

Hypertext marks in L^AT_EX

Sebastian Rahtz

Email: `sebastian.rahtz@oucs.ox.ac.uk`

processed December 17, 2000

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1 File hyccheck.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 <*check>
2 \documentclass{article}
3 \makeatletter

\checklatex Optional argument: release date of LATEX.
4 \newcommand*{\checklatex}[1][]{%
5   \typeout{}}%
6   \typeout{* Format: 'LaTeX2e' #1}%
7   \typeout{\space\space Loaded: '\fmtname' \fmtversion}%
8 }%

\checkpackage The argument of \checkpackage is the package name without extension optionally
              followed by a release date.
9 \newcommand*{\checkpackage}[1]{%
10   \def\HyC@package{#1}%
11   \let\HyC@date\@empty
12   \@ifnextchar[\HyC@getDate\HyC@checkPackage
13 }

\HyC@getDate The release date is scanned.
14 \def\HyC@getDate[#1]{%
15   \def\HyC@date{#1}%
16   \HyC@checkPackage
17 }

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

```

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

```

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

```

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

```

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

```

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

```

59 \def\HyC@checkcommand{%
60   \ifx\HyC@next\relax
61     \PackageError{hyc}{%
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 LATEX definition (number of arguments).
101 \def\HyC@nc@opt[#1]{%
102 \def\HyC@param{[#1]}%
103 \ifnextchar[\HyC@nc@default\HyC@nc@noopt
104 }

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

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

```

```

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

\HyC@def The parameter text of \def or \edef is stored in the token register \HyC@Toks.
\HyC@edef
125 \def\HyC@def#1#{%
126   \HyC@Toks={#1}%
127   \HyC@nc@noopt
128 }
129 \let\HyC@edef\HyC@def

\HyC@doCheck This command performs the checks and prints the result.
130 \def\HyC@doCheck{%
131   \typeout{* Checking '\HyC@string\HyC@cmd':}%
132   \HyC@checkItem{cmd}%
133   \HyC@checkItem{robustcmd}%
134   \HyC@checkItem{optcmd}%
135   \HyC@checkItem{robustoptcmd}%
136   \endgroup
137 }

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

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

```



```

\HyC@checkOk The result, if the check succeeds.
154 \def\HyC@checkOk#1{%
155   \typeout{\space\space'\HyC@string#1' ok.}}

\HyC@checkFailed The result, if the check fails.
156 \def\HyC@checkFailed#1#2{%
157   \typeout{\space\space'\HyC@string#1' failed.}%
158   \typeout{\space\space* original: \meaning#2}%
159   \typeout{\space\space* expected: \HyC@meaning#1}%
160 }

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

```

2 Package options and setup

2.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

\Hy@SetCatcodes
180 \def\Hy@SetCatcodes{%
181   \@makeother\'%
182   \@makeother\=%
183   \catcode'\$=3
184   \catcode'\&=4
185   \catcode'\^=7
186   \catcode'\_ =8
187   \@makeother\|%

```

```

188 \makeother\:%
189 \makeother\(%
190 \makeother\)%
191 \makeother\[%
192 \makeother\]%
193 \makeother\/%
194 \makeother\!%
195 \makeother\<%
196 \makeother\>%
197 \makeother\.%
198 \makeother\;%
199 \makeother\+%
200 \makeother\-%
201 \makeother\"%
202 \makeother\'%
203 }

```

`\Hy@RestoreCatcodes`

```

204 \begingroup
205 \def\x#1{\catcode'\noexpand#1=\the\catcode'#1\relax}%
206 \xdef\Hy@RestoreCatcodes{%
207   \the\toks@
208   \x\${%
209   \x\&%
210   \x\^%
211   \x\_%
212   \x\|%
213   \x\:%
214   \x\(%
215   \x\)%
216   \x\[%
217   \x\]%
218   \x\/%
219   \x\!%
220   \x\<%
221   \x\>%
222   \x\.%
223   \x\;%
224   \x\+%
225   \x\-%
226   \x\"%
227   \x\'%
228 }%
229 \endgroup

```

`230 \Hy@SetCatcodes`

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

```

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

```

2.2 Switches

```

235 \newif\ifHy@typexml
236 \newif\ifHy@activeanchor
237 \newif\ifHy@backref
238 \newif\ifHy@bookmarks
239 \newif\ifHy@bookmarksnumbered
240 \newif\ifHy@bookmarksopen
241 \newif\ifHy@breaklinks
242 \newif\ifHy@centerwindow
243 \newif\ifHy@CJKbookmarks
244 \newif\ifHy@colorlinks
245 \newif\ifHy@draft
246 \newif\ifHy@figures
247 \newif\ifHy@fitwindow
248 \newif\ifHy@frenchlinks
249 \newif\ifHy@hyperfootnotes
250 \newif\ifHy@hyperindex
251 \newif\ifHy@hypertexnames
252 \newif\ifHy@implicit
253 \newif\ifHy@linktocpage
254 \newif\ifHy@menubar
255 \newif\ifHy@naturalnames
256 \newif\ifHy@nesting
257 \newif\ifHy@newwindow
258 \newif\ifHy@pageanchor
259 \newif\ifHy@pagelabels
260 \newif\ifHy@pdfpagehidden
261 \newif\ifHy@pdfstring
262 \newif\ifHy@plainpages
263 \newif\ifHy@psize
264 \newif\ifHy@raiselinks
265 \newif\ifHy@seminarslides
266 \newif\ifHy@texht
267 \newif\ifHy@toolbar
268 \newif\ifHy@unicode
269 \newif\ifHy@verbose
270 \newif\ifHy>windowui

```

Defaults for the switches are now set.

```

271 \Hy@backreffalse
272 \Hy@bookmarksnumberedfalse
273 \Hy@bookmarksopenfalse
274 \Hy@bookmarkstrue
275 \Hy@breaklinksfalse

```

```

276 \Hy@centerwindowfalse
277 \Hy@CJKbookmarksfalse
278 \Hy@figuresfalse
279 \Hy@fitwindowfalse
280 \Hy@hyperfootnotesttrue
281 \Hy@hyperindextrue
282 \Hy@hypertextnamestrue
283 \Hy@implicittrue
284 \Hy@linktocpagefalse
285 \Hy@menubartrue
286 \Hy@naturalnamesfalse
287 \Hy@nestingfalse
288 \Hy@newwindowfalse
289 \Hy@pageanchortrue
290 \Hy@pagelabelsfalse
291 \Hy@pdfpagehiddenfalse
292 \Hy@pdfstringfalse
293 \Hy@plainpagestrue
294 \Hy@raiselinksfalse
295 \Hy@texhtfalse
296 \Hy@toolbartrue
297 \Hy@typexmlfalse
298 \Hy@unicodefalse
299 \Hy@verbosefalse
300 \Hy>windowuitrue

```

3 Common help macros

`\Hy@StepCount`

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

`\Hy@GlobalStepCount`

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

```

303 \newdimen\@linkdim
304 \let\Hy@driver\@empty
305 \let\MaybeStopEarly\relax
306 \newcount\Hy@linkcounter
307 \newcount\Hy@pagecounter
308 \Hy@linkcounter0
309 \Hy@pagecounter0

```

3.1 Macros for recursions

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

```

310 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
311 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

```

3.2 Coordinate transformations

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

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

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

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

Example (TeX):

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

`\hypercalcbp`

```
312 \begingroup\expandafter\expandafter\expandafter\endgroup
313 \expandafter\ifx\csname dimexpr\endcsname\relax
314   \def\hypercalcbpdef#1#2{%
315     \begingroup
316       \toks@{}%
317       \HyCal@scan#2\hypercalcbp\@nil
318     \expandafter\endgroup
319     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
320   }
321   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
322     \toks@\expandafter{\the\toks@ #1}%
323     \ifx\#2\%
324       \else
325         \Hy@ReturnAfterFi{%
326           \HyCal@do#2\@nil
327         }%
328     \fi
329   }
```

```

330 \def\HyCal@do#1#2\@nil{%
331   \setlength{\dimen@}{#1}%
332   \setlength{\dimen@}{0.99626401\dimen@}%
333   \edef\x{%
334     \toks@{%
335       \the\toks@
336       \strip@pt\dimen@
337     }%
338   }\x
339   \HyCal@scan#2\@nil
340 }
341 \else
342 \def\hypercalcbp#1{%
343   \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
344 }
345 \def\hypercalcbpdef{\def}
346 \fi

```

4 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Email: oberdiek@ruf.uni-freiburg.de.

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

4.1 Description of PDF strings

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

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

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

4.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
348 \begingroup
```

4.2.1 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.

```
349 \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.

```
350 \edef\0{\string\0}%
```

```
351 \edef\1{\string\1}%
```

```
352 \edef\2{\string\2}%
```

```
353 \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.

```

354 \ifHy@unicode
355 \edef\8{\string\8}%
356 \edef\9{\string\9}%
357 \fontencoding{PU}%
358 \else
359 \fontencoding{PD1}%
360 \fi
361 \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).

```

362 \@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).

```

363 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

364 \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.

```

365 \let\{\textbraceleft
366 \let\}\textbraceright
367 \let\\textbackslash
368 \let\#\textnumbersign
369 \let\$\textdollar
370 \let\%\textpercent
371 \let\&\textampersand
372 \% \let\~\textasciitilde
373 \let\_textunderscore
374 \let\P\textparagraph
375 \let\ldots\textellipsis
376 \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.

```
377 \def\{\pdfstringdefWarn\}%
378 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
379 \def\TeX{\TeX}%
380 \def\LaTeX{\LaTeX}%
381 \def\LaTeXe{\LaTeX2e}%
382 \def\TeX{e-\TeX}%
383 \def\MF{Metafont}%
384 \def\MP{Metapost}%
```

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

```
385 \let\emph\@firstofone
386 \let\textbf\@firstofone
387 \let\textit\@firstofone
388 \let\textmd\@firstofone
389 \let\textnormal\@firstofone
390 \let\textrm\@firstofone
391 \let\textsc\@firstofone
392 \let\textsf\@firstofone
393 \let\textsl\@firstofone
394 \let\texttt\@firstofone
395 \let\textup\@firstofone
396 \let\ttfamily\@empty
397 \let\sffamily\@empty
398 \let\itshape\@empty
399 \let\upshape\@empty
400 \let\bfseries\@empty
401 \let\rm\@empty
402 \let\Huge\@empty
403 \let\LARGE\@empty
404 \let\Large\@empty
405 \let\footnotesize\@empty
406 \let\huge\@empty
407 \let\large\@empty
```

```

408 \let\normalsize\@empty
409 \let\scriptsize\@empty
410 \let\small\@empty
411 \let\tiny\@empty

```

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

```

412 \let\textlatin\@firstofone
413 \@ifundefined{language@group}{}{%
414   \csname HyPsd@babel@language@group\endcsname
415 }%

```

Package german.

```

416 \let\glqq\textglqq
417 \let\grqq\textgrqq
418 \let\glq\textglq
419 \let\grq\textgrq
420 \let\flqq\textflqq
421 \let\frqq\textfrqq
422 \let\flq\textflq
423 \let\frq\textfrq

```

Package french. The support is deferred, because it needs `\GenericError` to be disabled (see below).

AMS classes.

```

424 \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.

```

425 \let\hspace\HyPsd@hspace

```

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

```

426 \let\label\@gobble
427 \let\index\@gobble
428 \let\glossary\@gobble
429 \let\href\@secondoftwo

```

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

```

430 \let\ref\HyPsd@ref
431 \let\pageref\HyPsd@pageref

```

Miscellaneous commands.

```
432 \let\leavevmode\@empty
\halign causes error messages because of the template character #.
433 \def\halign{\pdfstringdefWarn\halign\@gobble}%
```

Patch for cjk bookmarks.

```
434 \ifHy@CJKbookmarks
435 \HyPsd@CJKhook
436 \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`).

```
437 \Hy@pdfstringtrue
438 \pdfstringdefPreHook
```

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

```
439 \HyPsd@LetUnexpandableSpace\space
440 \HyPsd@LetUnexpandableSpace\ %
441 \HyPsd@LetUnexpandableSpace~%
442 \HyPsd@LetUnexpandableSpace\nobreakspace
```

Package xspace.

```
443 \@ifundefined{xspace}{%
444 \let\xspace\HyPsd@ITALCORR
445 }{%
446 \let\xspace\HyPsd@XSPACE
447 }%
448 \let\HyPsd@ITALCORR
449 \let\bgroup\/%
450 \let\egroup\/%
```

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

```
451 \let\discretionary\@gobbletwo
\@ifstar is defined in  $\text{\LaTeX}$  as follows:
\def\@ifstar#1{\@ifnextchar *{\@firstoftwo{#1}}}
```

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

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

```
452 \let\@ifnextchar\HyPsd@ifnextchar
453 \let\@protected@testopt\HyPsd@protected@testopt
```

4.2.2 Expansion

There are several possibilities to expand tokens within \LaTeX :

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

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

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

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

```

454 \begingroup
455 \let\GenericError\@gobblefour
456 \let\GenericWarning\@gobbletwo
457 \let\GenericInfo\@gobbletwo

```

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

```

458 \ifx\nofrenchguillemets\undefined
459 \else
460 \nofrenchguillemets
461 \fi

```

Definition commands and expansion. Redefining the defining commands (see sec. 4.5.10). The original meaning of `\xdef` is saved in `\Hy@temp`.

```

462 \let\Hy@temp\xdef
463 \let\def\HyPsd@DefCommand
464 \let\gdef\HyPsd@DefCommand
465 \let\edef\HyPsd@DefCommand
466 \let\xdef\HyPsd@DefCommand
467 \let\futurelet\HyPsd@LetCommand
468 \let\let\HyPsd@LetCommand
469 \Hy@temp#1{#2}%
470 \endgroup

```

4.2.3 Postprocessing

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

```

471 \ifx#1\@empty
472 \else

```

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

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

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

```

473      \HyPsd@ProtectSpaces#1%
474      \let\HyPsd@String\@empty
475      \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
476      \global\let#1\HyPsd@String

```

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

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

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

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

```

477      \let\HyPsd@SPACEOPTI\relax
478      {%
479          \let\HyPsd@String\@empty
480          \expandafter\HyPsd@CheckCatcodes#1\HyPsd@end
481          \global\let#1\HyPsd@String
482      }%
483      \expandafter\HyPsd@RemoveMask\expandafter
484      |\expandafter\@empty#1\HyPsd@end#1%

```

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

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

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

```

485      \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
486      \let\HyPsd@String\@empty
487      \expandafter\HyPsd@GlyphProcess#1\relax\@empty
488      \global\let#1\HyPsd@String

```

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

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

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

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

```
490 \ifHy@unicode
491 \expandafter\HyPsd@StringSubst\cname 80\040\endcsname
492 \HyPsd@SPACEOPTI#1%
493 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
494 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
495 {\HyPsd@SPACEOPTI\80\273}#1%
496 \else
497 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
498 \expandafter\HyPsd@Subst\expandafter{%
499 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
500 \string\273}{\HyPsd@SPACEOPTI\273}#1%
501 \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.

```
502 \ifHy@unicode
503 \HyPsd@StringSubst{\)}{\80\051}#1%
504 \HyPsd@Subst){\80\051}#1%
505 \let\HyPsd@empty\relax
506 \expandafter\HyPsd@StringSubst\cname 80\051\endcsname
507 {\HyPsd@empty\80\051}#1%
508 \else
509 \HyPsd@StringSubst{\)}{\051}#1%
510 \HyPsd@Subst){\051}#1%
511 \let\HyPsd@empty\relax
512 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
513 \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`.

```

514 \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
515 \@ifundefined{@xspace}{%
516 }{%
517 \let\HyPsd@xspace\relax
518 \expandafter\HyPsd@Subst\expandafter
519 {\HyPsd@XSPACE}\HyPsd@xspace#1%
520 \let\HyPsd@xspace\HyPsd@doxspace
521 }%
522 \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.

```

523 % \HyPsd@Subst{---}\textemdash#1%
524 % \HyPsd@Subst{--}\textendash#1%
525 % \HyPsd@Subst{fi}\textfi#1%
526 % \HyPsd@Subst{fl}\textfl#1%
527 % \HyPsd@Subst{!'}\textexclamdown#1%
528 % \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

529 \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.

```

530 \ifHy@unicode
531 \HyPsd@StringSubst\(\textparenleft#1%
532 \HyPsd@Subst(\textparenleft#1%
533 \else
534 \HyPsd@StringSubst\({\050}#1%
535 \HyPsd@Subst({\050}#1%
536 \HyPsd@StringSubst{\050}\string\{ }#1%

```


537 \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.

```
538       \ifHy@unicode
539       \edef\HyPsd@SPACEOPTI{\80\040}%
540       \else
541       \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
542       \fi
543       \xdef#1{#1\@empty}%
544       \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.

```
545       \ifHy@unicode
546       \HyPsd@ConvertToUnicode#1%
547       \fi
```

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

```
548       \pdfstringdefPostHook#1%
549       \endgroup
550 }
```

4.3 Encodings

4.3.1 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.

```
551 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
552 \DeclareFontFamily{PD1}{pdf}{}
553 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
554 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

4.3.2 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`.

```
555 \def\HyPsd@InitUnicode{%
556   \ifundefined{T@PU}{\input{puenc.def}}{}%
557   \DeclareFontFamily{PU}{pdf}{}%
558   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
559   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
560   \let\HyPsd@InitUnicode\relax
561 }
```

4.4 Additional user commands

4.4.1 `\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.

```
562 \newcommand*{\texorpdfstring}{%
563   \ifHy@pdfstring
564     \expandafter\@secondoftwo
565   \else
566     \expandafter\@firstoftwo
567   \fi
568 }
```

4.4.2 Hooks for `\pdfstringdef`

`\pdfstringdefPreHook` Default definition of the hooks for `\pdfstringdef`. The construct `\ifundefined` with `\pdfstringdefPostHook` `\let` is a little bit faster than `\providecommand`.

```
569 \ifundefined{pdfstringdefPreHook}{%
570   \let\pdfstringdefPreHook\@empty
571 }{}
572 \ifundefined{pdfstringdefPostHook}{%
573   \let\pdfstringdefPostHook\@gobble
574 }{}
```

`\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`.

```
575 \def\pdfstringdefDisableCommands{%
576   \begingroup
577     \makeatletter
578     \HyPsd@DisableCommands
579 }
```

`\HyPsd@DisableCommands`

```
580 \long\def\HyPsd@DisableCommands#1{%
581   \toks0=\expandafter{\pdfstringdefPreHook}%
582   \toks1={#1}%
583   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
584   \endgroup
585 }
```

`\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`.

```
586 \def\pdfstringdefWarn#1{%
587   \expandafter\noexpand\csname<>-string#1\endcsname
588 }
```

4.5 Help macros for expansion

4.5.1 Babel languages

```
589 \newif\ifHy@next
```

Nothing to do for english.

```
590 \@ifpackagewith{babel}{danish}{%
591   \def\HyPsd@babel@danish{%
592     \declare@shorthand{danish}{"}{|}%
593     \declare@shorthand{danish}{"}{|}%
594   }%
```

```

595 }{}
596 \@ifpackagewith{babel}{dutch}{%
597   \def\HyPsd@babel@dutch{%
598     \declare@shorthand{dutch}{"}|{}%
599     \declare@shorthand{dutch}{"}~{}-}%
600   }%
601 }{}
602 \@ifpackagewith{babel}{finnish}{%
603   \def\HyPsd@babel@finnish{%
604     \declare@shorthand{finnish}{"}|{}%
605   }%
606 }{}
607 \Hy@nextfalse
608 \@ifpackagewith{babel}{frenchb}{\Hy@nexttrue}{}
609 \@ifpackagewith{babel}{francais}{\Hy@nexttrue}{}
610 \ifHy@next
611   \def\HyPsd@babel@frenchb{%
612     \def\guill@spacing{ }%
613   }%
614 \fi
615 \Hy@nextfalse
616 \@ifpackagewith{babel}{german}{\Hy@nexttrue}{}
617 \@ifpackagewith{babel}{germanb}{\Hy@nexttrue}{}
618 \@ifpackagewith{babel}{austrian}{\Hy@nexttrue}{}
619 \ifHy@next
620   \def\HyPsd@babel@german{%
621     \declare@shorthand{german}{"}f{}f}%
622     \declare@shorthand{german}{"}|{}%
623     \declare@shorthand{german}{"}~{}-}%
624   }%
625 \fi
626 \Hy@nextfalse
627 \@ifpackagewith{babel}{ngerman}{\Hy@nexttrue}{}
628 \@ifpackagewith{babel}{ngermanb}{\Hy@nexttrue}{}
629 \@ifpackagewith{babel}{naustrian}{\Hy@nexttrue}{}
630 \ifHy@next
631   \def\HyPsd@babel@ngerman{%
632     \declare@shorthand{german}{"}|{}%
633     \declare@shorthand{german}{"}~{}-}%
634   }%
635 \fi
636 \Hy@nextfalse
637 \@ifpackagewith{babel}{usorbian}{\Hy@nexttrue}{}
638 \@ifpackagewith{babel}{uppersorbian}{\Hy@nexttrue}{}
639 \ifHy@next
640   \def\HyPsd@babel@usorbian{%
641     \declare@shorthand{usorbian}{"}f{}f}%
642     \declare@shorthand{usorbian}{"}|{}%
643   }%
644 \fi

```

```

645 \Hy@nextfalse
646 \@ifpackagewith{babel}{brazil}{\Hy@nexttrue}{}%
647 \@ifpackagewith{babel}{brazilian}{\Hy@nexttrue}{}%
648 \@ifpackagewith{babel}{portuges}{\Hy@nexttrue}{}%
649 \@ifpackagewith{babel}{portuguese}{\Hy@nexttrue}{}%
650 \ifHy@next
651   \def\HyPsd@babel@portuges{%
652     \declare@shorthand{portuges}{"}{|}{}%
653   }%
654 \fi
655 \Hy@nextfalse
656 \@ifpackagewith{babel}{russian}{\Hy@nexttrue}{%
657 \@ifpackagewith{babel}{russianb}{\Hy@nexttrue}{%
658 \ifHy@next
659   \def\HyPsd@babel@russian{%
660     \declare@shorthand{russian}{"}{|}{}%
661     \declare@shorthand{russian}{"}{~}{-}%
662   }%
663 \fi
664 \Hy@nextfalse
665 \@ifpackagewith{babel}{ukrainian}{\Hy@nexttrue}{%
666 \@ifpackagewith{babel}{ukraineb}{\Hy@nexttrue}{%
667 \ifHy@next
668   \def\HyPsd@babel@ukrainian{%
669     \declare@shorthand{ukrainian}{"}{|}{}%
670     \declare@shorthand{ukrainian}{"}{~}{-}%
671   }%
672 \fi
673 \@ifpackagewith{babel}{slovene}{%
674   \def\HyPsd@babel@slovene{%
675     \declare@shorthand{slovene}{"}{|}{}%
676   }%
677 }{}
678 \@ifpackagewith{babel}{swedish}{%
679   \def\HyPsd@babel@swedish{%
680     \declare@shorthand{swedish}{"}{|}{}%
681     \declare@shorthand{swedish}{"}{~}{-}%
682   }%
683 }{}

```

4.5.2 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.

```

684 \begin{group}
685   \toks@{%
686     \let\CJK@ignorespaces\empty
687     \def\CJK@char#1{\@gobbletwo}%
688     \let\CJK@charx\@gobblefour

```

```

689 \let\CJK@punctchar\@gobblefour
690 \def\CJK@punctcharx#1{\@gobblefour}%
691 % ... ?
692 \ifHy@unicode
693 \def\Hy@CJKpu{\80}%
694 \else
695 \let\Hy@CJKpu\@empty
696 \fi
697 \HyPsd@CJKAActiveChars
698 }%
699 \count@=127
700 \@whilenum\count@<255 \do{%
701 \advance\count@ by 1
702 \lccode'\~= \count@
703 \lowercase{%
704 \toks@\expandafter{\the\toks@ ~}%
705 }%
706 }%
707 \toks@\expandafter{\the\toks@ !}%
708 \xdef\HyPsd@CJKhook{\the\toks@}%
709 \endgroup

```

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

```

710 \def\HyPsd@CJKAActiveChars#1{%
711 \ifx#1!%
712 \let\HyPsd@CJKAActiveChars\relax
713 \else
714 \edef#1{\noexpand\Hy@CJKpu\string#1}%
715 \fi
716 \HyPsd@CJKAActiveChars
717 }

```

4.5.3 `\@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` ($=\text{\relax}$).

```

\def\@current@cmd#1{%
  \ifx\protect\@typesetprotect
    \@inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}

```

```

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

718 \def\HyPsd@inmathwarn#1#2{%
719   \ifx#2\expandafter
720     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
721       \HyPsd@GLYPHERR
722       \expandafter\@gobble\string#1%
723       >%
724       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
725     \else
726       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
727     \fi
728   \else
729     \expandafter#2%
730   \fi
731 }
732 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
733 \def\HyPsd@EndWithElse#1\else\else{}

```

4.5.4 \add@accent-Patch

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

\HyPsd@add@accent

```

734 \def\HyPsd@add@accent#1#2{%
735   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
736   #2%
737 }%

```

4.5.5 Unexpandable spaces

\HyPsd@LetUnexpandableSpace In \HyPsd@@ProtectSpaces the space tokens are replaced by not expandable commands, that work like spaces:

- So they can be caught by undelimited arguments.
- And they work in number, dimension, and skip assignments.

These properties are used in \HyPsd@CheckCatcodes.

```

738 \def\HyPsd@LetUnexpandableSpace#1{%
739   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
740 }

```

\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.

```

741 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

4.5.6 Marker for commands

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

```

742 \edef\HyPsd@XSPACE{\string#\string X}
743 \edef\HyPsd@ITALCORR{\string#\string I}
744 \edef\HyPsd@GLYPHERR{\string#\string G}

```

4.5.7 \hspace fix

\HyPsd@hspace

```

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

```

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

```

746 \def\HyPsd@@hspace#1*#2\END{%
747   \ifx\#2\%
748     \HyPsd@hspacetest{#1}%
749   \else
750     \expandafter\HyPsd@hspacetest
751   \fi
752 }

```

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

```

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

```


4.5.8 Fix for AMS classes

```

754 \@ifundefined{tocsection}{%
755   \let\HyPSD@AMSclassfix\relax
756 }{%
757   \def\HyPSD@AMSclassfix{%
758     \let\tocpart\HyPSD@tocsection
759     \let\tocchapter\HyPSD@tocsection
760     \let\tocappendix\HyPSD@tocsection
761     \let\tocsection\HyPSD@tocsection
762     \let\tocsubsection\HyPSD@tocsection
763     \let\tocsubsubsection\HyPSD@tocsection
764     \let\tocparagraph\HyPSD@tocsection
765   }%
766   \def\HyPSD@tocsection#1#2#3{%
767     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
768     #3%
769   }%
770 }

```

4.5.9 Reference commands

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

```

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

```

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

```

772 \def\HyPsd@@ref#1*#2\END{%
773   \ifx\#2\%
774     \HyPsd@@@ref{#1}%
775   \else
776     \expandafter\HyPsd@@@ref
777   \fi
778 }%

```

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

```

779 \def\HyPsd@@@ref#1{%
780   \expandafter\ifx\csname r@#1\endcsname\relax
781     ??%
782   \else
783     \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
784   \fi
785 }

```

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

```

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

```

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

```

787 \def\HyPsd@@pageref#1*#2\END{%

```

```

788 \ifx\#2\%
789   \HyPsd@@pageref{#1}%
790 \else
791   \expandafter\HyPsd@@pageref
792 \fi
793 }

```

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

```

794 \def\HyPsd@@pageref#1{%
795   \expandafter\ifx\csname r@#1\endcsname\relax
796     ??%
797   \else
798     \expandafter\expandafter\expandafter\expandafter
799     \expandafter\expandafter\expandafter\@car
800     \expandafter\expandafter\expandafter\@gobble
801     \csname r@#1\endcsname\@nil
802   \fi
803 }

```

4.5.10 Redefining the defining commands

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

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

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand

```

```

804 \begingroup
805   \def\x#1#2{%
806     \endgroup
807     \let#1\def
808     \def\HyPsd@DefCommand##1##2##{%
809       #1%
810       \expandafter\noexpand
811       \csname\expandafter\@gobble\string##1\@empty\endcsname
812       \@gobble
813     }%
814     \let#2\let
815     \def\HyPsd@LetCommand##1{%
816       #2%
817       \expandafter\noexpand
818       \csname\expandafter\@gobble\string##1\@empty\endcsname
819     }%
820   }%
821 \expandafter\x\csname <def>-command\expandafter\endcsname
822       \csname <let>-command\endcsname

```

4.5.11 \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.

```

823 \def\HyPsd@ifnextchar{%
824   \pdfstringdefWarn\@ifnextchar
825   \expandafter\@gobbletwo\@gobble
826 }

```

4.5.12 \@protected@testoptifnextchar

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

```

827 \def\HyPsd@protected@testopt#1{%
828   \pdfstringdefWarn#1%
829   \@gobbletwo
830 }

```

4.6 Help macros for postprocessing

4.6.1 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:

```
831 \def\HyPsd@Warning#1{%  
832   \begingroup  
833     \def\space{ }%  
834     \Hy@Warning{#1}%  
835   \endgroup  
836 }
```

4.6.2 Protecting spaces

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

```
837 \def\HyPsd@ProtectSpaces#1{%  
838   \expandafter\HyPsd@@ProtectSpaces  
839     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%  
840 }
```

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

```
841 \def\HyPsd@@ProtectSpaces#1 #2\HyPsd@End#3{%  
842   \ifx\scrollmode#2\scrollmode  
843     \HyPsd@RemoveMask#1\HyPsd@End#3%  
844   \else  
845     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%  
846     \Hy@ReturnAfterFi{%  
847       \expandafter\HyPsd@@ProtectSpaces#3\HyPsd@End#3%  
848     }%  
849   \fi  
850 }
```

Remove mask.

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

```
851 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%  
852   \toks@\expandafter{#1}%  
853   \xdef#2{\the\toks@}%  
854 }
```

4.6.3 Remove grouping braces

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

```

855 \def\HyPsd@RemoveBraces#1{%
856   \ifx\scrollmode#1\scrollmode
857   \else
858     \Hy@ReturnAfterFi{%
859       \HyPsd@@RemoveBraces#1\HyPsd@End{#1}%
860     }%
861   \fi
862 }

```

`\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`.

```

863 \def\HyPsd@@RemoveBraces#1#2\HyPsd@End#3{%
864   \def\Hy@temp@A{#1#2}%
865   \def\Hy@temp@B{#3}%
866   \ifx\Hy@temp@A\Hy@temp@B
867     \expandafter\def\expandafter\HyPsd@String\expandafter{%
868       \HyPsd@String#1%
869     }%
870     \Hy@ReturnAfterElseFi{%
871       \ifx\scrollmode#2\scrollmode
872       \else
873         \Hy@ReturnAfterFi{%
874           \HyPsd@RemoveBraces{#2}%
875         }%
876       \fi
877     }%
878   \else
879     \def\Hy@temp@A{#1}%
880     \HyPsd@AppendItalcorr\HyPsd@String
881     \Hy@ReturnAfterFi{%
882       \ifx\Hy@temp@A\@empty
883         \Hy@ReturnAfterElseFi{%
884           \HyPsd@RemoveBraces{#2}%
885         }%
886       \else
887         \Hy@ReturnAfterFi{%
888           \HyPsd@ProtectSpaces\Hy@temp@A
889           \HyPsd@AppendItalcorr\Hy@temp@A
890           \expandafter\HyPsd@RemoveBraces\expandafter
891             {\Hy@temp@A#2}%
892         }%
893       \fi

```

```

894    }%
895    \fi
896 }

```

`\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`.

```

897 \def\HyPsd@AppendItalcorr#1{%
898   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/}#1%
899 }
900 \def\HyPsd@@AppendItalcorr#1#2{%
901   \expandafter\def\expandafter#2\expandafter{#2#1}%
902 }

```

4.6.4 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`).

```

903 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
904   \global\let\HyPsd@Rest\relax
905   \ifcat\relax\noexpand#1\relax
906     \ifx#1\protect
907       \else
908         \ifx#1\penalty
909           \setbox\z@=\hbox{%
910             \afterassignment\HyPsd@AfterCountRemove
911             \count@=#2\HyPsd@End
912           }%
913         \else
914           \ifx#1\kern
915             \setbox\z@=\hbox{%
916               \afterassignment\HyPsd@AfterDimenRemove
917               \dimen@=#2\HyPsd@End
918             }%
919           \else
920             \ifx#1\hskip
921               \setbox\z@=\hbox{%
922                 \afterassignment\HyPsd@AfterSkipRemove
923                 \skip@=#2\HyPsd@End
924               }%
925             \else

```

```

926         \HyPsd@CatcodeWarning{#1}%
927     \fi
928 \fi
929 \fi
930 \fi
931 \else
932     \ifcat#1 %SPACE
933         \expandafter\def\expandafter\HyPsd@String\expandafter{%
934             \HyPsd@String\HyPsd@SPACEOPTI
935         }%
936     \else
937         \ifcat$#1%
938             \HyPsd@CatcodeWarning{math shift}%
939         \else
940             \ifcat&#1%
941                 \HyPsd@CatcodeWarning{alignment tab}%
942             \else
943                 \ifcat^#1%
944                     \HyPsd@CatcodeWarning{superscript}%
945                 \else
946                     \ifcat_#1%
947                         \HyPsd@CatcodeWarning{subscript}%
948                     \else
949                         \expandafter\def\expandafter\HyPsd@String\expandafter{%
950                             \HyPsd@String#1%
951                         }%
952                     \fi
953                 \fi
954             \fi
955         \fi
956     \fi
957 \fi
958 \ifx\HyPsd@Rest\relax
959     \Hy@ReturnAfterElseFi{%
960         \ifx\scrollmode#2\scrollmode
961         \else
962             \Hy@ReturnAfterFi{%
963                 \HyPsd@CheckCatcodes#2\HyPsd@end
964             }%
965         \fi
966     }%
967 \else
968     \Hy@ReturnAfterFi{%
969         \ifx\HyPsd@Rest\@empty
970         \else
971             \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
972         \fi
973     }%
974 \fi
975 }

```

Remove counts, dimens, skips.

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

```
976 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
977   \gdef\HyPsd@Rest{#1}%
978 }
```

`\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.

```
979 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
980   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex
981     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
982     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
983   \else
984     \ifdim\dimen@=\z@
985       \else
986         \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
987       \fi
988     \gdef\HyPsd@Rest{#1}%
989   \fi
990 }
```

`\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).

```
991 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
992   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex
993     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
994     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
995   \else
996     \ifdim\skip@=\z@
997       \else
998         \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
999       \fi
1000     \gdef\HyPsd@Rest{#1}%
1001   \fi
1002 }
```

Catcode warnings.

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

```
1003 \def\HyPsd@CatcodeWarning#1{%
1004   \HyPsd@Warning{%
1005     Token not allowed in a PDFDocEncoded string,%
1006     \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1007   }%
1008 }
1009 \begingroup
```



```

1010 \catcode'\|=0
1011 \catcode'\|=12
1012 |gdef|HyPsd@RemoveCmdPrefix#1{%
1013     |expandafter|HyPsd@@RemoveCmdPrefix
1014     |string#1|@empty\<>-|@empty|@empty
1015 }%
1016 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1017 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1018 \def\HyPsd@RemoveSpaceWarning#1{%
1019     \HyPsd@Warning{%
1020         Token not allowed in a PDFDocEncoded string:%
1021         \MessageBreak #1\MessageBreak
1022         removed%
1023     }%
1024 }

```

\HyPsd@ReplaceSpaceWarning

```

1025 \def\HyPsd@ReplaceSpaceWarning#1{%
1026     \HyPsd@Warning{%
1027         Token not allowed in a PDFDocEncoded string:%
1028         \MessageBreak #1\MessageBreak
1029         replaced by space%
1030     }%
1031 }

```

4.6.5 Check for wrong glyphs

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

```

1032 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1033     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1034         \HyPsd@String#1%
1035     }%
1036     \ifx\#2\%
1037     \else
1038         \Hy@ReturnAfterFi{%
1039             \HyPsd@GlyphProcessWarning#2\@empty
1040         }%
1041     \fi
1042 }
1043 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1044     \HyPsd@Warning{%
1045         Glyph not defined in %
1046         P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1047         removing '@backslashchar#1'%
1048     }%
1049     \HyPsd@GlyphProcess#2\@empty
1050 }

```

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`.

```
1051 \def\HyPsd@spaceopti#1{ % first space
1052   \ifx\HyPsd@spaceopti#1%
1053     \040%
1054   \else
1055     #1%
1056   \fi
1057 }
```

4.6.6 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.

```
1058 \def\HyPsd@Subst#1#2#3{%
1059   \def\HyPsd@@Replace##1#1##2\END{%
1060     ##1%
1061     \ifx\##2\%
1062     \else
1063       #2%
1064       \Hy@ReturnAfterFi{%
1065         \HyPsd@@Replace##2\END
1066       }%
1067     \fi
1068   }%
1069   \xdef#3{%
1070     \expandafter\HyPsd@@Replace#3#1\END
1071   }%
1072 }
```

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

```
1073 \def\HyPsd@StringSubst#1{%
1074   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1075 }
```

4.6.7 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.

```
1076 \def\HyPsd@doxspace#1{%
```

```

1077 \ifx#1\relax\else
1078 \ifx#1.\else
1079 \ifx#1:\else
1080 \ifx#1,\else
1081 \ifx#1;\else
1082 \ifx#1!\else
1083 \ifx#1?\else
1084 \ifx#1/\else
1085 \ifx#1-\else
1086 \ifx#1'\else
1087 \HyPsd@SPACEOPTI
1088 \fi
1089 \fi
1090 \fi
1091 \fi
1092 \fi
1093 \fi
1094 \fi
1095 \fi
1096 \fi
1097 \fi
1098 #1%
1099 }%

```

4.6.8 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.

```

1100 \begingroup
1101 \catcode'\|=0
1102 \catcode'\|=12

```

\HyPsd@ConvertToUnicode

```

1103 |gdef|HyPsd@ConvertToUnicode#1{%
1104 |xdef#1{%
1105 \376\377%
1106 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1107 }%
1108 }

```

\HyPsd@DoConvert

```

1109 |gdef|HyPsd@DoConvert#1{%
1110 |ifx#1|@empty
1111 |else
1112 |Hy@ReturnAfterFi{%
1113 |ifx#1\%
1114 \%
1115 |expandafter|HyPsd@DoEscape

```

```

1116         |else
1117             \000#1%
1118             |expandafter|HyPsd@DoConvert
1119         |fi
1120     }%
1121 |fi
1122 }

```

`\HyPsd@DoEscape`

```

1123 |gdef|HyPsd@DoEscape#1{%
1124     |ifx#19%
1125         |expandafter|HyPsd@GetTwoBytes
1126     |else
1127         |Hy@ReturnAfterFi{%
1128             |ifx#18%
1129                 00%
1130             |expandafter|HyPsd@GetTwoBytes
1131         |else
1132             #1%
1133             |expandafter|HyPsd@GetOneByte
1134         |fi
1135     }%
1136 |fi
1137 }

```

`\HyPsd@GetTwoBytes`

```

1138 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1139     #1\#2#3#4%
1140     |HyPsd@DoConvert
1141 }

```

`\HyPsd@GetOneByte`

```

1142 |gdef|HyPsd@GetOneByte#1#2{%
1143     #1#2%
1144     |HyPsd@DoConvert
1145 }
1146 |endgroup

```

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

```

1147 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1148     \xdef#4{#4#1#2}%
1149     \HyPsd@@ConvertToUnicode#3\END#4%
1150 }

```

5 Support of other packages

5.1 Package subfigure

```

1151 \@ifpackageloaded{subfigure}{%
1152   \Hy@hypertexnamesfalse
1153 }{}

```

5.2 Package xr and xr-hyper

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

```

1154 \@ifundefined{XR@addURL}{%
1155 }{}

```

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.

```

1156 \def\xR@addURL#1{\xR@dURL#1{}{}{}{}\\}%
1157 \def\xR@dURL#1#2#3#4#5\\{%
1158   {#1}{#2}%
1159   \if!#4!%
1160   \else
1161     {#3}{#4}{\xR@URL}%
1162   \fi
1163 }%
1164 }

```

```

1165 \def\Hy@true{true}
1166 \def\Hy@false{false}

```

Providing dummy definitions.

```

1167 \let\literalps@out@gobble
1168 \newcommand\pdfbookmark[3][]{ }
1169 \let\Acrobatmenu@gobble
1170 \def\Hy@writebookmark#1#2#3#4#5{%

```

6 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

```

1171 \let\HyperRaiseLinkLength\@tempdima
1172 \let\HyperRaiseLinkHook\@empty
1173 \def\HyperRaiseLinkDefault{\baselineskip}

```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```

1174 \def\Hy@raisedlink#1{%
1175   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1176   \HyperRaiseLinkHook
1177   \ifvmode
1178     #1%
1179   \else
1180     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1181   \fi
1182 }

```

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

```

\Hy@RestoreLastskip 1183 \def\Hy@SaveLastskip{%
1184   \let\Hy@RestoreLastskip\relax
1185   \ifvmode
1186     \ifdim\lastskip=\z@
1187       \let\Hy@RestoreLastskip\nobreak
1188     \else
1189       \begingroup
1190         \skip@=-\lastskip
1191         \edef\x{%
1192           \endgroup
1193           \def\noexpand\Hy@RestoreLastskip{%
1194             \noexpand\ifvmode
1195               \noexpand\nobreak
1196               \vskip\the\skip@
1197               \vskip\the\lastskip\relax
1198             \noexpand\fi
1199           }%
1200         }%
1201       \x
1202     \fi
1203   \else
1204     \ifhmode
1205       \ifdim\lastskip=\z@
1206         \let\Hy@RestoreLastskip\nobreak
1207       \else
1208         \begingroup
1209           \skip@=-\lastskip
1210           \edef\x{%
1211             \endgroup
1212             \def\noexpand\Hy@RestoreLastskip{%
1213               \noexpand\ifhmode
1214                 \noexpand\nobreak
1215                 \hskip\the\skip@
1216                 \hskip\the\lastskip\relax
1217             \noexpand\fi
1218           }%
1219         }%

```

```

1220         \x
1221         \fi
1222     \fi
1223 \fi
1224 }%

```

7 Options

7.1 Help macros

`\Hy@boolkey`

```

1225 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1226 \def\Hy@@boolkey[#1]#2#3{%
1227   \lowercase{\def\Hy@tempa{#3}}%
1228   \ifx\Hy@tempa\@empty
1229     \let\Hy@tempa\Hy@true
1230   \fi
1231   \ifx\Hy@tempa\Hy@true
1232   \else
1233     \ifx\Hy@tempa\Hy@false
1234     \else
1235       \let\Hy@tempa\relax
1236     \fi
1237   \fi
1238   \ifx\Hy@tempa\relax
1239     \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1240   \else
1241     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1242     \csname Hy@#2\Hy@tempa\endcsname
1243   \fi
1244 }

```

`\Hy@WarnOptionValue`

```

1245 \def\Hy@WarnOptionValue#1#2#3{%
1246   \Hy@Warning{%
1247     Unexpected value ‘#1’\MessageBreak
1248     of option ‘#2’ instead of\MessageBreak
1249     #3%
1250   }
1251 }

```

`\Hy@DisableOption`

```

1252 \def\Hy@DisableOption#1{%
1253   \@ifundefined{KV@Hyp@#1@default}{%
1254     \define@key{Hyp}{#1}%
1255   }{%
1256     \define@key{Hyp}{#1}[]%
1257   }%

```

```

1258 {\Hy@WarnOptionDisabled{#1}}%
1259 }

```

\Hy@WarnOptionDisabled

```

1260 \def\Hy@WarnOptionDisabled#1{%
1261   \Hy@Warning{%
1262     Option ‘#1’ has already been used,\MessageBreak
1263     setting the option has no effect%
1264   }%
1265 }

```

7.2 Defining the options

```

1266 \define@key{Hyp}{implicit}[true]{%
1267   \Hy@boolkey{implicit}{#1}%
1268 }
1269 \define@key{Hyp}{draft}[true]{%
1270   \Hy@boolkey{draft}{#1}%
1271 }
1272 \let\KV@Hyp@nolinks\KV@Hyp@draft
1273 \define@key{Hyp}{a4paper}[true]{%
1274   \def\special@paper{210mm,297mm}%
1275   \def\Hy@pageheight{842}%
1276 }
1277 \define@key{Hyp}{a5paper}[true]{%
1278   \def\special@paper{148mm,210mm}%
1279   \def\Hy@pageheight{595}%
1280 }
1281 \define@key{Hyp}{b5paper}[true]{%
1282   \def\special@paper{176mm,250mm}%
1283   \def\Hy@pageheight{709}%
1284 }
1285 \define@key{Hyp}{letterpaper}[true]{%
1286   \def\special@paper{8.5in,11in}%
1287   \def\Hy@pageheight{792}%
1288 }
1289 \define@key{Hyp}{legalpaper}[true]{%
1290   \def\special@paper{8.5in,14in}%
1291   \def\Hy@pageheight{1008}%
1292 }
1293 \define@key{Hyp}{executivepaper}[true]{%
1294   \def\special@paper{7.25in,10.5in}%
1295   \def\Hy@pageheight{720}%
1296 }
1297 \define@key{Hyp}{debug}[true]{%
1298   \Hy@boolkey[debug]{verbose}{#1}%
1299 }
1300 \define@key{Hyp}{linktopage}[true]{%
1301   \Hy@boolkey{linktopage}{#1}%

```



```

1302 }
1303 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1304 \def\XR@ext{dvi}
1305 \define@key{Hyp}{verbose}[true]{%
1306   \Hy@boolkey{verbose}{#1}%
1307 }
1308 \define@key{Hyp}{typexml}[true]{%
1309   \Hy@boolkey{typexml}{#1}%
1310 }

```

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.

```

1311 \define@key{Hyp}{raiselinks}[true]{%
1312   \Hy@boolkey{raiselinks}{#1}%
1313 }

```

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

```

1314 \define@key{Hyp}{breaklinks}[true]{%
1315   \Hy@boolkey{breaklinks}{#1}%
1316 }

```

Determines whether an automatic anchor is put on each page

```

1317 \define@key{Hyp}{pageanchor}[true]{%
1318   \Hy@boolkey{pageanchor}{#1}%
1319 }

```

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.

```

1320 \define@key{Hyp}{plainpages}[true]{%
1321   \Hy@boolkey{plainpages}{#1}%
1322 }

```

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

```

1323 \define@key{Hyp}{naturalnames}[true]{%
1324   \Hy@boolkey{naturalnames}{#1}%
1325 }

```

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

```

1326 \define@key{Hyp}{hypertextnames}[true]{%
1327   \Hy@boolkey{hypertextnames}{#1}%
1328 }

```

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

```

1329 \define@key{Hyp}{nesting}[true]{%
1330   \Hy@boolkey{nesting}{#1}%
1331 }

```

```

1332 \define@key{Hyp}{unicode}[true]{%
1333   \Hy@boolkey{unicode}{#1}%
1334   \HyPsd@InitUnicode

```

1335 }

8 Options for different drivers

```
1336 \define@key{Hyp}{hyperref}[true]{}
1337 \define@key{Hyp}{tex4ht}[true]{%
1338   \def\XR@ext{html}%
1339   \Hy@texhttrue
1340   \def\Hy@raisedlink{}%
1341   \setkeys{Hyp}{colorlinks=true}%
1342   \def\BeforeTeXIVht{\usepackage{color}}%
1343   \def\Hy@driver{htex4ht}%
1344   \def\MaybeStopEarly{%
1345     \typeout{Hyperref stopped early}%
1346     \AtBeginDocument{\PDF@FinishDoc}%
1347     \endinput
1348   }%
1349 }
1350 \define@key{Hyp}{pdftex}[true]{%
1351   \def\Hy@driver{hpdftex}%
1352   \def\XR@ext{pdf}%
1353   \PassOptionsToPackage{pdftex}{color}%
1354   \Hy@breaklinkstrue
1355 }
1356 \define@key{Hyp}{dvipdf}[true]{%
1357 }
1358 \define@key{Hyp}{nativepdf}[true]{%
1359   \def\Hy@driver{hdvips}%
1360   \def\XR@ext{pdf}%
1361 }
1362 \define@key{Hyp}{dvipdfm}[true]{%
1363   \def\Hy@driver{hdvipdfm}%
1364   \def\XR@ext{pdf}%
1365   \Hy@breaklinkstrue
1366 }
1367 \define@key{Hyp}{pdfmark}[true]{%
1368   \def\Hy@driver{hdvips}%
1369   \def\XR@ext{pdf}%
1370 }
1371 \define@key{Hyp}{dvips}[true]{%
1372   \def\Hy@driver{hdvips}%
1373   \def\XR@ext{pdf}%
1374 }
1375 \define@key{Hyp}{hypertex}[true]{%
1376   \def\Hy@driver{hypertex}%
1377 }
1378 \let\Hy@MaybeStopNow\relax
1379 \define@key{Hyp}{vtex}[true]{%
1380   \begingroup\expandafter\expandafter\expandafter\endgroup
1381   \expandafter\ifx\csgname OpMode\endcsgname\relax
```

```

1382 \latexerror{Non-VTeX processor}{}%
1383 \global\let\Hy@MaybeStopNow\endinput
1384 \endinput
1385 \else
1386 \ifnum\ifnum\OpMode=2 1\else\OpMode\fi=1 % SPACE
1387 \def\XR@ext{pdf}%
1388 \def\Hy@driver{hvtex}%
1389 \else
1390 \ifnum\OpMode=10\relax
1391 \def\XR@ext{htm}%
1392 \def\Hy@driver{hvtexhtm}%
1393 \def\MaybeStopEarly{%
1394 \typeout{Hyperref stopped early}%
1395 \AtBeginDocument{\PDF@FinishDoc}%
1396 \endinput
1397 }%
1398 \else
1399 \latexerror{Mode (\the\OpMode) has no hyperref driver}{}%
1400 \global\let\Hy@MaybeStopNow\endinput
1401 \endinput
1402 \fi
1403 \fi
1404 \fi
1405 }
1406 \define@key{Hyp}{vtexpdfmark}[true]{%
1407 \begingroup\expandafter\expandafter\expandafter\endgroup
1408 \expandafter\ifx\csname OpMode\endcsname\relax
1409 \latexerror{Non-VTeX processor}{}%
1410 \let\Hy@MaybeStopNow\endinput
1411 \endinput
1412 \else
1413 \ifnum\ifnum\OpMode=2 1\else\OpMode\fi=1 % SPACE
1414 \def\XR@ext{pdf}%
1415 \def\Hy@driver{hvtexmrk}%
1416 \else
1417 \latexerror{Mode (\the\OpMode) has no hyperref driver}{}%
1418 \let\Hy@MaybeStopNow\endinput
1419 \endinput
1420 \fi
1421 \fi
1422 }
1423 \define@key{Hyp}{dviwindo}[true]{%
1424 \def\Hy@driver{hdviwind}%
1425 \setkeys{Hyp}{colorlinks}%
1426 \PassOptionsToPackage{dviwindo}{color}%
1427 }
1428 \define@key{Hyp}{dvipsone}[true]{%
1429 \def\XR@ext{pdf}%
1430 \def\Hy@driver{hdvipson}%
1431 }

```

```

1432 \define@key{Hyp}{textures}[true]{%
1433   \def\XR@ext{pdf}%
1434   \def\Hy@driver{htexture}%
1435 }
1436 \define@key{Hyp}{latex2html}[true]{%
1437   \AtBeginDocument{\@@@latextohtmlX}%
1438 }

```

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

```

1439 \define@key{Hyp}{ps2pdf}[true]{%
1440   \def\Hy@driver{hdvips}%
1441   \providecommand\@pdfborder{0 0 1}%
1442 }

```

9 Options to add extra features

Make included figures (assuming they use the standard graphics package) be hypertext links. Off by default. Needs more work.

```

1443 \define@key{Hyp}{hyperfigures}[true]{%
1444   \Hy@boolkey[hyperfigures]{figures}{#1}%
1445 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

1446 \define@key{Hyp}{hyperfootnotes}[true]{%
1447   \Hy@boolkey[hyperfootnotes]{#1}%
1448 }

```

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

```

1449 \def\back@none{none}
1450 \def\back@section{section}
1451 \def\back@page{page}
1452 \def\back@slide{slide}
1453 \define@key{Hyp}{backref}[section]{%
1454   \lowercase{\def\Hy@tempa{#1}}%
1455   \ifx\Hy@tempa\@empty
1456     \let\Hy@tempa\back@section
1457   \fi
1458   \ifx\Hy@tempa\Hy@false
1459     \let\Hy@tempa\back@none
1460   \fi
1461   \ifx\Hy@tempa\back@slide
1462     \let\Hy@tempa\back@section
1463   \fi
1464   \ifx\Hy@tempa\back@page
1465     \PassOptionsToPackage{hyperpageref}{backref}%
1466     \Hy@backreftrue
1467   \else
1468     \ifx\Hy@tempa\back@section
1469       \PassOptionsToPackage{hyperref}{backref}%
1470       \Hy@backreftrue
1471     \else

```

```

1472     \ifx\Hy@tempa\back@none
1473     \Hy@backreffalse
1474   \else
1475     \Hy@WarnOptionValue{#1}{backref}{%
1476       'section', 'slide', 'page', 'none', \MessageBreak
1477       or 'false'}%
1478   \fi
1479 \fi
1480 \fi
1481 }
1482 \define@key{Hyp}{pagebackref}[true]{%
1483   \lowercase{\def\Hy@tempa{#1}}%
1484   \ifx\Hy@tempa\@empty
1485     \let\Hy@tempa\Hy@true
1486   \fi
1487   \ifx\Hy@tempa\Hy@true
1488     \PassOptionsToPackage{hyperpageref}{backref}%
1489     \Hy@backreftrue
1490   \else
1491     \ifx\Hy@tempa\Hy@false
1492       \Hy@backreffalse
1493     \else
1494       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
1495     \fi
1496   \fi
1497 }

```

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

```

1498 \define@key{Hyp}{hyperindex}[true]{%
1499   \Hy@boolkey{hyperindex}{#1}%
1500 }

```

10 Language options

```

1501 \def\Hy@setcaptions#1#2{%
1502   \@ifpackageloaded{babel}{%
1503     \expandafter\addto\csname captions#2\expandafter\endcsname
1504     \expandafter{#1}%
1505   }{%
1506     #1%
1507   }%
1508 }
1509 \def\Hy@autorefenglish{\Hy@setcaptions\Hy@captionsenglish}
1510 \def\Hy@autorefgerman{\Hy@setcaptions\Hy@captionsgerman}
1511 \def\Hy@autorefspanish{\Hy@setcaptions\Hy@captiosspanish}
1512 \def\Hy@captionsenglish{%
1513   \def\equationautorefname{Equation}%
1514   \def\footnoteautorefname{footnote}%

```

```

1515 \def\itemautorefname{item}%
1516 \def\figureautorefname{Figure}%
1517 \def\tableautorefname{Table}%
1518 \def\partautorefname{Part}%
1519 \def\appendixautorefname{Appendix}%
1520 \def\chapterautorefname{chapter}%
1521 \def\sectionautorefname{section}%
1522 \def\subsectionautorefname{subsection}%
1523 \def\subsubsectionautorefname{subsubsection}%
1524 \def\paragraphautorefname{paragraph}%
1525 \def\subparagraphautorefname{subparagraph}%
1526 \def\FancyVerbLineautorefname{line}%
1527 \def\theoremautorefname{Theorem}%
1528 }
1529 \def\Hy@captionsgerman{%
1530 \def\equationautorefname{Gleichung}%
1531 \def\footnoteautorefname{Fu\ss note}%
1532 \def\itemautorefname{Punkt}%
1533 \def\figureautorefname{Abbildung}%
1534 \def\tableautorefname{Tabelle}%
1535 \def\partautorefname{Teil}%
1536 \def\appendixautorefname{Anhang}%
1537 \def\chapterautorefname{Kapitel}%
1538 \def\sectionautorefname{Abschnitt}%
1539 \def\subsectionautorefname{Unterabschnitt}%
1540 \def\subsubsectionautorefname{Unterunterabschnitt}%
1541 \def\paragraphautorefname{Absatz}%
1542 \def\subparagraphautorefname{Unterabsatz}%
1543 \def\FancyVerbLineautorefname{Zeile}%
1544 \def\theoremautorefname{Theorem}%
1545 }
1546 \def\Hy@captionsspanish{%
1547 \def\equationautorefname{Ecuaci\'}on}%
1548 \def\footnoteautorefname{Nota a pie de p\'}agina}%
1549 \def\itemautorefname{Elemento}%
1550 \def\figureautorefname{Figura}%
1551 \def\tableautorefname{Tabla}%
1552 \def\partautorefname{Parte}%
1553 \def\appendixautorefname{Ap\'}endice}%
1554 \def\chapterautorefname{Cap\'}itulo}%
1555 \def\sectionautorefname{Secci\'}on}%
1556 \def\subsectionautorefname{Subsecci\'}on}%
1557 \def\subsubsectionautorefname{Subsubsecci\'}on}%
1558 \def\paragraphautorefname{P\'}arrafo}%
1559 \def\subparagraphautorefname{Subp\'}arrafo}%
1560 \def\FancyVerbLineautorefname{L\'}inea}%
1561 \def\theoremautorefname{Teorema}%
1562 }
1563 \define@key{Hyp}{english}[]{\Hy@autorefenglish{english}}
1564 \define@key{Hyp}{UKenglish}[]{\Hy@autorefenglish{UKenglish}}

```

```

1565 \define@key{Hyp}{british}[]{\Hy@autorefenglish{british}}
1566 \define@key{Hyp}{USenglish}[]{\Hy@autorefenglish{USenglish}}
1567 \define@key{Hyp}{american}[]{\Hy@autorefenglish{american}}
1568 \define@key{Hyp}{german}[]{\Hy@autorefgerman{german}}
1569 \define@key{Hyp}{austrian}[]{\Hy@autorefgerman{austrian}}
1570 \define@key{Hyp}{ngerman}[]{\Hy@autorefgerman{ngerman}}
1571 \define@key{Hyp}{naustrian}[]{\Hy@autorefgerman{naustrian}}
1572 \define@key{Hyp}{spanish}[]{\Hy@autorefspanish{spanish}}

```

11 Options to change appearance of links

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

```

1573 \define@key{Hyp}{colorlinks}[true]{%
1574   \Hy@boolkey{colorlinks}{#1}%
1575   \ifHy@colorlinks
1576     \def\@pdfborder{0 0 0}%
1577   \fi
1578 }
1579 \define@key{Hyp}{frenchlinks}[true]{%
1580   \Hy@boolkey{frenchlinks}{#1}%
1581 }

```

12 Bookmarking

```

1582 \define@key{Hyp}{bookmarks}[true]{%
1583   \Hy@boolkey{bookmarks}{#1}%
1584 }
1585 \define@key{Hyp}{bookmarksopen}[true]{%
1586   \Hy@boolkey{bookmarksopen}{#1}%
1587 }
1588 % ‘bookmarksopenlevel’ to specify the open level. From Heiko Oberdiek.
1589 \define@key{Hyp}{bookmarksopenlevel}{%
1590   \def\@bookmarksopenlevel{#1}%
1591 }
1592 \def\@bookmarksopenlevel{\maxdimen}
1593 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
1594 \define@key{Hyp}{bookmarkstype}{%
1595   \def\Hy@bookmarkstype{#1}%
1596 }
1597 \def\Hy@bookmarkstype{toc}

```

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

```

1598 \define@key{Hyp}{bookmarksnumbered}[true]{%
1599   \Hy@boolkey{bookmarksnumbered}{#1}%
1600 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

1601 \define@key{Hyp}{CJKbookmarks}[true]{%

```

```

1602 \Hy@boolkey{CJKbookmarks}{#1}%
1603 }
1604 % \end{macrocode}
1605 %
1606 % \begin{macrocode}
1607 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
1608 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
1609 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
1610 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
1611 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
1612 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
1613 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

Default values:
1614 \def\@linkcolor{red}
1615 \def\@anchorcolor{black}
1616 \def\@citecolor{green}
1617 \def\@filecolor{cyan}
1618 \def\@urlcolor{magenta}
1619 \def\@menucolor{red}
1620 \def\@pagecolor{red}
1621 \def\hyperbaseurl#1{\def\@baseurl{#1}}
1622 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
1623 \let\@baseurl\empty
1624 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
1625 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
1626 \hyperlinkfileprefix{file:}

```

13 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.

```

1627 \let\pdfpagetransition\relax
1628 \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.

```

1629 \let\pdfpageduration\relax
1630 \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.

```

1631 \newif\ifHy@useHidKey
1632 \Hy@useHidKeyfalse
1633 \define@key{Hyp}{pdfpagehidden}[true]{%
1634 \Hy@boolkey{pdfpagehidden}{#1}%

```



```

1635 \ifHy@pdfpagehidden
1636 \global\Hy@useHidKeytrue
1637 \fi
1638 }

1639 \define@key{Hyp}{linkbordercolor}{\def\@linkbordercolor{#1}}
1640 \define@key{Hyp}{urlbordercolor}{\def\@urlbordercolor{#1}}
1641 \define@key{Hyp}{menubordercolor}{\def\@menubordercolor{#1}}
1642 \define@key{Hyp}{filebordercolor}{\def\@filebordercolor{#1}}
1643 \define@key{Hyp}{runbordercolor}{\def\@runbordercolor{#1}}
1644 \define@key{Hyp}{citebordercolor}{\def\@citebordercolor{#1}}
1645 \define@key{Hyp}{pagebordercolor}{\def\@pagebordercolor{#1}}
1646 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
1647 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
1648 \define@key{Hyp}{pdfpagemode}{\def\@pdfpagemode{/#1 }}
1649 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
1650 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
1651 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
1652 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
1653 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
1654 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
1655 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
1656 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
1657 \let\setpdflinkmargin\gobble
1658 \def\calculate@pdfview#1 #2\\{%
1659 \def\@pdfview{#1}%
1660 \ifx\\#2\\%
1661 \def\@pdfviewparams{ -32768}%
1662 \else
1663 \def\@pdfviewparams{ #2}%
1664 \fi
1665 }
1666 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
1667 \define@key{Hyp}{pdfstartview}{%
1668 \ifx\\#1\\%
1669 \def\@pdfstartview{}%
1670 \else
1671 \hypercalcbpdef\@pdfstartview{ /#1 }%
1672 \fi
1673 }
1674 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
1675 \define@key{Hyp}{pdftoolbar}[true]{%
1676 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
1677 }
1678 \define@key{Hyp}{pdfmenubar}[true]{%
1679 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
1680 }
1681 \define@key{Hyp}{pdfwindowui}[true]{%
1682 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
1683 }

```

```

1684 \define@key{Hyp}{pdffitwindow}[true]{%
1685   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
1686 }
1687 \define@key{Hyp}{pdfcenterwindow}[true]{%
1688   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
1689 }
1690 \define@key{Hyp}{pdfnewwindow}[true]{%
1691   \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
1692 }
1693 \define@key{Hyp}{pdfpagelayout}{\def\pdf@pagelayout{#1}}
1694 \def\pdf@pagelayout{}
1695 \define@key{Hyp}{pdfpagelabels}[true]{%
1696   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
1697 }

```

Default values:

```

1698 \def\@linkbordercolor{1 0 0}
1699 \def\@urlbordercolor{0 1 1}
1700 \def\@menubordercolor{1 0 0}
1701 \def\@filebordercolor{0 .5 .5}
1702 \def\@runbordercolor{0 .7 .7}
1703 \def\@citebordercolor{0 1 0}
1704 \def\@pagebordercolor{1 1 0}
1705 \def\@pdfhighlight{/I}
1706 \def\@pdfpagemode{}
1707 \def\@pdftitle{}
1708 \def\@pdfauthor{}
1709 \def\@pdfproducer{}
1710 \def\@pdfcreator{LaTeX with hyperref package}
1711 \def\@pdfsubject{}
1712 \def\@pdfkeywords{}
1713 \def\@pdfpagescrop{}
1714 \def\@pdfstartview{/Fit }
1715 \def\@pdfstartpage{1}
1716 \let\PDF@SetupDoc\@empty
1717 \let\PDF@FinishDoc\@empty
1718 \edef\special@paper{\the\paperwidth,\the\paperheight}
1719 \hypercaltcbpdef\Hy@pageheight{\hypercaltcbp{\paperheight}}
1720 \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.

```

1721 \let\hyper@normalise\ExecuteOptions
1722 \let\ExecuteOptions\hypersetup
1723 \Hy@RestoreCatcodes
1724 \InputIfFileExists{hyperref.cfg}{-}{-}
1725 \Hy@SetCatcodes
1726 \let\ExecuteOptions\hyper@normalise
1727 \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.

```
1728 \def\ProcessOptionsWithKV#1{%
1729   \let\@tempc\relax
1730   \let\Hy@tempa\@empty
```

Add any global options that are known to KV to the start of the list being built in \Hy@tempa and mark them used (by removing them from the unused option list).

```
1731   \@for\CurrentOption:=\@classoptionslist\do{%
1732     \ifundefined{KV@#1\CurrentOption}%
1733     {}%
1734     {%
1735       \edef\Hy@tempa{\Hy@tempa,\CurrentOption,}%
1736       \@expandtwoargs\@removeelement\CurrentOption
1737         \@unusedoptionlist\@unusedoptionlist
1738     }%
1739   }%
```

Now stick the package options at the end of the list and wrap in a call to \setkeys. Can simply use \edef, normally KV takes care to avoid expansion, but the package system has already fully expanded the package option list before passing it to the package, so no more harm can occur here.

```
1740   \edef\Hy@tempa{%
1741     \noexpand\setkeys{#1}{%
1742       \Hy@tempa\@optionlist{\@currname.\@current}%
1743     }%
1744   }%
```

Do it.

```
1745   \Hy@tempa
1746 }
```

```
1747 \let\ReadBookmarks\relax
1748 \ProcessOptionsWithKV{Hyp}
```

After processing options.

```
1749 \AtBeginDocument{%
1750   \ifHy@draft
1751     \let\hyper@@anchor\@gobble
1752     \gdef\hyper@link#1#2#3{#3}%
1753     \let\hyper@anchorstart\@gobble
1754     \let\hyper@anchorend\@empty
1755     \let\hyper@linkstart\@gobbletwo
1756     \let\hyper@linkend\@empty
1757     \def\hyper@linkurl#1#2{#1}%
1758     \def\hyper@linkfile#1#2#3{#1}%
1759     \def\Acrobatmenu#1#2{#2}%
1760     \let\PDF@SetupDoc\@empty
1761     \let\PDF@FinishDoc\@empty
1762     \let\@fifthoffive\@secondoftwo
1763     \let\@secondoffive\@secondoftwo
```

```

1764 \let\ReadBookmarks\relax
1765 \let\WriteBookmarks\relax
1766 \Hy@WarningNoLine{ draft mode on}%
1767 \fi
1768 \Hy@DisableOption{draft}%
1769 }%

```

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

```

1770 \ifx\HyPsd@InitUnicode\relax
1771 \define@key{Hyp}{unicode}[true]{%
1772 \Hy@boolkey{unicode}{#1}%
1773 }
1774 \else
1775 \define@key{Hyp}{unicode}[true]{%
1776 \Hy@boolkey{unicode}{#1}%
1777 \ifHy@unicode
1778 \Hy@WarningNoLine{Set package option 'unicode' first\MessageBreak
1779 in order to load unicode support%
1780 }%
1781 \Hy@unicodedefalse
1782 \fi
1783 }
1784 \fi

```

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

```

1785 \let\HyPsd@InitUnicode\undefined

```

13.0.1 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.

```

1786 \Hy@nextfalse
1787 \@ifpackagewith{babel}{spanish}{\Hy@nexttrue}{%
1788 \@ifpackagewith{babel}{galician}{\Hy@nexttrue}{%
1789 \@ifpackagewith{babel}{estonian}{\Hy@nexttrue}{%
1790 \ifHy@next
1791 \let\texttilde\~%
1792 \fi

```

13.0.2 Bookmarks

```

1793 \def\WriteBookmarks{0}
1794 \def\@bookmarkopenstatus#1{%
1795 \ifHy@bookmarksopen

```

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

```

1796 \ifnum#1<\expandafter\@firstofone\expandafter

```

```

1797          {\number\@bookmarksopenlevel} % explicit space
1798      \else
1799          -%
1800      \fi
1801  \else
1802      -%
1803  \fi
1804 }
1805 \ifHy@bookmarks
1806   \Hy@Info{Bookmarks ON}%
1807   \ifx\@pdfpagemode\@empty
1808     \def\@pdfpagemode{/UseOutlines }%
1809   \fi
1810 \else
1811   \def\@bookmarkopenstatus#1{%
1812     \Hy@Info{Bookmarks OFF}%
1813     \AtEndOfPackage{%
1814       \global\let\ReadBookmarks\relax
1815       \global\let\WriteBookmarks\relax
1816     }
1817     \ifx\@pdfpagemode\@empty
1818       \def\@pdfpagemode{/UseNone}%
1819     \fi
1820   \fi
1821 \Hy@DisableOption{bookmarks}
1822 \ifHy@figures
1823   \Hy@Info{Hyper figures ON}
1824 \else
1825   \Hy@Info{Hyper figures OFF}
1826 \fi
1827 \ifHy@nesting
1828   \Hy@Info{Link nesting ON}
1829 \else
1830   \Hy@Info{Link nesting OFF}
1831 \fi
1832 \ifHy@hyperindex
1833   \Hy@Info{Hyper index ON}
1834 \else
1835   \Hy@Info{Hyper index OFF}
1836 \fi
1837 \ifHy@plainpages
1838   \Hy@Info{Plain pages ON}
1839 \else
1840   \Hy@Info{Plain pages OFF}
1841 \fi
1842 \ifHy@backref
1843   \Hy@Info{Backreferencing ON}
1844 \else
1845   \Hy@Info{Backreferencing OFF}
1846 \fi

```

```

1847 \ifHy@typexml
1848   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
1849 \fi
1850 \Hy@DisableOption{typexml}
1851 \ifHy@implicit
1852   \typeout{Implicit mode ON; LaTeX internals redefined}%
1853 \else
1854   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
1855   \def\MaybeStopEarly{%
1856     \typeout{Hyperref stopped early}%
1857     \AtBeginDocument{\PDF@FinishDoc}%
1858   \endinput
1859   }%
1860   \AtBeginDocument{%
1861     \let\autoref\ref
1862     \ifx\@pdfpagemode\@empty
1863       \gdef\@pdfpagemode{/UseNone}%
1864     \fi
1865     \global\Hy@backreffalse
1866   }%
1867   \AtEndOfPackage{%
1868     \global\let\ReadBookmarks\relax
1869     \global\let\WriteBookmarks\relax
1870   }%
1871 \fi
1872 \Hy@DisableOption{implicit}
1873 \AtEndOfPackage{%
1874   \@ifpackageloaded{tex4ht}{%
1875     \def\Hy@driver{htex4ht}%
1876     \Hy@texhttrue
1877   }{}%
1878   \ifx\Hy@driver\@empty
1879     \@ifundefined{pdfoutput}{%
1880       \let\pdfoutput\@undefined
1881       \@ifundefined{OpMode}{%
1882         \def\Hy@driver{hypertex}%
1883       }{%
1884         \ifnum\ifnum\OpMode=2 1\else\OpMode\fi=1 % SPACE
1885           \def\Hy@driver{hvtex}%
1886           \def\XR@ext{pdf}%
1887         \else
1888           \ifnum\OpMode=10\relax
1889             \def\XR@ext{htm}%
1890             \def\Hy@driver{hvtexhtm}%
1891             \def\MaybeStopEarly{%
1892               \typeout{Hyperref stopped early}%
1893               \AtBeginDocument{\PDF@FinishDoc}%
1894             \endinput
1895             }%

```

```

1896         \else
1897             \def\Hy@driver{hypertex}%
1898         \fi
1899     \fi
1900 }
1901 }{%
1902     \ifcase\pdfoutput
1903         \let\pdfoutput\@undefined
1904         \def\Hy@driver{hypertex}%
1905     \else
1906         \def\Hy@driver{hpdftex}%
1907         \def\XR@ext{pdf}%
1908         \PassOptionsToPackage{pdftex}{color}%
1909         \Hy@breaklinkstrue
1910     \fi
1911 }%
1912 \typeout{*hyperref using default driver \Hy@driver*}%
1913 \else
1914     \typeout{*hyperref using driver \Hy@driver*}%
1915 \fi
1916 \input{\Hy@driver.def}%
1917 \let\@unprocessedoptions\relax
1918 \Hy@RestoreCatcodes
1919 }
1920 \Hy@DisableOption{tex4ht}
1921 \Hy@DisableOption{pdftex}
1922 \Hy@DisableOption{dvipdf}
1923 \Hy@DisableOption{nativepdf}
1924 \Hy@DisableOption{dvipdfm}
1925 \Hy@DisableOption{pdfmark}
1926 \Hy@DisableOption{dvips}
1927 \Hy@DisableOption{hypertex}
1928 \Hy@DisableOption{vtex}
1929 \Hy@DisableOption{vtexpdfmark}
1930 \Hy@DisableOption{dviwindo}
1931 \Hy@DisableOption{dvipsone}
1932 \Hy@DisableOption{textures}
1933 \Hy@DisableOption{latex2html}
1934 \Hy@DisableOption{ps2pdf}
1935 \AtBeginDocument{%
1936     \ifHy@colorlinks
1937         \ifHy@typexml\else\RequirePackage{color}\fi
1938         \def\Hy@colorlink#1{\begingroup\color{#1}}%
1939         \def\Hy@endcolorlink{\endgroup}%
1940         \Hy@Info{Link coloring ON}%
1941     \else
1942         \ifHy@frenchlinks
1943             \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
1944             \def\Hy@endcolorlink{\endgroup}%
1945             \Hy@Info{French linking ON}%

```

```

1946 \else
    for grouping consistency:
1947 \def\Hy@colorlink#1{\begingroup}%
1948 \def\Hy@endcolorlink{\endgroup}%
1949 \Hy@Info{Link coloring OFF}%
1950 \fi
1951 \fi
1952 \Hy@DisableOption{colorlinks}%
1953 \Hy@DisableOption{frenchlinks}%
1954 \ifHy@texht
1955 \long\def\@firstoffive#1#2#3#4#5{#1}%
1956 \long\def\@secondoffive#1#2#3#4#5{#2}%
1957 \long\def\@thirdoffive#1#2#3#4#5{#3}%
1958 \long\def\@fourthoffive#1#2#3#4#5{#4}%
1959 \long\def\@fifthoffive#1#2#3#4#5{#5}%
1960 \providecommand*\@safe@activetrue{}%
1961 \providecommand*\@safe@activesfalse{}%
1962 \def\T@ref#1{%
1963 \@safe@activetrue
1964 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
1965 \@safe@activesfalse
1966 }%
1967 \def\T@pageref#1{%
1968 \@safe@activetrue
1969 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
1970 \@safe@activesfalse
1971 }%
1972 \else
1973 \ifHy@typexml\else\RequirePackage{nameref}\fi
1974 \ReadBookmarks
1975 \fi
1976 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
1977 \DeclareRobustCommand\pageref{%
1978 \@ifstar\@pagerefstar\T@pageref
1979 }%
1980 }
1981 \ifHy@backref
1982 \RequirePackage{backref}
1983 \else
1984 \let\Hy@backout\@gobble
1985 \fi
1986 \Hy@DisableOption{backref}
1987 \Hy@DisableOption{pagebackref}
1988 \Hy@activeanchorfalse

```

14 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`.

```

1989 \begingroup
1990 \endlinechar=-1
1991 \catcode'\^M\active
1992 \catcode'\%\active
1993 \catcode'\#\active
1994 \catcode'\_\active
1995 \gdef\hyper@normalise{
1996   \begingroup
1997   \catcode'\^M\active
1998   \def^M{ }
1999   \catcode'\%\active
2000   \let%\@percentchar
2001   \let\%\@percentchar
2002   \catcode'\#\active
2003   \def#{\hyper@hash}
2004   \def\#{\hyper@hash}
2005   \catcode'\_\active
2006   \def_{\string_}
2007   \let~\hyper@tilde
2008   \let~\hyper@tilde
2009   \ifx\@safe@activetrue\undefined\else\@safe@activetrue\fi
2010   \hyper@n@rmalise
2011 }
2012 \catcode'\#=6
2013 \gdef\hyper@n@rmalise#1#2{
2014   \edef\Hy@tempa{
2015     \endgroup
2016     \noexpand#1{\Hy@RemovePercentCr#2%\^M\@nil}
2017   }
2018   \Hy@tempa
2019 }
2020 \gdef\Hy@RemovePercentCr#1%\^M#2\@nil{
2021   #1
2022   \ifx\limits#2\limits
2023   \else
2024     \Hy@ReturnAfterFi{
2025       \Hy@RemovePercentCr #2\@nil
2026     }
2027   \fi
2028 }
2029 \endgroup
2030 \providecommand\hyper@chars{%
2031   \let\#\hyper@hash
2032   \let%\@percentchar
2033 }

```

```

2034 \def\hyperlink#1#2{%
2035   \hyper@@link{#1}{#2}%
2036 }

2037 \DeclareRobustCommand*\href{\hyper@normalise\href@}
2038 \begingroup
2039   \catcode'\$=6
2040   \catcode'\#=12
2041   \gdef\href$1{\expandafter\href@split$1##\}
2042   \gdef\href@split$1#$2#$3\{\%
2043     \hyper@@link{$1}{$2}%
2044   }
2045 \endgroup

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

2046 \RequirePackage{url}
2047 \let\HyOrg@url\url
2048 \def\Hurl{\begingroup \Url}
2049 \let\nolinkurl\Hurl
2050 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2051 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2052 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2053 \providecommand\hyper@image[2]{#2}

2054 \def\hypertarget#1#2{%
2055   \ifHy@nesting
2056     \hyper@@anchor{#1}{#2}%
2057   \else
2058     \hyper@@anchor{#1}{\relax}#2%
2059   \fi
2060 }

  \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 \hyperrrref also has a first parameter of URL. If there is an optional first parameter
  to \hyperdef, it is the name of a LATEX label which can be used in a short form of
  \hyperref later, to avoid remembering the name and category.

2061 \DeclareRobustCommand*\hyperref{%
2062   \@ifnextchar[\label@hyperref\@hyperref
2063 }
2064 \def\@hyperref{\hyper@normalise\@hyperref}
2065 \def\@hyperref#1#2#3{%
2066   \edef\ref@one{\ifx\\#2\\\else#2.\fi#3}%
2067   \expandafter\tryhyper@link\ref@one\\{#1}%
2068 }
2069 \def\tryhyper@link#1\\#2{%
2070   \hyper@@link{#2}{#1}%
2071 }

2072 \def\hyperdef{\@ifnextchar[\label@hyperdef]{\@hyperdef}}

```



```

2112 \ifx\Hy@tempa\@empty
2113   \hyper@link{#1}{#3}{#4}%
2114 \else
2115   \expandafter\hyper@readexternallink#2\{#1}{#3}{#4}%
2116 \fi
2117 }

```

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.

```

2118 \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.

```

2119 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1:.\{#1}%
2120 }

```

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

```

2121 \def\@pdftempwordfile{file}%
2122 \def\@pdftempwordrun{run}%
2123 \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:

```

2124 \ifx\#6\%
2125   \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
2126 \else
2127   \ifx\#4\%
2128     \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
2129   \else

```

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

```

2130   \def\@pdftempa{#4}%
2131   \ifx\@pdftempa\@pdftempwordfile
2132     \expandafter\@hyper@linkfile#7\{#3}{#2}%
2133   \else

```

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

```
2134      \ifx\@pdftempa\@pdftempwordrun
2135      \expandafter\@hyper@launch#7\{\#3}\#2}%
2136      \else
otherwise its a URL
2137      \hyper@linkurl{\#3}\#7\ifx\#2\\\else\##2\fi}%
2138      \fi
2139      \fi
2140      \fi
2141      \fi
2142 }
```

By default, turn run: into file:

```
2143 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2144      \hyper@linkurl{\#2}\file:#1\ifx\#3\\\else\##3\fi}%
2145 }
```

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

```
2146 \def\@hyper@linkfile file:#1\#2#3{%
2147      %file url,link string, name
2148      \filename@parse{\#1}%
2149      \ifx\filename@ext\relax
2150      \edef\filename@ext{\XR@ext}%
2151      \fi
2152      \def\use@file{\filename@area\filename@base.\filename@ext}%
2153      \ifx\filename@ext\XR@ext
2154      \hyper@linkfile{\#2}\use@file{\#3}%
2155      \else
2156      \ifx\@baseurl\@empty
2157      \hyper@linkurl{\#2}\%
2158      \Hy@linkfileprefix\use@file\ifx\#3\\\else\##3\fi
2159      }%
2160      \else
2161      \hyper@linkurl{\#2}\use@file\ifx\#3\\\else\##3\fi}%
2162      \fi
2163      \fi
2164 }
```

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.

```
2165 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2166 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2167      \ifx\#1\%
```

```

2168 #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2169 \else
2170   \def\anchor@spot{#2#3}%
2171   \let\put@me@back\@empty
2172   \ifx\relax#2\relax
2173   \else
2174     \ifHy@nesting
2175     \else
2176       \ifcat a\noexpand#2\relax
2177       \else
2178         \ifcat 0\noexpand#2 \relax
2179         \else
2180 %           \typeout{Anchor start is not alphanumeric %
2181 %             on input line\the\inputlineno%
2182 %           }%
2183           \let\anchor@spot\@empty
2184           \def\put@me@back{#2#3}%
2185         \fi
2186       \fi
2187     \fi
2188   \fi
2189   \ifHy@activeanchor
2190     \anchor@spot
2191   \else
2192     \hyper@anchor{#1}%
2193   \fi
2194   \expandafter\put@me@back
2195 \fi
2196 \let\anchor@spot\@empty
2197 }

```

16 Compatibility with the *LT_EX2html* package

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

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

```

2198 \let\htmladding\hyperimage
2199 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2200 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2201 \def\htmlref#1#2{% anchor text, label
2202   \label@hyperref[{#2}]{#1}%
2203 }

```

This is really too much. The *LT_EX2html* package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the

‘printed’ way, since we are about fidelity to the page.

```
2204 \def\@latextohtmlX{%
2205   \let\hhyperref\hyperref
2206   \def\hyperref##1##2##3##4{% anchor text for HTML
2207                                   % text to print before label in print
2208                                   % label
2209                                   % post-label text in print
2210     ##2\ref{##4}##3%
2211   }%
2212 }
```

17 Forms creation

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

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

```
2213 \newif\ifFld@checked
2214 \newif\ifFld@hidden
2215 \newif\ifFld@multiline
2216 \newif\ifFld@readonly
2217 \newif\ifFld@disabled
2218 \newif\ifFld@password
2219 \newif\ifFld@radio
2220 \newif\ifFld@combo
2221 \newif\ifFld@popdown
2222 \Fld@multilinefalse
2223 \Fld@checkedfalse
2224 \Fld@hiddenfalse
2225 \Fld@readonlyfalse
2226 \Fld@disabledfalse
2227 \Fld@radiofalse
2228 \Fld@combofalse
2229 \Fld@popdownfalse
2230 \Fld@passwordfalse
2231 \newcount\Fld@menulength
2232 \newdimen\Field@Width
2233 \newdimen\Fld@charsize
2234 \Fld@charsize=10\p@
2235 \def\Fld@maxlen{0}
2236 \def\Fld@align{0}
2237 \def\Fld@color{0 0 0}
2238 \def\Fld@bcolor{1 1 1}
2239 \def\Fld@bordercolor{1 0 0}
2240 \def\Fld@bordersep{1\p@}
2241 \def\Fld@borderwidth{1}
2242 \def\Fld@borderstyle{S}
2243 \def\Fld@cbsymbol{4}
```

```

2244 \newtoks\Choice@toks
2245 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2246 \def\endForm{\@endForm}
2247 \newif\ifForm@html
2248 \Form@htmlfalse
2249 \def\Form@boolkey#1#2{%
2250   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2251 }
2252 \define@key{Form}{action}{%
2253   \def\Form@action{#1}%
2254 }
2255 \def\enc@html{html}
2256 \define@key{Form}{encoding}{%
2257   \def\Hy@tempa{#1}%
2258   \ifx\Hy@tempa\enc@html
2259     \Form@htmltrue
2260   \else
2261     \typeout{hyperref: form 'encoding' key set to #1 %
2262       -- unknown type%
2263     }%
2264     \Form@htmlfalse
2265   \fi
2266 }
2267 \define@key{Form}{method}{%
2268   \def\Form@method{#1}%
2269 }
2270 \def\Form@method{}
2271 \def\Field@boolkey#1#2{%
2272   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2273 }
2274 \newtoks\Field@toks
2275 \Field@toks={ }%
2276 \def\Field@addtoks#1#2{%
2277   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
2278   \@processme
2279 }
2280 \def\Fld@checkequals#1=#2=#3\{\%
2281   \def\@currDisplay{#1}%
2282   \ifx\#2\%
2283     \def\@currValue{#1}%
2284   \else
2285     \def\@currValue{#2}%
2286   \fi
2287 }
2288 \define@key{Field}{loc}{%
2289   \def\Fld@loc{#1}%
2290 }
2291 \define@key{Field}{multiline}[true]{%
2292   \lowercase{\Field@boolkey{#1}}{multiline}%
2293 }

```



```

2294 \define@key{Field}{checked}[true]{%
2295   \lowercase{\Field@boolkey{#1}}{checked}%
2296 }
2297 \define@key{Field}{hidden}[true]{%
2298   \lowercase{\Field@boolkey{#1}}{hidden}%
2299 }
2300 \define@key{Field}{readonly}[true]{%
2301   \lowercase{\Field@boolkey{#1}}{readonly}%
2302 }
2303 \define@key{Field}{disabled}[true]{%
2304   \lowercase{\Field@boolkey{#1}}{disabled}%
2305 }
2306 \define@key{Field}{password}[true]{%
2307   \lowercase{\Field@boolkey{#1}}{password}%
2308 }
2309 \define@key{Field}{radio}[true]{%
2310   \lowercase{\Field@boolkey{#1}}{radio}%
2311 }
2312 \define@key{Field}{combo}[true]{%
2313   \lowercase{\Field@boolkey{#1}}{combo}%
2314 }
2315 \define@key{Field}{popdown}[true]{%
2316   \lowercase{\Field@boolkey{#1}}{popdown}%
2317 }
2318 \define@key{Field}{accesskey}{%
2319   \Field@addtoks{accesskey}{#1}%
2320 }
2321 \define@key{Field}{tabkey}{%
2322   \Field@addtoks{tabkey}{#1}%
2323 }
2324 \define@key{Field}{name}{%
2325   \def\Fld@name{#1}%
2326 }
2327 \define@key{Field}{width}{%
2328   \def\Fld@width{#1}%
2329   \Field@Width#1\setbox0=\hbox{m}%
2330 }
2331 \define@key{Field}{maxlen}{%
2332   \def\Fld@maxlen{#1}%
2333 }
2334 \define@key{Field}{menulength}{%
2335   \Fld@menulength=#1\relax
2336 }
2337 \define@key{Field}{height}{%
2338   \def\Fld@height{#1}%
2339 }
2340 \define@key{Field}{charsize}{%
2341   \Fld@charsize#1%
2342 }
2343 \define@key{Field}{fillcolor}{%

```

```

2344 \def\Fld@fillcolor{#1}%
2345 }
2346 \define@key{Field}{bordercolor}{%
2347 \def\Fld@bordercolor{#1}%
2348 }
2349 \define@key{Field}{color}{%
2350 \def\Fld@color{#1}%
2351 }
2352 \define@key{Field}{borderwidth}{%
2353 \def\Fld@borderwidth{#1}%
2354 }
2355 \define@key{Field}{borderstyle}{%
2356 \def\Fld@borderstyle{#1}%
2357 }
2358 \define@key{Field}{bordersep}{%
2359 \def\Fld@bordersep{#1}%
2360 }
2361 \define@key{Field}{default}{%
2362 \def\Fld@default{#1}%
2363 }
2364 \define@key{Field}{align}{%
2365 \def\Fld@align{#1}%
2366 }
2367 \define@key{Field}{value}{%
2368 \def\Fld@value{#1}%
2369 }
2370 \define@key{Field}{backgroundcolor}{%
2371 \def\Fld@bcolor{#1}%
2372 }
2373 \define@key{Field}{checkboxsymbol}{%
2374 \def\Fld@cbsymbol{#1}%
2375 }
2376 \def\Fld@format@code{}
2377 \def\Fld@validate@code{}
2378 \def\Fld@calculate@code{}
2379 \def\Fld@keystroke@code{}
2380 \define@key{Field}{keystroke}{%
2381 \def\Fld@keystroke@code{#1}%
2382 }
2383 \define@key{Field}{format}{%
2384 \def\Fld@format@code{#1}%
2385 }
2386 \define@key{Field}{validate}{%
2387 \def\Fld@validate@code{#1}%
2388 }
2389 \define@key{Field}{calculate}{%
2390 \def\Fld@calculate@code{#1}%
2391 }
2392 \define@key{Field}{onfocus}{%
2393 \Field@addtoks{onfocus}{#1}%

```

```

2394 }
2395 \define@key{Field}{onblur}{%
2396   \Field@addtoks{onblur}{#1}%
2397 }
2398 \define@key{Field}{onselect}{%
2399   \Field@addtoks{onselect}{#1}%
2400 }
2401 \define@key{Field}{onchange}{%
2402   \Field@addtoks{onchange}{#1}%
2403 }
2404 \define@key{Field}{onclick}{%
2405   \def\Fld@onclick{#1}%
2406   \Field@addtoks{onclick}{#1}%
2407 }
2408 \define@key{Field}{ondblclick}{%
2409   \Field@addtoks{ondblclick}{#1}%
2410 }
2411 \define@key{Field}{onmousedown}{%
2412   \Field@addtoks{onmousedown}{#1}%
2413 }
2414 \define@key{Field}{onmouseup}{%
2415   \Field@addtoks{onmouseup}{#1}%
2416 }
2417 \define@key{Field}{onmouseover}{%
2418   \Field@addtoks{onmouseover}{#1}%
2419 }
2420 \define@key{Field}{onmousemove}{%
2421   \Field@addtoks{onmousemove}{#1}%
2422 }
2423 \define@key{Field}{onmouseout}{%
2424   \Field@addtoks{onmouseout}{#1}%
2425 }
2426 \define@key{Field}{onkeypress}{%
2427   \Field@addtoks{onkeypress}{#1}%
2428 }
2429 \define@key{Field}{onkeydown}{%
2430   \Field@addtoks{onkeydown}{#1}%
2431 }
2432 \define@key{Field}{onkeyup}{%
2433   \Field@addtoks{onkeyup}{#1}%
2434 }
2435 %
2436 \DeclareRobustCommand\TextField{%
2437   \@ifnextchar[{\@TextField}{\@TextField[]}%
2438 }
2439 \DeclareRobustCommand\ChoiceMenu{%
2440   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
2441 }
2442 \DeclareRobustCommand\CheckBox{%
2443   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%

```

```

2444 }
2445 \DeclareRobustCommand\PushButton{%
2446   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
2447 }
2448 \DeclareRobustCommand\Gauge{%
2449   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
2450 }
2451 \DeclareRobustCommand\Submit{%
2452   \@ifnextchar[{\@Submit}{\@Submit[]}%
2453 }
2454 \DeclareRobustCommand\Reset{%
2455   \@ifnextchar[{\@Reset}{\@Reset[]}%
2456 }
2457 \def\LayoutTextField#1#2{% label, field
2458   #1 #2%
2459 }
2460 \def\LayoutChoiceField#1#2{% label, field
2461   #1 #2%
2462 }
2463 \def\LayoutCheckField#1#2{% label, field
2464   #1 #2%
2465 }
2466 \def\LayoutPushButtonField#1{% button
2467   #1%
2468 }
2469 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
2470 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
2471 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
2472 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
2473 \def\MakeButtonField#1{%
2474   \sbox0{%
2475     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
2476   }%
2477   \@tempdima\ht0
2478   \advance\@tempdima by \Fld@borderwidth bp
2479   \advance\@tempdima by \Fld@borderwidth bp
2480   \ht0\@tempdima
2481   \@tempdima\dp0
2482   \advance\@tempdima by \Fld@borderwidth bp
2483   \advance\@tempdima by \Fld@borderwidth bp
2484   \dp0\@tempdima
2485   \box0\relax
2486 }
2487 \def\DefaultHeightofSubmit{14pt}
2488 \def\DefaultWidthofSubmit{2cm}
2489 \def\DefaultHeightofReset{14pt}
2490 \def\DefaultWidthofReset{2cm}
2491 \def\DefaultHeightofCheckBox{\baselineskip}
2492 \def\DefaultWidthofCheckBox{\baselineskip}
2493 \def\DefaultHeightofChoiceMenu{\baselineskip}

```

```

2494 \def\DefaultWidthofChoiceMenu{\baselineskip}
2495 \def\DefaultHeightofText{\baselineskip}
2496 \def\DefaultWidthofText{3cm}

```

18 Setup

```

2497 \ifHy@figures
2498   \Hy@Info{Hyper figures ON}
2499 \else
2500   \Hy@Info{Hyper figures OFF}
2501 \fi
2502 \ifHy@nesting
2503   \Hy@Info{Link nesting ON}
2504 \else
2505   \Hy@Info{Link nesting OFF}
2506 \fi
2507 \ifHy@hyperindex
2508   \Hy@Info{Hyper index ON}
2509 \else
2510   \Hy@Info{Hyper index OFF}
2511 \fi
2512 \ifHy@backref
2513   \Hy@Info{backreferencing ON}
2514 \else
2515   \Hy@Info{backreferencing OFF}
2516 \fi
2517 \ifHy@colorlinks
2518   \Hy@Info{Link coloring ON}
2519 \else
2520   \Hy@Info{Link coloring OFF}
2521 \fi

```

19 Low-level utility macros

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

```

2522 \edef\hyper@hash{\string#}
2523 \edef\hyper@tilde{\string~}
2524 \edef\hyper@quote{\string"}
2525 \let\@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.

```

2526 \AtBeginDocument{%
2527   \Hy@pdfstringtrue
2528   \PDF@SetupDoc
2529   \let\PDF@SetupDoc\@empty
2530   \Hy@DisableOption{4}%
2531   \Hy@DisableOption{pdfpagescrop}%
2532   \Hy@DisableOption{pdfpagemode}%

```

```

2533 \Hy@DisableOption{pdfstartview}%
2534 \Hy@DisableOption{pdfstartpage}%
2535 \Hy@DisableOption{pdftoolbar}%
2536 \Hy@DisableOption{pdfmenubar}%
2537 \Hy@DisableOption{pdfwindowui}%
2538 \Hy@DisableOption{pdffitwindow}%
2539 \Hy@DisableOption{pdfcenterwindow}%
2540 \Hy@DisableOption{pdfpagelayout}%
2541 \Hy@DisableOption{baseurl}%
2542 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
2543 \Hy@pdfstringfalse
2544 }

```

20 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.

```

2545 \def\NoHyper{%
2546   \def\hyper@link@[#1]##2##3##4{##4}%
2547   \def\hyper@@anchor##1{%
2548     \global\let\hyper@livelink\hyper@link
2549     \gdef\hyper@link##1##2##3{##3}%
2550     \def\hyper@anchorstart##1{%
2551       \let\hyper@anchorend\@empty
2552       \def\hyper@linkstart##1##2{%
2553         \let\hyper@linkend\@empty
2554         \def\hyper@linkurl##1##2{##1}%
2555         \def\hyper@linkfile##1##2##3{##1}%
2556         \let\Hy@backout\@gobble
2557       }
2558     \def\stop@hyper{%
2559       \def\hyper@link@[#1]##2##3##4{##4}%
2560       \let\Hy@backout\@gobble
2561       \def\hyper@@anchor##1{%
2562         \def\hyper@link##1##2##3{##3}%
2563         \def\hyper@anchorstart##1{%
2564           \let\hyper@anchorend\@empty
2565           \def\hyper@linkstart##1##2{%
2566             \let\hyper@linkend\@empty
2567             \def\hyper@linkurl##1##2{##1}%
2568             \def\hyper@linkfile##1##2##3{##1}%
2569           }
2570         \def\endNoHyper{%
2571           \global\let\hyper@link\hyper@livelink
2572         }
2573       }

```

21 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:

```
2574 <*nohyperref>
2575 \let\hyper@@anchor\@gobble
2576 \def\hyper@link#1#2#3{#3}%
2577 \let\hyper@anchorstart\@gobble
2578 \let\hyper@anchorend\@empty
2579 \let\hyper@linkstart\@gobbletwo
2580 \let\hyper@linkend\@empty
2581 \def\hyper@linkurl#1#2{#1}%
2582 \def\hyper@linkfile#1#2#3{#1}%
2583 \let\PDF@SetupDoc\@empty
2584 \let\PDF@FinishDoc\@empty
```

Some top-level commands:

```
2585 \let\Acrobatmenu\@gobble
2586 \let\pdfstringdefDisableCommands\@gobbletwo
2587 \let\texorpdfstring\@firstoftwo
2588 \let\pdfbookmark\@undefined
2589 \newcommand\pdfbookmark[3] [] {}
2590 \let\phantomsection\@empty
2591 \let\hypersetup\@gobble
2592 \let\hyperbaseurl\@gobble
2593 \let\href\@gobble
2594 \let\hyperdef\@gobbletwo
2595 \let\hyperlink\@gobble
2596 \let\hypertarget\@gobble
2597 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
2598 \long\def\@gobbleopt[#1]{}
2599 \let\hyperpage\@empty
2600 </nohyperref>
```

22 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}

```
2601 <*package>
2602 \AtBeginDocument{%
```

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.

```

2603 \if@filesw
2604 \ifHy@typexml
2605 \immediate\closeout\@mainaux
2606 \immediate\openout\@mainaux\jobname.aux
2607 \immediate\write\@auxout{<relaxxml>\relax}%
2608 \fi
2609 \immediate\write\@auxout{%
2610 \string\ifx\string\hyper@anchor\string\@undefined^^J%
2611 \global\let\string\oldcontentsline\string\contentsline^^J%
2612 \gdef\string\contentsline%
2613 \string#1\string#2\string#3\string#4{%
2614 \string\oldcontentsline%
2615 {\string#1}{\string#2}{\string#3}}^^J%
2616 \global\let\string\oldnewlabel\string\newlabel^^J%
2617 \gdef\string\newlabel\string#1\string#2{%
2618 \string\newlabelxx{\string#1}\string#2}^^J%
2619 \gdef\string\newlabelxx%
2620 \string#1\string#2\string#3\string#4\string#5\string#6{%
2621 \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.

```

2622 \string\AtEndDocument{%
2623 \let\string\contentsline\string\oldcontentsline^^J%
2624 \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.

```

2625 \string\else^^J%
2626 \global\let\string\hyper@last\relax^^J%
2627 \string\fi^^J%
2628 }%
2629 \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.

```

2630 \ifx\hyper@last\@undefined
2631 \def\@starttoc#1{%
2632 \begingroup
2633 \makeatletter
2634 \IfFileExists{\jobname.#1}{%
2635 \Hy@WarningNoLine{%
2636 old #1 file detected, not used; run LaTeX again%
2637 }%

```



```

2638     }{}%
2639     \if@filesw
2640         \expandafter\newwrite\csname tf@#1\endcsname
2641         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
2642     \fi
2643     \@nobreakfalse
2644 \endgroup
2645 }%
2646 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
2647 \fi
2648 }

```

23 Page numbers

This stuff is done by Heiko Oberdiek.

23.1 PDF /PageLabels

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

```

2649 \ifHy@pagelabels

```

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

```

2650 \def\HyPL@Labels{}

```

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

```

2651 \newcount\Hy@abspage
2652 \Hy@abspage=0

```

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

```

2653 \def\HyPL@LastType{init}%
2654 \def\HyPL@LastNumber{0}%
2655 \def\HyPL@LastPrefix{}%

```

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

```

2656 \def\HyPL@arabic{D}%
2657 \def\HyPL@Roman{R}%
2658 \def\HyPL@roman{r}%
2659 \def\HyPL@Alph{A}%
2660 \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.

```

2661 \def\HyPL@EveryPage{%
2662     \begingroup
2663     \let\HyPL@Type\relax
2664     \ifnum\the\c@page>0
2665         \expandafter\HyPL@CheckThePage\thepage\@nil
2666     \fi

```

```

2667 \let\Hy@temp Y%
2668 \ifx\HyPL@Type\HyPL@LastType
2669 \else
2670 \let\Hy@temp N%
2671 \fi
2672 \ifx\HyPL@Type\relax
2673 \pdfstringdef\HyPL@Prefix{\thepage}%
2674 \else
2675 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
2676 \fi
2677 \ifx\HyPL@Prefix\HyPL@LastPrefix
2678 \else
2679 \let\Hy@temp N%
2680 \fi
2681 \if Y\Hy@temp
2682 \advance\c@page by -1
2683 \ifnum\HyPL@LastNumber=\the\c@page\relax
2684 \else
2685 \let\Hy@temp N%
2686 \fi
2687 \Hy@StepCount\c@page
2688 \fi
2689 \if N\Hy@temp
2690 \ifx\HyPL@Type\relax
2691 \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
2692 \else
2693 \HyPL@StorePageLabel{%
2694 \ifx\HyPL@Prefix\@empty
2695 \else
2696 /P (\HyPL@Prefix)
2697 \fi
2698 /S /\csname HyPL\HyPL@Type\endcsname
2699 \ifnum\the\c@page=1
2700 \else
2701 \space/St \the\c@page
2702 \fi
2703 }%
2704 \fi
2705 \fi
2706 \xdef\HyPL@LastNumber{\the\c@page}%
2707 \global\let\HyPL@LastType\HyPL@Type
2708 \global\let\HyPL@LastPrefix\HyPL@Prefix
2709 \endgroup
2710 \Hy@GlobalStepCount\Hy@abspage
2711 }

```

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

```

2712 \def\HyPL@CheckThePage#1\@nil{%
2713 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
2714 }

```

`\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`.

```

2715 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
2716   \def\Hy@tempa{#4}%
2717   \def\Hy@tempb{\csname\endcsname\c@page}%
2718   \ifx\Hy@tempa\Hy@tempb
2719     \expandafter\ifx\csname HyPL#3\endcsname\relax
2720     \else
2721       \def\HyPL@Type{#3}%
2722       \def\HyPL@Prefix{#2}%
2723       \fi
2724     \else
2725       \begingroup
2726       \let\Hy@next\endgroup
2727       \let\HyPL@found\@undefined
2728       \def\arabic{\HyPL@Format{arabic}}%
2729       \def\Roman{\HyPL@Format{Roman}}%
2730       \def\roman{\HyPL@Format{roman}}%
2731       \def\Alph{\HyPL@Format{Alph}}%
2732       \def\alph{\HyPL@Format{alph}}%
2733       \protected@edef\Hy@temp{#1}%
2734       \ifx\HyPL@found\relax
2735         \toks@{\expandafter{\Hy@temp}}%
2736         \edef\Hy@next{\endgroup
2737           \noexpand\HyPL@@CheckThePage\the\toks@
2738           \noexpand\HyPL@found\relax\noexpand\@nil
2739         }%
2740       \fi
2741       \Hy@next
2742     \fi
2743   }

```

`\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`.

```

2744 \def\HyPL@Format#1#2{%
2745   \ifx\HyPL@found\@undefined
2746     \expandafter\ifx\csname c@#2\endcsname\c@page
2747       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
2748     \else
2749       \expandafter\noexpand\csname#1\endcsname{#2}%
2750     \fi
2751   \else
2752     \expandafter\noexpand\csname#1\endcsname{#2}%
2753   \fi
2754 }

```

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

```
2755 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
2756   \def\Hy@tempa{#3}%
2757   \def\Hy@tempb{\HyPL@found\relax}%
2758   \ifx\Hy@tempa\Hy@tempb
2759     \def\HyPL@Type{#2}%
2760     \def\HyPL@Prefix{#1}%
2761   \fi
2762 }
```

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

```
2763 \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`.

```
2764 \def\HyPL@Useless{0 << /S /D >> }%
```

`\HyPL@SetPageLabels` The page labels are written to the PDF cataloge. The command `\Hy@PutCatalog` is defined in the driver files.

```
2765 \def\HyPL@SetPageLabels{%
2766   \ifx\HyPL@Labels\@empty
2767   \else
2768     \ifx\HyPL@Labels\HyPL@Useless
2769     \else
2770       \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
2771     \fi
2772   \fi
2773 }
2774 % \end{macrocode}
2775 % \end{macro}
2776 %
2777 % \begin{macro}{\HyPL@EveryPage}
2778 % Without option 'pdfpagelabels' we need a dummy for
2779 % \cmd{\HyPL@EveryPage}.
2780 % \begin{macrocode}
2781 \else
2782   \let\HyPL@EveryPage\@empty
2783 \fi
```

Option 'pdfpagelabels' has been used and is now disabled.

```
2784 \Hy@DisableOption{pdfpagelabels}
```

```
2785 </package>
```

23.1.1 pdfTeX and VTeX

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

\Hy@PutCatalog

```
2786 <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.

```
2787 <*vTeX>
2788 \edef\Hy@VTeXversion{%
2789   \ifx\VTeXversion\@undefined
2790     \z@
2791   \else
2792     \ifx\VTeXversion\relax
2793       \z@
2794     \else
2795       \VTeXversion
2796     \fi
2797   \fi
2798 }
2799 \begingroup
2800   \ifnum\Hy@VTeXversion<660 %
2801     \gdef\Hy@PutCatalog#1{%
2802       \Hy@WarningNoLine{%
2803         VTeX 6.59g or above required for pdfpagelabels%
2804       }%
2805     }
2806   \else
2807     \gdef\Hy@PutCatalog#1{%
2808       \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
2809     }
2810     \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
2811       \ifx\#2\%
2812         \else
2813           \immediate\special{!pdfpagelabels #2}%
2814         \fi
2815       }
2816     \fi
2817 \endgroup
2818 </vTeX>
2819 <*pdfTeX | vTeX>
```

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

```
2820 \ifHy@pagelabels
2821   \def\HyPL@StorePageLabel#1{%
2822     \toks@\expandafter{\HyPL@Labels}%
2823     \xdef\HyPL@Labels{%
2824       \the\toks@
2825       \the\Hy@abspage\space<< #1 >> %
2826     }%
2827   }
```

```
2827 }
```

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.

```
2828 \AtEndDocument{\clearpage\HyPL@SetPageLabels}
```

```
2829 \fi
```

```
2830 \</pdfTeX | vTeX>
```

23.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```
2831 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
```

```
2832 <*pdfmarkbase>
```

```
2833 \def\Hy@PutCatalog#1{%
```

```
2834 \pdfmark{pdfmark=PUT,Raw={\string{Catalog\string} << #1 >>}}%
```

```
2835 }
```

```
2836 \</pdfmarkbase>
```

```
2837 <*pdfmarkbase | dvipdfm>
```

```
2838 \ifHy@pagelabels
```

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

```
2839 \def\HyPL@StorePageLabel#1{%
```

```
2840 \if@filesw
```

```
2841 \begingroup
```

```
2842 \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
```

```
2843 \immediate\write\@mainaux{%
```

```
2844 \string\HyPL@Entry{\Hy@tempa}%
```

```
2845 }%
```

```
2846 \endgroup
```

```
2847 \fi
```

```
2848 }
```

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.

```
2849 \AtBeginDocument{%
```

```
2850 \if@filesw
```

```
2851 \immediate\write\@mainaux{%
```

```
2852 \string\providecommand\string*\string\HyPL@Entry[1]{}%
```

```
2853 }%
```

```
2854 \fi
```

```
2855 \ifx\HyPL@Labels\@empty
```

```
2856 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
```

```
2857 \else
```

```
2858 \HyPL@SetPageLabels
```

```
2859 \fi
```

```
2860 \let\HyPL@Entry\@gobble
```

```
2861 }%
```

```

\HyPL@Entry
2862 \def\HyPL@Entry#1{%
2863   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
2864     \HyPL@Labels
2865     #1%
2866   }%
2867 }

2868 \fi
2869 </pdfmarkbase | dvipdfm>

2870 <*package>

2871 \MaybeStopEarly

```

24 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

```

2872 \newcommand\theHequation{\theHsection.\arabic{equation}}
2873 \@ifundefined{thepart}{\newcommand\theHpart{\arabic{part}}}{
2874 \@ifundefined{thechapter}{%
2875   \newcommand\theHsection    {\arabic{section}}
2876   \newcommand\theHfigure     {\arabic{figure}}
2877   \newcommand\theHtable      {\arabic{table}}
2878 }{%
2879   \newcommand\theHchapter     {\arabic{chapter}}
2880   \newcommand\theHfigure      {\theHchapter.\arabic{figure}}
2881   \newcommand\theHtable       {\theHchapter.\arabic{table}}
2882   \newcommand\theHsection     {\theHchapter.\arabic{section}}
2883 }
2884 \newcommand\theHsubsection    {\theHsection.\arabic{subsection}}
2885 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
2886 \newcommand\theHparagraph     {\theHsubsubsection.\arabic{paragraph}}

```

```

2887 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
2888 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
2889 \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.

```

2890 \let\H@item\item
2891 \newcounter{Item}
2892 \def\theHItem{\arabic{Item}}
2893 \def\item{%
2894   \@hyper@itemfalse
2895   \if@nmbrrlist\@hyper@itemtrue\fi
2896   \H@item
2897 }

2898 \newcommand\theHenumi      {\theHItem}
2899 \newcommand\theHenumii     {\theHItem}
2900 \newcommand\theHenumiii    {\theHItem}
2901 \newcommand\theHenumiv     {\theHItem}
2902 \newcommand\theHHfootnote  {\arabic{Hfootnote}}
2903 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
2904 \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.

```

2905 \let\H@refstepcounter\refstepcounter
2906 \edef\name@of@eq{equation}%
2907 \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.

```

2908 \newif\if@hyper@item
2909 \newif\if@skiphyperref
2910 \@hyper@itemfalse
2911 \@skiphyperreffalse
2912 \def\refstepcounter#1{%
2913   \H@refstepcounter{#1}%
2914   \edef\This@name{#1}%
2915   \ifx\This@name\name@of@slide
2916   \else
2917     \if@skiphyperref
2918     \else
2919       \if@hyper@item
2920         \stepcounter{Item}%
2921         \hyper@refstepcounter{Item}%
2922       \else
2923         \hyper@refstepcounter{#1}%
2924       \fi

```



```

2925 \fi
2926 \fi
2927 }

```

AMSTeX 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.

```

2928 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

2929 \def\hyper@refstepcounter#1{%
2930 \edef\This@name{#1}%
2931 \ifx\This@name\name@of@eq
2932 \make@stripped@name{\theequation}%
2933 \let\theHequation\newname
2934 \fi
2935 \@ifundefined{theH#1}{%
2936 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
2937 }{}%
2938 \hyper@makecurrent{#1}%
2939 \ifmeasuring@
2940 \else
2941 \Hy@raisedlink{%
2942 \hyper@anchorstart{\@currentHref}\hyper@anchorend
2943 }%
2944 \fi
2945 }

```

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

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

```

2946 \def\Hy@chapterstring{chapter}
2947 \def\Hy@appendixstring{appendix}
2948 \def\Hy@chapapp{\Hy@chapterstring}
2949 \let\Hy@org@appendix\appendix
2950 \def\appendix{%
2951 \Hy@org@appendix
2952 \@ifundefined{chapter}%
2953 {\gdef\theHsection{\Alph{section}}}%
2954 {\gdef\theHchapter{\Alph{chapter}}}%
2955 \xdef\Hy@chapapp{\Hy@appendixstring}%
2956 }

```

`\hyper@makecurrent` Because of Babel mucking around, nullify `\textlatin` when making names.

```

2957 \def\hyper@makecurrent#1{%
2958 \begingroup
2959 \edef\Hy@param{#1}%
2960 \ifx\Hy@param\Hy@chapterstring

```

```

2961 \let\Hy@param\Hy@chapapp
2962 \fi
2963 \ifHy@hypertextnames
2964 \ifHy@naturalnames
2965 \let\textlatin\@firstofone
2966 \xdef\@currentHlabel{\csname the#1\endcsname}%
2967 \else
2968 \xdef\@currentHlabel{\csname theH#1\endcsname}%
2969 \fi
2970 \xdef\@currentHref{%
2971 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
2972 }%
2973 \else
2974 \Hy@GlobalStepCount\Hy@linkcounter
2975 \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
2976 \fi
2977 \endgroup
2978 }

2979 \@ifpackageloaded{fancyvrb}{%
2980 \def\FV@StepLineNo{%
2981 \FV@SetLineNo
2982 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
2983 \FV@StepLineNo
2984 }%
2985 }{}

```

25 Package lastpage support

Package lastpage directly writes the `\newlabel` command to the aux file. Because package hyperref requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package lastpage is loaded after package hyperref. The same algorithm (options hyper-textnames and plainpages) is used to get the page anchor name as in `\@hyperfixhead` (see sec. 32). The link will not work if option `pageanchor` is set to false.

`\lastpage@putlabel`

```

2986 \AtBeginDocument{%
2987 \@ifpackageloaded{lastpage}{%
2988 \ifHy@pageanchor
2989 \else
2990 \Hy@WarningNoLine{%
2991 The \string\pageref{LastPage} link doesn't work\MessageBreak
2992 with disabled option 'pageanchor'%
2993 }%
2994 \fi
2995 \def\lastpage@putlabel{%
2996 \addtocounter{page}{-1}%
2997 \if@filesw

```

```

2998     \begingroup
2999     \ifHy@pageanchor
3000         \ifHy@hypertextnames
3001             \ifHy@plainpages
3002                 \def\Hy@temp{\arabic{page}}%
3003             \else
3004                 \let\textlatin\@firstofone
3005                 \edef\Hy@temp{\thepage}%
3006             \fi
3007         \else
3008             \def\Hy@temp{\the\Hy@pagecounter}%
3009         \fi
3010     \fi
3011     \immediate\write\@auxout{%
3012         \string\newlabel
3013         {LastPage}{\the\Hy@temp}{\thepage}{\thepage}%
3014         \ifHy@pageanchor page.\Hy@temp\fi}{}}%
3015     }%
3016 \endgroup
3017 \fi
3018 \addtocounter{page}{1}%
3019 }%
3020 }{}%
3021 }
3022 \end{package}
3023 \check
3024 \checkpackage{lastpage}[1994/06/25]
3025 \checkcommand\def\lastpage@putlabel{%
3026     \addtocounter{page}{-1}%
3027     \immediate\write\@auxout{%
3028         \string\newlabel{LastPage}{\the\lastpage}{\thepage}{\thepage}%
3029     }%
3030     \addtocounter{page}{1}%
3031 }
3032 \end{check}
3033 \end{package}

```

26 Package ifthen support

`\hypergetpageref` Package ifthen's `\isodd` does not work with `\pageref` because of the extra link and the star form. Therefore we need an expandable variant:

```

3034 \newcommand*{\hypergetpageref}[1]{%
3035     \expandafter\Hy@getpageref\csname r@#1\endcsname{#1}%
3036 }
3037 \def\Hy@getpageref#1#2{%
3038     \ifx#1\relax
3039         0%
3040     \protect\G@refundefinedtrue

```

```

3041 \latex@warning{Reference ‘#2’ on page \thepage\space
3042 undefined%
3043 }%
3044 \else
3045 \expandafter\Hy@GetSecondArg#1\@nil
3046 \fi
3047 }
3048 \long\def\Hy@GetSecondArg#1#2#3\@nil{#2}

```

`\hypergetref` The corresponding macro of `\hypergetpageref` is `\hypergetref`:

```

3049 \newcommand*{\hypergetref}[1]{%
3050 \expandafter\Hy@getref\csname r@#1\endcsname{#1}%
3051 }
3052 \def\Hy@getref#1#2{%
3053 \ifx#1\relax
3054 ??%
3055 \protect\G@refundefinedtrue
3056 \latex@warning{Reference ‘#2’ on page \thepage\space
3057 undefined%
3058 }%
3059 \else
3060 \expandafter\@car#1\@nil
3061 \fi
3062 }

```

`\Hy@TE@begingroup` Unfortunately there is no hook in `\ifthenelse` in order to provide expandable versions without link of `\ref` and `\pageref`. As possible target I could only find `\begingroup`:

```

3063 \ifpackageloaded{ifthen}{%
3064 \let\HyOrg@ifthenelse\ifthenelse
3065 \def\ifthenelse{%
3066 \let\begingroup\Hy@TE@begingroup
3067 \HyOrg@ifthenelse
3068 }%
3069 \let\HyOrg@begingroup\begingroup
3070 \def\Hy@TE@begingroup{%
3071 \let\begingroup\HyOrg@begingroup
3072 \begingroup
3073 \let\ref\hypergetref
3074 \let\pageref\hypergetpageref
3075 }%
3076 }{}

```

27 Package titlesec and titletoc support

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

Package titlesec support:

```

3077 \ifpackageloaded{titlesec}{%
3078 \def\ttl@Hy@steplink#1{%

```

```

3079 \Hy@GlobalStepCount\Hy@linkcounter
3080 \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3081 \def\ttl@Hy@saveanchor{%
3082   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3083 }%
3084 }%
3085 \def\ttl@Hy@refstepcounter#1{%
3086   \let\ttl@b\Hy@raisedlink
3087   \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3088   \refstepcounter{#1}%
3089   \let\Hy@raisedlink\ttl@b
3090 }%
3091 }{}

Package titletoc support:
3092 \@ifpackageloaded{titletoc}{%
3093   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3094 }{}

```

28 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 35).

```

3095 \let\new@refstepcounter\refstepcounter
3096 \let\H@equation\equation
3097 \let\H@endequation\endequation
3098 \@ifpackageloaded{amsmath}{%}{%
3099   \def\equation{%
3100     \let\refstepcounter\H@refstepcounter
3101     \H@equation
3102     \make@stripped@name{\theequation}%
3103     \let\theHequation\newname
3104     \hyper@makecurrent{equation}%
3105     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3106     \let\refstepcounter\new@refstepcounter}%
3107   \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3108 }

```

My goodness, why can't L^AT_EX be consistent? Why is `\eqnarray` set up differently from other objects?

People (you know who you are, Thomas Beuth) sometimes make an `eqnarray` where *all* the lines end with `\notag`, so there is no suitable anchor at all. In this case, pass by on the other side.

```

3109 \newif\if@eqnstar
3110 \@eqnstarfalse
3111 \let\H@eqnarray\eqnarray
3112 \let\H@endeqnarray\endeqnarray

```

```

3113 \def\eqnarray{%
3114   \let\Hy@reserved@a\relax
3115   \def\@currentHref{%
3116     \H@eqnarray
3117     \if@eqnstar
3118     \else
3119       \ifx\\ \@currentHref\\%
3120       \else
3121         \make@stripped@name{\theequation}%
3122         \let\theHequation\newname
3123         \hyper@makecurrent{equation}%
3124         \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3125       \fi
3126     \fi
3127 }
3128 \def\endeqnarray{%
3129   \H@endeqnarray
3130 }

```

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.

```

3131 \@namedef{eqnarray*}{%
3132   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
3133 }
3134 \@namedef{endeqnarray*}{%
3135   \nonumber\endeqnarray\@eqnstarfalse
3136 }

```

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

```

3137 \@ifundefined{subeqnarray}{%
3138   \let\H@subeqnarray\subeqnarray
3139   \let\H@endsubeqnarray\endsubeqnarray
3140   \def\subeqnarray{%
3141     \let\Hy@reserved@a\relax
3142     \H@subeqnarray
3143     \make@stripped@name{\theequation}%
3144     \let\theHequation\newname
3145     \hyper@makecurrent{equation}%
3146     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3147   }%
3148   \def\endsubeqnarray{%
3149     \H@endsubeqnarray
3150   }%
3151   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3152 }

```

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

```

3153 \def\make@stripped@name#1{%
3154   \begingroup
3155     \escapechar\m@ne

```

```

3156 \global\let\newname\@empty
3157 \protected@edef\Hy@tempa{#1}%
3158 \edef\@tempb{%
3159   \noexpand\@tfor\noexpand\Hy@tempa:=%
3160   \expandafter\strip@prefix\meaning\Hy@tempa
3161 }%
3162 \@tempb\do{%
3163   \if{\Hy@tempa\else
3164     \if}\Hy@tempa\else
3165     \xdef\newname{\newname\Hy@tempa}%
3166   \fi
3167 \fi
3168 }%
3169 \endgroup
3170 }

```

29 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.

```

3171 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
3172 \ifHy@hyperfootnotes
3173   \newcounter{Hfootnote}
3174   \let\H@@footnotetext\@footnotetext
3175   \let\H@@footnotemark\@footnotemark
3176   \def\@xfootnotenext[#1]{%
3177     \begingroup
3178       \csname c@\mpfn\endcsname #1\relax
3179       \unrestored@protected\xdef\@thefnmark{\thempfn}%
3180     \endgroup
3181     \ifx\@footnotetext\@mpfootnotetext
3182       \expandafter\H@@mpfootnotetext
3183     \else
3184       \expandafter\H@@footnotetext
3185     \fi
3186   }%
3187   \def\@xfootnotemark[#1]{%
3188     \begingroup
3189       \c@footnote #1\relax
3190       \unrestored@protected\xdef\@thefnmark{\thefootnote}%
3191     \endgroup
3192     \H@@footnotemark
3193   }%
3194   \let\H@@mpfootnotetext\@mpfootnotetext
3195   \long\def\@mpfootnotetext#1{%

```

```

3196 \H@@mpfootnotetext{%
3197 \ifHy@nesting
3198 \hyper@@anchor{\@currentHref}{#1}%
3199 \else
3200 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#1%
3201 \fi
3202 }%
3203 }%
3204 \long\def\@footnotetext#1{%
3205 \H@@footnotetext{%
3206 \ifHy@nesting
3207 \hyper@@anchor{\@currentHref}{#1}%
3208 \else
3209 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#1%
3210 \fi
3211 }%
3212 }%

```

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.

```

3213 \def\@footnotemark{%
3214 \leavevmode
3215 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
3216 \H@refstepcounter{Hfootnote}%
3217 \hyper@makecurrent{Hfootnote}%
3218 \hyper@linkstart{link}{\@currentHref}%
3219 \@makefnmark
3220 \hyper@linkend
3221 \ifhmode\spacefactor\@x@sf\fi
3222 \relax
3223 }%

```

But the special footnotes in `\maketitle` are much too hard to deal with properly. Let them revert to plain behaviour.

```

3224 \let\HyOrg@maketitle\maketitle
3225 \def\maketitle{%
3226 \let\Hy@saved@footnotemark\@footnotemark
3227 \let\Hy@saved@footnotetext\@footnotetext
3228 \let\@footnotemark\H@@footnotemark
3229 \let\@footnotetext\H@@footnotetext
3230 \HyOrg@maketitle
3231 \ifx\@footnotemark\H@@footnotemark
3232 \let\@footnotemark\Hy@saved@footnotemark
3233 \fi
3234 \ifx\@footnotetext\H@@footnotetext
3235 \let\@footnotetext\Hy@saved@footnotetext
3236 \fi
3237 }%

```


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

```

3238 \def\realfootnote{%
3239   \ifnextchar[\@xfootnote{%
3240     \stepcounter{\@mpfn}%
3241     \protected@xdef\@thefnmark{\thempfn}%
3242     \H@@footnotemark\H@@footnotetext
3243   }%
3244 }%

3245 \fi
3246 \Hy@DisableOption{hyperfootnotes}

3247 </package>
3248 <*check>
3249 \checklatex
3250 \checkcommand\def\@xfootnotenext[#1]{%
3251   \begingroup
3252     \csname c@\@mpfn\endcsname #1\relax
3253     \unrestored@protected@xdef\@thefnmark{\thempfn}%
3254   \endgroup
3255   \@footnotetext
3256 }
3257 \checkcommand\def\@xfootnotemark[#1]{%
3258   \begingroup
3259     \c@footnote #1\relax
3260     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3261   \endgroup
3262   \@footnotemark
3263 }
3264 \checkcommand\def\@footnotemark{%
3265   \leavevmode
3266   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
3267   \@makefnmark
3268   \ifhmode\spacefactor\@x@sf\fi
3269   \relax
3270 }
3271 </check>
3272 <*package>

```

30 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.

```

3273 \def\caption{%
3274   \ifx\@capytype\@undefined
3275     \@latex@error{\noexpand\caption outside float}\@ehd
3276     \expandafter\@gobble
3277   \else
3278     \H@refstepcounter\@capytype

```

```

3279 \expandafter\@firstofone
3280 \fi
3281 {\@dblarg{\@caption\@capttype}}%
3282 }
3283 \long\def\@caption#1[#2]#3{%
3284 \hyper@makecurrent{\@capttype}%
3285 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
3286 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
3287 }%
3288 \begingroup
3289 \@parboxrestore
3290 \if@minipage
3291 \@setminipage
3292 \fi
3293 \normalsize
3294 \@makecaption{\csname fnum@#1\endcsname}{%
3295 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

3296 \ifHy@nesting
3297 \hyper@@anchor{\@currentHref}{#3}%
3298 \else
3299 \hyper@@anchor{\@currentHref}{\relax}#3%
3300 \fi
3301 }%
3302 \par
3303 \endgroup
3304 }
3305 </package>
3306 <*check>
3307 \checklatex[1999/06/01 - 2000/06/01]
3308 \checkcommand\def\caption{%
3309 \ifx\@capttype\@undefined
3310 \@latex@error{\noexpand\caption outside float}\@ehd
3311 \expandafter\@gobble
3312 \else
3313 \refstepcounter\@capttype
3314 \expandafter\@firstofone
3315 \fi
3316 {\@dblarg{\@caption\@capttype}}%
3317 }
3318 \checkcommand\long\def\@caption#1[#2]#3{%
3319 \par
3320 \addcontentsline{\csname ext@#1\endcsname}{#1}%
3321 {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
3322 \begingroup
3323 \@parboxrestore
3324 \if@minipage
3325 \@setminipage
3326 \fi

```

```

3327 \normalsize
3328 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
3329 \endgroup
3330 }
3331 </check>
3332 <*package>

```

31 Bibliographic references

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

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

```

3333 \def\hyper@natlinkstart#1{%
3334   \Hy@backout{#1}%
3335   \hyper@linkstart{cite}{cite.#1}%
3336   \def\hyper@nat@current{#1}%
3337 }
3338 \def\hyper@natlinkend{%
3339   \hyper@linkend
3340 }
3341 \def\hyper@natlinkbreak#1#2{%
3342   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
3343 }
3344 \def\hyper@natanchorstart#1{%
3345   \hyper@anchorstart{cite.#1}%
3346 }
3347 \def\hyper@natanchorend{\hyper@anchorend}

```

Do not play games if we have *natbib* support.

```

3348 \@ifundefined{NAT@parse}{%
3349   \def\bibcite#1#2{%
3350     \@newl@bel{b}{#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
3351   }%

```

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

```

3352   \let\Hy@bibcite\bibcite
3353   \begingroup
3354     \@ifundefined{bbl@cite@choice}{}%
3355     \g@addto@macro\bbl@cite@choice{%
3356       \let\bibcite\Hy@bibcite
3357     }%
3358   }%
3359 \endgroup

```

```

3360 % |\@BIBLABEL| is working around a 'feature' of Rev\TeX.
3361 % \begin{macrocode}
3362 \providecommand{\@BIBLABEL}{\@biblabel}%
3363 \def\@lbibitem[#1]#2{%
3364 \@skiphyperreftrue
3365 \H@item[\hyper@anchorstart{cite.#2}%
3366 \@BIBLABEL{#1}\hyper@anchorend\hfill]}%
3367 \@skiphyperreffalse
3368 \if@filesw
3369 \begingroup
3370 \let\protect\noexpand
3371 \immediate\write\@auxout{%
3372 \string\bibcite{#2}{#1}%
3373 }%
3374 \endgroup
3375 \fi
3376 \ignorespaces
3377 }%

```

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

```

3378 \def\@bibitem#1{%
3379 \@skiphyperreftrue\H@item\@skiphyperreffalse
3380 \hyper@anchorstart{cite.#1}\relax\hyper@anchorend
3381 \if@filesw
3382 \begingroup
3383 \let\protect\noexpand
3384 \immediate\write\@auxout{%
3385 \string\bibcite{#1}{\the\value{\@listctr}}}%
3386 }%
3387 \endgroup
3388 \fi
3389 \ignorespaces
3390 }%
3391 }{}

3392 </package>
3393 <*check>
3394 \checklatex
3395 \checkcommand\def\@lbibitem[#1]#2{%
3396 \item[\@biblabel{#1}\hfill]}%
3397 \if@filesw
3398 {%
3399 \let\protect\noexpand
3400 \immediate\write\@auxout{%
3401 \string\bibcite{#2}{#1}%
3402 }%
3403 }%
3404 \fi
3405 \ignorespaces
3406 }

```

```

3407 \checkcommand\def\@bibitem#1{%
3408   \item
3409   \if@filesw
3410     \immediate\write\@auxout{%
3411       \string\bibcite{#1}{\the\value{\@listctr}}}%
3412   }%
3413 \fi
3414 \ignorespaces
3415 }
3416 \</check>
3417 \<*package>

```

Revtext (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.

```

3418 \@ifclassloaded{revtex}{%
3419   \Hy@Info{*** compatibility with revtex **** }%
3420   \def\revtex@checking#1#2{%
3421     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
3422     \expandafter\def\csname b@#1\endcsname{#2}%
3423     \@SetMaxRnhefLabel{#1}%
3424     \expandafter\let\csname b@#1\endcsname\T@temp
3425   }%

```

Tanmoy provided this replacement for CITEX. Lord knows what it does.

```

3426 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
3427 \def\CITEX[#1]#2{%
3428   \let\@citea\@empty
3429   \leavevmode
3430   \unskip
3431   $\sim$%
3432   \scriptstyle
3433   \CITE{%
3434     \@for\@citeb:=#2\do{%
3435       \@citea
3436       \def\@citea{\penalty\@m }%
3437       \edef\@citeb{\expandafter\@firstofone\@citeb}%
3438       \if@filesw
3439         \immediate\write\@auxout{\string\citation{\@citeb}}%
3440       \fi
3441       \@ifundefined{b@\@citeb}{%
3442         \mbox{\reset@font\bfseries ?}%
3443         \G@refundefinedtrue
3444         \@latex@warning{%
3445           Citation ‘\@citeb’ on page \thepage \space undefined%
3446         }%
3447       }{%
3448         {\csname b@\@citeb\endcsname}%
3449       }%
3450     }%

```

```

3451     }{#1}%
3452     }$%
3453     }%

```

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.

```

3454 \def\@citex[#1]#2{%
3455     \let\@citea\@empty
3456     \@cite{%
3457         \@for\@citeb:=#2\do{%
3458             \@citea
3459             \def\@citea{\penalty\@m\ }%
3460             \edef\@citeb{\expandafter\@firstofone\@citeb}%
3461             \if@filesw
3462                 \immediate\write\@auxout{\string\citation{\@citeb}}%
3463             \fi
3464             \@ifundefined{b@\@citeb}{%
3465                 \mbox{\reset@font\bfseries ?}%
3466                 \G@refundefinedtrue
3467                 \@latex@warning{%
3468                     Citation ‘\@citeb’ on page \thepage \space undefined%
3469                 }%
3470             }{%
3471                 \hbox{\csname b@\@citeb\endcsname}%
3472             }%
3473         }%
3474     }{#1}%
3475     }%
3476 }{}

```

31.1 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.

```

3477 \@ifpackageloaded{harvard}{%
3478     \Hy@Info{*** compatibility with harvard *** }%
3479     \Hy@raiselinksfalse
3480     \def\harvardcite#1#2#3#4{%
3481         \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
3482         \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
3483         \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
3484         \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
3485     }%
3486     \def\HAR@citetoaux#1{%
3487         \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
3488         \ifHy@backref
3489             \ifx\@empty\@currentlabel
3490                 \else

```

```

3491      \@bsphack
3492      \protected@write\@auxout{}\%
3493      \string\@writefile{brf}\%
3494      \string\backcite{#1}\%
3495      {\thepage}{\@currentlabel}{\@currentHref}%
3496      }%
3497      }%
3498      }%
3499      \@esphack
3500      \fi
3501      \fi
3502      }%
3503      \def\harvarditem{%
3504      \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}}%
3505      }%
3506      \def\@harvarditem[#1]#2#3#4#5\par{%
3507      \item[]%
3508      \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
3509      \if@filesw
3510      \begingroup
3511      \def\protect##1{\string ##1\space}%
3512      \ifthenelse{\equal{#1}{\null}}{%
3513      {\def\next{{#4}{#2}{#2}{#3}}}%
3514      {\def\next{{#4}{#2}{#1}{#3}}}%
3515      \immediate\write\@auxout{\string\harvardcite\codeof\next}%
3516      \endgroup
3517      \fi
3518      \protect\hspace*{-\labelwidth}%
3519      \protect\hspace*{-\labelsep}%
3520      \ignorespaces
3521      #5%
3522      \ifHy@backref
3523      \newblock
3524      \backref{csname br@#4\endcsname}%
3525      \fi
3526      \par
3527      }%

```

\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:

```

3528      \long\def\HAR@checkcitations#1#2#3#4{%
3529      \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
3530      \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
3531      \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
3532      \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
3533      \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
3534      \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
3535      \else
3536      \@tempwattrue

```

```

3537         \fi
3538     \else
3539         \@tempswatrue
3540     \fi
3541 \else
3542     \@tempswatrue
3543 \fi
3544 }%
3545 }{}

```

31.2 Package chicago

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

```

3546 \@ifpackageloaded{chicago}{%

\citeN
3547 \def\citeN{%
3548     \def\@citesep{-1000}%
3549     \def\@cite##1##2{##1}%
3550     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
3551     \@citedata@opt
3552 }%

\shortciteN
3553 \def\shortciteN{%
3554     \def\@citesep{-1000}%
3555     \def\@cite##1##2{##1}%
3556     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
3557     \@citedata@opt
3558 }%

\@citedata@opt
3559 \def\@citedata@opt{%
3560     \let\@cite@opt\@empty
3561     \@ifnextchar [{%
3562         \@tempswatrue
3563         \@citedatax@opt
3564     }{%
3565         \@tempswafalse
3566         \@citedatax[]%
3567     }%
3568 }%

\@citedatax@opt
3569 \def\@citedatax@opt[#1]{%
3570     \def\@cite@opt{, #1}%
3571     \@citedatax[{#1}]%
3572 }
3573 }{}

```


32 Page numbers

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

```

3574 \def\@begindvi{%
3575   \unvbox \@begindvibox
3576   \ifHy@pageanchor
3577     \@hyperfixhead
3578     \global\let \@begindvi \@hyperfixhead
3579   \else
3580     \global\let \@begindvi \HyPL@EveryPage
3581   \fi
3582 }
3583 \def\pagenumbering#1{%
3584   \global\c@page \@ne
3585   \gdef\thepage{\csname @#1\endcsname\c@page}%
3586 }
```

This is needed for some unremembered reason. . .

```

3587 \let\HYPERPAGEANCHOR\hyperpageanchor
```

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

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

```

3588 \providecommand\hyper@pagetransition{}
3589 \providecommand\hyper@pageduration{}
3590 \providecommand\hyper@pagehidden{}
```

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

`\@hyperfixhead`

```

3591 \def\@hyperfixhead{%
3592   \HyPL@EveryPage
3593   \ifHy@hypertextnames
3594     \ifHy@plainpages
3595       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\arabic{page}}}%
3596     \else
3597       \begingroup
3598         \let\textlatin\@firstofone
3599         \xdef\@the@H@page{\thepage}%
3600       \endgroup
3601       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
3602     \fi
3603   \else
```

```

3604 \Hy@GlobalStepCount\Hy@pagecounter
3605 \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}}%
3606 \fi
3607 \let\H@old@thehead\@thehead
3608 \if^@\thehead^%
3609 \def\H@old@thehead{\hfil}%
3610 \fi
3611 \ifHy@texht
3612 \def\@thehead{}%
3613 \else
3614 \ifHy@seminarslides
3615 \begingroup
3616 \let\leavevmode\relax
3617 \Hy@TempPageAnchor\relax
3618 \hyper@pagetransition
3619 \hyper@pageduration
3620 \hyper@pagehidden
3621 \endgroup
3622 \else
3623 \def\@thehead{%
3624 \Hy@TempPageAnchor\relax
3625 \hyper@pagetransition
3626 \hyper@pageduration
3627 \hyper@pagehidden
3628 \H@old@thehead
3629 }%
3630 \fi
3631 \fi
3632 \ifx\PDF@FinishDoc\@empty
3633 \else
3634 \PDF@FinishDoc
3635 \gdef\PDF@FinishDoc{}%
3636 \fi
3637 }

```

33 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.

```

3638 \begingroup\expandafter\expandafter\expandafter\endgroup
3639 \expandafter\ifx\csname chapter\endcsname\relax
3640 \def\toclevel@part{0}
3641 \else
3642 \def\toclevel@part{-1}
3643 \fi
3644 \def\toclevel@chapter{0}
3645 \def\toclevel@section{1}

```

```

3646 \def\toclevel@subsection{2}
3647 \def\toclevel@subsubsection{3}
3648 \def\toclevel@paragraph{4}
3649 \def\toclevel@subparagraph{5}
3650 \def\toclevel@figure{0}
3651 \def\toclevel@table{0}
3652 \@ifpackageloaded{listings}{%
3653   \def\theHlstlisting{\thelstlisting}%
3654   \def\toclevel@lstlisting{0}%
3655 }{}
3656 \@ifpackageloaded{listing}{%
3657   \def\theHlisting{\thelisting}%
3658   \def\toclevel@listing{0}%
3659 }{}
3660 \def\addcontentsline#1#2#3{% toc extension, type, tag
3661   \begingroup
3662     \let\label\@gobble
3663     \let\textlatin\@firstofone
3664     \ifx\@currentHref\@empty
3665       \Hy@Warning{%
3666         No destination for bookmark of \string\addcontentsline,%
3667         \MessageBreak destination is added%
3668       }%
3669       \phantomsection
3670     \fi
3671     \expandafter\ifx\csname toclevel@#2\endcsname\relax
3672       \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
3673       \def\Hy@toclevel{0}%
3674     \else
3675       \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
3676     \fi
3677     \Hy@writebookmark{\csname the#2\endcsname}%
3678       {#3}%
3679       {\@currentHref}%
3680       {\Hy@toclevel}%
3681       {#1}%
3682     \ifHy@verbose
3683       \typeout{pdfTeX: bookmark at \the\inputlineno:
3684         {\csname the#2\endcsname}
3685         {#3}
3686         {\@currentHref}%
3687         {\Hy@toclevel}%
3688         {#1}%
3689       }%
3690     \fi
3691     \addtocontents{#1}{%
3692       \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
3693     }%
3694   \endgroup
3695 }

```

```

3696 \def\contentsline#1#2#3#4{%
3697   \ifx\#4\%
3698     \csname l@#1\endcsname{#2}{#3}%
3699   \else
3700     \ifHy@linktocpage
3701       \csname l@#1\endcsname{#2}{#3}%
3702       \hyper@linkstart{link}{#4}{#3}\hyper@linkend
3703     }%
3704   \else
3705     \csname l@#1\endcsname{#2}{#3}%
3706     \hyper@linkstart{link}{#4}{#3}\hyper@linkend
3707   }%
3708 \fi
3709 \fi
3710 }

3711 \end{package}
3712 \end{check}
3713 \end{checklatex}
3714 \checkcommand\def\addcontentsline#1#2#3{%
3715   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
3716 }
3717 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}%
3718 \end{check}
3719 \end{package}

```

34 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.

```

3720 \let\H@definecounter\@definecounter
3721 \def\@definecounter#1{%
3722   \H@definecounter{#1}%
3723   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3724 }

```

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.

```

3725 \let\H@newctr\@newctr
3726 \def\@newctr#1[#2]{%
3727   \H@newctr#1[#2]%
3728   \expandafter\def\csname theH#1\endcsname
3729     {\csname the#2\endcsname.\arabic{#1}}%
3730 }

```

35 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.

```

3731 \let\Hmake@df@tag@@\make@df@tag@@
3732 \def\make@df@tag@@#1{%
3733   \Hmake@df@tag@@{#1}%
3734   \Hy@GlobalStepCount\Hy@linkcounter
3735   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
3736   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3737 }
3738 \let\Hmake@df@tag@@@ \make@df@tag@@@
3739 \def\make@df@tag@@@#1{%
3740   \Hmake@df@tag@@@{#1}%
3741   \Hy@GlobalStepCount\Hy@linkcounter
3742   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
3743   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3744 }

```

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

```

3745 \ifpackagewith{hyperref}{pdf $\text{\LaTeX}$ }{%
3746   \let\H@seteqlabel\@seteqlabel
3747   \def\@seteqlabel#1{%
3748     \H@seteqlabel{#1}%
3749     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
3750     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3751   }%
3752 }{}

```

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}}}

```

35.1 `\numberwithin patch`

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

```

3753 </package>
3754 <*check>
3755 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]

```

```

3756 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
3757   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
3758     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
3759       \@addtoreset{#2}{#3}%
3760       \@xp\xdef\csname the#2\endcsname{%
3761         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
3762       }%
3763     }%
3764   }%
3765 }%
3766 \</check>
3767 \<*package>
3768 \@ifpackageloaded{amsmath}{%
3769   \@ifpackagelater{amsmath}{1999/12/14}{%
3770     \renewcommand*{\numberwithin}[3][\arabic]{%
3771       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
3772         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
3773           \@addtoreset{#2}{#3}%
3774           \@xp\xdef\csname the#2\endcsname{%
3775             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
3776           }%
3777           \@xp\xdef\csname theH#2\endcsname{%
3778             \@xp\@nx
3779             \csname the\@ifundefined{theH#3}{H#3\endcsname
3780             .\@nx#1{#2}%
3781           }%
3782         }%
3783       }%
3784     }%
3785   }{%
3786     \Hy@WarningNoLine{%
3787       \string\numberwithin\space of package 'amsmath'
3788       only fixed\MessageBreak
3789       for version 2000/06/06 v2.12 or newer%
3790     }%
3791   }
3792 }{}

```

36 Included figures

Simply intercept the low level graphics package macro.

```

3793 \ifHy@figures
3794   \let\Hy@Gin@setfile\Gin@setfile
3795   \def\Gin@setfile#1#2#3{%
3796     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
3797   }
3798 \fi
3799 \Hy@DisableOption{hyperfigures}

```

37 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.

```
3800 \ifHy@hyperindex
3801   \def\HyInd@ParenLeft{({}%
3802   \@ifpackageloaded{multind}{%
3803     \let\HyInd@org@wrindex\@wrindex
3804     \def\@wrindex#1#2{\HyInd@org@wrindex{#1}#2||\}%
3805     \def\HyInd@org@wrindex#1#2|#3|#4\{\%
3806       \ifx\#3\%
3807         \HyInd@org@wrindex{#1}{#2|hyperpage}%
3808       \else
3809         \def\Hy@temp@A{#3}%
3810         \ifx\Hy@temp@A\HyInd@ParenLeft
3811           HyInd@org@wrindex{#1}{#2|#3hyperpage}%
3812         \else
3813           \HyInd@org@wrindex{#1}{#2|#3}%
3814         \fi
3815       \fi
3816     }%
3817   }{%
3818     \def\@wrindex#1{\@@wrindex#1||\}%
3819     \def\@@wrindex#1|#2|#3\{\%
3820       \ifx\#2\%
3821         \protected@write\@indexfile{){}%
3822         \string\indexentry{#1|hyperpage}{\thepage}%
3823       }%
3824     \else
3825       \def\Hy@temp@A{#2}%
3826       \ifx\Hy@temp@A\HyInd@ParenLeft
3827         \protected@write\@indexfile{){}%
3828         \string\indexentry{#1|#2hyperpage}{\thepage}%
3829       }%
3830     \else
3831       \protected@write\@indexfile{){}%
3832       \string\indexentry{#1|#2}{\thepage}%
3833     }%
3834     \fi
3835   \fi
3836 \endgroup
3837 \@esphack
```

```

3838 }%
3839 }%
3840 \fi
3841 \Hy@DisableOption{hyperindex}

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.

3842 \def\hyperpage#1{\@hyperpage#1----\}
3843 \def\@hyperpage#1--#2--#3\{%
3844   \ifx\#2\%
3845     \@commahyperpage{#1}%
3846   \else
3847     \hyperlink{page.#1}{#1}--\hyperlink{page.#2}{#2}%
3848   \fi
3849 }
3850 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
3851 \def\@commahyperpage#1, #2,#3\{%
3852   \ifx\#2\%
3853     \hyperlink{page.#1}{#1}%
3854   \else
3855     \hyperlink{page.#1}{#1}, \hyperlink{page.#2}{#2}%
3856   \fi
3857 }

```

38 Compatibility with foiltex

```

3858 \@ifclassloaded{foils}{%
3859   \providecommand*\ext@table{lot}%
3860   \providecommand*\ext@figure{lof}%
3861 }{}

```

39 Compatibility with seminar slide package

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

```

3862 \@ifclassloaded{seminar}{%
3863   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
3864 }{%
3865   \Hy@seminarslidesfalse
3866 }
3867 \@ifpackageloaded{slidesec}{%
3868   \newcommand\theHslidesection {\arabic{slidesection}}%
3869   \newcommand\theHslidesubsection{%
3870     \theHslidesection.\arabic{slidesubsection}%
3871   }%
3872   \def\slide@heading[#1]#2{%
3873     \H@refstepcounter{slidesection}%
3874     \@addtoreset{slidesubsection}{slidesection}%
3875     \addtocontents{los}{%

```



```

3876     \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
3877     {\@SCTR}{slideheading.\theslidesection}%
3878 }%
3879 \def\Hy@tempa{#2}%
3880 \ifx\Hy@tempa\@empty
3881 \else
3882   {%
3883     \edef\@currentlabel{%
3884       \csname p@slidesection\endcsname\theslidesection
3885     }%
3886     \makeslideheading{#2}%
3887   }%
3888 \fi
3889 \gdef\theslideheading{#1}%
3890 \gdef\theslidesubheading{}%
3891 \ifHy@hypertextnames
3892   \ifHy@naturalnames
3893     \hyper@@anchor{slideheading.\theslidesection}{\relax}%
3894     \Hy@writebookmark
3895       {\theslidesection}%
3896       {#1}%
3897       {slideheading.\theslidesection}%
3898       {1}%
3899       {toc}%
3900   \else
3901     \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
3902     \Hy@writebookmark
3903       {\theslidesection}%
3904       {#1}%
3905       {slideheading.\theHslidesection}%
3906       {1}%
3907       {toc}%
3908   \fi
3909 \else
3910   \Hy@GlobalStepCount\Hy@linkcounter
3911   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
3912   \Hy@writebookmark
3913     {\theslidesection}%
3914     {#1}%
3915     {slideheading.\the\Hy@linkcounter}%
3916     {1}%
3917     {toc}%
3918 \fi
3919 }%
3920 \def\slide@subheading[#1]#2{%
3921   \H@refstepcounter{slidesubsection}%
3922   \addtocontents{los}{%
3923     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
3924     {\@SCTR}{slideheading.\theslidesubsection}%
3925   }%

```

```

3926 \def\Hy@tempa{#2}%
3927 \ifx\Hy@tempa\@empty
3928 \else
3929 {%
3930 \edef\@currentlabel{%
3931 \csname p@slidessubsection\endcsname\theslidessubsection
3932 }%
3933 \makeslidesubheading{#2}%
3934 }%
3935 \fi
3936 \gdef\theslidesubheading{#1}%
3937 \ifHy@hypertextnames
3938 \ifHy@naturalnames
3939 \hyper@@anchor{slideheading.\theslidessubsection}{\relax}%
3940 \Hy@writebookmark
3941 {\theslidessubsection}%
3942 {#1}%
3943 {slideheading.\theslidessubsection}%
3944 {2}%
3945 {toc}%
3946 \else
3947 \hyper@@anchor{slideheading.\theHslidessubsection}{\relax}%
3948 \Hy@writebookmark
3949 {\theslidessubsection}%
3950 {#1}%
3951 {slideheading.\theHslidessubsection}%
3952 {2}%
3953 {toc}%
3954 \fi
3955 \else
3956 \Hy@GlobalStepCount\Hy@linkcounter
3957 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
3958 \Hy@writebookmark
3959 {\theslidessubsection}%
3960 {#1}%
3961 {slideheading.\the\Hy@linkcounter}%
3962 {1}%
3963 {toc}%
3964 \fi
3965 }%
3966 \providecommand{\listslidesname}{List of Slides}%
3967 \def\listofslides{%
3968 \section*{%
3969 \listslidesname
3970 \@mkboth{%
3971 \expandafter\MakeUppercase\listslidesname
3972 }{%
3973 \expandafter\MakeUppercase\listslidesname
3974 }%
3975 }%

```

```

3976 \def\l@slide##1##2##3##4{%
3977 \slide@undottedcline{%
3978 \slidenumberline{##3}{\hyperlink{##4}{##2}}%
3979 }{%}%
3980 }%
3981 \let\l@subslide\l@slide
3982 \@startlos
3983 }%
3984 \def\slide@contents{%
3985 \def\l@slide##1##2##3##4{%
3986 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
3987 }%
3988 \let\l@subslide\@gobblefour
3989 \@startlos
3990 }%
3991 \def\Slide@contents{%
3992 \def\l@slide##1##2##3##4{%
3993 \ifcase\lslide@flag
3994 \message{##1 ** \the\c@slidesection}%
3995 \ifnum##1>\c@slidesection
3996 \def\lslide@flag{1}%
3997 {%
3998 \large
3999 \slide@ccline{%
4000 \slidenumberline{$\rightarrow\bullet$}%
4001 {\hyperlink{##4}{##2}}%
4002 }{##3}%
4003 }%
4004 \else
4005 {%
4006 \large
4007 \slide@ccline{%
4008 \slidenumberline{$\surd\;\bullet$}%
4009 {\hyperlink{##4}{##2}}%
4010 }{##3}%
4011 }%
4012 \fi
4013 \or
4014 \def\lslide@flag{2}%
4015 {%
4016 \large
4017 \slide@ccline{%
4018 \slidenumberline{$\bullet$}%
4019 {\hyperlink{##4}{##2}}%
4020 }{##3}%
4021 }%
4022 \or
4023 {%
4024 \large
4025 \slide@ccline{%

```

```

4026         \slidenumberline{$\bullet$}%
4027         {\hyperlink{##4}{##2}}%
4028     }{##3}%
4029 }%
4030 \fi
4031 }%
4032 \def\l@subslide##1##2##3##4{%
4033     \ifnum\lslide@flag=1
4034         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}}%
4035     \fi
4036 }%
4037 \def\lslide@flag{0}%
4038 \@startlos
4039 }%
4040 {}

```

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.)

```

4041 \ifHy@texht\endinput\fi
4042 \let\real@setref\@setref
4043 \def\@setref#1#2#3{% csname, extract group, refname
4044     \ifx#1\relax
4045         \protect\G@refundefinedtrue
4046         \nfss@text{\reset@font\bfseries ??}%
4047         \@latex@warning{%
4048             Reference ‘#3’ on page \thepage \space undefined%
4049         }%
4050     \else
4051         \hyper@@link
4052         {\expandafter\@fifthoffive#1}%
4053         {\expandafter\@fourthoffive#1\@empty\@empty}%
4054         {\expandafter#2#1\@empty\@empty\null}%
4055     \fi
4056 }
4057 \def\@pagesetref#1#2#3{% csname, extract macro, ref
4058     \ifx#1\relax
4059         \protect\G@refundefinedtrue
4060         \nfss@text{\reset@font\bfseries ??}%
4061         \@latex@warning{%
4062             Reference ‘#3’ on page \thepage \space undefined%
4063         }%
4064     \else
4065         \protect\hyper@@link
4066         {\expandafter\@fifthoffive#1}%
4067         {page.\expandafter\@secondoffive#1}%
4068         {\expandafter\@secondoffive#1}%
4069     \fi
4070 }
4071 \</package>

```

```

4072 <*check>
4073 \checklatex
4074 \checkcommand\def\@setref#1#2#3{%
4075   \ifx#1\relax
4076     \protect\G@refundefinedtrue
4077     \nfss@text{\reset@font\bfseries ??}%
4078     \@latex@warning{%
4079       Reference ‘#3’ on page \thepage\space undefined%
4080     }%
4081   \else
4082     \expandafter#2#1\null
4083   \fi
4084 }
4085 </check>
4086 <*package>

```

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

```

4087 \def\@refstar#1{%
4088   \@safe@activestru
4089   \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
4090   \@safe@activesfalse
4091 }
4092 \def\@pagerefstar#1{%
4093   \@safe@activestru
4094   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
4095   \@safe@activesfalse
4096 }
4097 \DeclareRobustCommand\autoref[1]{%
4098   \expandafter\auto@setref\csname r@#1\endcsname\@firstoffive{#1}%
4099 }
4100 \def\auto@setref#1#2#3{% csname, extract group, refname
4101   \@safe@activestru
4102   \ifx#1\relax
4103     \protect\G@refundefinedtrue
4104     \nfss@text{\reset@font\bfseries ??}%
4105     \@latex@warning{%
4106       Reference ‘#3’ on page \thepage \space undefined%
4107     }%
4108   \else
4109     \edef\@thisref{\expandafter\@fourthoffive#1\@empty\@empty}%
4110     \expandafter\test@reftype\@thisref\%
4111     \hyper@link
4112     {\expandafter\@fifthoffive#1}%
4113     {\expandafter\@fourthoffive#1\@empty\@empty}%
4114     {\@currentHtag\expandafter#2#1\@empty\@empty\@empty\@empty\@empty}%
4115   \fi
4116   \@safe@activesfalse
4117 }
4118 \def\test@reftype#1.#2\%

```

```

4119 \@ifundefined{#1autorefname}{%
4120   \ifundefined{#1name}{%
4121     \def\@currentHtag{}%
4122     \@latex@warning{no tag name for #1 at \the\inputlineno}%
4123   }{%
4124     \def\@currentHtag{\csname#1name\endcsname~}%
4125   }%
4126 }{%
4127   \def\@currentHtag{\csname#1autorefname\endcsname~}%
4128 }%
4129 }
4130 \def\@currentHtag{}

    Defaults for the names that \autoref uses.
4131 \providecommand\AMSautorefname{\equationautorefname}
4132 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
4133 \providecommand\Itemautorefname{\itemautorefname}
4134 \providecommand\equationautorefname{Equation}
4135 \providecommand\footnoteautorefname{footnote}
4136 \providecommand\itemautorefname{item}
4137 \providecommand\figureautorefname{Figure}
4138 \providecommand\tableautorefname{Table}
4139 \providecommand\partautorefname{Part}
4140 \providecommand\appendixautorefname{Appendix}
4141 \providecommand\chapterautorefname{chapter}
4142 \providecommand\sectionautorefname{section}
4143 \providecommand\subsectionautorefname{subsection}
4144 \providecommand\subsubsectionautorefname{subsubsection}
4145 \providecommand\paragraphautorefname{paragraph}
4146 \providecommand\subparagraphautorefname{subparagraph}
4147 \providecommand\FancyVerbLineautorefname{line}
4148 \providecommand\theoremautorefname{Theorem}
4149 \</package>
4150 \<*pdftex>

```

40 Configuration files

40.1 pdftex

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

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

```

4151 \def\setpdflinkmargin#1{\pdflinkmargin#1}
4152 \ifx\pdfstartlink\@undefined% less than version 14
4153   \let\pdfstartlink\pdfannotlink
4154   \let\pdflinkmargin\@tempdima
4155   \let\pdfxform\pdfform

```

```

4156 \let\pdflastxform\pdflastform
4157 \let\pdfrefxform\pdfrefform
4158 \else
4159 \pdflinkmargin1pt
4160 \fi

```

First set up the default linking

```
4161 \providecommand\pdfview{XYZ}
```

First define the anchors:

```

4162 \def\new@pdflink#1{%
4163   \ifHy@verbose
4164     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
4165   \fi
4166   \Hy@SaveLastskip
4167   \pdfdest name {#1}\pdfview
4168   \Hy@RestoreLastskip
4169 }
4170 \let\pdf@endanchor\@empty

```

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.

```

4171 \providecommand\pdfborder{0 0 1}
4172 \def\Hy@undefinedname{UNDEFINED}
4173 \def\find@pdflink#1#2{%
4174   \leavevmode
4175   \protected@edef\Hy@testname{#2}%
4176   \ifx\Hy@testname\@empty
4177     \let\Hy@testname\Hy@undefinedname
4178   \fi
4179   \pdfstartlink
4180   attr{%
4181     /Border [\pdfborder]
4182     /H \pdfhighlight\space
4183     /C [\CurrentBorderColor]%
4184   }%
4185   goto name {\Hy@testname}%
4186   \Hy@colorlink{\csname @#1color\endcsname}%
4187 }
4188 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
4189 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
4190 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
4191 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
4192 \def\hyper@linkstart#1#2{%
4193   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
4194   \find@pdflink{#1}{#2}}
4195 \def\hyper@linkend{\close@pdflink}
4196 \def\hyper@link#1#2#3{%
4197   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%

```

```

4198 \find@pdflink{#1}{#2}#3\close@pdflink
4199 }
4200 \def\CurrentBorderColor{\@linkbordercolor}
4201 \def\hyper@linkurl#1#2{%
4202 \bgroup
4203 \hyper@chars
4204 \leavevmode
4205 \pdfstartlink
4206 attr{%
4207 /Border [\@pdfborder]
4208 /H \@pdfhighlight\space
4209 /C [\@urlbordercolor]%
4210 }%
4211 user{%
4212 /Subtype /Link
4213 /A <<
4214 /Type /Action
4215 /S /URI
4216 /URI (#2)
4217 >>%
4218 }%
4219 \Hy@colorlink{\@urlcolor}#1%
4220 \close@pdflink
4221 \egroup
4222 }
4223 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
4224 \bgroup
4225 \leavevmode
4226 \pdfstartlink
4227 attr{%
4228 /Border [\@pdfborder]
4229 /H \@pdfhighlight\space
4230 /C [\@filebordercolor]%
4231 }%
4232 user {%
4233 /Subtype /Link
4234 /A <<
4235 /F (#2)
4236 /S /GoToR
4237 \ifHy@newwindow /NewWindow true \fi

```

If #3 is empty, page 0; if its a number, Page number, otherwise a named destination.
\afterassignment\xxx\count@=0\foo!%

```

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

```



```

4238         \ifx\#3\%
4239         /D [0 \@pdfstartview]
4240         \else
4241         /D (#3)
4242         \fi
4243         >>%
4244     }%
4245     \Hy@colorlink{\@filecolor}#1%
4246     \close@pdflink
4247 \egroup
4248 }
4249 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
4250 \bgroup
4251     \leavevmode
4252     \pdfstartlink
4253     attr{%
4254         /Border [\@pdfborder]
4255         /H \@pdfhighlight\space
4256         /C [\@runbordercolor]%
4257     }%
4258     user {%
4259         /Subtype /Link
4260         /A <<
4261         /F (#1)
4262         /S /Launch
4263         \ifHy@newwindow /NewWindow true \fi
4264         \ifx\#3\%
4265         \else
4266         /Win << /P (#3) /F (#1) >>
4267         \fi
4268         >>%
4269     }%
4270     \Hy@colorlink{\@filecolor}#2%
4271     \close@pdflink
4272 \egroup
4273 }

```

\@pdfproducer

```

4274 \ifx\pdftexversion\@undefined
4275 \def\@pdfproducer{pdfTeX}
4276 \else
4277 \def\@pdfproducer{pdfTeX\the\pdftexversion.\pdftexrevision}
4278 \fi

```

\PDF@SetupDox

```

4279 \def\PDF@SetupDoc{%
4280 \ifx\@pdfpagescrop\@empty
4281 \else

```

```

4282 \edef\process@me{%
4283 \pdfpagesattr={%
4284 /CropBox [ \@pdfpagescrop ]%
4285 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
4286 \else
4287 ^^J\the\pdfpagesattr
4288 \fi
4289 }%
4290 }%
4291 \process@me
4292 \fi
4293 \pdfcatalog { % Catalog dictionary of PDF output.
4294 /PageMode \@pdfpagemode
4295 /URI << /Base (\@baseurl) >>
4296 }
4297 \ifx\@pdfstartview\@empty
4298 \else
4299 openaction goto page \@pdfstartpage {\@pdfstartview}%
4300 \fi
4301 \pdfcatalog{
4302 /ViewerPreferences <<
4303 \ifHy@toolbar\else /HideToolbar true \fi
4304 \ifHy@menubar\else /HideMenubar true \fi
4305 \ifHy>windowui\else /HideWindowUI true \fi
4306 \ifHy@fitwindow /FitWindow true \fi
4307 \ifHy@centerwindow /CenterWindow true \fi
4308 >>
4309 \ifx\pdf@pagelayout\@empty
4310 \else
4311 /PageLayout /\pdf@pagelayout\space
4312 \fi
4313 }%
4314 }

```

\PDF@FinishDoc

```

4315 \def\PDF@FinishDoc{%
4316 \pdfinfo{%
4317 /Author (\@pdfauthor)
4318 /Title (\@pdftitle)
4319 /Subject (\@pdfsubject)
4320 /Creator (\@pdfcreator)
4321 /Producer (\@pdfproducer)
4322 /Keywords (\@pdfkeywords)
4323 }%
4324 \Hy@DisableOption{pdfauthor}%
4325 \Hy@DisableOption{pdftitle}%
4326 \Hy@DisableOption{pdfsubject}%
4327 \Hy@DisableOption{pdfcreator}%
4328 \Hy@DisableOption{pdfproducer}%
4329 \Hy@DisableOption{pdfkeywords}%

```

4330 }

\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.

```
4331 \def\hyper@pagetransition{%
4332   \ifx\@pdfpagetransition\relax
4333   \else
4334     \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}}>>\END
4335   \ifx\@pdfpagetransition\@empty
4336   \else
4337     \edef\@processme{%
4338       \global\pdfpageattr{%
4339         \the\pdfpageattr
4340         ^^J/Trans << /S /\@pdfpagetransition\space >>%
4341       }%
4342     }%
4343     \@processme
4344   \fi
4345 \fi
4346 }
```

\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.

```
4347 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
4348   \ifx\#2\%
4349     \global\pdfpageattr{#1}%
4350   \else
4351     \Hy@RemoveTransPageAttr#1#4\END
4352   \fi
4353 }
```

\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.

```
4354 \def\hyper@pageduration{%
4355   \ifx\@pdfpageduration\relax
4356   \else
4357     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
4358   \ifx\@pdfpageduration\@empty
4359   \else
4360     \edef\@processme{%
4361       \global\pdfpageattr{%
4362         \the\pdfpageattr
4363         ^^J/Dur \@pdfpageduration\space
4364       }%
4365     }%
```

```

4366     \@processme
4367   \fi
4368 \fi
4369 }

```

\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.

```

4370 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
4371   \ifx\#2\%
4372     \global\pdfpageattr{#1}%
4373   \else
4374     \Hy@RemoveDurPageAttr#1#4\END
4375   \fi
4376 }

```

\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).

```

4377 \def\hyper@pagehidden{%
4378   \ifHy@useHidKey
4379     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
4380     \ifHy@pdfpagehidden
4381       \edef\@processme{%
4382         \global\pdfpageattr{%
4383           \the\pdfpageattr
4384           ^^J/Hid true % SPACE
4385         }%
4386       }%
4387       \@processme
4388     \fi
4389   \fi
4390 }

```

\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.

```

4391 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
4392   \ifx\#2\%
4393     \global\pdfpageattr{#1}%
4394   \else
4395     \Hy@RemoveHidPageAttr#1#4\END
4396   \fi
4397 }

```

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.

```

4398 \pdfoutput=1
4399 \pdfcompresslevel=9
4400 \AtBeginDocument{%
4401   \ifclassloaded{seminar}{%
4402     \setlength{\pdfhorigin}{1truein}%
4403     \setlength{\pdfvorigin}{1truein}%
4404     \ifportrait
4405       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
4406       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
4407     \else
4408       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
4409       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
4410     \fi
4411   }{%
4412     \setlength{\pdfpagewidth}{\paperwidth}%
4413     \setlength{\pdfpageheight}{\paperheight}%
4414   }%
4415 }
4416 \def\Acrobatmenu#1#2{%
4417   \leavevmode
4418   \pdfstartlink
4419   attr{%
4420     /Border [ \@pdfborder ]
4421     /H \pdfhighlight\space
4422     /C [ \@menubordercolor ]%
4423   }%
4424   user{
4425     /Subtype /Link
4426     /A <<
4427       /S /Named /N /#1
4428     >>
4429   }%
4430   \Hy@colorlink{\@menucolor}#2\close@pdflink
4431 }
4432 </pdfTeX>
4433 <*hypertex>

```

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

```

4434 \def\PDF@FinishDoc{}
4435 \def\PDF@SetupDoc{%
4436   \ifx\@baseurl\@empty\else
4437     \special{html:<base href="\@baseurl">}%
4438   \fi
4439 }
4440 \def\hyper@anchor#1{%
4441   \Hy@SaveLastskip
4442   \begingroup
4443     \let\protect=\string
4444     \hyper@chars
4445     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
4446   \endgroup
4447   \Hy@activeanchortrue
4448   \Hy@colorlink{\@anchorcolor}\anchor@spot\Hy@endcolorlink
4449   \special{html:</a>}%
4450   \Hy@activeanchorfalse
4451   \Hy@RestoreLastskip
4452 }
4453 \def\hyper@anchorstart#1{%
4454   \Hy@SaveLastskip
4455   \begingroup
4456     \hyper@chars
4457     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
4458   \endgroup
4459   \Hy@activeanchortrue
4460 }
4461 \def\hyper@anchorend{%
4462   \special{html:</a>}%
4463   \Hy@activeanchorfalse
4464   \Hy@RestoreLastskip
4465 }

```

```

4466 \def\@urltype{url}
4467 \def\hyper@linkstart#1#2{%
4468   \Hy@colorlink{\csname @#1color\endcsname}%
4469   \def\Hy@tempa{#1}%
4470   \ifx\Hy@tempa\@urltype
4471     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
4472   \else
4473     \begingroup
4474       \hyper@chars
4475       \special{html:<a href=\hyper@quote\##2\hyper@quote>}}%
4476     \endgroup
4477   \fi
4478 }
4479 \def\hyper@linkend{%
4480   \special{html:</a>}}%
4481   \Hy@endcolorlink
4482 }
4483 \def\hyper@linkfile#1#2#3{%
4484   \hyper@linkurl{#1}{file:#2\ifx\\#3\\else\##3\fi}%
4485 }
4486 \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.

```

4487   \leavevmode
4488   \ifHy@raiselinks
4489     \setbox\@tempboxa=\color@hbox #1\color@endbox
4490     \@linkdim\dp\@tempboxa
4491     \lower\@linkdim\hbox{%
4492       \hyper@chars
4493       \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
4494     }%
4495     \Hy@colorlink{\@urlcolor}#1%
4496     \@linkdim\ht\@tempboxa

```

Because of the interaction with the `dvi` 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).

```

4497     \advance\@linkdim by -6.5\p@
4498     \raise\@linkdim\hbox{\special{html:</a>}}%
4499     \Hy@endcolorlink
4500   \else
4501     \begingroup
4502       \hyper@chars
4503       \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
4504       \Hy@colorlink{\@urlcolor}#1%
4505       \special{html:</a>}}%
4506       \Hy@endcolorlink
4507     \endgroup
4508   \fi

```

```

4509 }
4510 \def\hyper@link#1#2#3{%
4511   \hyper@linkurl{#3}{\##2}%
4512 }

4513 \def\hyper@image#1#2{%
4514   \begingroup
4515     \hyper@chars
4516     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
4517   \endgroup
4518 }
4519 </hypertext>
4520 <*dviwindo>

```

40.3 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 `hypertext` 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.

```

4521 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
4522 \def\hyper@anchor#1{%
4523   \Hy@SaveLastskip
4524   \begingroup
4525     \let\protect=\string
4526     \special{mark: #1}%
4527   \endgroup
4528   \Hy@activeanchortrue
4529   \Hy@colorlink{\@anchorcolor}\anchor@spot\Hy@endcolorlink
4530   \Hy@activeanchorfalse
4531   \Hy@RestoreLastskip
4532 }
4533 \def\hyper@anchorstart#1{%
4534   \Hy@SaveLastskip
4535   \special{mark: #1}%
4536   \Hy@activeanchortrue
4537 }
4538 \def\hyper@anchorend{%
4539   \Hy@activeanchorfalse
4540   \Hy@RestoreLastskip
4541 }
4542 \def\hyper@linkstart#1#2{%
4543   \Hy@colorlink{\csname @#1color\endcsname}%

```



```

4544 \special{button:
4545     10000000
4546     \number\baselineskip\space
4547     #2%
4548 }%
4549 }
4550 \def\hyper@linkend{%
4551     \Hy@endcolorlink
4552 }
4553 \def\hyper@link#1#2#3{%
4554     \setbox\@tempboxa=\color@hbox #3\color@endbox
4555     \leavevmode
4556     \ifHy@raiselinks
4557         \@linkdim\dp\@tempboxa
4558         \lower\@linkdim\hbox{%
4559             \special{button:
4560                 \number\wd\@tempboxa\space
4561                 \number\ht\@tempboxa\space
4562                 #2%
4563             }%
4564             \Hy@colorlink{\csname @#1color\endcsname}#3%
4565             \Hy@endcolorlink
4566         }%
4567         \@linkdim\ht\@tempboxa
4568         \advance\@linkdim by -6.5\p@
4569         \raise\@linkdim\hbox{}%
4570     \else
4571         \special{button:
4572             \number\wd\@tempboxa\space
4573             \number\ht\@tempboxa\space
4574             #2%
4575         }%
4576         \Hy@colorlink{\csname @#1color\endcsname}#3\Hy@endcolorlink
4577     \fi
4578 }
4579 \def\hyper@linkurl#1#2{%
4580     \begingroup
4581     \hyperchars
4582     \leavevmode
4583     \setbox\@tempboxa=\color@hbox #1\color@endbox
4584     \ifHy@raiselinks
4585         \@linkdim\dp\@tempboxa
4586         \lower\@linkdim\hbox{%
4587             \special{button:
4588                 \number\wd\@tempboxa\space
4589                 \number\ht\@tempboxa\space
4590                 launch: \wwwbrowser\space
4591                 #2%
4592             }%
4593             \Hy@colorlink{\@urlcolor}#1\Hy@endcolorlink

```

```

4594     }%
4595     \@linkdim\ht\@tempboxa
4596     \advance\@linkdim by -6.5\p@
4597     \raise\@linkdim\hbox{}%
4598   \else
4599     \special{button:
4600       \number\wd\@tempboxa\space
4601       \number\ht\@tempboxa\space
4602       launch: \wwwbrowser\space
4603       #2%
4604     }%
4605     \Hy@colorlink{\@urlcolor}#1\Hy@endcolorlink
4606   \fi
4607 \endgroup
4608 }
4609 \def\hyper@linkfile#1#2#3{%
4610   \begingroup
4611     \hyper@chars
4612     \leavevmode
4613     \setbox\@tempboxa=\color@hbox #1\color@endbox
4614     \ifHy@raiselinks
4615       \@linkdim\dp\@tempboxa
4616       \lower\@linkdim\hbox{}%
4617       \special{button:
4618         \number\wd\@tempboxa\space
4619         \number\ht\@tempboxa\space
4620         #3,
4621         file: #2%
4622       }%
4623       \Hy@colorlink{\@filecolor}#1\Hy@endcolorlink
4624     }%
4625     \@linkdim\ht\@tempboxa
4626     \advance\@linkdim by -6.5\p@
4627     \raise\@linkdim\hbox{}%
4628   \else
4629     \special{button:
4630       \number\wd\@tempboxa\space
4631       \number\ht\@tempboxa\space
4632       #3,
4633       file: #2
4634     }%
4635     \Hy@colorlink{\@filecolor}#1\Hy@endcolorlink
4636   \fi
4637 \endgroup
4638 }
4639 \def\@pdfproducer{dviwindo + Distiller}
4640 \def\PDF@FinishDoc{%
4641   \special{PDF: Keywords \@pdfkeywords}%
4642   \special{PDF: Title \@pdftitle}%
4643   \special{PDF: Creator \@pdfcreator}%

```

```

4644 \special{PDF: Author \@pdfauthor}%
4645 \special{PDF: Producer \@pdfproducer}%
4646 \special{PDF: Subject \@pdfsubject}%
4647 \Hy@DisableOption{pdfauthor}%
4648 \Hy@DisableOption{pdftitle}%
4649 \Hy@DisableOption{pdfsubject}%
4650 \Hy@DisableOption{pdfcreator}%
4651 \Hy@DisableOption{pdfproducer}%
4652 \Hy@DisableOption{pdfkeywords}%
4653 }
4654 \def\PDF@SetupDoc{%
4655 \ifx\@baseurl\@empty\else
4656 \special{PDF: Base \@baseurl}%
4657 \fi
4658 \ifx\@pdfpagescrop\@empty\else
4659 \special{PDF: BBox \@pdfpagescrop}%
4660 \fi
4661 \pdfmark{pdfmark=/DOCVIEW,
4662 Page=\@pdfstartpage,
4663 View=\@pdfstartview,
4664 PageMode=\@pdfpagemode
4665 }%
4666 \ifx\@pdfpagescrop\@empty
4667 \else
4668 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
4669 \fi
4670 \pdfmark{pdfmark=/PUT,
4671 Raw={
4672 \string{Catalog}\string} <<
4673 /ViewerPreferences <<
4674 \ifHy@toolbar\else /HideToolbar true \fi
4675 \ifHy@menubar\else /HideMenubar true \fi
4676 \ifHy>windowui\else /HideWindowUI true \fi
4677 \ifHy@fitwindow /FitWindow true \fi
4678 \ifHy@centerwindow /CenterWindow true \fi
4679 >>
4680 \ifx\pdf@pagelayout\@empty
4681 \else
4682 /PageLayout /\pdf@pagelayout\space
4683 \fi
4684 >>%
4685 }%
4686 }%
4687 }
4688 </dviwindo>
4689 <*dvi pdfm>

```

40.4 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```
4690 \newsavebox{\pdfm@box}
4691 \def\@pdfm@mark#1{\special{pdf:#1}}
4692 \def\@pdfm@dest#1{%
4693   \Hy@SaveLastskip
4694   \@pdfm@mark{dest (#1) [@thispage /\@pdfview\space @xpos @ypos]]}%
4695   \Hy@RestoreLastskip
4696 }
4697 \providecommand\@pdfview{XYZ}
4698 \providecommand\@pdfborder{0 0 1}
4699 \def\hyper@anchor#1{%
4700   \@pdfm@dest{#1}%
4701 }
4702 \def\hyper@anchorstart#1{%
4703   \Hy@activeanchortrue
4704   \@pdfm@dest{#1}%
4705 }
4706 \def\hyper@anchorend{%
4707   \Hy@activeanchorfalse
4708 }
4709 \def\Hy@undefinedname{UNDEFINED}
4710 \def\hyper@linkstart#1#2{%
4711   \protected@edef\Hy@testname{#2}%
4712   \ifx\Hy@testname\@empty
4713     \let\Hy@testname\Hy@undefinedname
4714   \fi
4715   \@pdfm@mark{%
4716     bann <<
4717       /Type /Annot
4718       /Subtype /Link
4719       /Border [ \@pdfborder]
4720       /C [ \csname @#1bordercolor\endcsname]
4721       /A <<
4722         /S /GoTo
4723         /D ( \Hy@testname)
4724       >>
4725     >>
4726   }%
4727   \Hy@colorlink{ \csname @#1color\endcsname}%
4728 }
4729 \def\hyper@linkend{%
4730   \Hy@endcolorlink
4731   \@pdfm@mark{eann}%
4732 }
4733 \def\hyper@link#1#2#3{%
4734   \hyper@linkstart{#1}{#2}#3\hyper@linkend
4735 }
4736 \def\hyper@linkfile#1#2#3{%
```

```

4737 \pdfmark{%
4738   bann <<
4739     /Type /Annot
4740     /Subtype /Link
4741     /Border [ \@pdfborder]
4742     /C [ \@filebordercolor]
4743     /A <<
4744       /S /GoToR
4745       /F (#2)
4746       /D \ifx\#3\ [0 \@pdfstartview]\else(#3)\fi\space
4747       \ifHy@newwindow /NewWindow true \fi
4748     >>
4749   >>%
4750 }%
4751 \Hy@colorlink{ \@filecolor}#1\Hy@endcolorlink
4752 \pdfmark{eann}%
4753 }
4754 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
4755 \pdfmark{%
4756   bann <<
4757     /Type /Annot
4758     /Subtype /Link
4759     /Border [ \@pdfborder]
4760     /C [ \@filebordercolor]
4761     /A <<
4762       /S /Launch
4763       /F (#1)
4764       \ifHy@newwindow /NewWindow true \fi
4765       \ifx\#3\%
4766       \else
4767         /Win << /P (#3) /F (#1) >>
4768       \fi
4769     >>
4770   >>%
4771 }%
4772 \Hy@colorlink{ \@filecolor}#2\Hy@endcolorlink
4773 \pdfmark{eann}%
4774 }
4775 \def\hyper@linkurl#1#2{%
4776 \pdfmark{%
4777   bann <<
4778     /Type /Annot
4779     /Subtype /Link
4780     /Border [ \@pdfborder]
4781     /C [ \@urlbordercolor]
4782     /A <<
4783       /S /URI
4784       /URI (#2)
4785     >>
4786   >>%

```

```

4787 }%
4788 \Hy@colorlink{\@urlcolor}#1\Hy@endcolorlink
4789 \@pdfm@mark{eann}%
4790 }
4791 \def\Acrobatmenu#1#2{%
4792 \@pdfm@mark{%
4793   bann <<
4794     /Type /Annot
4795     /Subtype /Link
4796     /A <<
4797       /S /Named
4798       /N /#1
4799     >>
4800     /Border [ \@pdfborder ]
4801     /C [ \@menubordercolor ]
4802   >>%
4803 }%
4804 \Hy@colorlink{\@menucolor}#2\Hy@endcolorlink
4805 \@pdfm@mark{eann}%
4806 }
4807 \def\@pdfproducer{dvipdfm}
4808 \def\PDF@FinishDoc{%
4809 \@pdfm@mark{%
4810   docinfo <<
4811     /Title (\@pdftitle)
4812     /Subject (\@pdfsubject)
4813     /Creator (\@pdfcreator)
4814     /Author (\@pdfauthor)
4815     /Producer (\@pdfproducer)
4816     /Keywords (\@pdfkeywords)
4817   >>%
4818 }%
4819 \Hy@DisableOption{pdfauthor}%
4820 \Hy@DisableOption{pdftitle}%
4821 \Hy@DisableOption{pdfsubject}%
4822 \Hy@DisableOption{pdfcreator}%
4823 \Hy@DisableOption{pdfproducer}%
4824 \Hy@DisableOption{pdfkeywords}%
4825 }
4826 \def\PDF@SetupDoc{%
4827 \@pdfm@mark{%
4828   docview <<
4829     /Page \@pdfstartpage\space
4830     /View \@pdfstartview\space
4831     /URI << /Base (\@baseurl) >>
4832     /PageMode \@pdfpagemode
4833     /ViewerPreferences <<
4834       \ifHy@toolbar\else /HideToolbar true \fi
4835       \ifHy@menubar\else /HideMenubar true \fi
4836       \ifHy>windowui\else /HideWindowUI true \fi

```

```

4837         \ifHy@fitwindow /FitWindow true \fi
4838         \ifHy@centerwindow /CenterWindow true \fi
4839     >>
4840     \ifx\pdf@pagelayout\@empty
4841     \else
4842         /PageLayout /\pdf@pagelayout\space
4843     \fi
4844     >>%
4845 }%
4846 \ifx\@pdfpagescrop\@empty
4847 \else
4848     \@pdfm@mark{put @pages << /CropBox [ \@pdfpagescrop ] >>}
4849 \fi
4850 }
4851 </dvipdfm>

```

40.5 VTeX typesetting system

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

```

4852 <*vtexhtml>
4853 \RequirePackage{vtexhtml}
4854 \newif\if@Localurl
4855 \def\PDF@FinishDoc{}
4856 \def\PDF@SetupDoc{%
4857     \ifx\@baseurl\@empty\else
4858         \special{!direct <base href="\@baseurl">}%
4859     \fi
4860 }
4861 \def\@urltype{url}
4862 \def\hyper@link#1#2#3{%
4863     \leavevmode
4864     \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
4865     #3%
4866     \special{!direct </a>}%
4867 }
4868 \def\hyper@linkurl#1#2{%
4869     \begingroup
4870     \hyper@chars
4871     \leavevmode
4872     \MathBSuppress=1\relax
4873     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
4874     #1%
4875     \MathBSuppress=0\relax
4876     \special{!direct </a>}%
4877     \endgroup
4878 }
4879 \def\hyper@linkfile#1#2#3{%
4880     \hyper@linkurl{#1}{file:#2\ifx\\#3\\\else\##3\fi}%

```

```

4881 }
4882 \def\hyper@linkstart#1#2{%
4883   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
4884     \@Localurltrue
4885     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
4886   \else
4887     \@Localurlfalse
4888     \begingroup
4889       \hyper@chars
4890       \special{!aref #2}%
4891     \endgroup
4892   \fi
4893 }
4894 \def\hyper@linkend{%
4895   \if@Localurl
4896     \special{!endaref}%
4897   \else
4898     \special{!direct </a>}%
4899   \fi
4900 }
4901 \def\hyper@anchorstart#1{%
4902   \Hy@SaveLastskip
4903   \begingroup
4904     \hyper@chars
4905     \special{!aname #1}%
4906     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
4907   \endgroup
4908   \Hy@activeanchortrue
4909 }
4910 \def\hyper@anchorend{%
4911   \special{!direct </a>}%
4912   \Hy@activeanchorfalse
4913   \Hy@RestoreLastskip
4914 }
4915 \def\hyper@anchor#1{%
4916   \Hy@SaveLastskip
4917   \begingroup
4918     \let\protect=\string
4919     \hyper@chars
4920     \leavevmode
4921     \special{!aname #1}%
4922     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
4923   \endgroup
4924   \Hy@activeanchortrue
4925   \bgroup\anchor@spot\egroup
4926   \special{!direct </a>}%
4927   \Hy@activeanchorfalse
4928   \Hy@RestoreLastskip
4929 }
4930 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}

```



```

4931 \def\@endForm{}
4932 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
4933   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
4934 }
4935 \def\@TextField[#1]#2{% parameters, label
4936   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
4937 }
4938 \def\@CheckBox[#1]#2{% parameters, label
4939   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
4940 }
4941 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
4942   \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
4943 }
4944 \def\@PushButton[#1]#2{% parameters, label
4945   \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
4946 }
4947 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
4948 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
4949 \</vtxhtml>
4950 \<vtx>

```

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.

```

4951 \ifx\mediaheight\@undefined
4952 \else
4953   \ifx\mediaheight\relax
4954   \else
4955     \providecommand*\VTeXInitMediaSize{%
4956       \setlength\mediaheight\paperheight
4957       \setlength\mediawidth\paperwidth
4958     }%
4959     \AtBeginDocument{\VTeXInitMediaSize}%
4960   \fi
4961 \fi

```

Older versions of VTeX require xyz in lower case.

```

4962 \providecommand\@pdfview{xyz}
4963 \providecommand\@pdfborder{0 0 1}%
4964 \def\CurrentBorderColor{\@linkbordercolor}
4965 \def\hyper@anchor#1{%
4966   \Hy@SaveLastskip
4967   \begingroup
4968     \let\protect=\string
4969     \hyper@chars
4970     \special{!aname #1;\@pdfview}%
4971   \endgroup
4972   \Hy@activeanchortrue
4973   \Hy@colorlink{\@anchorcolor}\anchor@spot\Hy@endcolorlink
4974   \Hy@activeanchorfalse

```

```

4975 \Hy@RestoreLastskip
4976 }
4977 \def\hyper@anchorstart#1{%
4978 \Hy@SaveLastskip
4979 \begingroup
4980 \hyper@chars
4981 \special{!aname #1;\@pdfview}%
4982 \endgroup
4983 \Hy@activeanchortrue
4984 }
4985 \def\hyper@anchorend{%
4986 \Hy@activeanchorfalse
4987 \Hy@RestoreLastskip
4988 }
4989 \def\@urltype{url}
4990 \def\Hy@undefinedname{UNDEFINED}
4991 \def\hyper@linkstart#1#2{%
4992 \Hy@colorlink{\csname @#1color\endcsname}%
4993 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
4994 \def\Hy@tempa{#1}%
4995 \ifx\Hy@tempa\@urltype
4996 \special{!%
4997 \aef <u=/Type /Action /S /URI /URI (#2)>;%
4998 a=</Border [\@pdfborder] /C [\CurrentBorderColor]>%
4999 }%
5000 \else
5001 \protected@edef\Hy@testname{#2}%
5002 \ifx\Hy@testname\@empty
5003 \let\Hy@testname\Hy@undefinedname
5004 \fi
5005 \special{!%
5006 \aef \Hy@testname;%
5007 a=</Border [\@pdfborder] /C [\CurrentBorderColor]>%
5008 }%
5009 \fi
5010 }
5011 \def\hyper@linkend{%
5012 \special{!endaref}%
5013 \Hy@endcolorlink
5014 }
5015 \def\hyper@linkfile#1#2#3{%
5016 \leavevmode
5017 \special{!%
5018 \aef <f=#2>#3;%
5019 a=</Border [\@pdfborder] /C [\@filebordercolor]>%
5020 }%
5021 \Hy@colorlink{\@filecolor}#1\Hy@endcolorlink
5022 \special{!endaref}%
5023 }
5024 \def\hyper@linkurl#1#2{%

```

```

5025 \begingroup
5026 \hyper@chars
5027 \leavevmode
5028 \special{!%
5029   aref <u=/Type /Action /S /URI /URI (#2)>;%
5030   a=</Border [\@pdfborder] /C [\@urlbordercolor]>%
5031   }%
5032   \Hy@colorlink{\@urlcolor}#1\Hy@endcolorlink
5033   \special{!endaref}%
5034 \endgroup
5035 }
5036 \def\hyper@link#1#2#3{%
5037   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5038   \leavevmode
5039   \protected@edef\Hy@testname{#2}%
5040   \ifx\Hy@testname\@empty
5041     \let\Hy@testname\Hy@undefinedname
5042   \fi
5043   \special{!%
5044     aref \Hy@testname;%
5045     a=</Border [\@pdfborder] /C [\CurrentBorderColor]>%
5046     }%
5047     \Hy@colorlink{\csname @#1color\endcsname}#3\Hy@endcolorlink
5048     \special{!endaref}%
5049   }
5050 \def\hyper@image#1#2{%
5051   \hyper@linkurl{#2}{#1}%
5052 }
5053 \def\@hyper@launch run:#1\#2#3{%
5054   \leavevmode
5055   \special{!aref
5056     <u=%
5057       /Type /Action
5058       /S /Launch
5059       /F (#1)
5060       \ifHy@newwindow /NewWindow true \fi
5061       \ifx\#3\@else /Win << /F (#1) /P (#3) >> \fi%
5062     >;%
5063     a=</Border [\@pdfborder] /C [\@runbordercolor]>%
5064     }%
5065     \Hy@colorlink{\@filecolor}#2\Hy@endcolorlink
5066     \special{!endaref}%
5067   }
5068 \def\Acrobatmenu#1#2{%
5069   \leavevmode
5070   \special{!%
5071     aref <u=/S /Named /N /#1>;%
5072     a=</Border [\@pdfborder] /C [\@menubordercolor]>%
5073     }%
5074     \Hy@colorlink{\@menucolor}#2\Hy@endcolorlink

```

```

5075 \special{!endaref}%
5076 }

```

The following code (transition effects) is made by Alex Kostin.
The code below makes sense for \TeX 7.02 or later.
Please never use $\text{\ifundefined\TeXversion}\{...\}$ *globally*.

```

5077 \ifnum\Hy@TeXversion<702 %
5078 \else
5079 \def\hyper@pagetransition{%
5080 \ifx\pdfpagetransition\relax
5081 \else
5082 \ifx\pdfpagetransition\empty

```

Standard incantation.

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

```

5083 \else
5084 \hvtex@parse@trans\pdfpagetransition
5085 \fi
5086 \fi
5087 }

```

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

Syntax of \TeX $\text{\special}\{!trans <transition_effect>\}$:

```

<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>]
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

5088 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
5089 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
5090 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
5091 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
5092 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
5093 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}

```

Optional parameters:

```

5094 \def\hvtex@par@dimension{/Dm}
5095 \def\hvtex@par@direction{/Di}

```

```

5096 \def\hvtex@par@duration{/D}
5097 \def\hvtex@par@motion{/M}

```

Tokenizer:

```

5098 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}

```

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

```

5099 \def\hvtex@gettoken@#1 #2\@nil{%
5100   \edef\hvtex@token{#1}%
5101   \edef\hvtex@buffer{#2}%
5102 }
5103 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

5104   \let\hvtex@trans@code\@empty
5105   \let\hvtex@param@dimension\@empty
5106   \let\hvtex@param@direction\@empty
5107   \let\hvtex@param@duration\@empty
5108   \let\hvtex@param@motion\@empty
5109   \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

5110   \hvtex@gettoken
5111   \ifx\hvtex@token\@empty

```

Leading space(s)?

```

5112     \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

5113     \else
5114       \hvtex@gettoken
5115     \fi
5116   \fi
5117   \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

5118   \hvtex@trans@params
5119 }

```

Reentrant macro to parse optional parameters.

```

5120 \def\hvtex@trans@params{%
5121   \ifx\hvtex@buffer\@empty
5122   \else
5123     \hvtex@gettoken
5124     \let\hvtex@trans@par\hvtex@token
5125     \ifx\hvtex@buffer\@empty
5126     \else
5127       \hvtex@gettoken
5128       \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

5129         \let\hvtex@param@duration\hvtex@token
5130       \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```
5131      \expandafter\edef\expandafter\hvtex@param@motion
5132      \expandafter{\expandafter\@gobble\hvtex@token}%
5133      \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
5134      \expandafter\edef\expandafter\hvtex@param@dimension
5135      \expandafter{\expandafter\@gobble\hvtex@token}%
5136      \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).

```
5137      \let\hvtex@param@direction\hvtex@token
5138      \fi\fi\fi\fi
5139      \fi
5140      \fi
5141      \ifx\hvtex@buffer\@empty
5142      \let\next\hvtex@produce@trans
5143      \else
5144      \let\next\hvtex@trans@params
5145      \fi
5146      \next
5147  }
```

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

```
5148  \def\hvtex@produce@trans{%
5149    \let\vtex@trans@special\@empty
5150    \if S\hvtex@trans@code
5151      \edef\vtex@trans@special{\hvtex@trans@code
5152        \hvtex@param@dimension\hvtex@param@motion}%
5153    \else \if B\hvtex@trans@code
5154      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
5155    \else \if X\hvtex@trans@code
5156      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
5157    \else \if W\hvtex@trans@code
5158      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
5159    \else \if D\hvtex@trans@code
5160      \let\vtex@trans@special\hvtex@trans@code
5161    \else \if G\hvtex@trans@code
5162      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
5163    \fi\fi\fi\fi\fi\fi
5164    \ifx\vtex@trans@special\@empty
5165    \else
5166      \ifx\hvtex@param@duration\@empty
5167      \else
5168        \setlength{\dimen@}{\hvtex@param@duration\p@}%
```

I'm not guilty of possible overflow.

```
5169      \multiply\dimen@\@m
5170      \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
```

```

5171      \fi
      And all the mess is just for this.
5172      \special{!trans \vtex@trans@special}%
5173      \fi
5174  }

5175  \def\hyper@pageduration{%
5176    \ifx\@pdfpageduration\relax
5177    \else
5178      \ifx\@pdfpageduration\@empty
5179        \special{!duration-}%
5180      \else
5181        \special{!duration \@pdfpageduration}%
5182      \fi
5183    \fi
5184  }

5185  \def\hyper@pagehidden{%
5186    \ifHy@useHidKey
5187      \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
5188    \fi
5189  }
5190 \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.

```

5191 \def\@pdfproducer{VTeX}
5192 \ifnum\Hy@VTeXversion>\z@
5193   \count@\VTeXversion
5194   \divide\count@ 100
5195   \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
5196   \multiply\count@ -100
5197   \advance\count@\VTeXversion
5198   \edef\@pdfproducer{%
5199     \@pdfproducer
5200     .\ifnum\count@<10 0\fi\the\count@,\space
5201     \ifnum\OpMode=\@ne PDF\else PS\fi
5202     \space backend%
5203     \ifx\gexmode\@undefined\else
5204       \ifnum\gexmode>\z@\space with GeX\fi
5205     \fi
5206   }
5207 \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).

```

5208 \def\PDF@SetupDoc{%
5209   \ifx\pdfpagescrop\@empty
5210   \else
5211     \special{!pdfinfo b=<\pdfpagescrop>}%
5212   \fi
5213   \special{!onopen Page\pdfstartpage}%
5214   \special{!pdfinfo p=<\pdfpagemode>}%
5215   \ifx\pdfbaseurl\@empty
5216   \else
5217     \special{!pdfinfo u=<<</Base (\pdfbaseurl)>>>}%
5218   \fi
5219   \special{!pdfinfo v=<<<%
5220     \ifHy@toolbar\else /HideToolbar true \fi
5221     \ifHy@menubar\else /HideMenubar true \fi
5222     \ifHy>windowui\else /HideWindowUI true \fi
5223     \ifHy@fitwindow /FitWindow true \fi
5224     \ifHy@centerwindow /CenterWindow true \fi
5225   >>>}%
5226   \ifx\pdf@pagelayout\@empty
5227   \else
5228     \special{!pdfinfo l=</\pdf@pagelayout\space>}%
5229   \fi
5230 }%
5231 \def\PDF@FinishDoc{%
5232   \special{!pdfinfo a=<\pdfauthor>}%
5233   \special{!pdfinfo t=<\pdftitle>}%
5234   \special{!pdfinfo s=<\pdfsubject>}%
5235   \special{!pdfinfo c=<\pdfcreator>}%
5236   \special{!pdfinfo r=<\pdfproducer>}%
5237   \special{!pdfinfo k=<\pdfkeywords>}%
5238   \Hy@DisableOption{pdfauthor}%
5239   \Hy@DisableOption{pdftitle}%
5240   \Hy@DisableOption{pdfsubject}%
5241   \Hy@DisableOption{pdfcreator}%
5242   \Hy@DisableOption{pdfproducer}%

```



```

5243 \Hy@DisableOption{pdfkeywords}%
5244 }
5245 </vtex>
5246 <*pdfmark | dvipdf>

```

40.6 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

```

5247 \def\hyper@anchor#1{%
5248   \Hy@SaveLastskip
5249   \begingroup
5250     \pdfmark[\anchor@spot]{%
5251       pdfmark=/DEST,%
5252       linktype=anchor,%
5253       View=/\@pdfview \@pdfviewparams,%
5254       DestAnchor={#1}%
5255     }%
5256   \endgroup
5257   \Hy@RestoreLastskip
5258 }
5259 <*dvipdf>
5260 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
5261 \def\hyper@anchorend{\Hy@activeanchorfalse}
5262 \def\hyper@linkstart#1#2{%
5263   \Hy@colorlink{\csname @#1color\endcsname}%
5264   \xdef\hyper@currentanchor{#2}%
5265 }
5266 \def\hyper@linkend{%
5267   \Hy@endcolorlink
5268 }
5269 </dvipdf>
5270 <*pdfmark>
5271 \ifundefined{hyper@anchorstart}{-}{\endinput}
5272 \def\hyper@anchorstart#1{%
5273   \Hy@SaveLastskip
5274   \literalps@out{H.S}%
5275   \xdef\hyper@currentanchor{#1}%

```

```

5276 \Hy@activeanchortrue
5277 }
5278 \def\hyper@anchorend{%
5279 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
5280 \pdfmark{%
5281 pdfmark=/DEST,%
5282 linktype=anchor,%
5283 View=/\@pdfview \@pdfviewparams,%
5284 DestAnchor=\hyper@currentanchor,%
5285 Raw=H.B%
5286 }%
5287 \Hy@activeanchorfalse
5288 \Hy@RestoreLastskip
5289 }
5290 \def\hyper@linkstart#1#2{%
5291 \ifHy@breaklinks
5292 \else
5293 \leavevmode\hbox\bgroup
5294 \fi
5295 \Hy@colorlink{\csname @#1color\endcsname}%
5296 \literalps@out{H.S}%
5297 \xdef\hyper@currentanchor{#2}%
5298 \gdef\hyper@currentlinktype{#1}%
5299 }
5300 \def\hyper@linkend{%
5301 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
5302 \edef\Hy@temp{\csname @\hyper@currentlinktype bordercolor\endcsname}%
5303 \pdfmark{%
5304 pdfmark=/ANN,%
5305 linktype=link,%
5306 Subtype=/Link,%
5307 Dest=\hyper@currentanchor,%
5308 AcroHighlight=\@pdfhighlight,%
5309 Border=\@pdfborder,%
5310 Color=\Hy@temp,%
5311 Raw=H.B%
5312 }%
5313 \Hy@endcolorlink
5314 \ifHy@breaklinks
5315 \else
5316 \egroup
5317 \fi
5318 }

```

\hyper@pagetransition

```

5319 \def\hyper@pagetransition{%
5320 \ifx\@pdfpagetransition\relax
5321 \else
5322 \ifx\@pdfpagetransition\empty
5323 % 1. Does an old entry have to be deleted?

```

```

5324      % 2. If 1=yes, how to delete?
5325      \else
5326      \pdfmark{%
5327      pdfmark=/PUT,%
5328      Raw={%
5329      {ThisPage} <<
5330      /Trans << /S /\@pdfpagetransition\space >>
5331      >>%
5332      }%
5333      }%
5334      \fi
5335      \fi
5336      }

```

\hyper@pageduration

```

5337 \def\hyper@pageduration{%
5338 \ifx\@pdfpageduration\relax
5339 \else
5340 \ifx\@pdfpageduration\@empty
5341 % 1. Does an old entry have to be deleted?
5342 % 2. If 1=yes, how to delete?
5343 \else
5344 \pdfmark{%
5345 pdfmark=/PUT,%
5346 Raw={%
5347 {ThisPage} <</Dur \@pdfpageduration>>%
5348 }%
5349 }%
5350 \fi
5351 \fi
5352 }

```

\hyper@pagehidden

```

5353 \def\hyper@pagehidden{%
5354 \ifHy@useHidKey
5355 \pdfmark{%
5356 pdfmark=/PUT,%
5357 Raw={%
5358 {ThisPage} <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
5359 }%
5360 }%
5361 \fi
5362 }

5363 </pdfmark>
5364 \def\hyper@image#1#2{%
5365 \hyper@linkurl{#2}{#1}}
5366 \def\Hy@undefinedname{UNDEFINED}
5367 \def\hyper@link#1#2#3{%
5368 \edef\Hy@temp{\csname @#1bordercolor\endcsname}%

```

```

5369 \begingroup
5370 \protected@edef\Hy@testname{#2}%
5371 \ifx\Hy@testname\@empty
5372 \let\Hy@testname\Hy@undefinedname
5373 \fi
5374 <*dvipdf>
5375 \pdfmark[{#3}]{%
5376 pdfmark=/LNK,%
5377 },%
5378 linktype=#1,%
5379 AcroHighlight=\@pdfhighlight,%
5380 Border=\@pdfborder,%
5381 Color=\Hy@temp,%
5382 Dest=\Hy@testname
5383 }%
5384 </dvipdf>
5385 <*pdfmarkbase>
5386 \pdfmark[{#3}]{%
5387 Color=\Hy@temp,%
5388 linktype=#1,%
5389 AcroHighlight=\@pdfhighlight,%
5390 Border=\@pdfborder,%
5391 pdfmark=/ANN,%
5392 Subtype=/Link,%
5393 Dest=\Hy@testname
5394 }%
5395 </pdfmarkbase>
5396 \endgroup
5397 }
5398 \newtoks\pdf@docset
5399 \def\PDF@FinishDoc{%
5400 \pdfmark{%
5401 pdfmark=/DOCINFO,%
5402 Title=\@pdftitle,%
5403 Subject=\@pdfsubject,%
5404 Creator=\@pdfcreator,%
5405 Author=\@pdfauthor,%
5406 Producer=\@pdfproducer,%
5407 Keywords=\@pdfkeywords
5408 }%
5409 \Hy@DisableOption{pdfauthor}%
5410 \Hy@DisableOption{pdftitle}%
5411 \Hy@DisableOption{pdfsubject}%
5412 \Hy@DisableOption{pdfcreator}%
5413 \Hy@DisableOption{pdfproducer}%
5414 \Hy@DisableOption{pdfkeywords}%
5415 }
5416 \def\PDF@SetupDoc{%
5417 \ifx\@baseurl\@empty\def\@dbaseUrl{}\else
5418 \def\@dbaseUrl{%

```

```

5419 \fi
5420 \pdfmark{%
5421   pdfmark=/DOCVIEW,%
5422   Page=\@pdfstartpage,%
5423   View=\@pdfstartview,%
5424   URI={<< /Base (\@baseurl) >>},%
5425   PageMode=\@pdfpagemode
5426 }%
5427 \ifx\@pdfpagescrop\@empty
5428 \else
5429   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5430 \fi
5431 \pdfmark{%
5432   pdfmark=/PUT,%
5433   Raw={%
5434     \string{Catalog\string} <<
5435     /ViewerPreferences <<
5436       \ifHy@toolbar\else /HideToolbar true \fi
5437       \ifHy@menubar\else /HideMenubar true \fi
5438       \ifHy>windowui\else /HideWindowUI true \fi
5439       \ifHy@fitwindow /FitWindow true \fi
5440       \ifHy@centerwindow /CenterWindow true \fi
5441     >>
5442     \ifx\pdf@pagelayout\@empty
5443     \else
5444       /PageLayout /\pdf@pagelayout\space
5445     \fi
5446   >>%
5447 }%
5448 }%
5449 }
5450 </pdfmark | dvipdf>
5451 <*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.

```

5452 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}]
5453 \def\pdfmark@[#1]#2{%
5454   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
5455   \@processme
5456   \let\pdf@type\relax
5457   \setkeys{PDF}{#2}%
5458   \ifx\pdf@type\relax
5459     \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
5460     \ifx\\#1\\\relax\else\pdf@rect{#1}\fi
5461   \else
5462     \ifx\\#1\\\relax

```

```

5463 <pdfmarkbase> \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
5464 <dvipdf> \literalps@out{/ANN >>}%
5465 \else
5466 \Hy@colorlink{\@ifundefined{@\pdf@linktype color}%
5467 {\@linkcolor}%
5468 {\csname @\pdf@linktype color\endcsname}}%
5469 \pdf@rect{#1}%
5470 <pdfmarkbase> \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
5471 <dvipdf> \literalps@out{/ANN >>}%
5472 \Hy@endcolorlink
5473 \fi
5474 \fi
5475 }

```

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).

```

5476 \newsavebox{\pdf@box}
5477 \def\pdf@rect#1{%
5478 <dvipdf> \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
5479 \leavevmode
5480 \sbox\pdf@box{#1}%
5481 \dimen@ \ht\pdf@box
5482 \leavevmode
5483 \ifdim\dp\pdf@box=\z@
5484 \literalps@out{H.S}%
5485 \else
5486 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
5487 \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. . .).

```

5488 \ifHy@breaklinks\unhbox\else\box\fi\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

5489 \ifdim\dimen@=\z@
5490 \literalps@out{H.R}%
5491 \else
5492 \raise\dimen@\hbox{\literalps@out{H.R}}%
5493 \fi
5494 \pdf@addtoksx{H.B}%
5495 }

```

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.

```

5496 \newtoks\pdf@toks

```

```

5497 \newtoks\pdf@defaulttoks
5498 \pdf@defaulttoks={}%
5499 \def\pdf@addtoks#1#2{%
5500   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
5501   \@processme
5502 }
5503 \def\pdf@addtoksx#1{%
5504   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
5505   \@processme
5506 }
5507 \def\PDFdefaults#1{%
5508   \pdf@defaulttoks={#1}%
5509 }

```

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

```

5510 % what is the type of pdfmark?
5511 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
5512 % what is the link type?
5513 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
5514 \def\pdf@linktype{link}
5515 % parameter is a stream of PDF
5516 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
5517 % parameter is a name
5518 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
5519 % parameter is a array
5520 \define@key{PDF}{Border}{\pdf@addtoks{[#1]}{Border}}
5521 % parameter is a array
5522 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
5523 % parameter is a string
5524 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
5525 % parameter is a integer
5526 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
5527 % parameter is a array
5528 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
5529 % parameter is a string
5530 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
5531 % parameter is a string or file
5532 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
5533 % parameter is a destination
5534 \define@key{PDF}{Dest}{%
5535   \begingroup
5536     \edef\x{#1}%
5537     \expandafter\endgroup
5538     \ifx\x\@empty\else\pdf@addtoks{(#1) cvn}{Dest}\fi
5539 }
5540 \define@key{PDF}{DestAnchor}{%
5541   \begingroup
5542     \edef\x{#1}%
5543     \expandafter\endgroup
5544     \ifx\x\@empty\else\pdf@addtoks{(#1) cvn}{Dest}\fi

```

```

5545 }
5546 % parameter is a string
5547 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
5548 % parameter is a string
5549 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
5550 % parameter is a int
5551 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
5552 % parameter is a name
5553 \define@key{PDF}{AcroHighlight}{\pdf@addtoks{#1}{H}}
5554 % parameter is a string
5555 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
5556 % parameter is a string
5557 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
5558 % parameter is a string
5559 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
5560 % parameter is a string
5561 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
5562 % parameter is a Boolean
5563 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
5564 % parameter is a integer or name
5565 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
5566 % parameter is a name
5567 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
5568 % parameter is a string
5569 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
5570 % parameter is a array
5571 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}
5572 % parameter is a integer
5573 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
5574 % parameter is a name
5575 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
5576 \dviopdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
5577 % parameter is a string
5578 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
5579 % parameter is a string
5580 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
5581 % parameter is a string
5582 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
5583 % parameter is an array
5584 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}
5585 % parameter is a string
5586 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

These are the keys used in the DOCINFO section.

5587 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
5588 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
5589 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
5590 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
5591 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
5592 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}

```



```

5593 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
5594 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
5595 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
5596 </pdfmarkbase | dvipdf>
5597 <*pdfmark | dvipdf>
5598 \def\Acrobatmenu#1#2{%
5599   \pdfmark[{#2}]{%
5600     linktype=menu,%
5601     pdfmark=/ANN,%
5602     AcroHighlight=\pdfhighlight,%
5603     Border=\pdfborder,%
5604     Action=<< /Subtype /Named /N /#1 >>,%
5605     Subtype=/Link%
5606   }%
5607 }

```

And now for some useful examples:

```

5608 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
5609 \def\PDFNextPage@[#1]#2{%
5610   \pdfmark[{#2}]{#1,Border=\pdfborder,Color=.2 .1 .5,
5611   pdfmark=/ANN,Subtype=/Link,Page=/Next}}
5612 \def\PDFPreviousPage{%
5613   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}}%
5614 }
5615 \def\PDFPreviousPage@[#1]#2{%
5616   \pdfmark[{#2}]{#1,Border=\pdfborder,Color=.4 .4 .1,
5617   pdfmark=/ANN,Subtype=/Link,Page=/Prev}}
5618 \def\PDFOpen#1{%
5619   \pdfmark{#1,pdfmark=/DOCVIEW}%
5620 }

```

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

```

5621 \def\PDFPage{\@ifnextchar[{\PDFPage@}{\PDFPage@[]}}
5622 \def\PDFPage@[#1]#2#3{%
5623   \let\pageref\simple@pageref
5624   \pdfmark[{#3}]{%
5625     #1,%
5626     Page=#2,%
5627     AcroHighlight=\pdfhighlight,%
5628     Border=\pdfborder,%
5629     Color=\pagebordercolor,%
5630     pdfmark=/ANN,%
5631     Subtype=/Link%
5632   }%
5633 }
5634 \def\simple@pageref#1{%
5635   \expandafter\ifx\csname r@#1\endcsname\relax
5636     0%

```

```

5637 \else
5638 \expandafter\expandafter\expandafter
5639 \secondoffive\csname r@#1\endcsname
5640 \fi}

```

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

```

5641 \def\hyper@linkurl#1#2{%
5642 \begingroup
5643 \hyper@chars
5644 \leavevmode
5645 \pdfmarkbase{
5646 \pdfmark[#1]{%
5647 pdfmark=/ANN,%
5648 linktype=url,%
5649 AcroHighlight=\pdfhighlight,%
5650 Border=\pdfborder,%
5651 Color=\urlbordercolor,%
5652 Action={<< /Subtype /URI /URI (#2) >>},%
5653 Subtype=/Link%
5654 }%
5655 \pdfmarkbase}
5656 \dvi{pdf}
5657 \pdfmark[#1]{%
5658 pdfmark=/LNK,%
5659 linktype=url,%
5660 AcroHighlight=\pdfhighlight,%
5661 Border=\pdfborder,%
5662 Color=\urlbordercolor,%
5663 Action=URI /URI (#2)%
5664 }%
5665 \dvi{pdf}
5666 \endgroup
5667 }
5668 \def\hyper@linkfile#1#2#3{%
5669 \begingroup
5670 \leavevmode
5671 \pdfmark{
5672 \pdfmark[#1]{%
5673 pdfmark=/ANN,%
5674 Subtype=/Link,
5675 AcroHighlight=\pdfhighlight,%
5676 Border=\pdfborder,%
5677 linktype=file,%
5678 Color=\filebordercolor,%
5679 Action=<<
5680 /S /GoToR
5681 \ifHy@newwindow /NewWindow true \fi
5682 /F (#2)
5683 /D \ifx\#3\[/O \pdfstartview\else(#3)\fi
5684 >>%

```

```

5685     }%
5686 </pdfmark>
5687 <*dvipdf>
5688     \pdfmark[{#1}]{%
5689         pdfmark=/LNK,%
5690         linktype=file,%
5691         AcroHighlight=\@pdfhighlight,%
5692         Border=\@pdfborder,%
5693         Color=\@filebordercolor,%
5694         Action=<<
5695             /S /GoToR
5696             \ifHy@newwindow /NewWindow true \fi
5697             /F (#2)
5698             /D \ifx\#3\[O \@pdfstartview]\else(#3)\fi
5699         >>%
5700     }%
5701 </dvipdf>
5702 \endgroup
5703 }
5704 \def\@hyper@launch run:#1\#2#3{%
5705     \begingroup
5706     \leavevmode
5707 <*pdfmark>
5708     \pdfmark[{#2}]{%
5709         pdfmark=/ANN,%
5710         Subtype=/Link,%
5711         AcroHighlight=\@pdfhighlight,%
5712         Border=\@pdfborder,%
5713         linktype=file,%
5714         Color=\@filebordercolor,%
5715         Action=<<
5716             /S /Launch
5717             \ifHy@newwindow /NewWindow true \fi
5718             /F (#1)
5719             \ifx\#3\else /Win << /P (#3) /F (#1) >> \fi
5720         >>%
5721     }%
5722 </pdfmark>
5723 <*dvipdf>
5724     \pdfmark[{#2}]{%
5725         pdfmark=/LNK,%
5726         linktype=file,%
5727         AcroHighlight=\@pdfhighlight,%
5728         Border=\@pdfborder,%
5729         Color=\@filebordercolor,%
5730         Action=<<
5731             /S /GoToR
5732             \ifHy@newwindow /NewWindow true \fi
5733             /F (#1)
5734             /D \ifx\#3\[O \@pdfstartview]\else(#3)\fi

```

```

5735      >>%
5736    }%
5737  </dvipdf>
5738    \endgroup
5739  }
5740  </pdfmark | dvipdf>

```

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

40.7 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.

```

5741 <*dvips>
5742 \input{pdfmark.def}%
5743 \def\@pdfproducer{dvips + Distiller}
5744 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
5745 \def\headerps@out#1{\special{! #1}}%
5746 \providecommand\@pdfborder{0 0 12}
5747 \providecommand\@pdfview{XYZ}
5748 \providecommand\@pdfviewparams{ H.V}

5749 \AtBeginDvi{%
5750   \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.

```

5751   /DvipsToPDF { 72.27 mul Resolution div } def
5752   /PDFToDvips { 72.27 div Resolution mul } def

```

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

```

5753   /HyperBorder { 1 PDFToDvips } def
5754   /H.V {pdf@hoff pdf@voff null} def
5755   /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

```

5756 /H.S {
5757     currentpoint
5758     HyperBorder add /pdf@lly exch def
5759     dup DvipsToPDF /pdf@hoff exch def
5760     HyperBorder sub /pdf@llx exch def
5761 } def

```

The calculation of upper left y is done without raising the point in \TeX , by simply adding on the current $\backslash\text{baselineskip}$ 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

```

5762 /H.L {
5763     2 sub dup
5764     /HyperBasePt exch def
5765     PDFToDvips /HyperBaseDvips exch def
5766     currentpoint
5767     HyperBaseDvips sub /pdf@ury exch def
5768     /pdf@urx exch def
5769 } def
5770 /H.A {
5771     H.L
5772 % |pdf@voff| = the distance from the top of the page to a point
5773 % |baselineskip| above the current point in PDF coordinates
5774     currentpoint exch pop
5775     vsize 72 sub exch DvipsToPDF
5776     HyperBasePt sub % baseline skip
5777     sub /pdf@voff exch def
5778 } def
5779 /H.R {
5780     currentpoint
5781     HyperBorder sub /pdf@ury exch def
5782     HyperBorder add /pdf@urx exch def
5783 % |pdf@voff| = the distance from the top of the page to the current point, in
5784 % PDF coordinates
5785     currentpoint exch pop vsize 72 sub
5786     exch DvipsToPDF sub /pdf@voff exch def
5787 } def
5788 systemdict
5789 /pdfmark known not
5790 {userdict /pdfmark systemdict /cleartomark get put} if
5791 }%
5792 }
5793 \AtBeginDocument{%
5794     \ifx\special@paper\empty\else
5795         \special{papersize=\special@paper}%
5796     \fi
5797 }

```

5798 \langle /dvips \rangle

40.8 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.

```
5799  $\langle$ *vtexpdfmark $\rangle$ 
5800 \input{pdfmark.def}%
5801 \ifnum\OpMode=\@ne
5802   \def\@pdfproducer{VTeX}
5803 \else
5804   \def\@pdfproducer{VTeX + Distiller}
5805 \fi
5806 \def\literalps@out#1{\special{pS:#1}}%
5807 \def\headerps@out#1{\immediate\special{pS:#1}}%
5808 \providecommand\@pdfborder{0 0 12}
5809 \providecommand\@pdfview{XYZ}
5810 \providecommand\@pdfviewparams{ H.V}

5811 \AtBeginDvi{%
5812   \headerps@out{%
5813     /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.

```
5814   /HyperBorder {1} def
5815   /H.V {pdf@hoff pdf@voff null} def
5816   /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```
5817   /H.S {
5818     currentpoint
5819     HyperBorder sub
5820     /pdf@lly exch def
5821     dup 72 add /pdf@hoff exch def
5822     HyperBorder sub
5823     /pdf@llx exch def
5824   } def
```

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

```
5825   /H.L {
5826     2 sub
5827     /HyperBasePt exch def
5828     currentpoint
5829     HyperBasePt add HyperBorder add
```

```

5830      /pdf@ury exch def
5831      HyperBorder add
5832      /pdf@urx exch def
5833    } def
5834    /H.A {
5835      H.L
5836      currentpoint exch pop
5837      vsize 72 sub exch
5838      HyperBasePt add add
5839      /pdf@voff exch def
5840    } def
pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
5841    /H.R {
5842      currentpoint
5843      HyperBorder add
5844      /pdf@ury exch def
5845      HyperBorder add
5846      /pdf@urx exch def
5847      currentpoint exch pop vsize 72 sub add
5848      /pdf@voff exch def
5849    } def
5850  }%
5851 }
5852 </vtxpdfmark>

```

40.9 Textures

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

```

5853 <*textures>
5854 \input{pdfmark.def}%
5855 \def\@pdfproducer{Textures + Distiller}%
5856 \def\literalps@out#1{\special{rawpostscript #1}}%
5857 \def\headerps@out#1{\special{prepostscript #1}}%
5858 \providecommand\@pdfborder{0 0 1}
5859 \providecommand\@pdfview{XYZ}
5860 \providecommand\@pdfviewparams{ H.V}
5861 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to T_EX.

```

5862 \headerps@out{%

```

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

```

5863 /vsize {\Hy@pageheight} def
5864 /DvipsToPDF {} def

```

```

5865 /PDFToDvips {} def
5866 /HyperBorder { 1 PDFToDvips } def
5867 /H.V {pdf@hoff pdf@voff null} def
5868 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
5869 /H.S {
5870   currentpoint
5871   HyperBorder add /pdf@lly exch def
5872   dup DvipsToPDF /pdf@hoff exch def
5873   HyperBorder sub /pdf@llx exch def
5874 } def
5875 /H.L {
5876   2 sub
5877   PDFToDvips /HyperBase exch def
5878   currentpoint
5879   HyperBase sub /pdf@ury exch def
5880   /pdf@urx exch def
5881 } def
5882 /H.A {
5883   H.L
5884   currentpoint exch pop
5885   vsize 72 sub exch DvipsToPDF
5886   HyperBase sub % baseline skip
5887   sub /pdf@voff exch def
5888 } def
5889 /H.R {
5890   currentpoint
5891   HyperBorder sub /pdf@ury exch def
5892   HyperBorder add /pdf@urx exch def
5893   currentpoint exch pop vsize 72 sub
5894   exch DvipsToPDF sub /pdf@voff exch def
5895 } def
5896 systemdict
5897 /pdfmark known not
5898 {userdict /pdfmark systemdict /cleartomark get put} if
5899 }

```

The last part of this driver is a contribution of Ross Moore (ross@ics.mq.edu.au).

```

5900 \AtBeginDocument{%
5901   \ifHy@colorlinks
5902     \headerps@out{%
5903       TeXdict begin^^J%
5904       /PDFBorder{/Border [0 0 0]}def^^J%
5905     end%
5906   }%
5907 \fi
5908 }

```

Textures provides built-in support for HyperTeX specials so this part is copied from hypertex.def

```

5909 \def\PDF@SetupDoc{%

```



```

5910 \ifx\@baseurl\@empty\else
5911   \special{html:<base href="\@baseurl">}%
5912 \fi
5913 }
5914 \def\hyper@anchor#1{%
5915   \Hy@SaveLastskip
5916   \begingroup
5917     \let\protect=\string
5918     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5919   \endgroup
5920   \Hy@activeanchortrue
5921   \Hy@colorlink{\@anchorcolor}\anchor@spot\Hy@endcolorlink
5922   \special{html:</a>}%
5923   \Hy@activeanchorfalse
5924   \Hy@RestoreLastskip
5925 }
5926 \def\hyper@anchorstart#1{%
5927   \Hy@SaveLastskip
5928   \begingroup
5929     \hyper@chars
5930     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5931   \endgroup
5932   \Hy@activeanchortrue
5933 }
5934 \def\hyper@anchorend{%
5935   \special{html:</a>}%
5936   \Hy@activeanchorfalse
5937   \Hy@RestoreLastskip
5938 }
5939 \def\@urltype{url}
5940 \def\hyper@linkstart#1#2{%
5941   \Hy@colorlink{\csname @#1color\endcsname}%
5942   \def\Hy@tempa{#1}%
5943   \ifx\Hy@tempa\@urltype
5944     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5945   \else
5946     \begingroup
5947       \hyper@chars
5948       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
5949     \endgroup
5950   \fi
5951 }
5952 \def\hyper@linkend{%
5953   \special{html:</a>}%
5954   \Hy@endcolorlink
5955 }
5956 \def\hyper@linkfile#1#2#3{%
5957   \hyper@linkurl{#1}{file:#2\ifx\\#3\\else\##3\fi}%
5958 }
5959 \def\hyper@linkurl#1#2{%

```

```

5960 \leavevmode
5961 \ifHy@raiselinks
5962   \setbox\@tempboxa=\color@hbox #1\color@endbox
5963   \@linkdim\dp\@tempboxa
5964   \lower\@linkdim\hbox{%
5965     \hyper@chars
5966     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5967   }%
5968   \Hy@colorlink{\@urlcolor}#1%
5969   \@linkdim\ht\@tempboxa
5970   \advance\@linkdim by -6.5\p@
5971   \raise\@linkdim\hbox{\special{html:</a>}}%
5972   \Hy@endcolorlink
5973 \else
5974   \begingroup
5975     \hyper@chars
5976     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5977     \Hy@colorlink{\@urlcolor}#1%
5978     \special{html:</a>}}%
5979     \Hy@endcolorlink
5980   \endgroup
5981 \fi
5982 }
5983 \def\hyper@link#1#2#3{%
5984   \hyper@linkurl{#3}{\##2}%
5985 }
5986 \def\hyper@image#1#2{%
5987   \begingroup
5988     \hyper@chars
5989     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
5990   \endgroup
5991 }
5992 </textures>

```

40.10 dvipsone

```

5993 % \subsection{dvipsone driver}
5994 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
5995 % |\special| commands.
5996 <*dvipsone>
5997 \providecommand\@pdfborder{0 0 65781}
5998 \input{pdfmark.def}%
5999 \def\@pdfproducer{dvipsone + Distiller}
6000 \def\literalps@out#1{\special{ps:#1}}%
6001 \def\headerps@out#1{\special{! #1}}%
6002 \def\PDF@FinishDoc{%
6003   \special{PDF: Keywords \@pdfkeywords}%
6004   \special{PDF: Title \@pdftitle}%
6005   \special{PDF: Creator \@pdfcreator}%

```

```

6006 \special{PDF: Author \@pdfauthor}%
6007 \special{PDF: Producer \@pdfproducer}%
6008 \special{PDF: Subject \@pdfsubject}%
6009 \Hy@DisableOption{pdfauthor}%
6010 \Hy@DisableOption{pdftitle}%
6011 \Hy@DisableOption{pdfsubject}%
6012 \Hy@DisableOption{pdfcreator}%
6013 \Hy@DisableOption{pdfproducer}%
6014 \Hy@DisableOption{pdfkeywords}%
6015 }
6016 \def\PDF@SetupDoc{%
6017 \pdfmark{%
6018 pdfmark=/DOCVIEW,
6019 Page=\@pdfstartpage,
6020 View=\@pdfstartview,
6021 URI={<< /Base (\@baseurl) >>},
6022 PageMode=\@pdfpagemode
6023 }%
6024 \ifx\@pdfpagescrop\@empty
6025 \else
6026 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6027 \fi
6028 \pdfmark{%
6029 pdfmark=/PUT,%
6030 Raw={
6031 \string{Catalog\string} <<
6032 /ViewerPreferences <<
6033 \ifHy@toolbar\else /HideToolbar true \fi
6034 \ifHy@menubar\else /HideMenubar true \fi
6035 \ifHy>windowui\else /HideWindowUI true \fi
6036 \ifHy@fitwindow /FitWindow true \fi
6037 \ifHy@centerwindow /CenterWindow true \fi
6038 >>
6039 \ifx\pdf@pagelayout\@empty
6040 \else
6041 /PageLayout /\pdf@pagelayout\space
6042 \fi
6043 >>%
6044 }%
6045 }%
6046 }
6047 \providecommand\@pdfview{XYZ}
6048 \providecommand\@pdfviewparams{ %
6049 gsave revscl currentpoint grestore
6050 72 add exch pop null exch null
6051 }

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page

offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to T_EX.

6052 \special{headertext=

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

```

6053 /DvipsToPDF { 65781 div } def
6054 /PDFToDvips { 65781 mul } def
6055 /HyperBorder { 1 PDFToDvips } def
6056 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
6057 /H.S {
6058   currentpoint
6059   HyperBorder add /pdf@lly exch def
6060   dup DvipsToPDF /pdf@hoff exch def
6061   HyperBorder sub /pdf@llx exch def
6062 } def
6063 /H.L {
6064   2 sub
6065   PDFToDvips /HyperBase exch def
6066   currentpoint
6067   HyperBase sub /pdf@ury exch def
6068   /pdf@urx exch def
6069 } def
6070 /H.A {
6071   H.L
6072   currentpoint exch pop
6073   HyperBase sub % baseline skip
6074   DvipsToPDF /pdf@voff exch def
6075 } def
6076 /H.R {
6077   currentpoint
6078   HyperBorder sub /pdf@ury exch def
6079   HyperBorder add /pdf@urx exch def
6080   currentpoint exch pop DvipsToPDF /pdf@voff exch def
6081 } def
6082 systemdict
6083 /pdfmark known not
6084 {userdict /pdfmark systemdict /cleartomark get put} if
6085 }
6086 </dvipsone>
6087 <*dvipdf>
6088 \def\literalps@out#1{\special{pdf: #1}}%
6089 \providecommand\@pdfborder{0 0 1}
6090 </dvipdf>

```

40.11 TeX4ht

```

6091 <*tex4ht>
6092 \ifpackageloaded{tex4ht}
6093 {\typeout{hyperref tex4ht: tex4ht already loaded}}%
6094 {\RequirePackage{htex4ht}{tex4ht}}
6095 \def\PDF@FinishDoc{}

```

```

6096 \def\PDF@SetupDoc{%
6097   \ifx\@baseurl\@empty\else
6098     \special{t4ht=<base href="\@baseurl">}%
6099   \fi
6100 }
6101 \def\hyper@anchor#1{%
6102   \Hy@SaveLastskip
6103   \begingroup
6104     \let\protect=\string
6105     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
6106   \endgroup
6107   \Hy@activeanchortrue
6108   \Hy@colorlink{\@anchorcolor}\anchor@spot\Hy@endcolorlink
6109   \special{t4ht=</a>}%
6110   \Hy@activeanchorfalse
6111   \Hy@RestoreLastskip
6112 }
6113 \def\hyper@anchorstart#1{%
6114   \Hy@SaveLastskip
6115   \begingroup
6116     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
6117   \endgroup
6118   \Hy@activeanchortrue
6119 }
6120 \def\hyper@anchorend{%
6121   \special{t4ht=</a>}%
6122   \Hy@activeanchorfalse
6123   \Hy@RestoreLastskip
6124 }
6125 \def\@urltype{url}
6126 \def\hyper@linkstart#1#2{%
6127   \Hy@colorlink{\csname @#1color\endcsname}%
6128   \def\Hy@tempa{#1}%
6129   \ifx\Hy@tempa\@urltype
6130     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
6131   \else
6132     {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
6133   \fi
6134 }
6135 \def\hyper@linkend{%
6136   \special{t4ht=</a>}%
6137   \Hy@endcolorlink
6138 }
6139 \def\hyper@linkfile#1#2#3{%
6140   \hyper@linkurl{#1}{file:#2\ifx\#3\\\else\##3\fi}%
6141 }
6142 \def\hyper@linkurl#1#2{%
6143   \leavevmode
6144   \ifHy@raiselinks
6145     \setbox\@tempboxa=\color@hbox #1\color@endbox

```

```

6146 \@linkdim\dp\@tempboxa
6147 \lower\@linkdim\hbox{%
6148 \begingroup
6149 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
6150 \endgroup
6151 }%
6152 \Hy@colorlink{\@urlcolor}#1\Hy@endcolorlink
6153 \@linkdim\ht\@tempboxa
6154 \advance\@linkdim by -6.5\p@
6155 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
6156 \else
6157 \begingroup
6158 \hyper@chars
6159 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
6160 \Hy@colorlink{\@urlcolor}#1\Hy@endcolorlink
6161 \special{t4ht=</a>}}%
6162 \endgroup
6163 \fi
6164 }
6165 \def\hyper@link#1#2#3{%
6166 \hyper@linkurl{#3}{\##2}}%
6167 }
6168 \def\hyper@image#1#2{%
6169 \begingroup
6170 \hyper@chars
6171 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
6172 \endgroup
6173 }
6174 \let\autoref\ref
6175 \ifx \rEfLiNK \UnDef
6176 \def\rEfLiNK #1#2{#2}%
6177 \fi
6178 \def\backref#1{}
6179 </tex4ht>
6180 <*tex4htcfg>
6181 \IfFileExists{\jobname.cfg}{\endinput}{}
6182 \Preamble{html}
6183 \begin{document}
6184 \EndPreamble
6185 \def\TeX{TeX}
6186 \def\OMEGA{\Omega}
6187 \def\LaTeX{LaTeX}
6188 \def\LaTeXe{\LaTeX2e}
6189 \def\eTeX{e-TeX}
6190 \def\MF{Metafont}
6191 \def\MP{Metapost}
6192 </tex4htcfg>

```

41 Driver-specific form support

41.1 pdfmarks

```
6193 <*pdfmark>
6194 \long\def \@Form[#1]{%
6195 \AtBeginDvi{%
6196   \headerps@out{%
6197 [ /_objdef {pdfDocEncoding}
6198   /type /dict
6199 /OBJ pdfmark
6200 [ {pdfDocEncoding}
6201 << /Type /Encoding
6202   /Differences [ 24 /breve /caron /circumflex /dotaccent
6203 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
6204 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
6205 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
6206 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
6207 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
6208 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
6209 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
6210 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
6211 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
6212 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
6213 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
6214 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
6215 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
6216 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
6217 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /ccedilla
6218 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
6219 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
6220 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
6221 /yacute /thorn /ydieresis ]
6222 >>
6223 /PUT pdfmark
6224 [ /_objdef {ZaDb}
6225   /type /dict
6226 /OBJ pdfmark
6227 [ {ZaDb}
6228 <<
6229   /Type /Font
6230   /Subtype /Type1
6231   /Name /ZaDb
6232   /BaseFont /ZapfDingbats
6233 >>
6234 /PUT pdfmark
6235 [ /_objdef {Helv}
6236   /type /dict
6237 /OBJ pdfmark
6238 [ {Helv}
```

```

6239 <<
6240 /Type /Font
6241 /Subtype /Type1
6242 /Name /Helv
6243 /BaseFont /Helvetica
6244 /Encoding {pdfDocEncoding}
6245 >>
6246 /PUT pdfmark
6247 [ /_objdef {aform}
6248 /type /dict
6249 /OBJ pdfmark
6250 [ /_objdef {afields}
6251 /type /array
6252 /OBJ pdfmark
6253 [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
6254 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
6255 [/EP pdfmark
6256 [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
6257 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
6258 [/EP pdfmark
6259 [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
6260 100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
6261 lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
6262 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
6263 /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
6264 [/EP pdfmark
6265 [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
6266 250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
6267 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
6268 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
6269 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
6270 [/EP pdfmark
6271 [ {aform}
6272 <<
6273 /Fields {afields}
6274 /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
6275 /DA (/Helv 10 Tf 0 g )
6276 /CO {corder}
6277 /NeedAppearances true
6278 >>
6279 /PUT pdfmark
6280 [ \string{Catalog\string}
6281 <<
6282 /AcroForm {aform}
6283 >>
6284 /PUT pdfmark
6285 [ /_objdef {corder} /type /array /OBJ pdfmark % dps
6286 }}%
6287 \setkeys{Form}{#1}%
6288 }

```



```

6289 \def\@endForm{}
6290 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6291 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
6292 }
6293 \def\@TextField[#1]#2{% parameters, label
6294 \def\Fld@name{#2}%
6295 \def\Fld@default{}%
6296 \let\Fld@value\@empty
6297 \def\Fld@width{\DefaultWidthofText}%
6298 \def\Fld@height{\DefaultHeightofText}%
6299 \bgroup
6300 \Field@toks={ }%
6301 \setkeys{Field}{#1}%
6302 \ifFld@hidden\def\Fld@width{1sp}\fi
6303 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
6304 \ifFld@multiline
6305 \def\Fld@height{4\DefaultHeightofText}%
6306 \fi
6307 \LayoutTextField{#2}{%
6308 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
6309 pdfmark=/ANN,Raw={\PDFForm@Text}%
6310 }%
6311 }%
6312 \egroup
6313 }
6314 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6315 \def\Fld@name{#2}%
6316 \def\Fld@default{}%
6317 \def\Fld@width{\DefaultWidthofChoiceMenu}%
6318 \def\Fld@height{\DefaultHeightofChoiceMenu}%
6319 \bgroup
6320 \Fld@menulength=0
6321 \@tempdima\z@
6322 \@for\@curropt:=#3\do{%
6323 \expandafter\Fld@checkequals\@curropt==\%
6324 \Hy@StepCount\Fld@menulength
6325 \settowidth{\@tempdimb}{\@currDisplay}%
6326 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
6327 }%
6328 \advance\@tempdima by 15\p@
6329 \Field@toks={ }%
6330 \setkeys{Field}{#1}%
6331 \ifFld@hidden\def\Fld@width{1sp}\fi
6332 \LayoutChoiceField{#2}{%
6333 \ifFld@radio
6334 \@@Radio{#3}%
6335 \else
6336 {%
6337 \ifdim\Fld@width<\@tempdima
6338 \ifdim\@tempdima<1cm\@tempdima1cm\fi

```

```

6339         \edef\Fld@width{\the\@tempdima}%
6340     \fi
6341     \def\Fld@flags{}%
6342     \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
6343     \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
6344     \ifx\Fld@flags\@empty
6345         \@tempdima=\the\Fld@menulength\Fld@charsize
6346         \advance\@tempdima by \Fld@borderwidth bp
6347         \advance\@tempdima by \Fld@borderwidth bp
6348         \edef\Fld@height{\the\@tempdima}%
6349     \fi
6350     \@@ListBox{#3}%
6351 }%
6352 \fi
6353 }%
6354 \egroup
6355 }
6356 \def\@@Radio#1{%
6357     \Fld@listcount=0
6358     \@for\@curropt:=#1\do{%
6359         \expandafter\Fld@checkequals\@curropt==\%
6360         \Hy@StepCount\Fld@listcount
6361         \@currDisplay\space
6362         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
6363             pdfmark=/ANN,%
6364             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
6365         } % deliberate space between radio buttons
6366     }%
6367 }
6368 \newcount\Fld@listcount
6369 \def\@@ListBox#1{%
6370     \Choice@toks={ }%
6371     \Fld@listcount=0
6372     \@for\@curropt:=#1\do{%
6373         \expandafter\Fld@checkequals\@curropt==\%
6374         \Hy@StepCount\Fld@listcount
6375         \edef\@processme{%
6376             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
6377         }\@processme
6378     }%
6379     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
6380         pdfmark=/ANN,Raw={\PDFForm@List}%
6381     }%
6382 }
6383 \def\@PushButton[#1]#2{% parameters, label
6384     \def\Fld@name{#2}%
6385     \bgroup
6386         \Field@toks={ }%
6387         \setkeys{Field}{#1}%
6388         \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

6389     \LayoutPushButtonField{%
6390         \pdfmark[\MakeButtonField{#2}]{%
6391             pdfmark=/ANN,Raw={\PDFForm@Push}%
6392         }%
6393     }%
6394 \egroup
6395 }
6396 \def\@Submit[#1]#2{%
6397     \Field@toks={ }%
6398     \def\Fld@width{\DefaultWidthofSubmit}%
6399     \def\Fld@height{\DefaultHeightofSubmit}%
6400     \bgroup
6401         \def\Fld@name{Submit}%
6402         \setkeys{Field}{#1}%
6403         \ifFld@hidden\def\Fld@width{1sp}\fi
6404         \pdfmark[\MakeButtonField{#2}]{%
6405             pdfmark=/ANN,%
6406             Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
6407         }%
6408     \egroup
6409 }
6410 \def\@Reset[#1]#2{%
6411     \Field@toks={ }%
6412     \def\Fld@width{\DefaultWidthofReset}%
6413     \def\Fld@height{\DefaultHeightofReset}%
6414     \bgroup
6415         \def\Fld@name{Reset}%
6416         \setkeys{Field}{#1}%
6417         \ifFld@hidden\def\Fld@width{1sp}\fi
6418         \pdfmark[\MakeButtonField{#2}]{%
6419             pdfmark=/ANN,Raw={\PDFForm@Reset}%
6420         }%
6421     \egroup
6422 }
6423 \def\@CheckBox[#1]#2{% parameters, label
6424     \def\Fld@name{#2}%
6425     \def\Fld@default{0}%
6426     \bgroup
6427         \def\Fld@width{\DefaultWidthofCheckBox}%
6428         \def\Fld@height{\DefaultHeightofCheckBox}%
6429         \Field@toks={ }%
6430         \setkeys{Field}{#1}%
6431         \ifFld@hidden\def\Fld@width{1sp}\fi
6432         \LayoutCheckField{#2}{%
6433             \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
6434                 pdfmark=/ANN,Raw={\PDFForm@Check}%
6435             }%
6436         }%
6437     \egroup
6438 }

```

6439 \langle /pdfmark \rangle

41.2 dvipdf

```
6440  $\langle$ *dvipdf $\rangle$ 
6441 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
6442 \def\@endForm{}
6443 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6444   \typeout{Sorry, dvipdf does not support FORM gauges}%
6445 }
6446 \def\@TextField[#1]#2{% parameters, label
6447   \typeout{Sorry, dvipdf does not support FORM text fields}%
6448 }
6449 \def\@CheckBox[#1]#2{% parameters, label
6450   \typeout{Sorry, dvipdf does not support FORM checkboxes}%
6451 }
6452 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6453   \typeout{Sorry, dvipdf does not support FORM choice menus}%
6454 }
6455 \def\@PushButton[#1]#2{% parameters, label
6456   \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
6457 }
6458 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
6459 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
6460  $\langle$ /dvipdf $\rangle$ 
```

41.3 HyperTeX

```
6461  $\langle$ *hypertex $\rangle$ 
6462 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
6463 \def\@endForm{}
6464 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6465   \typeout{Sorry, HyperTeX does not support FORM gauges}%
6466 }
6467 \def\@TextField[#1]#2{% parameters, label
6468   \typeout{Sorry, HyperTeX does not support FORM text fields}%
6469 }
6470 \def\@CheckBox[#1]#2{% parameters, label
6471   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
6472 }
6473 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6474   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
6475 }
6476 \def\@PushButton[#1]#2{% parameters, label
6477   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
6478 }
6479 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
6480 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
6481  $\langle$ /hypertex $\rangle$ 
```

41.4 TeX4ht

```

6482 <*tex4ht>
6483 \def\@Form[#1]{%
6484   \setkeys{Form}{#1}%
6485   \HCode{<form action="\Form@action" method="\Form@method">}%
6486 }
6487 \def\@endForm{\HCode{</form>}}
6488 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6489   \typeout{Sorry, TeX4ht does not support gauges}%
6490 }
6491 \def\@TextField[#1]#2{% parameters, label
6492   \let\Hy@reserved@a\@empty
6493   \def\Fld@name{#2}%
6494   \def\Fld@default{}%
6495   \bgroup
6496     \Field@toks={ }%
6497     \setkeys{Field}{#1}%
6498     \HCode{<label for="\Fld@name">#2</label>}%
6499     \ifFld@password
6500       \@@PasswordField
6501     \else
6502       \@@TextField
6503     \fi
6504   \egroup
6505 }
6506 \def\@@PasswordField{%
6507   \HCode{%
6508     <input type="password"
6509       id="\Fld@name"
6510       name="\Fld@name"
6511       \ifFld@hidden type="hidden"\fi
6512       value="\Fld@default"
6513       \the\Field@toks
6514     >%
6515   }%
6516 }
6517 \def\@@TextField{%
6518   \ifFld@multiline
6519     \HCode{<textarea
6520       \ifFld@readonly readonly \fi
6521       id="\Fld@name"
6522       name="\Fld@name"
6523       \ifFld@hidden type="hidden"\fi
6524       \the\Field@toks>%
6525     }%
6526     \Fld@default
6527     \HCode{</textarea>}%
6528   \else
6529     \HCode{<input type="text"
6530       \ifFld@readonly readonly \fi
6531       id="\Fld@name"

```

```

6532     name="\Fld@name"
6533     \ifFld@hidden type="hidden"\fi
6534     value="\Fld@default" \the\Field@toks>
6535 }%
6536 \fi
6537 }
6538 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6539 \def\Fld@name{#2}%
6540 \def\Fld@default{}%
6541 \let\Hy@reserved@a\relax
6542 \bgroup
6543 \expandafter\Fld@findlength#3\\%
6544 \Field@toks={ }%
6545 \setkeys{Field}{#1}%
6546 #2%
6547 \ifFld@radio
6548 \expandafter\@@Radio#3\\%
6549 \else
6550 \expandafter\@@Menu#3\\%
6551 \fi
6552 \egroup
6553 }
6554 \def\Fld@findlength#1\\{%
6555 \Fld@menulength=0
6556 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
6557 }
6558 \def\@@Menu#1\\{%
6559 \HCode{<select size="\the\Fld@menulength"
6560 name="\Fld@name" \the\Field@toks>}%
6561 \@for\@curropt:=#1\do{%
6562 \expandafter\Fld@checkequals\@curropt==\\%
6563 \HCode{<option
6564 \ifx\@curropt\Fld@default selected \fi
6565 value="\@currValue">\@currDisplay</option>%
6566 }%
6567 }%
6568 \HCode{</select>}%
6569 }
6570 \def\@@Radio#1\\{%
6571 \@for\@curropt:=#1\do{%
6572 \expandafter\Fld@checkequals\@curropt==\\%
6573 \HCode{<input type="radio"
6574 \ifx\@curropt\Fld@default checked \fi
6575 name="\Fld@name"
6576 value="\@currValue"
6577 \the\Field@toks>%
6578 }%
6579 \@currDisplay
6580 }%
6581 }

```

```

6582 \def\@PushButton[#1]#2{% parameters, label
6583   \def\Fld@name{#2}%
6584   \bgroup
6585     \Field@toks={ }%
6586     \setkeys{Field}{#1}%
6587     \HCode{<input type="button"
6588       name="\Fld@name"
6589       value="#2"
6590       \the\Field@toks>%
6591     }%
6592     \HCode{</button>}%
6593   \egroup
6594 }
6595 \def\@Submit[#1]#2{%
6596   \HCode{<button type="submit">#2</button>}%
6597 }
6598 \def\@Reset[#1]#2{%
6599   \HCode{<button type="reset">#2</button>}%
6600 }
6601 \def\@CheckBox[#1]#2{% parameters, label
6602   \let\Hy@reserved@a\@empty
6603   \def\Fld@name{#2}%
6604   \def\Fld@default{0}%
6605   \bgroup
6606     \Field@toks={ }%
6607     \setkeys{Field}{#1}%
6608     \HCode{<input type="checkbox"
6609       \ifFld@checked checked \fi
6610       \ifFld@disabled disabled \fi
6611       \ifFld@readonly readonly \fi
6612       name="\Fld@name"
6613       \ifFld@hidden type="hidden"\fi
6614       value="\Fld@default"
6615       \the\Field@toks>%
6616     #2%
6617   }%
6618   \egroup
6619 }
6620 </tex4ht>

```

41.5 pdfTeX

```

6621 <*pdfTeX>
6622 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6623   \typeout{Sorry, pdfTeX does not support FORM gauges}%
6624 }
6625 \RequirePackage{pifont}%
6626 \def\MakeFieldObject#1#2{\sbox0{#1}%
6627   \immediate\pdfxform0 %
6628   \expandafter\edef\csname #2object\endcsname{%

```

```

6629 \the\pdflastxform\space 0 R%
6630 }%
6631 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
6632 }%
6633 \def\@Form[#1]{%
6634 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
6635 \setkeys{Form}{#1}%
6636 \ifnum\pdfTeXversion>13
6637 \pdfrefobj\OBJ@pdfdocencoding
6638 \pdfrefobj\OBJ@ZaDb
6639 \pdfrefobj\OBJ@Helv
6640 \pdfrefobj\OBJ@acroform
6641 \fi
6642 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
6643 \MakeFieldObject{\ding{123}}{Ding}%
6644 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
6645 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
6646 }
6647 \def\@endForm{}
6648 \def\@TextField[#1]#2{% parameters, label
6649 \def\Fld@name{#2}%
6650 \def\Fld@default{}%
6651 \let\Fld@value\@empty
6652 \def\Fld@width{\DefaultWidthofText}%
6653 \def\Fld@height{\DefaultHeightofText}%
6654 \bgroup
6655 \Field@toks={ }%
6656 \setkeys{Field}{#1}%
6657 \ifFld@hidden\def\Fld@width{1sp}\fi
6658 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
6659 \ifFld@multiline
6660 \def\Fld@height{4\DefaultHeightofText}%
6661 \fi
6662 \LayoutTextField{#2}{%
6663 \pdfstartlink user {\PDFForm@Text}%
6664 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink}%
6665 \egroup
6666 }
6667 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6668 \def\Fld@name{#2}%
6669 \def\Fld@default{}%
6670 \def\Fld@width{\DefaultWidthofChoiceMenu}%
6671 \def\Fld@height{\DefaultHeightofChoiceMenu}%
6672 \bgroup
6673 \Fld@menulength=0
6674 \@tempdima\z@
6675 \@for\@curropt:=#3\do{%
6676 \expandafter\Fld@checkequals\@curropt==\%
6677 \Hy@StepCount\Fld@menulength
6678 \settowidth{\@tempdimb}{\@currDisplay}%

```



```

6679 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
6680 }%
6681 \advance\@tempdima by 15\p@
6682 \Field@toks={ }%
6683 \setkeys{Field}{#1}%
6684 \ifFld@hidden\def\Fld@width{1sp}\fi
6685 \LayoutChoiceField{#2}{%
6686 \ifFld@radio
6687 \@@Radio{#3}%
6688 \else
6689 {%
6690 \ifdim\Fld@width<\@tempdima
6691 \ifdim\@tempdima<1cm\@tempdima1cm\fi
6692 \edef\Fld@width{\the\@tempdima}%
6693 \fi
6694 \def\Fld@flags{}%
6695 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
6696 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
6697 \ifx\Fld@flags\@empty
6698 \@tempdima=\the\Fld@menulength\Fld@charsize
6699 \advance\@tempdima by \Fld@borderwidth bp
6700 \advance\@tempdima by \Fld@borderwidth bp
6701 \edef\Fld@height{\the\@tempdima}%
6702 \fi
6703 \@@Listbox{#3}%
6704 }%
6705 \fi
6706 }%
6707 \egroup
6708 }
6709 \def\@@Radio#1{%
6710 \Fld@listcount=0
6711 \@for\@curropt:=#1\do{%
6712 \expandafter\Fld@checkequals\@curropt==\%
6713 \Hy@StepCount\Fld@listcount
6714 \@currDisplay\space
6715 \leavevmode
6716 \pdfstartlink user {%
6717 \PDFForm@Radio
6718 /AP <<
6719 /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.

```

6720 /\@currValue\space \DingObject
6721 >>
6722 >>
6723 }%
6724 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink

```

```

6725     \space% deliberate space between radio buttons
6726   }%
6727 }
6728 \newcount\Fld@listcount
6729 \def\@@ListBox#1{%
6730   \Choice@toks={ }%
6731   \Fld@listcount=0
6732   \@for\@curropt:=#1\do{%
6733     \expandafter\Fld@checkequals\@curropt==\%
6734     \Hy@StepCount\Fld@listcount
6735     \edef\@processme{%
6736       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
6737     }\@processme
6738   }%
6739   \leavevmode
6740   \pdfstartlink user {\PDFForm@List}%
6741   \MakeChoiceField{\Fld@width}{\Fld@height}%
6742   \pdfendlink
6743 }
6744 \def\@PushButton[#1]#2{% parameters, label
6745   \def\Fld@name{#2}%
6746   \bgroup
6747     \Field@toks={ }%
6748     \setkeys{Field}{#1}%
6749     \ifFld@hidden\def\Fld@width{1sp}\fi
6750     \LayoutPushButtonField{%
6751       \leavevmode
6752       \pdfstartlink user {\PDFForm@Push}%
6753       \MakeButtonField{#2}%
6754       \pdfendlink
6755     }%
6756   \egroup
6757 }
6758 \def\@Submit[#1]#2{%
6759   \Field@toks={ }%
6760   \def\Fld@width{\DefaultWidthofSubmit}%
6761   \def\Fld@height{\DefaultHeightofSubmit}%
6762   \bgroup
6763     \def\Fld@name{Submit}%
6764     \setkeys{Field}{#1}%
6765     \ifFld@hidden\def\Fld@width{1sp}\fi
6766     \leavevmode
6767     \pdfstartlink user {%
6768       \PDFForm@Submit
6769       /AP << /N \SubmitObject\space /D \SubmitPObject >>
6770     }%
6771     \MakeButtonField{#2}%
6772     \pdfendlink
6773   \egroup
6774 }

```

```

6775 \def\@Reset[#1]#2{%
6776   \Field@toks={ }%
6777   \def\Fld@width{\DefaultWidthofReset}%
6778   \def\Fld@height{\DefaultHeightofReset}%
6779   \bgroup
6780     \def\Fld@name{Reset}%
6781     \setkeys{Field}{#1}%
6782     \ifFld@hidden\def\Fld@width{1sp}\fi
6783     \leavevmode
6784     \pdfstartlink user {\PDFForm@Reset}%
6785     \MakeButtonField{#2}%
6786     \pdfendlink
6787   \egroup
6788 }
6789 \def\@CheckBox[#1]#2{% parameters, label
6790   \def\Fld@name{#2}%
6791   \def\Fld@default{0}%
6792   \bgroup
6793     \def\Fld@width{\DefaultWidthofCheckBox}%
6794     \def\Fld@height{\DefaultHeightofCheckBox}%
6795     \Field@toks={ }%
6796     \setkeys{Field}{#1}%
6797     \ifFld@hidden\def\Fld@width{1sp}\fi
6798     \LayoutCheckField{#2}{%
6799       \pdfstartlink user {\PDFForm@Check}%
6800       \MakeCheckField{\Fld@width}{\Fld@height}%
6801       \pdfendlink
6802     }%
6803   \egroup
6804 }
6805 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
6806 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
6807 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
6808 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
6809 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
6810 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
6811 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
6812 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
6813 /logicalnot /.notdef /registered /macron /degree /plusminus
6814 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
6815 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
6816 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
6817 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
6818 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
6819 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
6820 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
6821 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
6822 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
6823 /ograve /oacute /ocircumflex /otilde /odieresis /divide /oslash
6824 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>

```

```

6825 }
6826 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
6827 \pdfobj {
6828   <<
6829     /Type /Font
6830     /Subtype /Type1
6831     /Name /ZaDb
6832     /BaseFont /ZapfDingbats
6833   >>
6834 }
6835 \edef\OBJ@ZaDb{\the\pdflastobj}
6836 \pdfobj { <<
6837   /Type /Font
6838   /Subtype /Type1
6839   /Name /Helv
6840   /BaseFont /Helvetica
6841   /Encoding \OBJ@pdfdocencoding\space 0 R
6842   >>
6843 }
6844 \edef\OBJ@Helv{\the\pdflastobj}
6845 \pdfobj {
6846   <<
6847     /Fields []
6848     /DR <<
6849       /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
6850     >>
6851     /DA (/Helv 10 Tf 0 g )
6852     /NeedAppearances true
6853   >>
6854 }
6855 \edef\OBJ@acroform{\the\pdflastobj}
6856 \pdfobj {

```

41.6 dvipdfm

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

```

6857 \*dvipdfm

```

\@Gauge

```

6858 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6859   \typeout{Sorry, dvipdfm does not support FORM gauges}%
6860 }

```

\@Form

```

6861 \def\@Form[#1]{%
6862   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
6863   \setkeys{Form}{#1}%
6864   \@pdfm@mark{obj @afields [ ]}%
6865   \@pdfm@mark{obj @corder [ ]}%

```

```

6866 \pdfmark{%
6867   obj @aform <<
6868     /Fields @afields
6869     /DR << /Font << /ZaDb @OBJZaDb /Helv @OBJHelv >> >>
6870     /DA (/Helv 10 Tf 0 g )
6871     /CO @corder
6872     /NeedAppearances true
6873   >>%
6874 }%
6875 \pdfmark{put @catalog << /AcroForm @aform >>}%
6876 }

\@endForm

6877 \def\@endForm{}

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

6878 \def\dvipdfm@setdim{%
6879   height \the\ht\pdfm@box\space
6880   width \the\wd\pdfm@box\space
6881   depth \the\dp\pdfm@box\space
6882 }

\@TextField

6883 \def\@TextField[#1]#2{% parameters, label
6884   \def\Fld@name{#2}%
6885   \def\Fld@default{}%
6886   \let\Fld@value\@empty
6887   \def\Fld@width{\DefaultWidthofText}%
6888   \def\Fld@height{\DefaultHeightofText}%
6889   \bgroup
6890     \Field@toks={ }%
6891     \setkeys{Field}{#1}%
6892     \ifFld@hidden\def\Fld@width{1sp}\fi
6893     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
6894     \ifFld@multiline
6895       \def\Fld@height{4\DefaultHeightofText}% DANGER
6896     \fi
6897     \setbox\pdfm@box=\hbox{%
6898       \MakeTextField{\Fld@width}{\Fld@height}%
6899     }%
6900     \LayoutTextField{#2}{%
6901       \pdfmark{%
6902         ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
6903       }%
6904     }%
6905     \unhbox\pdfm@box
6906     \pdfmark{put @afields @\Fld@name}% record in @afields array
6907   \egroup
6908 }

```

\@ChoiceMenu

```

6909 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
6910   \def \Fld@name{#2}%
6911   \def \Fld@default{}%
6912   \def \Fld@width{\DefaultWidthofChoiceMenu}%
6913   \def \Fld@height{\DefaultHeightofChoiceMenu}%
6914   \bgroup
6915     \Fld@menulength=0
6916     \@tempdima\z@
6917     \@for \@curropt:=#3\do{%
6918       \expandafter \Fld@checkequals \@curropt==\%
6919       \Hy@StepCount \Fld@menulength
6920       \settowidth{\@tempdimb}{\@currDisplay}%
6921       \ifdim \@tempdimb>\@tempdima \@tempdima \@tempdimb \fi
6922     }%
6923     \advance \@tempdima by 15\p@
6924     \Field@toks={ }%
6925     \setkeys{Field}{#1}%
6926     \ifFld@hidden \def \Fld@width{1sp} \fi
6927     \LayoutChoiceField{#2}{%
6928       \ifFld@radio
6929         \@@Radio{#3}%
6930       \else
6931         {%
6932           \ifdim \Fld@width<\@tempdima
6933             \ifdim \@tempdima<1cm \@tempdima 1cm \fi
6934             \edef \Fld@width{\the \@tempdima}%
6935           \fi
6936           \def \Fld@flags{}%
6937           \ifFld@combo \def \Fld@flags{/Ff 917504} \fi
6938           \ifFld@popdown \def \Fld@flags{/Ff 131072} \fi
6939           \ifx \Fld@flags \@empty
6940             \@tempdima=\the \Fld@menulength \Fld@charsize
6941             \advance \@tempdima by \Fld@borderwidth bp
6942             \advance \@tempdima by \Fld@borderwidth bp
6943             \edef \Fld@height{\the \@tempdima}%
6944           \fi
6945           \@@ListBox{#3}%
6946         }%
6947       \fi
6948     }%
6949   \egroup
6950 }

```

\@@Radio

```

6951 \def \@@Radio#1{%
6952   \Fld@listcount=0
6953   \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
6954   \@for \@curropt:=#1\do{%
6955     \expandafter \Fld@checkequals \@curropt==\%

```

```

6956 \Hy@StepCount\Fld@listcount
6957 \@currDisplay\space
6958 \leavevmode
6959 \@pdfm@mark{%
6960   ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
6961   \dvipdfm@setdim
6962   <<
6963   \PDFForm@Radio\space
6964   /$On /\@currValue\space
6965   >>%
6966 }%
6967 \unhcopy\pdfm@box\space% deliberate space between radio buttons
6968 \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
6969 }%
6970 }

```

\Fld@listcount

```

6971 \newcount\Fld@listcount

```

\@@ListBox

```

6972 \def\@@ListBox#1{%
6973   \Choice@toks={ }%
6974   \Fld@listcount=0
6975   \@for\@curropt:=#1\do{%
6976     \expandafter\Fld@checkequals\@curropt==\%
6977     \Hy@StepCount\Fld@listcount
6978     \edef\@processme{%
6979       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
6980     }\@processme
6981   }%
6982   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
6983   \leavevmode
6984   \@pdfm@mark{%
6985     ann @\Fld@name\space\dvipdfm@setdim
6986     << \PDFForm@List >>%
6987   }%
6988   \unhbox\pdfm@box
6989   \@pdfm@mark{put @afields @\Fld@name}%
6990 }

```

\@PushButton

```

6991 \def\@PushButton[#1]#2{% parameters, label
6992   \def\Fld@name{#2}%
6993   \bgroup
6994   \Field@toks={ }%
6995   \setkeys{Field}{#1}%
6996   \ifFld@hidden\def\Fld@width{1sp}\fi
6997   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
6998   \LayoutPushButtonField{%

```

```

6999      \leavevmode
7000      \@pdfm@mark{%
7001          ann @\Fld@name\space\dvipdfm@setdim
7002          << \PDFForm@Push >>%
7003      }%
7004  }%
7005  \unhbox\pdfm@box
7006  \@pdfm@mark{put @afields @\Fld@name}%
7007  \egroup
7008 }

\@Submit
7009 \def\@Submit[#1]#2{%
7010     \Field@toks={ }%
7011     \def\Fld@width{\DefaultWidthofSubmit}%
7012     \def\Fld@height{\DefaultHeightofSubmit}%
7013     \bgroup
7014         \def\Fld@name{Submit}%
7015         \setkeys{Field}{#1}%
7016         \ifFld@hidden\def\Fld@width{1sp}\fi
7017         \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
7018         \leavevmode
7019         \@pdfm@mark{%
7020             ann @\Fld@name\space\dvipdfm@setdim
7021             << \PDFForm@Submit >>%
7022         }%
7023         \unhbox\pdfm@box%
7024         \@pdfm@mark{put @afields @\Fld@name}%
7025     \egroup
7026 }

\@Reset
7027 \def\@Reset[#1]#2{%
7028     \Field@toks={ }%
7029     \def\Fld@width{\DefaultWidthofReset}%
7030     \def\Fld@height{\DefaultHeightofReset}%
7031     \bgroup
7032         \def\Fld@name{Reset}%
7033         \setkeys{Field}{#1}%
7034         \ifFld@hidden\def\Fld@width{1sp}\fi
7035         \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
7036         \leavevmode
7037         \@pdfm@mark{%
7038             ann @\Fld@name\space\dvipdfm@setdim
7039             << \PDFForm@Reset >>%
7040         }%
7041         \unhbox\pdfm@box
7042         \@pdfm@mark{put @afields @\Fld@name}%
7043     \egroup
7044 }

```


\@CheckBox

```
7045 \def\@CheckBox[#1]#2{% parameters, label
7046   \def\Fld@name{#2}%
7047   \def\Fld@default{0}%
7048   \bgroup
7049     \def\Fld@width{\DefaultWidthofCheckBox}%
7050     \def\Fld@height{\DefaultHeightofCheckBox}%
7051     \Field@toks={ }%
7052     \setkeys{Field}{#1}%
7053     \ifFld@hidden\def\Fld@width{1sp}\fi
7054     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
7055     \LayoutCheckField{#2}{%
7056       \@pdfm@mark{%
7057         ann @\Fld@name\space\dvipdfm@setdim
7058         << \PDFForm@Check >>%
7059       }%
7060       \unhbox\pdfm@box
7061       \@pdfm@mark{put @afields @\Fld@name}%
7062     }%
7063   \egroup
7064 }

7065 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
7066   24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
7067   /tilde
7068   39 /quotesingle
7069   96 /grave
7070 128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
7071   /fraction /guilsinglleft /guilsinglright /minus /perthousand
7072   /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
7073   /quotesinglbase /trademark /fi /fl /lslash /OE /Scaron /Ydieresis
7074   /Zcaron /dotlessi /lslash /oe /scaron /zcaron
7075 164 /currency
7076 166 /brokenbar
7077 168 /dieresis /copyright /ordfeminine
7078 172 /logicalnot /.notdef /registered /macron /degree /plusminus
7079   /twosuperior /threesuperior /acute /mu
7080 183 /periodcentered /cedilla /onesuperior /ordmasculine
7081 188 /onequarter /onehalf /threequarters
7082 192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
7083   /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
7084   /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
7085   /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
7086   /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
7087   /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
7088   /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
7089   /eth /ntilde /ograve /oacute /ocircumflex /otilde /odieresis
7090   /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
7091   /thorn /ydieresis%
7092 ] >>
```

```

7093 }
7094 \@pdfm@mark{obj @OBJZaDb
7095 <<
7096   /Type /Font
7097   /Subtype /Type1
7098   /Name /ZaDb
7099   /BaseFont /ZapfDingbats
7100 >>
7101 }
7102 \@pdfm@mark{obj @OBJHelv
7103 <<
7104   /Type /Font
7105   /Subtype /Type1
7106   /Name /Helv
7107   /BaseFont /Helvetica
7108   /Encoding @OBJpdfdocencoding
7109 >>
7110 }
7111 </dvipdfm>

```

41.7 Common forms part

```

7112 <*pdfform>

```

\PDFForm@Check

```

7113 \def\PDFForm@Check{%
7114   /Subtype /Widget
7115   \ifFld@hidden /F 6 \else /F 4 \fi
7116   /T (\Fld@name)
7117   /Q \Fld@align\space
7118   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
7119   /MK <<
7120     /BC [\Fld@bordercolor]
7121     \ifx\Fld@bcolor\@empty
7122     \else
7123       /BG [\Fld@bcolor]
7124     \fi
7125     /CA (\Fld@cbsymbol)
7126   >>
7127   /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
7128   /FT /Btn
7129   /H /P
7130   \ifFld@checked /V /Yes \else /V /Off \fi
7131 }

```

\PDFForm@Push

```

7132 \def\PDFForm@Push{%
7133   /Subtype /Widget
7134   \ifFld@hidden /F 6 \else /F 4 \fi
7135   /T (\Fld@name)

```

```

7136 /FT /Btn
7137 /Ff 65540
7138 /H /P
7139 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
7140 /MK <<
7141     /BC [\Fld@bordercolor]
7142 >>
7143 /A << /S /JavaScript /JS (\Fld@onclick;) >>
7144 }

```

\PDFForm@List

```

7145 \def\PDFForm@List{%
7146 /Subtype /Widget
7147 \ifFld@hidden /F 6 \else /F 4 \fi
7148 /T (\Fld@name)
7149 /FT /Ch
7150 /Q \Fld@align\space
7151 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
7152 /MK <<
7153     /BC [\Fld@bordercolor]
7154     \ifx\Fld@bcolor\@empty
7155     \else
7156     /BG [\Fld@bcolor]
7157     \fi
7158 >>
7159 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
7160 /Opt [\the\Choice@toks]
7161 /DV (\Fld@default)
7162 \Fld@flags
7163 }

```

\PDFForm@Radio

```

7164 \def\PDFForm@Radio{%
7165 /Subtype /Widget
7166 \ifFld@hidden /F 6 \else /F 4 \fi
7167 /T (\Fld@name)
7168 /FT /Btn
7169 /Ff 49152
7170 /H /P
7171 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
7172 /MK <<
7173     /BC [\Fld@bordercolor]
7174     \ifx\Fld@bcolor\@empty
7175     \else
7176     /BG [\Fld@bcolor]
7177     \fi
7178 /CA (H)
7179 >>
7180 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
7181 \ifx\@currValue\Fld@default

```

```

7182     /V /\Fld@default\space
7183 \else
7184     /V /Off
7185 \fi
7186 }

```

\PDFForm@Text

```

7187 \def\PDFForm@Text{%
7188   /Subtype /Widget
7189   \ifFld@hidden /F 6 \else /F 4 \fi
7190   /T (\Fld@name)
7191   /Q \Fld@align\space
7192   /FT /Tx
7193   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
7194   /MK <<
7195     /BC [\Fld@bordercolor]
7196     \ifx\Fld@bcolor\@empty
7197     \else
7198       /BG [\Fld@bcolor]
7199     \fi
7200   >>
7201   /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
7202   /DV (\Fld@default)
7203   /AA <<

```

K input (keystroke) format

```

7204     \ifx\Fld@keystroke@code\@empty
7205     \else
7206       /K << /S /JavaScript /JS (\Fld@keystroke@code) >>
7207     \fi

```

F display format

```

7208     \ifx\Fld@format@code\@empty
7209     \else
7210       /F << /S /JavaScript /JS (\Fld@format@code) >>
7211     \fi

```

V validation

```

7212     \ifx\Fld@validate@code\@empty
7213     \else
7214       /V << /S /JavaScript /JS (\Fld@validate@code) >>
7215     \fi

```

C calculation

```

7216     \ifx\Fld@calculate@code\@empty
7217     \else
7218       /C << /S /JavaScript /JS (\Fld@calculate@code) >>
7219     \fi
7220   >>
7221   /V (\Fld@value)
7222   \ifFld@multiline

```

```

7223     \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
7224 \else
7225     \ifFld@password
7226         \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
7227     \fi
7228 \fi
7229 \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
7230 }

```

\PDFForm@Submit

```

7231 \def\PDFForm@Submit{%
7232 /Subtype /Widget
7233 \ifFld@hidden /F 6 \else /F 4 \fi
7234 /T (\Fld@name)
7235 /FT /Btn
7236 /Ff 65540
7237 /H /P
7238 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
7239 /MK <<
7240     /BC [\Fld@bordercolor]
7241 >>
7242 /A <<
7243     /S /SubmitForm
7244     /F <<
7245         /FS /URL
7246         /F (\Form@action)
7247     >>
7248     \ifForm@html /Flags 4 \fi
7249 >>
7250 }

```

\PDFForm@Reset

```

7251 \def\PDFForm@Reset{%
7252 /Subtype /Widget
7253 \ifFld@hidden /F 6 \else /F 4 \fi
7254 /T (\Fld@name)
7255 /FT /Btn
7256 /H /P
7257 /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
7258 /Ff 65540
7259 /MK <<
7260     /BC [\Fld@bordercolor]
7261 %     /CA (Clear)
7262 %     /AC (Done)
7263 >>
7264 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
7265 /A << /S /ResetForm >>
7266 }

7267 </pdfform>

```

7268 \langle *package \rangle

42 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`

```
7269 \def\phantomsection{%
7270   \Hy@GlobalStepCount\Hy@linkcounter
7271   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
7272   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7273 }
7274  $\langle$ /package $\rangle$ 
```

42.1 Bookmarks

7275 \langle *outlines \rangle

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 4. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

```
7276 \newwrite\@outlinefile
7277 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
7278   \ifx\WriteBookmarks\relax%
7279     \else
7280       \ifnum#4>\c@tocdepth
7281         \else
7282           \@writetorep{#1}{#2}{#3}{#4}{#5}%
7283         \fi
7284       \fi}
7285 \def\Hy@currentbookmarklevel{0}
7286 \def\Hy@numberline#1{#1 }
7287 \def\@writetorep#1#2#3#4#5{%
7288   \begingroup
7289     \def\Hy@tempa{#5}%
7290     \ifx\Hy@tempa\Hy@bookmarkstype
7291       \edef\Hy@level{#4}%
7292       \ifx\Hy@levelcheck Y%
7293         \@tempcnta\Hy@level\relax
7294         \advance\@tempcnta by -1
7295       \ifnum\Hy@currentbookmarklevel<\@tempcnta
7296         \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
```

```

7297         \advance\@tempcnta by 1
7298         \Hy@Warning{%
7299             Difference (\the\@tempcnta) between bookmark levels is %
7300             greater \MessageBreak than one, level fixed%
7301         }%
7302         \@tempcnta\Hy@currentbookmarklevel
7303         \advance\@tempcnta by 1
7304         \edef\Hy@level{\the\@tempcnta}%
7305     \fi
7306 \else
7307     \global\let\Hy@levelcheck Y%
7308 \fi
7309 \global\let\Hy@currentbookmarklevel\Hy@level
7310 \@tempcnta\Hy@level\relax
7311 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
7312 \advance\@tempcnta by -1
7313 \edef\Hy@tempa{#3}%
7314 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
7315 \ifx\Hy@tempa\Hy@tempb
7316     \Hy@Warning{%
7317         The anchor of a bookmark and its parent's must not%
7318         \MessageBreak be the same. Added a new anchor%
7319     }%
7320     \phantomsection
7321 \fi
7322 \ifHy@bookmarksnumbered
7323     \let\numberline\Hy@numberline
7324 \else
7325     \let\numberline\@gobble
7326 \fi
7327 \pdfstringdef\Hy@tempa{#2}%
7328 \protected@write\@outlinefile{}{%
7329     \protect\BOOKMARK
7330     [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
7331     {\Hy@tempa}{\Hy@tempb}%
7332 }%
7333 \fi
7334 \endgroup
7335 }

```

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

```

7336 \newcommand{\currentpdfbookmark}{%
7337     \pdfbookmark[\Hy@currentbookmarklevel]%
7338 }
7339 \newcommand{\subpdfbookmark}{%
7340     \@tempcnta\Hy@currentbookmarklevel
7341     \Hy@StepCount\@tempcnta
7342     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
7343 }

```

```

7344 \newcommand{\belowpdfbookmark}[2]{%
7345   \@tempcnta\Hy@currentbookmarklevel
7346   \Hy@StepCount\@tempcnta
7347   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
7348   \advance\@tempcnta by -1
7349   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
7350 }

```

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.

```

7351 \renewcommand\pdfbookmark[3][0]{%
7352   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
7353   \hyper@anchorstart{#3.#1}\hyper@anchorend
7354 }
7355 \def\BOOKMARK{\ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}}
7356 \def\@BOOKMARK[#1]{\ifnextchar[{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}}

```

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

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

```

7357 <*vtex>
7358 \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.

```

7359 \begingroup
7360   \catcode'\'=12
7361   \ifnum\Hy@VTeXversion<650 %
7362     \catcode'\ "=12
7363     \gdef\hv@pdf@char#1#2#3{%
7364       \char
7365       \ifcase'#1#2#3
7366         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
7367         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
7368         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
7369         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
7370         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
7371         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
7372         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
7373         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
7374         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
7375         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
7376         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
7377         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
7378         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%

```



```

7379 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
7380 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
7381 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
7382 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
7383 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
7384 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
7385 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
7386 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
7387 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
7388 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
7389 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
7390 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
7391 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
7392 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
7393 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
7394 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
7395 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
7396 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
7397 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
7398 \fi
7399 }
7400 \else
7401 \gdef\hv@pdf@char{\char'}
7402 \fi
7403 \endgroup

```

\@@BOOKMARK

```

7404 \def\@@BOOKMARK[#1][#2]#3#4#5{%
7405 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
7406 \edef\@mycount{\the\@serial@counter}%
7407 \Hy@StepCount\@serial@counter
7408 \edef\@parcount{%
7409 \expandafter\ifx\csname @count@#5\endcsname\relax
7410 0%
7411 \else
7412 \csname @count@#5\endcsname
7413 \fi
7414 }%
7415 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
7416 o\fi,t=#4}%
7417 }%

```

\ReadBookmarks

```

7418 \def\ReadBookmarks{%
7419 \begingroup
7420 \def\0{\hv@pdf@char 0}%
7421 \def\1{\hv@pdf@char 1}%
7422 \def\2{\hv@pdf@char 2}%
7423 \def\3{\hv@pdf@char 3}%
7424 \def\{({}%

```

```

7425 \def\)}{)%
7426 \InputIfFileExists{\jobname.out}{-}{-}%
7427 \endgroup
7428 \ifx\WriteBookmarks\relax
7429 \else
7430 \if@files
7431 \immediate\openout\@outlinefile=\jobname.out
7432 \ifHy@typexml
7433 \immediate\write\@outlinefile{<relaxxml>\relax}%
7434 \fi
7435 \fi
7436 \fi
7437 }

7438 </vtex>
7439 <*\vtex>
7440 \def\ReadBookmarks{%
7441 \begingroup
7442 \escapechar='\'%
7443 \let\escapechar\gobble %
7444 \def\@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
7445 \InputIfFileExists{\jobname.out}{-}{-}%
7446 \ifx\WriteBookmarks\relax
7447 \global\let\WriteBookmarks\relax
7448 \fi
7449 \def\@BOOKMARK [##1][##2]##3##4##5{%
7450 \def\Hy@temp{##4}%
7451 <*\pdfTeX>
7452 \pdfoutline goto
7453 name{##3}%
7454 count ##2\check@bm@number{##3}{%
7455 \expandafter\strip@prefix\meaning\Hy@temp
7456 }%
7457 </pdfTeX>
7458 <*\pdfmark>
7459 \pdfmark{%
7460 pdfmark=/OUT,%
7461 Count=##2\check@bm@number{##3},%
7462 Dest={##3},%
7463 Title=\expandafter\strip@prefix\meaning\Hy@temp
7464 }%
7465 </pdfmark>
7466 <*\dviPDFM>
7467 \@pdfm@mark{%
7468 outline ##1 <<
7469 /Title (\expandafter\strip@prefix\meaning\Hy@temp)
7470 /A <<
7471 /S /GoTo
7472 /D (##3)
7473 >>

```

```

7474     >>
7475     }%
7476 </dvipdfm>
7477 }%
7478 {%
7479   \def\WriteBookmarks{0}%
7480   \InputIfFileExists{\jobname.out}{\{\}}%
7481 }%
7482 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{\{\}}}%
7483 \ifx\WriteBookmarks\relax\else
7484   \if@files\immediate\openout\@outlinefile=\jobname.out
7485   \ifHy@typexml
7486     \immediate\write\@outlinefile{<relaxxml>\relax}%
7487   \fi
7488 \fi
7489 \fi
7490 \endgroup
7491 }
7492 \def\check@bm@number#1{%
7493   \expandafter\ifx\csname B_#1\endcsname\relax
7494     0%
7495   \else
7496     \csname B_#1\endcsname
7497   \fi
7498 }
7499 \def\calc@bm@number#1{%
7500   \@tempcnta=\check@bm@number{#1}\relax
7501   \advance\@tempcnta by1
7502   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
7503 }
7504 </!vtex>

```

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

```

7505 \ifHy@implicit
7506 \else
7507   \def\@beginndvi{%
7508     \unvbox\@beginndvibox
7509     \HyPL@EveryPage
7510     \global\let\@beginndvi\HyPL@EveryPage
7511   }%
7512   \expandafter\endinput
7513 \fi

7514 \let\H@old@ssect\@ssect
7515 \def\@ssect#1#2#3#4#5{%
7516   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
7517   \phantomsection
7518 }
7519 \let\H@old@schapter\@schapter
7520 \def\@schapter#1{%

```

```

7521 \H@old@schapter{#1}%
7522 \begingroup
7523   \let\@mkboth\@gobbletwo
7524   \Hy@GlobalStepCount\Hy@linkcounter
7525   \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
7526   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7527 \endgroup
7528 }

```

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:

```

7529 \@ifundefined{@chapter}{}{%
7530   \let\Hy@org@chapter\@chapter
7531   \def\@chapter{%
7532     \def\Hy@next{%
7533       \Hy@GlobalStepCount\Hy@linkcounter
7534       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
7535       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7536     }%
7537     \ifnum\c@secnumdepth>\m@ne
7538       \@ifundefined{if@mainmatter}%
7539       \iftrue{\csname if@mainmatter\endcsname}
7540       \let\Hy@next\relax
7541     \fi
7542     \fi
7543     \Hy@next
7544     \Hy@org@chapter
7545   }%
7546 }

7547 \let\H@old@spart\@spart
7548 \def\@spart#1{%
7549   \H@old@spart{#1}%
7550   \Hy@GlobalStepCount\Hy@linkcounter
7551   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
7552   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7553 }

7554 \let\H@old@sect\@sect
7555 \def\@sect#1#2#3#4#5#6[#7]#8{%
7556   \ifnum #2>\c@secnumdepth
7557     \Hy@GlobalStepCount\Hy@linkcounter
7558     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
7559     \fi
7560   \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[[#7]][#8]%
7561   \ifnum #2>\c@secnumdepth
7562     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7563     \fi
7564 }

7565 \expandafter\def\csname Parent-4\endcsname{}
7566 \expandafter\def\csname Parent-3\endcsname{}

```

```

7567 \expandafter\def\csname Parent-2\endcsname{}
7568 \expandafter\def\csname Parent-1\endcsname{}
7569 \expandafter\def\csname Parent0\endcsname{}
7570 \expandafter\def\csname Parent1\endcsname{}
7571 \expandafter\def\csname Parent2\endcsname{}
7572 \expandafter\def\csname Parent3\endcsname{}
7573 \expandafter\def\csname Parent4\endcsname{}

```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias.Isenberg@gmx.de.

```

7574 \ifclassloaded{scrbook}{%
7575   \def\@addchap[#1]#2{%
7576     \typeout{#2}%
7577     \if@twoside\@mkboth{#1}{ }\else\@mkboth{ }\{#1\}\fi
7578     \addtocontents{lof}{\protect\addvspace{10\p@}}%
7579     \addtocontents{lot}{\protect\addvspace{10\p@}}%
7580     \Hy@GlobalStepCount\Hy@linkcounter
7581     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
7582     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7583     \if@twocolumn
7584       \topnewpage[\@makeschapterhead{#2}]%
7585     \else
7586       \@makeschapterhead{#2}%
7587       \@afterheading
7588     \fi
7589     \addcontentsline{toc}{chapter}{#1}%
7590   }%
7591 }{}
7592 </outlines>
7593 <*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.

```

7594 \begingroup
7595   \catcode‘P=12
7596   \catcode‘T=12
7597   \lowercase{\endgroup
7598   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
7599 }
7600 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
7601 </pdfmark>

```

43 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

43.1 PD1 encoding

```

7602 <*pd1enc>
7603 \DeclareFontEncoding{PD1}{-}{-}

Special white space escape characters not for use in bookmarks but for other PDF strings.
7604 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
7605 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
7606 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
7607 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
7608 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

Accents
7609 \DeclareTextAccent{\'}{PD1}{\textgrave}
7610 \DeclareTextAccent{\'}{PD1}{\textacute}
7611 \DeclareTextAccent{\~}{PD1}{\textcircumflex}
7612 \DeclareTextAccent{\~}{PD1}{\texttilde}
7613 \DeclareTextAccent{\"}{PD1}{\textdieresis}
7614 \DeclareTextAccent{\r}{PD1}{\textring}
7615 \DeclareTextAccent{\v}{PD1}{\textcaron}
7616 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
7617 \DeclareTextAccent{\c}{PD1}{\textcedilla}
7618 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textgrave}
7619 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
7620 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textcircumflex}
7621 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
7622 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
7623 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
7624 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
7625 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
7626 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}

Accent glyph names
7627 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
7628 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
7629 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
7630 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
7631 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
7632 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
7633 \DeclareTextCommand{\textring}{PD1}{\036} % ring
7634 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
7635 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
7636 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
7637 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
7638 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
7639 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
7640 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050
7641 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus

```

```

\054: comma
\055: hyphen
\056: period
\057: slash
\060...\071: 0...9
\072: colon
\073: semicolon
7642 \DeclareTextCommand{\textless}{PD1}{<} % less \074
\075: equal
7643 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076
\077: question
\100: at
\101...\132: A...Z
\133: bracketleft
7644 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
7645 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
7646 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
7647 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141...\172: a...z
7648 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
7649 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
7650 \DeclareTextCommand{\textbar}{PD1}{|} % bar
7651 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
7652 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
7653 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
7654 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
7655 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
7656 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
7657 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
7658 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
7659 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
7660 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
7661 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
7662 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
7663 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
7664 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
7665 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
7666 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
7667 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
7668 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
7669 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
7670 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
7671 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
7672 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
7673 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224

```

7674 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
7675 \DeclareTextCommand{\OE}{PD1}{\226} % OE
7676 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
7677 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230} % Ydieresis
7678 \DeclareTextCommand{\IJ}{PD1}{\230}
7679 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
7680 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
7681 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
7682 \DeclareTextCommand{\oe}{PD1}{\234} % oe
7683 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
7684 \DeclareTextCompositeCommand{\v}{PD1}{z}{z} % zcaron, 236

No glyph \237 in PDFDocEncoding.

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

7685 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
7686 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
7687 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
7688 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
7689 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
7690 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
7691 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
7692 \DeclareTextCommand{\textsection}{PD1}{\247} % section
7693 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
7694 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
7695 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
7696 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
7697 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

No glyph \255 in PDFDocEncoding.

7698 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
7699 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
7700 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
7701 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
7702 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
7703 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
7704 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
7705 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
7706 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
7707 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
7708 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
7709 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
7710 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
7711 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
7712 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
7713 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
7714 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
7715 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
7716 \DeclareTextCompositeCommand{\'}{PD1}{A}{\300} % Agrave
7717 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute
7718 \DeclareTextCompositeCommand{\`}{PD1}{A}{\302} % Acircumflex
7719 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde

7720 \DeclareTextCompositeCommand{"}{PD1}{A}{\304} % Adieresis
7721 \DeclareTextCompositeCommand{r}{PD1}{A}{\305} % Aring
7722 \DeclareTextCommand{AE}{PD1}{\306} % AE
7723 \DeclareTextCompositeCommand{c}{PD1}{C}{\307} % Ccedilla
7724 \DeclareTextCompositeCommand{'}{PD1}{E}{\310} % Egrave
7725 \DeclareTextCompositeCommand{'}{PD1}{E}{\311} % Eacute
7726 \DeclareTextCompositeCommand{^}{PD1}{E}{\312} % Ecircumflex
7727 \DeclareTextCompositeCommand{"}{PD1}{E}{\313} % Edieresis
7728 \DeclareTextCompositeCommand{'}{PD1}{I}{\314} % Igrave
7729 \DeclareTextCompositeCommand{'}{PD1}{I}{\315} % Iacute
7730 \DeclareTextCompositeCommand{^}{PD1}{I}{\316} % Icircumflex
7731 \DeclareTextCompositeCommand{"}{PD1}{I}{\317} % Idieresis
7732 \DeclareTextCommand{DH}{PD1}{\320} % Eth
7733 \DeclareTextCommand{DJ}{PD1}{\320} % Eth
7734 \DeclareTextCompositeCommand{~}{PD1}{N}{\321} % Ntilde
7735 \DeclareTextCompositeCommand{'}{PD1}{O}{\322} % Ograve
7736 \DeclareTextCompositeCommand{'}{PD1}{O}{\323} % Oacute
7737 \DeclareTextCompositeCommand{^}{PD1}{O}{\324} % Ocircumflex
7738 \DeclareTextCompositeCommand{~}{PD1}{O}{\325} % Otilde
7739 \DeclareTextCompositeCommand{"}{PD1}{O}{\326} % Odieresis
7740 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
7741 \DeclareTextCommand{O}{PD1}{\330} % Oslash
7742 \DeclareTextCompositeCommand{'}{PD1}{U}{\331} % Ugrave
7743 \DeclareTextCompositeCommand{'}{PD1}{U}{\332} % Uacute
7744 \DeclareTextCompositeCommand{^}{PD1}{U}{\333} % Ucircumflex
7745 \DeclareTextCompositeCommand{"}{PD1}{U}{\334} % Udieresis
7746 \DeclareTextCompositeCommand{'}{PD1}{Y}{\335} % Yacute
7747 \DeclareTextCommand{TH}{PD1}{\336} % Thorn
7748 \DeclareTextCommand{ss}{PD1}{\337} % germandbls
7749 \DeclareTextCompositeCommand{'}{PD1}{a}{\340} % agrave
7750 \DeclareTextCompositeCommand{'}{PD1}{a}{\341} % aacute
7751 \DeclareTextCompositeCommand{^}{PD1}{a}{\342} % acircumflex
7752 \DeclareTextCompositeCommand{~}{PD1}{a}{\343} % atilde
7753 \DeclareTextCompositeCommand{"}{PD1}{a}{\344} % adieresis
7754 \DeclareTextCompositeCommand{r}{PD1}{a}{\345} % aring
7755 \DeclareTextCommand{ae}{PD1}{\346} % ae
7756 \DeclareTextCompositeCommand{c}{PD1}{c}{\347} % ccedilla
7757 \DeclareTextCompositeCommand{'}{PD1}{e}{\350} % egrave
7758 \DeclareTextCompositeCommand{'}{PD1}{e}{\351} % eacute
7759 \DeclareTextCompositeCommand{^}{PD1}{e}{\352} % ecircumflex
7760 \DeclareTextCompositeCommand{"}{PD1}{e}{\353} % edieresis
7761 \DeclareTextCompositeCommand{'}{PD1}{i}{\354} % igrave
7762 \DeclareTextCompositeCommand{'}{PD1}{i}{\354} % igrave
7763 \DeclareTextCompositeCommand{'}{PD1}{i}{\355} % iacute
7764 \DeclareTextCompositeCommand{'}{PD1}{i}{\355} % iacute
7765 \DeclareTextCompositeCommand{^}{PD1}{i}{\356} % icircumflex
7766 \DeclareTextCompositeCommand{^}{PD1}{i}{\356} % icircumflex
7767 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
7768 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
7769 \DeclareTextCommand{dh}{PD1}{\360} % eth

```

7770 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
7771 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
7772 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
7773 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
7774 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
7775 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
7776 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
7777 \DeclareTextCommand{\o}{PD1}{\370} % oslash
7778 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave
7779 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
7780 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
7781 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
7782 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
7783 \DeclareTextCommand{\th}{PD1}{\376} % thorn
7784 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
7785 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

7786 \DeclareTextCommand{\SS}{PD1}{SS}
7787 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

7788 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
7789 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
7790 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
7791 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
7792 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
7793 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
7794 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
7795 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

7796 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
7797 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
7798 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
7799 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
7800 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
7801 \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
j.W.Myszka@immt.pwr.wroc.pl;

```

7802 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
7803 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
7804 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
7805 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
7806 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
7807 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
7808 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
7809 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
7810 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
7811 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek

```

```

7812 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
7813 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
7814 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
7815 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot
7816 </pdlenc>

```

43.2 PU encoding

```

7817 <*puenc>
7818 \DeclareFontEncoding{PU}{-}{-}

```

43.2.1 Basic Latin

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

```

7819 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
7820 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
7821 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
7822 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
7823 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

Accents

```

7824 \DeclareTextAccent{\'}{PU}{\textgrave}
7825 \DeclareTextAccent{\'}{PU}{\textacute}
7826 \DeclareTextAccent{\~}{PU}{\textcircumflex}
7827 \DeclareTextAccent{\~}{PU}{\texttilde}
7828 \DeclareTextAccent{"}{PU}{\textdieresis}
7829 \DeclareTextAccent{\r}{PU}{\textring}
7830 \DeclareTextAccent{\v}{PU}{\textcaron}
7831 \DeclareTextAccent{\.}{PU}{\textdotaccent}
7832 \DeclareTextAccent{\c}{PU}{\textcedilla}
7833 \DeclareTextAccent{\U}{PU}{\textbreve}
7834 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
7835 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textgrave}
7836 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
7837 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
7838 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
7839 \DeclareTextCompositeCommand{"}{PU}{\@empty}{\textdieresis}
7840 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
7841 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
7842 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
7843 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
7844 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
7845 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}

```

Accent glyph names

```

7846 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
7847 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
7848 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
7849 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
7850 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
7851 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek

```

```

7852 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
7853 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
7854 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
\040: space
\041: exclam
7855 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
7856 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
7857 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
7858 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
7859 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
\047: quotesingle
7860 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
7861 \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
7862 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
\075: equal
7863 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076
\077: question
\100: at
\101...\132: A...Z
\133: bracketleft
7864 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
\135: bracketright
7865 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
7866 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
7867 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
\141...\172: a...z
7868 \DeclareTextCompositeCommand{.}{PU}{i}{i} % i
7869 \DeclareTextCommand{\j}{PU}{j} % jdotless
7870 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
7871 \DeclareTextCommand{\textbar}{PU}{|} % bar
7872 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
7873 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
No glyph \177 in PDFDocEncoding.

```

43.2.2 Latin-1 Supplement

```
7874 \DeclareTextCommand{\textbullet}{PU}{\80\200} % bullet
7875 \DeclareTextCommand{\textdagger}{PU}{\80\201} % dagger
7876 \DeclareTextCommand{\textdaggerdbl}{PU}{\80\202} % daggerdbl
7877 \DeclareTextCommand{\textellipsis}{PU}{\80\203} % ellipsis
7878 \DeclareTextCommand{\textemdash}{PU}{\80\204} % emdash
7879 \DeclareTextCommand{\textendash}{PU}{\80\205} % endash
7880 \DeclareTextCommand{\textflorin}{PU}{\80\206} % florin
7881 \DeclareTextCommand{\textfractionmark}{PU}{/} % fraction, \80\207
7882 \DeclareTextCommand{\guilsinglleft}{PU}{\80\210} % guilsinglleft
7883 \DeclareTextCommand{\guilsinglright}{PU}{\80\211} % guilsinglright
7884 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
7885 \DeclareTextCommand{\textperthousand}{PU}{\80\213} % perthousand
7886 \DeclareTextCommand{\quotedblbase}{PU}{\80\214} % quotedblbase
7887 \DeclareTextCommand{\textquotedblleft}{PU}{\80\215} % quotedblleft
7888 \DeclareTextCommand{\textquotedblright}{PU}{\80\216} % quotedblright
7889 \DeclareTextCommand{\textquoteleft}{PU}{\80\217} % quoteleft
7890 \DeclareTextCommand{\textquoteright}{PU}{\80\220} % quoteright
7891 \DeclareTextCommand{\quotesinglbase}{PU}{\80\221} % quotesinglbase
7892 \DeclareTextCommand{\texttrademark}{PU}{\80\222} % trademark
7893 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
7894 \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, testbmasc, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

```
7895 \DeclareTextCommand{\OE}{PU}{\80\226} % OE
7896 \DeclareTextCommand{\oe}{PU}{\80\234} % oe
```

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

```
7897 \DeclareTextCommand{\texteuro}{PU}{\80\240} % Euro
7898 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
7899 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
7900 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
7901 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
7902 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
7903 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
7904 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
7905 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
7906 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
7907 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
7908 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
7909 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot
```

No glyph \255 in PDFDocEncoding.

```
7910 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
7911 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
7912 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
7913 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
7914 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
7915 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
```

7916 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
7917 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
7918 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
7919 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
7920 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
7921 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
7922 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
7923 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
7924 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
7925 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
7926 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
7927 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
7928 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
7929 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
7930 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\302} % Acircumflex
7931 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\303} % Atilde
7932 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
7933 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
7934 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
7935 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
7936 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
7937 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
7938 \DeclareTextCompositeCommand{\~}{PU}{E}{\80\312} % Ecircumflex
7939 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
7940 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
7941 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
7942 \DeclareTextCompositeCommand{\~}{PU}{I}{\80\316} % Icircumflex
7943 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
7944 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
7945 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
7946 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve
7947 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
7948 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\324} % Ocircumflex
7949 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
7950 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
7951 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
7952 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
7953 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave
7954 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
7955 \DeclareTextCompositeCommand{\~}{PU}{U}{\80\333} % Ucircumflex
7956 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
7957 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
7958 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
7959 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
7960 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave
7961 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute
7962 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\342} % acircumflex
7963 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
7964 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
7965 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring

```

7966 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
7967 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
7968 \DeclareTextCompositeCommand{\' }{PU}{e}{\80\350} % egrave
7969 \DeclareTextCompositeCommand{\' }{PU}{e}{\80\351} % eacute
7970 \DeclareTextCompositeCommand{\^ }{PU}{e}{\80\352} % ecircumflex
7971 \DeclareTextCompositeCommand{\" }{PU}{e}{\80\353} % edieresis
7972 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\354} % igrave
7973 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\354} % igrave
7974 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\355} % iacute
7975 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\355} % iacute
7976 \DeclareTextCompositeCommand{\^ }{PU}{i}{\80\356} % icircumflex
7977 \DeclareTextCompositeCommand{\^ }{PU}{i}{\80\356} % icircumflex
7978 \DeclareTextCompositeCommand{\" }{PU}{i}{\80\357} % idieresis
7979 \DeclareTextCompositeCommand{\" }{PU}{i}{\80\357} % idieresis
7980 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
7981 \DeclareTextCompositeCommand{\~ }{PU}{n}{\80\361} % ntilde
7982 \DeclareTextCompositeCommand{\' }{PU}{o}{\80\362} % ograve
7983 \DeclareTextCompositeCommand{\' }{PU}{o}{\80\363} % oacute
7984 \DeclareTextCompositeCommand{\^ }{PU}{o}{\80\364} % ocircumflex
7985 \DeclareTextCompositeCommand{\~ }{PU}{o}{\80\365} % otilde
7986 \DeclareTextCompositeCommand{\" }{PU}{o}{\80\366} % odieresis
7987 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
7988 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
7989 \DeclareTextCompositeCommand{\' }{PU}{u}{\80\371} % ugrave
7990 \DeclareTextCompositeCommand{\' }{PU}{u}{\80\372} % uacute
7991 \DeclareTextCompositeCommand{\^ }{PU}{u}{\80\373} % ucircumflex
7992 \DeclareTextCompositeCommand{\" }{PU}{u}{\80\374} % udieresis
7993 \DeclareTextCompositeCommand{\' }{PU}{y}{\80\375} % yacute
7994 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
7995 \DeclareTextCompositeCommand{\" }{PU}{y}{\80\377} % ydieresis
7996 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

7997 \DeclareTextCommand{\SS}{PU}{SS}
7998 \DeclareTextCommand{\textcelsius}{PU}{\textdegree C}

```

Aliases (german.sty)

```

7999 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
8000 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
8001 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
8002 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
8003 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
8004 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
8005 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
8006 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

8007 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
8008 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
8009 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
8010 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
8011 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

8012 \DeclareTextCommand{\textbeta}{PU}{\ss}

43.2.3 Latin Extended-A

8013 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
8014 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
8015 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
8016 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
8017 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
8018 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
8019 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
8020 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
8021 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% Ccircumflex
8022 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% ccircumflex
8023 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
8024 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
8025 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
8026 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
8027 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
8028 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
8029 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
8030 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
8031 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
8032 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
8033 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
8034 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
8035 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
8036 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
8037 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
8038 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
8039 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
8040 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
8041 \DeclareTextCompositeCommand{\~}{PU}{G}{\81\034}% Gcircumflex
8042 \DeclareTextCompositeCommand{\~}{PU}{g}{\81\035}% gcircumflex
8043 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
8044 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
8045 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
8046 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
8047 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
8048 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
8049 \DeclareTextCompositeCommand{\~}{PU}{H}{\81\044}% Hcircumflex
8050 \DeclareTextCompositeCommand{\~}{PU}{h}{\81\045}% hcircumflex
8051 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
8052 \DeclareTextCommand{\texthslash}{PU}{\81\047}% hslash
8053 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
8054 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
8055 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% itilde
8056 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
8057 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
8058 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% imacron
8059 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% Ibreve


```

8060 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
8061 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055} % ibreve
8062 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
8063 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
8064 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057} % iogonek
8065 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
8066 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
8067 % IJlig
8068 % ijlig
8069 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
8070 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
8071 \DeclareTextCompositeCommand{\^}{PU}{\j}{\81\065} % jcircumflex
8072 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
8073 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
8074 % kgreen
8075 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
8076 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
8077 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
8078 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
8079 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
8080 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
8081 % L middle dot
8082 % l middle dot
8083 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
8084 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
8085 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
8086 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
8087 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
8088 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
8089 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
8090 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
8091 % n apostrophe
8092 \DeclareTextCommand{\NG}{PU}{NG} % \81\112
8093 \DeclareTextCommand{\ng}{PU}{ng} % \81\113
8094 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
8095 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
8096 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
8097 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
8098 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
8099 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
8100 % \DeclareTextCommand{\OE}{PU}{\81\122} % OE
8101 % \DeclareTextCommand{\oe}{PU}{\81\123} % oe
8102 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
8103 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
8104 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
8105 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
8106 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
8107 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
8108 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
8109 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute

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8110 \DeclareTextCompositeCommand{\~}{PU}{S}{\81\134} % Scircumflex
8111 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135} % scircumflex
8112 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
8113 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
8114 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
8115 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
8116 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
8117 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
8118 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
8119 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
8120 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
8121 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
8122 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
8123 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
8124 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
8125 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
8126 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
8127 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
8128 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
8129 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
8130 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
8131 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
8132 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
8133 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
8134 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
8135 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
8136 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
8137 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
8138 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
8139 \DeclareTextCommand{\IJ}{PU}{\81\170}
8140 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
8141 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
8142 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
8143 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
8144 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
8145 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

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43.2.4 Latin Extended-B

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8146 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
8147 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
8148 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
8149 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
8150 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
8151 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
8152 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
8153 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
8154 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
8155 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
8156 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
8157 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron

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```

8158 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
8159 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
8160 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
8161 \DeclareTextCompositeCommand{\k}{PU}{0}{\81\352} % Oogonek
8162 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

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43.2.5 Greek

```

8163 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
8164 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
8165 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
8166 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
8167 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
8168 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
8169 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
8170 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
8171 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
8172 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
8173 \DeclareTextCommand{\textBeta}{PU}{\83\222}
8174 \DeclareTextCommand{\textGamma}{PU}{\83\223}
8175 \DeclareTextCommand{\textDelta}{PU}{\83\224}
8176 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
8177 \DeclareTextCommand{\textZeta}{PU}{\83\226}
8178 \DeclareTextCommand{\textEta}{PU}{\83\227}
8179 \DeclareTextCommand{\textTheta}{PU}{\83\230}
8180 \DeclareTextCommand{\textIota}{PU}{\83\231}
8181 \DeclareTextCommand{\textKappa}{PU}{\83\232}
8182 \DeclareTextCommand{\textLambda}{PU}{\83\233}
8183 \DeclareTextCommand{\textMu}{PU}{\83\234}
8184 \DeclareTextCommand{\textNu}{PU}{\83\235}
8185 \DeclareTextCommand{\textXi}{PU}{\83\236}
8186 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
8187 \DeclareTextCommand{\textPi}{PU}{\83\240}
8188 \DeclareTextCommand{\textRho}{PU}{\83\241}
8189 \DeclareTextCommand{\textSigma}{PU}{\83\243}
8190 \DeclareTextCommand{\textTau}{PU}{\83\244}
8191 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
8192 \DeclareTextCommand{\textPhi}{PU}{\83\246}
8193 \DeclareTextCommand{\textChi}{PU}{\83\247}
8194 \DeclareTextCommand{\textPsi}{PU}{\83\250}
8195 \DeclareTextCommand{\textOmega}{PU}{\83\251}
8196 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
8197 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
8198 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
8199 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
8200 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
8201 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
8202 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
8203 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
8204 \DeclareTextCommand{\textalpha}{PU}{\83\261}
8205 \DeclareTextCommand{\textbeta}{PU}{\83\262}

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8206 \DeclareTextCommand{\textgamma}{PU}{\83\263}
8207 \DeclareTextCommand{\textdelta}{PU}{\83\264}
8208 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
8209 \DeclareTextCommand{\textzeta}{PU}{\83\266}
8210 \DeclareTextCommand{\texteta}{PU}{\83\267}
8211 \DeclareTextCommand{\texttheta}{PU}{\83\270}
8212 \DeclareTextCommand{\textiota}{PU}{\83\271}
8213 \DeclareTextCommand{\textkappa}{PU}{\83\272}
8214 \DeclareTextCommand{\textlambda}{PU}{\83\273}
8215 \DeclareTextCommand{\textmu}{PU}{\83\274}
8216 \DeclareTextCommand{\textnu}{PU}{\83\275}
8217 \DeclareTextCommand{\textxi}{PU}{\83\276}
8218 \DeclareTextCommand{\textomicron}{PU}{\83\277}
8219 \DeclareTextCommand{\textpi}{PU}{\83\300}
8220 \DeclareTextCommand{\textrho}{PU}{\83\301}
8221 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
8222 \DeclareTextCommand{\textsigma}{PU}{\83\303}
8223 \DeclareTextCommand{\texttau}{PU}{\83\304}
8224 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
8225 \DeclareTextCommand{\textphi}{PU}{\83\306}
8226 \DeclareTextCommand{\textchi}{PU}{\83\307}
8227 \DeclareTextCommand{\textpsi}{PU}{\83\310}
8228 \DeclareTextCommand{\textomega}{PU}{\83\311}
8229 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
8230 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
8231 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
8232 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
8233 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
8234 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
8235 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
8236 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
8237 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}
8238 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
8239 %\DeclareTextCommand{\textvarrho}{PU}{\83\361}

```

43.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```

8240 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
8241 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
8242 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
8243 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
8244 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
8245 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
8246 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
8247 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
8248 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
8249 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
8250 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE

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8251 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
8252 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% KJE
8253 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
8254 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
8255 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
8256 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
8257 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
8258 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
8259 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
8260 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
8261 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
8262 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
8263 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
8264 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
8265 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
8266 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
8267 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
8268 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
8269 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
8270 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
8271 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
8272 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
8273 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
8274 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
8275 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
8276 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
8277 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
8278 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
8279 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
8280 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
8281 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
8282 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
8283 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
8284 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
8285 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
8286 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
8287 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
8288 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
8289 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
8290 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
8291 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
8292 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
8293 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
8294 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
8295 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
8296 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
8297 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
8298 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
8299 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
8300 \DeclareTextCommand{\cyrl}{PU}{\84\073}% el

8301 \DeclareTextCommand{\cymr}{PU}{\84\074}% em
8302 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
8303 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
8304 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
8305 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
8306 \DeclareTextCommand{\cyr{s}}{PU}{\84\101}% es
8307 \DeclareTextCommand{\cyrt}{PU}{\84\102}% te
8308 \DeclareTextCommand{\cyru}{PU}{\84\103}% u
8309 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef
8310 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
8311 \DeclareTextCommand{\cyrc}{PU}{\84\106}% tse
8312 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che
8313 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha
8314 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
8315 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
8316 \DeclareTextCommand{\cyrrery}{PU}{\84\113}% yeru
8317 \DeclareTextCommand{\cyr{s}ftsn}{PU}{\84\114}% soft sign
8318 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
8319 \DeclareTextCommand{\cyr{y}u}{PU}{\84\116}% yu
8320 \DeclareTextCommand{\cyr{y}a}{PU}{\84\117}% ya
8321 \DeclareTextCommand{\cyr{y}o}{PU}{\84\121}% io
8322 \DeclareTextCompositeCommand{\'}{PU}{\cyr{e}}{\84\121}%
8323 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
8324 \DeclareTextCompositeCommand{\'}{PU}{\cyr{g}}{\84\123}% gje
8325 \DeclareTextCommand{\cyr{ie}}{PU}{\84\124}% ukrainian ie
8326 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
8327 \DeclareTextCommand{\cyr{ii}}{PU}{\84\126}% byelorussian-ukrainian i
8328 \DeclareTextCommand{\cyr{yi}}{PU}{\84\127}% yi
8329 \DeclareTextCommand{\cyr{je}}{PU}{\84\130}% je
8330 \DeclareTextCommand{\cyr{l}je}{PU}{\84\131}% lje
8331 \DeclareTextCommand{\cyr{n}je}{PU}{\84\132}% nje
8332 \DeclareTextCommand{\cyr{ts}he}{PU}{\84\133}% tshe
8333 \DeclareTextCompositeCommand{\'}{PU}{\cyr{k}}{\84\134}% kje
8334 \DeclareTextCommand{\cyr{ushrt}}{PU}{\84\136}% short u
8335 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
8336 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
8337 \DeclareTextCommand{\cyr{omega}}{PU}{\84\141}% omega
8338 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
8339 \DeclareTextCommand{\cyr{yat}}{PU}{\84\143}% yat
8340 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
8341 \DeclareTextCommand{\cyr{i}ote}{PU}{\84\145}% iotified e
8342 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
8343 \DeclareTextCommand{\cyr{l}yus}{PU}{\84\147}% little yus
8344 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
8345 \DeclareTextCommand{\cyr{i}otlyus}{PU}{\84\151}% iotified little yus
8346 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
8347 \DeclareTextCommand{\cyr{by}us}{PU}{\84\153}% big yus
8348 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
8349 \DeclareTextCommand{\cyr{i}otbyus}{PU}{\84\155}% iotified big yus
8350 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI

8351 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi
8352 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
8353 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
8354 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
8355 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
8356 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
8357 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
8358 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
8359 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
8360 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
8361 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
8362 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
8363 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
8364 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
8365 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
8366 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
8367 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
8368 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
8369 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
8370 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
8371 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
8372 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
8373 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
8374 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
8375 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
8376 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
8377 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
8378 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
8379 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
8380 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
8381 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
8382 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
8383 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
8384 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
8385 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
8386 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender
8387 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
8388 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
8389 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
8390 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
8391 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
8392 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
8393 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
8394 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
8395 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
8396 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
8397 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
8398 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
8399 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
8400 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha

8401 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
8402 \DeclareTextCommand{\cyrstdsc}{PU}{\84\253}% es descender
8403 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
8404 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% te descender
8405 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
8406 \DeclareTextCommand{\cyrY}{PU}{\84\257}% straight u
8407 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
8408 \DeclareTextCommand{\cyrYhcrs}{PU}{\84\261}% straight u stroke
8409 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
8410 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
8411 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
8412 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse
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8473 </puenc>

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