

Hypertext marks in L^AT_EX

Sebastian Rahtz

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

Heiko Oberdiek

Email: `oberdiek@uni-freiburg.de`

processed December 30, 2006

1 Documentation overview for hyperref

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

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

Bookmark talk, paper The paper version of the talk.

Source code documentation:

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

backref.dtx “Back referencing from bibliographical citations”

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

2 Contents

1	Documentation overview for hyperref	1
2	Contents	2
3	File hycheck.tex	6
4	Package options and setup	9
4.1	Save catcodes	9
4.2	Compatibility with format dumps	11
4.3	Switches	11
5	Common help macros	13
5.1	Macros for recursions	13
5.2	Babel's protection of shorthand characters	13
5.3	Coordinate transformations	13
6	Dealing with PDF strings	14
6.1	Description of PDF strings	15
6.2	Definition of <code>\pdfstringdef</code>	15
6.2.1	Preprocessing	16
6.2.2	Expansion	20
6.2.3	Postprocessing	22
6.3	Encodings	25
6.3.1	PD1 encoding	25
6.3.2	PU encoding	25
6.4	Additional user commands	26
6.4.1	<code>\texorpdfstring</code>	26
6.4.2	Hooks for <code>\pdfstringdef</code>	26
6.5	Help macros for expansion	27
6.5.1	Babel languages	27
6.5.2	CJK bookmarks	29
6.5.3	<code>\@inmathwarn-Patch</code>	30
6.5.4	<code>\add@accent-Patch</code>	31
6.5.5	Unexpandable spaces	32
6.5.6	Marker for commands	32
6.5.7	<code>\hspace fix</code>	32
6.5.8	Fix for AMS classes	33
6.5.9	Reference commands	33
6.5.10	Redefining the defining commands	34
6.5.11	<code>\ifnextchar</code>	35
6.5.12	<code>\@protected@testoptifnextchar</code>	35
6.6	Help macros for postprocessing	36
6.6.1	Generic warning.	36
6.6.2	Protecting spaces	36
6.6.3	Remove grouping braces	36
6.6.4	Catcode check	37
6.6.5	Check for wrong glyphs	40
6.6.6	Replacing tokens	41
6.6.7	Support for package <code>xspace</code>	42
6.6.8	Converting to Unicode	42
6.6.9	Support for UTF-8 input encoding	43

7	Support of other packages	46
7.1	Class memoir	46
7.2	Package subfigure	46
7.3	Package xr and xr-hyper	47
8	Help macros for links	48
9	Options	49
9.1	Help macros	49
9.2	Defining the options	51
10	Options for different drivers	53
11	Options to add extra features	55
12	Language options	56
13	Options to change appearance of links	60
14	Bookmarking	60
15	PDF-specific options	61
15.1	Patch for babel's \texttilde	67
15.1.1	Driver loading	68
15.1.2	Bookmarks	70
16	User hypertext macros	72
17	Underlying basic hypertext macros	75
18	Compatibility with the <i>l^AT_EX2html</i> package	77
19	Forms creation	78
20	Setup	83
21	Low-level utility macros	84
22	Localized nullifying of package	84
23	Package nohyperref	85
24	The Mangling Of Aux and Toc Files	86
25	Title strings	87
26	Page numbers	88
26.1	PDF /PageLabels	89
26.1.1	pdfTeX and VTeX	92
26.1.2	pdfmarkbase, dvipdfm	93
27	Automated l^AT_EX hypertext cross-references	94
28	Package lastpage support	97
29	Package ifthen support	98

30 Package titlesec and titletoc support	98
31 Package varioref support	99
32 Package longtable support	99
33 Equations	99
34 Footnotes	102
35 Float captions	105
36 Bibliographic references	107
36.1 Package harvard	110
36.2 Package chicago	111
37 Page numbers	112
38 Table of contents	114
39 New counters	115
40 AMS\LaTeX compatibility	116
40.1 <code>\addtoreset</code> and <code>\numberwithin</code> patches	116
41 Included figures	118
42 hyperindex entries	118
43 Compatibility with foiltex	120
44 Compatibility with seminar slide package	120
45 Configuration files	126
45.1 PS/PDF strings	126
45.2 pdftex	127
45.3 hypertext	136
45.4 dviwindo	138
45.5 dvipdfm dvi to PDF converter	142
45.6 VTeX typesetting system	146
45.7 Fix for Adobe bug number 466320	156
45.8 Direct pdfmark support (dvipdf and pdfmark)	156
45.9 Rokicki's dvips	169
45.10 VTeX's vtexpdfmark driver	171
45.11 Textures	172
45.12 dvipsone	176
45.13 TeX4ht	179
46 Driver-specific form support	181
46.1 pdfmarks	181
46.2 dvipdf	185
46.3 HyperTeX	186
46.4 TeX4ht	186
46.5 pdfTeX	189
46.6 dvipdfm	193

46.7 Common forms part	199
47 Bookmarks in the PDF file	203
47.1 Bookmarks	204
48 Compatibility with koma-script classes	210
49 Encoding definition files for encodings of PDF strings	211
49.1 PD1 encoding	211
49.2 PU encoding	216
49.2.1 Basic Latin	216
49.2.2 Latin-1 Supplement	217
49.2.3 Latin Extended-A	219
49.2.4 Latin Extended-B	222
49.2.5 Greek	222
49.2.6 Cyrillic	224
49.2.7 Symbols	228
49.3 PU encoding, additions for VnTeX	228
49.4 PU encoding, additions for Arabi	231
50 End of file hycheck.tex	232
51 Index	232

3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

4 Package options and setup

4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```
230 \Hy@SetCatcodes
```

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

```

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

```

4.2 Compatibility with format dumps

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

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

```

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

```

4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

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

```

5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

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

```

5.1 Macros for recursions

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

```

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

```

5.2 Babel's protection of shorthand characters

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

```

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

```

5.3 Coordinate transformations

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

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

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

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

Example (T_EX):

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

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

6 Dealing with PDF strings

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

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

6.1 Description of PDF strings

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

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

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

6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
369 \begingroup
```

6.2.1 Preprocessing

Octal escape sequences. To avoid problems with eight bit or non printable characters, the octal escape notation is supported. So most glyphs in the encoding definitions for PD1 and PU produce these octal escape sequences. All three octal digits have to be used:

- Wrong results are avoided, if digits follow that are not part of the octal sequence.
- Macros rely on the fact that the octal sequences always consist of three digits (vtex driver, Unicode support).

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

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

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

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

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

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

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

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

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

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

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


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

```
386 \let\add@accent\HyPsd@add@accent
```

Commands that don't use NFSS directly. There are several commands that prints characters in the printable ASCII area that don't obey the NFSS, so they have to be redefined here.

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

Newline `\newline` or `\\` do not work in bookmarks, in text annotations they should expand to `\r`. In pdf strings `\\` stands for a backslash. Therefore the commands are disabled now. The user can redefine them for a result what he want:

backslash: `\pdfstringdefDisableCommands{\let\\\textbackslash}`

new line: `\pdfstringdefDisableCommands{\let\\\textCR}`

disabled: `\pdfstringdefDisableCommands{\let\\\empty}`

At any case, however, the optional argument or the star cannot be scanned in a 100% sure manner.

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

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

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

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

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

```

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

```

Package color.

```

434 \def\textcolor##1##{\@secondoftwo}%

```

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

```

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

```

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

```

441 \let\cyr\relax

```

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

```

442 \let\es@roman\@Roman

```

Package german.

```

443 \let\glqq\textglqq
444 \let\grqq\textgrqq
445 \let\glq\textglq
446 \let\grq\textgrq
447 \let\flqq\textflqq
448 \let\frqq\textfrqq
449 \let\flq\textflq
450 \let\frq\textfrq

```

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

Package FrenchPro. This package uses:

```

\if@mid@expandable{not fully expandable code}{fully expandable code}
451 \let\if@mid@expandable\@firstoftwo

```

AMS classes.

```
452 \HyPSD@AMSclassfix
```

Redefinition of `\hspace` `\hspace` don't work in bookmarks, the following fix tries to set a space if the argument is a positive length.

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

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

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

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

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

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

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

Miscellaneous commands.

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

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

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

Patch for cjk bookmarks.

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

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

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

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

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

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

Package xspace.

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

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

```
500 \let\discretionary\@gobbletwo
    \@ifstar is defined in  $\LaTeX$  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 expandable commands would be very extensive and the result would be only an approximation. So here a cheaper solution follows in order to get rid of the error message at least:

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

6.2.2 Expansion

There are several possibilities to expand tokens within \LaTeX :

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

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

that stomach tokens that aren't allowed in PDF strings are detected by \TeX and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. \TeX provides no way to catch the error caused by $\backslash\text{csname}$ 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.

$\backslash\text{edef}$ This version uses this standard form for expansion. It is stronger than \LaTeX 's $\backslash\text{protected@edef}$. 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 $\backslash\text{edef}$, 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 $\backslash\text{texorpdfstring}$). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with $\backslash\text{csname}$. 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 $\backslash\text{xdef}$ the $\backslash\text{Generic}\dots$ 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, $\backslash\text{pdfstringdef}$ is slow enough).

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

Package french. This fix only works, if $\backslash\text{GenericError}$ is disabled.

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

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

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

6.2.3 Postprocessing

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

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

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

- T_EX 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 T_EX'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.
- T_EX 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.

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

Check tokens. After removing the spaces and the grouping characters the string now should only 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.

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

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

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

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

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

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

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

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

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

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

Right parenthesis. Also \xspace detects a right parenthesis. For the \xspace support and the following parenthesis check the different parenthesis notations), \), and \051 are converted to one type \) and before \HyPsd@empty with the meaning of \relax is introduced for \xspace. By redefining to \@empty \HyPsd@empty can easily removed later.

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

```

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

```

Support for package xspace. `\xspace` looks for the next token and decides if it expands to a space or not. Following tokens prevent its transformation to a space: Beginning and end of group, handled above by replacing by an italic correction, several punctuation marks, a closing parentheses, and several spaces.

Without package `xspace` there are tokens with catcode 11 and 12, `\HyPsd@empty` and `\HyPsd@SPACEOPTI`. With package `xspace` marker for the italic correction `\/` and `\xspace` come with. In the package `xspace` case the two markers are replaced by commands and an `\edef` performs the `\xspace` processing.

In the opposite of the original `\xspace` `\HyPsd@xspace` uses an argument instead of a `\futurelet`, so we have to provide such an argument, if `\HyPsd@xspace` comes last. Because `\HyPsd@Subst` with several equal tokens (`--`) needs a safe last token, in both cases the string gets an additional `\HyPsd@empty`.

```

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

```

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

```

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

```

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

```

579      \let\HyPsd@empty\@empty

```

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

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

```

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

```



```
587 \fi
```

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

With Unicode the spaces are replaced by their octal sequences.

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

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

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

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

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

6.3 Encodings

6.3.1 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with \LaTeX 2_ε's NFSS. Because the informational strings are not set by \TeX '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 \TeX does not process it anyway. So use CM.

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

6.3.2 PU encoding

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

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

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

```

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

```

6.4 Additional user commands

6.4.1 `\texorpdfstring`

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

```

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

```

6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

```

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

```

```

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

```

`\pdfstringdefWarn` The purpose of `\pdfstringdefWarn` is to produce a warning message, so the user can see, that something can go wrong with the conversion to PDF strings.

The prefix `\<>-` is added to the token. `\noexpand` protects the probably undefined one during the first expansion step. Then `\HyPsd@CheckCatcodes` can detect the not allowed token, `\HyPsd@CatcodeWarning` prints a warning message, after `\HyPsd@RemovePrefix` has removed the prefix.

`\pdfstringdefWarn` is intended for document authors or package writers, examples for use can be seen in the definition of `\HyPsd@ifnextchar` or `\HyPsd@protected@testopt`.

```

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

```

6.5 Help macros for expansion

6.5.1 Babel languages

```

639 \newif\ifHy@next

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

```

```

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

```

```

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

```

6.5.2 CJK bookmarks

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

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

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

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

```

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

```

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

```

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

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

```

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

6.5.3 `\@inmathwarn-Patch`

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

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

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

```

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

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

```

6.5.4 `\add@accent-Patch`

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

`\HyPsd@add@accent`

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

6.5.5 Unexpandable spaces

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

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

These properties are used in `\HyPsd@CheckCatcodes`.

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

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

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

6.5.6 Marker for commands

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

`\HyPsd@ITALCORR`
`\HyPsd@GLYPHERR`

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

6.5.7 \hspace fix

`\HyPsd@hspace`

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

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

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

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

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


6.5.8 Fix for AMS classes

```

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

```

6.5.9 Reference commands

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

6.5.10 Redefining the defining commands

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

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

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

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

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

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

```

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

```

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

```

6.5.11 \ifnextchar

`\HyPsd@ifnextchar` In `\pdfstringdef` `\ifnextchar` is disabled via a `\let` command to save time. First a warning message is given, then the three arguments are canceled. `\ifnextchar` cannot work in a correct manner, because it uses `\futurelet`, but this is a stomach feature, that doesn't work in an expanding context.

```

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

```

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

```

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

```

6.5.12 \@protected@testoptifnextchar

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

```

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

```

6.6 Help macros for postprocessing

6.6.1 Generic warning.

`\HyPsd@Warning` For several reasons `\space` is masked and does not have its normal meaning. But it is used in warning messages, so it is redefined locally:

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

6.6.2 Protecting spaces

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

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

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

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

Remove mask.

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

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

6.6.3 Remove grouping braces

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

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

`\HyPsd@@RemoveBraces` `\HyPsd@@RemoveBraces` is called with the expanded string, the end marked by `\HyPsd@End`, the expanded string again, but enclosed in braces and the string command. The first expanded string is scanned by the parameter text `#1#2`. By a comparison with the original form in `#3` we can decide whether `#1` is a single token or a group. To avoid the case that `#2` is a group, the string is extended by a `|` before.

While removing the grouping braces an italic correction marker is inserted for supporting package `xspace` and letting ligatures broken.

Because the string is already expanded, the `\if` commands should disappeared. So we can move some parts out of the argument of `\Hy@ReturnAfterFi`.

```

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

```

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

```

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

```

6.6.4 Catcode check

Check catcodes.

`\HyPsd@CheckCatcodes` Because `\ifcat` expands its arguments, this is prevented by `\noexpand`. In case of command tokens and active characters `\ifcat` now sees a `\relax`. After protecting spaces and removing braces #1 should be a single token, no group of several tokens, nor an empty group. (So the `\expandafter\relax` between `\ifcat` and `\noexpand` is only for safety and it should be possible to remove it.)

`\protect` and `\relax` should be removed silently. But it is too dangerous and breaks some code giving them the meaning of `\@empty`. So commands with the meaning of `\protect` are removed here. (`\protect` should have the meaning of `\@typeset@protect` that is equal to `\relax`).

```

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

```

```

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

```

Remove counts, dimens, skips.

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

```

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

```

`\HyPsd@AfterDimenRemove` If the value of the dimen (`\kern`) is zero, it can be removed silently. All other values are difficult to interpret. Negative values do not work in bookmarks. Should positive values be removed or should they be replaced by space(s)? The following code replaces positive values greater than 1ex with a space and removes them else.

```

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

```

`\HyPsd@AfterSkipRemove` The glue part of skips do not work in PDF strings and are ignored. Skips (`\hskip`), that are not zero, have the same interpreting problems like dimens (see above).

```

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

```

```

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

```

Catcode warnings.

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

```

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

```

\HyPsd@RemoveSpaceWarning

```

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

```

\HyPsd@ReplaceSpaceWarning

```

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

```

6.6.5 Check for wrong glyphs

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

```

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

```



```

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

```

Spaces.

`\HyPsd@spaceopti` In the string the spaces are represented by `\HyPsd@spaceopti` tokens. Within an `\edef` it prints itself as a simple space and looks for its next argument. If another space follows, so it replaces the next `\HyPsd@spaceopti` by an protected space `\040`.

```

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

```

6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is an wrapper for the command `\HyPsd@Subst` that does all the work: In string stored in command #3 it replaces the tokens #1 with #2.

- #1 Exact the tokens that should be replaced.
- #2 The replacement (don't need to be expanded).
- #3 Command with the string.

```

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

```

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

```

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

```

6.6.7 Support for package xspace

`\HyPsd@doxspace` `\xspace` does not work, because it uses a `\futurelet` that cannot be executed in \TeX 's mouth. So this implementation uses an argument to examine the next token. In a previous version I reused `\@xspace`, but this version is shorter and easier to understand.

```

1198 \def\HyPsd@doxspace#1{%
1199   \ifx#1\relax\else
1200     \ifx#1.\else
1201       \ifx#1:\else
1202         \ifx#1,\else
1203           \ifx#1;\else
1204             \ifx#1!\else
1205               \ifx#1?\else
1206                 \ifx#1/\else
1207                   \ifx#1-\else
1208                     \ifx#1'\else
1209                       \HyPsd@SPACEOPTI
1210                     \fi
1211                   \fi
1212                 \fi
1213               \fi
1214             \fi
1215           \fi
1216         \fi
1217       \fi
1218     \fi
1219   \fi
1220   #1%
1221 }%
```

6.6.8 Converting to Unicode

Eight bit characters are converted to the sixteen bit ones, `\8` is replaced by `\00`, and `\9` is removed. The result should be a valid Unicode PDF string without the Unicode marker at the beginning.

```

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

`\HyPsd@ConvertToUnicode`

```

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

`\HyPsd@DoConvert`

```

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

```

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

```

\HyPsd@DoEscape

```

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

```

\HyPsd@GetTwoBytes

```

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

```

\HyPsd@GetOneByte

```

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

```

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

```

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

```

6.6.9 Support for UTF-8 input encoding

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

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

```

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

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

```

The two octet form of UTF-8 110aaabb (A) and 10cccd (B) must be converted into octal numbers 00a and bcd. The result is `\8a\bcd` (with a, b, c, d as octal numbers). The conversion equations.

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

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

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

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

$$(5)$$

```

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

```

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

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

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

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

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

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

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

$$(12)$$

```

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

```

```

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

```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

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

```

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

```

1341 \def\HyPsd@unichar#1{%
1342 \ifHy@unicode

```

```

1343 \ifnum#1>"FFFF %
1344 \HyPsd@UnicodeReplacementCharacter % unsupported
1345 \else
1346 \ifnum#1>"7FF %
1347 \9%
1348 \expandafter\HyPsd@unichar@first@byte\expandafter{%
1349 \number
1350 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1351 }%
1352 \else
1353 \8%
1354 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1355 \fi
1356 \expandafter\HyPsd@unichar@second@byte\expandafter{%
1357 \number
1358 \numexpr#1-256*\number
1359 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1360 }%
1361 \fi
1362 \else
1363 .% unsupported (Unicode -> PDF Doc Encoding)
1364 \fi
1365 }%
1366 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}
1367 \def\HyPsd@unichar@first@byte#1{%
1368 \number\dimexpr.015625\dimexpr#1sp\relax\relax
1369 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1370 \number
1371 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1372 }%
1373 }%
1374 \def\HyPsd@unichar@second@byte#1{%
1375 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1376 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1377 \number
1378 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1379 }%
1380 }%
1381 \def\HyPsd@unichar@octtwo#1{%
1382 \number\dimexpr.125\dimexpr#1sp\relax\relax
1383 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp\relax\relax\relax
1384 }%
1385 \fi

```

7 Support of other packages

7.1 Class memoir

```

1386 \@ifclassloaded{memoir}{%
1387 \AtEndOfPackage{\RequirePackage{memhfixc}}}%
1388 }{}

```

7.2 Package subfigure

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

```

1389 \@ifpackageloaded{subfigure}{%
1390 \@ifundefined{sub@label}{%

```

```

1391 \Hy@hypertextnamesfalse
1392 }{%
1393 \renewcommand*{\sub@label}[1]{%
1394 \@bsphack
1395 \subfig@oldlabel{#1}%
1396 \if@filesw
1397 \begingroup
1398 \edef\@currentlabstr{%
1399 \expandafter\strip@prefix\meaning\@currentlabelname
1400 }%
1401 \protected@write\@auxout{}{%
1402 \string\newlabel{sub@#1}{%
1403 {\@nameuse{@@thesub\@capttype}}%
1404 {\thepage}%
1405 {\expandafter\strip@period\@currentlabstr\relax.\relax\@@@}%
1406 {\@currentHref}%
1407 }%
1408 }%
1409 }%
1410 \endgroup
1411 \fi
1412 \@esphack
1413 }%
1414 \@ifpackagelater{subfigure}{2002/03/26}{%
1415 \providecommand*\toclevel@subfigure{1}%
1416 \providecommand*\toclevel@subtable{1}%
1417 }%
1418 }%
1419 }{}

```

7.3 Package xr and xr-hyper

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

```

1420 \@ifundefined{XR@addURL}{%
1421 }{%

```

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.

```

1422 \def\xr@addURL#1{\xr@dURL#1{}{}{}{}\\}%
1423 \def\xr@dURL#1#2#3#4#5\\{%
1424 {#1}{#2}%
1425 \if!#4!%
1426 \else
1427 {#3}{#4}{\xr@URL}%
1428 \fi
1429 }%
1430 }

```

```

1431 \def\Hy@true{true}
1432 \def\Hy@false{false}

```

Providing dummy definitions.

```

1433 \let\literalps@out@gobble
1434 \newcommand\pdfbookmark[3][]{ }
1435 \let\Acrobatmenu@gobble
1436 \def\Hy@writebookmark#1#2#3#4#5{%

```

8 Help macros for links

Anchors get created on the baseline of where they occur. If an XYZ PDF view is set, this means that the link places the top of the screen *on the baseline* of the target. If this is an equation, for instance, it means that you cannot see anything. Some links, of course, are created at the start of environments, and so it works. To allow for this, anchors are raised, where possible, by some small amount. This defaults to `\baselineskip`, but users can set it to something else in two ways (thanks to Heiko Oberdiek for suggesting this):

1. Redefine `\HyperRaiseLinkDefault` to be eg the height of a `\strut`
2. Redefine `\HyperRaiseLinkHook` to do something complicated; it must give a value to `\HyperRaiseLinkLength`, which is what actually gets used

```
1437 \let\HyperRaiseLinkLength\@tempdima
1438 \let\HyperRaiseLinkHook\@empty
1439 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
1440 \def\Hy@raisedlink#1{%
1441   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1442   \HyperRaiseLinkHook
1443   \ifvmode
1444     #1%
1445   \else
1446     \penalty\@M
1447     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1448   \fi
1449 }
```

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

```
1450 \def\Hy@SaveLastskip{%
1451   \let\Hy@RestoreLastskip\relax
1452   \ifvmode
1453     \ifdim\lastskip=\z@
1454       \let\Hy@RestoreLastskip\nobreak
1455     \else
1456       \begingroup
1457         \skip@=-\lastskip
1458         \edef\x{%
1459           \endgroup
1460           \def\noexpand\Hy@RestoreLastskip{%
1461             \noexpand\ifvmode
1462               \noexpand\nobreak
1463               \vskip\the\skip@
1464               \vskip\the\lastskip\relax
1465             \noexpand\fi
1466           }%
1467         }%
1468       \x
1469     \fi
1470   \else
1471     \ifhmode
1472       \ifdim\lastskip=\z@
1473         \let\Hy@RestoreLastskip\nobreak
1474       \else
1475         \begingroup
1476           \skip@=-\lastskip
```



```

1477         \edef\x{%
1478             \endgroup
1479             \def\noexpand\Hy@RestoreLastskip{%
1480                 \noexpand\ifhmode
1481                     \noexpand\nobreak
1482                     \hskip\the\skip@
1483                     \hskip\the\lastskip\relax
1484                 \noexpand\fi
1485             }%
1486         }%
1487     \x
1488 \fi
1489 \fi
1490 \fi
1491 }%

```

9 Options

9.1 Help macros

\Hy@boolkey

```

1492 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1493 \def\Hy@@boolkey[#1]#2#3{%
1494     \lowercase{\def\Hy@tempa{#3}}%
1495     \ifx\Hy@tempa\@empty
1496         \let\Hy@tempa\Hy@true
1497     \fi
1498     \ifx\Hy@tempa\Hy@true
1499     \else
1500         \ifx\Hy@tempa\Hy@false
1501         \else
1502             \let\Hy@tempa\relax
1503         \fi
1504     \fi
1505     \ifx\Hy@tempa\relax
1506         \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1507     \else
1508         \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1509         \csname Hy@#2\Hy@tempa\endcsname
1510     \fi
1511 }

```

\Hy@WarnOptionValue

```

1512 \def\Hy@WarnOptionValue#1#2#3{%
1513     \Hy@Warning{%
1514         Unexpected value ‘#1’\MessageBreak
1515         of option ‘#2’ instead of\MessageBreak
1516         #3%
1517     }
1518 }

```

\Hy@DisableOption

```

1519 \def\Hy@DisableOption#1{%
1520     \@ifundefined{KV@Hyp@#1@default}{%
1521         \define@key{Hyp}{#1}%
1522     }{%

```

```

1523 \define@key{Hyp}{#1}[]%
1524 }%
1525 {\Hy@WarnOptionDisabled{#1}}%
1526 }

```

\Hy@WarnOptionDisabled

```

1527 \def\Hy@WarnOptionDisabled#1{%
1528 \Hy@Warning{%
1529 Option ‘#1’ has already been used,\MessageBreak
1530 setting the option has no effect%
1531 }%
1532 }

```

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

```

1533 \def\Hy@CheckOptionValue#1#2#3{%
1534 \begingroup
1535 \edef\x{#1}%
1536 \@onelevel@sanitize\x
1537 \let\y=y%
1538 \def\do##1##2{%
1539 \def\z{##1}%
1540 \@onelevel@sanitize\z
1541 \ifx\x\z
1542 \let\y=n%
1543 \let\do\@gobbletwo
1544 \fi
1545 }%
1546 #3%
1547 \ifx\y y%
1548 \def\do##1##2{%
1549 * ‘##1’%
1550 \ifx\##2\else\space(##2)\fi
1551 \MessageBreak
1552 }%
1553 \Hy@Warning{%
1554 Values of option ‘#2’:\MessageBreak
1555 #3%
1556 * An empty value disables the option.\MessageBreak
1557 Unknown value ‘\x’%
1558 }%
1559 \fi
1560 \endgroup
1561 }

```

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

```

1562 \def\Hy@DefNameKey#1{%
1563 \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1564 }

```

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

```

1565 \def\Hy@@DefNameKey#1#2#3{%

```

```

1566 \define@key{Hyp}{#2}{%
1567     \edef#1{##1}%
1568     \ifx#1\@empty
1569     \else
1570         \Hy@CheckOptionValue{##1}{#2}{#3}%
1571     \fi
1572 }%
1573 \let#1\@empty
1574 }

```

\Hy@UseNameKey

```

1575 \def\Hy@UseNameKey#1#2{%
1576     \ifx#2\@empty
1577     \else
1578         /#1/#2%
1579     \fi
1580 }

```

9.2 Defining the options

```

1581 \define@key{Hyp}{implicit}[true]{%
1582     \Hy@boolkey{implicit}{#1}%
1583 }
1584 \define@key{Hyp}{draft}[true]{%
1585     \Hy@boolkey{draft}{#1}%
1586 }
1587 \define@key{Hyp}{final}[true]{%
1588     \Hy@boolkey{final}{#1}%
1589 }
1590 \let\KV@Hyp@nolinks\KV@Hyp@draft
1591 \define@key{Hyp}{a4paper}[true]{%
1592     \def\special@paper{210mm,297mm}%
1593     \def\Hy@pageheight{842}%
1594 }
1595 \define@key{Hyp}{a5paper}[true]{%
1596     \def\special@paper{148mm,210mm}%
1597     \def\Hy@pageheight{595}%
1598 }
1599 \define@key{Hyp}{b5paper}[true]{%
1600     \def\special@paper{176mm,250mm}%
1601     \def\Hy@pageheight{709}%
1602 }
1603 \define@key{Hyp}{letterpaper}[true]{%
1604     \def\special@paper{8.5in,11in}%
1605     \def\Hy@pageheight{792}%
1606 }
1607 \define@key{Hyp}{legalpaper}[true]{%
1608     \def\special@paper{8.5in,14in}%
1609     \def\Hy@pageheight{1008}%
1610 }
1611 \define@key{Hyp}{executivepaper}[true]{%
1612     \def\special@paper{7.25in,10.5in}%
1613     \def\Hy@pageheight{720}%
1614 }
1615 \define@key{Hyp}{setpagesize}[true]{%
1616     \Hy@boolkey{setpagesize}{#1}%
1617 }

```

```

1618 \define@key{Hyp}{debug}[true]{%
1619   \Hy@boolkey[debug]{verbose}{#1}%
1620 }
1621 \define@key{Hyp}{linktopage}[true]{%
1622   \Hy@boolkey[linktopage]{#1}%
1623 }
1624 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1625 \def\XR@ext{dvi}
1626 \define@key{Hyp}{verbose}[true]{%
1627   \Hy@boolkey[verbose]{#1}%
1628 }
1629 \define@key{Hyp}{typexml}[true]{%
1630   \Hy@boolkey[typexml]{#1}%
1631 }

```

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.

```

1632 \define@key{Hyp}{raiselinks}[true]{%
1633   \Hy@boolkey[raiselinks]{#1}%
1634 }

```

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

```

1635 \define@key{Hyp}{breaklinks}[true]{%
1636   \Hy@boolkey[breaklinks]{#1}%
1637 }

```

Determines whether an automatic anchor is put on each page

```

1638 \define@key{Hyp}{pageanchor}[true]{%
1639   \Hy@boolkey[pageanchor]{#1}%
1640 }

```

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.

```

1641 \define@key{Hyp}{plainpages}[true]{%
1642   \Hy@boolkey[plainpages]{#1}%
1643 }

```

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

```

1644 \define@key{Hyp}{naturalnames}[true]{%
1645   \Hy@boolkey[naturalnames]{#1}%
1646 }

```

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

```

1647 \define@key{Hyp}{hypertexnames}[true]{%
1648   \Hy@boolkey[hypertexnames]{#1}%
1649 }

```

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

```

1650 \define@key{Hyp}{nesting}[true]{%
1651   \Hy@boolkey[nesting]{#1}%
1652 }

```

```

1653 \define@key{Hyp}{unicode}[true]{%
1654   \Hy@boolkey[unicode]{#1}%
1655   \HyPsd@InitUnicode
1656 }

```

10 Options for different drivers

```
1657 \define@key{Hyp}{hyperref}[true]{%
1658 \define@key{Hyp}{tex4ht}[true]{%
1659   \def\XR@ext{html}%
1660   \Hy@texhttrue
1661   \def\Hy@raisedlink{}%
1662   \setkeys{Hyp}{colorlinks=true}%
1663   \def\BeforeTeXIVht{\usepackage{color}}%
1664   \def\Hy@driver{htex4ht}%
1665   \def\MaybeStopEarly{%
1666     \typeout{Hyperref stopped early}%
1667     \AfterBeginDocument{\PDF@FinishDoc}%
1668     \endinput
1669   }%
1670 }
1671 \define@key{Hyp}{pdftex}[true]{%
1672   \def\Hy@driver{hpdftex}%
1673   \def\XR@ext{pdf}%
1674   \PassOptionsToPackage{pdftex}{color}%
1675   \Hy@breaklinkstrue
1676 }
1677 \define@key{Hyp}{dvipdf}[true]{%
1678   \Hy@WarningNoLine{%
1679     Option 'dvipdf' is deprecated.\MessageBreak
1680     See the user manual for available driver options%
1681   }%
1682 }
1683 \define@key{Hyp}{nativepdf}[true]{%
1684   \def\Hy@driver{hdvips}%
1685   \def\Hy@raisedlink{}%
1686   \def\XR@ext{pdf}%
1687 }
1688 \define@key{Hyp}{dvipdfm}[true]{%
1689   \def\Hy@driver{hdvipdfm}%
1690   \def\XR@ext{pdf}%
1691   \Hy@breaklinkstrue
1692 }
1693 \define@key{Hyp}{dvipdfmx}[true]{%
1694   \def\Hy@driver{hdvipdfm}%
1695   \def\XR@ext{pdf}%
1696   \Hy@breaklinkstrue
1697 }
1698 \define@key{Hyp}{pdfmark}[true]{%
1699   \def\Hy@driver{hdvips}%
1700   \def\Hy@raisedlink{}%
1701   \def\XR@ext{pdf}%
1702 }
1703 \define@key{Hyp}{dvips}[true]{%
1704   \def\Hy@driver{hdvips}%
1705   \def\Hy@raisedlink{}%
1706   \def\XR@ext{pdf}%
1707 }
1708 \define@key{Hyp}{hypertex}[true]{%
1709   \def\Hy@driver{hypertex}%
1710 }
1711 \let\Hy@MaybeStopNow\relax
```

```

1712 \define@key{Hyp}{vtex}[true]{%
1713   \begingroup\expandafter\expandafter\expandafter\endgroup
1714   \expandafter\ifx\csname OpMode\endcsname\relax
1715     \@latex@error{Non-VTeX processor}{}%
1716     \global\let\Hy@MaybeStopNow\endinput
1717   \endinput
1718   \else
1719     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1720       \def\XR@ext{pdf}%
1721       \def\Hy@driver{hvtex}%
1722     \else
1723       \ifnum\OpMode=10\relax
1724         \def\XR@ext{htm}%
1725         \def\Hy@driver{hvtexhtm}%
1726         \def\MaybeStopEarly{%
1727           \typeout{Hyperref stopped early}%
1728           \AfterBeginDocument{\PDF@FinishDoc}%
1729         \endinput
1730       }%
1731     \else
1732       \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1733       \global\let\Hy@MaybeStopNow\endinput
1734     \endinput
1735   \fi
1736 \fi
1737 \fi
1738 }
1739 \define@key{Hyp}{vtexpdfmark}[true]{%
1740   \begingroup\expandafter\expandafter\expandafter\endgroup
1741   \expandafter\ifx\csname OpMode\endcsname\relax
1742     \@latex@error{Non-VTeX processor}{}%
1743     \let\Hy@MaybeStopNow\endinput
1744   \endinput
1745   \else
1746     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1747       \def\XR@ext{pdf}%
1748       \def\Hy@driver{hvtexmrk}%
1749       \def\Hy@raisedlink{%
1750         \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1751         \let\Hy@MaybeStopNow\endinput
1752       \endinput
1753     \fi
1754   \fi
1755 \fi
1756 }
1757 \define@key{Hyp}{dviwindo}[true]{%
1758   \def\Hy@driver{hdvwind}%
1759   \setkeys{Hyp}{colorlinks}%
1760   \PassOptionsToPackage{dviwindo}{color}%
1761 }
1762 \define@key{Hyp}{dvipsone}[true]{%
1763   \def\XR@ext{pdf}%
1764   \def\Hy@driver{hdvipson}%
1765   \def\Hy@raisedlink{%
1766     }
1767 \define@key{Hyp}{textures}[true]{%
1768   \def\XR@ext{pdf}%

```

```

1769 \def\Hy@driver{htexture}%
1770 }
1771 \define@key{Hyp}{latex2html}[true]{%
1772 \AtBeginDocument{\@latextohtmlX}%
1773 }

```

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

```

1774 \define@key{Hyp}{ps2pdf}[true]{%
1775 \def\Hy@driver{hdvips}%
1776 \def\Hy@raisedlink{}%
1777 \providecommand\pdfborder{0 0 1}%
1778 }

```

11 Options to add extra features

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

```

1779 \define@key{Hyp}{hyperfigures}[true]{%
1780 \Hy@boolkey[hyperfigures]{figures}{#1}%
1781 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

1782 \define@key{Hyp}{hyperfootnotes}[true]{%
1783 \Hy@boolkey[hyperfootnotes]{#1}%
1784 }

```

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

```

1785 \def\back@none{none}
1786 \def\back@section{section}
1787 \def\back@page{page}
1788 \def\back@slide{slide}
1789 \define@key{Hyp}{backref}[section]{%
1790 \lowercase{\def\Hy@tempa{#1}}%
1791 \ifx\Hy@tempa\@empty
1792 \let\Hy@tempa\back@section
1793 \fi
1794 \ifx\Hy@tempa\Hy@false
1795 \let\Hy@tempa\back@none
1796 \fi
1797 \ifx\Hy@tempa\back@slide
1798 \let\Hy@tempa\back@section
1799 \fi
1800 \ifx\Hy@tempa\back@page
1801 \PassOptionsToPackage{hyperpageref}{backref}%
1802 \Hy@backreftrue
1803 \else
1804 \ifx\Hy@tempa\back@section
1805 \PassOptionsToPackage{hyperref}{backref}%
1806 \Hy@backreftrue
1807 \else
1808 \ifx\Hy@tempa\back@none
1809 \Hy@backreffalse
1810 \else
1811 \Hy@WarnOptionValue{#1}{backref}{%
1812 'section', 'slide', 'page', 'none', \MessageBreak
1813 or 'false'}%
1814 \fi
1815 \fi

```

```

1816 \fi
1817 }
1818 \define@key{Hyp}{pagebackref}[true]{%
1819 \lowercase{\def\Hy@tempa{#1}}%
1820 \ifx\Hy@tempa\@empty
1821 \let\Hy@tempa\Hy>true
1822 \fi
1823 \ifx\Hy@tempa\Hy>true
1824 \PassOptionsToPackage{hyperpageref}{backref}%
1825 \Hy@backreftrue
1826 \else
1827 \ifx\Hy@tempa\Hy>false
1828 \Hy@backreffalse
1829 \else
1830 \Hy@WarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
1831 \fi
1832 \fi
1833 }

```

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

```

1834 \define@key{Hyp}{hyperindex}[true]{%
1835 \Hy@boolkey{hyperindex}{#1}%
1836 }

```

Configuration of encap char.

```

1837 \define@key{Hyp}{encap}[|]{%
1838 \def\HyInd@EncapChar{#1}%
1839 }

```

12 Language options

The `\autoref` feature depends on the language.

```

1840 \def\HyLang@english{%
1841 \def\equationautorefname{Equation}%
1842 \def\footnoteautorefname{footnote}%
1843 \def\itemautorefname{item}%
1844 \def\figureautorefname{Figure}%
1845 \def\tableautorefname{Table}%
1846 \def\partautorefname{Part}%
1847 \def\appendixautorefname{Appendix}%
1848 \def\chapterautorefname{chapter}%
1849 \def\sectionautorefname{section}%
1850 \def\subsectionautorefname{subsection}%
1851 \def\subsubsectionautorefname{subsubsection}%
1852 \def\paragraphautorefname{paragraph}%
1853 \def\subparagraphautorefname{subparagraph}%
1854 \def\FancyVerbLineautorefname{line}%
1855 \def\theoremautorefname{Theorem}%
1856 }
1857 \def\HyLang@german{%
1858 \def\equationautorefname{Gleichung}%
1859 \def\footnoteautorefname{Fu\ss note}%
1860 \def\itemautorefname{Punkt}%
1861 \def\figureautorefname{Abbildung}%
1862 \def\tableautorefname{Tabelle}%
1863 \def\partautorefname{Teil}%

```



```

1864 \def\appendixautorefname{Anhang}%
1865 \def\chapterautorefname{Kapitel}%
1866 \def\sectionautorefname{Abschnitt}%
1867 \def\subsectionautorefname{Unterabschnitt}%
1868 \def\subsubsectionautorefname{Unterunterabschnitt}%
1869 \def\paragraphautorefname{Absatz}%
1870 \def\subparagraphautorefname{Unterabsatz}%
1871 \def\FancyVerbLineautorefname{Zeile}%
1872 \def\theoremautorefname{Theorem}%
1873 }
1874 \def\HyLang@portuges{%
1875 \def\equationautorefname{Equa\c c\~ao}%
1876 \def\footnoteautorefname{Nota de rodap\~e}%
1877 \def\itemautorefname{Item}%
1878 \def\figureautorefname{Figura}%
1879 \def\tableautorefname{Tabela}%
1880 \def\partautorefname{Parte}%
1881 \def\appendixautorefname{Ap\~endice}%
1882 \def\chapterautorefname{Cap\~itulo}%
1883 \def\sectionautorefname{Se\c c\~ao}%
1884 \def\subsectionautorefname{Subse\c c\~ao}%
1885 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
1886 \def\paragraphautorefname{par\~agrafo}%
1887 \def\subparagraphautorefname{subpar\~agrafo}%
1888 \def\FancyVerbLineautorefname{linha}%
1889 \def\theoremautorefname{Teorema}%
1890 }
1891 \def\HyLang@spanish{%
1892 \def\equationautorefname{Ecuaci\~on}%
1893 \def\footnoteautorefname{Nota a pie de p\~agina}%
1894 \def\itemautorefname{Elemento}%
1895 \def\figureautorefname{Figura}%
1896 \def\tableautorefname{Tabla}%
1897 \def\partautorefname{Parte}%
1898 \def\appendixautorefname{Ap\~endice}%
1899 \def\chapterautorefname{Cap\~itulo}%
1900 \def\sectionautorefname{Secci\~on}%
1901 \def\subsectionautorefname{Subsecci\~on}%
1902 \def\subsubsectionautorefname{Subsubsecci\~on}%
1903 \def\paragraphautorefname{P\~arrafo}%
1904 \def\subparagraphautorefname{Subp\~arrafo}%
1905 \def\FancyVerbLineautorefname{L\~inea}%
1906 \def\theoremautorefname{Teorema}%
1907 }
1908 \def\HyLang@afrikaans{%
1909 \def\equationautorefname{Vergelyking}%
1910 \def\footnoteautorefname{Voetnota}%
1911 \def\itemautorefname{Item}%
1912 \def\figureautorefname{Figuur}%
1913 \def\tableautorefname{Tabel}%
1914 \def\partautorefname{Deel}%
1915 \def\appendixautorefname{Bylae}%
1916 \def\chapterautorefname{Hoofstuk}%
1917 \def\sectionautorefname{Afdeling}%
1918 \def\subsectionautorefname{Subafdeling}%
1919 \def\subsubsectionautorefname{Subsubafdeling}%
1920 \def\paragraphautorefname{Paragraaf}%

```

```

1921 \def\subparagraphautorefname{Subparagraaf}%
1922 \def\FancyVerbLineautorefname{Lyn}%
1923 \def\theoremautorefname{Teorema}%
1924 }
1925 \def\HyLang@french{%
1926 \def\equationautorefname{\`Equation}%
1927 \def\footnoteautorefname{note}%
1928 \def\itemautorefname{item}%
1929 \def\figureautorefname{Figure}%
1930 \def\tableautorefname{Tableau}%
1931 \def\partautorefname{Partie}%
1932 \def\appendixautorefname{Appendice}%
1933 \def\chapterautorefname{chapitre}%
1934 \def\sectionautorefname{section}%
1935 \def\subsectionautorefname{sous-section}%
1936 \def\subsubsectionautorefname{sous-sous-section}%
1937 \def\paragraphautorefname{paragraphe}%
1938 \def\subparagraphautorefname{sous-paragraphe}%
1939 \def\FancyVerbLineautorefname{ligne}%
1940 \def\theoremautorefname{Th\'eor\'eme}%
1941 }
1942 \def\HyLang@vietnamese{%
1943 \def\equationautorefname{Ph\`uhorn{}\`ohorn{}ng tr\`inh}%
1944 \def\footnoteautorefname{Ch\`u th\`ich}%
1945 \def\itemautorefname{m\`d{u}c}%
1946 \def\figureautorefname{H\`inh}%
1947 \def\tableautorefname{B\`h{a}ng}%
1948 \def\partautorefname{Ph\`acircumflex{}n}%
1949 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
1950 \def\chapterautorefname{ch\`uhorn{}\`ohorn{}ng}%
1951 \def\sectionautorefname{m\`d{u}c}%
1952 \def\subsectionautorefname{m\`d{u}c}%
1953 \def\subsubsectionautorefname{m\`d{u}c}%
1954 \def\paragraphautorefname{d\`j{o\`d{a}n}%
1955 \def\subparagraphautorefname{d\`j{o\`d{a}n}%
1956 \def\FancyVerbLineautorefname{d\`ong}%
1957 \def\theoremautorefname{D\`J\`d{i}nh l\`y}%
1958 }

```

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

```

1959 \def\HyLang@addto#1#2{%
1960 #2%
1961 \@temptokena{#2}%
1962 \ifx#1\relax
1963 \let#1\@empty
1964 \fi
1965 \ifx#1\undefined
1966 \edef#1{\the\@temptokena}%
1967 \else
1968 \toks@\expandafter{#1}%
1969 \edef#1{\the\toks@\the\@temptokena}%
1970 \fi
1971 \@temptokena{}\toks@\@temptokena
1972 }
1973 \def\HyLang@DeclareLang#1#2{%
1974 \begingroup

```

```

1975 \edef\x##1##2{%
1976 \noexpand\ifx##2\relax
1977 \errmessage{No definitions for language #2' found!}%
1978 \noexpand\fi
1979 \endgroup
1980 \noexpand\define@key{Hyp}{#1}[] {%
1981 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
1982 }%
1983 }%
1984 \expandafter\x\csname extras#1\expandafter\endcsname
1985 \csname HyLang@#2\endcsname
1986 }
1987 \HyLang@DeclareLang{english}{english}
1988 \HyLang@DeclareLang{UKenglish}{english}
1989 \HyLang@DeclareLang{british}{english}
1990 \HyLang@DeclareLang{USenglish}{english}
1991 \HyLang@DeclareLang{american}{english}
1992 \HyLang@DeclareLang{german}{german}
1993 \HyLang@DeclareLang{austrian}{german}
1994 \HyLang@DeclareLang{ngerman}{german}
1995 \HyLang@DeclareLang{naustrian}{german}
1996 \HyLang@DeclareLang{brazil}{portuges}
1997 \HyLang@DeclareLang{brazilian}{portuges}
1998 \HyLang@DeclareLang{portuguese}{portuges}
1999 \HyLang@DeclareLang{spanish}{spanish}
2000 \HyLang@DeclareLang{afrikaans}{afrikaans}
2001 \HyLang@DeclareLang{french}{french}
2002 \HyLang@DeclareLang{frenchb}{french}
2003 \HyLang@DeclareLang{francais}{french}
2004 \HyLang@DeclareLang{acadian}{french}
2005 \HyLang@DeclareLang{canadien}{french}

```

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

```

2006 \define@key{Hyp}{vietnamese}[] {%
2007 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2008 \AtEndOfPackage{%
2009 \ifundefined{T@PU}{-}{%
2010 \input{puvnenc.def}%
2011 }%
2012 }%
2013 }
2014 \define@key{Hyp}{vietnam}[] {%
2015 \HyLang@addto\extravietnam\HyLang@vietnamese
2016 \AtEndOfPackage{%
2017 \ifundefined{T@PU}{-}{%
2018 \input{puvnenc.def}%
2019 }%
2020 }%
2021 }

```

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

```

2022 \define@key{Hyp}{arabic}[] {%
2023 \AtEndOfPackage{%
2024 \ifundefined{T@PU}{-}{%
2025 \input{puarenc.def}%
2026 }%
2027 }%
2028 }

```

13 Options to change appearance of links

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

```
2029 \define@key{Hyp}{colorlinks}[true]{%
2030   \Hy@boolkey{colorlinks}{#1}%
2031   \ifHy@colorlinks
2032     \def\pdfborder{0 0 0}%
2033   \fi
2034 }
2035 \define@key{Hyp}{frenchlinks}[true]{%
2036   \Hy@boolkey{frenchlinks}{#1}%
2037 }
```

14 Bookmarking

```
2038 \define@key{Hyp}{bookmarks}[true]{%
2039   \Hy@boolkey{bookmarks}{#1}%
2040 }
2041 \define@key{Hyp}{bookmarksopen}[true]{%
2042   \Hy@boolkey{bookmarksopen}{#1}%
2043 }
```

The depth of the outlines is controlled by option `bookmarksdepth`. The option acts globally and distinguishes three cases:

- `bookmarksdepth`: Without value `hyperref` uses counter `tocdepth` (compatible behaviour and default).
- `bookmarksdepth=<number>`: the depth is set to `<number>`.
- `bookmarksdepth=<name>`: The `<name>` must not start with a number or minus sign. It is a document division name (part, chapter, section, ...). Internally the value of macro `\toclevel@<name>` is used.

```
2044 \let\Hy@bookmarksdepth\c@tocdepth
2045 \define@key{Hyp}{bookmarksdepth}[]{}%
2046   \begingroup
2047     \edef\x{#1}%
2048     \ifx\x\empty
2049       \global\let\Hy@bookmarksdepth\c@tocdepth
2050     \else
2051       \ifundefined{toclevel@\x}{%
2052         \@onelevel@sanitize\x
2053         \edef\y{\expandafter\@car\x\@nil}%
2054         \ifcase 0\expandafter\ifx\y-1\fi
2055           \expandafter\ifnum\expandafter'\y>47 %
2056             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2057           \Hy@Warning{Unknown document division name (\x)}%
2058         \else
2059           \setbox\z@=\hbox{%
2060             \count@=\x
2061             \xdef\Hy@bookmarksdepth{\the\count@}%
2062           }%
2063         \fi
2064       }{}%
2065       \setbox\z@=\hbox{%
2066         \count@=\csname toclevel@\x\endcsname
2067         \xdef\Hy@bookmarksdepth{\the\count@}%
2068       }
```

```

2068      }%
2069      }%
2070      \fi
2071 \endgroup
2072 }

```

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

```

2073 \define@key{Hyp}{bookmarksopenlevel}{%
2074   \def\@bookmarksopenlevel{#1}%
2075 }
2076 \def\@bookmarksopenlevel{\maxdimen}
2077 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2078 \define@key{Hyp}{bookmarkstype}{%
2079   \def\Hy@bookmarkstype{#1}%
2080 }
2081 \def\Hy@bookmarkstype{toc}

```

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

```

2082 \define@key{Hyp}{bookmarksnumbered}[true]{%
2083   \Hy@boolkey{bookmarksnumbered}{#1}%
2084 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2085 \define@key{Hyp}{CJKbookmarks}[true]{%
2086   \Hy@boolkey{CJKbookmarks}{#1}%
2087 }
2088 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
2089 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2090 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2091 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2092 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2093 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2094 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```

2095 \def\@linkcolor{red}
2096 \def\@anchorcolor{black}
2097 \def\@citecolor{green}
2098 \def\@filecolor{cyan}
2099 \def\@urlcolor{magenta}
2100 \def\@menucolor{red}
2101 \def\@pagecolor{red}
2102 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2103 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2104 \let\@baseurl\@empty
2105 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2106 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2107 \hyperlinkfileprefix{file:}

```

15 PDF-specific options

`\pdfpagetransition` The value of option `pdfpagetransition` is stored in `\pdfpagetransition`. Its initial value is set to `\relax` in order to be able to differentiate between a not used option and an option with an empty value.

```

2108 \let\@pdfpagetransition\relax
2109 \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.

```
2110 \let\pdfpageduration\relax
2111 \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.

```
2112 \newif\ifHy@useHidKey
2113 \Hy@useHidKeyfalse
2114 \define@key{Hyp}{pdfpagehidden}[true]{%
2115   \Hy@boolkey{pdfpagehidden}{#1}%
2116   \ifHy@pdfpagehidden
2117     \global\Hy@useHidKeytrue
2118   \fi
2119 }
```

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

Package `xcolor` provides `\XC@bordercolor` since version 1.1. If the two spaces in the color specification are missing, then the value is processed as color specification from package `xcolor` by using `\XC@bordercolor` (since `xcolor` 2004/05/09 v1.11).

```
2120 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2121 \@for\Hy@temp:=\Hy@ColorList\do{%
2122   \edef\Hy@temp{%
2123     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2124       \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2125     }%
2126   }%
2127   \Hy@temp
2128 }
2129 \def\Hy@bordercolor#1#2#3{%
2130   \begingroup
2131     \Hy@safe@activetrue
2132     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2133     \expandafter\Hy@CheckColorSpec\x{#3}\@nil{#1}{#2}%
2134   }
2135   \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2136     \ifx\#3\%
2137       \@ifundefined{XC@bordercolor}{%
2138         \Hy@Warning{%
2139           Unsupported color specification (#4bordercolor).\MessageBreak
2140           Load package 'xcolor' (version >= 1.11) first.\MessageBreak
2141           Ignoring color specification%
2142         }%
2143       }
2144     }{%
2145       \endgroup
2146       \XC@bordercolor{#4}{#5}%
2147     }%
2148   }
2149   \endgroup
2150   \@namedef{@#4bordercolor}{#5}%
2151 \fi
2152 }
```

```

2153 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2154 \Hy@DefNameKey{pdfhighlight}{%
2155   \do{/I}{Invert}%
2156   \do{/N}{None}%
2157   \do{/O}{Outline}%
2158   \do{/P}{Push}%
2159 }
2160 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2161 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2162 \def\Hy@setpdfborder{%
2163   \ifx\@pdfborder\@empty
2164   \else
2165     /Border[\@pdfborder]%
2166   \fi
2167   \ifx\@pdfborderstyle\@empty
2168   \else
2169     /BS<<\@pdfborderstyle>>%
2170   \fi
2171 }
2172 \Hy@DefNameKey{pdfpagemode}{%
2173   \do{UseNone}{}%
2174   \do{UseOutlines}{}%
2175   \do{UseThumbs}{}%
2176   \do{FullScreen}{}%
2177   \do{UseOC}{PDF 1.5}%
2178   \do{UseAttachments}{PDF 1.6}%
2179 }
2180 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2181   \do{UseNone}{}%
2182   \do{UseOutlines}{}%
2183   \do{UseThumbs}{}%
2184   \do{FullScreen}{}%
2185   \do{UseOC}{PDF 1.5}%
2186   \do{UseAttachments}{PDF 1.6}%
2187 }
2188 \Hy@DefNameKey{pdfdirection}{%
2189   \do{L2R}{Left to right}%
2190   \do{R2L}{Right to left}%
2191 }
2192 \Hy@DefNameKey{pdfviewarea}{%
2193   \do{MediaBox}{}%
2194   \do{CropBox}{}%
2195   \do{BleedBox}{}%
2196   \do{TrimBox}{}%
2197   \do{ArtBox}{}%
2198 }
2199 \Hy@DefNameKey{pdfviewclip}{%
2200   \do{MediaBox}{}%
2201   \do{CropBox}{}%
2202   \do{BleedBox}{}%
2203   \do{TrimBox}{}%
2204   \do{ArtBox}{}%
2205 }
2206 \Hy@DefNameKey{pdfprintarea}{%
2207   \do{MediaBox}{}%
2208   \do{CropBox}{}%
2209   \do{BleedBox}{}%

```

```

2210 \do{TrimBox}{}%
2211 \do{ArtBox}{}%
2212 }
2213 \Hy@DefNameKey{pdfprintclip}{%
2214 \do{MediaBox}{}%
2215 \do{CropBox}{}%
2216 \do{BleedBox}{}%
2217 \do{TrimBox}{}%
2218 \do{ArtBox}{}%
2219 }
2220 \Hy@DefNameKey{pdfprintscaling}{%
2221 \do{AppDefault}{}%
2222 \do{None}{}%
2223 }
2224 \Hy@DefNameKey{pdfduplex}{%
2225 \do{Simplex}{}%
2226 \do{DuplexFlipShortEdge}{}%
2227 \do{DuplexFlipLongEdge}{}%
2228 }
2229 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2230 \do{true}{}%
2231 \do{false}{}%
2232 }
2233 \define@key{Hyp}{pdfprintpagerange}{%
2234 \def\@pdfprintpagerange{#1}%
2235 }
2236 \Hy@DefNameKey{pdfnumcopies}{%
2237 \do{2}{two copies}%
2238 \do{3}{three copies}%
2239 \do{4}{four copies}%
2240 \do{5}{five copies}%
2241 }
2242 \define@key{Hyp}{pdfusetitle}[true]{%
2243 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2244 }
2245 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2246 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2247 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2248 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2249 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2250 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2251 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2252 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2253 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2254 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2255 \let\setpdflinkmargin@gobble
2256 \def\calculate@pdfview#1 #2\{%
2257 \def\@pdfview{#1}%
2258 \ifx\#2\%
2259 \def\@pdfviewparams{-32768}%
2260 \else
2261 \def\@pdfviewparams{ #2}%
2262 \fi
2263 }
2264 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
2265 \define@key{Hyp}{pdfstartview}{%
2266 \ifx\#1\%

```



```

2267 \def\@pdfstartview{}%
2268 \else
2269 \hypercalcbpdef\@pdfstartview{ /#1 }%
2270 \fi
2271 }
2272 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2273 \define@key{Hyp}{pdftoolbar}[true]{%
2274 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2275 }
2276 \define@key{Hyp}{pdfmenubar}[true]{%
2277 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2278 }
2279 \define@key{Hyp}{pdfwindowui}[true]{%
2280 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2281 }
2282 \define@key{Hyp}{pdffitwindow}[true]{%
2283 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2284 }
2285 \define@key{Hyp}{pdfcenterwindow}[true]{%
2286 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2287 }
2288 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2289 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2290 }
2291 \define@key{Hyp}{pdfnewwindow}[true]{%
2292 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2293 }
2294 \Hy@DefNameKey{pdfpagelayout}{%
2295 \do{SinglePage}{}}%
2296 \do{OneColumn}{}%
2297 \do{TwoColumnLeft}{}%
2298 \do{TwoColumnRight}{}%
2299 \do{TwoPageLeft}{PDF 1.5}%
2300 \do{TwoPageRight}{PDF 1.5}%
2301 }
2302 \define@key{Hyp}{pdflang}{%
2303 \def\@pdflang{#1}%
2304 }
2305 \define@key{Hyp}{pdfpagelabels}[true]{%
2306 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2307 }
2308 \define@key{Hyp}{pdfescapeform}[true]{%
2309 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2310 }

```

Default values:

```

2311 \def\@linkbordercolor{1 0 0}
2312 \def\@urlbordercolor{0 1 1}
2313 \def\@menubordercolor{1 0 0}
2314 \def\@filebordercolor{0 .5 .5}
2315 \def\@runbordercolor{0 .7 .7}
2316 \def\@citebordercolor{0 1 0}
2317 \def\@pagebordercolor{1 1 0}
2318 \def\@pdfhighlight{/I}
2319 \def\@pdftitle{}
2320 \def\@pdfauthor{}
2321 \let\@pdfproducer\relax
2322 \def\@pdfcreator{LaTeX with hyperref package}

```

```

2323 \def\@pdfcreationdate{}
2324 \def\@pdfmoddate{}
2325 \def\@pdfsubject{}
2326 \def\@pdfkeywords{}
2327 \def\@pdfpagescrop{}
2328 \def\@pdfstartview{ /Fit }
2329 \def\@pdfstartpage{1}
2330 \def\@pdfprintpagerange{}
2331 \def\@pdflang{}
2332 \let\PDF@SetupDoc\@empty
2333 \let\PDF@FinishDoc\@empty
2334 \let\phantomsection\@empty
2335 \@ifundefined{stockwidth}{%
2336   \edef\special@paper{\the\paperwidth,\the\paperheight}
2337 }{%
2338   \edef\special@paper{\the\stockwidth,\the\stockheight}
2339 }
2340 \begingroup
2341   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2342   \dimen@=0.99626401\dimen@
2343   \xdef\Hy@pageheight{\strip@pt\dimen@}
2344 \endgroup
2345 \def\HyInd@EncapChar{\\}
2346 \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.

```

2347 \let\hyper@normalise\ExecuteOptions
2348 \let\ExecuteOptions\hypersetup
2349 \Hy@RestoreCatcodes
2350 \InputIfFileExists{hyperref.cfg}{-}{-}
2351 \Hy@SetCatcodes
2352 \let\ExecuteOptions\hyper@normalise
2353 \Hy@MaybeStopNow

```

To add flexibility, we will not use the ordinary processing of package options, but put them through the `keyval` package. This section was written by David Carlisle.

Package `kvoptions` is used for processing options that are given as key value pairs. The package provides `\ProcessKeyvalOptions`, formerly known as `\ProcessOptionsWithKV`.

```

2354 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2355 \@ifpackageloaded{tex4ht}{%
2356   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2357   \PassOptionsToPackage{tex4ht}{hyperref}%
2358 }%
2359 }{-}

2360 \let\ReadBookmarks\relax
2361 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2362 \AtBeginDocument{%
2363   \ifHy@draft
2364     \let\hyper@@anchor\@gobble
2365     \gdef\hyper@link#1#2#3{#3}%
2366     \let\hyper@anchorstart\@gobble

```

```

2367 \let\hyper@anchorend\@empty
2368 \let\hyper@linkstart\@gobbletwo
2369 \let\hyper@linkend\@empty
2370 \def\hyper@linkurl#1#2{#1}%
2371 \def\hyper@linkfile#1#2#3{#1}%
2372 \def\Acrobatmenu#1#2{#2}%
2373 \let\PDF@SetupDoc\@empty
2374 \let\PDF@FinishDoc\@empty
2375 \let\@fifthoffive\@secondoftwo
2376 \let\@secondoffive\@secondoftwo
2377 \let\ReadBookmarks\relax
2378 \let\WriteBookmarks\relax
2379 \Hy@WarningNoLine{ draft mode on}%
2380 \fi
2381 \Hy@DisableOption{draft}%
2382 \Hy@DisableOption{nolinks}%
2383 \Hy@DisableOption{final}%
2384 }%

```

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.

```

2385 \ifx\HyPsd@InitUnicode\relax
2386 \define@key{Hyp}{unicode}[true]{%
2387 \Hy@boolkey{unicode}{#1}%
2388 }
2389 \else
2390 \define@key{Hyp}{unicode}[true]{%
2391 \Hy@boolkey{unicode}{#1}%
2392 \ifHy@unicode
2393 \Hy@WarningNoLine{Set package option ‘unicode’ first\MessageBreak
2394 in order to load unicode support%
2395 }%
2396 \Hy@unicodedefalse
2397 \fi
2398 }
2399 \fi

```

The macro \HyPsd@InitUnicode is no longer needed.

```

2400 \let\HyPsd@InitUnicode\@undefined

```

15.1 Patch for babel’s \texttilde

Babel does not define \texttilde in NFSS2 manner, so the NFSS2 definitions of PD1 or PU encoding is not compatible. To fix this, \texttilde is defined in babel manner.

```

2401 \Hy@nextfalse
2402 \@ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2403 \@ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2404 \@ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2405 \ifHy@next
2406 \let\texttilde\~%
2407 \fi
2408 \ifHy@figures
2409 \Hy@Info{Hyper figures ON}
2410 \else
2411 \Hy@Info{Hyper figures OFF}
2412 \fi

```

```

2413 \ifHy@nesting
2414   \Hy@Info{Link nesting ON}
2415 \else
2416   \Hy@Info{Link nesting OFF}
2417 \fi
2418 \ifHy@hyperindex
2419   \Hy@Info{Hyper index ON}
2420 \else
2421   \Hy@Info{Hyper index OFF}
2422 \fi
2423 \ifHy@plainpages
2424   \Hy@Info{Plain pages ON}
2425 \else
2426   \Hy@Info{Plain pages OFF}
2427 \fi
2428 \ifHy@backref
2429   \Hy@Info{Backreferencing ON}
2430 \else
2431   \Hy@Info{Backreferencing OFF}
2432 \fi
2433 \ifHy@typexml
2434   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2435 \fi
2436 \Hy@DisableOption{typexml}
2437 \ifHy@implicit
2438   \typeout{Implicit mode ON; LaTeX internals redefined}%
2439 \else
2440   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2441   \def\MaybeStopEarly{%
2442     \typeout{Hyperref stopped early}%
2443     \AfterBeginDocument{\PDF@FinishDoc}%
2444     \endinput
2445   }%
2446   \AtBeginDocument{%
2447     \let\autoref\ref
2448     \ifx\@pdfpagemode\@empty
2449       \gdef\@pdfpagemode{UseNone}%
2450     \fi
2451     \global\Hy@backreffalse
2452   }%
2453   \AtEndOfPackage{%
2454     \global\let\ReadBookmarks\relax
2455     \global\let\WriteBookmarks\relax
2456   }%
2457 \fi
2458 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2459 \AtEndOfPackage{%
2460   \@ifpackageloaded{tex4ht}{%
2461     \def\Hy@driver{htex4ht}%
2462     \Hy@texhttrue
2463   }{}%
2464   \ifx\Hy@driver\@empty
2465     \providecommand*{\Hy@defaultdriver}{hypertex}%
2466     \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

2467 \expandafter\ifx\csname pdfoutput\endcsname\relax
2468 \begingroup\expandafter\expandafter\expandafter\endgroup
2469 \expandafter\ifx\csname OpMode\endcsname\relax
2470 \let\Hy@driver\Hy@defaultdriver
2471 \else
2472 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2473 \def\Hy@driver{hvtex}%
2474 \def\XR@ext{pdf}%
2475 \else
2476 \ifnum\OpMode=10\relax
2477 \def\XR@ext{htm}%
2478 \def\Hy@driver{hvtexhtm}%
2479 \def\MaybeStopEarly{%
2480 \typeout{Hyperref stopped early}%
2481 \AfterBeginDocument{\PDF@FinishDoc}%
2482 \endinput
2483 }%
2484 \else
2485 \let\Hy@driver\Hy@defaultdriver
2486 \fi
2487 \fi
2488 \fi
2489 \else
2490 \ifnum\pdfoutput<1 %
2491 \let\Hy@driver\Hy@defaultdriver
2492 \else
2493 \def\Hy@driver{hpdfTeX}%
2494 \def\XR@ext{pdf}%
2495 \PassOptionsToPackage{pdfTeX}{color}%
2496 \Hy@breaklinkstrue
2497 \fi
2498 \fi
2499 \ifx\Hy@driver\Hy@defaultdriver
2500 \def\Hy@temp{hdvips}%
2501 \ifx\Hy@temp\Hy@driver
2502 \def\Hy@raisedlink{}%
2503 \def\XR@ext{pdf}%
2504 \fi
2505 \def\Hy@temp{hdvipdfm}%
2506 \ifx\Hy@temp\Hy@driver
2507 \def\XR@ext{pdf}%
2508 \Hy@breaklinkstrue
2509 \fi
2510 \def\Hy@temp{hdviwind}%
2511 \ifx\Hy@temp\Hy@driver
2512 \setkeys{Hyp}{colorlinks}%
2513 \PassOptionsToPackage{dviwindo}{color}%
2514 \fi
2515 \def\Hy@temp{hdvipson}%
2516 \ifx\Hy@temp\Hy@driver
2517 \def\XR@ext{pdf}%
2518 \def\Hy@raisedlink{}%
2519 \fi
2520 \def\Hy@temp{textures}%
2521 \ifx\Hy@temp\Hy@driver
2522 \def\XR@ext{pdf}%
2523 \fi

```

```

2524 \fi
2525 \typeout{*hyperref using default driver \Hy@driver*}%
2526 \else
2527 \typeout{*hyperref using driver \Hy@driver*}%
2528 \fi
2529 \input{\Hy@driver.def}%
2530 \let\@unprocessedoptions\relax
2531 \Hy@RestoreCatcodes
2532 }
2533 \Hy@DisableOption{tex4ht}
2534 \Hy@DisableOption{pdftex}
2535 \Hy@DisableOption{dvipdf}
2536 \Hy@DisableOption{nativepdf}
2537 \Hy@DisableOption{dvipdfm}
2538 \Hy@DisableOption{pdfmark}
2539 \Hy@DisableOption{dvips}
2540 \Hy@DisableOption{hypertex}
2541 \Hy@DisableOption{vtex}
2542 \Hy@DisableOption{vtexpdfmark}
2543 \Hy@DisableOption{dviwindo}
2544 \Hy@DisableOption{dvipsone}
2545 \Hy@DisableOption{textures}
2546 \Hy@DisableOption{latex2html}
2547 \Hy@DisableOption{ps2pdf}

```

15.1.2 Bookmarks

```

2548 \def\WriteBookmarks{0}
2549 \def\@bookmarkopenstatus#1{%
2550 \ifHy@bookmarksopen

```

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

```

2551 \ifnum#1<\expandafter\@firstofone\expandafter
2552 \number\@bookmarkopenlevel} % explicit space
2553 \else
2554 -%
2555 \fi
2556 \else
2557 -%
2558 \fi
2559 }
2560 \ifHy@bookmarks
2561 \Hy@Info{Bookmarks ON}%
2562 \ifx\@pdfpagemode\@empty
2563 \def\@pdfpagemode{UseOutlines}%
2564 \fi
2565 \else
2566 \def\@bookmarkopenstatus#1{%
2567 \Hy@Info{Bookmarks OFF}%
2568 \AtEndOfPackage{%
2569 \global\let\ReadBookmarks\relax
2570 \global\let\WriteBookmarks\relax
2571 }
2572 \ifx\@pdfpagemode\@empty
2573 \def\@pdfpagemode{UseNone}%
2574 \fi
2575 \fi
2576 \Hy@DisableOption{bookmarks}

```

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

```

2577 \AtBeginDocument{%
2578   \ifHy@colorlinks
2579     \ifHy@typexml\else\RequirePackage{color}\fi
2580     \def\Hy@colorlink#1{%
2581       \begingroup
2582       \expandafter\Hy@colorscan\expandafter#1#1\@nil%
2583     }%
2584     \def\Hy@colorscan#1{%
2585       \@ifnextchar[% ]
2586       {%
2587         \Hy@@colorscan
2588       }{%
2589         \expandafter\color\expandafter#1\@car{}}%
2590     }%
2591   }%
2592   \def\Hy@@colorscan#1\@nil{\color#1}%
2593   \def\Hy@endcolorlink{\endgroup}%
2594   \Hy@Info{Link coloring ON}%
2595 \else
2596   \ifHy@frenchlinks
2597     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2598     \def\Hy@endcolorlink{\endgroup}%
2599     \Hy@Info{French linking ON}%
2600   \else
for grouping consistency:
2601     \def\Hy@colorlink#1{\begingroup}%
2602     \def\Hy@endcolorlink{\endgroup}%
2603     \Hy@Info{Link coloring OFF}%
2604   \fi
2605 \fi
2606 \Hy@DisableOption{colorlinks}%
2607 \Hy@DisableOption{frenchlinks}%
2608 \ifHy@texht
2609   \long\def\@firstoffive#1#2#3#4#5{#1}%
2610   \long\def\@secondoffive#1#2#3#4#5{#2}%
2611   \long\def\@thirdoffive#1#2#3#4#5{#3}%
2612   \long\def\@fourthoffive#1#2#3#4#5{#4}%
2613   \long\def\@fifthoffive#1#2#3#4#5{#5}%
2614   \providecommand*\@safe@activestruer{}%
2615   \providecommand*\@safe@activesfalse{}%
2616   \def\T@ref#1{%
2617     \Hy@safe@activestruer
2618     \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2619     \Hy@safe@activesfalse
2620   }%
2621   \def\T@pageref#1{%
2622     \Hy@safe@activestruer
2623     \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2624     \Hy@safe@activesfalse
2625   }%
2626 \else
2627   \ifHy@typexml\else\RequirePackage{nameref}\fi
2628 \fi
2629 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2630 \DeclareRobustCommand\pageref{%
2631   \@ifstar\@pagerefstar\T@pageref

```

```

2632 }%
2633 }
2634 \AfterBeginDocument{%
2635   \ifHy@texht
2636   \else
2637     \ReadBookmarks
2638   \fi
2639 }

2640 \ifHy@backref
2641   \RequirePackage{backref}
2642 \else
2643   \let\Hy@backout\@gobble
2644 \fi
2645 \Hy@DisableOption{backref}
2646 \Hy@DisableOption{pagebackref}

2647 \Hy@activeanchorfalse

```

16 User hypertext macros

We need to normalise all user commands taking a URL argument; Within the argument the following special definitions apply: \#, \%, ~ produce #, %, ~ respectively. for consistency ~ produces ~ as well. At the *top level only* ie not within the argument of another command, you can use # and % unescaped, to produce themselves. even if, say, # is entered as # it will be converted to \# so it does not die if written to an aux file etc. \# will write as # locally while making \specials.

```

2648 \begingroup
2649   \endlinechar=-1
2650   \catcode'\^M\active
2651   \catcode'\%\active
2652   \catcode'\#\active
2653   \catcode'\_\active
2654   \catcode'\$\active
2655   \gdef\hyper@normalise{
2656     \begingroup
2657     \catcode'\^M\active
2658     \def^^M{ }
2659     \catcode'\%\active
2660     \let%\@percentchar
2661     \let%\@percentchar
2662     \catcode'\#\active
2663     \def#{\hyper@hash}
2664     \def\#{\hyper@hash}
2665     \@makeother\&
2666     \edef\textunderscore{\string_}
2667     \let_\textunderscore
2668     \catcode'\_\active
2669     \let_\textunderscore
2670     \let~\hyper@tilde
2671     \let~\hyper@tilde
2672     \let\textasciitilde\hyper@tilde
2673     \let\\\@backslashchar
2674     \edef$\string$}
2675     \Hy@safe@activetrue
2676     \hyper@nrmalise
2677   }
2678   \catcode'\#=6

```



```

2679 \gdef\hyper@normalise#1#2{
2680   \edef\Hy@tempa{
2681     \endgroup
2682     \noexpand#1{\Hy@RemovePercentCr#2%^~M\@nil}
2683   }
2684   \Hy@tempa
2685 }
2686 \gdef\Hy@RemovePercentCr#1%^~M#2\@nil{
2687   #1
2688   \ifx\limits#2\limits
2689   \else
2690     \Hy@ReturnAfterFi{
2691       \Hy@RemovePercentCr #2\@nil
2692     }
2693   \fi
2694 }
2695 \endgroup
2696 \providecommand\hyper@chars{%
2697   \let#\hyper@hash
2698   \let%\@percentchar
2699 }

2700 \def\hyperlink#1#2{%
2701   \hyper@@link{}{#1}{#2}%
2702 }

2703 \DeclareRobustCommand*\href{\hyper@normalise\href@}
2704 \begingroup
2705   \catcode'\$=6
2706   \catcode'\#=12
2707   \gdef\href@#1{\expandafter\href@split$1##\}
2708   \gdef\href@split$1#$2#$3\{\%
2709     \hyper@@link{$1}{$2}%
2710   }
2711 \endgroup

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

2712 \RequirePackage{url}
2713 \let\HyOrg@url\url
2714 \def\Hurl{\begingroup \Url}
2715 \let\nolinkurl\Hurl
2716 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2717 \def\url@#1{\hyper@@linkurl{\Hurl{#1}}{#1}}

2718 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2719 \providecommand\hyper@image[2]{#2}

2720 \def\hypertarget#1#2{%
2721   \ifHy@nesting
2722     \hyper@@anchor{#1}{#2}%
2723   \else
2724     \hyper@@anchor{#1}{\relax}#2%
2725   \fi
2726 }

```

`\hyperref` is more complicated, as it includes the concept of a category of link, used to make the name. This is not really used in this package. `\hyperdef` sets up an anchor in the same way. They each have three parameters of category, linkname, and marked text, and `\hyperref` also has a first parameter of URL. If there is an optional first parameter

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

```

2727 \DeclareRobustCommand*\hyperref{%
2728   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
2729 }
2730 \def\Hy@babelnormalise#1[#2]{%
2731   \begingroup
2732     \Hy@safe@activestrue
2733     \edef\Hy@tempa{%
2734       \endgroup
2735       \noexpand#1[#2]}%
2736   }%
2737   \Hy@tempa
2738 }
2739 \def\@hyperref{\hyper@normalise\@hyperref}
2740 \def\@hyperref#1#2#3{%
2741   \edef\ref@one{\ifx\#2\else#2.\fi#3}%
2742   \expandafter\tryhyper@link\ref@one\{#1}%
2743 }
2744 \def\tryhyper@link#1\#2{%
2745   \hyper@@link{#2}{#1}%
2746 }

2747 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
2748 \def\@hyperdef#1#2#3{%, category, name, text
2749   \ifHy@nesting
2750     \hyper@@anchor{#1.#2}{#3}%
2751   \else
2752     \hyper@@anchor{#1.#2}{\relax}#3%
2753   \fi
2754 }

```

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

```

2755 \def\label@hyperref[#1]{%
2756   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
2757 }%
2758 \def\label@@hyperref#1#2#3{%
2759   \ifx#1\relax
2760     \protect\G@refundefinedtrue
2761     \@latex@warning{%
2762       Hyper reference ‘#2’ on page \thepage \space undefined%
2763     }%
2764     \hyper@@link{}{??}{#3}%
2765   \else
2766     \hyper@@link{\expandafter\@fifthoffive#1}%
2767       {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2768   \fi
2769 }
2770 \def\label@hyperdef[#1]#2#3#4{ label name, category, name,
2771                               % anchor text
2772   \@bsphack
2773   \if@files@w
2774     \protected@write\@auxout{%
2775       {\string\newlabel{#1}{-}{-}\#2.#3}}%
2776   \fi
2777   \@esphack
2778   \ifHy@nesting

```

```

2779 \hyper@@anchor{#2.#3}{#4}%
2780 \else
2781 \hyper@@anchor{#2.#3}{\relax}#4%
2782 \fi
2783 }

```

17 Underlying basic hypertext macros

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

```

2784 \def\hyper@link{\let\Hy@reserved@a\relax
2785 \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2786 }
2787 \def\hyper@link@[#1]#2#3#4{%
2788 \begingroup
2789 \protected@edef\Hy@tempa{#2}%
2790 \Hy@safe@activestrue
2791 \edef\x{#3}%
2792 \ifx\Hy@tempa\@empty
2793 \toks0{\hyper@link{#1}}%
2794 \else
2795 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2796 \fi
2797 \toks1{{#4}}%
2798 \edef\x{\endgroup
2799 \the\toks0 {\x}\the\toks1 }
2800 }%
2801 \x
2802 }

```

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.

```

2803 \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.

```

2804 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
2805 }

```

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

```

2806 \def\@pdftempwordfile{file}%
2807 \def\@pdftempwordrun{run}%
2808 \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:

```

2809 \ifx\#6\%
2810 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2811 \else
2812 \ifx\#4\%
2813 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2814 \else

```

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

```

2815 \def\@pdftempa{#4}%
2816 \ifx\@pdftempa\@pdftempwordfile
2817 \expandafter\@hyper@linkfile#7\#{3}{#2}%
2818 \else

```

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

```

2819 \ifx\@pdftempa\@pdftempwordrun
2820 \expandafter\@hyper@launch#7\#{3}{#2}%
2821 \else

```

otherwise its a URL

```

2822 \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
2823 \fi
2824 \fi
2825 \fi
2826 \fi
2827 }

```

By default, turn run: into file:

```

2828 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2829 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\#3\else\hyper@hash#3\fi}%
2830 }

```

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

```

2831 \def\@hyper@linkfile file:#1\#2#3{%
2832 %file url,link string, name
2833 \filename@parse{#1}%
2834 \ifx\filename@ext\relax
2835 \edef\filename@ext{\XR@ext}%
2836 \fi
2837 \def\use@file{\filename@area\filename@base.\filename@ext}%
2838 \ifx\filename@ext\XR@ext
2839 \hyper@linkfile{#2}{\use@file}{#3}%
2840 \else
2841 \ifx\@baseurl\@empty
2842 \hyper@linkurl{#2}{%
2843 \Hy@linkfileprefix\use@file\ifx\#3\else\hyper@hash#3\fi
2844 }%
2845 \else
2846 \hyper@linkurl{#2}{\use@file\ifx\#3\else\hyper@hash#3\fi}%
2847 \fi
2848 \fi
2849 }

```

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.

```

2850 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2851 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2852   \ifx\#1\%
2853     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2854   \else
2855     \def\anchor@spot{#2#3}%
2856     \let\put@me@back\@empty
2857     \ifx\relax#2\relax
2858     \else
2859       \ifHy@nesting
2860       \else
2861         \ifcat a\noexpand#2\relax
2862         \else
2863           \ifcat 0\noexpand#2 \relax
2864           \else
2865             \typeout{Anchor start is not alphanumeric %
2866             on input line\the\inputlineno%
2867             }%
2868             \let\anchor@spot\@empty
2869             \def\put@me@back{#2#3}%
2870           \fi
2871         \fi
2872       \fi
2873     \fi
2874     \ifHy@activeanchor
2875       \anchor@spot
2876     \else
2877       \hyper@anchor{#1}%
2878     \fi
2879     \expandafter\put@me@back
2880   \fi
2881   \let\anchor@spot\@empty
2882 }
```

18 Compatibility with the *LT_εX2html* package

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

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

```

2883 \let\htmladding\hyperimage
2884 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2885 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2886 \def\htmlref#1#2{% anchor text, label
2887   \label@hyperref[{#2}]{#1}%
2888 }
```

This is really too much. The \LaTeX 2html 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.

```

2889 \def\@@latextohtmlX{%
2890   \let\hhyperref\hyperref
2891   \def\hyperref##1##2##3##4{% anchor text for HTML
2892                                   % text to print before label in print
2893                                   % label
2894                                   % post-label text in print
2895     ##2\ref{##4}##3%
2896   }%
2897 }
```

19 Forms creation

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

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

```

2898 \newif\ifFld@checked
2899 \newif\ifFld@hidden
2900 \newif\ifFld@multiline
2901 \newif\ifFld@readonly
2902 \newif\ifFld@disabled
2903 \newif\ifFld@password
2904 \newif\ifFld@radio
2905 \newif\ifFld@combo
2906 \newif\ifFld@popdown
2907 \Fld@multilinefalse
2908 \Fld@checkedfalse
2909 \Fld@hiddenfalse
2910 \Fld@readonlyfalse
2911 \Fld@disabledfalse
2912 \Fld@radiofalse
2913 \Fld@combofalse
2914 \Fld@popdownfalse
2915 \Fld@passwordfalse
2916 \newcount\Fld@menulength
2917 \newdimen\Fld@Width
2918 \newdimen\Fld@charsize
2919 \Fld@charsize=10\p@
2920 \def\Fld@maxlen{0}
2921 \def\Fld@align{0}
2922 \def\Fld@color{0 0 0}
2923 \def\Fld@bcolor{1 1 1}
2924 \def\Fld@bordercolor{1 0 0}
2925 \def\Fld@bordersep{1\p@}
2926 \def\Fld@borderwidth{1}
2927 \def\Fld@borderstyle{S}
2928 \def\Fld@cbsymbol{4}
2929 \newtoks\Choice@toks
2930 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2931 \def\endForm{\@endForm}
2932 \newif\ifForm@html
2933 \Form@htmlfalse
```

```

2934 \def\Form@boolkey#1#2{%
2935   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2936 }
2937 \define@key{Form}{action}{%
2938   \hyper@normalise\Hy@DefFormAction{#1}%
2939 }
2940 \def\Hy@DefFormAction{\def\Form@action}
2941 \def\enc@html{html}
2942 \define@key{Form}{encoding}{%
2943   \def\Hy@tempa{#1}%
2944   \ifx\Hy@tempa\enc@html
2945     \Form@htmltrue
2946   \else
2947     \typeout{hyperref: form 'encoding' key set to #1 %
2948       -- unknown type%
2949     }%
2950     \Form@htmlfalse
2951   \fi
2952 }
2953 \define@key{Form}{method}{%
2954   \def\Form@method{#1}%
2955 }
2956 \def\Form@method{}
2957 \def\Field@boolkey#1#2{%
2958   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2959 }
2960 \newtoks\Field@toks
2961 \Field@toks={ }%
2962 \def\Field@addtoks#1#2{%
2963   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
2964   \@processme
2965 }
2966 \def\Fld@checkequals#1=#2=#3\\{%
2967   \def\@currDisplay{#1}%
2968   \ifx\\#2\\%
2969     \def\@currValue{#1}%
2970   \else
2971     \def\@currValue{#2}%
2972   \fi
2973 }
2974 \define@key{Field}{loc}{%
2975   \def\Fld@loc{#1}%
2976 }
2977 \define@key{Field}{multiline}[true]{%
2978   \lowercase{\Field@boolkey{#1}}{multiline}%
2979 }
2980 \define@key{Field}{checked}[true]{%
2981   \lowercase{\Field@boolkey{#1}}{checked}%
2982 }
2983 \define@key{Field}{hidden}[true]{%
2984   \lowercase{\Field@boolkey{#1}}{hidden}%
2985 }
2986 \define@key{Field}{readonly}[true]{%
2987   \lowercase{\Field@boolkey{#1}}{readonly}%
2988 }
2989 \define@key{Field}{disabled}[true]{%
2990   \lowercase{\Field@boolkey{#1}}{disabled}%

```

```

2991 }
2992 \define@key{Field}{password}[true]{%
2993   \lowercase{\Field@boolkey{#1}}{password}%
2994 }
2995 \define@key{Field}{radio}[true]{%
2996   \lowercase{\Field@boolkey{#1}}{radio}%
2997 }
2998 \define@key{Field}{combo}[true]{%
2999   \lowercase{\Field@boolkey{#1}}{combo}%
3000 }
3001 \define@key{Field}{popdown}[true]{%
3002   \lowercase{\Field@boolkey{#1}}{popdown}%
3003 }
3004 \define@key{Field}{accesskey}{%
3005   \Field@addtoks{accesskey}{#1}%
3006 }
3007 \define@key{Field}{tabkey}{%
3008   \Field@addtoks{tabkey}{#1}%
3009 }
3010 \define@key{Field}{name}{%
3011   \def\Fld@name{#1}%
3012 }
3013 \define@key{Field}{width}{%
3014   \def\Fld@width{#1}%
3015   \Field@Width#1\setbox0=\hbox{m}%
3016 }
3017 \define@key{Field}{maxlen}{%
3018   \def\Fld@maxlen{#1}%
3019 }
3020 \define@key{Field}{menulength}{%
3021   \Fld@menulength=#1\relax
3022 }
3023 \define@key{Field}{height}{%
3024   \def\Fld@height{#1}%
3025 }
3026 \define@key{Field}{charsize}{%
3027   \Fld@charsize#1%
3028 }
3029 \define@key{Field}{fillcolor}{%
3030   \def\Fld@fillcolor{#1}%
3031 }
3032 \define@key{Field}{bordercolor}{%
3033   \def\Fld@bordercolor{#1}%
3034 }
3035 \define@key{Field}{color}{%
3036   \def\Fld@color{#1}%
3037 }
3038 \define@key{Field}{borderwidth}{%
3039   \def\Fld@borderwidth{#1}%
3040 }
3041 \define@key{Field}{borderstyle}{%
3042   \def\Fld@borderstyle{#1}%
3043 }
3044 \define@key{Field}{bordersep}{%
3045   \def\Fld@bordersep{#1}%
3046 }
3047 \define@key{Field}{default}{%

```



```

3048 \def\Fld@default{#1}%
3049 }
3050 \define@key{Field}{align}{%
3051 \def\Fld@align{#1}%
3052 }
3053 \define@key{Field}{value}{%
3054 \def\Fld@value{#1}%
3055 }
3056 \define@key{Field}{backgroundcolor}{%
3057 \def\Fld@bcolor{#1}%
3058 }
3059 \define@key{Field}{checkboxsymbol}{%
3060 \def\Fld@cbsymbol{#1}%
3061 }
3062 \def\Fld@format@code{}
3063 \def\Fld@validate@code{}
3064 \def\Fld@calculate@code{}
3065 \def\Fld@keystroke@code{}
3066 \def\Fld@onfocus@code{}
3067 \def\Fld@onblur@code{}
3068 \def\Fld@onmousedown@code{}
3069 \def\Fld@onmouseup@code{}
3070 \def\Fld@onenter@code{}
3071 \def\Fld@onexit@code{}
3072 \define@key{Field}{keystroke}{%
3073 \def\Fld@keystroke@code{#1}%
3074 }
3075 \define@key{Field}{format}{%
3076 \def\Fld@format@code{#1}%
3077 }
3078 \define@key{Field}{validate}{%
3079 \def\Fld@validate@code{#1}%
3080 }
3081 \define@key{Field}{calculate}{%
3082 \def\Fld@calculate@code{#1}%
3083 }
3084 \define@key{Field}{onfocus}{%
3085 \def\Fld@onfocus@code{#1}%
3086 }
3087 \define@key{Field}{onblur}{%
3088 \def\Fld@onblur@code{#1}%
3089 }
3090 \define@key{Field}{onenter}{%
3091 \def\Fld@onenter@code{#1}%
3092 }
3093 \define@key{Field}{onexit}{%
3094 \def\Fld@onexit@code{#1}%
3095 }
3096 \define@key{Field}{onselect}{%
3097 \Field@addtoks{onselect}{#1}%
3098 }
3099 \define@key{Field}{onchange}{%
3100 \Field@addtoks{onchange}{#1}%
3101 }
3102 \define@key{Field}{onclick}{%
3103 \def\Fld@onclick{#1}%
3104 \Field@addtoks{onclick}{#1}%

```

```

3105 }
3106 \define@key{Field}{ondblclick}{%
3107   \Field@addtoks{ondblclick}{#1}%
3108 }
3109 \define@key{Field}{onmousedown}{%
3110   \Field@addtoks{onmousedown}{#1}%
3111 }
3112 \define@key{Field}{onmouseup}{%
3113   \Field@addtoks{onmouseup}{#1}%
3114 }
3115 \define@key{Field}{onmouseover}{%
3116   \Field@addtoks{onmouseover}{#1}%
3117 }
3118 \define@key{Field}{onmousemove}{%
3119   \Field@addtoks{onmousemove}{#1}%
3120 }
3121 \define@key{Field}{onmouseout}{%
3122   \Field@addtoks{onmouseout}{#1}%
3123 }
3124 \define@key{Field}{onkeypress}{%
3125   \Field@addtoks{onkeypress}{#1}%
3126 }
3127 \define@key{Field}{onkeydown}{%
3128   \Field@addtoks{onkeydown}{#1}%
3129 }
3130 \define@key{Field}{onkeyup}{%
3131   \Field@addtoks{onkeyup}{#1}%
3132 }
3133 %
3134 \DeclareRobustCommand\TextField{%
3135   \@ifnextchar[{\@TextField}{\@TextField[]}%
3136 }
3137 \DeclareRobustCommand\ChoiceMenu{%
3138   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
3139 }
3140 \DeclareRobustCommand\CheckBox{%
3141   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
3142 }
3143 \DeclareRobustCommand\PushButton{%
3144   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
3145 }
3146 \DeclareRobustCommand\Gauge{%
3147   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3148 }
3149 \DeclareRobustCommand\Submit{%
3150   \@ifnextchar[{\@Submit}{\@Submit[]}%
3151 }
3152 \DeclareRobustCommand\Reset{%
3153   \@ifnextchar[{\@Reset}{\@Reset[]}%
3154 }
3155 \def\LayoutTextField#1#2{% label, field
3156   #1 #2%
3157 }
3158 \def\LayoutChoiceField#1#2{% label, field
3159   #1 #2%
3160 }
3161 \def\LayoutCheckField#1#2{% label, field

```

```

3162 #1 #2%
3163 }
3164 \def\LayoutPushButtonField#1{% button
3165 #1%
3166 }
3167 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3168 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3169 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3170 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3171 \def\MakeButtonField#1{%
3172 \sbox0{%
3173 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3174 }%
3175 \@tempdima\ht0
3176 \advance\@tempdima by \Fld@borderwidth bp
3177 \advance\@tempdima by \Fld@borderwidth bp
3178 \ht0\@tempdima
3179 \@tempdima\dp0
3180 \advance\@tempdima by \Fld@borderwidth bp
3181 \advance\@tempdima by \Fld@borderwidth bp
3182 \dp0\@tempdima
3183 \box0\relax
3184 }
3185 \def\DefaultHeightofSubmit{14pt}
3186 \def\DefaultWidthofSubmit{2cm}
3187 \def\DefaultHeightofReset{14pt}
3188 \def\DefaultWidthofReset{2cm}
3189 \def\DefaultHeightofCheckBox{\baselineskip}
3190 \def\DefaultWidthofCheckBox{\baselineskip}
3191 \def\DefaultHeightofChoiceMenu{\baselineskip}
3192 \def\DefaultWidthofChoiceMenu{\baselineskip}
3193 \def\DefaultHeightofText{\baselineskip}
3194 \def\DefaultWidthofText{3cm}

```

20 Setup

```

3195 \ifHy@figures
3196 \Hy@Info{Hyper figures ON}
3197 \else
3198 \Hy@Info{Hyper figures OFF}
3199 \fi
3200 \ifHy@nesting
3201 \Hy@Info{Link nesting ON}
3202 \else
3203 \Hy@Info{Link nesting OFF}
3204 \fi
3205 \ifHy@hyperindex
3206 \Hy@Info{Hyper index ON}
3207 \else
3208 \Hy@Info{Hyper index OFF}
3209 \fi
3210 \ifHy@backref
3211 \Hy@Info{backreferencing ON}
3212 \else
3213 \Hy@Info{backreferencing OFF}
3214 \fi

```

```

3215 \ifHy@colorlinks
3216   \Hy@Info{Link coloring ON}
3217 \else
3218   \Hy@Info{Link coloring OFF}
3219 \fi

```

21 Low-level utility macros

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

```

3220 \edef\hyper@hash{\string#}
3221 \edef\hyper@tilde{\string~}
3222 \edef\hyper@quote{\string"}
3223 \let\@currentHref\@empty
3224 \let\Hy@footnote@currentHref\@empty

```

We give the start of document a special label; this is used in backreferencing-by-section, to allow for cites before any sectioning commands. Set up PDF info.

```

3225 \AfterBeginDocument{%
3226   \Hy@pdfstringtrue
3227   \PDF@SetupDoc
3228   \let\PDF@SetupDoc\@empty
3229   \Hy@DisableOption{pdfpagescrop}%
3230   \Hy@DisableOption{pdfpagemode}%
3231   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3232   \Hy@DisableOption{pdfdirection}%
3233   \Hy@DisableOption{pdfviewarea}%
3234   \Hy@DisableOption{pdfviewclip}%
3235   \Hy@DisableOption{pdfprintarea}%
3236   \Hy@DisableOption{pdfprintclip}%
3237   \Hy@DisableOption{pdfprintscaling}%
3238   \Hy@DisableOption{pdfduplex}%
3239   \Hy@DisableOption{pdfpicktraybypdfsize}%
3240   \Hy@DisableOption{pdfprintpagerange}%
3241   \Hy@DisableOption{pdfnumcopies}%
3242   \Hy@DisableOption{pdfstartview}%
3243   \Hy@DisableOption{pdfstartpage}%
3244   \Hy@DisableOption{pdftoolbar}%
3245   \Hy@DisableOption{pdfmenubar}%
3246   \Hy@DisableOption{pdfwindowui}%
3247   \Hy@DisableOption{pdffitwindow}%
3248   \Hy@DisableOption{pdfcenterwindow}%
3249   \Hy@DisableOption{pdfdisplaydoctitle}%
3250   \Hy@DisableOption{pdfpagelayout}%
3251   \Hy@DisableOption{pdflang}%
3252   \Hy@DisableOption{baseurl}%
3253   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3254   \Hy@pdfstringfalse
3255 }

```

22 Localized nullifying of package

Sometimes we just don't want the wretched package interfering with us. Define an environment we can put in manually, or include in a style file, which stops the hypertext functions doing anything. This is used, for instance, in the Elsevier classes, to stop hyperref playing havoc in the front matter.

```

3256 \def\NoHyper{%

```

```

3257 \def\hyper@link@{##1}##2##3##4{##4}%
3258 \def\hyper@@anchor##1{%
3259 \global\let\hyper@livelink\hyper@link
3260 \gdef\hyper@link##1##2##3{##3}%
3261 \def\hyper@anchorstart##1{%
3262 \let\hyper@anchorend\@empty
3263 \def\hyper@linkstart##1##2{%
3264 \let\hyper@linkend\@empty
3265 \def\hyper@linkurl##1##2{##1}%
3266 \def\hyper@linkfile##1##2##3{##1}%
3267 \let\Hy@backout\@gobble
3268 }
3269 \def\stop@hyper{%
3270 \def\hyper@link@{##1}##2##3##4{##4}%
3271 \let\Hy@backout\@gobble
3272 \def\hyper@@anchor##1{%
3273 \def\hyper@link##1##2##3{##3}%
3274 \def\hyper@anchorstart##1{%
3275 \let\hyper@anchorend\@empty
3276 \def\hyper@linkstart##1##2{%
3277 \let\hyper@linkend\@empty
3278 \def\hyper@linkurl##1##2{##1}%
3279 \def\hyper@linkfile##1##2##3{##1}%
3280 }
3281 \def\endNoHyper{%
3282 \global\let\hyper@link\hyper@livelink
3283 }
3284 \end{package}

```

23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```

3285 \def\*nohyperref
3286 \let\hyper@@anchor\@gobble
3287 \def\hyper@link##1##2##3{##3}%
3288 \let\hyper@anchorstart\@gobble
3289 \let\hyper@anchorend\@empty
3290 \let\hyper@linkstart\@gobbletwo
3291 \let\hyper@linkend\@empty
3292 \def\hyper@linkurl##1##2{##1}%
3293 \def\hyper@linkfile##1##2##3{##1}%
3294 \let\PDF@SetupDoc\@empty
3295 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

3296 \let\Acrobatmenu\@gobble
3297 \let\pdfstringdefDisableCommands\@gobbletwo
3298 \let\texorpdfstring\@firstoftwo
3299 \let\pdfbookmark\@undefined
3300 \newcommand\pdfbookmark[3]{}
3301 \let\phantomsection\@empty

```

```

3302 \let\hypersetup\@gobble
3303 \let\hyperbaseurl\@gobble
3304 \let\href\@gobble
3305 \let\hyperdef\@gobbletwo
3306 \let\hyperlink\@gobble
3307 \let\hypertarget\@gobble
3308 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
3309 \long\def\@gobbleopt[#1]{%
3310 \let\hyperpage\@empty
3311 \</nohyperref>

```

24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to \begin{document}

```

3312 \*package
3313 \AfterBeginDocument{%

```

First the code to deal with removing the hyperref package from a document.

Write some stuff into the aux file so if the next run is done without hyperref, then \contentsline and \newlabel are defined to cope with the extra arguments.

```

3314 \if@filesw
3315 \ifHy@typexml
3316 \immediate\closeout\@mainaux
3317 \immediate\openout\@mainaux\jobname.aux
3318 \immediate\write\@auxout{<relaxxml>\relax}%
3319 \fi
3320 \immediate\write\@auxout{%
3321 \string\ifx\string\hyper@anchor\string\@undefined^^J%
3322 \global\let\string\oldcontentsline\string\contentsline^^J%
3323 \gdef\string\contentsline%
3324 \string#1\string#2\string#3\string#4{%
3325 \string\oldcontentsline%
3326 {\string#1}{\string#2}{\string#3}}^^J%
3327 \global\let\string\oldnewlabel\string\newlabel^^J%
3328 \gdef\string\newlabel\string#1\string#2{%
3329 \string\newlabelxx{\string#1}\string#2}^^J%
3330 \gdef\string\newlabelxx%
3331 \string#1\string#2\string#3\string#4\string#5\string#6{%
3332 \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.

```

3333 \string\AtEndDocument{%
3334 \let\string\contentsline\string\oldcontentsline^^J%
3335 \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.

```

3336 \string\else^^J%
3337 \global\let\string\hyper@last\relax^^J%
3338 \string\fi^^J%
3339 }%
3340 \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.

```

3341 \ifx\hyper@last\@undefined
3342 \def\@starttoc#1{%
3343 \begingroup
3344 \makeatletter
3345 \IfFileExists{\jobname.#1}{%
3346 \Hy@WarningNoLine{%
3347 old #1 file detected, not used; run LaTeX again%
3348 }%
3349 }{}%
3350 \if@filesw
3351 \expandafter\newwrite\csname tf@#1\endcsname
3352 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
3353 \fi
3354 \@nobreakfalse
3355 \endgroup
3356 }%
3357 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{}{}{}}%
3358 \fi
3359 }

```

25 Title strings

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

```

3360 \ifHy@usetitle
3361 \let\HyOrg@title\title
3362 \let\HyOrg@author\author
3363 \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3364 \def\Hy@scanopttitle[#1]{%
3365 \gdef\Hy@title{#1}%
3366 \HyOrg@title[{#1}]%
3367 }%
3368 \def\Hy@scantitle#1{%
3369 \gdef\Hy@title{#1}%
3370 \HyOrg@title{#1}%
3371 }
3372 \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3373 \def\Hy@scanoptauthor[#1]{%
3374 \gdef\Hy@author{#1}%
3375 \HyOrg@author[{#1}]%
3376 }%
3377 \def\Hy@scanauthor#1{%
3378 \gdef\Hy@author{#1}%
3379 \HyOrg@author{#1}%
3380 }

```

The case, that or re given before hyperref is loaded, is much more complicate, because LaTeX initializes the macros title and author with LaTeX error and warning messages.

```

3381 \begingroup
3382 \def\process@me#1\@nil#2{%
3383 \expandafter\let\expandafter\x\csname @#2\endcsname

```

```

3384 \edef\y{\expandafter\strip@prefix\meaning\x}%
3385 \def\c##1##2\@nil{%
3386 \ifx\\##1\\%
3387 \else
3388 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
3389 \expandafter{\x}%
3390 \fi
3391 }%
3392 \expandafter\c\y\relax#1\@nil
3393 }%
3394 \expandafter\process@me\string\@latex@\@nil{title}%
3395 \expandafter\process@me\string\@latex@\@nil{author}%
3396 \endgroup
3397 \fi
3398 \Hy@DisableOption{pdfusetitle}

```

Macro `\Hy@UseMaketitleInfos` is used in the driver files, before the information entries are used.

The newline macro `\newline` or `\\` is much more complicate. In the title a good replacement can be a space, but can be already a space after `\\` in the title string. So this space is removed by scanning for the next non-empty argument.

In the macro `\author` the newline can perhaps separate the different authors, so the newline expands here to a comma with space.

The possible arguments such as space or the optional argument after the newline macros are not detected.

```

3399 \def\Hy@UseMaketitleString#1{%
3400 \ifundefined{Hy@#1}{-}{%
3401 \begingroup
3402 \let\Hy@saved@hook\pdfstringdefPreHook
3403 \pdfstringdefDisableCommands{%
3404 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
3405 \let\newline\\%
3406 }%
3407 \expandafter\ifx\csname @pdf#1\endcsname\@empty
3408 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3409 \csname Hy@#1\endcsname\@empty
3410 }%
3411 \fi
3412 \global\let\pdfstringdefPreHook\Hy@saved@hook
3413 \endgroup
3414 }%
3415 }
3416 \def\Hy@newline@title#1{ #1}
3417 \def\Hy@newline@author#1{, #1}
3418 \def\Hy@UseMaketitleInfos{%
3419 \Hy@UseMaketitleString{title}%
3420 \Hy@UseMaketitleString{author}%
3421 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

26.1 PDF /PageLabels

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

```
3422 \ifHy@pagelabels
```

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

```
3423 \def\thispdfpagelabel#1{%
3424   \gdef\HyPL@thisLabel{#1}%
3425 }
3426 \global\let\HyPL@thisLabel\relax
```

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

```
3427 \def\HyPL@Labels{}
```

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

```
3428 \newcount\Hy@abspage
3429 \Hy@abspage=0
```

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

```
3430 \def\HyPL@LastType{init}%
3431 \def\HyPL@LastNumber{0}%
3432 \def\HyPL@LastPrefix{}
```

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

```
3433 \def\HyPL@arabic{D}%
3434 \def\HyPL@Roman{R}%
3435 \def\HyPL@roman{r}%
3436 \def\HyPL@Alph{A}%
3437 \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.

```
3438 \def\HyPL@EveryPage{%
3439   \begingroup
3440   \ifx\HyPL@thisLabel\relax
3441     \let\HyPL@page\thepage
3442   \else
3443     \let\HyPL@page\HyPL@thisLabel
3444     \global\let\HyPL@thisLabel\relax
3445   \fi
3446   \let\HyPL@Type\relax
3447   \ifnum\the\c@page>0
3448     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3449   \fi
3450   \let\Hy@temp Y%
3451   \ifx\HyPL@Type\HyPL@LastType
3452   \else
3453     \let\Hy@temp N%
3454   \fi
3455   \ifx\HyPL@Type\relax
3456     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3457   \else
3458     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3459   \fi
3460   \ifx\HyPL@Prefix\HyPL@LastPrefix
3461   \else
```

```

3462     \let\Hy@temp N%
3463   \fi
3464   \if Y\Hy@temp
3465     \advance\c@page by -1
3466     \ifnum\HyPL@LastNumber=\the\c@page\relax
3467     \else
3468       \let\Hy@temp N%
3469     \fi
3470     \Hy@StepCount\c@page
3471   \fi
3472   \if N\Hy@temp
3473     \ifx\HyPL@Type\relax
3474       \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
3475     \else
3476       \HyPL@StorePageLabel{%
3477         \ifx\HyPL@Prefix\@empty
3478         \else
3479           /P (\HyPL@Prefix)
3480         \fi
3481         /S /\csname HyPL\HyPL@Type\endcsname
3482         \ifnum\the\c@page=1
3483         \else
3484           \space/St \the\c@page
3485         \fi
3486       }%
3487     \fi
3488   \fi
3489   \xdef\HyPL@LastNumber{\the\c@page}%
3490   \global\let\HyPL@LastType\HyPL@Type
3491   \global\let\HyPL@LastPrefix\HyPL@Prefix
3492 \endgroup
3493 \Hy@GlobalStepCount\Hy@abspage
3494 }

```

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

```

3495 \def\HyPL@CheckThePage#1\@nil{%
3496   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3497 }

```

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

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

```

3498 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3499   \def\Hy@tempa{#4}%
3500   \def\Hy@tempb{\csname\endcsname\c@page}%
3501   \ifx\Hy@tempa\Hy@tempb
3502     \expandafter\ifx\csname HyPL#3\endcsname\relax
3503   \else
3504     \def\HyPL@Type{#3}%
3505     \def\HyPL@Prefix{#2}%
3506   \fi
3507   \else
3508     \begingroup
3509     \let\Hy@next\endgroup
3510     \let\HyPL@found\@undefined
3511     \def\arabic{\HyPL@Format{arabic}}%

```

```

3512     \def\Roman{\HyPL@Format{Roman}}%
3513     \def\roman{\HyPL@Format{roman}}%
3514     \def\Alph{\HyPL@Format{Alph}}%
3515     \def\alph{\HyPL@Format{alph}}%
3516     \protected@edef\Hy@temp{#1}%
3517     \ifx\HyPL@found\relax
3518         \toks@{\expandafter{\Hy@temp}}%
3519         \edef\Hy@next{\endgroup
3520             \noexpand\HyPL@@@CheckThePage\the\toks@
3521             \noexpand\HyPL@found\relax\noexpand\@nil
3522         }%
3523     \fi
3524     \Hy@next
3525 \fi
3526 }

```

\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`.

```

3527 \def\HyPL@Format#1#2{%
3528     \ifx\HyPL@found\@undefined
3529         \expandafter\ifx\csname c@#2\endcsname\c@page
3530             \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3531         \else
3532             \expandafter\noexpand\csname#1\endcsname{#2}%
3533         \fi
3534     \else
3535         \expandafter\noexpand\csname#1\endcsname{#2}%
3536     \fi
3537 }

```

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

```

3538 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3539     \def\Hy@tempa{#3}%
3540     \def\Hy@tempb{\HyPL@found\relax}%
3541     \ifx\Hy@tempa\Hy@tempb
3542         \def\HyPL@Type{#2}%
3543         \def\HyPL@Prefix{#1}%
3544     \fi
3545 }

```

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

```

3546 \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`.

```

3547 \def\HyPL@Useless{0 << /S /D >> }%
3548 \@onelevel@sanitize\HyPL@Useless

```

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

```

3549 \def\HyPL@SetPageLabels{%
3550     \@onelevel@sanitize\HyPL@Labels
3551     \ifx\HyPL@Labels\@empty
3552     \else

```

```

3553     \ifx\HyPL@Labels\HyPL@Useless
3554     \else
3555         \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3556     \fi
3557 \fi
3558 }

```

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

```

3559 \else
3560 \let\HyPL@EveryPage\@empty
3561 \fi

```

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

```

3562 \Hy@DisableOption{pdfpagelabels}
3563 </package>

```

26.1.1 pdfTeX and VTeX

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

\Hy@PutCatalog

```

3564 <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.

```

3565 <*vTeX>
3566 \edef\Hy@VTeXversion{%
3567 \ifx\VTeXversion\@undefined
3568 \z@
3569 \else
3570 \ifx\VTeXversion\relax
3571 \z@
3572 \else
3573 \VTeXversion
3574 \fi
3575 \fi
3576 }
3577 \begingroup
3578 \ifnum\Hy@VTeXversion<660 %
3579 \gdef\Hy@PutCatalog#1{%
3580 \Hy@WarningNoLine{%
3581 VTeX 6.59g or above required for pdfpagelabels%
3582 }%
3583 }
3584 \else
3585 \gdef\Hy@PutCatalog#1{%
3586 \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3587 }
3588 \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3589 \ifx\#2\%
3590 \else
3591 \immediate\special{!pdfpagelabels #2}%
3592 \fi

```

```

3593    }
3594    \fi
3595 \endgroup
3596 \</vtex>

3597 \<pdfTeX | vTeX>

```

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

```

3598 \ifHy@pagelabels
3599   \def\HyPL@StorePageLabel#1{%
3600     \toks@\expandafter{\HyPL@Labels}%
3601     \xdef\HyPL@Labels{%
3602       \the\toks@
3603       \the\Hy@abspage\space<< #1 >> %
3604     }%
3605   }

```

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.

```

3606   \AtEndDocument{\clearpage\HyPL@SetPageLabels}

3607 \fi
3608 \</pdfTeX | vTeX>

```

26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

3609 \<dvipdfm>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
3610 \<pdfmarkbase>
3611 \def\Hy@PutCatalog#1{%
3612   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3613 }
3614 \</pdfmarkbase>

3615 \<pdfmarkbase | dvipdfm>
3616 \ifHy@pagelabels

```

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

```

3617   \def\HyPL@StorePageLabel#1{%
3618     \if@filesw
3619       \begingroup
3620         \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
3621         \immediate\write\@mainaux{%
3622           \string\HyPL@Entry{\Hy@tempa}%
3623         }%
3624       \endgroup
3625     \fi
3626   }

```

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.

```

3627   \AfterBeginDocument{%
3628     \if@filesw
3629       \immediate\write\@mainaux{%
3630         \string\providecommand\string*\string\HyPL@Entry[1]{}%
3631       }%
3632     \fi

```

```

3633 \ifx\HyPL@Labels\@empty
3634 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3635 \else
3636 \HyPL@SetPageLabels
3637 \fi
3638 \let\HyPL@Entry\@gobble
3639 }%

\HyPL@Entry

3640 \def\HyPL@Entry#1{%
3641 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3642 \HyPL@Labels
3643 #1%
3644 }%
3645 }

3646 \fi
3647 </pdfmarkbase | dvipdfm>
3648 <*package>
3649 \MaybeStopEarly

```

27 Automated L^AT_EX hypertext cross-references

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

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

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

Start with a fallback for equations

```

3650 \newcommand\theHequation{\theHsection.\arabic{equation}}
3651 \@ifundefined{thepart}{}{\newcommand\theHpart{\arabic{part}}}
3652 \@ifundefined{thechapter}{}%
3653 \newcommand\theHsection {\arabic{section}}
3654 \newcommand\theHfigure {\arabic{figure}}
3655 \newcommand\theHtable {\arabic{table}}
3656 }{%
3657 \newcommand\theHchapter {\arabic{chapter}}
3658 \newcommand\theHfigure {\theHchapter.\arabic{figure}}
3659 \newcommand\theHtable {\theHchapter.\arabic{table}}
3660 \newcommand\theHsection {\theHchapter.\arabic{section}}
3661 }
3662 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
3663 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3664 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}

```

```

3665 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3666 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
3667 \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.

```

3668 \let\H@item\item
3669 \newcounter{Item}
3670 \def\theHItem{\arabic{Item}}
3671 \def\item{%
3672   \@hyper@itemfalse
3673   \if@nmbrrlist\@hyper@itemtrue\fi
3674   \H@item
3675 }

3676 \newcommand\theHenumi      {\theHItem}
3677 \newcommand\theHenumii     {\theHItem}
3678 \newcommand\theHenumiii    {\theHItem}
3679 \newcommand\theHenumiv     {\theHItem}
3680 \newcommand\theHHfootnote {\arabic{Hfootnote}}
3681 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
3682 \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.

```

3683 \let\H@refstepcounter\refstepcounter
3684 \edef\name@of@eq{equation}%
3685 \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.

```

3686 \newif\if@hyper@item
3687 \newif\if@skiphyperref
3688 \@hyper@itemfalse
3689 \@skiphyperreffalse
3690 \def\refstepcounter#1{%
3691   \H@refstepcounter{#1}%
3692   \edef\This@name{#1}%
3693   \ifx\This@name\name@of@slide
3694   \else
3695     \if@skiphyperref
3696     \else
3697       \if@hyper@item
3698         \stepcounter{Item}%
3699         \hyper@refstepcounter{Item}%
3700       \else
3701         \hyper@refstepcounter{#1}%
3702       \fi
3703     \fi
3704   \fi
3705 }

```

AMS_{La}TeX 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.

```

3706 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

3707 \def\hyper@refstepcounter#1{%
3708   \edef\This@name{#1}%
3709   \ifx\This@name\name@of@eq
3710     \make@stripped@name{\theequation}%
3711     \let\theHequation\newname
3712   \fi
3713   \@ifundefined{theH#1}{%
3714     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3715   }{}%
3716   \hyper@makecurrent{#1}%
3717   \ifmeasuring@
3718   \else
3719     \Hy@raisedlink{%
3720       \hyper@anchorstart{\@currentHref}\hyper@anchorend
3721     }%
3722   \fi
3723 }
```

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`.

```

3724 \def\Hy@chapterstring{chapter}
3725 \def\Hy@appendixstring{appendix}
3726 \def\Hy@chapapp{\Hy@chapterstring}
3727 \let\HyOrg@appendix\appendix
3728 \def\appendix{%
3729   \@ifundefined{chapter}%
3730   {\gdef\theHsection{\Alph{section}}}%
3731   {\gdef\theHchapter{\Alph{chapter}}}%
3732   \xdef\Hy@chapapp{\Hy@appendixstring}%
3733   \HyOrg@appendix
3734 }
```

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

```

3735 \def\hyper@makecurrent#1{%
3736   \begingroup
3737   \edef\Hy@param{#1}%
3738   \ifx\Hy@param\Hy@chapterstring
3739     \let\Hy@param\Hy@chapapp
3740   \fi
3741   \ifHy@hypertextnames
3742     \let\@number\@firstofone
3743   \ifHy@naturalnames
3744     \let\textlatin\@firstofone
3745     \xdef\@currentHlabel{\csname the#1\endcsname}%
3746   \else
3747     \xdef\@currentHlabel{\csname theH#1\endcsname}%
3748   \fi
3749   \xdef\@currentHref{%
3750     \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3751   }%
3752   \else
```



```

3753     \Hy@GlobalStepCount\Hy@linkcounter
3754     \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
3755     \fi
3756 \endgroup
3757 }

3758 \@ifpackageloaded{fancyvrb}{%
3759   \def\FV@StepLineNo{%
3760     \FV@SetLineNo
3761     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3762     \FV@StepLineNo
3763   }%
3764 }{}

```

28 Package lastpage support

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

`\lastpage@putlabel`

```

3765 \AtBeginDocument{%
3766   \@ifpackageloaded{lastpage}{%
3767     \ifHy@pageanchor
3768     \else
3769       \Hy@WarningNoLine{%
3770         The \string\pageref{LastPage} link doesn't work\MessageBreak
3771         with disabled option 'pageanchor'%
3772       }%
3773     \fi
3774     \def\lastpage@putlabel{%
3775       \addtocounter{page}{-1}%
3776       \if@filesw
3777         \begingroup
3778         \let\@number\@firstofone
3779         \ifHy@pageanchor
3780           \ifHy@hypertexnames
3781             \ifHy@plainpages
3782               \def\Hy@temp{\arabic{page}}%
3783             \else
3784               \Hy@unicodefalse
3785               \pdfstringdef\Hy@temp{\thepage}%
3786             \fi
3787           \else
3788             \def\Hy@temp{\the\Hy@pagecounter}%
3789           \fi
3790         \fi
3791         \immediate\write\@auxout{%
3792           \string\newlabel
3793           {LastPage}{\the\Hy@temp}{\thepage}{}%
3794           \ifHy@pageanchor page.\Hy@temp\fi}{}}%
3795       }%
3796     \endgroup

```

```

3797     \fi
3798     \addtocounter{page}{1}%
3799   }%
3800 }{}%
3801 }
3802 \</package>
3803 \<*check>
3804 \checkpackage{lastpage}[1994/06/25]
3805 \checkcommand\def\lastpage@putlabel{%
3806   \addtocounter{page}{-1}%
3807   \immediate\write\@auxout{%
3808     \string\newlabel{LastPage}{\the\thepage}}%
3809   }%
3810   \addtocounter{page}{1}%
3811 }
3812 \</check>
3813 \<*package>

```

29 Package ifthen support

Since version 6.75a this is done in package nameref.

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

```

3814 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
3815 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

30 Package titlesec and titletoc support

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

Package titlesec support:

```

3816 \@ifpackageloaded{titlesec}{%
3817   \def\ttl@Hy@steplink#1{%
3818     \Hy@GlobalStepCount\Hy@linkcounter
3819     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3820     \def\ttl@Hy@saveanchor{%
3821       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3822     }%
3823   }%
3824   \def\ttl@Hy@refstepcounter#1{%
3825     \let\ttl@b\Hy@raisedlink
3826     \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3827     \refstepcounter{#1}%
3828     \let\Hy@raisedlink\ttl@b
3829   }%
3830 }{}

```

Package titletoc support:

```

3831 \@ifpackageloaded{titletoc}{%
3832   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3833 }{}

```

31 Package varioref support

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

```
3834 \def\Hy@varioref@undefined{{???}{??}{}}{}{}
3835 \@ifpackageloaded{varioref}{%
3836   \def\vref@pagenum#1#2{%
3837     \ifundefined{r@#2}{%
3838       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3839     }{}%
3840     \edef#1{\getpagerefnumber{#2}}%
3841   }%
3842 }{}
```

32 Package longtable support

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

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

```
3843 \@ifpackageloaded{longtable}{%
3844   \begingroup
3845     \def\y{\LT@array}%
3846     \ifundefined{scr@LT@array}{}{\def\y{\scr@LT@array}}%
3847     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3848       \expandafter\endgroup
3849       \expandafter\def\y[#1]##2{%
3850         \H@refstepcounter{#1}%
3851         \hyper@makecurrent{table}%
3852         #2\@sharp####4%
3853       }%
3854     }%
3855     \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil
```

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

```
3856   \begingroup
3857     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3858     \endgroup
3859     \def\LT@start{%
3860       #1%
3861       \hyper@refstepcounter{table}%
3862       \ifvoid\LT@firsthead\copy
3863       #2%
3864     }%
3865   }%
3866   \expandafter\x\LT@start\@nil
3867 }{}
```

33 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original \refstepcounter. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 40). The exception is that we

move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

3868 \let\new@refstepcounter\refstepcounter
3869 \let\H@equation\equation
3870 \let\H@endequation\endequation

3871 \@ifpackageloaded{amsmath}{%
3872   \long\def\Hy@temp{%
3873     \incr@eqnum
3874     \mathdisplay@push
3875     \st@rredfalse \global\@eqnswtrue
3876     \mathdisplay{equation}%
3877   }%
3878   \ifx\Hy@temp\equation
3879     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3880       \csname iftrue\endcsname
3881   \else
3882     \long\def\equation{%
3883       \mathdisplay@push
3884       \st@rredfalse \global\@eqnswtrue
3885       \mathdisplay{equation}%
3886       \incr@eqnum
3887     }%
3888   \fi
3889 \fi
3890 }{%
3891 \def\equation{%
3892   \let\refstepcounter\H@refstepcounter
3893   \H@equation
3894   \make@stripped@name{\theequation}%
3895   \let\theHequation\newname
3896   \hyper@makecurrent{equation}%
3897   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3898   \let\refstepcounter\new@refstepcounter
3899 }%
3900 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3901 }

```

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.

```

3902 \newif\if@eqnstar
3903 \@eqnstarfalse
3904 \let\H@eqnarray\eqnarray
3905 \let\H@endeqnarray\endeqnarray
3906 \def\eqnarray{%
3907   \let\Hy@reserved@a\relax
3908   \def\@currentHref{}%
3909   \H@eqnarray
3910   \if@eqnstar
3911   \else
3912     \ifx\\ \@currentHref\\%
3913   \else
3914     \make@stripped@name{\theequation}%
3915     \let\theHequation\newname
3916     \hyper@makecurrent{equation}%

```

```

3917     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3918     \fi
3919 \fi
3920 }
3921 \def\endeqnarray{%
3922   \H@endeqnarray
3923 }

```

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.

```

3924 \@namedef{eqnarray*}{%
3925   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
3926 }
3927 \@namedef{endeqnarray*}{%
3928   \nonumber\endeqnarray\@eqnstarfalse
3929 }

```

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

```

3930 \@ifundefined{subeqnarray}{%
3931   \let\H@subeqnarray\subeqnarray
3932   \let\H@endsubeqnarray\endsubeqnarray
3933   \def\subeqnarray{%
3934     \let\Hy@reserved@a\relax
3935     \H@subeqnarray
3936     \make@stripped@name{\theequation}%
3937     \let\theHequation\newname
3938     \hyper@makecurrent{equation}%
3939     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3940   }%
3941   \def\endsubeqnarray{%
3942     \H@endsubeqnarray
3943   }%
3944   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3945 }

```

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

```

3946 \def\make@stripped@name#1{%
3947   \begingroup
3948     \escapechar\m@ne
3949     \global\let\newname\@empty
3950     \protected@edef\Hy@tempa{#1}%
3951     \edef\@tempb{%
3952       \noexpand\@tfor\noexpand\Hy@tempa:=%
3953       \expandafter\strip@prefix\meaning\Hy@tempa
3954     }%
3955     \@tempb\do{%
3956       \if\Hy@tempa\else
3957         \if\Hy@tempa\else
3958           \xdef\newname{\newname\Hy@tempa}%
3959         \fi
3960       \fi
3961     }%
3962   \endgroup
3963 }

```

34 Footnotes

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

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

```

3964 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
3965 \ifHy@hyperfootnotes
3966   \newcounter{Hfootnote}
3967   \let\H@@footnotetext\@footnotetext
3968   \let\H@@footnotemark\@footnotemark
3969   \def\@xfootnotenext[#1]{%
3970     \begingroup
3971       \csname c@\@mpfn\endcsname #1\relax
3972       \unrestored@protected@xdef\@thefnmark{\thempfn}%
3973     \endgroup
3974     \ifx\@footnotetext\@mpfootnotetext
3975       \expandafter\H@@mpfootnotetext
3976     \else
3977       \expandafter\H@@footnotetext
3978     \fi
3979   }%
3980   \def\@xfootnotemark[#1]{%
3981     \begingroup
3982       \c@footnote #1\relax
3983       \unrestored@protected@xdef\@thefnmark{\thefnmark}%
3984     \endgroup
3985     \H@@footnotemark
3986   }%
3987   \let\H@@mpfootnotetext\@mpfootnotetext
3988   \long\def\@mpfootnotetext#1{%
3989     \H@@mpfootnotetext{%
3990       \ifHy@nesting
3991         \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3992       \else
3993         \Hy@raisedlink{%
3994           \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3995         }#1%
3996       \fi
3997     }%
3998   }%
3999   \long\def\@footnotetext#1{%
4000     \H@@footnotetext{%
4001       \ifHy@nesting
4002         \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4003       \else
4004         \Hy@raisedlink{%
4005           \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4006         }%
4007         \let\@currentHlabel\Hy@footnote@currentHlabel
4008         \let\@currentHref\Hy@footnote@currentHref
4009         \let\@currentlabelname\@empty
4010         #1%
4011       \fi
4012     }%
4013   }%

```

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.

```

4014 \def\@footnotemark{%
4015   \leavevmode
4016   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
4017   \stepcounter{Hfootnote}%
4018   \global\let\Hy@saved@currentHlabel\@currentHlabel
4019   \global\let\Hy@saved@currentHref\@currentHref
4020   \hyper@makecurrent{Hfootnote}%
4021   \global\let\Hy@footnote@currentHlabel\@currentHlabel
4022   \global\let\Hy@footnote@currentHref\@currentHref
4023   \global\let\@currentHlabel\Hy@saved@currentHlabel
4024   \global\let\@currentHref\Hy@saved@currentHref
4025   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
4026   \@makefnmark
4027   \hyper@linkend
4028   \ifhmode\spacefactor\x@sf\fi
4029   \relax
4030 }%
```

Support for footnotes in p columns of longtable. Here \footnote commands are splitted into \footnotemark and a call of \footnotetext with the optional argument, that is not supported by hyperref. The result is a link by \footnotemark without valid anchor.

```

4031 \@ifpackageloaded{longtable}{%
4032   \CheckCommand*{\LT@p@ftntext}[1]{%
4033     \edef\@tempa{%
4034       \the\LT@p@ftn
4035       \noexpand\footnotetext[\the\c@footnote]%
4036     }%
4037     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
4038   }%
4039   \long\def\LT@p@ftntext#1{%
4040     \edef\@tempa{%
4041       \the\LT@p@ftn
4042       \begingroup
4043         \noexpand\c@footnote=\the\c@footnote\relax
4044         \noexpand\protected@xdef
4045           \noexpand\@thefnmark{\noexpand\thempfn}%
4046         \noexpand\protected@xdef\noexpand\@thefnmark{%
4047           \noexpand\thempfn
4048         }%
4049         \expandafter\expandafter\expandafter\noexpand
4050           \expandafter\expandafter\expandafter\Hy@LT@footnotetext
4051           \expandafter\expandafter\expandafter{%
4052             \expandafter\Hy@footnote@currentHref\expandafter
4053             }\expandafter{\Hy@footnote@currentHlabel}%
4054       }%
4055       \global\LT@p@ftn\expandafter{%
4056         \@tempa{#1}%
4057       }\endgroup
4058     }%
4059   }%
4060   \long\def\Hy@LT@footnotetext#1#2#3{%
4061     \H@@@footnotetext{%
```

```

4062     \ifHy@nesting
4063       \hyper@@anchor{#1}{#3}%
4064     \else
4065       \Hy@raisedlink{%
4066         \hyper@@anchor{#1}{\relax}%
4067       }%
4068       \def\@currentHlabel{#2}%
4069       \def\@currentHref{#1}%
4070       \let\@currentlabelname\@empty
4071       #3%
4072     \fi
4073   }%
4074 }%
4075 }-%

```

But the special footnotes in `\maketitle` are much too hard to deal with properly. Let them revert to plain behaviour. The koma classes add an optional argument.

```

4076 \let\HyOrg@maketitle\maketitle
4077 \def\maketitle{%
4078   \let\Hy@saved@footnotemark\@footnotemark
4079   \let\Hy@saved@footnotetext\@footnotetext
4080   \let\@footnotemark\H@@footnotemark
4081   \let\@footnotetext\H@@footnotetext
4082   \@ifnextchar[\Hy@maketitle@optarg{% ]
4083     \HyOrg@maketitle
4084     \Hy@maketitle@end
4085   }%
4086 }%
4087 \def\Hy@maketitle@optarg[#1]{%
4088   \HyOrg@maketitle[#1]%
4089   \Hy@maketitle@end
4090 }%
4091 \def\Hy@maketitle@end{%
4092   \ifx\@footnotemark\H@@footnotemark
4093     \let\@footnotemark\Hy@saved@footnotemark
4094   \fi
4095   \ifx\@footnotetext\H@@footnotetext
4096     \let\@footnotetext\Hy@saved@footnotetext
4097   \fi
4098 }%

```

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

```

4099 \def\realfootnote{%
4100   \@ifnextchar[\@xfootnote{%
4101     \stepcounter{\@mpfn}%
4102     \protected@xdef\@thefnmark{\thempfn}%
4103     \H@@footnotemark\H@@footnotetext
4104   }%
4105 }%
4106 \fi
4107 \Hy@DisableOption{hyperfootnotes}

4108 \</package>
4109 \<*check>
4110 \checklatex
4111 \checkcommand\def\@xfootnotenext[#1]{%
4112   \begingroup

```



```

4113 \csname c@\mpfn\endcsname #1\relax
4114 \unrestored@protected@xdef\@thefnmark{\thempfn}%
4115 \endgroup
4116 \@footnotetext
4117 }
4118 \checkcommand\def\@xfootnotemark[#1]{%
4119 \begingroup
4120 \c@footnote #1\relax
4121 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
4122 \endgroup
4123 \@footnotemark
4124 }
4125 \checkcommand\def\@footnotemark{%
4126 \leavevmode
4127 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
4128 \@makefnmark
4129 \ifhmode\spacefactor\@x@sf\fi
4130 \relax
4131 }
4132 \end{check}
4133 \end{package}

```

35 Float captions

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

```

4134 \def\caption{%
4135 \ifx\@capytype\@undefined
4136 \latex@error{\noexpand\caption outside float}\@ehd
4137 \expandafter\@gobble
4138 \else
4139 \H@refstepcounter\@capytype
4140 \@ifundefined{fst@\@capytype}{%
4141 \let\Hy@tempa\@caption
4142 }{%
4143 \let\Hy@tempa\Hy@float@caption
4144 }%
4145 \expandafter\@firstofone
4146 \fi
4147 {\@dblarg{\Hy@tempa\@capytype}}%
4148 }
4149 \long\def\@caption#1[#2]#3{%
4150 \hyper@makecurrent{\@capytype}%
4151 \def\@currentlabelname{#2}%
4152 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
4153 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
4154 }%
4155 \begingroup
4156 \@parboxrestore
4157 \if@minipage
4158 \@setminipage
4159 \fi
4160 \normalsize
4161 \@makecaption{\csname fnum@#1\endcsname}{%
4162 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4163     \ifHy@nesting
4164     \hyper@@anchor{\@currentHref}{#3}%
4165     \else
4166     \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4167     \fi
4168   }%
4169   \par
4170 \endgroup
4171 }

```

Compatibility with float.sty: anchor setting at the top of the float, if the float is controlled by float.sty. Several \caption commands inside one float are not supported.

```

4172 \let\Hy@float@caption\@caption
4173 \@ifpackageloaded{float}{%
4174   \def\Hy@float@caption{%
4175     \hyper@makecurrent{\@capttype}%
4176     \float@caption
4177   }
4178   \let\HyOrg@float@makebox\float@makebox
4179   \renewcommand{\float@makebox}[1]{%
4180     \HyOrg@float@makebox{%
4181       #1\relax
4182       \begingroup
4183         \hyper@makecurrent{\@capttype}%
4184         \hyper@@anchor{\@currentHref}{\relax}%
4185       \endgroup
4186     }%
4187   }%
4188 }{}

4189 </package>
4190 <*check>
4191 \checklatex[1999/06/01 - 2000/06/01]
4192 \checkcommand\def\caption{%
4193   \ifx\@capttype\@undefined
4194     \@latex@error{noexpand\caption outside float}\@ehd
4195     \expandafter\@gobble
4196   \else
4197     \refstepcounter{\@capttype}
4198     \expandafter\@firstofone
4199   \fi
4200   {\@dblarg{\@caption\@capttype}}%
4201 }
4202 \checkcommand\long\def\@caption#1[#2]#3{%
4203   \par
4204   \addcontentsline{\csname ext@#1\endcsname}{#1}%
4205     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
4206   \begingroup
4207     \@parboxrestore
4208     \if@minipage
4209       \@setminipage
4210     \fi
4211     \normalsize
4212     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
4213   \endgroup
4214 }
4215 </check>

```

4216 $\langle *package \rangle$

36 Bibliographic references

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

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

```

4217 \def\hyper@natlinkstart#1{%
4218   \Hy@backout{#1}%
4219   \hyper@linkstart{cite}{cite.#1}%
4220   \def\hyper@nat@current{#1}%
4221 }
4222 \def\hyper@natlinkend{%
4223   \hyper@linkend
4224 }
4225 \def\hyper@natlinkbreak#1#2{%
4226   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
4227 }
4228 \def\hyper@natanchorstart#1{%
4229   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4230 }
4231 \def\hyper@natanchorend{\hyper@anchorend}

```

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

```

4232 \@ifundefined{NAT@parse}{%
4233   \def\bibcite#1#2{%
4234     \newl@bel{b}{#1@extra@binfo}{\hyper@link{cite}{cite.#1}{#2}}%
4235   }%
4236   \gdef\@extra@binfo{}%

```

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

```

4237 \let\Hy@bibcite\bibcite
4238 \begingroup
4239   \@ifundefined{bbl@cite@choice}{}%
4240   \g@addto@macro\bbl@cite@choice{%
4241     \let\bibcite\Hy@bibcite
4242   }%
4243 }%
4244 \endgroup

```

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

```

4245 \providecommand*\@BIBLABEL{\@biblabel}%
4246 \def\@lbibitem[#1]#2{%
4247   \@skiphyperreftrue
4248   \H@item[%
4249     \ifx\Hy@raisedlink\@empty
4250       \hyper@anchorstart{cite.#2}\@BIBLABEL{#1}\hyper@anchorend
4251     \else
4252       \Hy@raisedlink{\hyper@anchorstart{cite.#2}\hyper@anchorend}%

```

```

4253     \@BIBLABEL{#1}%
4254     \fi
4255     \hfill
4256   ]%
4257   \@skiphyperreffalse
4258   \if@filesw
4259     \begingroup
4260       \let\protect\noexpand
4261       \immediate\write\@auxout{%
4262         \string\bibcite{#2}{#1}%
4263       }%
4264     \endgroup
4265   \fi
4266   \ignorespaces
4267 }%

```

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

```

4268 \def\@bibitem#1{%
4269   \@skiphyperreftrue\H@item\@skiphyperreffalse
4270   \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax\hyper@anchorend}%
4271   \if@filesw
4272     \begingroup
4273       \let\protect\noexpand
4274       \immediate\write\@auxout{%
4275         \string\bibcite{#1}{\the\value{\@listctr}}}%
4276     }%
4277   \endgroup
4278   \fi
4279   \ignorespaces
4280 }%
4281 }{}
4282 \</package>
4283 \< *check>
4284 \checklatex
4285 \checkcommand\def\@lbibitem[#1]#2{%
4286   \item[\@biblabel{#1}\hfill]%
4287   \if@filesw
4288     {%
4289       \let\protect\noexpand
4290       \immediate\write\@auxout{%
4291         \string\bibcite{#2}{#1}%
4292       }%
4293     }%
4294   \fi
4295   \ignorespaces
4296 }
4297 \checkcommand\def\@bibitem#1{%
4298   \item
4299   \if@filesw
4300     \immediate\write\@auxout{%
4301       \string\bibcite{#1}{\the\value{\@listctr}}}%
4302   }%
4303   \fi
4304   \ignorespaces
4305 }
4306 \</check>
4307 \< *package>

```

Revtex (bless its little heart) takes over \bibcite and looks at the result to measure something. Make this a hypertext link and it goes ape. Therefore, make an anodyne result first, call its business, then go back to the real thing.

```

4308 \@ifclassloaded{revtex}{%
4309   \Hy@Info{*** compatibility with revtex **** }%
4310   \def\revtex@checking#1#2{%
4311     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4312     \expandafter\def\csname b@#1\endcsname{#2}%
4313     \@SetMaxRnhefLabel{#1}%
4314     \expandafter\let\csname b@#1\endcsname\T@temp
4315   }%

```

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

```

4316 \@ifundefined{CITE}{\def\CITE{\cite}}{%
4317   \providecommand*\@extra@b@citeb{}%
4318   \def\CITE[#1]#2{%
4319     \let\@citea\@empty
4320     \leavevmode
4321     \unskip
4322     $~{%
4323       \scriptstyle
4324       \@CITE{%
4325         \@for\@citeb:=#2\do{%
4326           \@citea
4327           \def\@citea{,\penalty\@m\ }%
4328           \edef\@citeb{\expandafter\@firstofone\@citeb}%
4329           \if@filesw
4330             \immediate\write\@auxout{\string\citation{\@citeb}}%
4331           \fi
4332           \@ifundefined{b@\@citeb\extra@b@citeb}{%
4333             \mbox{\reset@font\bfseries ?}%
4334             \G@refundefinedtrue
4335             \@latex@warning{%
4336               Citation ‘\@citeb’ on page \thepage \space undefined%
4337             }%
4338           }{%
4339             {\csname b@\@citeb\@extra@b@citeb\endcsname}%
4340           }%
4341         }%
4342       }{#1}%
4343     }$%
4344   }%

```

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

```

4345 \def\citex[#1]#2{%
4346   \let\@citea\@empty
4347   \@cite{%
4348     \@for\@citeb:=#2\do{%
4349       \@citea
4350       \def\@citea{,\penalty\@m\ }%
4351       \edef\@citeb{\expandafter\@firstofone\@citeb}%
4352       \if@filesw
4353         \immediate\write\@auxout{\string\citation{\@citeb}}%
4354       \fi
4355       \@ifundefined{b@\@citeb\extra@b@citeb}{%
4356         \mbox{\reset@font\bfseries ?}%

```

```

4357         \G@refundefinedtrue
4358         \@latex@warning{%
4359             Citation ‘\@citeb’ on page \thepage \space undefined%
4360         }%
4361     }{%
4362         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
4363     }%
4364 }%
4365 }{\#1}%
4366 }%
4367 }{}

```

36.1 Package harvard

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

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

```

4368 \ifpackageloaded{harvard}{%
4369   \AtBeginDocument{%
4370     \Hy@Info{*** compatibility with harvard *** }%
4371     \Hy@raiselinksfalse
4372     \def\harvardcite#1#2#3#4{%
4373       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
4374       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
4375       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
4376       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4377     }%
4378     \def\HAR@citetoaux#1{%
4379       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4380       \ifHy@backref
4381         \ifx\@empty\@currentlabel
4382           \else
4383             \@bsphack
4384             \if@filesw
4385               \protected@write\@auxout{}{%
4386                 \string\writefile{brf}{%
4387                   \string\backcite{#1}{%
4388                     {\thepage}{\@currentlabel}{\@currentHref}%
4389                   }%
4390               }%
4391             }%
4392             \fi
4393             \@esphack
4394           \fi
4395         \fi
4396     }%
4397     \def\harvarditem{%
4398       \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4399     }%
4400     \def\@harvarditem[#1]#2#3#4#5\par{%
4401       \item[]%
4402       \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4403       \if@filesw

```

```

4404     \begingroup
4405     \def\protect##1{\string ##1\space}%
4406     \ifthenelse{\equal{#1}{\null}}{%
4407         {\def\next{{#4}{#2}{#2}{#3}}}%
4408         {\def\next{{#4}{#2}{#1}{#3}}}%
4409     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4410     \endgroup
4411     \fi
4412     \protect\hspace*{-\labelwidth}%
4413     \protect\hspace*{-\labelsep}%
4414     \ignorespaces
4415     #5%
4416     \ifHy@backref
4417         \newblock
4418         \backref{\csname br@#4\endcsname}%
4419     \fi
4420     \par
4421     }%

```

`\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`:

```

4422     \long\def\HAR@checkcitations#1#2#3#4{%
4423         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4424         \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4425             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4426             \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4427                 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4428                 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4429                     \else
4430                         \@tempswatrue
4431                     \fi
4432                 \else
4433                     \@tempswatrue
4434                 \fi
4435             \else
4436                 \@tempswatrue
4437             \fi
4438         }%
4439     }%

4440 }{}

```

36.2 Package chicago

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

```

4441 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

4442     \def\citeN{%
4443         \def\@citesep{pen{-1000}}%
4444         \def\@cite##1##2{##1}%
4445         \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
4446         \@citedata@opt
4447     }%

```

`\shortciteN`

```

4448 \def\shortciteN{%
4449   \def\@citesep{~}%
4450   \def\@cite##1##2{##1}%
4451   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
4452   \@citedata@opt
4453 }%

```

`\@citedata@opt`

```

4454 \def\@citedata@opt{%
4455   \let\@cite@opt\@empty
4456   \@ifnextchar [{%
4457     \@tempwatrue
4458     \@citedatax@opt
4459   }{%
4460     \@tempwafalse
4461     \@citedatax[]%
4462   }%
4463 }%

```

`\@citedatax@opt`

```

4464 \def\@citedatax@opt[#1]{%
4465   \def\@cite@opt{, #1}%
4466   \@citedatax[{#1}]%
4467 }
4468 }{}

```

37 Page numbers

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

```

4469 \def\@beginndvi{%
4470   \unvbox \@beginndvibox
4471   \Hy@beginndvi
4472   \global\let\@beginndvi\Hy@beginndvi
4473 }
4474 \def\Hy@beginndvi{%
4475   \@hyperfixhead
4476   \HyPL@EveryPage
4477 }
4478 \def\pagenumbering#1{%
4479   \global\c@page \@ne
4480   \gdef\thepage{\csname @#1\endcsname\c@page}%
4481 }

```

This is needed for some unremembered reason. . .

```

4482 \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.

```
4483 \providecommand\hyper@pagetransition{}
4484 \providecommand\hyper@pageduration{}
4485 \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`

```
4486 \def\@hyperfixhead{%
4487   \Hy@DistillerDestFix
4488   \ifHy@pageanchor
4489     \ifHy@hypertextnames
4490     \ifHy@plainpages
4491       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4492     \else
4493       \begingroup
4494         \let\@number\@firstofone
4495         \Hy@unicodedefalse
4496         \pdfstringdef\@theH@page{\thepage}%
4497       \endgroup
4498       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
4499     \fi
4500   \else
4501     \Hy@GlobalStepCount\Hy@pagecounter
4502     \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
4503   \fi
4504   \else
4505     \let\Hy@TempPageAnchor\@empty
4506   \fi
4507   \let\H@old@thehead\@thehead
4508   \if~\@thehead~%
4509     \def\H@old@thehead{\hfil}%
4510   \fi
4511   \ifHy@texht
4512     \def\@thehead{}%
4513   \else
4514     \ifHy@seminarslides
4515       \begingroup
4516         \let\leavevmode\relax
4517         \Hy@TempPageAnchor\relax
4518         \hyper@pagetransition
4519         \hyper@pageduration
4520         \hyper@pagehidden
4521       \endgroup
4522     \else
4523       \def\@thehead{%
4524         \Hy@TempPageAnchor\relax
4525         \hyper@pagetransition
4526         \hyper@pageduration
4527         \hyper@pagehidden
4528         \H@old@thehead
4529       }%
4530     \fi
4531   \fi
4532   \ifx\PDF@FinishDoc\@empty
4533   \else
```

```

4534 \PDF@FinishDoc
4535 \gdef\PDF@FinishDoc{}%
4536 \fi
4537 }

```

38 Table of contents

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

```

4538 \begingroup\expandafter\expandafter\expandafter\endgroup
4539 \expandafter\ifx\csname chapter\endcsname\relax
4540 \def\toclevel@part{0}
4541 \else
4542 \def\toclevel@part{-1}
4543 \fi
4544 \def\toclevel@chapter{0}
4545 \def\toclevel@section{1}
4546 \def\toclevel@subsection{2}
4547 \def\toclevel@subsubsection{3}
4548 \def\toclevel@paragraph{4}
4549 \def\toclevel@subparagraph{5}
4550 \def\toclevel@figure{0}
4551 \def\toclevel@table{0}
4552 \@ifpackageloaded{listings}{%
4553 \providecommand*\theHlstlisting{\thelstlisting}%
4554 \providecommand*\toclevel@lstlisting{0}%
4555 }{}
4556 \@ifpackageloaded{listing}{%
4557 \providecommand*\theHlisting{\thelisting}%
4558 \providecommand*\toclevel@listing{0}%
4559 }{}
4560 \def\addcontentsline#1#2#3{% toc extension, type, tag
4561 \begingroup
4562 \let\label@gobble
4563 \let\textlatin@firstofone
4564 \ifx\@currentHref\@empty
4565 \Hy@Warning{%
4566 No destination for bookmark of \string\addcontentsline,%
4567 \MessageBreak destination is added%
4568 }%
4569 \phantomsection
4570 \fi
4571 \expandafter\ifx\csname toclevel@#2\endcsname\relax
4572 \begingroup
4573 \def\Hy@tempa{#1}%
4574 \ifx\Hy@tempa\Hy@bookmarkstype
4575 \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
4576 \else
4577 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4578 \fi
4579 \endgroup
4580 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
4581 \fi
4582 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
4583 \Hy@writebookmark{\csname the#2\endcsname}%

```

```

4584     {#3}%
4585     {\@currentHref}%
4586     {\Hy@toclevel}%
4587     {#1}%
4588     \ifHy@verbose
4589     \def\Hy@tempa{#3}%
4590     \@onelevel@sanitize\Hy@tempa
4591     \typeout{pdfTeX: bookmark at \the\inputlineno:
4592         {\csname the#2\endcsname}
4593         {\Hy@tempa}
4594         {\@currentHref}%
4595         {\Hy@toclevel}%
4596         {#1}%
4597     }%
4598     \fi
4599     \addtocontents{#1}{%
4600         \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4601     }%
4602 \endgroup
4603 }
4604 \def\contentsline#1#2#3#4{%
4605     \ifx\#4\%
4606         \csname l@#1\endcsname{#2}{#3}%
4607     \else
4608         \ifHy@linktocpage
4609             \csname l@#1\endcsname{#2}{#3}{%
4610                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
4611             }%
4612         \else
4613             \csname l@#1\endcsname{%
4614                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
4615             }{#3}%
4616         \fi
4617     \fi
4618 }
4619 \end{package}
4620 \end{*check}
4621 \checklatex
4622 \checkcommand\def\addcontentsline#1#2#3{%
4623     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
4624 }
4625 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4626 \end{*check}
4627 \end{package}

```

39 New counters

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

```

4628 \let\H@definecounter\@definecounter
4629 \def\@definecounter#1{%
4630     \H@definecounter{#1}%
4631     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4632 }

```

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.

```

4633 \let\H@newctr\@newctr
4634 \def\@newctr#1[#2]{%
4635   \H@newctr#1[#2]}%
4636 \expandafter\def\csname theH#1\endcsname{%
4637   \csname the\@ifundefined{theH#2}{-}{H}#2\endcsname.\arabic{#1}%
4638 }%
4639 }

```

40 AMS \LaTeX compatibility

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

```

4640 \let\Hmake@df@tag@@\make@df@tag@@
4641 \def\make@df@tag@@#1{%
4642   \Hmake@df@tag@@{#1}%
4643   \Hy@GlobalStepCount\Hy@linkcounter
4644   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4645   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4646 }
4647 \let\Hmake@df@tag@@@\make@df@tag@@@
4648 \def\make@df@tag@@@#1{%
4649   \Hmake@df@tag@@@{#1}%
4650   \Hy@GlobalStepCount\Hy@linkcounter
4651   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4652   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4653 }

```

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

```

4654 \@ifpackagewith{hyperref}{pdf $\TeX$ }{%
4655   \let\H@seteqlabel\@seteqlabel
4656   \def\@seteqlabel#1{%
4657     \H@seteqlabel{#1}%
4658     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4659     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4660   }%
4661 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result seems to do nothing anyway.

```

\let\H@tagform@\tagform@
\def\tagform@#1{%
  \maketag@@@{\hyper@@anchor{\@currentHref}%
    {(\ignorespaces#1\unskip)}}%
}
\def\eqref#1{\textup{\H@tagform@\ref{#1}}}

```

40.1 `\@addtoreset` and `\numberwithin` patches

`\@addtoreset` puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the

counter print command `\theHcounter` is redefined in order to add the parent counter.

```

4662 \let\HyOrg@addtoreset\@addtoreset
4663 \def\@addtoreset#1#2{%
4664   \HyOrg@addtoreset{#1}{#2}%
4665   \expandafter\xdef\csname theH#1\endcsname{%
4666     \expandafter\noexpand
4667       \csname the\@ifundefined{theH#2}{H#2\endcsname
4668       .\noexpand\the\noexpand\value{#1}%
4669   }%
4670 }
```

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

```

4671 \</package>
4672 \<*check>
4673 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4674 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4675   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4676     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4677       \@addtoreset{#2}{#3}%
4678       \@xp\xdef\csname the#2\endcsname{%
4679         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4680       }%
4681     }%
4682   }%
4683 }%
4684 \</check>
4685 \<*package>
4686 \@ifpackageloaded{amsmath}{%
4687   \@ifpackagelater{amsmath}{1999/12/14}{%
4688     \renewcommand*\@numberwithin[3][\arabic]{%
4689       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4690         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4691           \HyOrg@addtoreset{#2}{#3}%
4692           \@xp\xdef\csname the#2\endcsname{%
4693             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4694           }%
4695           \@xp\xdef\csname theH#2\endcsname{%
4696             \@xp\@nx
4697             \csname the\@ifundefined{theH#3}{H#3\endcsname
4698             .\@nx#1{#2}%
4699           }%
4700         }%
4701       }%
4702     }%
4703   }{%
4704     \Hy@WarningNoLine{%
4705       \string\numberwithin\space of package 'amsmath'
4706       only fixed\MessageBreak
4707       for version 2000/06/06 v2.12 or newer%
4708     }%
4709   }
4710 }{}
```

41 Included figures

Simply intercept the low level graphics package macro.

```
4711 \ifHy@figures
4712   \let\Hy@Gin@setfile\Gin@setfile
4713   \def\Gin@setfile#1#2#3{%
4714     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4715   }
4716 \fi
4717 \Hy@DisableOption{hyperfigures}
```

42 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```
4718 \ifHy@hyperindex
4719   \def\HyInd@ParenLeft{({}%
4720   \def\HyInd@ParenRight{)}}%
4721   \Hy@nextfalse
4722   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4723   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4724   \begingroup
4725     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
4726   \lowercase{\endgroup
4727     \ifHy@next
4728       \let\HyInd@org@wrindex\@wrindex
4729       \def\@wrindex#1#2{\HyInd@@wrindex{#1}{#2}||\}%
4730       \def\HyInd@@wrindex#1#2|#3|#4\{\%
4731         \ifx\|#3\%
4732           \HyInd@org@wrindex{#1}{#2|hyperpage}%
4733         \else
4734           \def\Hy@temp@A{#3}%
4735           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4736             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4737             \relax
4738           \HyInd@org@wrindex{#1}{#2|#3}%
4739         \else
4740           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4741         \fi
4742       \fi
4743     }%
4744   \else
4745     \def\@wrindex#1{\@@wrindex#1||\}%
4746     \def\@@wrindex#1|#2|#3\{\%
4747       \if@filesw
4748         \ifx\|#2\%
4749           \protected@write\@indexfile{\%
4750             \string\indexentry{#1|hyperpage}{\thepage}%

```

```

4751         }%
4752     \else
4753         \def\Hy@temp@A{#2}%
4754         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4755             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4756             \relax
4757             \protected@write\@indexfile{}\{%
4758                 \string\indexentry{#1|#2}{\thepage}%
4759             }%
4760     \else
4761         \protected@write\@indexfile{}\{%
4762             \string\indexentry{#1|#2hyperpage}{\thepage}%
4763         }%
4764     \fi
4765 \fi
4766 \fi
4767 \endgroup
4768 \@esphack
4769 }%
4770 \fi
4771 }%
4772 \fi
4773 \Hy@DisableOption{hyperindex}
4774 \Hy@DisableOption{encap}

```

This again is quite flaky, but allow for the common situation of a page range separated by en-rule. We split this into two different hyperlinked pages.

```

4775 \def\hyperpage#1{\@hyperpage#1---\}
4776 \def\@hyperpage#1--#2--#3\{\%
4777     \ifx\#2\%
4778         \@commahyperpage{#1}%
4779     \else
4780         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4781     \fi
4782 }
4783 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4784 \def\@commahyperpage#1, #2,#3\{\%
4785     \ifx\#2\%
4786         \HyInd@pagelink{#1}%
4787     \else
4788         \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4789     \fi
4790 }

```

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

```

4791 \def\HyInd@pagelink#1{%
4792     \begingroup
4793     \toks@={}%
4794     \HyInd@removespaces#1 \@nil
4795 \endgroup
4796 }
4797 \def\HyInd@removespaces#1 #2\@nil{%
4798     \toks@=\expandafter{\the\toks@#1}%
4799     \ifx\#2\%
4800         \edef\x{\the\toks@}%
4801         \ifx\x@empty
4802             \else

```

```

4803     \hyperlink{page.\the\toks@}{\the\toks@}%
4804   \fi
4805 \else
4806   \Hy@ReturnAfterFi{%
4807     \HyInd@removespaces#2\@nil
4808   }%
4809 \fi
4810 }

```

43 Compatibility with foiltex

```

4811 \@ifclassloaded{foils}{%
4812   \providecommand*\ext@table{lot}%
4813   \providecommand*\ext@figure{lof}%
4814 }{}

```

44 Compatibility with seminar slide package

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

```

4815 \@ifclassloaded{seminar}{%
4816   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
4817 }{%
4818   \Hy@seminarslidesfalse
4819 }
4820 \@ifpackageloaded{slidesec}{%
4821   \newcommand\theHslidesection {\arabic{slidesection}}%
4822   \newcommand\theHslidesubsection{%
4823     \theHslidesection.\arabic{slidesubsection}%
4824   }%
4825   \def\slide@heading[#1]#2{%
4826     \H@refstepcounter{slidesection}%
4827     \@addtoreset{slidesubsection}{slidesection}%
4828     \addtocontents{los}{%
4829       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4830       {\@SCTR}{slideheading.\theslidesection}%
4831     }%
4832   \def\Hy@tempa{#2}%
4833   \ifx\Hy@tempa\@empty
4834     \else
4835       {%
4836         \edef\@currentlabel{%
4837           \csname p@slidesection\endcsname\theslidesection
4838         }%
4839         \makeslideheading{#2}%
4840       }%
4841   \fi
4842   \gdef\theslideheading{#1}%
4843   \gdef\theslidesubheading{%
4844     \ifHy@bookmarksnumbered
4845       \def\Hy@slidetitle{\theslidesection\space #1}%
4846     \else
4847       \def\Hy@slidetitle{#1}%
4848   \fi
4849   \ifHy@hypertextnames
4850     \ifHy@naturalnames

```



```

4851         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
4852         \Hy@writebookmark
4853             {\theslidesection}%
4854             {\Hy@slidetitle}%
4855             {slideheading.\theslidesection}%
4856             {1}%
4857             {toc}%
4858     \else
4859         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
4860         \Hy@writebookmark
4861             {\theslidesection}%
4862             {\Hy@slidetitle}%
4863             {slideheading.\theHslidesection}%
4864             {1}%
4865             {toc}%
4866     \fi
4867 \else
4868     \Hy@GlobalStepCount\Hy@linkcounter
4869     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4870     \Hy@writebookmark
4871         {\theslidesection}%
4872         {\Hy@slidetitle}%
4873         {slideheading.\the\Hy@linkcounter}%
4874         {1}%
4875         {toc}%
4876 \fi
4877 }%
4878 \def\slide@subheading[#1]#2{%
4879     \H@refstepcounter{slidesubsection}%
4880     \addtocontents{los}{%
4881         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
4882         {\@SCTR}{slideheading.\theslidesubsection}%
4883     }%
4884     \def\Hy@tempa{#2}%
4885     \ifx\Hy@tempa\@empty
4886     \else
4887         {%
4888             \edef\@currentlabel{%
4889                 \csname p@slidesubsection\endcsname\theslidesubsection
4890             }%
4891             \makeslidesubheading{#2}%
4892         }%
4893     \fi
4894     \gdef\theslidesubheading{#1}%
4895     \ifHy@bookmarksnumbered
4896         \def\Hy@slidetitle{\theslidesubsection\space #1}%
4897     \else
4898         \def\Hy@slidetitle{#1}%
4899     \fi
4900     \ifHy@hypertextnames
4901         \ifHy@naturalnames
4902             \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
4903             \Hy@writebookmark
4904                 {\theslidesubsection}%
4905                 {\Hy@slidetitle}%
4906                 {slideheading.\theslidesubsection}%
4907                 {2}%

```

```

4908         {toc}%
4909     \else
4910         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
4911         \Hy@writebookmark
4912             {\theslidesubsection}%
4913             {\Hy@slidetitle}%
4914             {slideheading.\theHslidesubsection}%
4915             {2}%
4916         {toc}%
4917     \fi
4918 \else
4919     \Hy@GlobalStepCount\Hy@linkcounter
4920     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4921     \Hy@writebookmark
4922         {\theslidesubsection}%
4923         {\Hy@slidetitle}%
4924         {slideheading.\the\Hy@linkcounter}%
4925         {1}%
4926     {toc}%
4927 \fi
4928 }%
4929 \providecommand*\listslidenamelist{List of Slides}%
4930 \def\listofslides{%
4931     \section*{%
4932         \listslidenamelist
4933         \@mkboth{%
4934             \expandafter\MakeUppercase\listslidenamelist
4935         }{%
4936             \expandafter\MakeUppercase\listslidenamelist
4937         }%
4938     }%
4939     \def\l@slide##1##2##3##4{%
4940         \slide@undottedcline{%
4941             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
4942         }{%
4943         }%
4944         \let\l@subslide\l@slide
4945         \@startlos
4946     }%
4947     \def\slide@contents{%
4948         \def\l@slide##1##2##3##4{%
4949             \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
4950         }%
4951         \let\l@subslide\@gobblefour
4952         \@startlos
4953     }%
4954     \def\Slide@contents{%
4955         \def\l@slide##1##2##3##4{%
4956             \ifcase\lslide@flag
4957                 \message{##1 ** \the\c@slidesection}%
4958                 \ifnum##1>\c@slidesection
4959                     \def\lslide@flag{1}%
4960                 {%
4961                     \large
4962                     \slide@ccline{%
4963                         \slidenumberline{\$ \Rightarrow \bullet \$}%
4964                         {\hyperlink{##4}{##2}}%

```

```

4965         }{##3}%
4966     }%
4967 \else
4968     {%
4969         \large
4970         \slide@cline{%
4971             \slidenumberline{$\surd\;\bullet$}%
4972             {\hyperlink{##4}{##2}}%
4973         }{##3}%
4974     }%
4975 \fi
4976 \or
4977 \def\lslide@flag{2}%
4978 {%
4979     \large
4980     \slide@cline{%
4981         \slidenumberline{$\bullet$}%
4982         {\hyperlink{##4}{##2}}%
4983     }{##3}%
4984 }%
4985 \or
4986 {%
4987     \large
4988     \slide@cline{%
4989         \slidenumberline{$\bullet$}%
4990         {\hyperlink{##4}{##2}}%
4991     }{##3}%
4992 }%
4993 \fi
4994 }%
4995 \def\l@subslide##1##2##3##4{%
4996     \ifnum\lslide@flag=1
4997         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
4998     \fi
4999 }%
5000 \def\lslide@flag{0}%
5001 \@startlos
5002 }%
5003 }{}

```

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.)

```

5004 \ifHy@texht
5005     \expandafter\endinput
5006 \fi
5007 \let\real@setref\@setref
5008 \def\@setref#1#2#3{% csname, extract group, refname
5009     \ifx#1\relax
5010         \protect\G@refundefinedtrue
5011         \nfss@text{\reset@font\bfseries ??}%
5012         \@latex@warning{%
5013             Reference ‘#3’ on page \thepage \space undefined%
5014         }%
5015     \else
5016         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
5017     \fi
5018 }

```

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

```

5019 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
5020   \begingroup
5021     \toks0={\hyper@@link{#5}{#4}}%
5022     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
5023     \edef\x{\endgroup
5024       \the\toks0 {\the\toks1 }%
5025     }%
5026   \x
5027 }
5028 \def\@pagesetref#1#2#3{% csname, extract macro, ref
5029   \ifx#1\relax
5030     \protect\G@refundefinedtrue
5031     \nfss@text{\reset@font\bfseries ??}%
5032     \@latex@warning{%
5033       Reference ‘#3’ on page \thepage \space undefined%
5034     }%
5035   \else
5036     \protect\hyper@@link
5037     {\expandafter\@fifthoffive#1}%
5038     {page.\expandafter\@secondoffive#1}%
5039     {\expandafter\@secondoffive#1}%
5040   \fi
5041 }
5042 </package>
5043 <*check>
5044 \checklatex
5045 \checkcommand\def\@setref#1#2#3{%
5046   \ifx#1\relax
5047     \protect\G@refundefinedtrue
5048     \nfss@text{\reset@font\bfseries ??}%
5049     \@latex@warning{%
5050       Reference ‘#3’ on page \thepage\space undefined%
5051     }%
5052   \else
5053     \expandafter#2#1\null
5054   \fi
5055 }
5056 </check>
5057 <*package>

```

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

```

5058 \def\@refstar#1{%
5059   \Hy@safe@activetrue
5060   \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
5061   \Hy@safe@activetrue
5062 }
5063 \def\@pagerefstar#1{%
5064   \Hy@safe@activetrue
5065   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
5066   \Hy@safe@activetrue
5067 }
5068 \DeclareRobustCommand\autoref{%
5069   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
5070 }

```

```

5071 \def\HyRef@autoref#1#2{%
5072   \begingroup
5073   \Hy@safe@activetrue
5074   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
5075 \endgroup
5076 }
5077 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
5078   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
5079   \edef\HyRef@thisref{\expandafter\@fourthoffive#1\@empty\@empty\@empty}%
5080   \expandafter\HyRef@testreftype\HyRef@thisref\\%
5081   \Hy@safe@activesfalse
5082   #3{%
5083     \expandafter\@fifthoffive#1%
5084   }{%
5085     \expandafter\@fourthoffive#1\@empty\@empty\@empty
5086   }{%
5087     \HyRef@currentHtag
5088     \expandafter\@firstoffive#1\@empty\@empty\@empty
5089     \null
5090   }%
5091 \else
5092   \protect\G@refundefinedtrue
5093   \nfss@text{\reset@font\bfseries ??}%
5094   \@latex@warning{%
5095     Reference ‘#2’ on page \thepage\space undefined%
5096   }%
5097 \fi
5098 }
5099 \def\HyRef@testreftype#1.#2\\{%
5100   \@ifundefined{#1autorefname}{%
5101     \@ifundefined{#1name}{%
5102       \def\HyRef@currentHtag{%
5103         \@latex@warning{no tag name for #1 at \the\inputlineno}%
5104       }{%
5105         \edef\HyRef@currentHtag{%
5106           \expandafter\noexpand\csname#1name\endcsname
5107           \noexpand~%
5108         }%
5109       }%
5110     }{%
5111       \edef\HyRef@currentHtag{%
5112         \expandafter\noexpand\csname#1autorefname\endcsname
5113         \noexpand~%
5114       }%
5115     }%
5116   }
5117 \def\HyRef@currentHtag{}

```

Defaults for the names that \autoref uses.

```

5118 \providecommand\AMSautorefname{\equationautorefname}
5119 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
5120 \providecommand\Itemautorefname{\itemautorefname}
5121 \providecommand\itemautorefname{item}
5122 \providecommand\equationautorefname{Equation}
5123 \providecommand\footnoteautorefname{footnote}
5124 \providecommand\itemautorefname{item}
5125 \providecommand\figureautorefname{Figure}
5126 \providecommand\tableautorefname{Table}

```

```

5127 \providecommand\partautorefname{Part}
5128 \providecommand\appendixautorefname{Appendix}
5129 \providecommand\chapterautorefname{chapter}
5130 \providecommand\sectionautorefname{section}
5131 \providecommand\subsectionautorefname{subsection}
5132 \providecommand\subsubsectionautorefname{subsubsection}
5133 \providecommand\paragraphautorefname{paragraph}
5134 \providecommand\subparagraphautorefname{subparagraph}
5135 \providecommand\FancyVerbLineautorefname{line}
5136 \providecommand\theoremautorefname{Theorem}
5137 </package>

```

45 Configuration files

45.1 PS/PDF strings

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

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

```

5138 < *pdftex | dvipdfm | vtex | pdfmarkbase | dviwindo>
5139 \begingroup\expandafter\expandafter\expandafter\endgroup
5140 \expandafter\ifx\csname pdfescapestring\endcsname\relax
5141   \begingroup
5142     \catcode'\|=0 %
5143     \@makeother\|%
5144     |@firstofone{|endgroup
5145     |def|Hy@pstringdef#1#2{%
5146       |edef#1{#2}%
5147       |@onelevel@sanitize#1%
5148       |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
5149       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
5150       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
5151     }%
5152     |def|Hy@ExchangeBackslash#1\#2|@nil{%
5153       #1%
5154       |ifx|\#2|\%
5155       |else
5156         \|%
5157         |Hy@ReturnAfterFi{%
5158           |Hy@ExchangeBackslash#2|@nil
5159         }%
5160       |fi
5161     }%
5162   }
5163   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
5164     #1%
5165     \ifx\#2\%
5166     \else
5167       \@backslashchar(%
5168       \Hy@ReturnAfterFi{%
5169         \Hy@ExchangeLeftParenthesis#2\@nil
5170       }%

```

```

5171 \fi
5172 }
5173 \def\Hy@ExchangeRightParenthesis#1#2\@nil{%
5174 #1%
5175 \ifx\#2\%
5176 \else
5177 \@backslashchar)%
5178 \Hy@ReturnAfterFi{%
5179 \Hy@ExchangeRightParenthesis#2\@nil
5180 }%
5181 \fi
5182 }
5183 \else
5184 \def\Hy@pstringdef#1#2{%
5185 \edef#1{\pdfescapestring{#2}}%
5186 }%
5187 \fi
5188 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

45.2 pdfTeX

```
5189 < *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:

```

5190 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5191 \ifx\pdfstartlink\undefined% less than version 14
5192 \let\pdfstartlink\pdfannotlink
5193 \let\pdflinkmargin\@tempdima
5194 \let\pdfxform\pdfform
5195 \let\pdflastxform\pdflastform
5196 \let\pdfrefxform\pdfrefform
5197 \else
5198 \pdflinkmargin1pt
5199 \fi

```

First set up the default linking

```
5200 \providecommand\@pdfview{XYZ}
```

First define the anchors:

```

5201 \def\new@pdflink#1{%
5202 \ifHy@verbose
5203 \typeout{pdfTeX: define anchor at line \the\inputlineno: #1}%
5204 \fi
5205 \Hy@SaveLastskip
5206 \Hy@pstringdef\Hy@pstringDest{#1}%
5207 \Hy@DestName\Hy@pstringDest\@pdfview
5208 \Hy@RestoreLastskip
5209 }
5210 \let\pdf@endanchor\@empty

```

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

```

5211 \def\Hy@DestName#1#2{%
5212 \pdfdest name{#1}#2\relax
5213 }

```

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.

```

5214 \providecommand\pdfborder{0 0 1}
5215 \providecommand*\pdfborderstyle{}
5216 \def\Hy@undefinedname{UNDEFINED}
5217 \def\find@pdflink#1#2{%
5218   \leavevmode
5219   \protected@edef\Hy@testname{#2}%
5220   \ifx\Hy@testname\@empty
5221     \let\Hy@testname\Hy@undefinedname
5222   \else
5223     \Hy@pstringdef\Hy@testname\Hy@testname
5224   \fi
5225   \Hy@StartlinkName{%
5226     \Hy@setpdfborder
5227     \ifx\@pdfhighlight\@empty
5228       \else
5229         /H\@pdfhighlight
5230       \fi
5231     /C[\CurrentBorderColor]%
5232   }\Hy@testname
5233   \expandafter\Hy@colorlink\csname @#1color\endcsname
5234 }
5235 \def\Hy@StartlinkName#1#2{%
5236   \pdfstartlink attr{#1}goto name{#2}\relax
5237 }
5238 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
5239 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
5240 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
5241 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
5242 \def\hyper@linkstart#1#2{%
5243   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5244   \find@pdflink{#1}{#2}}
5245 \def\hyper@linkend{\close@pdflink}
5246 \def\hyper@link#1#2#3{%
5247   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5248   \find@pdflink{#1}{#2}#3\close@pdflink
5249 }
5250 \def\CurrentBorderColor{\@linkbordercolor}
5251 \def\hyper@linkurl#1#2{%
5252   \begingroup
5253     \Hy@pstringdef\Hy@pstringURI{#2}%
5254     \hyper@chars
5255     \leavevmode
5256     \pdfstartlink
5257       attr{%
5258         \Hy@setpdfborder
5259         \ifx\@pdfhighlight\@empty
5260           \else
5261             /H\@pdfhighlight
5262           \fi
5263         /C[\@urlbordercolor]%
5264       }%
5265     user{%
5266       /Subtype/Link%

```



```

5267      /A<<%
5268      /Type/Action%
5269      /S/URI%
5270      /URI(\Hy@pstringURI)%
5271      >>%
5272      }%
5273      \relax
5274      \Hy@colorlink\@urlcolor#1%
5275      \close@pdflink
5276      \endgroup
5277 }
5278 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5279   \begingroup
5280     \Hy@pstringdef\Hy@pstringF{#2}%
5281     \Hy@pstringdef\Hy@pstringD{#3}%
5282     \leavevmode
5283     \pdfstartlink
5284     attr{%
5285       \Hy@setpdfborder
5286       \ifx\@pdfhighlight\@empty
5287       \else
5288         /H\@pdfhighlight
5289       \fi
5290       /C[\@filebordercolor]%
5291     }%
5292     user {%
5293       /Subtype/Link%
5294       /A<<%
5295       /F(\Hy@pstringF)%
5296       /S/GoToR%
5297       \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}

```

```

5298      \ifx\#3\%
5299      /D[0 \pdfstartview]%
5300      \else
5301      /D(\Hy@pstringD)%
5302      \fi
5303      >>%
5304      }%
5305      \relax
5306      \Hy@colorlink\@filecolor#1%
5307      \close@pdflink
5308      \endgroup
5309 }
5310 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5311   \begingroup
5312     \Hy@pstringdef\Hy@pstringF{#1}%

```

```

5313 \Hy@pstringdef\Hy@pstringP{#3}%
5314 \leavevmode
5315 \pdfstartlink
5316   attr{%
5317     \Hy@setpdfborder
5318     \ifx\@pdfhighlight\@empty
5319     \else
5320       /H\@pdfhighlight
5321     \fi
5322     /C[\@runbordercolor]%
5323   }%
5324   user {%
5325     /Subtype/Link%
5326     /A<<%
5327       /F(\Hy@pstringF)%
5328       /S/Launch%
5329       \ifHy@newwindow /NewWindow true\fi
5330       \ifx\@#3\%
5331       \else
5332         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5333       \fi
5334     >>%
5335   }%
5336   \relax
5337 \Hy@colorlink\@filecolor#2%
5338 \close@pdflink
5339 \endgroup
5340 }

```

\@pdfproducer

```

5341 \ifx\@pdfproducer\relax
5342 \def\@pdfproducer{pdfTeX}
5343 \ifx\@eTeXversion\@undefined
5344 \else
5345   \ifx\@eTeXversion\relax
5346   \else
5347     \ifnum\@eTeXversion>0 %
5348     \def\@pdfproducer{pdfTeX}
5349     \fi
5350   \fi
5351 \fi
5352 \ifx\pdfTeXversion\@undefined
5353 \else
5354   \ifnum\pdfTeXversion<100 %
5355   \edef\@pdfproducer{%
5356     \@pdfproducer
5357     \the\pdfTeXversion.\pdfTeXrevision
5358   }
5359 \else
5360   \ifnum\pdfTeXversion<130 %
5361   \edef\@pdfproducer{%
5362     \@pdfproducer-
5363     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5364     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
5365     \pdfTeXrevision
5366   }
5367 \else

```

```

5368     \edef\@pdfproducer{%
5369         \@pdfproducer-%
5370         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5371         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5372         \pdfTeXrevision
5373     }%
5374     \fi
5375     \fi
5376     \fi
5377     \fi

```

\PDF@SetupDox

```

5378 \def\PDF@SetupDoc{%
5379     \ifx\@pdfpagescrop\@empty
5380     \else
5381         \edef\process@me{%
5382             \pdfpagesattr={%
5383                 /CropBox[\@pdfpagescrop]%
5384                 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
5385                 \else
5386                     ^^J\the\pdfpagesattr
5387                 \fi
5388             }%
5389         }%
5390         \process@me
5391     \fi
5392     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5393     \pdfcatalog{%
5394         /PageMode/\@pdfpagemode
5395         \ifx\@baseurl\@empty
5396         \else
5397             /URI<</Base(\Hy@pstringB)>>%
5398         \fi
5399     }%
5400     \ifx\@pdfstartview\@empty
5401     \else
5402         openaction goto page \@pdfstartpage {\@pdfstartview}%
5403     \fi
5404     \edef\Hy@temp{%
5405         \ifHy@toolbar\else /HideToolbar true\fi
5406         \ifHy@menubar\else /HideMenubar true\fi
5407         \ifHy>windowui\else /HideWindowUI true\fi
5408         \ifHy@fitwindow /FitWindow true\fi
5409         \ifHy@centerwindow /CenterWindow true\fi
5410         \ifHy@displaydoctitle /DisplayDocTitle true\fi
5411         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5412         \Hy@UseNameKey{Direction}\@pdfdirection
5413         \Hy@UseNameKey{ViewArea}\@pdfviewarea
5414         \Hy@UseNameKey{ViewClip}\@pdfviewclip
5415         \Hy@UseNameKey{PrintArea}\@pdfprintarea
5416         \Hy@UseNameKey{PrintClip}\@pdfprintclip
5417         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5418         \Hy@UseNameKey{Duplex}\@pdfduplex
5419         \ifx\@pdfpicktraybypdfsize\@empty
5420         \else
5421             /PickTrayByPDFSize \@pdfpicktraybypdfsize
5422         \fi

```

```

5423     \ifx\@pdfprintpagerange\@empty
5424     \else
5425         /PrintPageRange[\@pdfprintpagerange]%
5426     \fi
5427     \ifx\@pdfnumcopies\@empty
5428     \else
5429         /NumCopies \@pdfnumcopies
5430     \fi
5431 }%
5432 \pdfcatalog{%
5433     \ifx\Hy@temp\@empty
5434     \else
5435         /ViewerPreferences<<\Hy@temp>>%
5436     \fi
5437     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5438     \ifx\@pdflang\@empty
5439     \else
5440         /Lang(\@pdflang)%
5441     \fi
5442 }%
5443 }

```

\PDF@FinishDoc

```

5444 \def\PDF@FinishDoc{%
5445     \Hy@UseMaketitleInfos
5446     \pdfinfo{%
5447         /Author(\@pdfauthor)%
5448         /Title(\@pdftitle)%
5449         /Subject(\@pdfsubject)%
5450         /Creator(\@pdfcreator)%
5451         \ifx\@pdfcreationdate\@empty
5452         \else
5453             /CreationDate(\@pdfcreationdate)%
5454         \fi
5455         \ifx\@pdfmoddate\@empty
5456         \else
5457             /ModDate(\@pdfmoddate)%
5458         \fi
5459         \ifx\@pdfproducer\relax
5460         \else
5461             /Producer(\@pdfproducer)%
5462         \fi
5463         /Keywords(\@pdfkeywords)%
5464     }%
5465     \Hy@DisableOption{pdfauthor}%
5466     \Hy@DisableOption{pdftitle}%
5467     \Hy@DisableOption{pdfsubject}%
5468     \Hy@DisableOption{pdfcreator}%
5469     \Hy@DisableOption{pdfcreationdate}%
5470     \Hy@DisableOption{pdfmoddate}%
5471     \Hy@DisableOption{pdfproducer}%
5472     \Hy@DisableOption{pdfkeywords}%
5473 }

```

\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.

```

5474 \def\hyper@pagetransition{%
5475   \ifx\@pdfpagetransition\relax
5476   \else
5477     \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}}>>\END
5478   \ifx\@pdfpagetransition\@empty
5479   \else
5480     \edef\@processme{%
5481       \global\pdfpageattr{%
5482         \the\pdfpageattr
5483         ^^J/Trans << /S /\@pdfpagetransition\space >>%
5484       }%
5485     }%
5486     \@processme
5487   \fi
5488 \fi
5489 }

```

\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.

```

5490 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5491   \ifx\#2\%
5492     \global\pdfpageattr{#1}%
5493   \else
5494     \Hy@RemoveTransPageAttr#1#4\END
5495   \fi
5496 }

```

\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.

```

5497 \def\hyper@pageduration{%
5498   \ifx\@pdfpageduration\relax
5499   \else
5500     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
5501     \ifx\@pdfpageduration\@empty
5502     \else
5503       \edef\@processme{%
5504         \global\pdfpageattr{%
5505           \the\pdfpageattr
5506           ^^J/Dur \@pdfpageduration\space
5507         }%
5508       }%
5509       \@processme
5510     \fi
5511   \fi
5512 }

```

\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.

```

5513 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5514   \ifx\#2\%
5515     \global\pdfpageattr{#1}%

```

```

5516 \else
5517 \Hy@RemoveDurPageAttr#1#4\END
5518 \fi
5519 }

```

`\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).

```

5520 \def\hyper@pagehidden{%
5521 \ifHy@useHidKey
5522 \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
5523 \ifHy@pdfpagehidden
5524 \edef\@processme{%
5525 \global\pdfpageattr{%
5526 \the\pdfpageattr
5527 ^^J/Hid true % SPACE
5528 }%
5529 }%
5530 \@processme
5531 \fi
5532 \fi
5533 }

```

`\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.

```

5534 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5535 \ifx\#2\%
5536 \global\pdfpageattr{#1}%
5537 \else
5538 \Hy@RemoveHidPageAttr#1#4\END
5539 \fi
5540 }

```

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.

```

5541 \pdfoutput=1
5542 \pdfcompresslevel=9
5543 \AtBeginDocument{%
5544 \ifHy@setpagesize
5545 \expandafter\@firstofone
5546 \else
5547 \expandafter\@gobble
5548 \fi
5549 {%
5550 \@ifclassloaded{seminar}{%
5551 \setlength{\pdfhorigin}{1truein}%
5552 \setlength{\pdfvorigin}{1truein}%
5553 \ifportrait
5554 \ifdim\paperwidth=\z@
5555 \else
5556 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5557 \fi
5558 \ifdim\paperheight=\z@
5559 \else
5560 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%

```

```

5561     \fi
5562   \else
5563     \ifdim\paperheight=\z@
5564     \else
5565       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
5566     \fi
5567     \ifdim\paperwidth=\z@
5568     \else
5569       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5570     \fi
5571   \fi
5572 }{%
5573   \@ifundefined{stockwidth}{%
5574     \ifdim\paperwidth=\z@
5575     \else
5576       \setlength{\pdfpagewidth}{\paperwidth}%
5577     \fi
5578     \ifdim\paperheight=\z@
5579     \else
5580       \setlength{\pdfpageheight}{\paperheight}%
5581     \fi
5582   }{%
5583     \ifdim\stockwidth=\z@
5584     \else
5585       \setlength{\pdfpagewidth}{\stockwidth}%
5586     \fi
5587     \ifdim\stockheight=\z@
5588     \else
5589       \setlength{\pdfpageheight}{\stockheight}%
5590     \fi
5591   }%
5592 }%
5593 }%
5594 \Hy@DisableOption{setpagesize}%
5595 }
5596 \def\Acrobatmenu#1#2{%
5597   \leavevmode
5598   \pdfstartlink
5599   attr{%
5600     \Hy@setpdfborder
5601     \ifx\pdfhighlight\@empty
5602     \else
5603       /H\pdfhighlight
5604     \fi
5605     /C[\@menubordercolor]%
5606   }%
5607   user{
5608     /Subtype /Link
5609     /A<<%
5610     /S/Named/N/#1%
5611     >>%
5612   }%
5613   \relax
5614   \Hy@colorlink\@menucolor#2\close@pdflink
5615 }
5616 </pdfTeX>
5617 <*hypertex>

```

45.3 hypertext

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.

```
5618 \def\PDF@FinishDoc{}
5619 \def\PDF@SetupDoc{%
5620   \ifx\@baseurl\@empty
5621   \else
5622     \special{html:<base href="\@baseurl">}%
5623   \fi
5624 }
5625 \def\hyper@anchor#1{%
5626   \Hy@SaveLastskip
5627   \begingroup
5628     \let\protect=\string
5629     \hyper@chars
5630     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5631   \endgroup
5632   \Hy@activeanchortrue
5633   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5634   \special{html:</a>}%
5635   \Hy@activeanchorfalse
5636   \Hy@RestoreLastskip
5637 }
5638 \def\hyper@anchorstart#1{%
5639   \Hy@SaveLastskip
5640   \begingroup
5641     \hyper@chars
```



```

5642 \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5643 \endgroup
5644 \Hy@activeanchortrue
5645 }
5646 \def\hyper@anchorend{%
5647 \special{html:</a>}%
5648 \Hy@activeanchorfalse
5649 \Hy@RestoreLastskip
5650 }
5651 \def\@urlltype{url}
5652 \def\hyper@linkstart#1#2{%
5653 \expandafter\Hy@colorlink\csname @#1color\endcsname
5654 \def\Hy@tempa{#1}%
5655 \ifx\Hy@tempa\@urlltype
5656 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5657 \else
5658 \begingroup
5659 \hyper@chars
5660 \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
5661 \endgroup
5662 \fi
5663 }
5664 \def\hyper@linkend{%
5665 \special{html:</a>}%
5666 \Hy@endcolorlink
5667 }
5668 \def\hyper@linkfile#1#2#3{%
5669 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
5670 }
5671 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why L^AT_EX constructs make this totally foul up, and make us revert to basic T_EX. I do not know.

```

5672 \leavevmode
5673 \ifHy@raiselinks
5674 \setbox\@tempboxa=\color@hbox #1\color@endbox
5675 \@linkdim\dp\@tempboxa
5676 \lower\@linkdim\hbox{%
5677 \hyper@chars
5678 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5679 }%
5680 \Hy@colorlink\@urlcolor#1%
5681 \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvihps processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new dvips (Jan 1997).

```

5682 \advance\@linkdim by -6.5\p@
5683 \raise\@linkdim\hbox{\special{html:</a>}}%
5684 \Hy@endcolorlink
5685 \else
5686 \begingroup
5687 \hyper@chars
5688 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5689 \Hy@colorlink\@urlcolor#1%
5690 \special{html:</a>}%
5691 \Hy@endcolorlink

```

```

5692 \endgroup
5693 \fi
5694 }
5695 \def\hyper@link#1#2#3{%
5696 \hyper@linkurl{#3}{\##2}%
5697 }

5698 \def\hyper@image#1#2{%
5699 \begingroup
5700 \hyper@chars
5701 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
5702 \endgroup
5703 }
5704 \</hypertex>
5705 \<*dviwindo>

```

45.4 dviwindo

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

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

```

5706 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
5707 \def\hyper@anchor#1{%
5708 \Hy@SaveLastskip
5709 \begingroup
5710 \let\protect=\string
5711 \special{mark: #1}%
5712 \endgroup
5713 \Hy@activeanchortrue
5714 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5715 \Hy@activeanchorfalse
5716 \Hy@RestoreLastskip
5717 }
5718 \def\hyper@anchorstart#1{%
5719 \Hy@SaveLastskip
5720 \special{mark: #1}%
5721 \Hy@activeanchortrue
5722 }
5723 \def\hyper@anchorend{%
5724 \Hy@activeanchorfalse
5725 \Hy@RestoreLastskip
5726 }
5727 \def\hyper@linkstart#1#2{%
5728 \expandafter\Hy@colorlink\csize @#1color\endcsize
5729 \special{button:
5730 10000000
5731 \number\baselineskip\space
5732 #2%
5733 }%
5734 }

```

```

5735 \def\hyper@linkend{%
5736   \Hy@endcolorlink
5737 }
5738 \def\hyper@link#1#2#3{%
5739   \setbox\@tempboxa=\color@hbox #3\color@endbox
5740   \leavevmode
5741   \ifHy@raiselinks
5742     \@linkdim\dp\@tempboxa
5743     \lower\@linkdim\hbox{%
5744       \special{button:
5745         \number\wd\@tempboxa\space
5746         \number\ht\@tempboxa\space
5747         #2%
5748       }%
5749     \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5750     \Hy@endcolorlink
5751   }%
5752   \@linkdim\ht\@tempboxa
5753   \advance\@linkdim by -6.5\p@
5754   \raise\@linkdim\hbox{}%
5755 \else
5756   \special{button:
5757     \number\wd\@tempboxa\space
5758     \number\ht\@tempboxa\space
5759     #2%
5760   }%
5761   \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5762 \fi
5763 }
5764 \def\hyper@linkurl#1#2{%
5765   \begingroup
5766   \hyper@chars
5767   \leavevmode
5768   \setbox\@tempboxa=\color@hbox #1\color@endbox
5769   \ifHy@raiselinks
5770     \@linkdim\dp\@tempboxa
5771     \lower\@linkdim\hbox{%
5772       \special{button:
5773         \number\wd\@tempboxa\space
5774         \number\ht\@tempboxa\space
5775         launch: \wwwbrowser\space
5776         #2%
5777       }%
5778     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5779   }%
5780   \@linkdim\ht\@tempboxa
5781   \advance\@linkdim by -6.5\p@
5782   \raise\@linkdim\hbox{}%
5783 \else
5784   \special{button:
5785     \number\wd\@tempboxa\space
5786     \number\ht\@tempboxa\space
5787     launch: \wwwbrowser\space
5788     #2%
5789   }%
5790   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5791 \fi

```

```

5792 \endgroup
5793 }
5794 \def\hyper@linkfile#1#2#3{%
5795 \beginingroup
5796 \hyper@chars
5797 \leavevmode
5798 \setbox\@tempboxa=\color@hbox #1\color@endbox
5799 \ifHy@raiselinks
5800 \@linkdim\dp\@tempboxa
5801 \lower\@linkdim\hbox{%
5802 \special{button:
5803 \number\wd\@tempboxa\space
5804 \number\ht\@tempboxa\space
5805 #3,
5806 file: #2%
5807 }%
5808 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5809 }%
5810 \@linkdim\ht\@tempboxa
5811 \advance\@linkdim by -6.5\p@
5812 \raise\@linkdim\hbox{}}%
5813 \else
5814 \special{button:
5815 \number\wd\@tempboxa\space
5816 \number\ht\@tempboxa\space
5817 #3,
5818 file: #2
5819 }%
5820 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5821 \fi
5822 \endgroup
5823 }
5824 \ifx\@pdfproducer\relax
5825 \def\@pdfproducer{dviwindo + Distiller}
5826 \fi
5827 \def\PDF@FinishDoc{%
5828 \Hy@UseMaketitleInfos
5829 \special{PDF: Keywords \@pdfkeywords}%
5830 \special{PDF: Title \@pdftitle}%
5831 \special{PDF: Creator \@pdfcreator}%
5832 \ifx\@pdfcreationdate\@empty
5833 \else
5834 \special{PDF: CreationDate \@pdfcreationdate}%
5835 \fi
5836 \ifx\@pdfmoddate\@empty
5837 \else
5838 \special{PDF: ModDate \@pdfmoddate}%
5839 \fi
5840 \special{PDF: Author \@pdfauthor}%
5841 \ifx\@pdfproducer\relax
5842 \else
5843 \special{PDF: Producer \@pdfproducer}%
5844 \fi
5845 \special{PDF: Subject \@pdfsubject}%
5846 \Hy@DisableOption{pdfauthor}%
5847 \Hy@DisableOption{pdftitle}%
5848 \Hy@DisableOption{pdfsubject}%

```

```

5849 \Hy@DisableOption{pdfcreator}%
5850 \Hy@DisableOption{pdfcreationdate}%
5851 \Hy@DisableOption{pdfmoddate}%
5852 \Hy@DisableOption{pdfproducer}%
5853 \Hy@DisableOption{pdfkeywords}%
5854 }
5855 \def\PDF@SetupDoc{%
5856 \ifx\@baseurl\@empty
5857 \else
5858 \special{PDF: Base \@baseurl}%
5859 \fi
5860 \ifx\@pdfpagescrop\@empty\else
5861 \special{PDF: BBox \@pdfpagescrop}%
5862 \fi
5863 \pdfmark{pdfmark=/DOCVIEW,
5864 Page=\@pdfstartpage,
5865 View=\@pdfstartview,
5866 PageMode=/\@pdfpagemode
5867 }%
5868 \ifx\@pdfpagescrop\@empty
5869 \else
5870 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5871 \fi
5872 \edef\Hy@temp{%
5873 \ifHy@toolbar\else /HideToolbar true\fi
5874 \ifHy@menubar\else /HideMenubar true\fi
5875 \ifHy>windowui\else /HideWindowUI true\fi
5876 \ifHy@fitwindow /FitWindow true\fi
5877 \ifHy@centerwindow /CenterWindow true\fi
5878 \ifHy@displaydoctitle /DisplayDocTitle true\fi
5879 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5880 \Hy@UseNameKey{Direction}\@pdfdirection
5881 \Hy@UseNameKey{ViewArea}\@pdfviewarea
5882 \Hy@UseNameKey{ViewClip}\@pdfviewclip
5883 \Hy@UseNameKey{PrintArea}\@pdfprintarea
5884 \Hy@UseNameKey{PrintClip}\@pdfprintclip
5885 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5886 \Hy@UseNameKey{Duplex}\@pdfduplex
5887 \ifx\@pdfpicktraybypdfsize\@empty
5888 \else
5889 /PickTrayByPDFSize \@pdfpicktraybypdfsize
5890 \fi
5891 \ifx\@pdfprintpagerange\@empty
5892 \else
5893 /PrintPageRange[\@pdfprintpagerange]%
5894 \fi
5895 \ifx\@pdfnumcopies\@empty
5896 \else
5897 /NumCopies \@pdfnumcopies
5898 \fi
5899 }%
5900 \pdfmark{pdfmark=/PUT,
5901 Raw={%
5902 \string{Catalog\string} <<
5903 \ifx\Hy@temp\@empty
5904 \else
5905 /ViewerPreferences<<\Hy@temp>>%

```

```

5906      \fi
5907      \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5908      \ifx\@pdflang\@empty
5909      \else
5910      /Lang(\@pdflang)%
5911      \fi
5912      >>%
5913      }%
5914      }%
5915      }
5916      </dviwindo>
5917      < *dvipdfm>

```

45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

5918 \newsavebox{\pdfm@box}
5919 \def\@pdfm@mark#1{\special{pdf:#1}}
5920 \def\@pdfm@dest#1{%
5921   \Hy@SaveLastskip
5922   \Hy@pstringdef\Hy@pstringDest{#1}%
5923   \@pdfm@mark{dest (\Hy@pstringDest) [atthispage /\@pdfview\space @xpos @ypos]}%
5924   \Hy@RestoreLastskip
5925 }
5926 \providecommand\@pdfview{XYZ}
5927 \providecommand\@pdfborder{0 0 1}
5928 \providecommand*\@pdfborderstyle{}
5929 \def\hyper@anchor#1{%
5930   \@pdfm@dest{#1}%
5931 }
5932 \def\hyper@anchorstart#1{%
5933   \Hy@activeanchortrue
5934   \@pdfm@dest{#1}%
5935 }
5936 \def\hyper@anchorend{%
5937   \Hy@activeanchorfalse
5938 }
5939 \def\Hy@undefinedname{UNDEFINED}
5940 \def\hyper@linkstart#1#2{%
5941   \protected@edef\Hy@testname{#2}%
5942   \ifx\Hy@testname\@empty
5943     \let\Hy@testname\Hy@undefinedname
5944   \else
5945     \Hy@pstringdef\Hy@testname\Hy@testname
5946   \fi
5947   \@pdfm@mark{%
5948     bann <<
5949     /Type /Annot
5950     /Subtype /Link
5951     \Hy@setpdfborder
5952     /C [\csname @#1bordercolor\endcsname]
5953     /A <<
5954     /S /GoTo
5955     /D (\Hy@testname)
5956     >>
5957     >>
5958   }%

```

```

5959 \expandafter\Hy@colorlink\csname @#1color\endcsname
5960 }
5961 \def\hyper@linkend{%
5962   \Hy@endcolorlink
5963   \@pdfm@mark{eann}%
5964 }
5965 \def\hyper@link#1#2#3{%
5966   \hyper@linkstart{#1}{#2}#3\hyper@linkend
5967 }
5968 \def\hyper@linkfile#1#2#3{%
5969   \Hy@pstringdef\Hy@pstringF{#2}%
5970   \Hy@pstringdef\Hy@pstringD{#3}%
5971   \leavevmode
5972   \@pdfm@mark{%
5973     bann <<
5974     /Type /Annot
5975     /Subtype /Link
5976     \Hy@setpdfborder
5977     /C [\@filebordercolor]
5978     /A <<
5979     /S /GoToR
5980     /F (\Hy@pstringF)
5981     /D \ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD)\fi\space
5982     \ifHy@newwindow /NewWindow true \fi
5983     >>
5984     >>%
5985   }%
5986   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5987   \@pdfm@mark{eann}%
5988 }
5989 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5990   \Hy@pstringdef\Hy@pstringF{#1}%
5991   \Hy@pstringdef\Hy@pstringP{#3}%
5992   \leavevmode
5993   \@pdfm@mark{%
5994     bann <<
5995     /Type /Annot
5996     /Subtype /Link
5997     \Hy@setpdfborder
5998     /C [\@filebordercolor]
5999     /A <<
6000     /S /Launch
6001     /F (\Hy@pstringF)
6002     \ifHy@newwindow /NewWindow true \fi
6003     \ifx\#3\%
6004       \else
6005         /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6006       \fi
6007     >>
6008     >>%
6009   }%
6010   \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6011   \@pdfm@mark{eann}%
6012 }
6013 \def\hyper@linkurl#1#2{%
6014   \Hy@pstringdef\Hy@pstringURI{#2}%
6015   \leavevmode

```

```

6016 \pdfmarkmark{%
6017   bann <<
6018     /Type /Annot
6019     /Subtype /Link
6020     \Hy@setpdfborder
6021     /C [\@urlbordercolor]
6022     /A <<
6023       /S /URI
6024       /URI (\Hy@pstringURI)
6025     >>
6026   >>%
6027 }%
6028 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6029 \pdfmarkmark{eann}%
6030 }
6031 \def\Acrobatmenu#1#2{%
6032   \leavevmode
6033   \pdfmarkmark{%
6034     bann <<
6035       /Type /Annot
6036       /Subtype /Link
6037       /A <<
6038         /S /Named
6039         /N /#1
6040       >>
6041       \Hy@setpdfborder
6042       /C [\@menubordercolor]
6043     >>%
6044   }%
6045   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6046   \pdfmarkmark{eann}%
6047 }
6048 \ifx\@pdfproducer\relax
6049   \def\@pdfproducer{dvipdfm}
6050 \fi
6051 \def\PDF@FinishDoc{%
6052   \Hy@UseMaketitleInfos
6053   \pdfmarkmark{%
6054     docinfo <<
6055       /Title (\@pdftitle)
6056       /Subject (\@pdfsubject)
6057       /Creator (\@pdfcreator)
6058       \ifx\@pdfcreationdate\@empty
6059       \else
6060         /CreationDate(\@pdfcreationdate) %
6061       \fi
6062       \ifx\@pdfmoddate\@empty
6063       \else
6064         /ModDate(\@pdfmoddate) %
6065       \fi
6066       /Author (\@pdfauthor)
6067       \ifx\@pdfproducer\relax
6068       \else
6069         /Producer (\@pdfproducer)
6070       \fi
6071       /Keywords (\@pdfkeywords)
6072     >>%

```



```

6073 }%
6074 \Hy@DisableOption{pdfauthor}%
6075 \Hy@DisableOption{pdftitle}%
6076 \Hy@DisableOption{pdfsubject}%
6077 \Hy@DisableOption{pdfcreator}%
6078 \Hy@DisableOption{pdfcreationdate}%
6079 \Hy@DisableOption{pdfmoddate}%
6080 \Hy@DisableOption{pdfproducer}%
6081 \Hy@DisableOption{pdfkeywords}%
6082 }

6083 \def\PDF@SetupDoc{%
6084   \edef\Hy@temp{%
6085     \ifHy@toolbar\else /HideToolbar true\fi
6086     \ifHy@menubar\else /HideMenubar true\fi
6087     \ifHy>windowui\else /HideWindowUI true\fi
6088     \ifHy@fitwindow /FitWindow true\fi
6089     \ifHy@centerwindow /CenterWindow true\fi
6090     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6091     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6092     \Hy@UseNameKey{Direction}\@pdfdirection
6093     \Hy@UseNameKey{ViewArea}\@pdfviewarea
6094     \Hy@UseNameKey{ViewClip}\@pdfviewclip
6095     \Hy@UseNameKey{PrintArea}\@pdfprintarea
6096     \Hy@UseNameKey{PrintClip}\@pdfprintclip
6097     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6098     \Hy@UseNameKey{Duplex}\@pdfduplex
6099     \ifx\@pdfpicktraybypdfsize\@empty
6100     \else
6101       /PickTrayByPDFSize \@pdfpicktraybypdfsize
6102     \fi
6103     \ifx\@pdfprintpagerange\@empty
6104     \else
6105       /PrintPageRange[\@pdfprintpagerange]%
6106     \fi
6107     \ifx\@pdfnumcopies\@empty
6108     \else
6109       /NumCopies \@pdfnumcopies
6110     \fi
6111   }%
6112   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6113   \@pdfm@mark{%
6114     docview <<%
6115     \ifx\@pdfstartview\@empty
6116     \else
6117       /OpenAction[@page\@pdfstartpage\@pdfstartview]%
6118     \fi
6119     \ifx\@baseurl\@empty
6120     \else
6121       /URI<</Base(\Hy@pstringB)>>%
6122     \fi
6123     /PageMode/\@pdfpagemode
6124     \ifx\Hy@temp\@empty
6125     \else
6126       /ViewerPreferences<<\Hy@temp>>%
6127     \fi
6128     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6129     \ifx\@pdflang\@empty

```

```

6130     \else
6131         /Lang(\@pdflang)%
6132     \fi
6133     >>%
6134 }%
6135 \ifx\@pdfpagescrop\@empty
6136 \else
6137     \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}
6138 \fi
6139 }
6140 \</dvipdfm>

```

45.6 VTeX typesetting system

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

```

6141 \< *vtexhtml>
6142 \RequirePackage{vtexhtml}
6143 \newif\if@Localurl
6144 \def\PDF@FinishDoc{}
6145 \def\PDF@SetupDoc{%
6146     \ifx\@baseurl\@empty
6147     \else
6148         \special{!direct <base href="\@baseurl">}%
6149     \fi
6150 }
6151 \def\@urltype{url}
6152 \def\hyper@link#1#2#3{%
6153     \leavevmode
6154     \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
6155     #3%
6156     \special{!direct </a>}%
6157 }
6158 \def\hyper@linkurl#1#2{%
6159     \begingroup
6160         \hyper@chars
6161         \leavevmode
6162         \MathBSuppress=1\relax
6163         \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6164         #1%
6165         \MathBSuppress=0\relax
6166         \special{!direct </a>}%
6167     \endgroup
6168 }
6169 \def\hyper@linkfile#1#2#3{%
6170     \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\ \else\##3\fi}%
6171 }
6172 \def\hyper@linkstart#1#2{%
6173     \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
6174         \@Localurltrue
6175         \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6176     \else
6177         \@Localurlfalse
6178         \begingroup
6179             \hyper@chars
6180             \special{!aref #2}%
6181         \endgroup

```

```

6182 \fi
6183 }
6184 \def\hyper@linkend{%
6185   \if@Localurl
6186     \special{!endaref}%
6187   \else
6188     \special{!direct </a>}%
6189   \fi
6190 }
6191 \def\hyper@anchorstart#1{%
6192   \Hy@SaveLastskip
6193   \begingroup
6194     \hyper@chars
6195     \special{!aname #1}%
6196     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
6197   \endgroup
6198   \Hy@Activeanchortrue
6199 }
6200 \def\hyper@anchorend{%
6201   \special{!direct </a>}%
6202   \Hy@Activeanchorfalse
6203   \Hy@RestoreLastskip
6204 }
6205 \def\hyper@anchor#1{%
6206   \Hy@SaveLastskip
6207   \begingroup
6208     \let\protect=\string
6209     \hyper@chars
6210     \leavevmode
6211     \special{!aname #1}%
6212     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
6213   \endgroup
6214   \Hy@Activeanchortrue
6215   \bgroup\anchor@spot\egroup
6216   \special{!direct </a>}%
6217   \Hy@Activeanchorfalse
6218   \Hy@RestoreLastskip
6219 }
6220 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
6221 \def\@endForm{}
6222 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6223   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
6224 }
6225 \def\@TextField[#1]#2{% parameters, label
6226   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
6227 }
6228 \def\@CheckBox[#1]#2{% parameters, label
6229   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
6230 }
6231 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6232   \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
6233 }
6234 \def\@PushButton[#1]#2{% parameters, label
6235   \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
6236 }
6237 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6238 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}

```

```
6239 </vtexhtml>
```

```
6240 <*vtex>
```

VTeX version 6.68 supports `\mediawidth` and `\mediaheight`. The `\ifx` construct is better than a `\csname`, because it avoids the definition and the hash table entry of a previous undefined macro.

```
6241 \ifx\mediaheight\@undefined
6242 \else
6243   \ifx\mediaheight\relax
6244   \else
6245     \ifHy@setpagesize
6246       \providecommand*\VTexInitMediaSize{%
6247         \@ifundefined{stockwidth}{%
6248           \ifdim\paperheight>0pt %
6249             \setlength\mediaheight\paperheight
6250           \fi
6251           \ifdim\paperheight>0pt %
6252             \setlength\mediawidth\paperwidth
6253           \fi
6254         }{%
6255           \ifdim\stockheight>0pt %
6256             \setlength\mediaheight\stockheight
6257           \fi
6258           \ifdim\stockwidth>0pt %
6259             \setlength\mediawidth\stockwidth
6260           \fi
6261         }%
6262       }%
6263     \AtBeginDocument{\VTexInitMediaSize}%
6264   \fi
6265   \Hy@DisableOption{setpagesize}%
6266 \fi
6267 \fi
```

Older versions of VTeX require xyz in lower case.

```
6268 \providecommand\@pdfview{xyz}
6269 \providecommand\@pdfborder{0 0 1}
6270 \providecommand*\@pdfborderstyle{}
6271 \def\CurrentBorderColor{\@linkbordercolor}
6272 \def\hyper@anchor#1{%
6273   \Hy@SaveLastskip
6274   \begingroup
6275     \let\protect=\string
6276     \hyper@chars
6277     \special{!aname #1;\@pdfview}%
6278   \endgroup
6279   \Hy@activeanchortrue
6280   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6281   \Hy@activeanchorfalse
6282   \Hy@RestoreLastskip
6283 }
6284 \def\hyper@anchorstart#1{%
6285   \Hy@SaveLastskip
6286   \begingroup
6287     \hyper@chars
6288     \special{!aname #1;\@pdfview}%
6289   \endgroup
6290   \Hy@activeanchortrue
```

```

6291 }
6292 \def\hyper@anchorend{%
6293   \Hy@activeanchorfalse
6294   \Hy@RestoreLastskip
6295 }
6296 \def\@urltype{url}
6297 \def\Hy@undefinedname{UNDEFINED}
6298 \def\hyper@linkstart#1#2{%
6299   \Hy@pstringdef\Hy@pstringURI{#2}%
6300   \expandafter\Hy@colorlink\csname @#1color\endcsname
6301   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6302   \def\Hy@tempa{#1}%
6303   \ifx\Hy@tempa\@urltype
6304     \special{!%
6305       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6306       a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6307     }%
6308   \else
6309     \protected@edef\Hy@testname{#2}%
6310     \ifx\Hy@testname\@empty
6311       \let\Hy@testname\Hy@undefinedname
6312     \fi
6313     \special{!%
6314       aref \Hy@testname;%
6315       a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6316     }%
6317   \fi
6318 }
6319 \def\hyper@linkend{%
6320   \special{!endaref}%
6321   \Hy@endcolorlink
6322 }
6323 \def\hyper@linkfile#1#2#3{%
6324   \leavevmode
6325   \special{!%
6326     aref <%
6327       \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6328     f=#2>#3;%
6329     a=<\Hy@setpdfborder /C [\@filebordercolor]>%
6330   }%
6331   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6332   \special{!endaref}%
6333 }
6334 \def\hyper@linkurl#1#2{%
6335   \begingroup
6336   \Hy@pstringdef\Hy@pstringURI{#2}%
6337   \hyper@chars
6338   \leavevmode
6339   \special{!%
6340     aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6341     a=<\Hy@setpdfborder /C [\@urlbordercolor]>%
6342   }%
6343   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6344   \special{!endaref}%
6345   \endgroup
6346 }
6347 \def\hyper@link#1#2#3{%

```

```

6348 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6349 \leavevmode
6350 \protected@edef\Hy@testname{#2}%
6351 \ifx\Hy@testname\@empty
6352   \let\Hy@testname\Hy@undefinedname
6353 \fi
6354 \special{!%
6355   aref \Hy@testname;%
6356   a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6357 }%
6358 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6359 \special{!endaref}%
6360 }
6361 \def\hyper@image#1#2{%
6362   \hyper@linkurl{#2}{#1}%
6363 }
6364 \def\hyper@launch run:#1\#2#3{%
6365   \Hy@pstringdef\Hy@pstringF{#1}%
6366   \Hy@pstringdef\Hy@pstringP{#3}%
6367   \leavevmode
6368   \special{!aref
6369     <u=%
6370       /Type /Action
6371       /S /Launch
6372       /F (\Hy@pstringF)
6373       \ifHy@newwindow /NewWindow true \fi
6374       \ifx\#3\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6375     >;%
6376     a=<\Hy@setpdfborder /C [@runbordercolor]>%
6377   }%
6378   \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6379   \special{!endaref}%
6380 }
6381 \def\Acrobatmenu#1#2{%
6382   \leavevmode
6383   \special{!%
6384     aref <u=/S /Named /N /#1>;%
6385     a=<\Hy@setpdfborder /C [@menubordercolor]>%
6386   }%
6387   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6388   \special{!endaref}%
6389 }

```

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

The code below makes sense for \TeX 7.02 or later.

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

```

6390 \ifnum\Hy@VTeXversion<702 %
6391 \else
6392   \def\hyper@pagetransition{%
6393     \ifx\@pdfpagetransition\relax
6394     \else
6395       \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

6396   \else
6397     \hvtex@parse@trans\@pdfpagetransition
6398   \fi

```

```

6399     \fi
6400 }

```

Syntax of `\special{!trans <transition_effect>}`:

Transition codes:

Optional parameters:

Tokenizer:

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

Initializing code:

First token is the PDF transition name without escape.

Leading space(s)?

```
6426      \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
6427      \else
6428      \hvtex@gettoken
6429      \fi
6430      \fi
6431      \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
6432      \hvtex@trans@params
6433  }
```

Reentrant macro to parse optional parameters.

```
6434  \def\hvtex@trans@params{%
6435      \ifx\hvtex@buffer\@empty
6436      \else
6437      \hvtex@gettoken
6438      \let\hvtex@trans@par\hvtex@token
6439      \ifx\hvtex@buffer\@empty
6440      \else
6441      \hvtex@gettoken
6442      \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
6443      \let\hvtex@param@duration\hvtex@token
6444      \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
6445      \expandafter\edef\expandafter\hvtex@param@motion
6446      \expandafter{\expandafter\@gobble\hvtex@token}%
6447      \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
6448      \expandafter\edef\expandafter\hvtex@param@dimension
6449      \expandafter{\expandafter\@gobble\hvtex@token}%
6450      \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).

```
6451      \let\hvtex@param@direction\hvtex@token
6452      \fi\fi\fi\fi
6453      \fi
6454      \fi
6455      \ifx\hvtex@buffer\@empty
6456      \let\next\hvtex@produce@trans
6457      \else
6458      \let\next\hvtex@trans@params
6459      \fi
6460      \next
6461  }
```

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

```
6462  \def\hvtex@produce@trans{%
6463      \let\vtex@trans@special\@empty
6464      \if S\hvtex@trans@code
6465      \edef\vtex@trans@special{\hvtex@trans@code
6466      \hvtex@param@dimension\hvtex@param@motion}%

```



```

6467 \else \if B\hvtex@trans@code
6468 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6469 \else \if X\hvtex@trans@code
6470 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6471 \else \if W\hvtex@trans@code
6472 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6473 \else \if D\hvtex@trans@code
6474 \let\vtex@trans@special\hvtex@trans@code
6475 \else \if R\hvtex@trans@code
6476 \let\vtex@trans@special\hvtex@trans@code
6477 \else \if G\hvtex@trans@code
6478 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6479 \fi\fi\fi\fi\fi\fi\fi
6480 \ifx\vtex@trans@special\@empty
6481 \else
6482 \ifx\hvtex@param@duration\@empty
6483 \else
6484 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

6485 \multiply\dimen@\@m
6486 \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6487 \fi

```

And all the mess is just for this.

```

6488 \special{!trans \vtex@trans@special}%
6489 \fi
6490 }

6491 \def\hyper@pageduration{%
6492 \ifx\@pdfpageduration\relax
6493 \else
6494 \ifx\@pdfpageduration\@empty
6495 \special{!duration-}%
6496 \else
6497 \special{!duration \@pdfpageduration}%
6498 \fi
6499 \fi
6500 }

6501 \def\hyper@pagehidden{%
6502 \ifHy@useHidKey
6503 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6504 \fi
6505 }
6506 \fi

```

Caution: In opposite to the other drivers, the argument of `\special{!onopen #1}` is a reference name. The VTeX's postscript mode will work with a version higher than 7.0x.

The command `\VTeXOS` is defined since version 7.45. Magic values encode the operating system:

- 1: WinTel
- 2: Linux
- 3: OS/2
- 4: MacOS
- 5: MacOS/X

```

6507 \ifx\@pdfproducer\relax
6508 \def\@pdfproducer{VTeX}

```

```

6509 \ifnum\Hy@VTeXversion>\z@
6510   \count@\VTeXversion
6511   \divide\count@ 100
6512   \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6513   \multiply\count@ -100
6514   \advance\count@\VTeXversion
6515   \edef\@pdfproducer{%
6516     \@pdfproducer
6517     .\ifnum\count@<10 0\fi\the\count@
6518     \ifx\VTeXOS\@undefined\else
6519       \ifnum\VTeXOS>0 %
6520         \ifnum\VTeXOS<6 %
6521           \space(%
6522             \ifcase\VTeXOS
6523               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6524             \fi
6525           )%
6526         \fi
6527       \fi
6528     \fi
6529     ,\space
6530     \ifnum\OpMode=\@ne PDF\else PS\fi
6531     \space backend%
6532     \ifx\gexmode\@undefined\else
6533       \ifnum\gexmode>\z@\space with GeX\fi
6534     \fi
6535   }
6536 \fi
6537 \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).

```

6538 \def\PDF@SetupDoc{%
6539   \ifx\@pdfpagescrop\@empty
6540   \else
6541     \special{!pdfinfo b=<\@pdfpagescrop>}%
6542   \fi
6543   \special{!onopen Page\@pdfstartpage}%
6544   \special{!pdfinfo p=</\@pdfpagemode>}%
6545   \ifx\@baseurl\@empty
6546   \else
6547     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6548   \fi
6549   \special{!pdfinfo v=<<<
6550     \ifHy@toolbar\else /HideToolbar true\fi

```

```

6551 \ifHy@menubar\else /HideMenubar true\fi
6552 \ifHy@windowui\else /HideWindowUI true\fi
6553 \ifHy@fitwindow /FitWindow true\fi
6554 \ifHy@centerwindow /CenterWindow true\fi
6555 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6556 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6557 \Hy@UseNameKey{Direction}\@pdfdirection
6558 \Hy@UseNameKey{ViewArea}\@pdfviewarea
6559 \Hy@UseNameKey{ViewClip}\@pdfviewclip
6560 \Hy@UseNameKey{PrintArea}\@pdfprintarea
6561 \Hy@UseNameKey{PrintClip}\@pdfprintclip
6562 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6563 \Hy@UseNameKey{Duplex}\@pdfduplex
6564 \ifx\@pdfpicktraybypdfsize\@empty
6565 \else
6566 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6567 \fi
6568 \ifx\@pdfprintpagerange\@empty
6569 \else
6570 /PrintPageRange[\@pdfprintpagerange]%
6571 \fi
6572 \ifx\@pdfnumcopies\@empty
6573 \else
6574 /NumCopies \@pdfnumcopies
6575 \fi
6576 >>>}%
6577 \ifx\@pdfpagelayout\@empty
6578 \else
6579 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
6580 \fi
6581 }%
6582 \def\PDF@FinishDoc{%
6583 \Hy@UseMaketitleInfos
6584 \special{!pdfinfo a=<\@pdfauthor>}%
6585 \special{!pdfinfo t=<\@pdftitle>}%
6586 \special{!pdfinfo s=<\@pdfsubject>}%
6587 \special{!pdfinfo c=<\@pdfcreator>}%
6588 \ifx\@pdfproducer\relax
6589 \else
6590 \special{!pdfinfo r=<\@pdfproducer>}%
6591 \fi
6592 \special{!pdfinfo k=<\@pdfkeywords>}%
6593 \Hy@DisableOption{pdfauthor}%
6594 \Hy@DisableOption{pdftitle}%
6595 \Hy@DisableOption{pdfsubject}%
6596 \Hy@DisableOption{pdfcreator}%
6597 \Hy@DisableOption{pdfcreationdate}%
6598 \Hy@DisableOption{pdfmoddate}%
6599 \Hy@DisableOption{pdfproducer}%
6600 \Hy@DisableOption{pdfkeywords}%
6601 }
6602 </vtex>

```

45.7 Fix for Adobe bug number 466320

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

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

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```
6603 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%  
6604 <package>\providecommand*\Hy@DistillerDestFix{}%  
6605 <*pdfmark | dviwindo>  
6606 \def\Hy@DistillerDestFix{%  
6607   \begingroup  
6608     \let\x\literalps@out
```

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

```
6609   \ifnum \@ifundefined{OpMode}{0}{}%  
6610     \@ifundefined{gexmode}{0}{}%  
6611     \ifnum\gexmode>0 \OpMode\else 0\fi  
6612   }>1 %  
6613   \def\x##1{%  
6614     \immediate\special{!=##1}%  
6615   }%  
6616   \fi  
6617   \x{%  
6618     /product where{%  
6619       pop %  
6620       product(Distiller)search{%  
6621         pop pop pop %  
6622         version(.)search{%  
6623           exch pop exch pop%  
6624           (3011)eq{%  
6625             gsave %  
6626             newpath 0 0 moveto closepath clip%  
6627             /Courier findfont 10 scalefont setfont %  
6628             72 72 moveto(.)show %  
6629             grestore%  
6630           }if%  
6631         }{pop}ifelse%  
6632       }{pop}ifelse%  
6633     }if%  
6634   }%  
6635   \endgroup  
6636 }  
6637 </pdfmark | dviwindo>
```

45.8 Direct pdfmark support (dvipdf and pdfmark)

Drivers that load pdfmark.def have to provide the correct macro definitions of

\@pdfproducer	for document information
\literalps@out	PostScript output
\headerps@out	PostScript output that goes in the header area

and the correct definitions of the following PostScript procedures:

H.S	start of anchor, link or rect
#1 H.A	end of anchor, argument=baselineskip in pt
#1 H.L	end of link, argument=baselineskip in pt
H.R	end of rect
H.B	raw rect code

```

6638 <*pdfmark | dvipdf>
6639 \def\hyper@anchor#1{%
6640   \Hy@SaveLastskip
6641   \begingroup
6642     \pdfmark[\anchor@spot]{%
6643       pdfmark=/DEST,%
6644       linktype=anchor,%
6645       View=/\@pdfview \@pdfviewparams,%
6646       DestAnchor={#1}%
6647     }%
6648   \endgroup
6649   \Hy@RestoreLastskip
6650 }
6651 <*dvipdf>
6652 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6653 \def\hyper@anchorend{\Hy@activeanchorfalse}
6654 \def\hyper@linkstart#1#2{%
6655   \expandafter\Hy@colorlink\csname @#1color\endcsname
6656   \xdef\hyper@currentanchor{#2}%
6657 }
6658 \def\hyper@linkend{%
6659   \Hy@endcolorlink
6660 }
6661 </dvipdf>
6662 <*pdfmark>
6663 \ifundefined{hyper@anchorstart}{-}{\endinput}
6664 \def\hyper@anchorstart#1{%
6665   \Hy@SaveLastskip
6666   \literalps@out{H.S}%
6667   \xdef\hyper@currentanchor{#1}%
6668   \Hy@activeanchortrue
6669 }
6670 \def\hyper@anchorend{%
6671   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6672   \pdfmark{%
6673     pdfmark=/DEST,%
6674     linktype=anchor,%
6675     View=/\@pdfview \@pdfviewparams,%
6676     DestAnchor=\hyper@currentanchor,%
6677     Raw=H.B%
6678   }%
6679   \Hy@activeanchorfalse
6680   \Hy@RestoreLastskip
6681 }
6682 \def\hyper@linkstart#1#2{%
6683   \ifHy@breaklinks
6684   \else
6685     \leavevmode\hbox\bgroup
6686     \fi
6687   \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

6688 \literalps@out{H.S}%
6689 \xdef\hyper@currentanchor{#2}%
6690 \gdef\hyper@currentlinktype{#1}%
6691 }
6692 \def\hyper@linkend{%
6693 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6694 \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%
6695 \pdfmark{%
6696 pdfmark=/ANN,%
6697 linktype=link,%
6698 Subtype=/Link,%
6699 Dest=\hyper@currentanchor,%
6700 AcroHighlight=\@pdfhighlight,%
6701 Border=\@pdfborder,%
6702 BorderStyle=\@pdfborderstyle,%
6703 Color=\Hy@tempcolor,%
6704 Raw=H.B%
6705 }%
6706 \Hy@endcolorlink
6707 \ifHy@breaklinks
6708 \else
6709 \egroup
6710 \fi
6711 }
6712 \<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.

```

6713 \begingroup
6714 \catcode'P=12
6715 \catcode'T=12
6716 \lowercase{\endgroup
6717 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
6718 }
6719 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6720 \</pdfmark>

```

\hyper@pagetransition

```

6721 \def\hyper@pagetransition{%
6722 \ifx\@pdfpagetransition\relax
6723 \else
6724 \ifx\@pdfpagetransition\@empty
6725 % 1. Does an old entry have to be deleted?
6726 % 2. If 1=yes, how to delete?
6727 \else
6728 \pdfmark{%
6729 pdfmark=/PUT,%
6730 Raw={%
6731 \string{ThisPage\string}%
6732 <</Trans << /S /\@pdfpagetransition\space >> >>%
6733 }%
6734 }%
6735 \fi
6736 \fi
6737 }

```

\hyper@pageduration

```
6738 \def\hyper@pageduration{%
6739   \ifx\@pdfpageduration\relax
6740   \else
6741     \ifx\@pdfpageduration\@empty
6742       % 1. Does an old entry have to be deleted?
6743       % 2. If 1=yes, how to delete?
6744     \else
6745       \pdfmark{%
6746         pdfmark=/PUT,%
6747         Raw={%
6748           \string{ThisPage\string}%
6749           <</Dur \@pdfpageduration>>%
6750         }%
6751       }%
6752     \fi
6753   \fi
6754 }
```

\hyper@pagehidden

```
6755 \def\hyper@pagehidden{%
6756   \ifHy@useHidKey
6757     \pdfmark{%
6758       pdfmark=/PUT,%
6759       Raw={%
6760         \string{ThisPage\string}%
6761         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
6762       }%
6763     }%
6764   \fi
6765 }

6766 </pdfmark>
6767 \def\hyper@image#1#2{%
6768   \hyper@linkurl{#2}{#1}}
6769 \def\Hy@undefinedname{UNDEFINED}
6770 \def\hyper@link#1#2#3{%
6771   \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
6772   \begingroup
6773     \protected@edef\Hy@testname{#2}%
6774     \ifx\Hy@testname\@empty
6775       \let\Hy@testname\Hy@undefinedname
6776     \fi
6777   <*dvipdf>
6778   \pdfmark[{#3}]{%
6779     pdfmark=/LNK,%
6780     {},%
6781     linktype={#1},%
6782     AcroHighlight=\@pdfhighlight,%
6783     Border=\@pdfborder,%
6784     BorderStyle=\@pdfborderstyle,%
6785     Color=\Hy@tempcolor,%
6786     Dest=\Hy@testname
6787   }%
6788 </dvipdf>
6789 <*pdfmarkbase>
6790   \pdfmark[{#3}]{%
```

```

6791     Color=\Hy@tempcolor,%
6792     linktype={#1},%
6793     AcroHighlight=\@pdfhighlight,%
6794     Border=\@pdfborder,%
6795     BorderStyle=\@pdfborderstyle,%
6796     pdfmark=/ANN,%
6797     Subtype=/Link,%
6798     Dest=\Hy@testname
6799 }%
6800 </pdfmarkbase>
6801 \endgroup
6802 }
6803 \newtoks\pdf@docset
6804 \def\PDF@FinishDoc{%
6805   \Hy@UseMaketitleInfos
6806   \let\Hy@temp\@empty
6807   \ifx\@pdfcreationdate\@empty
6808   \else
6809     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6810   \fi
6811   \ifx\@pdfmoddate\@empty
6812   \else
6813     \expandafter\def\expandafter\Hy@temp\expandafter{%
6814       \Hy@temp
6815       ModDate=\@pdfmoddate,%
6816     }%
6817   \fi
6818   \ifx\@pdfproducer\relax
6819   \else
6820     \expandafter\def\expandafter\Hy@temp\expandafter{%
6821       \Hy@temp
6822       Producer=\@pdfproducer,%
6823     }%
6824   \fi
6825   \expandafter
6826   \pdfmark\expandafter{%
6827     \Hy@temp
6828     pdfmark=/DOCINFO,%
6829     Title=\@pdftitle,%
6830     Subject=\@pdfsubject,%
6831     Creator=\@pdfcreator,%
6832     Author=\@pdfauthor,%
6833     Keywords=\@pdfkeywords
6834   }%
6835   \Hy@DisableOption{pdfauthor}%
6836   \Hy@DisableOption{pdftitle}%
6837   \Hy@DisableOption{pdfsubject}%
6838   \Hy@DisableOption{pdfcreator}%
6839   \Hy@DisableOption{pdfcreationdate}%
6840   \Hy@DisableOption{pdfmoddate}%
6841   \Hy@DisableOption{pdfproducer}%
6842   \Hy@DisableOption{pdfkeywords}%
6843 }
6844 \def\PDF@SetupDoc{%
6845   \pdfmark{%
6846     pdfmark=/DOCVIEW,%
6847     Page=\@pdfstartpage,%

```



```

6848     View=\@pdfstartview,%
6849     PageMode=/\@pdfpagemode
6850 }%
6851 \ifx\@pdfpagescrop\@empty
6852 \else
6853     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6854 \fi
6855 \edef\Hy@temp{%
6856     \ifHy@toolbar\else /HideToolbar true\fi
6857     \ifHy@menubar\else /HideMenubar true\fi
6858     \ifHy>windowui\else /HideWindowUI true\fi
6859     \ifHy@fitwindow /FitWindow true\fi
6860     \ifHy@centerwindow /CenterWindow true\fi
6861     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6862     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6863     \Hy@UseNameKey{Direction}\@pdfdirection
6864     \Hy@UseNameKey{ViewArea}\@pdfviewarea
6865     \Hy@UseNameKey{ViewClip}\@pdfviewclip
6866     \Hy@UseNameKey{PrintArea}\@pdfprintarea
6867     \Hy@UseNameKey{PrintClip}\@pdfprintclip
6868     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6869     \Hy@UseNameKey{Duplex}\@pdfduplex
6870     \ifx\@pdfpicktraybypdfsize\@empty
6871     \else
6872         /PickTrayByPDFSize \@pdfpicktraybypdfsize
6873     \fi
6874     \ifx\@pdfprintpagerange\@empty
6875     \else
6876         /PrintPageRange[\@pdfprintpagerange]%
6877     \fi
6878     \ifx\@pdfnumcopies\@empty
6879     \else
6880         /NumCopies \@pdfnumcopies
6881     \fi
6882 }%
6883 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6884 \pdfmark{%
6885     pdfmark=/PUT,%
6886     Raw={%
6887         \string{Catalog\string} <<
6888         \ifx\Hy@temp\@empty
6889         \else
6890             /ViewerPreferences<<\Hy@temp>>%
6891         \fi
6892         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6893         \ifx\@pdflang\@empty
6894         \else
6895             /Lang(\@pdflang)%
6896         \fi
6897         \ifx\@baseurl\@empty
6898         \else
6899             /URI << /Base (\Hy@pstringB) >>%
6900         \fi
6901         >>%
6902     }%
6903 }%
6904 }

```

```

6905 </pdfmark | dvipdf>
6906 <*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.

```

6907 \newif\ifHy@pdfmarkerror
6908 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
6909 \def\pdfmark@[#1]#2{%
6910   \Hy@pdfmarkerrorfalse
6911   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
6912   \@processme
6913   \let\pdf@type\relax
6914   \setkeys{PDF}{#2}%
6915   \ifHy@pdfmarkerror
6916   \else
6917     \ifx\pdf@type\relax
6918       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
6919       \ifx\#1\\\relax\else\pdf@rect{#1}\fi
6920     \else
6921       \ifx\#1\\\relax
6922       <pdfmarkbase> \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
6923       <dvipdf> \literalps@out{/ANN >>}%
6924     \else
6925       \@ifundefined{@\pdf@linktype color}{%
6926         \Hy@colorlink@\linkcolor
6927       }{%
6928         \expandafter\Hy@colorlink
6929           \csname @\pdf@linktype color\endcsname
6930       }%
6931       \pdf@rect{#1}%
6932       <pdfmarkbase> \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
6933       <dvipdf> \literalps@out{/ANN >>}%
6934       \Hy@endcolorlink
6935     \fi
6936   \fi
6937 \fi
6938 }

```

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

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

```

\usepackage[hyperref]{setouterhbox}

```

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

```

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

```

```

6939 \newsavebox{\pdf@box}
6940 \providecommand{\Hy@setouterhbox}{\sbox}
6941 \providecommand{\Hy@breaklinksunhbox}{\unhbox}
6942 \def\pdf@rect#1{%
6943 <dvipdf> \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<}>#1%

```

```

6944 \leavevmode
6945 \ifHy@breaklinks
6946   \Hy@setouterhbox\pdf@box{#1}%
6947 \else
6948   \sbox\pdf@box{#1}%
6949 \fi
6950 \dimen@ht\pdf@box
6951 \ifdim\dp\pdf@box=\z@
6952   \literalps@out{H.S}%
6953 \else
6954   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
6955 \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...).

```

6956 \ifHy@breaklinks
6957   \expandafter\Hy@breaklinksunhbox
6958 \else
6959   \expandafter\box
6960 \fi
6961 \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

6962 \ifdim\dimen@=\z@
6963   \literalps@out{H.R}%
6964 \else
6965   \raise\dimen@\hbox{\literalps@out{H.R}}%
6966 \fi
6967 \pdf@addtoksx{H.B}%
6968 }

```

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.

```

6969 \newtoks\pdf@toks
6970 \newtoks\pdf@defaulttoks
6971 \pdf@defaulttoks={}%
6972 \def\pdf@addtoks#1#2{%
6973   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
6974   \@processme
6975 }
6976 \def\pdf@addtoksx#1{%
6977   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
6978   \@processme
6979 }
6980 \def\PDFdefaults#1{%
6981   \pdf@defaulttoks={#1}%
6982 }

```

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

```

6983 % what is the type of pdfmark?
6984 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
6985 % what is the link type?
6986 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
6987 \def\pdf@linktype{link}

```

```

6988 % parameter is a stream of PDF
6989 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
6990 % parameter is a name
6991 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
6992 % parameter is a array
6993 \define@key{PDF}{Border}{%
6994   \edef\Hy@temp{#1}%
6995   \ifx\Hy@temp\@empty
6996   \else
6997     \pdf@addtoks{[#1]}{Border}%
6998   \fi
6999 }
7000 % parameter is a dictionary
7001 \define@key{PDF}{BorderStyle}{%
7002   \edef\Hy@temp{#1}%
7003   \ifx\Hy@temp\@empty
7004   \else
7005     \pdf@addtoks{<<#1>>}{BS}%
7006   \fi
7007 }
7008 % parameter is a array
7009 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
7010 % parameter is a string
7011 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
7012 % parameter is a integer
7013 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
7014 % parameter is a array
7015 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
7016 % parameter is a string
7017 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
7018 % parameter is a string or file
7019 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
7020 % parameter is a destination
7021 \define@key{PDF}{Dest}{%
7022   \Hy@pstringdef\Hy@pstringDest{#1}%
7023   \ifx\Hy@pstringDest\@empty
7024     \Hy@pdfmarkerrortrue
7025     \Hy@Warning{Destination with empty name ignored}%
7026   \else
7027     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7028   \fi
7029 }
7030 \define@key{PDF}{DestAnchor}{%
7031   \Hy@pstringdef\Hy@pstringDest{#1}%
7032   \ifx\Hy@pstringDest\@empty
7033     \Hy@pdfmarkerrortrue
7034     \Hy@Warning{Destination with empty name ignored}%
7035   \else
7036     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7037   \fi
7038 }
7039 % parameter is a string
7040 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
7041 % parameter is a string
7042 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
7043 % parameter is a int
7044 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}

```

```

7045 % parameter is a name
7046 \define@key{PDF}{AcroHighlight}{%
7047   \begingroup
7048     \edef\x{#1}%
7049     \expandafter\endgroup\ifx\x\empty
7050   \else
7051     \pdf@addtoks{#1}{H}%
7052   \fi
7053 }
7054 % parameter is a string
7055 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
7056 % parameter is a string
7057 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
7058 % parameter is a string
7059 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7060 % parameter is a string
7061 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
7062 % parameter is a Boolean
7063 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
7064 % parameter is a integer or name
7065 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
7066 % parameter is a name
7067 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
7068 % parameter is a string
7069 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
7070 % parameter is a array
7071 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}
7072 % parameter is a integer
7073 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
7074 % parameter is a name
7075 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
7076 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
7077 % parameter is a string
7078 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
7079 % parameter is a string
7080 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
7081 % parameter is a string
7082 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
7083 % parameter is an array
7084 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}
7085 % parameter is a string
7086 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

7087 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
7088 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
7089 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
7090 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7091 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
7092 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
7093 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
7094 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7095 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
7096 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
7097 \pdfmarkbase | dvipdf
7098 \*pdfmark | dvipdf
7099 \def\Acrobatmenu#1#2{%
7100   \pdfmark[{#2}] {%

```

```

7101    linktype=menu,%
7102    pdfmark=/ANN,%
7103    AcroHighlight=\@pdfhighlight,%
7104    Border=\@pdfborder,%
7105    BorderStyle=\@pdfborderstyle,%
7106    Action={<< /Subtype /Named /N /#1 >>},%
7107    Subtype=/Link%
7108 }%
7109 }

```

And now for some useful examples:

```

7110 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
7111 \def\PDFNextPage@[#1]#2{%
7112   \pdfmark[#{#2}]{%
7113     #1,%
7114     Border=\@pdfborder,%
7115     BorderStyle=\@pdfborderstyle,%
7116     Color=.2 .1 .5,%
7117     pdfmark=/ANN,%
7118     Subtype=/Link,%
7119     Page=/Next%
7120   }%
7121 }
7122 \def\PDFPreviousPage{%
7123   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}]%
7124 }
7125 \def\PDFPreviousPage@[#1]#2{%
7126   \pdfmark[#{#2}]{%
7127     #1,%
7128     Border=\@pdfborder,%
7129     BorderStyle=\@pdfborderstyle,%
7130     Color=.4 .4 .1,%
7131     pdfmark=/ANN,%
7132     Subtype=/Link,%
7133     Page=/Prev%
7134   }%
7135 }
7136 \def\PDFOpen#1{%
7137   \pdfmark{#1,pdfmark=/DOCVIEW}%
7138 }

```

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!

```

7139 \def\PDFPage{\@ifnextchar[{\PDFPage@}{\PDFPage@[]}}
7140 \def\PDFPage@[#1]#2#3{%
7141   \let\pageref\simple@pageref
7142   \pdfmark[#{#3}]{%
7143     #1,%
7144     Page={#2},%
7145     AcroHighlight=\@pdfhighlight,%
7146     Border=\@pdfborder,%
7147     BorderStyle=\@pdfborderstyle,%
7148     Color=\@pagebordercolor,%
7149     pdfmark=/ANN,%
7150     Subtype=/Link%
7151   }%
7152 }

```

```

7153 \def\simple@pageref#1{%
7154   \expandafter\ifx\csname r@#1\endcsname\relax
7155     0%
7156   \else
7157     \expandafter\expandafter\expandafter
7158       \@secondoffive\csname r@#1\endcsname
7159   \fi}

```

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

```

7160 \def\hyper@linkurl#1#2{%
7161   \begingroup
7162     \Hy@pstringdef\Hy@pstringURI{#2}%
7163     \hyper@chars
7164     \leavevmode
7165   \pdfmarkbase{
7166     \pdfmark[{#1}]{%
7167       pdfmark=/ANN,%
7168       linktype=url,%
7169       AcroHighlight=\@pdfhighlight,%
7170       Border=\@pdfborder,%
7171       BorderStyle=\@pdfborderstyle,%
7172       Color=\@urlbordercolor,%
7173       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
7174       Subtype=/Link%
7175     }%
7176   \pdfmarkbase}
7177 \dvi{pdf}
7178   \pdfmark[{#1}]{%
7179     pdfmark=/LNK,%
7180     linktype=url,%
7181     AcroHighlight=\@pdfhighlight,%
7182     Border=\@pdfborder,%
7183     BorderStyle=\@pdfborderstyle,%
7184     Color=\@urlbordercolor,%
7185     Action={URI /URI <\Hy@hstringURI>}%
7186   }%
7187 \dvi{pdf}
7188 \endgroup
7189 }
7190 \def\hyper@linkfile#1#2#3{%
7191   \begingroup
7192     \Hy@pstringdef\Hy@pstringF{#2}%
7193     \Hy@pstringdef\Hy@pstringD{#3}%
7194     \leavevmode
7195   \pdfmark{
7196     \pdfmark[{#1}]{%
7197       pdfmark=/ANN,%
7198       Subtype=/Link,%
7199       AcroHighlight=\@pdfhighlight,%
7200       Border=\@pdfborder,%
7201       BorderStyle=\@pdfborderstyle,%
7202       linktype=file,%
7203       Color=\@filebordercolor,%
7204       Action={<<
7205         /S /GoToR
7206         \ifHy@newwindow /NewWindow true \fi
7207         /F (\Hy@pstringF)
7208         /D \ifx\#3\[/0 \@pdfstartview\else(\Hy@pstringD) cvn\fi

```

```

7209     >>}%
7210   }%
7211 </pdfmark>
7212 <*dvipdf>
7213   \pdfmark[{#1}]{%
7214     pdfmark=/LNK,%
7215     linktype=file,%
7216     AcroHighlight=\pdfhighlight,%
7217     Border=\pdfborder,%
7218     BorderStyle=\pdfborderstyle,%
7219     Color=\@filebordercolor,%
7220     Action={<<
7221       /S /GoToR
7222       \ifHy@newwindow /NewWindow true \fi
7223       /F (\Hy@pstringF)
7224       /D \ifx\#3\[/0 \pdfstartview\else(\Hy@pstringD) cvn\fi
7225     >>}%
7226   }%
7227 </dvipdf>
7228   \endgroup
7229 }
7230 \def\@hyper@launch run:#1\#2#3{%
7231   \begingroup
7232     \Hy@pstringdef\Hy@pstringF{#1}%
7233     \Hy@pstringdef\Hy@pstringP{#3}%
7234     \leavevmode
7235 <*pdfmark>
7236   \pdfmark[{#2}]{%
7237     pdfmark=/ANN,%
7238     Subtype=/Link,%
7239     AcroHighlight=\pdfhighlight,%
7240     Border=\pdfborder,%
7241     BorderStyle=\pdfborderstyle,%
7242     linktype=file,%
7243     Color=\@filebordercolor,%
7244     Action={<<
7245       /S /Launch
7246       \ifHy@newwindow /NewWindow true \fi
7247       /F (\Hy@pstringF)
7248       \ifx\#3\%
7249       \else
7250         /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7251       \fi
7252     >>}%
7253   }%
7254 </pdfmark>
7255 <*dvipdf>
7256   \pdfmark[{#2}]{%
7257     pdfmark=/LNK,%
7258     linktype=file,%
7259     AcroHighlight=\pdfhighlight,%
7260     Border=\pdfborder,%
7261     BorderStyle=\pdfborderstyle,%
7262     Color=\@filebordercolor,%
7263     Action={<<
7264       /S /GoToR
7265       \ifHy@newwindow /NewWindow true \fi

```



```

7266      /F (\Hy@pstringF)
7267      \ifx\#3\%
7268      \else
7269      /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7270      \fi
7271      >>}%
7272  }%
7273 </dvipdf>
7274 \endgroup
7275 }
7276 </pdfmark | dvipdf>

```

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

45.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its y axis starts at the top of the page. Other drivers can and will be different!

The work is done in SDict, because we add in some header definitions in a moment.

```

7277 <*dvips>
7278 \input{pdfmark.def}%
7279 \ifx\@pdfproducer\relax
7280 \def\@pdfproducer{dvips + Distiller}
7281 \fi
7282 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
7283 \def\headerps@out#1{\special{! #1}}%
7284 \providecommand\@pdfborder{0 0 12}
7285 \providecommand*\@pdfborderstyle{}
7286 \providecommand\@pdfview{XYZ}
7287 \providecommand\@pdfviewparams{ H.V}
7288 \AtBeginDvi{%
7289 \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.

```

7290 /DvipsToPDF { 72.27 mul Resolution div } def
7291 /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.

```

7292 /HyperBorder { 1 PDFToDvips } def
7293 /H.V {pdf@hoff pdf@voff null} def
7294 /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

```

7295 /H.S {
7296   currentpoint
7297   HyperBorder add /pdf@lly exch def
7298   dup DvipsToPDF /pdf@hoff exch def
7299   HyperBorder sub /pdf@llx exch def
7300 } def

```

The calculation of upper left y is done without raising the point in \TeX , by simply adding on the current `\baselineskip` to the current y . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The x and y coordinates of the current point, minus the `baselineskip`

```

7301 /H.L {
7302   2 sub dup
7303   /HyperBasePt exch def
7304   PDFToDvips /HyperBaseDvips exch def
7305   currentpoint
7306   HyperBaseDvips sub /pdf@ury exch def
7307   /pdf@urx exch def
7308 } def
7309 /H.A {
7310   H.L
7311 % |pdf@voff| = the distance from the top of the page to a point
7312 % |baselineskip| above the current point in PDF coordinates
7313   currentpoint exch pop
7314   vsize 72 sub exch DvipsToPDF
7315   HyperBasePt sub % baseline skip
7316   sub /pdf@voff exch def
7317 } def
7318 /H.R {
7319   currentpoint
7320   HyperBorder sub /pdf@ury exch def
7321   HyperBorder add /pdf@urx exch def
7322 % |pdf@voff| = the distance from the top of the page to the current point, in
7323 % PDF coordinates
7324   currentpoint exch pop vsize 72 sub
7325   exch DvipsToPDF sub /pdf@voff exch def
7326 } def
7327 systemdict /pdfmark known
7328 {
7329   userdict /?pdfmark systemdict /exec get put
7330 }{
7331   userdict /?pdfmark systemdict /pop get put
7332   userdict /pdfmark systemdict /cleartomark get put
7333 }
7334 ifelse
7335 }%
7336 }
7337 \AfterBeginDocument{%
7338   \ifx\special@paper\@empty\else
7339     \ifHy@setpagesize
7340       \special{papersize=\special@paper}%
7341     \fi
7342     \Hy@DisableOption{setpagesize}%
7343   \fi

```

```

7344 }
7345 </dvips>

```

45.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the y axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

7346 <*vtexpdfmark>
7347 \input{pdfmark.def}%
7348 \ifx\@pdfproducer\relax
7349   \ifnum\OpMode=\@one
7350     \def\@pdfproducer{VTeX}
7351   \else
7352     \def\@pdfproducer{VTeX + Distiller}
7353   \fi
7354 \fi
7355 \def\literalps@out#1{\special{pS:#1}}%
7356 \def\headerps@out#1{\immediate\special{pS:#1}}%
7357 \providecommand\@pdfborder{0 0 1}
7358 \providecommand*\@pdfborderstyle{}
7359 \providecommand\@pdfview{XYZ}
7360 \providecommand\@pdfviewparams{ H.V}

7361 \AtBeginDvi{%
7362   \headerps@out{%
7363     /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.

```

7364   /HyperBorder {1} def
7365   /H.V {pdf@hoff pdf@voff null} def
7366   /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

7367   /H.S {
7368     currentpoint
7369     HyperBorder sub
7370     /pdf@lly exch def
7371     dup 72 add /pdf@hoff exch def
7372     HyperBorder sub
7373     /pdf@llx exch def
7374   } def

```

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

```

7375   /H.L {
7376     2 sub
7377     /HyperBasePt exch def
7378     currentpoint
7379     HyperBasePt add HyperBorder add
7380     /pdf@ury exch def
7381     HyperBorder add
7382     /pdf@urx exch def
7383   } def

```

```

7384    /H.A {
7385        H.L
7386        currentpoint exch pop
7387        vsize 72 sub exch
7388        HyperBasePt add add
7389        /pdf@voff exch def
7390    } def
pdf@ury =  $Y_c + \text{HyperBorder}$ , pdf@urx =  $X_c + \text{HyperBorder}$ 
7391    /H.R {
7392        currentpoint
7393        HyperBorder add
7394        /pdf@ury exch def
7395        HyperBorder add
7396        /pdf@urx exch def
7397        currentpoint exch pop vsize 72 sub add
7398        /pdf@voff exch def
7399    } def
7400    systemdict /pdfmark known
7401    {
7402        userdict /?pdfmark systemdict /exec get put
7403    }{
7404        userdict /?pdfmark systemdict /pop get put
7405        userdict /pdfmark systemdict /cleartomark get put
7406    }
7407    ifelse
7408 }%
7409 }
7410 </vtexpdfmark>

```

45.11 Textures

At the suggestion of Jacques Distler (distler@golem.ph.utexas.edu), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about Textures behaviour. Ross Moore (ross@maths.mq.edu.au) has added modifications for better compatibility, and to support use of pdfmark.

Start by defining a macro that expands to the end-of-line character. This will be used to format the appearance of PostScript code, to enhance readability, and avoid excessively long lines which might otherwise become broken to bad places.

`\Hy@ps@CR` The macro `\Hy@ps@CR` contains the end-of-line character.

```

7411 <*textures>
7412 \begingroup
7413   \obeylines %
7414   \gdef\Hy@ps@CR{\noexpand
7415   }%
7416 \endgroup %

```

Textures has two types of `\special` command for inserting PostScript code directly into the dvi output. The ‘postscript’ way preserves TeX’s idea of where on the page the `\special` occurred, but it wraps the contents with a `save–restore` pair, and adjusts the user-space coordinate system for local drawing commands. The ‘rawpostscript’ way simply inserts code, without regard for the location on the page.

Thus, to put arbitrary PostScript coding at a fixed location requires using *both* `\special` constructions. It works by pushing the device-space coordinates onto the

operand stack, where they can be used to transform back to the correct user-space coordinates for the whole page, within a ‘rawpostscript’ \special.

```
7417 \def\literalps@out#1{%
7418   \special{postscript 0 0 transform}%
7419   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7420 }%
7421 %
```

The ‘prepostscript’ is a 3rd kind of \special, used for inserting definitions into the dictionaries, before page-building begins. These are to be available for use on all pages.

```
7422 \def\headerps@out#1{%
7423   \special{%
7424     prepostscript TeXdict begin\Hy@ps@CR
7425       #1\Hy@ps@CR
7426     end%
7427   }%
7428 }%
7429 %
```

To correctly support the pdfmark method, for embedding PDF definitions with .ps files in a non-intrusive way, an appropriate definition needs to be made *before* the file pdfmark.def is read. Other parameters are best set afterwards.

```
7430 \AtBeginDvi{%
7431   \headerps@out{%
7432     /betterpdfmark {%
7433       systemdict begin
7434         dup /BP eq
7435         {cleartomark gsave nulldevice []
7436           {dup /EP eq
7437             {cleartomark cleartomark grestore}
7438             {cleartomark}
7439             ifelse
7440           }ifelse
7441         end
7442       }def\Hy@ps@CR
7443       __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7444       systemdict /pdfmark known
7445       {
7446         userdict /?pdfmark systemdict /load get put
7447       }{
7448         userdict /?pdfmark systemdict /pop get put
7449       }
7450       ifelse
7451     }% end of \headerps@out
7452 }% end of \AtBeginDvi
7453 %
7454 \input{pdfmark.def}%
7455 %
7456 \ifx\@pdfproducer\relax
7457   \def\@pdfproducer{Textures + Distiller}%
7458 \fi
7459 \providecommand\@pdfborder{0 0 1}
7460 \providecommand*\@pdfborderstyle{}
7461 \providecommand\@pdfview{XYZ}
7462 \providecommand\@pdfviewparams{ H.V}
7463 %
```

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

```
7464 \headerps@out{%
```

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

```
7465 /vsize {\Hy@pageheight} def
7466 /DvipsToPDF {} def
7467 /PDFToDvips {} def
7468 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7469 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7470 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7471 /H.S {
7472   currentpoint
7473   HyperBorder add /pdf@lly exch def
7474   dup DvipsToPDF /pdf@hoff exch def
7475   HyperBorder sub /pdf@llx exch def
7476 } def\Hy@ps@CR
7477 /H.L {
7478   2 sub
7479   PDFToDvips /HyperBase exch def
7480   currentpoint
7481   HyperBase sub /pdf@ury exch def
7482   /pdf@urx exch def
7483 } def\Hy@ps@CR
7484 /H.A {
7485   H.L
7486   currentpoint exch pop
7487   vsize 72 sub exch DvipsToPDF
7488   HyperBase sub % baseline skip
7489   sub /pdf@voff exch def
7490 } def\Hy@ps@CR
7491 /H.R {
7492   currentpoint
7493   HyperBorder sub /pdf@ury exch def
7494   HyperBorder add /pdf@urx exch def
7495   currentpoint exch pop vsize 72 sub
7496   exch DvipsToPDF sub /pdf@voff exch def
7497 } def\Hy@ps@CR
7498 }

7499 \AfterBeginDocument{%
7500   \ifHy@colorlinks
7501     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7502   \fi
7503 }
```

Textures provides built-in support for HyperTeX specials so this part combines code from `hypertex.def` with what is established by loading `pdfmark.def`, or any other driver.

```
7504 \expandafter\let\expandafter\keepPDF@SetupDoc
7505   \csname PDF@SetupDoc\endcsname
7506 \def\PDF@SetupDoc{%
7507   \ifx\@baseurl\@empty
7508     \else
7509       \special{html:<base href="\@baseurl">}%
7510   \fi
```

```

7511 \keepPDF@SetupDoc
7512 }
7513 \def\hyper@anchor#1{%
7514 \Hy@SaveLastskip
7515 \begingroup
7516 \let\protect=\string
7517 \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7518 \endgroup
7519 \Hy@activeanchortrue
7520 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7521 \special{html:</a>}%
7522 \Hy@activeanchorfalse
7523 \Hy@RestoreLastskip
7524 }
7525 \def\hyper@anchorstart#1{%
7526 \Hy@SaveLastskip
7527 \begingroup
7528 \hyper@chars
7529 \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7530 \endgroup
7531 \Hy@activeanchortrue
7532 }
7533 \def\hyper@anchorend{%
7534 \special{html:</a>}%
7535 \Hy@activeanchorfalse
7536 \Hy@RestoreLastskip
7537 }
7538 \def\@urltype{url}
7539 \def\hyper@linkstart#1#2{%
7540 \expandafter\Hy@colorlink\csname @#1color\endcsname
7541 \def\Hy@tempa{#1}%
7542 \ifx\Hy@tempa\@urltype
7543 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7544 \else
7545 \begingroup
7546 \hyper@chars
7547 \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7548 \endgroup
7549 \fi
7550 }
7551 \def\hyper@linkend{%
7552 \special{html:</a>}%
7553 \Hy@endcolorlink
7554 }
7555 \def\hyper@linkfile#1#2#3{%
7556 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7557 }
7558 \def\hyper@linkurl#1#2{%
7559 \leavevmode
7560 \ifHy@raiselinks
7561 \setbox\@tempboxa=\color@hbox #1\color@endbox
7562 \@linkdim\dp\@tempboxa
7563 \lower\@linkdim\hbox{%
7564 \hyper@chars
7565 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7566 }%
7567 \Hy@colorlink\@urlcolor#1%

```

```

7568 \@linkdim\ht\@tempboxa
7569 \advance\@linkdim by -6.5\p@
7570 \raise\@linkdim\hbox{\special{html:</a>}}%
7571 \Hy@endcolorlink
7572 \else
7573 \begingroup
7574 \hyper@chars
7575 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7576 \Hy@colorlink\@urlcolor#1%
7577 \special{html:</a>}%
7578 \Hy@endcolorlink
7579 \endgroup
7580 \fi
7581 }
7582 \def\hyper@link#1#2#3{%
7583 \hyper@linkurl{#3}{\##2}%
7584 }
7585 \def\hyper@image#1#2{%
7586 \begingroup
7587 \hyper@chars
7588 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7589 \endgroup
7590 }
7591 </textures>

```

45.12 dvipsone

```

7592 % \subsection{dvipsone driver}
7593 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
7594 % |\special| commands.
7595 < *dvipsone>
7596 \providecommand\@pdfborder{0 0 65781}
7597 \providecommand*\@pdfborderstyle{}
7598 \input{pdfmark.def}%
7599 \ifx\@pdfproducer\relax
7600 \def\@pdfproducer{dvipsone + Distiller}
7601 \fi
7602 \def\literalps@out#1{\special{ps:#1}}%
7603 \def\headerps@out#1{\special{! #1}}%
7604 \def\PDF@FinishDoc{%
7605 \Hy@UseMaketitleInfos
7606 \special{PDF: Keywords \@pdfkeywords}%
7607 \special{PDF: Title \@pdftitle}%
7608 \special{PDF: Creator \@pdfcreator}%
7609 \ifx\@pdfcreationdate\@empty
7610 \else
7611 \special{PDF: CreationDate \@pdfcreationdate}%
7612 \fi
7613 \ifx\@pdfmoddate\@empty
7614 \else
7615 \special{PDF: ModDate \@pdfmoddate}%
7616 \fi
7617 \special{PDF: Author \@pdfauthor}%
7618 \ifx\@pdfproducer\relax
7619 \else
7620 \special{PDF: Producer \@pdfproducer}%
7621 \fi

```



```

7622 \special{PDF: Subject \@pdfsubject}%
7623 \Hy@DisableOption{pdfauthor}%
7624 \Hy@DisableOption{pdftitle}%
7625 \Hy@DisableOption{pdfsubject}%
7626 \Hy@DisableOption{pdfcreator}%
7627 \Hy@DisableOption{pdfcreationdate}%
7628 \Hy@DisableOption{pdfmoddate}%
7629 \Hy@DisableOption{pdfproducer}%
7630 \Hy@DisableOption{pdfkeywords}%
7631 }
7632 \def\PDF@SetupDoc{%
7633 \pdfmark{%
7634 pdfmark=/DOCVIEW,
7635 Page=\@pdfstartpage,
7636 View=\@pdfstartview,
7637 PageMode=/\@pdfpagemode
7638 }%
7639 \ifx\@pdfpagescrop\@empty
7640 \else
7641 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7642 \fi
7643 \edef\Hy@temp{%
7644 \ifHy@toolbar\else /HideToolbar true\fi
7645 \ifHy@menubar\else /HideMenubar true\fi
7646 \ifHy@windowui\else /HideWindowUI true\fi
7647 \ifHy@fitwindow /FitWindow true\fi
7648 \ifHy@centerwindow /CenterWindow true\fi
7649 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7650 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7651 \Hy@UseNameKey{Direction}\@pdfdirection
7652 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7653 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7654 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7655 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7656 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7657 \Hy@UseNameKey{Duplex}\@pdfduplex
7658 \ifx\@pdfpicktraybypdfsize\@empty
7659 \else
7660 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7661 \fi
7662 \ifx\@pdfprintpagerange\@empty
7663 \else
7664 /PrintPageRange[\@pdfprintpagerange]%
7665 \fi
7666 \ifx\@pdfnumcopies\@empty
7667 \else
7668 /NumCopies \@pdfnumcopies
7669 \fi
7670 }%
7671 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7672 \pdfmark{%
7673 pdfmark=/PUT,%
7674 Raw={%
7675 \string{Catalog\string} <<
7676 \ifx\Hy@temp\@empty
7677 \else
7678 /ViewerPreferences<<\Hy@temp>>%

```

```

7679      \fi
7680      \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7681      \ifx\@pdflang\@empty
7682      \else
7683        /Lang(\@pdflang)%
7684      \fi
7685      \ifx\@baseurl\@empty
7686      \else
7687        /URI << /Base (\Hy@pstringB) >>%
7688      \fi
7689    >>%
7690  }%
7691 }%
7692 }
7693 \providecommand\@pdfview{XYZ}
7694 \providecommand\@pdfviewparams{ %
7695   gsave revscl currentpoint grestore
7696   72 add exch pop null exch null
7697 }

```

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

```

7698 \special{headertext=

```

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

```

7699 /DvipsToPDF { 65781 div } def
7700 /PDFToDvips { 65781 mul } def
7701 /HyperBorder { 1 PDFToDvips } def
7702 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7703 /H.S {
7704   currentpoint
7705   HyperBorder add /pdf@lly exch def
7706   dup DvipsToPDF /pdf@hoff exch def
7707   HyperBorder sub /pdf@llx exch def
7708 } def
7709 /H.L {
7710   2 sub
7711   PDFToDvips /HyperBase exch def
7712   currentpoint
7713   HyperBase sub /pdf@ury exch def
7714   /pdf@urx exch def
7715 } def
7716 /H.A {
7717   H.L
7718   currentpoint exch pop
7719   HyperBase sub % baseline skip
7720   DvipsToPDF /pdf@voff exch def
7721 } def
7722 /H.R {
7723   currentpoint
7724   HyperBorder sub /pdf@ury exch def
7725   HyperBorder add /pdf@urx exch def
7726   currentpoint exch pop DvipsToPDF /pdf@voff exch def
7727 } def
7728 systemdict

```

```

7729 /pdfmark known
7730 {
7731   userdict /?pdfmark /exec load put
7732 }{
7733   userdict /?pdfmark /pop load put
7734   userdict /pdfmark systemdict /cleartomark get put
7735 }
7736 ifelse
7737 }
7738 </dvipsone>
7739 <*dvipdf>
7740 \def\literalps@out#1{\special{pdf: #1}}%
7741 \providecommand\@pdfborder{0 0 1}
7742 \providecommand*\@pdfborderstyle{}
7743 </dvipdf>

```

45.13 TeX4ht

```

7744 <*tex4ht>
7745 \@ifpackageloaded{tex4ht}
7746 {\typeout{hyperref tex4ht: tex4ht already loaded}}%
7747 {\RequirePackage[hxetex]{tex4ht}}
7748 \def\PDF@FinishDoc{}
7749 \def\PDF@SetupDoc{%
7750   \ifx\@baseurl\@empty
7751   \else
7752     \special{t4ht=<base href="\@baseurl">}%
7753   \fi
7754 }
7755 \def\hyper@anchor#1{%
7756   \Hy@SaveLastskip
7757   \begingroup
7758     \let\protect=\string
7759     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
7760   \endgroup
7761   \Hy@activeanchortrue
7762   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7763   \special{t4ht=</a>}%
7764   \Hy@activeanchorfalse
7765   \Hy@RestoreLastskip
7766 }
7767 \def\hyper@anchorstart#1{%
7768   \Hy@SaveLastskip
7769   \begingroup
7770     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
7771   \endgroup
7772   \Hy@activeanchortrue
7773 }
7774 \def\hyper@anchorend{%
7775   \special{t4ht=</a>}%
7776   \Hy@activeanchorfalse
7777   \Hy@RestoreLastskip
7778 }
7779 \def\@urltype{url}
7780 \def\hyper@linkstart#1#2{%
7781   \expandafter\Hy@colorlink\csname @#1color\endcsname
7782   \def\Hy@tempa{#1}%
7783   \ifx\Hy@tempa\@urltype

```

```

7784 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
7785 \else
7786 {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
7787 \fi
7788 }
7789 \def\hyper@linkend{%
7790 \special{t4ht=</a>}}%
7791 \Hy@endcolorlink
7792 }
7793 \def\hyper@linkfile#1#2#3{%
7794 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7795 }
7796 \def\hyper@linkurl#1#2{%
7797 \leavevmode
7798 \ifHy@raiselinks
7799 \setbox\@tempboxa=\color@hbox #1\color@endbox
7800 \@linkdim\dp\@tempboxa
7801 \lower\@linkdim\hbox{%
7802 \begingroup
7803 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
7804 \endgroup
7805 }%
7806 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7807 \@linkdim\ht\@tempboxa
7808 \advance\@linkdim by -6.5\p@
7809 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
7810 \else
7811 \begingroup
7812 \hyper@chars
7813 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
7814 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7815 \special{t4ht=</a>}}%
7816 \endgroup
7817 \fi
7818 }
7819 \def\hyper@link#1#2#3{%
7820 \hyper@linkurl{#3}{\##2}%
7821 }
7822 \def\hyper@image#1#2{%
7823 \begingroup
7824 \hyper@chars
7825 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
7826 \endgroup
7827 }
7828 \let\autoref\ref
7829 \ifx \rEfLiNK \UnDef
7830 \def\rEfLiNK #1#2{#2}%
7831 \fi
7832 \def\backref#1{}
7833 </tex4ht>
7834 <*tex4htcfg>
7835 \IfFileExists{\jobname.cfg}{\endinput}{}
7836 \Preamble{html}
7837 \begin{document}
7838 \EndPreamble
7839 \def\TeX{TeX}
7840 \def\OMEGA{\Omega}

```

```

7841 \def\LaTeX{La\TeX}
7842 \def\LaTeXe{\LaTeX2e}
7843 \def\TeX{e-\TeX}
7844 \def\MF{Metafont}
7845 \def\MP{Metapost}
7846 \</tex4htcfg>

```

46 Driver-specific form support

46.1 pdfmarks

```

7847 <*pdfmark>
7848 \long\def\@Form[#1]{%
7849 \AtBeginDvi{%
7850 \headerps@out{%
7851 [ /_objdef {pdfDocEncoding}
7852 /type /dict
7853 /OBJ pdfmark
7854 [ {pdfDocEncoding}
7855 << /Type /Encoding
7856 /Differences [ 24 /breve /caron /circumflex /dotaccent
7857 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7858 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7859 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7860 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7861 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7862 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
7863 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
7864 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
7865 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
7866 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
7867 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
7868 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
7869 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
7870 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
7871 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /cedilla
7872 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
7873 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
7874 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
7875 /yacute /thorn /ydieresis ]
7876 >>
7877 /PUT pdfmark
7878 [ /_objdef {ZaDb}
7879 /type /dict
7880 /OBJ pdfmark
7881 [ {ZaDb}
7882 <<
7883 /Type /Font
7884 /Subtype /Type1
7885 /Name /ZaDb
7886 /BaseFont /ZapfDingbats
7887 >>
7888 /PUT pdfmark
7889 [ /_objdef {Helv}
7890 /type /dict
7891 /OBJ pdfmark
7892 [ {Helv}
7893 <<

```

```

7894 /Type /Font
7895 /Subtype /Type1
7896 /Name /Helv
7897 /BaseFont /Helvetica
7898 /Encoding {pdfDocEncoding}
7899 >>
7900 /PUT pdfmark
7901 [ /_objdef {aform}
7902 /type /dict
7903 /OBJ pdfmark
7904 [ /_objdef {afields}
7905 /type /array
7906 /OBJ pdfmark
7907 {
7908   [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
7909   1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
7910   [/EP pdfmark
7911   [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
7912   1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
7913   [/EP pdfmark
7914   [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
7915   100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
7916   lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
7917   lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7918   /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
7919   [/EP pdfmark
7920   [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
7921   250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
7922   96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
7923   lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7924   /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
7925   [/EP pdfmark
7926 } ?pdfmark
7927 [ {aform}
7928 <<
7929   /Fields {afields}
7930   /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
7931   /DA (/Helv 10 Tf 0 g )
7932   /CO {corder}
7933   /NeedAppearances true
7934 >>
7935 /PUT pdfmark
7936 [ \string{Catalog\string}
7937 <<
7938   /AcroForm {aform}
7939 >>
7940 /PUT pdfmark
7941 [ /_objdef {corder} /type /array /OBJ pdfmark   % dps
7942 }}%
7943 \setkeys{Form}{#1}%
7944 }
7945 \def\@endForm{}
7946 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7947   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
7948 }
7949 \def\@TextField[#1]#2{% parameters, label
7950   \def\Fld@name{#2}%

```

```

7951 \def\Fld@default{}%
7952 \let\Fld@value\@empty
7953 \def\Fld@width{\DefaultWidthofText}%
7954 \def\Fld@height{\DefaultHeightofText}%
7955 \ifFld@multiline
7956   \begingroup
7957     \dimen@=\DefaultHeightofText
7958     \dimen@=4\dimen@
7959     \edef\x{\endgroup
7960       \def\noexpand\Fld@height{\the\dimen@}%
7961     }%
7962   \x
7963 \fi
7964 \bgroup
7965   \Field@toks={ }%
7966   \setkeys{Field}{#1}%
7967   \ifFld@hidden\def\Fld@width{1sp}\fi
7968   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
7969   \LayoutTextField{#2}{%
7970     \Hy@escapeform\PDFForm@Text
7971     \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
7972       pdfmark=/ANN,Raw={\PDFForm@Text}%
7973     }%
7974   }%
7975 \egroup
7976 }
7977 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7978   \def\Fld@name{#2}%
7979   \def\Fld@default{}%
7980   \def\Fld@width{\DefaultWidthofChoiceMenu}%
7981   \def\Fld@height{\DefaultHeightofChoiceMenu}%
7982   \bgroup
7983     \Fld@menulength=0
7984     \@tempdima\z@
7985     \@for\@curropt:=#3\do{%
7986       \expandafter\Fld@checkequals\@curropt==\%
7987       \Hy@StepCount\Fld@menulength
7988       \settowidth{\@tempdimb}{\@currDisplay}%
7989       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
7990     }%
7991     \advance\@tempdima by 15\p@
7992     \Field@toks={ }%
7993     \setkeys{Field}{#1}%
7994     \ifFld@hidden\def\Fld@width{1sp}\fi
7995     \LayoutChoiceField{#2}{%
7996       \ifFld@radio
7997         \@@Radio{#3}%
7998       \else
7999         {%
8000           \ifdim\Fld@width<\@tempdima
8001             \ifdim\@tempdima<1cm\@tempdima1cm\fi
8002             \edef\Fld@width{\the\@tempdima}%
8003           \fi
8004           \def\Fld@flags{}%
8005           \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8006           \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8007           \ifx\Fld@flags\@empty

```

```

8008         \@tempdima=\the\Fld@menulength\Fld@charsize
8009         \advance\@tempdima by \Fld@borderwidth bp
8010         \advance\@tempdima by \Fld@borderwidth bp
8011         \edef\Fld@height{\the\@tempdima}%
8012     \fi
8013     \@@ListBox{#3}%
8014 }%
8015 \fi
8016 }%
8017 \egroup
8018 }
8019 \def\@@Radio#1{%
8020     \Fld@listcount=0
8021     \@for\@curropt:=#1\do{%
8022         \expandafter\Fld@checkequals\@curropt==\%
8023         \Hy@StepCount\Fld@listcount
8024         \@currDisplay\space
8025         \Hy@escapeform\PDFForm@Radio
8026         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
8027             pdfmark=/ANN,%
8028             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
8029         } % deliberate space between radio buttons
8030     }%
8031 }
8032 \newcount\Fld@listcount
8033 \def\@@ListBox#1{%
8034     \Choice@toks={ }%
8035     \Fld@listcount=0
8036     \@for\@curropt:=#1\do{%
8037         \expandafter\Fld@checkequals\@curropt==\%
8038         \Hy@StepCount\Fld@listcount
8039         \edef\@processme{%
8040             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8041         }\@processme
8042     }%
8043     \Hy@escapeform\PDFForm@List
8044     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
8045         pdfmark=/ANN,Raw={\PDFForm@List}%
8046     }%
8047 }
8048 \def\@PushButton[#1]#2{% parameters, label
8049     \def\Fld@name{#2}%
8050     \bgroup
8051         \Field@toks={ }%
8052         \setkeys{Field}{#1}%
8053         \ifFld@hidden\def\Fld@width{1sp}\fi
8054         \LayoutPushButtonField{%
8055             \Hy@escapeform\PDFForm@Push
8056             \pdfmark[\MakeButtonField{#2}]{%
8057                 pdfmark=/ANN,Raw={\PDFForm@Push}%
8058             }%
8059         }%
8060     \egroup
8061 }
8062 \def\@Submit[#1]#2{%
8063     \Field@toks={ }%
8064     \def\Fld@width{\DefaultWidthofSubmit}%

```



```

8065 \def\Fld@height{\DefaultHeightofSubmit}%
8066 \bgroup
8067   \def\Fld@name{Submit}%
8068   \setkeys{Field}{#1}%
8069   \ifFld@hidden\def\Fld@width{1sp}\fi
8070   \Hy@escapeform\PDFForm@Submit
8071   \pdfmark[\MakeButtonField{#2}]{%
8072     pdfmark=/ANN,%
8073     Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
8074   }%
8075 \egroup
8076 }
8077 \def\@Reset[#1]#2{%
8078   \Field@toks={ }%
8079   \def\Fld@width{\DefaultWidthofReset}%
8080   \def\Fld@height{\DefaultHeightofReset}%
8081   \bgroup
8082     \def\Fld@name{Reset}%
8083     \setkeys{Field}{#1}%
8084     \ifFld@hidden\def\Fld@width{1sp}\fi
8085     \Hy@escapeform\PDFForm@Reset
8086     \pdfmark[\MakeButtonField{#2}]{%
8087       pdfmark=/ANN,Raw={\PDFForm@Reset}%
8088     }%
8089   \egroup
8090 }
8091 \def\@CheckBox[#1]#2{% parameters, label
8092   \def\Fld@name{#2}%
8093   \def\Fld@default{0}%
8094   \bgroup
8095     \def\Fld@width{\DefaultWidthofCheckBox}%
8096     \def\Fld@height{\DefaultHeightofCheckBox}%
8097     \Field@toks={ }%
8098     \setkeys{Field}{#1}%
8099     \ifFld@hidden\def\Fld@width{1sp}\fi
8100     \LayoutCheckField{#2}{%
8101       \Hy@escapeform\PDFForm@Check
8102       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
8103         pdfmark=/ANN,Raw={\PDFForm@Check}%
8104       }%
8105     }%
8106   \egroup
8107 }
8108 \pdfmark

```

46.2 dvipdf

```

8109 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
8110 \def\@endForm{}
8111 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8112   \typeout{Sorry, dvipdf does not support FORM gauges}%
8113 }
8114 }
8115 \def\@TextField[#1]#2{% parameters, label
8116   \typeout{Sorry, dvipdf does not support FORM text fields}%
8117 }
8118 \def\@CheckBox[#1]#2{% parameters, label
8119   \typeout{Sorry, dvipdf does not support FORM checkboxes}%

```

```

8120 }
8121 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8122 \typeout{Sorry, dvipdf does not support FORM choice menus}%
8123 }
8124 \def\@PushButton[#1]#2{% parameters, label
8125 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
8126 }
8127 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8128 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8129 </dvipdf>

```

46.3 HyperTeX

```

8130 <*hypertex>
8131 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
8132 \def\@endForm{}
8133 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8134 \typeout{Sorry, HyperTeX does not support FORM gauges}%
8135 }
8136 \def\@TextField[#1]#2{% parameters, label
8137 \typeout{Sorry, HyperTeX does not support FORM text fields}%
8138 }
8139 \def\@CheckBox[#1]#2{% parameters, label
8140 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
8141 }
8142 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8143 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
8144 }
8145 \def\@PushButton[#1]#2{% parameters, label
8146 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
8147 }
8148 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8149 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8150 </hypertex>

```

46.4 TeX4ht

```

8151 <*tex4ht>
8152 \def\@Form[#1]{%
8153 \setkeys{Form}{#1}%
8154 \HCode{<form action="\Form@action" method="\Form@method">%
8155 }
8156 \def\@endForm{\HCode{</form>}}
8157 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8158 \typeout{Sorry, TeX4ht does not support gauges}%
8159 }
8160 \def\@TextField[#1]#2{% parameters, label
8161 \let\Hy@reserved@a\@empty
8162 \def\Fld@name{#2}%
8163 \def\Fld@default{}%
8164 \bgroup
8165 \Field@toks={ }%
8166 \setkeys{Field}{#1}%
8167 \HCode{<label for="\Fld@name">#2</label>}%
8168 \ifFld@password
8169 \@@PasswordField
8170 \else
8171 \@@TextField
8172 \fi

```

```

8173 \egroup
8174 }
8175 \def\@@PasswordField{%
8176   \HCode{%
8177     <input type="password"
8178       id="\Fld@name"
8179       name="\Fld@name"
8180       \ifFld@hidden type="hidden"\fi
8181       value="\Fld@default"
8182       \the\Field@toks
8183     >%
8184   }%
8185 }
8186 \def\@@TextField{%
8187   \ifFld@multiline
8188     \HCode{<textarea
8189       \ifFld@readonly readonly \fi
8190       id="\Fld@name"
8191       name="\Fld@name"
8192       \ifFld@hidden type="hidden"\fi
8193       \the\Field@toks>%
8194   }%
8195   \Fld@default
8196   \HCode{</textarea>}%
8197 \else
8198   \HCode{<input type="text"
8199     \ifFld@readonly readonly \fi
8200     id="\Fld@name"
8201     name="\Fld@name"
8202     \ifFld@hidden type="hidden"\fi
8203     value="\Fld@default" \the\Field@toks>
8204   }%
8205 \fi
8206 }
8207 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8208   \def\Fld@name{#2}%
8209   \def\Fld@default{#3}%
8210   \let\Hy@reserved@a\relax
8211   \bgroup
8212   \expandafter\Fld@findlength#3\\%
8213   \Field@toks={ }%
8214   \setkeys{Field}{#1}%
8215   #2%
8216   \ifFld@radio
8217     \expandafter\@@Radio#3\\%
8218   \else
8219     \expandafter\@@Menu#3\\%
8220   \fi
8221 \egroup
8222 }
8223 \def\Fld@findlength#1\\{%
8224   \Fld@menulength=0
8225   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
8226 }
8227 \def\@@Menu#1\\{%
8228   \HCode{<select size="\the\Fld@menulength"
8229     name="\Fld@name" \the\Field@toks>}%

```

```

8230 \@for\@curropt:=#1\do{%
8231   \expandafter\Fld@checkequals\@curropt==\%
8232   \HCode{<option
8233     \ifx\@curropt\Fld@default selected \fi
8234     value="\@currValue">\@currDisplay</option>%
8235   }%
8236 }%
8237 \HCode{</select>}%
8238 }
8239 \def\@@Radio#1\{%
8240   \@for\@curropt:=#1\do{%
8241     \expandafter\Fld@checkequals\@curropt==\%
8242     \HCode{<input type="radio"
8243       \ifx\@curropt\Fld@default checked \fi
8244       name="\Fld@name"
8245       value="\@currValue"
8246       \the\Field@toks>%
8247     }%
8248     \@currDisplay
8249   }%
8250 }
8251 \def\@PushButton[#1]#2{% parameters, label
8252   \def\Fld@name{#2}%
8253   \bgroup
8254     \Field@toks={ }%
8255     \setkeys{Field}{#1}%
8256     \HCode{<input type="button"
8257       name="\Fld@name"
8258       value="#2"
8259       \the\Field@toks>%
8260     }%
8261     \HCode{</button>}%
8262   \egroup
8263 }
8264 \def\@Submit[#1]#2{%
8265   \HCode{<button type="submit">#2</button>}%
8266 }
8267 \def\@Reset[#1]#2{%
8268   \HCode{<button type="reset">#2</button>}%
8269 }
8270 \def\@CheckBox[#1]#2{% parameters, label
8271   \let\Hy@reserved@a\@empty
8272   \def\Fld@name{#2}%
8273   \def\Fld@default{0}%
8274   \bgroup
8275     \Field@toks={ }%
8276     \setkeys{Field}{#1}%
8277     \HCode{<input type="checkbox"
8278       \ifFld@checked checked \fi
8279       \ifFld@disabled disabled \fi
8280       \ifFld@readonly readonly \fi
8281       name="\Fld@name"
8282       \ifFld@hidden type="hidden"\fi
8283       value="\Fld@default"
8284       \the\Field@toks>%
8285     #2%
8286   }%

```

```

8287 \egroup
8288 }
8289 </tex4ht>

```

46.5 pdfTeX

```

8290 <*pdfTeX>
8291 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8292 \typeout{Sorry, pdfTeX does not support FORM gauges}%
8293 }
8294 \def\MakeFieldObject#1#2{\sbox0{#1}%
8295 \immediate\pdfxform0 %
8296 \expandafter\edef\csname #2Object\endcsname{%
8297 \the\pdflastxform\space 0 R%
8298 }%
8299 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
8300 }%
8301 \def\@Form[#1]{%
8302 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
8303 \setkeys{Form}{#1}%
8304 \ifnum\pdfTeXversion>13
8305 \pdfrefobj\OBJ@pdfdocencoding
8306 \pdfrefobj\OBJ@ZaDb
8307 \pdfrefobj\OBJ@Helv
8308 \pdfrefobj\OBJ@acroform
8309 \fi
8310 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8311 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

8312 \begingroup
8313 \fontfamily{pzd}%
8314 \fontencoding{U}%
8315 \fontseries{m}%
8316 \fontshape{n}%
8317 \selectfont
8318 \char123 %
8319 \endgroup
8320 }{Ding}%
8321 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8322 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8323 }
8324 \def\@endForm{}
8325 \def\@TextField[#1]#2{% parameters, label
8326 \def\Fld@name{#2}%
8327 \def\Fld@default{}%
8328 \let\Fld@value\@empty
8329 \def\Fld@width{\DefaultWidthofText}%
8330 \def\Fld@height{\DefaultHeightofText}%
8331 \ifFld@multiline
8332 \begingroup
8333 \dimen@=\DefaultHeightofText
8334 \dimen@=4\dimen@
8335 \edef\x{\endgroup
8336 \def\noexpand\Fld@height{\the\dimen@}%
8337 }%
8338 \x
8339 \fi
8340 \bgroup

```

```

8341 \Field@toks={ }%
8342 \setkeys{Field}{#1}%
8343 \ifFld@hidden\def\Fld@width{1sp}\fi
8344 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
8345 \LayoutTextField{#2}{%
8346 \Hy@escapeform\PDFForm@Text
8347 \pdfstartlink user {\PDFForm@Text}\relax
8348 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8349 }%
8350 \egroup
8351 }
8352 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8353 \def\Fld@name{#2}%
8354 \def\Fld@default{}%
8355 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8356 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8357 \bgroup
8358 \Fld@menulength=0
8359 \@tempdima\z@
8360 \@for\@curropt:=#3\do{%
8361 \expandafter\Fld@checkequals\@curropt==\%
8362 \Hy@StepCount\Fld@menulength
8363 \settowidth{\@tempdimb}{\@currDisplay}%
8364 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8365 }%
8366 \advance\@tempdima by 15\p@
8367 \Field@toks={ }%
8368 \setkeys{Field}{#1}%
8369 \ifFld@hidden\def\Fld@width{1sp}\fi
8370 \LayoutChoiceField{#2}{%
8371 \ifFld@radio
8372 \@@Radio{#3}%
8373 \else
8374 {%
8375 \ifdim\Fld@width<\@tempdima
8376 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8377 \edef\Fld@width{\the\@tempdima}%
8378 \fi
8379 \def\Fld@flags{}%
8380 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8381 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8382 \ifx\Fld@flags\empty
8383 \@tempdima=\the\Fld@menulength\Fld@charsize
8384 \advance\@tempdima by \Fld@borderwidth bp
8385 \advance\@tempdima by \Fld@borderwidth bp
8386 \edef\Fld@height{\the\@tempdima}%
8387 \fi
8388 \@@ListBox{#3}%
8389 }%
8390 \fi
8391 }%
8392 \egroup
8393 }
8394 \def\@@Radio#1{%
8395 \Fld@listcount=0
8396 \@for\@curropt:=#1\do{%
8397 \expandafter\Fld@checkequals\@curropt==\%

```

```

8398 \Hy@StepCount\Fld@listcount
8399 \@currDisplay\space
8400 \leavevmode
8401 \Hy@escapeform\PDFForm@Radio
8402 \pdfstartlink user {%
8403 \PDFForm@Radio
8404 /AP <<
8405 /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.

```

8406 /\@currValue\space \DingObject
8407 >>
8408 >>
8409 }%
8410 \relax
8411 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8412 \space% deliberate space between radio buttons
8413 }%
8414 }
8415 \newcount\Fld@listcount
8416 \def\@@ListBox#1{%
8417 \Choice@toks={ }%
8418 \Fld@listcount=0
8419 \@for\@curropt:=#1\do{%
8420 \expandafter\Fld@checkequals\@curropt==\\%
8421 \Hy@StepCount\Fld@listcount
8422 \edef\@processme{%
8423 \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8424 }\@processme
8425 }%
8426 \leavevmode
8427 \Hy@escapeform\PDFForm@List
8428 \pdfstartlink user {\PDFForm@List}\relax
8429 \MakeChoiceField{\Fld@width}{\Fld@height}%
8430 \pdfendlink
8431 }
8432 \def\@PushButton[#1]#2{% parameters, label
8433 \def\Fld@name{#2}%
8434 \bgroup
8435 \Field@toks={ }%
8436 \setkeys{Field}{#1}%
8437 \ifFld@hidden\def\Fld@width{1sp}\fi
8438 \LayoutPushButtonField{%
8439 \leavevmode
8440 \Hy@escapeform\PDFForm@Push
8441 \pdfstartlink user {\PDFForm@Push}\relax
8442 \MakeButtonField{#2}%
8443 \pdfendlink
8444 }%
8445 \egroup
8446 }
8447 \def\@Submit[#1]#2{%
8448 \Field@toks={ }%
8449 \def\Fld@width{\DefaultWidthofSubmit}%
8450 \def\Fld@height{\DefaultHeightofSubmit}%
8451 \bgroup

```

```

8452     \def\Fld@name{Submit}%
8453     \setkeys{Field}{#1}%
8454     \ifFld@hidden\def\Fld@width{1sp}\fi
8455     \leavevmode
8456     \Hy@escapeform\PDFForm@Submit
8457     \pdfstartlink user {%
8458         \PDFForm@Submit
8459         /AP << /N \SubmitObject\space /D \SubmitPObject >>
8460     }%
8461     \relax
8462     \MakeButtonField{#2}%
8463     \pdfendlink
8464 \egroup
8465 }
8466 \def\@Reset[#1]#2{%
8467     \Field@toks={ }%
8468     \def\Fld@width{\DefaultWidthofReset}%
8469     \def\Fld@height{\DefaultHeightofReset}%
8470     \bgroup
8471         \def\Fld@name{Reset}%
8472         \setkeys{Field}{#1}%
8473         \ifFld@hidden\def\Fld@width{1sp}\fi
8474         \leavevmode
8475         \Hy@escapeform\PDFForm@Reset
8476         \pdfstartlink user {\PDFForm@Reset}\relax
8477         \MakeButtonField{#2}%
8478         \pdfendlink
8479     \egroup
8480 }
8481 \def\@CheckBox[#1]#2{% parameters, label
8482     \def\Fld@name{#2}%
8483     \def\Fld@default{0}%
8484     \bgroup
8485         \def\Fld@width{\DefaultWidthofCheckBox}%
8486         \def\Fld@height{\DefaultHeightofCheckBox}%
8487         \Field@toks={ }%
8488         \setkeys{Field}{#1}%
8489         \ifFld@hidden\def\Fld@width{1sp}\fi
8490         \LayoutCheckField{#2}{%
8491             \Hy@escapeform\PDFForm@Check
8492             \pdfstartlink user {\PDFForm@Check}\relax
8493             \MakeCheckField{\Fld@width}{\Fld@height}%
8494             \pdfendlink
8495         }%
8496     \egroup
8497 }
8498 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8499 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8500 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8501 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8502 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8503 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
8504 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
8505 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8506 /logicalnot /.notdef /registered /macron /degree /plusminus
8507 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8508 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192

```



```

8509 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8510 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8511 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8512 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8513 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8514 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8515 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8516 /ograve /oacute /ocircumflex /otilde /odieresis /divide /oslash
8517 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8518 }
8519 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
8520 \pdfobj {
8521   <<
8522     /Type /Font
8523     /Subtype /Type1
8524     /Name /ZaDb
8525     /BaseFont /ZapfDingbats
8526   >>
8527 }
8528 \edef\OBJ@ZaDb{\the\pdflastobj}
8529 \pdfobj { <<
8530   /Type /Font
8531   /Subtype /Type1
8532   /Name /Helv
8533   /BaseFont /Helvetica
8534   /Encoding \OBJ@pdfdocencoding\space 0 R
8535   >>
8536 }
8537 \edef\OBJ@Helv{\the\pdflastobj}
8538 \pdfobj {
8539   <<
8540     /Fields []
8541     /DR <<
8542       /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8543     >>
8544     /DA (/Helv 10 Tf 0 g )
8545     /NeedAppearances true
8546   >>
8547 }
8548 \edef\OBJ@acroform{\the\pdflastobj}
8549 \pdfobj {

```

46.6 dvipdfm

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

```
8550 \*dvipdfm
```

\@Gauge

```

8551 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8552   \typeout{Sorry, dvipdfm does not support FORM gauges}%
8553 }

```

\@Form

```

8554 \def\@Form[#1]{%
8555   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8556   \setkeys{Form}{#1}%

```

```

8557 \@pdfm@mark{obj @afields [ ]}%
8558 \@pdfm@mark{obj @corder [ ]}%
8559 \@pdfm@mark{%
8560     obj @aform <<
8561         /Fields @afields
8562         /DR << /Font << /ZaDb @0BJZaDb /Helv @0BJHelv >> >>
8563         /DA (/Helv 10 Tf 0 g )
8564         /CO @corder
8565         /NeedAppearances true
8566     >>%
8567 }%
8568 \@pdfm@mark{put @catalog << /AcroForm @aform >>}%
8569 }

\@endForm

8570 \def\@endForm{}

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

8571 \def\dvipdfm@setdim{%
8572     height \the\ht\pdfm@box\space
8573     width \the\wd\pdfm@box\space
8574     depth \the\dp\pdfm@box\space
8575 }

\@TextField

8576 \def\@TextField[#1]#2{% parameters, label
8577     \def\Fld@name{#2}%
8578     \def\Fld@default{}%
8579     \let\Fld@value\@empty
8580     \def\Fld@width{\DefaultWidthofText}%
8581     \def\Fld@height{\DefaultHeightofText}%
8582     \ifFld@multiline
8583         \begingroup
8584             \dimen@=\DefaultHeightofText
8585             \dimen@=4\dimen@
8586             \edef\x{\endgroup
8587                 \def\noexpand\Fld@height{\the\dimen@}%
8588             }%
8589         \x
8590     \fi
8591     \bgroup
8592         \Field@toks={ }%
8593         \setkeys{Field}{#1}%
8594         \ifFld@hidden\def\Fld@width{1sp}\fi
8595         \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8596         \setbox\pdfm@box=\hbox{%
8597             \MakeTextField{\Fld@width}{\Fld@height}%
8598         }%
8599         \LayoutTextField{#2}{%
8600             \Hy@escapeform\PDFForm@Text
8601             \@pdfm@mark{%
8602                 ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8603             }%
8604         }%
8605         \unhbox\pdfm@box
8606         \@pdfm@mark{put @afields @\Fld@name}% record in @afields array
8607     \egroup

```

```

8608 }

\@ChoiceMenu

8609 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8610   \def\Fld@name{#2}%
8611   \def\Fld@default{}%
8612   \def\Fld@width{\DefaultWidthofChoiceMenu}%
8613   \def\Fld@height{\DefaultHeightofChoiceMenu}%
8614   \bgroup
8615     \Fld@menulength=0
8616     \@tempdima\z@
8617     \for\@curropt:=#3\do{%
8618       \expandafter\Fld@checkequals\@curropt==\%
8619       \Hy@StepCount\Fld@menulength
8620       \settowidth{\@tempdimb}{\@currDisplay}%
8621       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8622     }%
8623     \advance\@tempdima by 15\p@
8624     \Field@toks={ }%
8625     \setkeys{Field}{#1}%
8626     \ifFld@hidden\def\Fld@width{1sp}\fi
8627     \LayoutChoiceField{#2}{%
8628       \ifFld@radio
8629         \@@Radio{#3}%
8630       \else
8631         {%
8632           \ifdim\Fld@width<\@tempdima
8633             \ifdim\@tempdima<1cm\@tempdima1cm\fi
8634             \edef\Fld@width{\the\@tempdima}%
8635           \fi
8636           \def\Fld@flags{%
8637             \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8638             \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8639             \ifx\Fld@flags\@empty
8640               \@tempdima=\the\Fld@menulength\Fld@charsize
8641               \advance\@tempdima by \Fld@borderwidth bp
8642               \advance\@tempdima by \Fld@borderwidth bp
8643               \edef\Fld@height{\the\@tempdima}%
8644             \fi
8645             \@@ListBox{#3}%
8646           }%
8647         \fi
8648       }%
8649     \egroup
8650 }

\@@Radio

8651 \def\@@Radio#1{%
8652   \Fld@listcount=0
8653   \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8654   \for\@curropt:=#1\do{%
8655     \expandafter\Fld@checkequals\@curropt==\%
8656     \Hy@StepCount\Fld@listcount
8657     \@currDisplay\space
8658     \leavevmode
8659     \Hy@escapeform\PDFForm@Radio
8660     \@pdfm@mark{%

```

```

8661      ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8662      \dvipdfm@setdim
8663      <<
8664      \PDFForm@Radio\space
8665      /AP << /N << /\@currValue /null >> >>
8666      >>%
8667      }%
8668      \unhcopy\pdfm@box\space% deliberate space between radio buttons
8669      \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8670      }%
8671      }

\Fld@listcount

8672 \newcount\Fld@listcount

@@@Listbox

8673 \def\@@Listbox#1{%
8674   \Choice@toks={ }%
8675   \Fld@listcount=0
8676   \@for\@curropt:=#1\do{%
8677     \expandafter\Fld@checkequals\@curropt==\%
8678     \Hy@StepCount\Fld@listcount
8679     \edef\@processme{%
8680       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8681     }\@processme
8682   }%
8683   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8684   \leavevmode
8685   \Hy@escapeform\PDFForm@List
8686   \@pdfm@mark{%
8687     ann @\Fld@name\space\dvipdfm@setdim
8688     << \PDFForm@List >>%
8689   }%
8690   \unhbox\pdfm@box
8691   \@pdfm@mark{put @afields @\Fld@name}%
8692   }

\@PushButton

8693 \def\@PushButton[#1]#2{% parameters, label
8694   \def\Fld@name{#2}%
8695   \bgroup
8696   \Field@toks={ }%
8697   \setkeys{Field}{#1}%
8698   \ifFld@hidden\def\Fld@width{1sp}\fi
8699   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8700   \LayoutPushButtonField{%
8701     \leavevmode
8702     \Hy@escapeform\PDFForm@Push
8703     \@pdfm@mark{%
8704       ann @\Fld@name\space\dvipdfm@setdim
8705       << \PDFForm@Push >>%
8706     }%
8707   }%
8708   \unhbox\pdfm@box
8709   \@pdfm@mark{put @afields @\Fld@name}%
8710   \egroup
8711   }

```

\@Submit

```
8712 \def\@Submit[#1]#2{%
8713   \Field@toks={ }%
8714   \def\Fld@width{\DefaultWidthofSubmit}%
8715   \def\Fld@height{\DefaultHeightofSubmit}%
8716   \bgroup
8717     \def\Fld@name{Submit}%
8718     \setkeys{Field}{#1}%
8719     \ifFld@hidden\def\Fld@width{1sp}\fi
8720     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8721     \leavevmode
8722     \Hy@escapeform\PDFForm@Submit
8723     \@pdfm@mark{%
8724       ann @\Fld@name\space\dvipdfm@setdim
8725       << \PDFForm@Submit >>%
8726     }%
8727     \unhbox\pdfm@box%
8728     \@pdfm@mark{put @afields @\Fld@name}%
8729   \egroup
8730 }
```

\@Reset

```
8731 \def\@Reset[#1]#2{%
8732   \Field@toks={ }%
8733   \def\Fld@width{\DefaultWidthofReset}%
8734   \def\Fld@height{\DefaultHeightofReset}%
8735   \bgroup
8736     \def\Fld@name{Reset}%
8737     \setkeys{Field}{#1}%
8738     \ifFld@hidden\def\Fld@width{1sp}\fi
8739     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8740     \leavevmode
8741     \Hy@escapeform\PDFForm@Reset
8742     \@pdfm@mark{%
8743       ann @\Fld@name\space\dvipdfm@setdim
8744       << \PDFForm@Reset >>%
8745     }%
8746     \unhbox\pdfm@box
8747     \@pdfm@mark{put @afields @\Fld@name}%
8748   \egroup
8749 }
```

\@CheckBox

```
8750 \def\@CheckBox[#1]#2{% parameters, label
8751   \def\Fld@name{#2}%
8752   \def\Fld@default{0}%
8753   \bgroup
8754     \def\Fld@width{\DefaultWidthofCheckBox}%
8755     \def\Fld@height{\DefaultHeightofCheckBox}%
8756     \Field@toks={ }%
8757     \setkeys{Field}{#1}%
8758     \ifFld@hidden\def\Fld@width{1sp}\fi
8759     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
8760     \LayoutCheckField{#2}{%
8761       \Hy@escapeform\PDFForm@Check
8762       \@pdfm@mark{%
8763         ann @\Fld@name\space\dvipdfm@setdim
```

```

8764      << \PDFForm@Check >>%
8765      }%
8766      \unhbox\pdfm@box
8767      \@pdfm@mark{put @afields @\Fld@name}%
8768      }%
8769      \egroup
8770 }

8771 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
8772      24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8773      /tilde
8774      39 /quotesingle
8775      96 /grave
8776      128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8777      /fraction /guilsinglleft /guilsinglright /minus /perthousand
8778      /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8779      /quotesinglbase /trademark /fi /fl /lslash /OE /Scaron /Ydieresis
8780      /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8781      164 /currency
8782      166 /brokenbar
8783      168 /dieresis /copyright /ordfeminine
8784      172 /logicalnot /.notdef /registered /macron /degree /plusminus
8785      /twosuperior /threesuperior /acute /mu
8786      183 /periodcentered /cedilla /onesuperior /ordmasculine
8787      188 /onequarter /onehalf /threequarters
8788      192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8789      /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8790      /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8791      /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8792      /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8793      /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8794      /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8795      /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8796      /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8797      /thorn /ydieresis%
8798      ] >>
8799 }

8800 \@pdfm@mark{obj @OBJZaDb
8801      <<
8802      /Type /Font
8803      /Subtype /Type1
8804      /Name /ZaDb
8805      /BaseFont /ZapfDingbats
8806      >>
8807 }

8808 \@pdfm@mark{obj @OBJHelv
8809      <<
8810      /Type /Font
8811      /Subtype /Type1
8812      /Name /Helv
8813      /BaseFont /Helvetica
8814      /Encoding @OBJpdfdocencoding
8815      >>
8816 }
8817 </dvipdfm>

```

46.7 Common forms part

8818 $\langle *pdfform \rangle$

\backslash Hy@escapestring

```
8819 \begingroup\expandafter\expandafter\expandafter\endgroup
8820 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8821   \let\Hy@escapestring\@firstofone
8822   \def\Hy@escapeform#1{%
8823     \ifHy@escapeform
8824       \def\Hy@escapestring##1{%
8825         \noexpand\Hy@escapestring{\noexpand##1}%
8826       }%
8827       \edef\Hy@temp{#1}%
8828       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
8829     \def\Hy@escapestring##1{%
8830       \@ifundefined{Hy@esc@\string##1}{%
8831         ##1%
8832         \ThisShouldNotHappen
8833       }{%
8834         \csname Hy@esc@\string##1\endcsname
8835       }%
8836     }%
8837   \else
8838     \let\Hy@escapestring\@firstofone
8839   \fi
8840 }%
8841 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
8842   \ifx\#3\%
8843   \else
8844     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8845     \Hy@ReturnAfterFi{%
8846       \Hy@@escapeform#3\@nil
8847     }%
8848   \fi
8849 }%
8850 \else
8851   \def\Hy@escapeform#1{%
8852     \ifHy@escapeform
8853       \let\Hy@escapestring\pdfescapestring
8854     \else
8855       \let\Hy@escapestring\@firstofone
8856     \fi
8857   }%
8858   \Hy@escapeform{}%
8859 \fi
```

\backslash PDFForm@Check

```
8860 \def\PDFForm@Check{%
8861   /Subtype /Widget
8862   \ifFld@hidden /F 6 \else /F 4 \fi
8863   /T (\Hy@escapestring{Fld@name})
8864   /Q \Fld@align\space
8865   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8866   /MK <<
8867     /BC [\Fld@bordercolor]
8868     \ifx\Fld@bcolor\@empty
8869     \else
```

```

8870      /BG [\Fld@bcolor]
8871      \fi
8872      /CA (\Hy@escapestring{\Fld@cbsymbol})
8873      >>
8874      /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8875      /FT /Btn
8876      /H /P
8877      \ifFld@checked /V /Yes \else /V /Off \fi
8878 }

```

\PDFForm@Push

```

8879 \def\PDFForm@Push{%
8880   /Subtype /Widget
8881   \ifFld@hidden /F 6 \else /F 4 \fi
8882   /T (\Hy@escapestring{\Fld@name})
8883   /FT /Btn
8884   /Ff 65540
8885   /H /P
8886   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8887   /MK <<
8888     /BC [\Fld@bordercolor]
8889   >>
8890   /A << /S /JavaScript /JS (\Hy@escapestring{\Fld@onclick}) >>
8891 }

```

\Fld@additionalactions

```

8892 \def\Fld@additionalactions{%
8893   /AA <<

```

K input (keystroke) format

```

8894     \ifx\Fld@keystroke@code\@empty
8895     \else
8896       /K << /S /JavaScript /JS (\Hy@escapestring{\Fld@keystroke@code}) >>
8897     \fi

```

F display format

```

8898     \ifx\Fld@format@code\@empty
8899     \else
8900       /F << /S /JavaScript /JS (\Hy@escapestring{\Fld@format@code}) >>
8901     \fi

```

V validation

```

8902     \ifx\Fld@validate@code\@empty
8903     \else
8904       /V << /S /JavaScript /JS (\Hy@escapestring{\Fld@validate@code}) >>
8905     \fi

```

C calculation

```

8906     \ifx\Fld@calculate@code\@empty
8907     \else
8908       /C << /S /JavaScript /JS (\Hy@escapestring{\Fld@calculate@code}) >>
8909     \fi

```

Fo receiving the input focus

```

8910     \ifx\Fld@onfocus@code\@empty
8911     \else
8912       /Fo << /S /JavaScript /JS (\Hy@escapestring{\Fld@onfocus@code}) >>
8913     \fi

```


Bl loosing the input focus (blurred)

```
8914 \ifx\Fld@onblur@code\@empty
8915 \else
8916 /Bl << /S /JavaScript /JS (\Hy@escapestring{\Fld@onblur@code}) >>
8917 \fi
```

D pressing the mouse button (down)

```
8918 \ifx\Fld@onmousedown@code\@empty
8919 \else
8920 /D << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmousedown@code}) >>
8921 \fi
```

U releasing the mouse button (up)

```
8922 \ifx\Fld@onmouseup@code\@empty
8923 \else
8924 /U << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmouseup@code}) >>
8925 \fi
```

E cursor enters the annotation's active area.

```
8926 \ifx\Fld@onenter@code\@empty
8927 \else
8928 /E << /S /JavaScript /JS (\Hy@escapestring{\Fld@onenter@code}) >>
8929 \fi
```

X cursor exits the annotation's active area.

```
8930 \ifx\Fld@onexit@code\@empty
8931 \else
8932 /X << /S /JavaScript /JS (\Hy@escapestring{\Fld@onexit@code}) >>
8933 \fi
8934 >>
8935 }
```

\PDFForm@List

```
8936 \def\PDFForm@List{%
8937 /Subtype /Widget
8938 \ifFld@hidden /F 6 \else /F 4 \fi
8939 /T (\Hy@escapestring{\Fld@name})
8940 /FT /Ch
8941 /Q \Fld@align\space
8942 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8943 /MK <<
8944 /BC [\Fld@bordercolor]
8945 \ifx\Fld@bcolor\@empty
8946 \else
8947 /BG [\Fld@bcolor]
8948 \fi
8949 >>
8950 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8951 /Opt [\the\Choice@toks]
8952 /DV (\Hy@escapestring{\Fld@default})
8953 \Fld@additionalactions
8954 \Fld@flags
8955 }
```

\PDFForm@Radio

```
8956 \def\PDFForm@Radio{%
8957 /Subtype /Widget
8958 \ifFld@hidden /F 6 \else /F 4 \fi
```

```

8959 /T (\Hy@escapestring{\Fld@name})
8960 /FT /Btn
8961 /Ff 49152
8962 /H /P
8963 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8964 /MK <<
8965   /BC [\Fld@bordercolor]
8966   \ifx\Fld@bcolor\@empty
8967   \else
8968     /BG [\Fld@bcolor]
8969   \fi
8970 /CA (H)
8971 >>
8972 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8973 \ifx\@currValue\Fld@default
8974   /V /\Fld@default\space
8975 \else
8976   /V /Off
8977 \fi
8978 \Fld@additionalactions
8979 }

```

\PDFForm@Text

```

8980 \def\PDFForm@Text{%
8981   /Subtype /Widget
8982   \ifFld@hidden /F 6 \else /F 4 \fi
8983   /T (\Hy@escapestring{\Fld@name})
8984   /Q \Fld@align\space
8985   /FT /Tx
8986   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8987   /MK <<
8988     /BC [\Fld@bordercolor]
8989     \ifx\Fld@bcolor\@empty
8990     \else
8991       /BG [\Fld@bcolor]
8992     \fi
8993   >>
8994   /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8995   /DV (\Hy@escapestring{\Fld@default})
8996   /V (\Hy@escapestring{\Fld@value})
8997   \Fld@additionalactions
8998   \ifFld@multiline
8999     \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
9000   \else
9001     \ifFld@password
9002       \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
9003     \else
9004       \ifFld@readonly /Ff 1 \fi
9005     \fi
9006   \fi
9007   \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
9008 }

```

\PDFForm@Submit

```

9009 \def\PDFForm@Submit{%
9010   /Subtype /Widget
9011   \ifFld@hidden /F 6 \else /F 4 \fi

```

```

9012 /T (\Hy@escapestring{\Fld@name})
9013 /FT /Btn
9014 /Ff 65540
9015 /H /P
9016 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9017 /MK <<
9018 /BC [\Fld@bordercolor]
9019 >>
9020 /A <<
9021 /S /SubmitForm
9022 /F <<
9023 /FS /URL
9024 /F (\Hy@escapestring{\Form@action})
9025 >>
9026 \ifForm@html /Flags 4 \fi
9027 >>
9028 }

```

\PDFForm@Reset

```

9029 \def\PDFForm@Reset{%
9030 /Subtype /Widget
9031 \ifFld@hidden /F 6 \else /F 4 \fi
9032 /T (\Hy@escapestring{\Fld@name})
9033 /FT /Btn
9034 /H /P
9035 /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
9036 /Ff 65540
9037 /MK <<
9038 /BC [\Fld@bordercolor]
9039 % /CA (Clear)
9040 % /AC (Done)
9041 >>
9042 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9043 /A << /S /ResetForm >>
9044 }

9045 </pdfform>
9046 <*package>

```

47 Bookmarks in the PDF file

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

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

9047 \def\phantomsection{%
9048 \Hy@GlobalStepCount\Hy@linkcounter
9049 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9050 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9051 }
9052 </package>

```

47.1 Bookmarks

9053 `*outlines`

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper.pdf and slides.pdf in the doc directory of hyperref.

```
9054 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
9055 \ifx\WriteBookmarks\relax%
9056 \else
9057 \ifnum#4>\Hy@bookmarksdepth\relax
9058 \else
9059 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
9060 \fi
9061 \fi}
9062 \def\Hy@currentbookmarklevel{0}
9063 \def\Hy@numberline#1{#1 }
9064 \def\@@writetorep#1#2#3#4#5{%
9065 \begingroup
9066 \edef\Hy@tempa{#5}%
9067 \ifx\Hy@tempa\Hy@bookmarkstype
9068 \edef\Hy@level{#4}%
9069 \ifx\Hy@levelcheck Y%
9070 \@tempcnta\Hy@level\relax
9071 \advance\@tempcnta by -1
9072 \ifnum\Hy@currentbookmarklevel<\@tempcnta
9073 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
9074 \advance\@tempcnta by 1
9075 \Hy@Warning{%
9076 Difference (\the\@tempcnta) between bookmark levels is %
9077 greater \MessageBreak than one, level fixed%
9078 }%
9079 \@tempcnta\Hy@currentbookmarklevel
9080 \advance\@tempcnta by 1
9081 \edef\Hy@level{\the\@tempcnta}%
9082 \fi
9083 \else
9084 \global\let\Hy@levelcheck Y%
9085 \fi
9086 \global\let\Hy@currentbookmarklevel\Hy@level
9087 \@tempcnta\Hy@level\relax
9088 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
9089 \advance\@tempcnta by -1
9090 \edef\Hy@tempa{#3}%
9091 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
9092 \ifx\Hy@tempa\Hy@tempb
9093 \Hy@Warning{%
9094 The anchor of a bookmark and its parent's must not%
9095 \MessageBreak be the same. Added a new anchor%
9096 }%
9097 \phantomsection
9098 \fi
9099 \ifHy@bookmarksnumbered
9100 \let\numberline\Hy@numberline
9101 \let\partnumberline\Hy@numberline
9102 \let\chapternumberline\Hy@numberline
```

```

9103 \else
9104 \let\numberline@gobble
9105 \let\partnumberline@gobble
9106 \let\chapternumberline@gobble
9107 \fi
9108 \pdfstringdef\Hy@tempa{#2}%
9109 \if@files
9110 \protected@write\@outlinefile{}{%
9111 \protect\BOOKMARK
9112 [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
9113 {\Hy@tempa}{\Hy@tempb}%
9114 }%
9115 \fi
9116 \fi
9117 \endgroup
9118 }

```

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

```

9119 \newcommand{\currentpdfbookmark}{%
9120 \pdfbookmark[\Hy@currentbookmarklevel]%
9121 }
9122 \newcommand{\subpdfbookmark}{%
9123 \@tempcnta\Hy@currentbookmarklevel
9124 \Hy@StepCount\@tempcnta
9125 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
9126 }
9127 \newcommand{\belowpdfbookmark}[2]{%
9128 \@tempcnta\Hy@currentbookmarklevel
9129 \Hy@StepCount\@tempcnta
9130 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
9131 \advance\@tempcnta by -1
9132 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
9133 }

```

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.

```

9134 \renewcommand\pdfbookmark[3][0]{%
9135 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
9136 \hyper@anchorstart{#3.#1}\hyper@anchorend
9137 }
9138 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK[1][-]}
9139 \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.

```

9140 \*vtex
9141 \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.

```

9142 \begingroup

```

```

9143 \catcode'\'=12
9144 \ifnum\Hy@VTeXversion<650 %
9145 \catcode\'=12
9146 \gdef\hv@pdf@char#1#2#3{%
9147 \char
9148 \ifcase'#1#2#3
9149 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
9150 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
9151 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
9152 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
9153 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
9154 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
9155 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
9156 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
9157 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
9158 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
9159 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
9160 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
9161 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
9162 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
9163 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
9164 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
9165 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
9166 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
9167 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
9168 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
9169 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
9170 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
9171 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
9172 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
9173 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
9174 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
9175 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
9176 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
9177 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
9178 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
9179 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
9180 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
9181 \fi
9182 }
9183 \else
9184 \gdef\hv@pdf@char{\char'}
9185 \fi
9186 \endgroup

```

\@@BOOKMARK

```

9187 \def\@@BOOKMARK[#1][#2]#3#4#5{%
9188 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
9189 \edef\@mycount{\the\@serial@counter}%
9190 \Hy@StepCount\@serial@counter
9191 \edef\@parcount{%
9192 \expandafter\ifx\csname @count@#5\endcsname\relax
9193 0%
9194 \else
9195 \csname @count@#5\endcsname
9196 \fi
9197 }%

```

```

9198 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
9199 o\fi,t=#4}%
9200 }%

```

\ReadBookmarks

```

9201 \def\ReadBookmarks{%
9202   \begingroup
9203     \def\O{\hv@pdf@char 0}%
9204     \def\1{\hv@pdf@char 1}%
9205     \def\2{\hv@pdf@char 2}%
9206     \def\3{\hv@pdf@char 3}%
9207     \def\{({}%
9208     \def\)}{)%
9209     \def\do##1{%
9210       \ifnum\the\catcode'##1=\active
9211         \makeother##1%
9212       \fi
9213     }%
9214     \dospecials
9215     \InputIfFileExists{\jobname.out}{\}{}%
9216   \endgroup
9217   \ifx\WriteBookmarks\relax
9218   \else
9219     \if@filesw
9220       \newwrite\@outlinefile
9221       \immediate\openout\@outlinefile=\jobname.out
9222       \ifHy@typexml
9223         \immediate\write\@outlinefile{<relaxxml>\relax}%
9224       \fi
9225     \fi
9226   \fi
9227 }

9228 </vtex>

9229 <!*vtex>
9230 \def\ReadBookmarks{%
9231   \begingroup
9232     \escapechar='\'%
9233     \let\escapechar\@gobble %
9234     \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
9235     \InputIfFileExists{\jobname.out}{\}{}%
9236     \ifx\WriteBookmarks\relax
9237       \global\let\WriteBookmarks\relax
9238     \fi
9239     \def\@@BOOKMARK [##1][##2]##3##4##5{%
9240       \def\Hy@temp{##4}%
9241     }%
9242     \Hy@pstringdef\Hy@pstringName{##3}%
9243     \Hy@OutlineName{\Hy@pstringName{##2}\check@bm@number{##3}}%
9244     \expandafter\strip@prefix\meaning\Hy@temp
9245   }%
9246 \endgroup
9247 </pdfmark>
9248 <!*pdfmark>
9249 \Hy@pstringdef\Hy@pstringName{##3}%
9250 \pdfmark{

```

```

9252         pdfmark=/OUT,%
9253         Count={##2\check@bm@number{##3}},%
9254         Dest={\Hy@pstringName},%
9255         Title=\expandafter\strip@prefix\meaning\Hy@temp
9256     }%
9257 </pdfmark>
9258 <*dvipdfm>
9259     \Hy@pstringdef\Hy@pstringName{##3}%
9260     \@pdfm@mark{%
9261         outline ##1 <<
9262         /Title (\expandafter\strip@prefix\meaning\Hy@temp)
9263         /A <<
9264         /S /GoTo
9265         /D (\Hy@pstringName)
9266         >>
9267     >>
9268     }%
9269 </dvipdfm>
9270 }%
9271 {%
9272     \def\WriteBookmarks{0}%
9273     \InputIfFileExists{\jobname.out}{-}{-}%
9274 }%
9275 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
9276 \ifx\WriteBookmarks\relax
9277 \else
9278     \if@files
9279     \newwrite\@outlinefile
9280     \immediate\openout\@outlinefile=\jobname.out
9281     \ifHy@typexml
9282     \immediate\write\@outlinefile{<relaxxml>\relax}%
9283     \fi
9284     \fi
9285     \fi
9286 \endgroup
9287 }
9288 <*pdfTeX>
9289 \def\Hy@OutlineName#1#2#3#4{%
9290     \pdfoutline goto name{#2}count#3{#4}%
9291 }
9292 </pdfTeX>
9293 \def\check@bm@number#1{%
9294     \expandafter\ifx\csname B_#1\endcsname\relax
9295     0%
9296     \else
9297     \csname B_#1\endcsname
9298     \fi
9299 }
9300 \def\calc@bm@number#1{%
9301     \@tempcnta=\check@bm@number{#1}\relax
9302     \advance\@tempcnta by1
9303     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
9304 }
9305 </!vTeX>

```

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

```

9306 \ifHy@implicit

```



```

9307 \else
9308   \def\@beginndvi{%
9309     \unvbox\@beginndvibox
9310     \HyPL@EveryPage
9311     \global\let\@beginndvi\HyPL@EveryPage
9312   }%
9313   \expandafter\endinput
9314 \fi

9315 </outlines>
9316 <*outlines | hypertext>

9317 \let\H@old@ssect\@ssect
9318 \def\@ssect#1#2#3#4#5{%
9319   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9320   \phantomsection
9321 }
9322 \let\H@old@schapter\@schapter
9323 \def\@schapter#1{%
9324   \H@old@schapter{#1}%
9325   \begingroup
9326     \let\@mkboth\@gobbletwo
9327     \Hy@GlobalStepCount\Hy@linkcounter
9328     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9329     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9330   \endgroup
9331 }

```

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:

```

9332 \@ifundefined{chapter}{%
9333   \let\Hy@org@chapter\@chapter
9334   \def\@chapter{%
9335     \def\Hy@next{%
9336       \Hy@GlobalStepCount\Hy@linkcounter
9337       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9338       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9339     }%
9340     \ifnum\c@secnumdepth>\m@ne
9341       \@ifundefined{if@mainmatter}%
9342       \iftrue{\csname if@mainmatter\endcsname}
9343       \let\Hy@next\relax
9344     \fi
9345     \fi
9346     \Hy@next
9347     \Hy@org@chapter
9348   }%
9349 }

9350 \let\H@old@part\@part
9351 \begingroup\expandafter\expandafter\expandafter\endgroup
9352 \expandafter\ifx\csname chapter\endcsname\relax
9353   \let\Hy@secnum@part\z@
9354 \else
9355   \let\Hy@secnum@part\m@ne
9356 \fi
9357 \def\@part{%
9358   \ifnum\Hy@secnum@part>\c@secnumdepth

```

```

9359 \phantomsection
9360 \fi
9361 \H@old@part
9362 }

9363 \let\H@old@spart\@spart
9364 \def\@spart#1{%
9365 \H@old@spart{#1}%
9366 \Hy@GlobalStepCount\Hy@linkcounter
9367 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9368 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9369 }

9370 \let\H@old@sect\@sect
9371 \def\@sect#1#2#3#4#5#6[#7]#8{%
9372 \ifnum #2>\c@secnumdepth
9373 \Hy@GlobalStepCount\Hy@linkcounter
9374 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9375 \fi
9376 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
9377 \ifnum #2>\c@secnumdepth
9378 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9379 \fi
9380 }

9381 </outlines | hypertex>
9382 <*outlines>

9383 \expandafter\def\csname Parent-4\endcsname{}
9384 \expandafter\def\csname Parent-3\endcsname{}
9385 \expandafter\def\csname Parent-2\endcsname{}
9386 \expandafter\def\csname Parent-1\endcsname{}
9387 \expandafter\def\csname Parent0\endcsname{}
9388 \expandafter\def\csname Parent1\endcsname{}
9389 \expandafter\def\csname Parent2\endcsname{}
9390 \expandafter\def\csname Parent3\endcsname{}
9391 \expandafter\def\csname Parent4\endcsname{}

9392 </outlines>

```

48 Compatibility with koma-script classes

```

9393 <*outlines | hypertex>

```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias.Isenberg@gmx.de. With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

9394 \def\Hy@tempa{%
9395 \def\@addchap[##1]##2{%
9396 \typeout{##2}%
9397 \if@twoside
9398 \@mkboth{##1}{}%
9399 \else
9400 \@mkboth{}{##1}%
9401 \fi
9402 \addtocontents{lof}{\protect\addvspace{10\p@}}%
9403 \addtocontents{lot}{\protect\addvspace{10\p@}}%
9404 \Hy@GlobalStepCount\Hy@linkcounter
9405 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9406 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

9407 \if@twocolumn
9408 \topnewpage[\@makeschapterhead{##2}]%
9409 \else
9410 \@makeschapterhead{##2}%
9411 \afterheading
9412 \fi
9413 \addcontentsline{toc}{chapter}{##1}%
9414 }%
9415 }
9416 \@ifclassloaded{scrbook}{%
9417 \@ifclasslater{scrbook}{2001/01/01}{%
9418 \let\Hy@tempa\@empty
9419 }{}%
9420 }{%
9421 \@ifclassloaded{scrreprt}{%
9422 \@ifclasslater{scrreprt}{2001/01/01}{%
9423 \let\Hy@tempa\@empty
9424 }{}%
9425 }{%
9426 \let\Hy@tempa\@empty
9427 }%
9428 }%
9429 \Hy@tempa
9430 </outlines | hypertext>

```

49 Encoding definition files for encodings of PDF strings

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

49.1 PD1 encoding

```

9431 <*pd1enc>
9432 \DeclareFontEncoding{PD1}{}{}

```

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

```

9433 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9434 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9435 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9436 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9437 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

9438 \DeclareTextAccent{\`}{PD1}{\textgrave}
9439 \DeclareTextAccent{\'}{PD1}{\textacute}
9440 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
9441 \DeclareTextAccent{\~}{PD1}{\texttilde}
9442 \DeclareTextAccent{\"}{PD1}{\textdieresis}
9443 \DeclareTextAccent{\r}{PD1}{\textring}
9444 \DeclareTextAccent{\v}{PD1}{\textcaron}
9445 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
9446 \DeclareTextAccent{\c}{PD1}{\textcedilla}
9447 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textgrave}
9448 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
9449 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
9450 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
9451 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
9452 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
9453 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}

```

```

9454 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
9455 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
9456 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

Accent glyph names
9457 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
9458 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9459 \DeclareTextCommand{\textcirc{}}{PD1}{\032} % circumflex
9460 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9461 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9462 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9463 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9464 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
9465 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
9466 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9467 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9468 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9469 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
9470 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050
9471 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
9472 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
9473 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
9474 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash

\135: bracketright
9475 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9476 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9477 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave

\141... \172: a...z
9478 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9479 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9480 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9481 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9482 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

No glyph \177 in PDFDocEncoding.
9483 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9484 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9485 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl

```

```

9486 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9487 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9488 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9489 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9490 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9491 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
9492 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9493 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9494 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9495 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9496 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9497 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9498 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9499 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9500 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9501 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
9502 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9503 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9504 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9505 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9506 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
9507 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
9508 \DeclareTextCommand{\IJ}{PD1}{\230}
9509 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9510 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9511 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9512 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9513 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9514 \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.

```

9515 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9516 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9517 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9518 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9519 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9520 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9521 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9522 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9523 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9524 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
9525 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
9526 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
9527 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

9528 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
9529 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
9530 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
9531 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
9532 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
9533 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
9534 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
9535 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
9536 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
9537 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
9538 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
9539 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior

```

9540 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
 9541 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
 9542 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
 9543 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
 9544 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
 9545 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
 9546 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
 9547 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Acute
 9548 \DeclareTextCompositeCommand{\~}{PD1}{A}{\302} % Acircumflex
 9549 \DeclareTextCompositeCommand{\`}{PD1}{A}{\303} % Atilde
 9550 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
 9551 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
 9552 \DeclareTextCommand{\AE}{PD1}{\306} % AE
 9553 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
 9554 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
 9555 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
 9556 \DeclareTextCompositeCommand{\~}{PD1}{E}{\312} % Ecircumflex
 9557 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
 9558 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
 9559 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
 9560 \DeclareTextCompositeCommand{\~}{PD1}{I}{\316} % Icircumflex
 9561 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
 9562 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
 9563 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
 9564 \DeclareTextCompositeCommand{\`}{PD1}{N}{\321} % Ntilde
 9565 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve
 9566 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
 9567 \DeclareTextCompositeCommand{\~}{PD1}{O}{\324} % Ocircumflex
 9568 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
 9569 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
 9570 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
 9571 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
 9572 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave
 9573 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
 9574 \DeclareTextCompositeCommand{\~}{PD1}{U}{\333} % Ucircumflex
 9575 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
 9576 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
 9577 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
 9578 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
 9579 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave
 9580 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
 9581 \DeclareTextCompositeCommand{\~}{PD1}{a}{\342} % acircumflex
 9582 \DeclareTextCompositeCommand{\`}{PD1}{a}{\343} % atilde
 9583 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
 9584 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
 9585 \DeclareTextCommand{\ae}{PD1}{\346} % ae
 9586 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
 9587 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave
 9588 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
 9589 \DeclareTextCompositeCommand{\~}{PD1}{e}{\352} % ecircumflex
 9590 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
 9591 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
 9592 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
 9593 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9594 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9595 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex
 9596 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex

```

9597 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
9598 \DeclareTextCompositeCommand{"}{PD1}{\i}{\357} % idieresis
9599 \DeclareTextCommand{\dh}{PD1}{\360} % eth
9600 \DeclareTextCompositeCommand{~}{PD1}{n}{\361} % ntilde
9601 \DeclareTextCompositeCommand{'}{PD1}{o}{\362} % ograve
9602 \DeclareTextCompositeCommand{'}{PD1}{o}{\363} % oacute
9603 \DeclareTextCompositeCommand{^}{PD1}{o}{\364} % ocircumflex
9604 \DeclareTextCompositeCommand{^}{PD1}{o}{\365} % otilde
9605 \DeclareTextCompositeCommand{"}{PD1}{o}{\366} % odieresis
9606 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
9607 \DeclareTextCommand{\o}{PD1}{\370} % oslash
9608 \DeclareTextCompositeCommand{'}{PD1}{u}{\371} % ugrave
9609 \DeclareTextCompositeCommand{'}{PD1}{u}{\372} % uacute
9610 \DeclareTextCompositeCommand{^}{PD1}{u}{\373} % ucircumflex
9611 \DeclareTextCompositeCommand{"}{PD1}{u}{\374} % udieresis
9612 \DeclareTextCompositeCommand{'}{PD1}{y}{\375} % yacute
9613 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9614 \DeclareTextCompositeCommand{"}{PD1}{y}{\377} % ydieresis
9615 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9616 \DeclareTextCommand{\SS}{PD1}{SS}
9617 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9618 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9619 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9620 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9621 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9622 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9623 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9624 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9625 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9626 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9627 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9628 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9629 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9630 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9631 \DeclareTextCommand{\textbeta}{PD1}{\ss}

```

Polish aliases. PDF encoding does not have the characters, but it is useful to Poles to have the plain letters regardless. Requested by Wojciech Myszka ;W.Myszka@immt.pwr.wroc.pl;

```

9632 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9633 \DeclareTextCompositeCommand{'}{PD1}{c}{c} % cacute
9634 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9635 \DeclareTextCompositeCommand{'}{PD1}{n}{n} % nacute
9636 \DeclareTextCompositeCommand{'}{PD1}{s}{s} % sacute
9637 \DeclareTextCompositeCommand{'}{PD1}{z}{z} % zacute
9638 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot

9639 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9640 \DeclareTextCompositeCommand{'}{PD1}{C}{C} % Cacute
9641 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9642 \DeclareTextCompositeCommand{'}{PD1}{N}{N} % Nacute
9643 \DeclareTextCompositeCommand{'}{PD1}{S}{S} % Sacute
9644 \DeclareTextCompositeCommand{'}{PD1}{Z}{Z} % Zacute
9645 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

9646 (/pd1enc)

```

49.2 PU encoding

```
9647 <*puenc>
9648 \DeclareFontEncoding{PU}{-}{-}
```

49.2.1 Basic Latin

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

```
9649 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9650 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9651 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9652 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9653 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

Accents

```
9654 \DeclareTextAccent{\`}{PU}{\textgrave}
9655 \DeclareTextAccent{\'}{PU}{\textacute}
9656 \DeclareTextAccent{\~}{PU}{\textcircumflex}
9657 \DeclareTextAccent{\~}{PU}{\texttilde}
9658 \DeclareTextAccent{\¨}{PU}{\textdieresis}
9659 \DeclareTextAccent{\r}{PU}{\textring}
9660 \DeclareTextAccent{\v}{PU}{\textcaron}
9661 \DeclareTextAccent{\.}{PU}{\textdotaccent}
9662 \DeclareTextAccent{\c}{PU}{\textcedilla}
9663 \DeclareTextAccent{\U}{PU}{\textbreve}
9664 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
9665 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
9666 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9667 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
9668 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
9669 \DeclareTextCompositeCommand{\¨}{PU}{\@empty}{\textdieresis}
9670 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
9671 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
9672 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
9673 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
9674 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
9675 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
9676 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
9677 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9678 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9679 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}
```

Accent glyph names

```
9680 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9681 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9682 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
9683 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9684 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9685 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9686 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9687 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9688 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
```

\040: space

\041: exclam

```
9689 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9690 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9691 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9692 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9693 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
```


\047: quotesingle
 9694 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
 9695 \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
 9696 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
 \075: equal
 9697 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076
 \077: question
 \100: at
 \101... \132: A...Z
 \133: bracketleft
 9698 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
 \135: bracketright
 9699 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
 9700 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
 9701 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
 \141... \172: a...z
 9702 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
 9703 \DeclareTextCommand{\j}{PU}{j} % jdotless
 9704 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
 9705 \DeclareTextCommand{\textbar}{PU}{|} % bar
 9706 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
 9707 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
 No glyph \177 in PDFDocEncoding.

49.2.2 Latin-1 Supplement

9708 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
 9709 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
 9710 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmse, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

9711 %\DeclareTextCommand{\OE}{PU}{OE} % OE
 9712 %\DeclareTextCommand{\oe}{PU}{oe} % oe

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

9713 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
 9714 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
 9715 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
 9716 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
 9717 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
 9718 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
 9719 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
 9720 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis

9721 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
 9722 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
 9723 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
 9724 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9725 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
 9726 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
 9727 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
 9728 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
 9729 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
 9730 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
 9731 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
 9732 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
 9733 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
 9734 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
 9735 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
 9736 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
 9737 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
 9738 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
 9739 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
 9740 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
 9741 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
 9742 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
 9743 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
 9744 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
 9745 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\302} % Acircumflex
 9746 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\303} % Atilde
 9747 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
 9748 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
 9749 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
 9750 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
 9751 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
 9752 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
 9753 \DeclareTextCompositeCommand{\~}{PU}{E}{\80\312} % Ecircumflex
 9754 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
 9755 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
 9756 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
 9757 \DeclareTextCompositeCommand{\~}{PU}{I}{\80\316} % Icircumflex
 9758 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
 9759 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
 9760 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
 9761 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve
 9762 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
 9763 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\324} % Ocircumflex
 9764 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
 9765 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
 9766 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
 9767 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
 9768 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave
 9769 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
 9770 \DeclareTextCompositeCommand{\~}{PU}{U}{\80\333} % Ucircumflex
 9771 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
 9772 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
 9773 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
 9774 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
 9775 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave
 9776 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute

```

9777 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\342} % acircumflex
9778 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
9779 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
9780 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
9781 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
9782 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
9783 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350} % egrave
9784 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
9785 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
9786 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
9787 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
9788 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
9789 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9790 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9791 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
9792 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
9793 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9794 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9795 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9796 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
9797 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362} % ograve
9798 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
9799 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
9800 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
9801 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
9802 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9803 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9804 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371} % ugrave
9805 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
9806 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
9807 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
9808 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
9809 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9810 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
9811 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

9812 \DeclareTextCommand{\SS}{PU}{SS}

```

Aliases (german.sty)

```

9813 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9814 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9815 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9816 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9817 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9818 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9819 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9820 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9821 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9822 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9823 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9824 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9825 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

49.2.3 Latin Extended-A

```

9826 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9827 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron

```

```

9828 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9829 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9830 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
9831 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
9832 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
9833 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
9834 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% Ccircumflex
9835 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% ccircumflex
9836 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
9837 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
9838 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
9839 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
9840 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
9841 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
9842 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
9843 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
9844 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
9845 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
9846 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
9847 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
9848 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
9849 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
9850 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
9851 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
9852 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
9853 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
9854 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% Gcircumflex
9855 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% gcircumflex
9856 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
9857 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
9858 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
9859 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
9860 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
9861 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
9862 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% Hcircumflex
9863 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% hcircumflex
9864 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
9865 \DeclareTextCommand{\texthslash}{PU}{\81\047}% hslash
9866 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
9867 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9868 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9869 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
9870 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9871 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9872 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% Ibreve
9873 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9874 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9875 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% Iogonek
9876 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9877 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9878 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% Idot
9879 \DeclareTextCommand{\i}{PU}{\81\061}% idotless
9880 % IJlig
9881 % ijlig
9882 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% Jcircumflex
9883 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex
9884 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex

```

```

9885 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
9886 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
9887 % kgreen
9888 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
9889 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
9890 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
9891 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
9892 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
9893 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
9894 % L middle dot
9895 % l middle dot
9896 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
9897 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
9898 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
9899 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
9900 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
9901 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
9902 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
9903 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
9904 % n apostrophe
9905 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
9906 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
9907 \DeclareTextCompositeCommand{=}{PU}{O}{\81\114} % Omacron
9908 \DeclareTextCompositeCommand{=}{PU}{o}{\81\115} % omacron
9909 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
9910 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
9911 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
9912 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
9913 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
9914 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
9915 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
9916 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
9917 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
9918 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
9919 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
9920 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
9921 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
9922 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
9923 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
9924 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
9925 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
9926 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
9927 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
9928 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
9929 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
9930 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
9931 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
9932 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
9933 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
9934 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
9935 \DeclareTextCompositeCommand{\`}{PU}{U}{\81\150} % Utilde
9936 \DeclareTextCompositeCommand{\`}{PU}{u}{\81\151} % utilde
9937 \DeclareTextCompositeCommand{=}{PU}{U}{\81\152} % Umacron
9938 \DeclareTextCompositeCommand{=}{PU}{u}{\81\153} % umacron
9939 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
9940 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
9941 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring

```

```

9942 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
9943 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
9944 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
9945 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
9946 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
9947 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
9948 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
9949 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
9950 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
9951 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
9952 \DeclareTextCommand{\IJ}{PU}{\81\170}
9953 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
9954 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
9955 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
9956 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
9957 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
9958 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

49.2.4 Latin Extended-B

```

9959 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
9960 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
9961 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
9962 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
9963 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9964 \DeclareTextCompositeCommand{\v}{PU}{\i}{\81\320} % icaron
9965 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
9966 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
9967 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
9968 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
9969 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
9970 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
9971 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
9972 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
9973 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
9974 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
9975 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
9976 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

49.2.5 Greek

```

9977 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
9978 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
9979 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
9980 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
9981 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
9982 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
9983 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
9984 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
9985 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
9986 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
9987 \DeclareTextCommand{\textBeta}{PU}{\83\222}
9988 \DeclareTextCommand{\textGamma}{PU}{\83\223}
9989 \DeclareTextCommand{\textDelta}{PU}{\83\224}
9990 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
9991 \DeclareTextCommand{\textZeta}{PU}{\83\226}
9992 \DeclareTextCommand{\textEta}{PU}{\83\227}
9993 \DeclareTextCommand{\textTheta}{PU}{\83\230}
9994 \DeclareTextCommand{\textIota}{PU}{\83\231}

```

```

9995 \DeclareTextCommand{\textKappa}{PU}{\83\232}
9996 \DeclareTextCommand{\textLambda}{PU}{\83\233}
9997 \DeclareTextCommand{\textMu}{PU}{\83\234}
9998 \DeclareTextCommand{\textNu}{PU}{\83\235}
9999 \DeclareTextCommand{\textXi}{PU}{\83\236}
10000 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
10001 \DeclareTextCommand{\textPi}{PU}{\83\240}
10002 \DeclareTextCommand{\textRho}{PU}{\83\241}
10003 \DeclareTextCommand{\textSigma}{PU}{\83\243}
10004 \DeclareTextCommand{\textTau}{PU}{\83\244}
10005 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
10006 \DeclareTextCommand{\textPhi}{PU}{\83\246}
10007 \DeclareTextCommand{\textChi}{PU}{\83\247}
10008 \DeclareTextCommand{\textPsi}{PU}{\83\250}
10009 \DeclareTextCommand{\textOmega}{PU}{\83\251}
10010 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
10011 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
10012 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}
10013 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}
10014 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}
10015 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}
10016 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
10017 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
10018 \DeclareTextCommand{\textalpha}{PU}{\83\261}
10019 \DeclareTextCommand{\textbeta}{PU}{\83\262}
10020 \DeclareTextCommand{\textgamma}{PU}{\83\263}
10021 \DeclareTextCommand{\textdelta}{PU}{\83\264}
10022 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
10023 \DeclareTextCommand{\textzeta}{PU}{\83\266}
10024 \DeclareTextCommand{\texteta}{PU}{\83\267}
10025 \DeclareTextCommand{\texttheta}{PU}{\83\270}
10026 \DeclareTextCommand{\textiota}{PU}{\83\271}
10027 \DeclareTextCommand{\textkappa}{PU}{\83\272}
10028 \DeclareTextCommand{\textlambda}{PU}{\83\273}
10029 \DeclareTextCommand{\textmu}{PU}{\83\274}
10030 \DeclareTextCommand{\textnu}{PU}{\83\275}
10031 \DeclareTextCommand{\textxi}{PU}{\83\276}
10032 \DeclareTextCommand{\textomicron}{PU}{\83\277}
10033 \DeclareTextCommand{\textpi}{PU}{\83\300}
10034 \DeclareTextCommand{\textrho}{PU}{\83\301}
10035 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
10036 \DeclareTextCommand{\textsigma}{PU}{\83\303}
10037 \DeclareTextCommand{\texttau}{PU}{\83\304}
10038 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
10039 \DeclareTextCommand{\textphi}{PU}{\83\306}
10040 \DeclareTextCommand{\textchi}{PU}{\83\307}
10041 \DeclareTextCommand{\textpsi}{PU}{\83\310}
10042 \DeclareTextCommand{\textomega}{PU}{\83\311}
10043 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
10044 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
10045 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
10046 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
10047 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
10048 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
10049 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
10050 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
10051 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}

```

```
10052 \DeclareTextCommand{\textvarkappa}{PU}{\83\360}
10053 \DeclareTextCommand{\textvarrho}{PU}{\83\361}
```

49.2.6 Cyrillic

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

```
10054 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
10055 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
10056 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
10057 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
10058 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
10059 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
10060 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
10061 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
10062 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
10063 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
10064 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
10065 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
10066 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
10067 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
10068 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
10069 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
10070 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
10071 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
10072 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
10073 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
10074 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
10075 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
10076 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
10077 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
10078 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
10079 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
10080 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
10081 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
10082 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
10083 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
10084 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
10085 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
10086 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
10087 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
10088 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
10089 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
10090 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
10091 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
10092 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
10093 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
10094 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
10095 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
10096 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
10097 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
10098 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
10099 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
10100 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
10101 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
10102 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
10103 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
10104 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
```


10105 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
10106 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
10107 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
10108 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
10109 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
10110 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
10111 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
10112 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
10113 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
10114 \DeclareTextCommand{\cyrk}{PU}{\84\073}% el
10115 \DeclareTextCommand{\cyrml}{PU}{\84\074}% em
10116 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
10117 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
10118 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
10119 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
10120 \DeclareTextCommand{\cyrsl}{PU}{\84\101}% es
10121 \DeclareTextCommand{\cyrt}{PU}{\84\102}% te
10122 \DeclareTextCommand{\cyru}{PU}{\84\103}% u
10123 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef
10124 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
10125 \DeclareTextCommand{\cyrcl}{PU}{\84\106}% tse
10126 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che
10127 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha
10128 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
10129 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
10130 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
10131 \DeclareTextCommand{\cyrsltsn}{PU}{\84\114}% soft sign
10132 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
10133 \DeclareTextCommand{\cyrlyu}{PU}{\84\116}% yu
10134 \DeclareTextCommand{\cyrlyu}{PU}{\84\117}% ya
10135 \DeclareTextCommand{\cyrlyo}{PU}{\84\121}% io
10136 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\121}%
10137 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
10138 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
10139 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
10140 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
10141 \DeclareTextCommand{\cyrli}{PU}{\84\126}% byelorussian-ukrainian i
10142 \DeclareTextCommand{\cyrlyi}{PU}{\84\127}% yi
10143 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je
10144 \DeclareTextCommand{\cyrlyje}{PU}{\84\131}% lje
10145 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% nje
10146 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe
10147 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje
10148 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
10149 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
10150 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
10151 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
10152 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
10153 \DeclareTextCommand{\cyrlyat}{PU}{\84\143}% yat
10154 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
10155 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
10156 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
10157 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
10158 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
10159 \DeclareTextCommand{\cyrlyotlyus}{PU}{\84\151}% iotified little yus
10160 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
10161 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus

10162 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
10163 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus
10164 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
10165 \DeclareTextCommand{\cyrkxi}{PU}{\84\157}% ksi
10166 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
10167 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
10168 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
10169 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
10170 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
10171 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
10172 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
10173 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
10174 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
10175 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
10176 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
10177 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
10178 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
10179 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
10180 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
10181 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
10182 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
10183 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
10184 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
10185 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
10186 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
10187 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
10188 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
10189 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
10190 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
10191 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
10192 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
10193 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
10194 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
10195 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
10196 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
10197 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
10198 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
10199 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
10200 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender
10201 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
10202 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
10203 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
10204 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
10205 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
10206 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
10207 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
10208 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
10209 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
10210 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
10211 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
10212 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
10213 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
10214 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
10215 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
10216 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
10217 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
10218 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% te descender

10219 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
10220 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u
10221 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
10222 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% straight u stroke
10223 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
10224 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
10225 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
10226 \DeclareTextCommand{\cyrтетse}{PU}{\84\265}% ligature te tse
10227 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
10228 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
10229 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
10230 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
10231 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
10232 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha
10233 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
10234 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
10235 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
10236 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
10237 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka
10238 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
10239 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
10240 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
10241 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
10242 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
10243 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
10244 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
10245 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
10246 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
10247 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
10248 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% A diaeresis
10249 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% a diaeresis
10250 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
10251 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
10252 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
10253 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
10254 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
10255 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa
10256 \DeclareTextCompositeCommand{\"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
10257 \DeclareTextCompositeCommand{\"}{PU}{\cyrswa}{\84\333}% schwa diaeresis
10258 \DeclareTextCompositeCommand{\"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
10259 \DeclareTextCompositeCommand{\"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
10260 \DeclareTextCompositeCommand{\"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
10261 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\337}% ze diaeresis
10262 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
10263 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
10264 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
10265 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
10266 \DeclareTextCompositeCommand{\"}{PU}{\CYRI}{\84\344}% I diaeresis
10267 \DeclareTextCompositeCommand{\"}{PU}{\cyri}{\84\345}% i diaeresis
10268 \DeclareTextCompositeCommand{\"}{PU}{\CYRO}{\84\346}% O diaeresis
10269 \DeclareTextCompositeCommand{\"}{PU}{\cyro}{\84\347}% o diaeresis
10270 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
10271 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
10272 \DeclareTextCompositeCommand{\"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
10273 \DeclareTextCompositeCommand{\"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
10274 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
10275 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron

```

10276 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
10277 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
10278 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
10279 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
10280 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
10281 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
10282 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
10283 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

```

49.2.7 Symbols

```

10284 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
10285 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
10286 \DeclareTextCommand{\textquotelleft}{PU}{\9040\030} % quoteleft
10287 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
10288 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
10289 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
10290 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
10291 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
10292 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
10293 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
10294 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
10295 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
10296 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
10297 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
10298 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
10299 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
10300 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
10301 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
10302 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
10303 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
10304 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
10305 \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
10306 \DeclareTextCommand{\cyrangle}{PU}{\9043\052}
10307 </puenc>

```

49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

10308 <*puvnenc>
10309 \DeclareTextCommand{\abreve}{PU}{\81\003}
10310 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10311 \DeclareTextCommand{\dj}{PU}{\81\021}
10312 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10313 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10314 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10315 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10316 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10317 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10318 \DeclareTextCommand{\DJ}{PU}{\81\020}
10319 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10320 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10321 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10322 \DeclareTextCommand{\UHORN}{PU}{\81\257}
10323 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
10324 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}

```

10325 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
10326 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
10327 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
10328 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
10329 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
10330 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
10331 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
10332 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
10333 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
10334 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
10335 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
10336 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
10337 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
10338 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
10339 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
10340 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
10341 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
10342 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
10343 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
10344 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
10345 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
10346 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
10347 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
10348 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
10349 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
10350 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
10351 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
10352 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
10353 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
10354 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
10355 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
10356 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
10357 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
10358 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}
10359 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}
10360 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}
10361 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}
10362 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}
10363 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}
10364 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}
10365 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}
10366 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}
10367 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}
10368 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}
10369 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}
10370 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}
10371 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}
10372 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}
10373 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}
10374 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}
10375 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}
10376 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}
10377 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}
10378 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}
10379 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}
10380 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}
10381 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}

10382 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}
10383 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}
10384 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}
10385 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}
10386 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}
10387 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}
10388 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}
10389 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}
10390 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}
10391 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}
10392 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}
10393 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}
10394 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
10395 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}
10396 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
10397 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
10398 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}
10399 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
10400 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}
10401 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
10402 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
10403 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}
10404 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
10405 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}
10406 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
10407 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
10408 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}
10409 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
10410 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
10411 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
10412 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
10413 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
10414 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
10415 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
10416 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
10417 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
10418 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
10419 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
10420 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
10421 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
10422 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
10423 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
10424 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
10425 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
10426 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
10427 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
10428 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
10429 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
10430 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
10431 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
10432 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
10433 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
10434 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
10435 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
10436 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
10437 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
10438 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}

```

10439 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
10440 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
10441 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
10442 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
10443 </puvnenc>

```

49.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

10444 <*puarenc>
10445 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
10446 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA
10447 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA
10448 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA
10449 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HAMZA ABOVE
10450 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
10451 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
10452 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
10453 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
10454 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
10455 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
10456 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
10457 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
10458 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
10459 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
10460 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
10461 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
10462 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
10463 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
10464 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
10465 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
10466 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
10467 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
10468 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
10469 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
10470 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
10471 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
10472 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
10473 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
10474 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
10475 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
10476 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
10477 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
10478 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
10479 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
10480 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
10481 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH
10482 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
10483 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
10484 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
10485 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
10486 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
10487 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
10488 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
10489 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

```

Farsi

```

10490 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
10491 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
10492 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
10493 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
10494 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
10495 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

10496 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
10497 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ%

10498 \end{puarenc}

```

50 End of file hyccheck.tex

```

10499 \check
10500 \typeout{}
10501 \begin{document}
10502 \end{document}
10503 \end{check}

```

51 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined> refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols			
\!	194, 219	2697, 2706, 2775,	9776, 9784, 9789,
\"	201, 226, 9145,	5152, 5154, 5660,	9790, 9798, 9805,
	9442, 9451, 9507,	5669, 5696, 6170,	9808, 9832, 9833,
	9550, 9557, 9561,	7547, 7556, 7583,	9888, 9889, 9898,
	9569, 9575, 9583,	7786, 7794, 7820	9899, 9915, 9916,
	9590, 9597, 9598,	\\$ 183, 208, 391, 2654,	9921, 9922, 9953,
	9605, 9611, 9614,	2705	9954, 9977, 9978,
	9658, 9669, 9747,	\% . . . 392, 1241, 1242,	9979, 9980, 9981,
	9754, 9758, 9765,	2651, 2659, 2661,	9982, 9983, 9985,
	9771, 9779, 9786,	2698, 5154	10012, 10013,
	9793, 9794, 9801,	\& 184, 209, 393, 2665,	10014, 10015,
	9807, 9810, 9951,	7593	10045, 10046,
	10010, 10011,	\' 202, 227, 1876, 1882,	10047, 10057,
	10017, 10043,	1886, 1887, 1892,	10066, 10138,
	10044, 10055,	1893, 1898, 1899,	10147, 10323,
	10136, 10248,	1900, 1901, 1902,	10328, 10333,
	10249, 10256,	1903, 1904, 1905,	10338, 10343,
	10257, 10258,	1926, 1940, 1944,	10348, 10353,
	10259, 10260,	1957, 9143, 9439,	10358, 10363,
	10261, 10266,	9448, 9547, 9555,	10368, 10373,
	10267, 10268,	9559, 9566, 9573,	10378, 10383,
	10269, 10272,	9576, 9580, 9588,	10388, 10393,
	10273, 10276,	9593, 9594, 9602,	10398, 10403,
	10277, 10280,	9609, 9612, 9633,	10408, 10413,
	10281, 10282,	9635, 9636, 9637,	10418, 10423,
	10283	9640, 9642, 9643,	10428, 10433,
		9644, 9655, 9666,	10438
\#	390, 1266, 1267, 2652,	9744, 9752, 9756,	\(. 189, 214, 581, 584,
	2662, 2664, 2678,	9762, 9769, 9772,	586, 9207, 9470

<code>\)</code> . 190, 215, 553, 559, 562, 9208, 9471	8142, 8207, 8352, 8609	<code>\@biblabel</code> 4245, 4286
<code>\+</code> 199, 224	<code>\@Form</code> . . . 2930, 6220,	<code>\@bookmarkopenstatus</code> 2549, 2566, 9112
<code>\-</code> 200, 225	7848, 8110, 8131, 8152, 8301, 8554	<code>\@bookmarkopenlevel</code> 2074, 2076, 2552
<code>\.</code> 197, 222, 9445, 9454, 9478, 9638, 9645, 9661, 9672, 9702, 9836, 9837, 9848, 9849, 9858, 9859, 9878, 9955, 9956	<code>\@Gauge</code> . . 3147, 6222, 7946, 8112, 8133, 8157, 8291, 8551	<code>\@bsphack</code> 1394, 2772, 4383
<code>\/</code> . 193, 218, 497, 498, 499, 564, 1020	<code>\@Localurlfalse</code> 6177	<code>\@caption</code> 4141, 4149, 4172, 4200, 4202
<code>\:</code> 188, 213	<code>\@Localurltrue</code> . 6174	<code>\@capytype</code> 1403, 4135, 4139, 4140, 4147, 4150, 4175, 4183, 4193, 4197, 4200
<code>\;</code> 198, 223, 4971	<code>\@M</code> 1446	<code>\@car</code> . . 883, 899, 2053, 2589, 5363, 5370
<code>\<</code> 195, 220	<code>\@PushButton</code> . . 3144, 6234, 8048, 8124, 8145, 8251, 8432, 8693	<code>\@cdr</code> . . . 5364, 5371
<code>\=</code> . 166, 172, 179, 182, 9676, 9826, 9827, 9844, 9845, 9869, 9870, 9871, 9907, 9908, 9937, 9938, 10264, 10265, 10274, 10275	<code>\@Reset</code> . . 3153, 6237, 8077, 8127, 8148, 8267, 8466, 8731	<code>\@chapter</code> 9333, 9334
<code>\></code> 196, 221	<code>\@Roman</code> 442	<code>\@cite</code> . . . 4316, 4347, 4444, 4450
<code>\@@@</code> 1405	<code>\@SCTR</code> . . . 4830, 4882	<code>\@cite@opt</code> 4445, 4451, 4455, 4465
<code>\@BOOKMARK</code> . . 9138, 9139, 9187, 9234, 9239	<code>\@SetMaxRnhfLabel</code> 4313	<code>\@citea</code> . . 4319, 4326, 4327, 4346, 4349, 4350
<code>\@ListBox</code> 8013, 8033, 8388, 8416, 8645, 8673	<code>\@Submit</code> . . 3150, 6238, 8062, 8128, 8149, 8264, 8447, 8712	<code>\@citeb</code> . . 4325, 4328, 4330, 4332, 4336, 4339, 4348, 4351, 4353, 4355, 4359, 4362
<code>\@Menu</code> . . 8219, 8227	<code>\@TextField</code> . . 3135, 6225, 7949, 8115, 8136, 8160, 8325, 8576	<code>\@citebordercolor</code> 2316
<code>\@PasswordField</code> 8169, 8175	<code>\@addchap</code> 9395	<code>\@citecolor</code> 2090, 2097
<code>\@Radio</code> . 7997, 8019, 8217, 8239, 8372, 8394, 8629, 8651	<code>\@addtoreset</code> . . 4662, 4663, 4677, 4827	<code>\@citedata@opt</code> 4446, 4452, 4454
<code>\@TextField</code> . . 8171, 8186	<code>\@afterheading</code> . 9411	<code>\@citedatax</code> 4461, 4466
<code>\@commahyperpage</code> 4783, 4784	<code>\@anchorcolor</code> . 2089, 2096, 5633, 5714, 6280, 7520, 7762	<code>\@citedatax@opt</code> 4458, 4464
<code>\@hyperref</code> 2739, 2740	<code>\@auxout</code> . 1401, 2774, 3318, 3320, 3791, 3807, 4261, 4274, 4290, 4300, 4330, 4353, 4379, 4385, 4409	<code>\@citeseppen</code> . . 4443, 4449
<code>\@latextohtmlX</code> 1772, 2889	<code>\@backslashchar</code> 1169, 2673, 5167, 5177	<code>\@citex</code> 4345
<code>\@wrindex</code> 4745, 4746	<code>\@baseurl</code> 2102, 2104, 2841, 5392, 5395, 5620, 5622, 5856, 5858, 6112, 6119, 6146, 6148, 6545, 6547, 6883, 6897, 7507, 7509, 7671, 7685, 7750, 7752	<code>\@commahyperpage</code> 4778, 4783
<code>\@writetorep</code> . 9059, 9064	<code>\@beginarvi</code> 4469, 4472, 9308, 9311	<code>\@currDisplay</code> . 2967, 7988, 8024, 8040, 8234, 8248, 8363, 8399, 8423, 8620, 8657, 8680
<code>\@BIBLABEL</code> 4245, 4250, 4253	<code>\@begindvibox</code> . 4470, 9309	<code>\@currValue</code> . . 2969, 2971, 8028, 8040, 8234, 8245, 8406, 8423, 8665, 8680, 8973
<code>\@BOOKMARK</code> 9138, 9139	<code>\@bibitem</code> 4268, 4297	<code>\@currentHlabel</code> 3745, 3747, 3750, 4007, 4018, 4021, 4023, 4068
<code>\@CITE</code> . . . 4316, 4324		
<code>\@CITEX</code> 4318		
<code>\@CheckBox</code> 3141, 6228, 8091, 8118, 8139, 8270, 8481, 8750		
<code>\@ChoiceMenu</code> . . 3138, 6231, 7977, 8121,		

<code>\@currentHref</code> . 1406,	7203, 7219, 7243,	947, 951, 1543,
3223, 3720, 3749,	7262	2368, 3290, 3297,
3754, 3819, 3821,	<code>\@filecolor</code> .. 2093,	3305, 3308, 5069,
3897, 3908, 3912,	2098, 5306, 5337,	9326
3917, 3939, 4008,	5808, 5820, 5986,	<code>\@harvarditem</code> . 4398,
4019, 4022, 4024,	6010, 6331, 6378	4400
4069, 4164, 4166,	<code>\@firstoffive</code> . 2609,	<code>\@hyper@anchor</code> 2850,
4184, 4388, 4564,	2618, 5060, 5088	2851
4585, 4594, 4600,	<code>\@firstofone</code> 407, 408,	<code>\@hyper@itemfalse</code> .
4644, 4645, 4651,	409, 410, 411,	.. 3672, 3688
4652, 4658, 4659,	412, 413, 414,	<code>\@hyper@itemtrue</code> ..
9049, 9050, 9328,	415, 416, 417,	.... 3673
9329, 9337, 9338,	435, 2551, 3742,	<code>\@hyper@launch</code> 2820,
9367, 9368, 9374,	3744, 3778, 4145,	2828, 5310, 5989,
9378, 9405, 9406	4198, 4328, 4351,	6364, 7230
<code>\@currentlabel</code> 4381,	4494, 4563, 5545,	<code>\@hyper@linkfile</code> ..
4388, 4836, 4888	8821, 8838, 8855	.... 2810, 2813,
<code>\@currentlabelname</code>	<code>\@firstoftwo</code> 451, 616,	2817, 2831
.... 1399, 4009,	3298	<code>\@hyper@readexternallink</code>
4070, 4151	<code>\@footnotemark</code> 3968,	.. 2804, 2808
<code>\@currentlabstr</code> 1398,	4014, 4078, 4080,	<code>\@hyperdef</code> 2747, 2748
1405	4092, 4093, 4123,	<code>\@hyperfixhead</code> 4475,
<code>\@curropt</code> 7985, 7986,	4125	4486
8021, 8022, 8036,	<code>\@footnotetext</code> 3967,	<code>\@hyperpage</code> 4775, 4776
8037, 8225, 8230,	3974, 3999, 4079,	<code>\@hyperref</code> 2728, 2739
8231, 8233, 8240,	4081, 4095, 4096,	<code>\@ifclasslater</code> 9417,
8241, 8243, 8360,	4116	9422
8361, 8396, 8397,	<code>\@for</code> 2121, 4325, 4348,	<code>\@ifclassloaded</code> 1386,
8419, 8420, 8617,	7985, 8021, 8036,	4308, 4811, 4815,
8618, 8654, 8655,	8225, 8230, 8240,	5550, 9416, 9421
8676, 8677	8360, 8396, 8419,	<code>\@ifnextchar</code> 12,
<code>\@dblarg</code> . 1492, 4147,	8617, 8654, 8676	88, 103, 123, 501,
4200	<code>\@fourthoffive</code> . 463,	502, 942, 2585,
<code>\@definecounter</code> 4628,	2612, 2767, 5079,	2728, 2747, 2785,
4629	5085	2930, 3135, 3138,
<code>\@ehd</code> .. 63, 4136, 4194	<code>\@gobble</code> 49,	3141, 3144, 3147,
<code>\@empt</code> 463	56, 117, 454, 455,	3150, 3153, 3308,
<code>\@endForm</code> 2931, 6221,	456, 482, 623,	3363, 3372, 4082,
7945, 8111, 8132,	822, 835, 839,	4100, 4398, 4456,
8156, 8324, 8570	900, 911, 912,	6908, 7110, 7123,
<code>\@eqnocr</code> 3925	919, 924, 938,	7139, 9138, 9139
<code>\@eqnstarfalse</code> 3903,	943, 947, 1433,	<code>\@ifpackagelater</code> ..
3928	1435, 2255, 2364,	.. 1414, 4687
<code>\@eqnstartrue</code> .. 3925	2366, 2643, 3267,	<code>\@ifpackageloaded</code> .
<code>\@eqnswtrue</code> 3875, 3884	3271, 3286, 3288,	346, 1389, 2355,
<code>\@esphack</code> 1412, 2777,	3296, 3302, 3303,	2460, 3706, 3758,
4393, 4768	3304, 3306, 3307,	3766, 3816, 3831,
<code>\@extra@b@citeb</code> 4317,	3308, 3638, 4137,	3835, 3843, 3871,
4339, 4355, 4362	4195, 4562, 5547,	3964, 4031, 4173,
<code>\@extra@binfo</code> . 4234,	6446, 6449, 8302,	4368, 4441, 4552,
4236	8555, 9104, 9105,	4556, 4686, 4722,
<code>\@fifthoffive</code> . 2375,	9106, 9233	4723, 4820, 7745
2613, 2766, 5037,	<code>\@gobblefour</code> 505, 748,	<code>\@ifpackagewith</code> 640,
5083	749, 750, 4951	647, 648, 655,
<code>\@filebordercolor</code> .	<code>\@gobbleopt</code> 3308, 3309	661, 662, 669,
.... 2314, 5290,	<code>\@gobbletwo</code> 500, 506,	670, 671, 680,
5977, 5998, 6329,	507, 747, 943,	681, 682, 690,

691, 699, 700,	3621, 3629	\@nocounterr .. 4675,
701, 702, 709,	\@makecaption . 4161,	4689
710, 718, 719,	4212	\@number . 3742, 3778,
726, 732, 737,	\@makefnmark .. 4026,	4494
2356, 2402, 2403,	4128	\@nx . 4679, 4693, 4696,
2404, 4654	\@makeoother 165, 166,	4698
\@ifstar ... 66, 2629,	178, 179, 181,	\@onelevel@sanitize
2631, 5069	182, 187, 188,	.... 1536, 1540,
\@ifundefined 34, 235,	189, 190, 191,	2052, 3548, 3550,
436, 492, 565,	192, 193, 194,	4590
601, 606, 619,	195, 196, 197,	\@outlinefile . 9110,
622, 854, 1390,	198, 199, 200,	9220, 9221, 9223,
1420, 1520, 2009,	201, 202, 2665,	9279, 9280, 9282
2017, 2024, 2051,	5143, 9211	\@pagebordercolor .
2132, 2137, 2335,	\@makeschapterhead	.. 2317, 7148
2341, 3400, 3651,	.. 9408, 9410	\@pagecolor 2094, 2101
3652, 3713, 3729,	\@menubordercolor .	\@pagerefstar . 2631,
3837, 3846, 3930,	.... 2313, 5605,	5063
4140, 4232, 4239,	6042, 6385	\@pagesetref ... 5028
4316, 4332, 4355,	\@menucolor .. 2092,	\@parboxrestore 4156,
4637, 4667, 4675,	2100, 5614, 6045,	4207
4676, 4689, 4690,	6387	\@parcount 9191, 9198
4697, 5100, 5101,	\@mkboth . 4933, 9326,	\@part ... 9350, 9357
5573, 6247, 6609,	9398, 9400	\@pdfauthor .. 2246,
6610, 6663, 6925,	\@mpfn 3971, 4101, 4113	2320, 5447, 5840,
8302, 8555, 8830,	\@mpfootnotetext ..	6066, 6584, 6832,
9332, 9341	3974, 3987, 3988	7617
\@indexfile .. 4749,	\@mycount 9189, 9198	\@pdfborder .. 1777,
4757, 4761	\@namedef 2150, 3924,	2032, 2160, 2163,
\@inmathwarn 384, 385	3927, 4373, 4374,	2165, 5214, 5927,
\@latex@ . 3394, 3395	4375, 4376	6269, 6701, 6783,
\@latex@error . 1715,	\@nameuse 1403	6794, 7104, 7114,
1732, 1742, 1751,	\@ne . 4479, 6530, 7349	7128, 7146, 7170,
4136, 4194	\@newctr . 4633, 4634	7182, 7200, 7217,
\@latex@warning 2761,	\@newl@bel 3357, 4234	7240, 7260, 7284,
4335, 4358, 5012,	\@nil .. 332, 336, 341,	7357, 7459, 7596,
5032, 5049, 5094,	345, 360, 460,	7741
5103	463, 883, 901,	\@pdfborderstyle ..
\@lbibitem 4246, 4285	1293, 1295, 1311,	.... 2161, 2167,
\@linkbordercolor .	1313, 2053, 2133,	2169, 5215, 5928,
2311, 5250, 6271	2135, 2582, 2592,	6270, 6702, 6784,
\@linkcolor .. 2088,	2682, 2686, 2691,	6795, 7105, 7115,
2095, 6926	3382, 3385, 3392,	7129, 7147, 7171,
\@linkdim . 316, 5675,	3394, 3395, 3448,	7183, 7201, 7218,
5676, 5681, 5682,	3495, 3496, 3498,	7241, 7261, 7285,
5683, 5742, 5743,	3521, 3538, 3586,	7358, 7460, 7597,
5752, 5753, 5754,	3588, 3847, 3855,	7742
5770, 5771, 5780,	3857, 3866, 4794,	\@pdfcreationdate .
5781, 5782, 5800,	4797, 4807, 5016,	.... 2249, 2323,
5801, 5810, 5811,	5019, 5163, 5169,	5451, 5453, 5832,
5812, 7562, 7563,	5173, 5179, 5363,	5834, 6058, 6060,
7568, 7569, 7570,	5364, 5370, 5371,	6807, 6809, 7609,
7800, 7801, 7807,	6412, 6413, 8828,	7611
7808, 7809	8841, 8846	\@pdfcreator .. 2248,
\@listctr 4275, 4301	\@nobreakfalse . 3354	2322, 5450, 5831,
\@m . 4327, 4350, 6485	\@nocnterr 4676, 4690	6057, 6587, 6831,
\@mainaux 3316, 3317,		7608

\@pdfdirection	5412, 5880, 6092, 6557, 6863, 7651	6494, 6497, 6739, 6741, 6749	6117, 6543, 6847, 7635		
\@pdfduplex	.. 5418, 5886, 6098, 6563, 6869, 7657	\@pdfpagelayout	5437, 5907, 6128, 6577, 6579, 6892, 7680	\@pdfstartview	2267, 2269, 2328, 5299, 5400, 5402, 5865, 5981, 6115, 6117, 6848, 7208, 7224, 7636
\@pdfhighlight	2153, 2318, 5227, 5229, 5261, 5286, 5288, 5318, 5320, 5601, 5603, 6700, 6782, 6793, 7103, 7145, 7169, 7181, 7199, 7216, 7239, 7259	\@pdfpagemode	. 2448, 2449, 2562, 2563, 2572, 2573, 5394, 5866, 6123, 6544, 6849, 7637	\@pdfsubject	.. 2251, 2325, 5449, 5845, 6056, 6586, 6830, 7622
\@pdfhightlight	5259	\@pdfpagescrop	2272, 2327, 5379, 5383, 5860, 5861, 5868, 5870, 6135, 6137, 6539, 6541, 6851, 6853, 7639, 7641	\@pdftempa	2815, 2816, 2819
\@pdfkeywords	. 2252, 2326, 5463, 5829, 6071, 6592, 6833, 7606	\@pdfpagetransition	.... 2108, 5475, 5478, 5483, 6393, 6395, 6397, 6722, 6724, 6732	\@pdftempwordfile	. .. 2806, 2816
\@pdflang	2303, 2331, 5438, 5440, 5908, 5910, 6129, 6131, 6893, 6895, 7681, 7683	\@pdfpicktraybypdfsize	.... 5419, 5421, 5887, 5889, 6099, 6101, 6564, 6566, 6870, 6872, 7658, 7660	\@pdftempwordrun	.. .. 2807, 2819
\@pdfm@dest	.. 5920, 5930, 5934	\@pdfprintarea	5415, 5883, 6095, 6560, 6866, 7654	\@pdftitle	2245, 2319, 5448, 5830, 6055, 6585, 6829, 7607
\@pdfm@mark	.. 3609, 5919, 5923, 5947, 5963, 5972, 5987, 5993, 6011, 6016, 6029, 6033, 6046, 6053, 6113, 6137, 8557, 8558, 8559, 8568, 8601, 8606, 8660, 8669, 8686, 8691, 8703, 8709, 8723, 8728, 8742, 8747, 8762, 8767, 8771, 8800, 8808, 9260	\@pdfprintclip	5416, 5884, 6096, 6561, 6867, 7655	\@pdfview	2257, 5200, 5207, 5923, 5926, 6268, 6277, 6288, 6645, 6675, 7286, 7359, 7461, 7693
\@pdfmoddate	.. 2250, 2324, 5455, 5457, 5836, 5838, 6062, 6064, 6811, 6815, 7613, 7615	\@pdfprintpagerange	.... 2234, 2330, 5423, 5425, 5891, 5893, 6103, 6105, 6568, 6570, 6874, 6876, 7662, 7664	\@pdfviewarea	. 5413, 5881, 6093, 6558, 6864, 7652
\@pdfnonfullscreenpagemode	.... 5411, 5879, 6091, 6556, 6862, 7650	\@pdfprintscaling	. .... 5417, 5885, 6097, 6562, 6868, 7656	\@pdfviewclip	. 5414, 5882, 6094, 6559, 6865, 7653
\@pdfnumcopies	5427, 5429, 5895, 5897, 6107, 6109, 6572, 6574, 6878, 6880, 7666, 7668	\@pdfproducer	. 2247, 2321, 5341, 5459, 5461, 5824, 5825, 5841, 5843, 6048, 6049, 6067, 6069, 6507, 6508, 6512, 6515, 6516, 6588, 6590, 6818, 6822, 7279, 7280, 7348, 7350, 7352, 7456, 7457, 7599, 7600, 7618, 7620	\@pdfviewparams	2259, 2261, 6645, 6675, 7287, 7360, 7462, 7694
\@pdfpageduration	. .... 2110, 5498, 5501, 5506, 6492,	\@pdfstartpage	2264, 2329, 5402, 5864,	\@percentchar	. 2660, 2661, 2698
				\@processme	.. 2963, 2964, 5480, 5486, 5503, 5509, 5524, 5530, 6911, 6912, 6973, 6974, 6977, 6978, 8039, 8041, 8422, 8424, 8679, 8681
				\@protected@testopt	.... 503
				\@refstar	2629, 5058
				\@runbordercolor	.. 2315, 5322, 6376
				\@safe@activesfalse	.. 440, 2615
				\@safe@activetrue	.. 439, 2614
				\@schapter	9322, 9323

\@secondoffive	2376, 2610, 2623, 5038, 5039, 5065, 7158	8375, 8376, 8377, 8383, 8384, 8385, 8386, 8616, 8621,	\@footnotetext	3969, 4111	
\@secondoftwo	..... . . 434, 457, 614, 2375, 2376	8623, 8632, 8633, 8634, 8640, 8641, 8642, 8643	\@xp	. 4678, 4679, 4692, 4693, 4695, 4696	
\@sect	... 9370, 9371	\@tempdimb	7988, 7989,	\\[	..... 191, 216
\@seqncr	..... 3925		8363, 8364, 8620, 8621	\{	..... 387
\@serial@counter	.. .... 9141, 9188, 9189, 9190	\@tempswafalse	. 4460	\}	..... 388
\@seteqlabel	.. 4655, 4656	\@tempswattrue	. 4430, 4433, 4436, 4457	\\]	..... 192, 217
\@setminipage	. 4158, 4209	\@temptokena	.. 1961, 1966, 1969, 1971	\^	185, 210, 1881, 2650, 2657, 9440, 9449, 9548, 9556, 9560, 9567, 9574, 9581, 9589, 9595, 9596, 9603, 9610, 9656, 9667, 9745, 9753, 9757, 9763, 9770, 9777, 9785, 9791, 9792, 9799, 9806, 9834, 9835, 9854, 9855, 9862, 9863, 9882, 9883, 9884, 9923, 9924, 9947, 9948, 9949, 9950
\@setref	. 2618, 2623, 5007, 5008, 5045	\@tfor	..... 3952	_	186, 211, 395, 2653, 2667, 2668
\@sharp	.. 3847, 3852	\@the@H@page	.. 4496, 4498	\`	..... 165, 171, 178, 181, 1940, 1943, 1946, 1948, 1956, 9438, 9447, 9546, 9554, 9558, 9565, 9572, 9579, 9587, 9591, 9592, 9601, 9608, 9654, 9665, 9743, 9751, 9755, 9761, 9768, 9775, 9783, 9787, 9788, 9797, 9804, 10325, 10330, 10335, 10340, 10345, 10350, 10355, 10360, 10365, 10370, 10375, 10380, 10385, 10390, 10395, 10400, 10405, 10410, 10415, 10420, 10425, 10430, 10435, 10440
\@skiphyperreffalse	3689, 4257, 4269	\@thefnmark	.. 3972, 3983, 4045, 4046, 4102, 4114, 4121	_	187, 212, 1132, 1223, 1837, 2345, 4725, 5142, 5148
\@skiphyperreftrue	.. 4247, 4269	\@thehead	4507, 4508, 4512, 4523	\~	..... 394, 766, 1875, 1883, 1884, 1885, 2406, 2671, 9441, 9450, 9549, 9564, 9568, 9582
\@spart	.. 9363, 9364	\@thirdoffive	.. 2611		
\@ssect	.. 9317, 9318	\@topnewpage	... 9408		
\@startlos	4945, 4952, 5001	\@undefined	508, 2400, 3299, 3321, 3341, 3510, 3528, 3567, 4135, 4193, 5191, 5343, 5352, 6241, 6518, 6532		
\@starttoc	.... 3342	\@undottedtocline	. .... 4997		
\@tempa	.. 4033, 4037, 4040, 4056	\@unprocessedoptions	.... 2530		
\@tempb	.. 3951, 3955	\@urlbordercolor	.. .... 2312, 5263, 6021, 6341, 7172, 7184		
\@tempboxa	5674, 5675, 5681, 5739, 5742, 5745, 5746, 5752, 5757, 5758, 5768, 5770, 5773, 5774, 5780, 5785, 5786, 5798, 5800, 5803, 5804, 5810, 5815, 5816, 7561, 7562, 7568, 7799, 7800, 7807	\@urlcolor	2091, 2099, 5274, 5680, 5689, 5778, 5790, 6028, 6343, 7567, 7576, 7806, 7814		
\@tempcnta	9070, 9071, 9072, 9073, 9074, 9076, 9079, 9080, 9081, 9087, 9089, 9091, 9123, 9124, 9125, 9128, 9129, 9130, 9131, 9132, 9301, 9302, 9303	\@urlltype	5651, 5655, 6151, 6173, 6296, 6303, 7538, 7542, 7779, 7783		
\@tempdima	1437, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 5193, 7984, 7989, 7991, 8000, 8001, 8002, 8008, 8009, 8010, 8011, 8359, 8364, 8366,	\@whilenum	.... 764		
		\@wrindex	4728, 4729, 4745		
		\@writefile	... 4386		
		\@x@sf	... 4016, 4028, 4127, 4129		
		\@xfootnote	... 4100		
		\@xfootnotemark	3980, 4118		

	9600, 9604, 9657, 9668, 9746, 9760, 9764, 9778, 9796, 9800, 9866, 9867, 9868, 9935, 9936, 10327, 10332, 10337, 10342, 10347, 10352, 10357, 10362, 10367, 10372, 10377, 10382, 10387, 10392, 10397, 10402, 10407, 10412, 10417, 10422, 10427, 10432, 10437, 10442	9778, 9779, 9780, 9781, 9782, 9783, 9784, 9785, 9786, 9787, 9788, 9789, 9790, 9791, 9792, 9793, 9794, 9795, 9796, 9797, 9798, 9799, 9800, 9801, 9802, 9803, 9804, 9805, 9806, 9807, 9808, 9809, 9810, 9811, 9960, 9961, 9962, 9963, 9964, 9965, 9966, 9967, 9968, 9969, 9970, 9971, 9972, 9973, 9974, 9975, 9976, 10016, 10033, 10034, 10035, 10036, 10037, 10038, 10039, 10040, 10041, 10042, 10043, 10044, 10045, 10046, 10047, 10048, 10049, 10050, 10051, 10052, 10053, 10237, 10238, 10239, 10240, 10241, 10242, 10243, 10244, 10245, 10246, 10247, 10248, 10249, 10250, 10251, 10252, 10253, 10254, 10255, 10256, 10257, 10258, 10259, 10260, 10261, 10262, 10263, 10264, 10265, 10266, 10267, 10268, 10269, 10270, 10271, 10272, 10273, 10274, 10275, 10276, 10277, 10278, 10279, 10280, 10281, 10282, 10283, 10310, 10312, 10313, 10317, 10319, 10320, 10323, 10325, 10327, 10338, 10340,	10344, 10345, 10346, 10347, 10348, 10349, 10350, 10351, 10353, 10354, 10355, 10356, 10357, 10358, 10359, 10360, 10361, 10362, 10363, 10364, 10365, 10366, 10367, 10368, 10369, 10370, 10371, 10373, 10374, 10375, 10376, 10377, 10378, 10379, 10380, 10381, 10382, 10383, 10385, 10387, 10398, 10400, 10404, 10405, 10406, 10407, 10408, 10409, 10410, 10411, 10413, 10414, 10415, 10416, 10417, 10418, 10419, 10420, 10421, 10422, 10423, 10424, 10425, 10426, 10427, 10428, 10429, 10430, 10431, 10433, 10434, 10435, 10436, 10437, 10438, 10439, 10440, 10441, 10442, 10495, 10497
Numbers			
\3 374, 808, 809, 810, 811, 812, 813, 814, 815, 1366, 9206, 9546, 9547, 9548, 9549, 9550, 9551, 9552, 9553, 9554, 9555, 9556, 9557, 9558, 9559, 9560, 9561, 9562, 9563, 9564, 9565, 9566, 9567, 9568, 9569, 9570, 9571, 9572, 9573, 9574, 9575, 9576, 9577, 9578, 9579, 9580, 9581, 9582, 9583, 9584, 9585, 9586, 9587, 9588, 9589, 9590, 9591, 9592, 9593, 9594, 9595, 9596, 9597, 9598, 9599, 9600, 9601, 9602, 9603, 9604, 9605, 9606, 9607, 9608, 9609, 9610, 9611, 9612, 9613, 9614, 9615, 9743, 9744, 9745, 9746, 9747, 9748, 9749, 9750, 9751, 9752, 9753, 9754, 9755, 9756, 9757, 9758, 9759, 9760, 9761, 9762, 9763, 9764, 9765, 9766, 9767, 9768, 9769, 9770, 9771, 9772, 9773, 9774, 9775, 9776, 9777,			
		\9 377, 1314, 1335, 1347, 1366, 10284, 10285, 10286, 10287, 10288, 10289, 10290, 10291, 10292, 10293, 10294, 10295, 10296, 10297, 10298, 10299, 10300, 10301, 10302, 10303, 10304, 10305, 10306, 10324, 10326, 10328, 10329, 10330,	

10331,	10332,	\acircumflex . . . 1948,	\appendixautorefname
10333,	10334,	10310, 10333,	.... 1847, 1864,
10335,	10336,	10334, 10335,	1881, 1898, 1915,
10337,	10339,	10336, 10337	1932, 1949, 5128
10341,	10342,	\Acrobatmenu . . 1435,	\arabic . . 3511, 3650,
10343,	10344,	2372, 3296, 5596,	3651, 3653, 3654,
10345,	10346,	6031, 6381, 7099	3655, 3657, 3658,
10347,	10349,	\active 744, 751, 2650,	3659, 3660, 3662,
10351,	10354,	2651, 2652, 2653,	3663, 3664, 3665,
10356,	10358,	2654, 2657, 2659,	3666, 3667, 3670,
10359,	10360,	2662, 2668, 9210	3680, 3681, 3714,
10361,	10362,	\add@accent . . . 386	3782, 4631, 4637,
10363,	10364,	\addcontentsline . .	4674, 4688, 4816,
10365,	10366,	.... 4152, 4204,	4821, 4823
10367,	10369,	4560, 4566, 4622,	\AtBeginDocument 236,
10371,	10373,	9413	1772, 2362, 2446,
10374,	10375,	\addtocontents 4599,	2577, 3765, 4369,
10376,	10377,	4623, 4828, 4880,	5543, 6263
10379,	10380,	9402, 9403	\AtBeginDvi . . 7288,
10381,	10382,	\addtocounter . 3775,	7361, 7430, 7452,
10384,	10386,	3798, 3806, 3810	7849
10388,	10389,	\addvspace 9402, 9403	\AtEndDocument 3333,
10390,	10391,	\advance 314, 315, 765,	3606
10392,	10393,	3176, 3177, 3180,	\AtEndOfPackage 1387,
10394,	10395,	3181, 3465, 5682,	2008, 2016, 2023,
10396,	10397,	5753, 5781, 5811,	2434, 2453, 2459,
10399,	10401,	6514, 7569, 7808,	2568
10402,	10403,	7991, 8009, 8010,	\author . . 3362, 3372
10404,	10405,	8366, 8384, 8385,	\auto@setref . . . 465
10406,	10407,	8623, 8641, 8642,	\autoref . 2447, 5068,
10409,	10411,	9071, 9073, 9074,	7828
10414,	10416,	9080, 9089, 9131,	\ayn 10469
10418,	10419,	9302	
10420,	10421,	\AE 9552, 9749	B
10422,	10423,	\ae 9585, 9781	\baa 10452
10424,	10425,	\afterassignment . .	\back@none 1785, 1795,
10426,	10427,	1032, 1038, 1044	1808
10429,	10431,	\AfterBeginDocument	\back@page 1787, 1800
10433,	10434,	235, 1667, 1728,	\back@section . 1786,
10435,	10436,	2443, 2481, 2634,	1792, 1798, 1804
10437,	10439,	3225, 3313, 3627,	\back@slide 1788, 1797
10440,	10441,	7337, 7499	\backcite 4387
10442, 10496		\alef 10451	\backref . 4418, 7832
		\alefhamza . . . 10447	\baselineskip . 1439,
_ . . . 489, 4327, 4350		\aleflowerhamza . . .	3189, 3190, 3191,
		... 10449	3192, 3193, 5731,
A		\alefmadda . . . 10446	6671, 6693, 7312
\ABREVE 10316, 10388,		\alefmaqsura . . 10480	\bbl@cite@choice . .
10389, 10390,		\Alph 3514, 3730, 3731	.... 4240
10391, 10392		\alph 3515, 3944	\BeforeTeXIVht . 1663
\abreve 10309, 10328,		\AMSautorefname 5118	\begin . . . 7837, 10501
10329, 10330,		\anchor@spot . . 2855,	\belowpdfbookmark .
10331, 10332		2868, 2875, 2881,	.... 9127
\ACIRCUMFLEX . 10317,		5239, 5633, 5714,	\bfseries . 422, 4333,
10393, 10394,		6215, 6280, 6642,	4356, 5011, 5031,
10395, 10396,		7520, 7762	5048, 5093
10397		\appendix 3727, 3728	\bgroup . . . 498, 6215,
			6685, 7964, 7982,

8050, 8066, 8081,	6715, 9143, 9145,	\contentsline . 3322,
8094, 8164, 8211,	9210	3323, 3334, 4600,
8253, 8274, 8340,	\cf@encoding ... 820	4604, 4623, 4625
8357, 8434, 8451,	\chapterautorefname	\copy 3857, 3862
8470, 8484, 8591,	.... 1848, 1865,	\count@ 763, 764, 765,
8614, 8695, 8716,	1882, 1899, 1916,	766, 1033, 2060,
8735, 8753	1933, 1950, 5129	2061, 2066, 2067,
\bibcite . 4233, 4237,	\chapternumberline	6510, 6511, 6512,
4241, 4262, 4275,	.. 9102, 9106	6513, 6514, 6517
4291, 4301	\char 8318, 9147, 9184	\CurrentBorderColor
\BOOKMARK 9111, 9138	\check@bm@number ..	.... 5231, 5243,
\box 3183, 6959	.... 9244, 9253,	5247, 5250, 6271,
\bullet .. 4963, 4971,	9293, 9301	6301, 6306, 6315,
4981, 4989	\CheckBox 3140	6348, 6356
	\CheckCommand .. 4032	\currentpdfbookmark
	\checkcommand ... 42,	.... 9119
	3805, 4111, 4118,	\cyr 441
	4125, 4192, 4202,	\CYRA .. 10069, 10246,
	4285, 4297, 4622,	10248
	4625, 4674, 5045	\cyra .. 10102, 10247,
	\checklatex . 4, 4110,	10249
	4191, 4284, 4621,	\CYRABHCH 10233
	5044	\cyrabhch 10234
	\checkpackage 9, 3804,	\CYRABHCHDSC .. 10235
	4673	\cyrabhchdsc .. 10236
	\Choice@toks .. 2929,	\CYRABHDZE ... 10262
	8034, 8040, 8417,	\cyrabhdze ... 10263
	8423, 8674, 8680,	\CYRABHHA 10213
	8951	\cyrabhha 10214
\c@footnote .. 3982,	\ChoiceMenu ... 3137	\CYRAE 10250
4035, 4043, 4120	\citation 4330, 4353,	\cyrae 10251
\c@page .. 3447, 3465,	4379	\CYRB 10070
3466, 3470, 3482,	\citeauthoryear 4445,	\cyrb 10103
3484, 3489, 3496,	4451	\CYRBYUS 10160
3498, 3500, 3529,	\citeN 4442	\cyrbyus 10161
4479, 4480, 4491	\CJK@char 747	\CYRC 10092
\c@secnumdepth 9340,	\CJK@charx 748	\cyrc 10125
9358, 9372, 9377	\CJK@ignorespaces .	\CYRCH .. 10093, 10280
\c@slidesection 4829,	.... 746	\cyrch .. 10126, 10281
4957, 4958	\CJK@punctchar . 749	\CYRCHLDSC ... 10244
\c@slidesubsection	\CJK@punctcharx 750	\cyrchldsc ... 10245
.... 4881	\clearpage 3606	\CYRCHRDSC ... 10227
\c@tocdepth 2044, 2049	\close@pdflink 5238,	\cyrchrdsc ... 10228
\calc@bm@number 9234,	5245, 5248, 5275,	\CYRCHVCRS ... 10229
9300	5307, 5338, 5614	\cyrchvcrs ... 10230
\calculate@pdfview	\closeout 3316	\CYRD 10073
.. 2253, 2256	\codeof 4409	\cyrd 10106
\caption . 4134, 4136,	\color ... 2589, 2592	\CYRDJE 10056
4192, 4194	\color@endbox . 5674,	\cyrdje 10137
\catcode 171, 172, 183,	5739, 5768, 5798,	\CYRDZE 10059
184, 185, 186,	7561, 7799	\cyrdze 10140
205, 744, 751,	\color@hbox .. 5674,	\CYRDZHE 10068
1132, 1133, 1223,	5739, 5768, 5798,	\cyrdzhe 10149
1224, 2650, 2651,	7561, 7799	\CYRE .. 10055, 10074,
2652, 2653, 2654,	\COMBINING 10252	\cyre .. 10107, 10136,
2657, 2659, 2662,	.. 10185, 10186,	10253
2668, 2678, 2705,	10187, 10188	
2706, 5142, 6714,		

\CYREREV	10099	\cyrkvcrs	10202	\cyrt	10121
\cyrerev	10132	\CYRL	10081	\CYRTDSC	10217
\CYRERY	10097, 10282	\cyrllangle	10114	\cyrtdsc	10218
\cyrery	10130, 10283	\CYRLJE	10305	\CYRTETSE	10225
\CYRF	10090	\cyrllje	10063	\cyrtetse	10226
\cyrf	10123	\CYRLYUS	10144	\cyrthousands	10184
\CYRFITA	10168	\cyrlyus	10156	\CYRTSHE	10065
\cyrfita	10169	\CYRM	10157	\cyrtshe	10146
\CYRG	10057, 10072	\cyrm	10082	\CYRU	10089, 10274, 10276, 10278
\cyrghcrs	10105, 10138	\CYRN	10115	\cyrucyru	10122, 10275, 10277, 10279
\CYRGHCRS	10191	\cyrn	10083	\CYRUK	10174
\cyrghcrs	10192	\CYRNDSC	10116	\cyrucyruk	10175
\CYRGHK	10193	\cyrndsc	10207	\CYRUSHRT	10067
\cyrghk	10194	\CYRNG	10208	\cyrushrt	10148
\CYRGUP	10189	\cyrng	10209	\CYRV	10071
\cyrgup	10190	\CYRHHK	10210	\cyrv	10104
\CYRH	10091	\cyrnhk	10242	\CYRY	10219
\cyrh	10124	\CYRNJE	10243	\cyrucyry	10220
\CYRHDSC	10223	\cyrnje	10064	\CYRYA	10101
\cyrhdsc	10224	\CYRO	10145	\cyrucyrya	10134
\CYRHRDSN	10096	\cyrro	10084, 10268	\CYRYAT	10152
\cyrhrdsn	10129	\cyrucyro	10117, 10269	\cyrucyryat	10153
\CYRI	10077, 10079, 10264, 10266	\CYROMEGA	10150	\CYRYHCRS	10221
\cyrucyri	10110, 10112, 10265, 10267	\cyrucyromega	10151	\cyrucyryhcrs	10222
\CYRIE	10058	\CYROMEGARND	10176	\CYRYI	10061
\cyrucyrie	10139	\cyrucyromegarnd	10177	\cyrucyryi	10142
\CYRII	10060	\CYROMEGATITLO	10178	\CYRYO	10054
\cyrucyrii	10141	\cyrucyromegatitlo	10179	\cyrucyryo	10135
\CYRIOTBYUS	10162	\CYROT	10180	\CYRYU	10100
\cyrucyriotbyus	10163	\cyrrot	10181	\cyrucyryu	10133
\CYRIOTE	10154	\CYROTLD	10270, 10272	\CYRZ	10076, 10260
\cyrucyriote	10155	\cyrrotld	10271, 10273	\cyrucyryz	10109, 10261
\CYRIOTLYUS	10158	\CYRP	10085	\CYRZDSC	10197
\cyrucyriotlyus	10159	\cyrp	10118	\cyrucyryzdsc	10198
\CYRISHRT	10078	\CYRpalochka	10237	\CYRZH	10075, 10238, 10258
\cyrucyrishrt	10111	\CYRPHK	10211	\cyrucyryzh	10108, 10239, 10259
\CYRIZH	10170, 10172	\cyrphk	10212	\CYRZHDSC	10195
\cyrucyrizh	10171, 10173	\CYRPSI	10166	\cyrucyryzhdsc	10196
\CYRJE	10062	\cyrpsi	10167		
\cyrucyrije	10143	\CYRR	10086		
\CYRK	10066, 10080	\cyrucyrr	10119		
\cyrucyryk	10113, 10147	\cyrangle	10306		
\CYRKBEAK	10205	\CYRS	10087		
\cyrucyrykbeak	10206	\cyrucyrs	10120		
\CYRKDSC	10199	\CYRSCHWA	10254, 10256		
\cyrucyrykdsc	10200	\cyrucyrschwa	10255, 10257		
\CYRKHCRC	10203	\CYRSDSC	10215		
\cyrucyrykhcrs	10204	\cyrucyrysdsc	10216		
\CYRKHK	10240	\CYRSFTSN	10098		
\cyrucyrykhk	10241	\cyrucyrysfdsn	10131		
\CYRKOPPA	10182	\CYRSH	10094		
\cyrucyrykoppa	10183	\cyrucyrysh	10127		
\CYRKSI	10164	\CYRSHCH	10095		
\cyrucyryksi	10165	\cyrucyryshch	10128		
\CYRKVCRC	10201	\CYRSHHA	10231		
		\cyrucyryshha	10232		
		\CYRT	10088		

D

\d	1945, 1949, 1951, 1952, 1953, 1954, 1955, 1957, 10324, 10329, 10334, 10339, 10344, 10349, 10354, 10359, 10364, 10369, 10374, 10379, 10384, 10389, 10394, 10399, 10404, 10409, 10414, 10419,
----	---

10424, 10429, 10434, 10439	8355, 8612	3078, 3081, 3084, 3087, 3090, 3093, 3096, 3099, 3102, 3106, 3109, 3112, 3115, 3118, 3121, 3124, 3127, 3130, 6984, 6986, 6989, 6991, 6993, 7001, 7009, 7011, 7013, 7015, 7017, 7019, 7021, 7030, 7040, 7042, 7044, 7046, 7055, 7057, 7059, 7061, 7063, 7065, 7067, 7069, 7071, 7073, 7075, 7076, 7078, 7080, 7082, 7084, 7086, 7087, 7088, 7089, 7090, 7091, 7092, 7093, 7094, 7095, 7096
\dad 10466	\DefaultWidthofReset 3188, 8079, 8468, 8733	\DH 9562, 9759
\dal 10459	\DefaultWidthofSubmit 3186, 8064, 8449, 8714	\dh 9599, 9795
\damma 10486	\DefaultWidthofText 3194, 7953, 8329, 8580	\dhal 10460
\declare@shorthand . . 642, 643, 651, 652, 657, 674, 675, 676, 685, 686, 694, 695, 705, 713, 714, 722, 723, 728, 729, 734, 739, 740	\define@key . . 1521, 1523, 1566, 1581, 1584, 1587, 1591, 1595, 1599, 1603, 1607, 1611, 1615, 1618, 1621, 1624, 1626, 1629, 1632, 1635, 1638, 1641, 1644, 1647, 1650, 1653, 1657, 1658, 1671, 1677, 1683, 1688, 1693, 1698, 1703, 1708, 1712, 1739, 1757, 1762, 1767, 1771, 1774, 1779, 1782, 1789, 1818, 1834, 1837, 1980, 2006, 2014, 2022, 2029, 2035, 2038, 2041, 2045, 2073, 2078, 2082, 2085, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2103, 2106, 2109, 2111, 2114, 2123, 2153, 2160, 2161, 2233, 2242, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2264, 2265, 2272, 2273, 2276, 2279, 2282, 2285, 2288, 2291, 2302, 2305, 2308, 2386, 2390, 2937, 2942, 2953, 2974, 2977, 2980, 2983, 2986, 2989, 2992, 2995, 2998, 3001, 3004, 3007, 3010, 3013, 3017, 3020, 3023, 3026, 3029, 3032, 3035, 3038, 3041, 3044, 3047, 3050, 3053, 3056, 3059, 3072, 3075,	\dimen@ 352, 353, 357, 1039, 1102, 1103, 1106, 1108, 2341, 2342, 2343, 6484, 6485, 6486, 6950, 6962, 6965, 7957, 7958, 7960, 8333, 8334, 8336, 8584, 8585, 8587
\DeclareFontEncoding . . 9432, 9648		\dimexpr . . 364, 1290, 1292, 1300, 1305, 1308, 1310, 1328, 1330, 1332, 1336, 1338, 1350, 1354, 1359, 1368, 1371, 1375, 1378, 1382, 1383
\DeclareFontFamily . . . 602, 607		\DingObject . . . 8406
\DeclareFontShape 603, 608		\discretionary . 500
\DeclareFontSubstitution . . . 604, 609		\divide 6511
\DeclareRobustCommand 2629, 2630, 2703, 2716, 2718, 2727, 3134, 3137, 3140, 3143, 3146, 3149, 3152, 5068		\DJ . 1957, 9563, 9842, 10318
\DeclareTextAccent 9438, 9439, 9440, 9441, 9442, 9443, 9444, 9445, 9446, 9654, 9655, 9656, 9657, 9658, 9659, 9660, 9661, 9662, 9663, 9664		\dj . 1954, 1955, 9843, 10311
\DefaultHeightofCheckBox 3189, 8096, 8486, 8755		\do . . 764, 1538, 1543, 1548, 2121, 2155, 2156, 2157, 2158, 2173, 2174, 2175, 2176, 2177, 2178, 2181, 2182, 2183, 2184, 2185, 2186, 2189, 2190, 2193, 2194, 2195, 2196,
\DefaultHeightofChoiceMenu 3191, 7981, 8356, 8613		
\DefaultHeightofReset 3187, 8080, 8469, 8734		
\DefaultHeightofSubmit 3185, 8065, 8450, 8715		
\DefaultHeightofText 3193, 7954, 7957, 8330, 8333, 8581, 8584		
\DefaultWidthofCheckBox 3190, 8095, 8485, 8754		
\DefaultWidthofChoiceMenu 3192, 7980,		

2197, 2200, 2201,	\end 10502	3110, 3113, 3116,
2202, 2203, 2204,	\endeqnarray . . 3905,	3119, 3122, 3125,
2207, 2208, 2209,	3921, 3928	3128, 3131
2210, 2211, 2214,	\endequation . . 3870,	\Field@boolkey 2957,
2215, 2216, 2217,	3900	2978, 2981, 2984,
2218, 2221, 2222,	\endForm 2931	2987, 2990, 2993,
2225, 2226, 2227,	\endinput . . 64, 1668,	2996, 2999, 3002
2230, 2231, 2237,	1716, 1717, 1729,	\Field@toks . . 2960,
2238, 2239, 2240,	1733, 1734, 1743,	2961, 2963, 7965,
2295, 2296, 2297,	1744, 1752, 1753,	7992, 8051, 8063,
2298, 2299, 2300,	2444, 2482, 5005,	8078, 8097, 8165,
3955, 4325, 4348,	6663, 7835, 9313	8182, 8193, 8203,
7985, 8021, 8036,	\endlinechar . . . 2649	8213, 8229, 8246,
8225, 8230, 8240,	\endNoHyper . . . 3281	8254, 8259, 8275,
8360, 8396, 8419,	\EndPreamble . . . 7838	8284, 8341, 8367,
8617, 8654, 8676,	\endsubeqnarray 3932,	8435, 8448, 8467,
9209	3941	8487, 8592, 8624,
\documentclass . . . 2	\eqnarray 3904, 3906,	8696, 8713, 8732,
\dospecials . . . 9214	3925	8756
\dots 398	\equal 4406	\Field@Width . . 2917,
\dp . 3179, 3182, 5675,	\equation 3869, 3878,	3015
5742, 5770, 5800,	3882, 3891	\figureautorefname
6951, 6954, 7562,	\equationautorefname	. . . . 1844, 1861,
7800, 8574	. . . . 1841, 1858,	1878, 1895, 1912,
\dvipdfm@setdim 8571,	1875, 1892, 1909,	1929, 1946, 5125
8602, 8662, 8687,	1926, 1943, 5118,	\filename@area . 2837
8704, 8724, 8743,	5122	\filename@base . 2837
8763	\errmessage . . . 1977	\filename@ext . 2834,
E	\es@roman 442	2835, 2837, 2838
\ECIRCUMFLEX . 10319,	\escapechar 370, 3948,	\filename@parse 2833
10403, 10404,	9232, 9233, 9275	\find@pdflink . 5217,
10405, 10406,	\eTeX 404, 7843	5244, 5248
10407	\eTeXversion . . 5343,	\Fld@additionalactions
\ecircumflex . 10312,	5345, 5347	. . . . 8892, 8953,
10343, 10344,	\exandafter . . . 5761	8978, 8997
10345, 10346,	\ExecuteOptions 2347,	\Fld@align 2921, 3051,
10347	2348, 2352	8864, 8941, 8984
\egroup . . . 499, 6215,	\ext@figure . . . 4813	\Fld@bcolor . . 2923,
6709, 7975, 8017,	\ext@table 4812	3057, 8868, 8870,
8060, 8075, 8089,	\extra@b@citeb . 4332	8945, 8947, 8966,
8106, 8173, 8221,	\extrasvietnam . 2015	8968, 8989, 8991
8262, 8287, 8350,	\extrasvietnamese .	\Fld@bordercolor . .
8392, 8445, 8464,	. . . . 2007	. . . . 2924, 3033,
8479, 8496, 8607,	F	8867, 8888, 8944,
8649, 8710, 8729,	\fa 10472	8965, 8988, 9018,
8748, 8769	\FancyVerbLineautorefname \Fld@bordersep 2925,	9038
\emph 407	. . . . 1854, 1871,	\Fld@borderstyle . .
\empty 746, 2048	1888, 1905, 1922,	. . . . 2927, 3042,
\enc@html 2941, 2944	1939, 1956, 5135	8865, 8886, 8942,
\enc@update . . . 383	\farsikaf 10493	8963, 8986, 9016,
\END 845, 846, 871, 872,	\farsiya 10495	9042
886, 887, 1181,	\fatha 10485	\Fld@borderwidth . .
1187, 1192, 1275,	\fbox 8321, 8322	. . . . 2926, 3039,
1277, 5477, 5490,	\Field@addtoks 2962,	3173, 3176, 3177,
5494, 5500, 5513,	3005, 3008, 3097,	3180, 3181, 8009,
5517, 5522, 5534,	3100, 3104, 3107,	
5538		

8010, 8384, 8385, 8641, 8642, 8865, 8886, 8942, 8963, 8986, 9016, 9042	8493, 8581, 8587, 8597, 8613, 8643, 8653, 8683, 8715, 8734, 8755, 8759	\Fld@onfocus@code 3066, 3085, 8910, 8912
\Fld@calculate@code 3064, 3082, 8906, 8908	\Fld@hiddenfalse 2909	\Fld@onmousedown@code 3068, 8918, 8920
\Fld@cbsymbol . 2928, 3060, 8872	\Fld@keystroke@code 3065, 3073, 8894, 8896	\Fld@onmouseup@code 3069, 8922, 8924
\Fld@charsize . 2918, 2919, 3027, 8008, 8383, 8640, 8874, 8950, 8972, 8994, 9035	\Fld@listcount 8020, 8023, 8032, 8035, 8038, 8395, 8398, 8415, 8418, 8421, 8652, 8656, 8661, 8669, 8672, 8675, 8678	\Fld@passwordfalse 2915
\Fld@checkedfalse 2908	\Fld@loc 2975	\Fld@popdownfalse 2914
\Fld@checkequals 2966, 7986, 8022, 8037, 8231, 8241, 8361, 8397, 8420, 8618, 8655, 8677	\Fld@maxlen .. 2920, 3018, 9007	\Fld@radiofalse 2912
\Fld@color 2922, 3036, 8874, 8950, 8972, 8994	\Fld@menulength 2916, 3021, 7983, 7987, 8008, 8224, 8225, 8228, 8358, 8362, 8383, 8615, 8619, 8640	\Fld@readonlyfalse 2910
\Fld@combofalse 2913	\Fld@multilinefalse 2907	\Fld@validate@code 3063, 3079, 8902, 8904
\Fld@default .. 3048, 7951, 7968, 7979, 8093, 8163, 8181, 8195, 8203, 8209, 8233, 8243, 8273, 8283, 8327, 8344, 8354, 8483, 8578, 8595, 8611, 8752, 8952, 8973, 8974, 8995	\Fld@name 3011, 7950, 7978, 8049, 8067, 8082, 8092, 8162, 8167, 8178, 8179, 8190, 8191, 8200, 8201, 8208, 8229, 8244, 8252, 8257, 8272, 8281, 8326, 8353, 8433, 8452, 8471, 8482, 8577, 8602, 8606, 8610, 8661, 8669, 8687, 8691, 8694, 8704, 8709, 8717, 8724, 8728, 8736, 8743, 8747, 8751, 8763, 8767, 8863, 8882, 8939, 8959, 8983, 9012, 9032	\Fld@width 3014, 7953, 7967, 7971, 7980, 7994, 8000, 8002, 8026, 8044, 8053, 8064, 8069, 8079, 8084, 8095, 8099, 8102, 8329, 8343, 8348, 8355, 8369, 8375, 8377, 8411, 8429, 8437, 8449, 8454, 8468, 8473, 8485, 8489, 8493, 8580, 8594, 8597, 8612, 8626, 8632, 8634, 8653, 8683, 8698, 8714, 8719, 8733, 8738, 8754, 8758, 8759
\Fld@disabledfalse 2911	\Fld@onblur@code 3067, 3088, 8914, 8916	\float@caption . 4176
\Fld@fillcolor . 3030	\Fld@onclick .. 3103, 8890	\float@makebox 4178, 4179
\Fld@findlength 8212, 8223	\Fld@onenter@code 3070, 3091, 8926, 8928	\flq 449
\Fld@flags 8004, 8005, 8006, 8007, 8379, 8380, 8381, 8382, 8636, 8637, 8638, 8639, 8954	\Fld@onexit@code 3071, 3094, 8930, 8932	\flqq 447
\Fld@format@code 3062, 3076, 8898, 8900		\fmtname 7
\Fld@height .. 3024, 7954, 7960, 7971, 7981, 8011, 8026, 8044, 8065, 8080, 8096, 8102, 8330, 8336, 8348, 8356, 8386, 8411, 8429, 8450, 8469, 8486,		\fmtversion 7
		\fontencoding .. 378, 381, 8314
		\fontfamily ... 8313
		\fontseries ... 8315
		\fontshape 2597, 8316
		\footnote 2885
		\footnoteautorefname 1842, 1859, 1876, 1893, 1910, 1927, 1944, 5119, 5123
		\footnotesize .. 427

<code>\footnotetext</code> .. 4035	10346, 10351,	<code>\HAR@tempa</code> 4423, 4424,
<code>\Form</code> 2930	10356, 10361,	4425, 4426, 4427,
<code>\Form@action</code> .. 2940,	10366, 10371,	4428
8154, 9024	10376, 10381,	<code>\harvardcite</code> .. 4372,
<code>\Form@boolkey</code> .. 2934	10386, 10391,	4409
<code>\Form@htmlfalse</code> 2933,	10396, 10401,	<code>\harvarditem</code> ... 4397
2950	10406, 10411,	<code>\hbox</code> 1031, 1037, 1043,
<code>\Form@htmltrue</code> . 2945	10416, 10421,	1447, 2059, 2065,
<code>\Form@method</code> .. 2954,	10426, 10431,	3015, 3167, 3168,
2956, 8154	10436, 10441	3169, 3170, 4362,
<code>\frq</code> 450	<code>\H@@footnotemark</code> ..	5676, 5683, 5743,
<code>\frqq</code> 448	.... 3968, 3985,	5754, 5771, 5782,
<code>\futurelet</code> . 517, 839	4080, 4092, 4103	5801, 5812, 6685,
<code>\FV@SetLineNo</code> .. 3760	<code>\H@@footnotetext</code> ..	6954, 6965, 7563,
<code>\FV@StepLineNo</code> 3759,	.... 3967, 3977,	7570, 7801, 7809,
3761, 3762	4000, 4061, 4081,	8299, 8596, 8653,
	4095, 4103	8683, 8699, 8720,
G	<code>\H@mpfootnotetext</code>	8739, 8759
<code>\g@addto@macro</code> . 4240	3975, 3987, 3989	<code>\HCode</code> ... 8154, 8156,
<code>\G@refundefinedtrue</code>	<code>\H@definecounter</code> ..	8167, 8176, 8188,
.... 2760, 4334,	.. 4628, 4630	8196, 8198, 8228,
4357, 5010, 5030,	<code>\H@endeqnarray</code> 3905,	8232, 8237, 8242,
5047, 5092	3922	8256, 8261, 8265,
<code>\gaf</code> 10494	<code>\H@endequation</code> 3870,	8268, 8277
<code>\Gauge</code> 3146	3900	<code>\headerps@out</code> . 7283,
<code>\GenericError</code> .. 505	<code>\H@endsubeqnarray</code> .	7289, 7356, 7362,
<code>\GenericInfo</code> ... 507	.. 3932, 3942	7422, 7431, 7451,
<code>\GenericWarning</code> 506	<code>\H@eqnarray</code> 3904, 3909	7464, 7501, 7603,
<code>\getpagerefnumber</code> .	<code>\H@equation</code> 3869, 3893	7850
.... 3840	<code>\H@item</code> .. 3668, 3674,	<code>\hfil</code> 4509
<code>\getrefbykeydefault</code>	4248, 4269	<code>\hfill</code> ... 3167, 3168,
.. 3814, 3815	<code>\H@newctr</code> 4633, 4635	3169, 3170, 4255,
<code>\gexmode</code> . 6532, 6533,	<code>\H@old@part</code> 9350, 9361	4286
6611	<code>\H@old@schapter</code> 9322,	<code>\Hfootnoteautorefname</code>
<code>\ghayn</code> 10470	9324	.... 5119
<code>\Gin@setfile</code> .. 4712,	<code>\H@old@sect</code> 9370, 9376	<code>\hhyperref</code> 2890
4713	<code>\H@old@spart</code> .. 9363,	<code>\Hmake@df@tag@@</code> 4640,
<code>\glossary</code> 456	9365	4642
<code>\glq</code> 445	<code>\H@old@ssect</code> .. 9317,	<code>\Hmake@df@tag@@@</code> ..
<code>\glqq</code> 443	9319	.. 4647, 4649
<code>\grq</code> 446	<code>\H@old@thehead</code> 4507,	<code>\href</code> . 457, 2703, 2884,
<code>\grqq</code> 444	4509, 4528	2885, 3304
<code>\guill@spacing</code> . 665	<code>\H@refstepcounter</code> .	<code>\href@</code> ... 2703, 2707
<code>\guillemotleft</code> 9526,	.... 3683, 3691,	<code>\href@split</code> 2707, 2708
9622, 9723, 9817	3761, 3850, 3892,	<code>\hskip</code> ... 1042, 1115,
<code>\guillemotright</code> 9541,	4139, 4826, 4879	1482, 1483, 3173,
9623, 9738, 9818	<code>\H@seteqlabel</code> . 4655,	8299
<code>\guilsinglleft</code> 9491,	4657	<code>\hspace</code> 453, 4412, 4413
9624, 9819, 10298	<code>\H@subeqnarray</code> 3931,	<code>\ht</code> . 3175, 3178, 5681,
<code>\guilsinglright</code> 9492,	3935	5746, 5752, 5758,
9625, 9820, 10299	<code>\ha</code> 10478	5774, 5780, 5786,
	<code>\Haa</code> 10457	5804, 5810, 5816,
H	<code>\halign</code> 482	6950, 7568, 7807,
<code>\H</code> 9677, 9911,	<code>\hamza</code> 10445	8572
9912, 9943, 9944,	<code>\HAR@checkcitations</code>	<code>\htmladdimg</code> ... 2883
10278, 10279	.... 4422	<code>\htmladdnormallink</code>
<code>\h</code> 1947, 10326, 10331,	<code>\HAR@citetoaux</code> . 4378	.... 2884
10336, 10341,		

<code>\htmladdnormallinkfoot</code>	<code>\hvtex@trans@effect@Box</code>	2061, 2067, 9057
.... 2885	.... 6402	<code>\Hy@bookmarksnumberedfalse</code>
<code>\htmlref</code> 2886	<code>\hvtex@trans@effect@Dissolve</code>	.... 281
<code>\Huge</code> 424	.... 6403	<code>\Hy@bookmarksopenfalse</code>
<code>\huge</code> 428	<code>\hvtex@trans@effect@Glitter</code>	.... 282
<code>\Hurl</code> 2714, 2715, 2717	.... 6404	<code>\Hy@bookmarkstrue</code> .
<code>\hv@pdf@char</code> .. 9142,	<code>\hvtex@trans@effect@R</code>	.... 283
9203, 9204, 9205,	.... 6407	<code>\Hy@bookmarkstype</code> .
9206	<code>\hvtex@trans@effect@Split</code>	.... 2079, 2081,
<code>\hvtex@buffer</code> . 6412,	.... 6405	4574, 9067
6415, 6423, 6426,	<code>\hvtex@trans@effect@Wipe</code>	<code>\Hy@boolkey</code> .. 1492,
6435, 6439, 6455	.... 6406	1582, 1585, 1588,
<code>\hvtex@gettoken</code> 6412,	<code>\hvtex@trans@par</code> ..	1616, 1619, 1622,
6424, 6428, 6437,	.... 6438, 6442,	1627, 1630, 1633,
6441	6444, 6447, 6450	1636, 1639, 1642,
<code>\hvtex@gettoken@</code> ..	<code>\hvtex@trans@params</code>	1645, 1648, 1651,
.. 6412, 6413	6432, 6434, 6458	1654, 1780, 1783,
<code>\hvtex@par@dimension</code>	<code>\Hy@boolkey</code> .. 1492,	1835, 2030, 2036,
.. 6408, 6447	1493	2039, 2042, 2083,
<code>\hvtex@par@direction</code>	<code>\Hy@@colorscan</code> 2587,	2086, 2115, 2243,
.. 6409, 6450	2592	2274, 2277, 2280,
<code>\hvtex@par@duration</code>	<code>\Hy@@DefNameKey</code> 1563,	2283, 2286, 2289,
.. 6410, 6442	1565	2292, 2306, 2309,
<code>\hvtex@par@motion</code> .	<code>\Hy@@escapeform</code> 8828,	2387, 2391
.. 6411, 6444	8841, 8846	<code>\Hy@bordercolor</code> 2124,
<code>\hvtex@param@dimension</code>	<code>\Hy@abspage</code> .. 3428,	2129
.... 6419, 6448,	3493, 3603, 3620	<code>\Hy@breaklinksfalse</code>
6466, 6468	<code>\Hy@activeanchorfalse</code>	.... 284
<code>\hvtex@param@direction</code>	.... 2647, 5241,	<code>\Hy@breaklinkstrue</code>
.... 6420, 6451,	5635, 5648, 5715,	.... 1675, 1691,
6472, 6478	5724, 5937, 6202,	1696, 2496, 2508
<code>\hvtex@param@duration</code>	6217, 6281, 6293,	<code>\Hy@breaklinksunhbox</code>
.... 6421, 6443,	6653, 6679, 7522,	.. 6941, 6957
6482, 6484	7535, 7764, 7776	<code>\Hy@centerwindowfalse</code>
<code>\hvtex@param@motion</code>	<code>\Hy@activeanchortrue</code>	.... 285
.... 6422, 6445,	.... 5240, 5632,	<code>\Hy@chapapp</code> .. 3726,
6466, 6470	5644, 5713, 5721,	3732, 3739, 9328,
<code>\hvtex@parse@trans</code>	5933, 6198, 6214,	9337, 9405
.. 6397, 6417	6279, 6290, 6652,	<code>\Hy@chapterstring</code> .
<code>\hvtex@produce@trans</code>	6668, 7519, 7531,	3724, 3726, 3738
.. 6456, 6462	7761, 7772	<code>\Hy@CheckColorSpec</code>
<code>\hvtex@token</code> .. 6414,	<code>\Hy@appendixstring</code>	.. 2133, 2135
6425, 6431, 6438,	.. 3725, 3732	<code>\Hy@CheckOptionValue</code>
6443, 6446, 6449,	<code>\Hy@author</code> 3374, 3378	.. 1533, 1570
6451	<code>\Hy@babelnormalise</code>	<code>\Hy@CJKbookmarksfalse</code>
<code>\hvtex@trans@code</code> .	.. 2728, 2730	.... 286
.... 6401, 6402,	<code>\Hy@backout</code> .. 2643,	<code>\Hy@cjkpu</code> 757, 759, 778
6403, 6404, 6405,	3267, 3271, 4218	<code>\Hy@colorlink</code> . 2580,
6406, 6407, 6418,	<code>\Hy@backreffalse</code> 280,	2597, 2601, 5233,
6464, 6465, 6467,	1809, 1828, 2451	5274, 5306, 5337,
6468, 6469, 6470,	<code>\Hy@backreftrue</code> 1802,	5614, 5633, 5653,
6471, 6472, 6473,	1806, 1825	5680, 5689, 5714,
6474, 6475, 6476,	<code>\Hy@begindvi</code> .. 4471,	5728, 5749, 5761,
6477, 6478	4472, 4474	5778, 5790, 5808,
<code>\hvtex@trans@effect@Blinds</code>	<code>\Hy@bibcite</code> 4237, 4241	5820, 5959, 5986,
.... 6401	<code>\Hy@bookmarksdepth</code>	6010, 6028, 6045,
	.... 2044, 2049,	6280, 6300, 6331,

6343, 6358, 6378,	6595, 6596, 6597,	8896, 8900, 8904,
6387, 6655, 6687,	6598, 6599, 6600,	8908, 8912, 8916,
6926, 6928, 7520,	6835, 6836, 6837,	8920, 8924, 8928,
7540, 7567, 7576,	6838, 6839, 6840,	8932, 8939, 8952,
7762, 7781, 7806,	6841, 6842, 7342,	8959, 8983, 8995,
7814	7623, 7624, 7625,	8996, 9012, 9024,
\Hy@ColorList . 2120,	7626, 7627, 7628,	9032
2121	7629, 7630	\Hy@ExchangeLeftParenthesis
\Hy@colorscan . 2582,	\Hy@disableOption .	.. 5163, 5169
2584	.... 5851	\Hy@ExchangeRightParenthesis
\Hy@currentbookmarklevel	\Hy@displaydoctitlefalse	.. 5173, 5179
.... 9062, 9072,	.... 313	\Hy@false 1432, 1500,
9073, 9079, 9086,	\Hy@DistillerDestFix	1794, 1827
9120, 9123, 9128,	4487, 6604, 6606	\Hy@figuresfalse 288
9132	\Hy@draftfalse . 249	\Hy@finalfalse . 250
\Hy@defaultdriver .	\Hy@drafttrue .. 250	\Hy@finaltrue .. 249
.... 2465, 2470,	\Hy@driver 317, 1664,	\Hy@fitwindowfalse
2485, 2491, 2499	1672, 1684, 1689,	.... 289
\Hy@DefFormAction .	1694, 1699, 1704,	\Hy@float@caption .
.. 2938, 2940	1709, 1721, 1725,	4143, 4172, 4174
\Hy@DefNameKey 1562,	1748, 1758, 1764,	\Hy@footnote@currentHlabel
2154, 2172, 2180,	1769, 1775, 2461,	4007, 4021, 4053
2188, 2192, 2199,	2464, 2470, 2473,	\Hy@footnote@currentHref
2206, 2213, 2220,	2478, 2485, 2491,	.... 3224, 3991,
2224, 2229, 2236,	2493, 2499, 2501,	3994, 4002, 4005,
2294	2506, 2511, 2516,	4008, 4022, 4025,
\Hy@DestName .. 5207,	2521, 2525, 2527,	4052
5211	2529	\Hy@Gin@setfile 4712,
\Hy@DisableOption .	\Hy@endcolorlink ..	4714
.... 1519, 2381,	.... 2593, 2598,	\Hy@GlobalStepCount
2382, 2383, 2436,	2602, 5238, 5633,	315, 3493, 3753,
2458, 2533, 2534,	5666, 5684, 5691,	3818, 4501, 4643,
2535, 2536, 2537,	5714, 5736, 5750,	4650, 4868, 4919,
2538, 2539, 2540,	5761, 5778, 5790,	9048, 9327, 9336,
2541, 2542, 2543,	5808, 5820, 5962,	9366, 9373, 9404
2544, 2545, 2546,	5986, 6010, 6028,	\Hy@hstringURI . 7185
2547, 2576, 2606,	6045, 6280, 6321,	\Hy@hyperfootnotesfalse
2607, 2645, 2646,	6331, 6343, 6358,	.... 3964
3229, 3230, 3231,	6378, 6387, 6659,	\Hy@hyperfootnotetrue
3232, 3233, 3234,	6706, 6934, 7520,	.... 290
3235, 3236, 3237,	7553, 7571, 7578,	\Hy@hyperindextrue
3238, 3239, 3240,	7762, 7791, 7806,	.... 291
3241, 3242, 3243,	7814	\Hy@hypertexnamesfalse
3244, 3245, 3246,	\Hy@escapeform 7970,	.... 1391
3247, 3248, 3249,	8025, 8043, 8055,	\Hy@hypertexnamestrue
3250, 3251, 3252,	8070, 8085, 8101,	.... 292
3398, 3562, 4107,	8346, 8401, 8427,	\Hy@implicittrue 293
4717, 4773, 4774,	8440, 8456, 8475,	\Hy@Info .. 234, 1508,
5465, 5466, 5467,	8491, 8600, 8659,	2409, 2411, 2414,
5468, 5469, 5470,	8685, 8702, 8722,	2416, 2419, 2421,
5471, 5472, 5594,	8741, 8761, 8822,	2424, 2426, 2429,
5846, 5847, 5848,	8851, 8858	2431, 2561, 2567,
5849, 5850, 5852,	\Hy@escapeformfalse	2594, 2599, 2603,
5853, 6074, 6075,	.... 287	3196, 3198, 3201,
6076, 6077, 6078,	\Hy@escapestring ..	3203, 3206, 3208,
6079, 6080, 6081,	.... 8819, 8863,	3211, 3213, 3216,
6265, 6593, 6594,	8872, 8882, 8890,	

3218, 4309, 4370, 4577	710, 718, 719, 2402, 2403, 2404, 4722, 4723	7233, 7671, 8844, 9242, 9250, 9259
\Hy@level 9068, 9070, 9081, 9086, 9087, 9088, 9112	\Hy@numberline 9063, 9100, 9101, 9102	\Hy@pstringDest 5206, 5207, 5922, 5923, 7022, 7023, 7027, 7031, 7032, 7036
\Hy@levelcheck 9069, 9084	\Hy@org@chapter 9333, 9347	\Hy@pstringF .. 5280, 5295, 5312, 5327, 5332, 5969, 5980, 5990, 6001, 6005, 6365, 6372, 6374, 7192, 7207, 7223, 7232, 7247, 7250, 7266, 7269
\Hy@linkcounter 319, 321, 3753, 3754, 3818, 3819, 4643, 4644, 4650, 4651, 4658, 4868, 4869, 4873, 4919, 4920, 4924, 9048, 9049, 9327, 9328, 9336, 9337, 9366, 9367, 9373, 9374, 9404, 9405	\Hy@OutlineName 9243, 9289	\Hy@pstringName 9242, 9243, 9250, 9254, 9259, 9265
\Hy@linkfileprefix 2105, 2829, 2843, 5669, 6170, 7556, 7794	\Hy@pageanchortrue 299	\Hy@pstringP .. 5313, 5332, 5991, 6005, 6366, 6374, 7233, 7250, 7269
\Hy@linktocpagefalse 294	\Hy@pagecounter 320, 322, 3788, 4501, 4502	\Hy@pstringURI 5253, 5270, 6014, 6024, 6299, 6305, 6336, 6340, 7162, 7173
\Hy@LT@footnotetext .. 4050, 4060	\Hy@pageheight 1593, 1597, 1601, 1605, 1609, 1613, 2343, 7363, 7465	\Hy@PutCatalog 3555, <u>3564</u> , <u>3609</u>
\Hy@maketitle@end . 4084, 4089, 4091	\Hy@pagelabelstrue 300	\Hy@raisedlink 1440, 1661, 1685, 1700, 1705, 1749, 1765, 1776, 2502, 2518, 3719, 3821, 3825, 3826, 3828, 3897, 3900, 3993, 4004, 4065, 4166, 4229, 4249, 4252, 4270, 4645, 4652, 4659, 9050, 9329, 9338, 9368, 9378, 9406
\Hy@maketitle@optarg .. 4082, 4087	\Hy@param 3737, 3738, 3739, 3750, 3754	\Hy@raiselinksfalse .. 304, 4371
\Hy@MaybeStopNow 1711, 1716, 1733, 1743, 1752, 2353	\Hy@pdfmarkerrorfalse 6910	\Hy@RemoveDurPageAttr .. 5500, <u>5513</u>
\Hy@menubartrue 295	\Hy@pdfmarkerrortrue .. 7024, 7033	\Hy@RemoveHidPageAttr .. 5522, <u>5534</u>
\Hy@naturalnamesfalse 296	\Hy@pdfpagehiddenfalse 301	\Hy@RemovePercentCr 2682, 2686, 2691
\Hy@nestingfalse 297	\Hy@pdfstringfalse .. 302, 3254	\Hy@RemoveTransPageAttr .. 5477, <u>5490</u>
\Hy@newline@author 3417	\Hy@pdfstringtrue . .. 486, 3226	\Hy@reserved@a 2784, 3907, 3934, 8161, 8210, 8271
\Hy@newline@title 3416	\Hy@plainpagesfalse 303	\Hy@RestoreCatcodes <u>204</u> , 2349, 2531
\Hy@newwindowfalse 298	\Hy@ps@CR <u>7411</u> , 7419, 7424, 7425, 7442, 7468, 7469, 7470, 7476, 7483, 7490, 7497	\Hy@RestoreLastskip <u>1450</u> , 5208, 5636, 5649, 5716,
\Hy@next . 3509, 3519, 3524, 9335, 9343, 9346	\Hy@pstringB .. 5392, 5397, 6112, 6121, 6883, 6899, 7671, 7687	
\Hy@nextfalse .. 646, 660, 668, 679, 689, 698, 708, 717, 2401, 4721	\Hy@pstringD .. 5281, 5301, 5970, 5981, 7193, 7208, 7224	
\Hy@nexttrue 647, 648, 661, 662, 669, 670, 671, 680, 681, 682, 690, 691, 699, 700, 701, 702, 709,	\Hy@pstringdef <u>5138</u> , 5206, 5223, 5253, 5280, 5281, 5312, 5313, 5392, 5922, 5945, 5969, 5970, 5990, 5991, 6014, 6112, 6299, 6336, 6365, 6366, 6883, 7022, 7031, 7162, 7192, 7193, 7232,	

5725, 5924, 6203,	\Hy@setpagesizetrue	1792, 1794, 1795,
6218, 6282, 6294,	.... 305	1797, 1798, 1800,
6649, 6680, 7523,	\Hy@setpdfborder ..	1804, 1808, 1819,
7536, 7765, 7777	.... 2162, 5226,	1820, 1821, 1823,
\Hy@ReturnAfterElseFi	5258, 5285, 5317,	1827, 2680, 2684,
. 323, 992, 1005,	5600, 5951, 5976,	2733, 2737, 2789,
1081	5997, 6020, 6041,	2792, 2943, 2944,
\Hy@ReturnAfterFi .	6306, 6315, 6329,	3499, 3501, 3539,
.. 323, 340, 968,	6341, 6356, 6376,	3541, 3620, 3622,
980, 995, 1003,	6385	3950, 3952, 3953,
1009, 1084, 1090,	\Hy@setref@link 5016,	3956, 3957, 3958,
1160, 1186, 2690,	5019	4141, 4143, 4147,
4806, 5168, 5178,	\Hy@slidetitle 4845,	4573, 4574, 4589,
8845	4847, 4854, 4862,	4590, 4593, 4832,
\Hy@safe@activesfalse	4872, 4896, 4898,	4833, 4884, 4885,
325, 2619, 2624,	4905, 4913, 4923	5654, 5655, 6173,
5061, 5066, 5081	\Hy@StartlinkName .	6302, 6303, 7541,
\Hy@safe@activetrue	.. 5225, 5235	7542, 7782, 7783,
325, 2131, 2617,	\Hy@StepCount .. 314,	9066, 9067, 9090,
2622, 2675, 2732,	3470, 7987, 8023,	9092, 9108, 9113,
2790, 5059, 5064,	8038, 8225, 8362,	9394, 9418, 9423,
5073	8398, 8421, 8619,	9426, 9429
\Hy@saved@currentHlabel	8656, 8678, 9124,	\Hy@tempb 3500, 3501,
.. 4018, 4023	9129, 9190	3540, 3541, 9091,
\Hy@saved@currentHref	\Hy@temp ... 512, 519,	9092, 9113
.. 4019, 4024	2121, 2122, 2123,	\Hy@tempcolor . 6694,
\Hy@saved@footnotemark	2124, 2127, 2500,	6703, 6771, 6785,
.. 4078, 4093	2501, 2505, 2506,	6791
\Hy@saved@footnotetext	2510, 2511, 2515,	\Hy@TempPageAnchor
.. 4079, 4096	2516, 2520, 2521,	.... 4491, 4498,
\Hy@saved@hook 3402,	3450, 3453, 3462,	4502, 4505, 4517,
3412	3464, 3468, 3472,	4524
\Hy@SaveLastskip ..	3516, 3518, 3782,	\Hy@testname .. 5219,
.... 1450, 5205,	3785, 3788, 3794,	5220, 5221, 5223,
5626, 5639, 5708,	3872, 3878, 5404,	5232, 5941, 5942,
5719, 5921, 6192,	5433, 5435, 5872,	5943, 5945, 5955,
6206, 6273, 6285,	5903, 5905, 6084,	6309, 6310, 6311,
6640, 6665, 7514,	6124, 6126, 6806,	6314, 6350, 6351,
7526, 7756, 7768	6809, 6813, 6814,	6352, 6355, 6773,
\Hy@scanauthor 3372,	6820, 6821, 6827,	6774, 6775, 6786,
3377	6855, 6888, 6890,	6798
\Hy@scanoptauthor .	6994, 6995, 7002,	\Hy@texhtfalse . 306
.. 3372, 3373	7003, 7643, 7676,	\Hy@texhttrue . 1660,
\Hy@scanopttitle ..	7678, 8827, 8828,	2462
.. 3363, 3364	9240, 9246, 9255,	\Hy@title 3365, 3369
\Hy@scantitle . 3363,	9262	\Hy@toclevel .. 4582,
3368	\Hy@temp@A	4586, 4595
\Hy@secnum@part 9353,	.. 543, 544, 986,	\Hy@toolbartrue 307
9355, 9358	988, 1001, 1004,	\Hy@true . 1431, 1496,
\Hy@seminarslidesfalse	1010, 1011, 1013,	1498, 1821, 1823
.... 4818	4734, 4735, 4736,	\Hy@typexmlfalse 308
\Hy@seminarslidetrue	4753, 4754, 4755	\Hy@undefinedname .
.... 4816	\Hy@temp@B . 987, 988	.... 5216, 5221,
\Hy@SetCatcodes 180,	\Hy@tempa 1494, 1495,	5939, 5943, 6297,
230, 2351	1496, 1498, 1500,	6311, 6352, 6769,
\Hy@setouterhbox ..	1502, 1505, 1508,	6775
.. 6940, 6946	1509, 1790, 1791,	\Hy@unicodedefalse 309,

2396, 3784, 4495	\Hy@writebookmark .	\HyC@Toks . 79, <u>90</u> , 96,
\Hy@useHidKeyfalse	.... 1436, 4583,	106, 126
.... 2113	4852, 4860, 4870,	\HyCal@do . . 341, 345
\Hy@useHidKeytrue .	4903, 4911, 4921,	\HyCal@scan 332, 336,
.... 2117	9054, 9135	360
\Hy@UseMaketitleInfos	\HyC@cmd 87, 109, 122	\HyInd@wrindex 4729,
.... 3418, 5445,	\HyC@check 68, 71, <u>74</u>	4730
5828, 6052, 6583,	\HyC@checkcommand 50,	\HyInd@EncapChar . .
6805, 7605	<u>57</u> , <u>59</u>	1838, 2345, 4725
\Hy@UseMaketitleString	\HyC@checkFailed 146,	\HyInd@org@wrindex
3399, 3419, 3420	<u>156</u>	.... 4728, 4732,
\Hy@UseNameKey <u>1575</u> ,	\HyC@checkItem . 132,	4738, 4740
5411, 5412, 5413,	133, 134, 135, <u>138</u>	\HyInd@pagelink 4780,
5414, 5415, 5416,	\HyC@checklong 45, <u>53</u>	4786, 4788, 4791
5417, 5418, 5437,	\HyC@checkOk 144, <u>154</u>	\HyInd@ParenLeft . .
5879, 5880, 5881,	\HyC@checkPackage 12,	4719, 4735, 4754
5882, 5883, 5884,	16, <u>18</u>	\HyInd@ParenRight .
5885, 5886, 5907,	\HyC@cmd 62, 75, 87, 95,	4720, 4736, 4755
6091, 6092, 6093,	118, 131	\HyInd@removespaces
6094, 6095, 6096,	\HyC@date . 11, 15, 23,	4794, 4797, 4807
6097, 6098, 6128,	29, 31	\HyLang@addto . 1959,
6556, 6557, 6558,	\HyC@DeclareRobustCommand	1981, 2007, 2015
6559, 6560, 6561,	.... <u>114</u>	\HyLang@afrikaans .
6562, 6563, 6862,	\HyC@def <u>125</u>	.... 1908
6863, 6864, 6865,	\HyC@defcmd 47, 54, 93	\HyLang@DeclareLang
6866, 6867, 6868,	\HyC@doCheck . 99, <u>130</u>	.... 1973, 1987,
6869, 6892, 7650,	\HyC@edef <u>125</u>	1988, 1989, 1990,
7651, 7652, 7653,	\HyC@getDate . . 12, <u>14</u>	1991, 1992, 1993,
7654, 7655, 7656,	\HyC@meaning <u>152</u> , 159	1994, 1995, 1996,
7657, 7680	\HyC@nc@default 103,	1997, 1998, 1999,
\Hy@usetitlefalse .	<u>105</u>	2000, 2001, 2002,
.... 310	\HyC@nc@noopt . . . 88,	2003, 2004, 2005
\Hy@varioref@undefined	91, 103, 112, 123,	\HyLang@english 1840
3834, 3838, 5078	127	\HyLang@french . 1925
\Hy@verbosefalse 311	\HyC@nc@opt . 88, <u>101</u> ,	\HyLang@german . 1857
\Hy@vt@PutCatalog .	123	\HyLang@portuges . .
. . 3586, 3588	\HyC@newcommand . <u>86</u>	.... 1874
\Hy@VTeXversion 3566,	\HyC@next 48, 55, 60, 83	\HyLang@spanish 1891
3578, 6327, 6390,	\HyC@noValue . 80, 81,	\HyLang@vietnamese
6509, 9144	82, <u>85</u> , 139	1942, 2007, 2015
\Hy@Warning	\HyC@optcmd 107, 111	\HyOrg@addtoreset .
. . 232, 347, 956,	\HyC@org@cmd 76	4662, 4664, 4691
1513, 1528, 1553,	\HyC@org@optcmd . 80,	\HyOrg@appendix 3727,
2057, 2138, 4565,	111	3733
7025, 7034, 9075,	\HyC@org@robustcmd	\HyOrg@author . 3362,
9093	. . . 81, 120	3375, 3379
\Hy@WarningNoLine .	\HyC@org@robustoptcmd	\HyOrg@float@makebox
233, 1678, 2379,	.... 82	. . 4178, 4180
2393, 2853, 3346,	\HyC@package . 10, 22,	\HyOrg@maketitle . .
3580, 3634, 3769,	28, 34, 37, 38	4076, 4083, 4088
4575, 4704, 6918	\HyC@param 78, 96, 102	\HyOrg@title . . 3361,
\Hy@WarnOptionDisabled	\HyC@robustcmd . 115,	3366, 3370
. . 1525, <u>1527</u>	120, 121, 122	\HyOrg@url 2713
\Hy@WarnOptionValue	\HyC@star . 67, 70, 94	\hyper@anchor 2364,
.... 1506, <u>1512</u> ,	\HyC@string 131, <u>152</u> ,	2722, 2724, 2750,
1811, 1830	155, 157	2752, 2779, 2781,
\Hy@windowuitrue 312		2850, 3258, 3272,

3286, 3991, 3994,	\hyper@currentlinktype	\hyper@n@rmalise ..
4002, 4005, 4063,	.. 6690, 6694	.. 2676, 2679
4066, 4164, 4166,	\hyper@hash .. 2663,	\hyper@nat@current
4184, 4491, 4498,	2664, 2697, 2822,	.... 4220
4502, 4851, 4859,	2829, 2843, 2846,	\hyper@nat@anchorend
4869, 4902, 4910,	3220, 6154	.... 4231
4920	\hyper@image .. 2718,	\hyper@nat@anchorstart
\hyper@link .. 2701,	2719, 5698, 6361,	.... 4228
2709, 2745, 2764,	6767, 7585, 7822	\hyper@nat@linkbreak
2766, 2784, 4234,	\hyper@last 3337, 3341	.... 4225
4373, 4374, 4375,	\hyper@link .. 2365,	\hyper@nat@linkend .
4423, 4425, 4427,	2793, 3259, 3260,	.... 4222
5021, 5036, 5069	3273, 3282, 3287,	\hyper@nat@linkstart
\hyper@anchor . 2877,	5246, 5695, 5738,	.... 4217
3321, 5239, 5625,	5965, 6152, 6347,	\hyper@normalise ..
5707, 5929, 6205,	6770, 7582, 7819	.... 2347, 2352,
6272, 6639, 7513,	\hyper@link@ .. 2785,	2655, 2703, 2716,
7755	2787, 3257, 3270	2718, 2739, 2938
\hyper@anchorend ..	\hyper@linkend 2369,	\hyper@pageduration
.... 2367, 3253,	3264, 3277, 3291,	.... 4484, 4519,
3262, 3275, 3289,	4027, 4223, 4226,	4526, 5497, 6491,
3720, 3821, 3900,	4610, 4614, 5245,	6738
3917, 3939, 4231,	5664, 5735, 5961,	\hyper@pagehidden .
4250, 4252, 4270,	5966, 6184, 6319,	.... 4485, 4520,
4402, 4645, 4652,	6658, 6692, 7551,	4527, 5520, 6501,
4659, 5241, 5646,	7789	6755
5723, 5936, 6200,	\hyper@linkfile 2371,	\hyper@pagetransition
6292, 6653, 6670,	2839, 3266, 3279,	.... 4483, 4518,
7533, 7774, 9050,	3293, 5278, 5668,	4525, 5474, 6392,
9136, 9329, 9338,	5794, 5968, 6169,	6721
9368, 9378, 9406	6323, 7190, 7555,	\hyper@quote .. 3222,
\hyper@anchorstart	7793	5630, 5642, 5656,
.... 2366, 3253,	\hyper@linkstart ..	5660, 5678, 5688,
3261, 3274, 3288,	.... 2368, 3263,	5701, 6154, 6163,
3720, 3821, 3897,	3276, 3290, 4025,	6175, 6196, 6212,
3917, 3939, 4229,	4219, 4226, 4610,	7517, 7529, 7543,
4250, 4252, 4270,	4614, 5242, 5652,	7547, 7565, 7575,
4402, 4645, 4652,	5727, 5940, 5966,	7588, 7759, 7770,
4659, 5240, 5638,	6172, 6298, 6654,	7784, 7786, 7803,
5718, 5932, 6191,	6682, 7539, 7780	7813, 7825
6284, 6652, 6664,	\hyper@linkurl 2370,	\hyper@readexternallink
7525, 7767, 9050,	2717, 2822, 2829,	.. 2795, 2803
9136, 9329, 9338,	2842, 2846, 3265,	\hyper@refstepcounter
9368, 9378, 9406	3278, 3292, 5251,	.... 3699, 3701,
\hyper@chars .. 2696,	5669, 5671, 5696,	3707, 3861
5254, 5629, 5641,	5764, 6013, 6158,	\hyper@tilde .. 2670,
5659, 5677, 5687,	6170, 6334, 6362,	2671, 2672, 3221
5700, 5766, 5796,	6768, 7160, 7556,	\hyperbaseurl . 2102,
6160, 6179, 6194,	7558, 7583, 7794,	2103, 3303
6209, 6276, 6287,	7796, 7820	\hypercalcbp 327, 327
6337, 7163, 7528,	\hyper@livelink 3259,	\hypercalcbpdef 329,
7546, 7564, 7574,	3282	366, 2269
7587, 7770, 7786,	\hyper@makecurrent	\hyperdef 2747, 3305
7803, 7812, 7824	.... 3716, 3735,	\hypergetpageref ..
\hyper@currentanchor	3851, 3896, 3916,	.... 3815
.... 6656, 6667,	3938, 4020, 4150,	\hypergetref ... 3814
6676, 6689, 6699	4175, 4183	

\hyperimage .. 2718, 2883, 4714	\HyPL@Prefix .. 3456, 3458, 3460, 3474, 3477, 3479, 3491, 3505, 3543	\HyPsd@ar@get .. 460, 462
\hyperlink 2700, 3306, 4803, 4941, 4949, 4964, 4972, 4982, 4990, 4997	\HyPL@Roman ... 3434	\HyPsd@ar@tmp .. 461, 468, 469
\hyperlinkfileprefix 2105, 2106, 2107	\HyPL@roman ... 3435	\HyPsd@babel@danish 641
\hyperpage 3310, 4775	\HyPL@SetPageLabels 3549, 3606, 3636	\HyPsd@babel@dutch 650
\HYPERPAGEANCHOR 4482	\HyPL@StorePageLabel 3474, 3476, 3546, 3598, 3617	\HyPsd@babel@finnish 656
\hyperpageanchor 4482	\HyPL@thisLabel 3424, 3426, 3440, 3443, 3444	\HyPsd@babel@frenchb 664
\HyperRaiseLinkDefault .. 1439, 1441	\HyPL@Type 3446, 3451, 3455, 3473, 3481, 3490, 3504, 3542	\HyPsd@babel@german 673
\HyperRaiseLinkHook .. 1438, 1442	\HyPL@Useless . 3547, 3553	\HyPsd@babel@macedonian 727
\HyperRaiseLinkLength 1437, 1441, 1447	\HyPsd@@@pageref 889, 891, 894	\HyPsd@babel@ngerman 684
\hyperref 2727, 2890, 2891, 3308	\HyPsd@@@ref 874, 876, 879	\HyPsd@babel@portuges 704
\hypersetup .. 2346, 2348, 3302	\HyPsd@@AppendItalcorr 1019	\HyPsd@babel@russian 712
\hypertarget .. 2720, 3307	\HyPsd@@ConvertToUnicode 1277	\HyPsd@babel@slovene 733
\HyPL@@@CheckThePage .. 3520, 3538	\HyPsd@@GetNextTwoTokens 1275	\HyPsd@babel@swedish 738
\HyPL@@CheckThePage .. 3496, 3498	\HyPsd@@@Chspace . 845, 846	\HyPsd@babel@ukrainian 721
\HyPL@Alpha 3436	\HyPsd@@LetCommand ... 915, 936	\HyPsd@babel@usorbian 693
\HyPL@alph 3437	\HyPsd@@pageref 886, 887	\HyPsd@CatcodeWarning 1048, 1060, 1063, 1066, 1069, 1125
\HyPL@arabic ... 3433	\HyPsd@@ProtectSpaces ... 960, 963	\HyPsd@CheckCatcodes .. 530, 1025
\HyPL@CheckThePage .. 3448, 3495	\HyPsd@@ref 871, 872	\HyPsd@CJKActiveChars ... 761, 774
\HyPL@Entry .. 3622, 3630, 3638, 3640	\HyPsd@@RemoveBraces ... 981, 985	\HyPsd@CJKhook . 484, 743
\HyPL@EveryPage 3438, 3559, 4476, 9310, 9311	\HyPsd@@RemoveCmdPrefix .. 1135, 1138	\HyPsd@ConvertToUnicode .. 596, 1225
\HyPL@Format .. 3511, 3512, 3513, 3514, 3515, 3527	\HyPsd@Replace 1181, 1187, 1192	\HyPsd@DecimalToOctal ... 753, 782
\HyPL@found .. 3510, 3517, 3521, 3528, 3538, 3540	\HyPsd@add@accent 386, 834	\HyPsd@DefCommand . .. 513, 514, 515, 516, 904
\HyPL@Labels .. 3427, 3550, 3551, 3553, 3555, 3600, 3601, 3633, 3641, 3642	\HyPsd@AfterCountRemove .. 1032, 1098	\HyPsd@DisableCommands ... 628, 630
\HyPL@LastNumber .. 3431, 3466, 3489	\HyPsd@AfterDimenRemove .. 1038, 1101	\HyPsd@DoConvert 1227, 1237
\HyPL@LastPrefix .. 3432, 3460, 3491	\HyPsd@AfterSkipRemove .. 1044, 1113	\HyPsd@DoEscape 1251
\HyPL@LastType 3430, 3451, 3490	\HyPSD@AMScsfix .. 452, 855, 857	\HyPsd@doboxspace 570, 1198
\HyPL@page 3441, 3443, 3448, 3456	\HyPsd@AppendItalcorr 1002, 1011, 1019	\HyPsd@empty 555, 557, 561, 562, 564, 572, 579

\HyPsd@End . 530, 534, 961, 963, 965, 969, 973, 981, 985, 1025, 1033, 1039, 1045, 1085, 1093, 1098, 1101, 1113	\HyPsd@RemoveSpaceWarning 1108, 1120, 1140	\HyPsd@UTFviii@@three . . 1304, 1313
\HyPsd@EndWithElse . . . 824, 833	\HyPsd@ReplaceSpaceWarning 1103, 1115, 1147	\HyPsd@UTFviii@two . . 1289, 1295
\HyPsd@GetNextTwoTokens 1275	\HyPsd@Rest . . 1026, 1080, 1091, 1093, 1099, 1104, 1110, 1116, 1122	\HyPsd@UTFviii@four 1322
\HyPsd@GetOneByte 1270	\HyPsd@SPACEOPTI 527, 542, 543, 545, 547, 549, 550, 589, 591, 1056, 1209	\HyPsd@UTFviii@three . . 1285, 1303
\HyPsd@GetTwoBytes 1266	\HyPsd@spaceopti 591, 1173	\HyPsd@UTFviii@two . . 1284, 1288
\HyPsd@GLYPHERR 535, 821, 835, 842	\HyPsd@String . . 524, 526, 529, 531, 536, 538, 989, 990, 1002, 1055, 1056, 1071, 1072, 1102, 1114, 1155, 1156	\HyPsd@XSPACE . . 495, 569, 842
\HyPsd@GlyphProcess 537, 1154, 1171	\HyPsd@StringSubst . . 539, 541, 547, 553, 556, 559, 562, 581, 584, 586, 1195	\HyPsd@xspace . . 567, 569, 570
\HyPsd@GlyphProcessWarning . . 1161, 1165	\HyPsd@Subst 535, 544, 548, 554, 560, 564, 568, 573, 574, 575, 576, 577, 578, 582, 585, 1180, 1196	\HyRef@autoref 5069, 5071
\HyPsd@GobbleFiFi . . . 826, 832	\HyPsd@tocsection . . 858, 859, 860, 861, 862, 863, 864, 866	\HyRef@autosetref . . 5074, 5077
\HyPsd@hspace . . 453, 845	\HyPsd@UnexpandableSpace . 841, 967, 1104, 1116	\HyRef@currentHtag 5087, 5102, 5105, 5111, 5117
\HyPsd@hspacetest . . 848, 850, 853	\HyPsd@unichar 1286, 1341	\HyRef@testreftype . . 5080, 5099
\HyPsd@ifnextchar . . . 501, 941	\HyPsd@unichar@first@byte . . 1348, 1367	\HyRef@thisref 5079, 5080
\HyPsd@InitUnicode 605, 1655, 2385, 2400	\HyPsd@unichar@octtwo 1369, 1376, 1381	
\HyPsd@inmathwarn . . . 385, 818	\HyPsd@unichar@second@byte . . 1356, 1374	I
\HyPsd@ITALCORR 493, 497, 842	\HyPsd@UnicodeReplacementCharacter 1344, 1366	\i . . 9510, 9592, 9594, 9596, 9598, 9788, 9790, 9792, 9794, 9868, 9871, 9874, 9877, 9879, 9964
\HyPsd@LetCommand . . 517, 518, 904	\HyPsd@UTFviii . 379, 1281, 1283	\if . . 867, 1425, 3464, 3472, 3956, 3957, 4508, 6464, 6467, 6469, 6471, 6473, 6475, 6477
\HyPsd@LetUnexpandableSpace . . 488, 489, 490, 491, 838, 841	\HyPsd@UTFviii@@four . . 1326, 1334	\if@eqnstar 3902, 3910
\HyPsd@new@ifnextchar . . . 502, 945	\HyPsd@UTFviii@@four . . 1323, 1325	\if@files 1396, 2773, 3314, 3350, 3618, 3628, 3776, 4258, 4271, 4287, 4299, 4329, 4352, 4379, 4384, 4403, 4747, 9109, 9219, 9278
\HyPsd@pageref . 459, 886		\if@hyper@item 3686, 3697
\HyPsd@protected@testopt . . . 503, 949		\if@Localurl . . 6143, 6185
\HyPsd@ProtectSpaces 523, 959, 1010		\if@mid@expandable 451
\HyPsd@ref . 458, 871		\if@minipage . . 4157, 4208
\HyPsd@RemoveBraces . . 525, 977, 996, 1006, 1012		\if@nmbrlist . . . 3673
\HyPsd@RemoveCmdPrefix . . 1128, 1134		
\HyPsd@RemoveMask . . 533, 965, 973		

\if@skiphyperref ..	4016, 4028, 4127, 4129	\ifHy@nesting .. 262, 2413, 2721, 2749,
\if@twocolumn .. 9407	\ifHy@activeanchor	2778, 2859, 3200,
\if@twoside ... 9397	... 239, 2874	3990, 4001, 4062,
\ifcase ... 783, 1317,	\ifHy@backref .. 240,	4163
2054, 4735, 4754,	2428, 2640, 3210,	\ifHy@newwindow 263,
4956, 5078, 6522,	4380, 4416	5297, 5329, 5982,
9148	\ifHy@bookmarks 241,	6002, 6327, 6373,
\ifcat ... 1027, 1054,	2560	7206, 7222, 7246,
1059, 1062, 1065,	\ifHy@bookmarksnumbered	7265
1068, 2861, 2863	242, 4844, 4895,	\ifHy@next . 639, 649,
\ifdim 853, 1102, 1106,	9099	663, 672, 683,
1114, 1118, 1453,	\ifHy@bookmarksopen	692, 703, 711,
1472, 5554, 5558,	... 243, 2550	720, 2405, 4727
5563, 5567, 5574,	\ifHy@breaklinks 244,	\ifHy@pageanchor 264,
5578, 5583, 5587,	6683, 6707, 6945,	3767, 3779, 3794,
6248, 6251, 6255,	6956	4488
6258, 6951, 6962,	\ifHy@centerwindow	\ifHy@pagelabels 265,
7989, 8000, 8001,	245, 5409, 5877,	3422, 3598, 3616
8364, 8375, 8376,	6089, 6554, 6860,	\ifHy@pdfmarkerror
8621, 8632, 8633	7648	... 6907, 6915
\IfFileExists . 3345,	\ifHy@CJKbookmarks	\ifHy@pdfpagehidden
7835	... 246, 483	266, 2116, 5523,
\ifFld@checked 2898,	\ifHy@colorlinks 247,	6503, 6761
8278, 8877	2031, 2578, 3215,	\ifHy@pdfstring 267,
\ifFld@combo .. 2905,	7500	613
8005, 8380, 8637	\ifHy@displaydoctitle	\ifHy@plainpages 268,
\ifFld@disabled 2902,	279, 5410, 5878,	2423, 3781, 4490
8279	6090, 6555, 6861,	\ifHy@psize ... 269
\ifFld@hidden . 2899,	7649	\ifHy@raiselinks 270,
7967, 7994, 8053,	\ifHy@draft 248, 2363	5673, 5741, 5769,
8069, 8084, 8099,	\ifHy@escapeform 251,	5799, 7560, 7798
8180, 8192, 8202,	8823, 8852	\ifHy@seminarslides
8282, 8343, 8369,	\ifHy@figures .. 252,	... 271, 4514
8437, 8454, 8473,	2408, 3195, 4711	\ifHy@setpagesize .
8489, 8594, 8626,	\ifHy@fitwindow 253,	272, 5544, 6245,
8698, 8719, 8738,	5408, 5876, 6088,	7339
8758, 8862, 8881,	6553, 6859, 7647	\ifHy@texht 273, 2608,
8938, 8958, 8982,	\ifHy@frenchlinks .	2635, 3253, 4511,
9011, 9031	... 254, 2596	5004
\ifFld@multiline ..	\ifHy@hyperfootnotes	\ifHy@toolbar .. 274,
.... 2900, 7955,	... 255, 3965	5405, 5873, 6085,
8187, 8331, 8582,	\ifHy@hyperindex 256,	6550, 6856, 7644
8998	2418, 3205, 4718	\ifHy@typexml .. 238,
\ifFld@password 2903,	\ifHy@hypertextnames	2433, 2579, 2627,
8168, 9001	257, 3741, 3780,	3315, 9222, 9281
\ifFld@popdown 2906,	4489, 4849, 4900	\ifHy@unicode .. 275,
8006, 8381, 8638	\ifHy@implicit . 258,	375, 540, 552,
\ifFld@radio .. 2904,	2437, 9306	580, 588, 595,
7996, 8216, 8371,	\ifHy@linktopage .	756, 1168, 1342,
8628	... 259, 4608	2392
\ifFld@readonly 2901,	\ifHy@menubar .. 260,	\ifHy@useHidKey 2112,
8189, 8199, 8280,	5406, 5874, 6086,	5521, 6502, 6756
8999, 9002, 9004	6551, 6857, 7645	\ifHy@usetitle . 276,
\ifForm@html .. 2932,	\ifHy@naturalnames	3360
9026	261, 3743, 4850,	\ifHy@verbose .. 277,
\ifhmode . 1471, 1480,	4901	4588, 5202

<code>\ifHy@windowui</code> . 278, 5407, 5875, 6087, 6552, 6858, 7646	<code>\item</code> 3668, 3671, 4286, 4298, 4401	<code>\large</code> 429, 4961, 4969, 4979, 4987
<code>\ifmeasuring@</code> . 3706, 3717	<code>\Itemautorefname</code> 5120	<code>\lastpage@putlabel</code> 3765
<code>\ifnum</code> ... 1307, 1343, 1346, 1719, 1723, 1746, 2055, 2056, 2472, 2476, 2490, 2551, 3447, 3466, 3482, 3578, 4958, 4996, 5347, 5354, 5360, 6327, 6390, 6509, 6517, 6519, 6520, 6530, 6533, 6609, 6611, 6717, 7349, 8304, 8661, 8669, 9007, 9057, 9072, 9144, 9210, 9340, 9358, 9372, 9377	<code>\itemautorefname</code> 1843, 1860, 1877, 1894, 1911, 1928, 1945, 5120, 5121, 5124	<code>\lastskip</code> 1453, 1457, 1464, 1472, 1476, 1483
<code>\ifodd</code> 1337	<code>\itshape</code> 420	<code>\LaTeX</code> . 402, 403, 7841, 7842
<code>\ifportrait</code> ... 5553	J	<code>\LaTeXe</code> ... 403, 7842
<code>\ifthenelse</code> ... 4406	<code>\j</code> 9703, 9884	<code>\LayoutCheckField</code> 3161, 8100, 8490, 8760
<code>\iftrue</code> 9342	<code>\jarr</code> 10484	<code>\LayoutChoiceField</code> 3158, 7995, 8370, 8627
<code>\ifvmode</code> . 1443, 1452, 1461	<code>\jeem</code> 10456	<code>\LayoutPushButtonField</code> 3164, 8054, 8438, 8700
<code>\ifvoid</code> .. 3857, 3862	<code>\jeh</code> 10492	<code>\LayoutTextField</code> 3155, 7969, 8345, 8599
<code>\ignorespaces</code> . 3832, 4153, 4162, 4205, 4212, 4266, 4279, 4295, 4304, 4414, 4829, 4881	<code>\jobname</code> . 3317, 3345, 3352, 7835, 9215, 9221, 9235, 9273, 9275, 9280	<code>\lccode</code> ... 766, 4725
<code>\IJ</code> 9508, 9952	K	<code>\ldots</code> 397
<code>\ij</code> 9615, 9811	<code>\k</code> .. 9456, 9632, 9634, 9639, 9641, 9678, 9830, 9831, 9850, 9851, 9875, 9876, 9877, 9945, 9946, 9975, 9976	<code>\leavevmode</code> 480, 4015, 4126, 4320, 4516, 5218, 5255, 5282, 5314, 5597, 5672, 5740, 5767, 5797, 5971, 5992, 6015, 6032, 6153, 6161, 6210, 6324, 6338, 6349, 6367, 6382, 6685, 6944, 7164, 7194, 7234, 7559, 7797, 8400, 8426, 8439, 8455, 8474, 8658, 8684, 8701, 8721, 8740
<code>\immediate</code> 3316, 3317, 3318, 3320, 3352, 3591, 3621, 3629, 3791, 3807, 4261, 4274, 4290, 4300, 4330, 4353, 4379, 4409, 6614, 7356, 8295, 9198, 9221, 9223, 9280, 9282	<code>\kaf</code> 10474	<code>\limits</code> 2688
<code>\incr@eqnum</code> 3873, 3886	<code>\kasra</code> 10487	<code>\listofslides</code> .. 4930
<code>\index</code> 455	<code>\keepPDF@SetupDoc</code> . .. 7504, 7511	<code>\listslidenam</code> 4929, 4932, 4934, 4936
<code>\indexentry</code> .. 4750, 4758, 4762	<code>\kern</code> 1036, 1103, 1108, 1120	<code>\literalps@out</code> 1433, 6603, 6608, 6666, 6671, 6688, 6693, 6922, 6923, 6932, 6933, 6943, 6952, 6954, 6963, 6965, 7282, 7355, 7417, 7602, 7740
<code>\input</code> . 601, 606, 2010, 2018, 2025, 2529, 7278, 7347, 7454, 7598	<code>\kha</code> 10458	<code>\lower</code> ... 5676, 5743, 5771, 5801, 6954, 7563, 7801
<code>\InputIfFileExists</code> 2350, 9215, 9235, 9273, 9275	<code>\KV@Hyp@draft</code> .. 1590	<code>\lowercase</code> 767, 1494, 1790, 1819, 2978, 2981, 2984, 2987,
<code>\inputlineno</code> .. 2866, 4591, 5103, 5203	<code>\KV@Hyp@nolinks</code> 1590	
	L	
	<code>\L</code> 9504, 9896	
	<code>\l</code> 9511, 9897	
	<code>\l@slide</code> . 4829, 4939, 4944, 4948, 4955	
	<code>\l@subslide</code> .. 4881, 4944, 4951, 4995	
	<code>\label</code> 454, 4562	
	<code>\label@hyperref</code> 2756, 2758	
	<code>\label@hyperdef</code> 2747, 2770	
	<code>\label@hyperref</code> 2728, 2755, 2887	
	<code>\labelsep</code> 4413	
	<code>\labelwidth</code> ... 4412	
	<code>\lam</code> 10475	
	<code>\language@group</code> 437	
	<code>\LARGE</code> 425	
	<code>\Large</code> 426	

2990, 2993, 2996, 2999, 3002, 4726, 6716	\MaybeStopEarly 318, 1665, 1726, 2441, 2479, 3649	\newif . 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 639, 2112, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2932, 3686, 3687, 3706, 3902, 6143, 6907
\lslide@flag .. 4956, 4959, 4977, 4996, 5000	\mbox . 481, 4333, 4356	\newlabel 1402, 2775, 3327, 3328, 3335, 3357, 3792, 3808
\LT@array 3845	\meaning 62, 153, 158, 1399, 3384, 3750, 3953, 9246, 9255, 9262	\newlabelxx 3329, 3330
\LT@firsthead . 3857, 3862	\measuring@false 3706	\newline .. 400, 3405
\LT@p@ftn 4034, 4037, 4041, 4055	\mediaheight .. 6241, 6243, 6249, 6256	\newname . 3711, 3895, 3915, 3937, 3949, 3958
\LT@p@ftntext . 4032, 4039	\mediawidth 6252, 6259	\newsavebox 5918, 6939
\LT@start 3859, 3866	\meem 10476	\newtoks ... 90, 2929, 2960, 6803, 6969, 6970
M	\message 4957	\newwrite 3351, 9220, 9279
\mOne 3948, 9275, 9340, 9355	\MessageBreak .. 348, 1128, 1143, 1150, 1168, 1514, 1515, 1529, 1551, 1554, 1556, 1679, 1812, 2139, 2140, 2393, 3770, 4567, 4706, 9077, 9095	\next 4407, 4408, 4409, 6456, 6458, 6460
\make@df@tag@@ 4640, 4641	\MF 405, 7844	\nfss@text 5011, 5031, 5048, 5093
\make@df@tag@@@ 4647, 4648	\MP 406, 7845	\NG 9905
\make@stripped@name 3710, 3894, 3914, 3936, 3946	\multiply 6485, 6513	\ng 9906
\makeatletter 3, 627, 3344	N	\noboundary .. 10497
\MakeButtonField 3171, 8056, 8071, 8086, 8442, 8462, 8477, 8699, 8720, 8739	\name@of@eq 3684, 3709	\nobreak . 1454, 1462, 1473, 1481, 4016, 4127
\MakeCheckField 3168, 8102, 8493, 8759	\name@of@slide 3685, 3693	\nobreakspace .. 491
\MakeChoiceField 3170, 8044, 8429, 8683	\nasb 10482	\noexpand ... 22, 93, 95, 108, 116, 168, 170, 171, 172, 175, 205, 637, 778, 910, 927, 1027, 1460, 1461, 1462, 1465, 1479, 1480, 1481, 1484, 1976, 1978, 1980, 1981, 2123, 2124, 2682, 2735, 2861, 2863, 3520, 3521,
\MakeFieldObject 8294, 8311, 8321, 8322	\netscape 5706	
\MakeRadioField 3167, 8026, 8411, 8653	\new@if@next@char 946	
\makeslideheading 4839	\new@pdf@link .. 5201, 5239, 5240	
\makeslidesubheading 4891	\new@ref@step@counter .. 3868, 3898	
\MakeTextField 3169, 7971, 8348, 8597	\newblock 4417	
\maketitle 4076, 4077	\newcommand 4, 9, 42, 612, 1434, 3300, 3650, 3651, 3653, 3654, 3655, 3657, 3658, 3659, 3660, 3662, 3663, 3664, 3665, 3666, 3667, 3676, 3677, 3678, 3679, 3680, 3681, 3944, 4674, 4816, 4821, 4822, 9119, 9122, 9127	
\MakeUppercase 4934, 4936	\newcount .. 319, 320, 2916, 3428, 8032, 8415, 8672, 9141	
\MathBSuppress 6162, 6165	\newcounter 3669, 3966	
\mathdisplay .. 3876, 3885	\newdimen . 316, 2917, 2918	
\mathdisplay@push . .. 3874, 3883		
\maxdimen 2076, 8299		

3530, 3532, 3535, 3952, 4035, 4043, 4044, 4045, 4046, 4047, 4049, 4136, 4194, 4260, 4273, 4289, 4666, 4668, 5106, 5107, 5112, 5113, 6911, 7414, 7960, 8336, 8587, 8825	\OBJ@Helv 8307, 8537, 8542	P
\nofrenchguillemets ... 508, 510	\OBJ@pdfdocencoding 8305, 8519, 8534	\P 396
\NoHyper 3256	\OBJ@ZaDb 8306, 8528, 8542	\p@ . 2919, 2925, 5682, 5753, 5781, 5811, 6484, 7569, 7808, 7991, 8366, 8623, 9402, 9403
\nolinkurl 2715	\OCIRCUMFLEX . 10320, 10418, 10419, 10420, 10421, 10422	\PackageError ... 61
\nonumber 3925, 3928	\ocircumflex . 10313, 10358, 10359, 10360, 10361, 10362	\PackageInfo ... 234
\normalsize 430, 4160, 4211	\OE . 9505, 9711, 9913	\PackageWarning 232
\null 4398, 4406, 5053, 5089	\oe . 9512, 9712, 9914	\PackageWarningNoLine 233
\number .. 1290, 1291, 1292, 1293, 1297, 1298, 1299, 1300, 1301, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1315, 1316, 1317, 1318, 1319, 1320, 1323, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1336, 1337, 1338, 1349, 1350, 1354, 1357, 1358, 1359, 1368, 1370, 1371, 1375, 1377, 1378, 1382, 1383, 2552, 5731, 5745, 5746, 5757, 5758, 5773, 5774, 5785, 5786, 5803, 5804, 5815, 5816	\OHORN . 10321, 10423, 10424, 10425, 10426, 10427	\pagenumbering . 4478
\numberline .. 4153, 4205, 9100, 9104	\ohorn ... 1943, 1950, 10314, 10363, 10364, 10365, 10366, 10367	\pageref .. 459, 2630, 3770, 7141
\numberwithin .. 4671	\oldcontentsline .. 3322, 3325, 3334	\paperheight .. 2336, 2341, 5558, 5560, 5563, 5565, 5578, 5580, 6248, 6249, 6251
\numexpr . 1297, 1298, 1299, 1301, 1307, 1315, 1316, 1317, 1318, 1319, 1320, 1336, 1337, 1358, 1371, 1378, 1383	\oldnewlabel .. 3327, 3332, 3335	\paperwidth .. 2336, 5554, 5556, 5567, 5569, 5574, 5576, 6252
\nun 10477	\OMEGA 7840	\par . 4152, 4169, 4203, 4212, 4400, 4420
O	\openout . 3317, 3352, 9221, 9280	\paragraphautorefname 1852, 1869, 1886, 1903, 1920, 1937, 1954, 5133
\O 9571, 9767	\OpMode .. 1719, 1723, 1732, 1746, 1751, 2472, 2476, 6530, 6611, 7349	\partautorefname 1846, 1863, 1880, 1897, 1914, 1931, 1948, 5127
\o 9607, 9803	\or 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 4976, 4985, 6523, 9149, 9150, 9151, 9152, 9153, 9154, 9155, 9156, 9157, 9158, 9159, 9160, 9161, 9162, 9163, 9164, 9165, 9166, 9167, 9168, 9169, 9170, 9171, 9172, 9173, 9174, 9175, 9176, 9177, 9178, 9179, 9180	\partnumberline 9101, 9105
\obeylines 7413		\PassOptionsToPackage 1674, 1760, 1801, 1805, 1824, 2357, 2495, 2513
\OBJ@acroform . 8308, 8310, 8548		\pdf@addtoks .. 6972, 6991, 6997, 7005, 7009, 7011, 7013, 7015, 7017, 7019, 7027, 7036, 7040, 7042, 7044, 7051, 7055, 7057, 7059, 7061, 7063, 7065, 7067, 7069, 7071, 7073, 7075, 7076, 7078, 7080, 7082, 7084, 7086, 7087, 7088, 7089, 7090, 7091, 7092, 7093, 7094, 7095, 7096
		\pdf@addtoksx . 6967, 6976, 6989

\pdf@box . 6939, 6946, 6948, 6950, 6951, 6954, 6961	\PDFForm@Push . 8055, 8057, 8440, 8441, 8702, 8705, <u>8879</u>	\pdfpageattr . . 5477, 5481, 5482, 5492, 5500, 5504, 5505, 5515, 5522, 5525, 5526, 5536
\pdf@defaulttoks 6911, 6970, 6971, 6981	\PDFForm@Radio 8025, 8028, 8401, 8403, 8659, 8664, <u>8956</u>	\pdfpageheight 5560, 5569, 5580, 5589
\pdf@docset . . . 6803	\PDFForm@Reset 8085, 8087, 8475, 8476, 8741, 8744, <u>9029</u>	\pdfpagesattr . 5382, 5384, 5386
\pdf@endanchor 5210, 5239, 5241	\PDFForm@Submit 8070, 8073, 8456, 8458, 8722, 8725, <u>9009</u>	\pdfpagewidth . 5556, 5565, 5576, 5585
\PDF@FinishDoc 1667, 1728, 2333, 2374, 2443, 2481, 3295, 4532, 4534, 4535, <u>5444</u> , 5618, 5827, 6051, 6144, 6582, 6804, 7604, 7748	\PDFForm@Text . 7970, 7972, 8346, 8347, 8600, 8602, <u>8980</u>	\PDFPreviousPage 7122
\pdf@linktype . 6925, 6929, 6986, 6987	\pdfhorigin . . . 5551	\PDFPreviousPage@ . . . 7123, 7125
\pdf@rect 6919, 6931, 6942	\pdfinfo 5446	\pdfreelform . . . 5196
\PDF@SetupDoc . 2332, 2373, 3227, 3228, 3294, 5378, 5619, 5855, 6083, 6145, 6538, 6844, 7506, 7632, 7749	\pdflastform . . . 5195	\pdfrefobj 8305, 8306, 8307, 8308
\PDF@SetupDox . . <u>5378</u>	\pdflastobj . . 8519, 8528, 8537, 8548	\pdfrefxform . . 5196, 8299
\pdf@toks 6911, 6922, 6932, 6943, 6969, 6973, 6977	\pdflastxform . 5195, 8297, 8299	\pdfstartlink . 5191, 5192, 5236, 5256, 5283, 5315, 5598, 8347, 8402, 8428, 8441, 8457, 8476, 8492
\pdf@type 6913, 6917, 6922, 6932, 6943, 6984	\pdfm@box 5918, 8572, 8573, 8574, 8596, 8605, 8653, 8668, 8683, 8690, 8699, 8708, 8720, 8727, 8739, 8746, 8759, 8766	\pdfstringdef . . <u>368</u> , 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 3408, 3456, 3458, 3785, 4496, 9108
\pdfannotlink . . 5192	\pdfmark . 3612, 5863, 5870, 5900, 6642, 6672, 6695, 6728, 6745, 6757, 6778, 6790, 6826, 6845, 6853, 6884, 6908, 7100, 7112, 7126, 7137, 7142, 7166, 7178, 7196, 7213, 7236, 7256, 7633, 7641, 7672, 7971, 8026, 8044, 8056, 8071, 8086, 8102, 9251	\pdfstringdefDisableCommands <u>625</u> , 3297, 3403
\pdfbookmark . . 1434, 3299, 3300, 9120, 9125, 9130, 9134	\pdfmark@ 6908, 6909	\pdfstringdefPostHook . . . 598, <u>619</u>
\pdfcatalog . . 3564, 5393, 5432, 8310	\PDFNextPage . . . 7110	\pdfstringdefPreHook . . 487, <u>619</u> , 631, 633, 3402, 3412
\pdfcompresslevel 5542	\PDFNextPage@ . 7110, 7111	\pdfstringdefWarn . . . 399, 400, 482, <u>636</u> , 918, 923, 942, 946, 950
\PDFdefaults . . . 6980	\pdfobj . . 8498, 8520, 8529, 8538	\pdftexrevision 5357, 5365, 5372
\pdfdest 5212	\PDFOpen 7136	\pdftexversion 5352, 5354, 5357, 5360, 5363, 5364, 5370, 5371, 8304
\pdfendlink . . 5238, 8348, 8411, 8430, 8443, 8463, 8478, 8494	\pdfoutline . . . 9290	\pdfvorigin . . . 5552
\pdfescapestring 5185, 8853	\pdfoutput 2490, 5541	\pdfxform 5194, 8295
\pdfform 5194	\PDFPage 7139	\peh 10490
\PDFForm@Check 8101, 8103, 8491, 8492, 8761, 8764, <u>8860</u>	\PDFPage@ 7139, 7140	\penalty . 1030, 1446, 4327, 4350
\PDFForm@List . 8043, 8045, 8427, 8428, 8685, 8688, <u>8936</u>		\phantomsection 2334, 3301, 4569, 9047, 9097, 9320, 9359

<code>\Preamble</code> 7836	<code>\quotedblbase</code> . 9495, 9618, 9813, 10291	<code>\sectionautorefname</code> 1849, 1866, 1883, 1900, 1917, 1934, 1951, 5130
<code>\process@me</code> . . 3382, 3394, 3395, 5381, 5390	<code>\quotesinglbase</code> 9500, 9620, 9815, 10288	<code>\seen</code> 10463
<code>\ProcessKeyvalOptions</code> 2361	R	<code>\selectfont</code> 2597, 8317
<code>\protect</code> . 1028, 2760, 4153, 4205, 4260, 4273, 4289, 4405, 4412, 4413, 4600, 4623, 4829, 4881, 5010, 5030, 5036, 5047, 5092, 5628, 5710, 6208, 6275, 7516, 7758, 9111, 9402, 9403	<code>\r</code> . . 9443, 9452, 9551, 9584, 9659, 9670, 9748, 9780, 9941, 9942	<code>\setbox</code> . . 1031, 1037, 1043, 2059, 2065, 3015, 5674, 5739, 5768, 5798, 7561, 7799, 8596, 8653, 8683, 8699, 8720, 8739, 8759
<code>\protected@edef</code> 2789, 3516, 3950, 5219, 5941, 6309, 6350, 6773	<code>\ra</code> 10461	<code>\setkeys</code> . 1662, 1759, 2346, 2512, 6914, 7943, 7966, 7993, 8052, 8068, 8083, 8098, 8153, 8166, 8214, 8255, 8276, 8303, 8342, 8368, 8436, 8453, 8472, 8488, 8556, 8593, 8625, 8697, 8718, 8737, 8757
<code>\protected@write</code> 1401, 2774, 4385, 4749, 4757, 4761, 9110	<code>\raff</code> 10483	<code>\setlength</code> . 352, 353, 1441, 5551, 5552, 5556, 5560, 5565, 5569, 5576, 5580, 5585, 5589, 6249, 6252, 6256, 6259, 6484
<code>\protected@xdef</code> 4044, 4046, 4102	<code>\raise</code> . . . 1447, 5683, 5754, 5782, 5812, 6965, 7570, 7809	<code>\setpdflinkmargin</code> . 2254, 2255, 5190
<code>\providecommand</code> 1415, 1416, 1777, 2465, 2614, 2615, 2696, 2719, 3546, 3630, 4245, 4317, 4483, 4484, 4485, 4553, 4554, 4557, 4558, 4812, 4813, 4929, 5118, 5119, 5120, 5121, 5122, 5123, 5124, 5125, 5126, 5127, 5128, 5129, 5130, 5131, 5132, 5133, 5134, 5135, 5136, 5200, 5214, 5215, 5706, 5926, 5927, 5928, 6246, 6268, 6269, 6270, 6604, 6940, 6941, 7284, 7285, 7286, 7287, 7357, 7358, 7359, 7360, 7459, 7460, 7461, 7462, 7596, 7597, 7693, 7694, 7741, 7742	<code>\ReadBookmarks</code> 2360, 2377, 2454, 2569, 2637, 9201, 9230	<code>\settowidth</code> . . 7988, 8363, 8620
<code>\PushButton</code> . . . 3143	<code>\real@setref</code> . . 5007, 5060, 5065	<code>\sffamily</code> 419
<code>\put@me@back</code> . . 2856, 2869, 2879	<code>\realfootnote</code> . . 4099	<code>\shadda</code> 10488
Q	<code>\ref</code> . . 458, 2447, 2629, 2895, 7828	<code>\sheen</code> 10464
<code>\qaf</code> 10473	<code>\ref@one</code> . 2741, 2742	<code>\shortciteN</code> . . . 4448
	<code>\rEfLiNK</code> . 7829, 7830	<code>\simple@pageref</code> 7141, 7153
	<code>\refstepcounter</code> 3683, 3690, 3827, 3847, 3868, 3892, 3898, 4197	<code>\skip@</code> . . . 1045, 1114, 1115, 1118, 1120, 1457, 1463, 1476, 1482
	<code>\rem@ptetc</code> 6717, 6719	<code>\slide@cline</code> . . 4949, 4962, 4970, 4980, 4988
	<code>\renewcommand</code> . 1393, 4179, 4688, 9134	<code>\Slide@contents</code> 4954
	<code>\RequirePackage</code> 22, 231, 1387, 2354, 2434, 2579, 2627, 2641, 2712, 6142, 7747	<code>\slide@contents</code> 4947
	<code>\Reset</code> 3152	<code>\slide@heading</code> . 4825
	<code>\reset@font</code> . . 4333, 4356, 5011, 5031, 5048, 5093	<code>\slide@subheading</code> 4878
	<code>\revtex@checking</code> 4310	<code>\slide@undottedcline</code> 4940
	<code>\Rightarrow</code> . . . 4963	<code>\slidenumberline</code> 4941, 4949,
	<code>\rm</code> 423	
	<code>\Roman</code> 3512	
	<code>\roman</code> 3513	
	S	
	<code>\sad</code> 10465	
	<code>\sbox</code> 3172, 6940, 6948, 8294	
	<code>\scr@LT@array</code> . . 3846	
	<code>\scriptsize</code> . . . 431	
	<code>\scriptstyle</code> . . . 4323	
	<code>\scrollmode</code> 964, 978, 993, 1082	
	<code>\section</code> 4931	

4963, 4971, 4981, 4989	1885, 1902, 1919, 1936, 1953, 5132	\textcelsius .. 9617, 10302
\small 432	\sukun 10489	\textcent 9517, 9714
\smash 1447	\surd 4971	\textChi 10007
\spacefactor .. 4016, 4028, 4127, 4129	T	\textchi 10040
\special@paper 1592, 1596, 1600, 1604, 1608, 1612, 2336, 2338, 7338, 7340	\T 10453	\textcircled{...} 9440, 9449, 9459, 9656, 9667, 9682
\SS 9616, 9812	\T@pageref 2621, 2631	\textcolor 434, 8302, 8321, 8322, 8555
\ss .. 1859, 9578, 9631, 9774	\T@ref ... 2616, 2629	\textcopyright 9524, 9721
\st@rredfalse . 3875, 3884	\T@temp .. 4311, 4314	\textCR .. 9434, 9650
\stepcounter .. 3698, 4017, 4101	\Ta 10467	\textcurrency . 9519, 9716
\stockheight .. 2338, 2341, 5587, 5589, 6255, 6256	\taa 10454	\textdagger .. 9484, 10292
\stockwidth .. 2338, 5583, 5585, 6258, 6259	\tableautorefname 1845, 1862, 1879, 1896, 1913, 1930, 1947, 5126	\textdaggerdbl 9485, 10293
\stop@hyper ... 3269	\tatweel 10471	\textdegree .. 9530, 9617, 9727
\strip@period .. 1405	\tcheh 10491	\textDelta 9989
\strip@prefix ... 62, 1399, 3384, 3750, 3953, 9246, 9255, 9262	\TeX ... 401, 402, 404, 7839, 7841, 7843	\textdelta ... 10021
\strip@pt .. 357, 364, 2343, 5556, 5560, 5565, 5569, 6486, 8874, 8950, 8972, 8994, 9035	\texorpdfstring <u>612</u> , 3298	\textdieresis . 9442, 9451, 9523, 9658, 9669, 9720
\strip@pt@and@otherjunk 6671, 6693, 6719	\textacute 9439, 9448, 9534, 9655, 9666, 9731	\textdigamma .. 10051
\sub@label 1393	\textAlpha 9977, 9986	\textdiv .. 9628, 9823
\subeqnarray .. 3931, 3933	\textalpha .. 10012, 10018	\texdivide .. 9606, 9628, 9802, 9823
\subfig@oldlabel 1395	\textampersand . 393, 9469, 9693	\textdollar 391, 9467, 9691
\Submit 3149	\textasciicircum 9475, 9699	\textdotaccent 9445, 9454, 9460, 9661, 9672, 9683
\SubmitObject .. 8459	\textasciitilde 394, 2672, 9482, 9707	\textdoublegrave .. 9664, 9675, 9688
\SubmitPObject . 8459	\textbackslash . 389, 539, 9474, 9698	\textellipsis .. 397, 398, 9486, 10295
\subparagraphautorefname 1853, 1870, 1887, 1904, 1921, 1938, 1955, 5134	\textbar . 9480, 9705	\textemdash 573, 9487, 10285
\subpdfbookmark 9122	\textBeta 9987	\textendash 574, 9488, 10284
\subsection ... 7592	\textbeta 9631, 10019	\textEpsilon .. 9978, 9990
\subsectionautorefname 1850, 1867, 1884, 1901, 1918, 1935, 1952, 5131	\textbf 408	\textepsilon . 10013, 10022
\subsectionautorefname 1851, 1868,	\textbraceleft . 387, 9479, 9704	\textEta . 9979, 9992
	\textbraceright 388, 9481, 9706	\texteta 10014, 10024
	\textbreve 9457, 9663, 9674, 9680	\texteuro 9515, 10301
	\textbrokenbar 9521, 9718	\textexclamdown 577, 9516, 9713
	\textBS .. 9436, 9652	\textFF .. 9437, 9653
	\textbullet .. 9483, 10294	\textfi 575, 9502, 9709
	\textcaron 9444, 9453, 9458, 9660, 9671, 9681	\TextField 3134
	\textcdot 9630, 9825	\textfl 576, 9503, 9710
	\textcedilla .. 9446,	\textflorin 9489, 9959
	9455, 9538, 9662, 9673, 9735	

<code>\textflq</code> .. 449, 9624, 9819	<code>\textneg</code> . 9626, 9821	<code>\textquotedblright</code> . 9497, 10290
<code>\textflqq</code> . 447, 9622, 9817	<code>\textnormal</code> ... 411	<code>\textquoteleft</code> 9498, 9621, 9816, 10286
<code>\textfractionmark</code> . 9490, 10300	<code>\textNu</code> 9998	<code>\textquoteright</code> 9499, 10287
<code>\textfrq</code> .. 450, 9625, 9820	<code>\textnu</code> 10030	<code>\textregistered</code> 9528, 9725
<code>\textfrqq</code> . 448, 9623, 9818	<code>\textnumero</code> .. 10303	<code>\textRho</code> 10002
<code>\textGamma</code> 9988	<code>\textogonek</code> 9462, 9685	<code>\textrho</code> 10034
<code>\textgamma</code> ... 10020	<code>\textOmega</code> 9983, 10009	<code>\textring</code> 9443, 9452, 9463, 9659, 9670, 9686
<code>\textglq</code> .. 445, 9620, 9815	<code>\textomega</code> .. 10042, 10047	<code>\textrm</code> 412
<code>\textglqq</code> . 443, 9618, 9813	<code>\textOmicron</code> .. 9981, 10000	<code>\textsc</code> 413
<code>\textgrave</code> 9438, 9447, 9477, 9654, 9665, 9701	<code>\textomicron</code> . 10032, 10045	<code>\textsection</code> .. 9522, 9719
<code>\textgreater</code> .. 9473, 9697	<code>\textonehalf</code> .. 9543, 9740	<code>\textsf</code> 414, 8321, 8322
<code>\textgrq</code> .. 446, 9621, 9816	<code>\textonequarter</code> 9542, 9739	<code>\textSigma</code> ... 10003
<code>\textgrqq</code> . 444, 9619, 9814	<code>\textonesuperior</code> .. 9539, 9736	<code>\textsigma</code> ... 10036
<code>\textGslash</code> ... 9969	<code>\textordfeminine</code> .. 9525, 9722	<code>\textsl</code> 415
<code>\textgslash</code> ... 9970	<code>\textordmasculine</code> . 9540, 9737	<code>\textsterling</code> . 9518, 9715
<code>\textHslash</code> ... 9864	<code>\textparagraph</code> . 396, 9536, 9733	<code>\TextSymbolUnavailable</code> 9456, 9676, 9677, 9678, 9679
<code>\texthslash</code> ... 9865	<code>\textparenleft</code> . 581, 582, 9470, 9694	<code>\textTau</code> 10004
<code>\textHT</code> .. 9435, 9651	<code>\textparenright</code> 9471, 9695	<code>\texttau</code> 10037
<code>\texthungarumlaut</code> . 9461, 9684	<code>\textpercent</code> ... 392, 9468, 9692	<code>\textTheta</code> 9993
<code>\textIota</code> 9980, 9994, 10010	<code>\textperiodcentered</code> 9537, 9630, 9734, 9825	<code>\texttheta</code> ... 10025
<code>\textiota</code> ... 10015, 10026, 10043	<code>\textpertenthousand</code> ... 10297	<code>\textthreequarters</code> .. 9544, 9741
<code>\textIotadieresis</code> . 9984, 9985	<code>\textperthousand</code> .. 9494, 10296	<code>\textthreesuperior</code> .. 9533, 9730
<code>\textit</code> 409	<code>\textPhi</code> 10006	<code>\texttilde</code> 2406, 9441, 9450, 9464, 9657, 9668, 9687
<code>\textKappa</code> 9995	<code>\textphi</code> 10039	<code>\texttimes</code> 9627, 9822
<code>\textkappa</code> ... 10027	<code>\textPi</code> 10001	<code>\texttrademark</code> 9501, 10304
<code>\textLambda</code> ... 9996	<code>\textpi</code> 10033	<code>\textTslash</code> ... 9933
<code>\textlambda</code> .. 10028	<code>\textplusminus</code> 9531, 9629, 9728, 9824	<code>\texttslash</code> ... 9934
<code>\textlatin</code> 435, 3744, 4563	<code>\textpm</code> .. 9629, 9824	<code>\texttt</code> 416
<code>\textless</code> 9472, 9696	<code>\textPsi</code> 10008	<code>\texttwosuperior</code> .. 9532, 9729
<code>\textLF</code> .. 9433, 9649	<code>\textpsi</code> 10041	<code>\textunderscore</code> 395, 2666, 2667, 2669, 9476, 9700
<code>\textlogicalnot</code> 9527, 9626, 9724, 9821	<code>\textquestiondown</code> . 578, 9545, 9742	<code>\textup</code> 417
<code>\textmacron</code> 9529, 9726	<code>\textquotedbl</code> . 9465, 9689	<code>\textUpsilon</code> .. 9982, 10005, 10011
<code>\textmd</code> 410	<code>\textquotedblleft</code> . 9496, 9619, 9814, 10289	<code>\textupsilon</code> . 10038, 10044, 10046
<code>\textminus</code> 9493, 9708		<code>\textupsilonacute</code> . 10016, 10017
<code>\textMu</code> 9997		<code>\textvarkappa</code> . 10052
<code>\textmu</code> .. 9535, 9732, 10029		<code>\textvarphi</code> .. 10049
<code>\textmultiply</code> . 9570, 9627, 9766, 9822		

<code>\textvarpi</code> ... 10050	<code>\theHtheorem</code> ... 3666	<code>\toclevel@subsection</code> 4546
<code>\textvarrho</code> .. 10053	<code>\theHthm</code> 3667	<code>\toclevel@subsubsection</code> 4547
<code>\textvarsigma</code> . 10035	<code>\thelisting</code> ... 4557	<code>\toclevel@subtable</code> 1416
<code>\textvartheta</code> . 10048	<code>\thelstlisting</code> . 4553	<code>\toclevel@table</code> 4551
<code>\textXi</code> 9999	<code>\thempfn</code> . 3972, 4045, 4047, 4102, 4114	<code>\tocparagraph</code> .. 864
<code>\textxi</code> 10031	<code>\theoremautorefname</code> 1855, 1872, 1889, 1906, 1923, 1940, 1957, 5136	<code>\tocpart</code> 858
<code>\textyen</code> . 9520, 9717	<code>\thepage</code> . 1404, 2762, 3441, 3785, 3793, 3808, 4336, 4359, 4388, 4480, 4496, 4600, 4623, 4750, 4758, 4762, 5013, 5033, 5050, 5095	<code>\tocsection</code> ... 861
<code>\textZeta</code> 9991	<code>\theslideheading</code> 4842	<code>\tocsubsection</code> . 862
<code>\textzeta</code> 10023	<code>\theslidesection</code> 4830, 4837, 4845, 4851, 4853, 4855, 4861, 4871	<code>\tocsubsubsection</code> 863
<code>\TH</code> 9577, 9773	<code>\theslidesubheading</code> .. 4843, 4894	<code>\toks</code> .. 631, 632, 633, 2793, 2795, 2797, 2799, 5021, 5022, 5024
<code>\th</code> 9613, 9809	<code>\theslidesubsection</code> 4882, 4889, 4896, 4902, 4904, 4906, 4912, 4922	<code>\toks@</code> . 170, 207, 331, 334, 337, 355, 356, 745, 768, 771, 772, 974, 975, 1968, 1969, 1971, 3518, 3520, 3600, 3602, 4793, 4798, 4800, 4803
<code>\thaa</code> 10455	<code>\This@name</code> 3692, 3693, 3708, 3709	<code>\tryhyper@link</code> 2742, 2744
<code>\theequation</code> .. 3710, 3894, 3914, 3936	<code>\thispdfpagelabel</code> 3423	<code>\ttfamily</code> 418
<code>\thefootnote</code> .. 3983, 4121	<code>\ThisShouldNotHappen</code> 8832	<code>\ttl@b</code> ... 3825, 3828
<code>\theHchapter</code> .. 3657, 3658, 3659, 3660, 3731	<code>\tiny</code> 433	<code>\ttl@gobblecontents</code> 3832
<code>\theHenumi</code> 3676	<code>\title</code> ... 3361, 3363	<code>\ttl@Hy@refstepcounter</code> 3824
<code>\theHenumii</code> ... 3677	<code>\tocappendix</code> ... 860	<code>\ttl@Hy@saveanchor</code> .. 3820, 3826
<code>\theHenumiii</code> ... 3678	<code>\tocchapter</code> ... 859	<code>\ttl@Hy@steplink</code> 3817
<code>\theHenumiv</code> ... 3679	<code>\toclevel@chapter</code> 4544	<code>\typeout</code> 5, 6, 7, 19, 26, 27, 36, 131, 155, 157, 158, 159, 1666, 1727, 2438, 2440, 2442, 2480, 2525, 2527, 2865, 2947, 4591, 5203, 6220, 6223, 6226, 6229, 6232, 6235, 6237, 6238, 7746, 7947, 8110, 8113, 8116, 8119, 8122, 8125, 8127, 8128, 8131, 8134, 8137, 8140, 8143, 8146, 8148, 8149, 8158, 8292, 8552, 9396, 10500
<code>\theHequation</code> . 3650, 3711, 3895, 3915, 3937, 3944	<code>\toclevel@figure</code> 4550	
<code>\theHfigure</code> 3654, 3658	<code>\toclevel@listing</code> 4558	
<code>\theHHfootnote</code> 3680, 3682	<code>\toclevel@lstlisting</code> 4554	
<code>\theHHmpfootnote</code> 3682	<code>\toclevel@paragraph</code> 4548	
<code>\theHitem</code> 3670, 3676, 3677, 3678, 3679	<code>\toclevel@part</code> 4540, 4542	
<code>\theHlisting</code> ... 4557	<code>\toclevel@section</code> 4545	
<code>\theHlstlisting</code> 4553	<code>\toclevel@subfigure</code> 1415	
<code>\theHmpfootnote</code> 3681	<code>\toclevel@subparagraph</code> 4549	
<code>\theHparagraph</code> 3664, 3665		
<code>\theHpart</code> 3651		
<code>\theHsection</code> .. 3650, 3653, 3660, 3662, 3666, 3667, 3730		
<code>\theHslide</code> 4816		
<code>\theHslidesection</code> 4821, 4823, 4859, 4863		
<code>\theHslidesubsection</code> 4822, 4910, 4914		
<code>\theHsubequation</code> 3944		
<code>\theHsubparagraph</code> 3665		
<code>\theHsubsection</code> 3662, 3663		
<code>\theHsubsubsection</code> .. 3663, 3664		
<code>\theHtable</code> 3655, 3659		

U
\U . 9663, 9674, 10079,

10112, 10238,	\value 4275, 4301, 4668	2047, 2048, 2051,
10239, 10246,	\vbox 3167, 3168, 3169,	2052, 2053, 2057,
10247, 10252,	3170	2060, 2066, 2132,
10253	\vfill ... 3167, 3168,	2133, 2791, 2798,
\u .. 9679, 9828, 9829,	3169, 3170	2799, 2801, 3383,
9846, 9847, 9856,	\vref@pagenum .. 3836	3384, 3389, 3847,
9857, 9872, 9873,	\vskip ... 1463, 1464	3855, 3857, 3866,
9874, 9909, 9910,	\vTeX@trans@special	4800, 4801, 5023,
9939, 9940	.... 6463, 6465,	5026, 6608, 6613,
\UHORN . 10322, 10433,	6468, 6470, 6472,	6617, 7048, 7049,
10434, 10435,	6474, 6476, 6478,	7959, 7962, 8335,
10436, 10437	6480, 6486, 6488	8338, 8586, 8589
\uhorn ... 1943, 1950,	\VTeXInitMediaSize	\XC@bordercolor 2146
10315, 10373,	.. 6246, 6263	\XC@edef 2132
10374, 10375,	\VTeXOS .. 6518, 6519,	\XR@dURL 1422, 1423
10376, 10377	6520, 6522	\XR@addURL 1422
\UnDef 7829	\VTeXversion .. 3567,	\XR@ext .. 1624, 1625,
\undefined 1965	3570, 3573, 6510,	1659, 1673, 1686,
\unhbox .. 6941, 8605,	6514	1690, 1695, 1701,
8690, 8708, 8727,		1706, 1720, 1724,
8746, 8766	W	1747, 1763, 1768,
\unhcopy 8668	\waw 10479	2474, 2477, 2494,
\unichar 1286	\wawhamza 10448	2503, 2507, 2517,
\unrestored@protected@xdef\wd	. 5745, 5757, 5773,	2522, 2835, 2838
.... 3972, 3983,	5785, 5803, 5815,	\XR@URL 1427
4114, 4121	8573	\xspace 493, 495
\unskip 4321	\write ... 3318, 3320,	
\unvbox .. 4470, 9309	3621, 3629, 3791,	Y
\upshape 421	3807, 4261, 4274,	\y .. 1537, 1542, 1547,
\Url 2714	4290, 4300, 4330,	2053, 2054, 2055,
\url 2713, 2716	4353, 4379, 4409,	2056, 3384, 3392,
\url@ 2716, 2717	9223, 9282	3845, 3846, 3849,
\use@file 2837, 2839,	\WriteBookmarks 2378,	3855
2843, 2846	2455, 2548, 2570,	\ya 10481
\usepackage ... 1663	9055, 9217, 9236,	\yahamza 10450
\UTFviii@three@octets	9237, 9272, 9276	
.... 1285	\wwwbrowser .. 5706,	Z
\UTFviii@two@octets	5775, 5787	\z .. 1539, 1540, 1541
.... 1284		\z@ .. 853, 1031, 1037,
V	X	1043, 1102, 1106,
\v .. 9444, 9453, 9506,	\x 21, 25, 92,	1114, 1118, 1453,
9509, 9513, 9514,	98, 167, 168, 175,	1472, 2059, 2065,
9660, 9671, 9838,	177, 205, 208,	3568, 3571, 5554,
9839, 9840, 9841,	209, 210, 211,	5558, 5563, 5567,
9852, 9853, 9892,	212, 213, 214,	5574, 5578, 5583,
9893, 9902, 9903,	215, 216, 217,	5587, 6509, 6533,
9919, 9920, 9927,	218, 219, 220,	6717, 6951, 6962,
9928, 9931, 9932,	221, 222, 223,	7984, 8359, 8616,
9957, 9958, 9960,	224, 225, 226,	9353
9961, 9962, 9963,	227, 354, 359,	\za 10468
9964, 9965, 9966,	905, 933, 1458,	\zay 10462
9967, 9968, 9971,	1468, 1477, 1487,	\ZWNJ 10496
9972, 9973, 9974	1535, 1536, 1541,	
	1557, 1975, 1984,	