

Hypertext marks in \LaTeX

Sebastian Rahtz

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

Heiko Oberdiek

Email: `oberdiek@uni-freiburg.de`

processed January 18, 2007

1 Documentation overview for `hyperref`

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

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

Bookmark talk, paper The paper version of the talk.

Source code documentation:

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

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

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

2 Contents

1	Documentation overview for hyperref	1
2	Contents	2
3	File hyccheck.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	47
7.1	Class memoir	47
7.2	Package subfigure	47
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	62
15.1	Patch for babel's \texttilde	68
15.1.1	Driver loading	69
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	78
19	Forms creation	78
20	Setup	84
21	Low-level utility macros	84
22	Localized nullifying of package	85
23	Package nohyperref	86
24	The Mangling Of Aux and Toc Files	86
25	Title strings	88
26	Page numbers	89
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	99

30 Package titlesec and titletoc support	99
31 Package varioref support	99
32 Package longtable support	99
33 Equations	100
34 Footnotes	102
35 Float captions	106
36 Bibliographic references	107
36.1 Package harvard	110
36.2 Package chicago	112
37 Page numbers	113
38 Table of contents	114
39 New counters	116
40 AMS\LaTeX compatibility	116
40.1 \addtoreset and \numberwithin patches	117
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)	157
45.9 Rokicki's dvips	169
45.10 VTeX's vtexpdfmark driver	171
45.11 Textures	173
45.12 dvipsone	176
45.13 TeX4ht	179
46 Driver-specific form support	181
46.1 pdfmarks	181
46.2 dvipdf	186
46.3 HyperTeX	186
46.4 TeX4ht	187
46.5 pdfTeX	189
46.6 dvipdfm	194

46.7 Common forms part	199
47 Bookmarks in the PDF file	204
47.1 Bookmarks	204
48 Compatibility with koma-script classes	211
49 Encoding definition files for encodings of PDF strings	212
49.1 PD1 encoding	212
49.2 PU encoding	216
49.2.1 Basic Latin	216
49.2.2 Latin-1 Supplement	218
49.2.3 Latin Extended-A	220
49.2.4 Latin Extended-B	223
49.2.5 Greek	223
49.2.6 Cyrillic	224
49.2.7 Symbols	228
49.3 PU encoding, additions for VnTeX	229
49.4 PU encoding, additions for Arabi	231
50 End of file hycheck.tex	232
51 Index	233

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@pageanchorttrue
300 \Hy@pagelabelstrue
301 \Hy@pdfpagehiddenfalse
302 \Hy@pdfstringfalse
303 \Hy@plainpagesfalse
304 \Hy@raiselinksfalse
305 \Hy@setpagesizetrue
306 \Hy@texhtfalse
307 \Hy@toolbartrue
308 \Hy@typexmlfalse
309 \Hy@unicodedefalse
310 \Hy@usetitlefalse

```

```

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

```

5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

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

```

5.1 Macros for recursions

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

```

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

```

5.2 Babel's protection of shorthand characters

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

```

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

```

5.3 Coordinate transformations

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

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

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

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

Example (T_EX):

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

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

6 Dealing with PDF strings

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

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

6.1 Description of PDF strings

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

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

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

6.2 Definition of `\pdfstringdef`

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

Important: In 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 expandible commands would be very extensive and the result would be only an approximation. So here a cheaper solution follows in order to get rid of the error message at least:

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

6.2.2 Expansion

There are several possibilities to expand tokens within \LaTeX :

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

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

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

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

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

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

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

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

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

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

6.2.3 Postprocessing

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

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

Protecting spaces and removing grouping characters. In order to check the tokens we must separate them. This will be done with T_EX's argument parsing. With this method we must take the following item into account, that makes things a little 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 found 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 a marker for the xspace support.
- T_EX silently removes the outermost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

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

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

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

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

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

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

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

```

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

```

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

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

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

```

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

```

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

```

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

```

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

```

579      \let\HyPsd@empty\@empty

```

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

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

```

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

```



```
587 \fi
```

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

With Unicode the spaces are replaced by their octal sequences.

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

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

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

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

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

6.3 Encodings

6.3.1 PD1 encoding

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

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

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

6.3.2 PU encoding

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

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

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

```

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

```

6.4 Additional user commands

6.4.1 `\texorpdfstring`

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

```

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

```

6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

```

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

```

```

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

```

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

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

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

```

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

```

6.5 Help macros for expansion

6.5.1 Babel languages

```

639 \newif\ifHy@next

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

```

```

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

```

```

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

```

6.5.2 CJK bookmarks

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

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

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

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

```

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

```

`\HyPsd@CJKActiveChars` The macro `\HyPsd@CJKActiveChars` is only defined to limit the memory consumption of `\HyPsd@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\@currentcmd#1{%
  \ifx\protect\@typesetprotect
    \inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}
\def\@changedcmd#1#2{%
  \ifx\protect\@typesetprotect
    \inmathwarn#1%
    \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
      \expandafter\ifx\csname ?\string#1\endcsname\relax
        \expandafter\def\csname ?\string#1\endcsname{%
          \TextSymbolUnavailable#1%
        }%
      \fi
      \global\expandafter\let
        \csname\cf@encoding\string#1\expandafter\endcsname
        \csname ?\string#1\endcsname
    \fi
    \csname\cf@encoding\string#1%
    \expandafter\endcsname
  \else
    \noexpand#1%
  \fi}
\gdef\TextSymbolUnavailable#1{%
  \@latexerror{%
    Command \protect#1 unavailable in encoding \cf@encoding%
  }\@eha}
\def\inmathwarn#1{%
  \ifmmode
    \@latexwarning{Command \protect#1 invalid in math mode}%
  \fi}

818 \def\HyPsdinmathwarn#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), 10bccddd (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>"10FFFF %
1344 \HyPsd@UnicodeReplacementCharacter % illegal
1345 \else
1346 \ifnum#1>"FFFF %

```

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

```

1347 \expandafter\HyPsd@unichar\expandafter{%
1348 \number\numexpr 55296+%
1349 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1350 \relax\relax\relax
1351 }%

```

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

```

1352 \expandafter\HyPsd@unichar\expandafter{%
1353 \number\numexpr#1-9216%
1354 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1355 \relax\relax\relax
1356 }%
1357 \else
1358 \ifnum#1>"7FF %
1359 \9%
1360 \expandafter\HyPsd@unichar@first@byte\expandafter{%
1361 \number
1362 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1363 }%
1364 \else
1365 \8%
1366 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1367 \fi
1368 \expandafter\HyPsd@unichar@second@byte\expandafter{%
1369 \number
1370 \numexpr#1-256*\number
1371 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1372 }%
1373 \fi
1374 \fi
1375 \else
1376 .% unsupported (Unicode -> PDF Doc Encoding)
1377 \fi
1378 }%
1379 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}
1380 \def\HyPsd@unichar@first@byte#1{%
1381 \number\dimexpr.015625\dimexpr#1sp\relax\relax
1382 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1383 \number
1384 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1385 }%
1386 }%
1387 \def\HyPsd@unichar@second@byte#1{%
1388 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1389 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1390 \number
1391 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1392 }%
1393 }%
1394 \def\HyPsd@unichar@octtwo#1{%
1395 \number\dimexpr.125\dimexpr#1sp\relax\relax
1396 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp\relax\relax\relax

```

```

1397 }%
1398 \fi

```

7 Support of other packages

7.1 Class memoir

```

1399 \@ifclassloaded{memoir}{%
1400   \AtEndOfPackage{\RequirePackage{memhfixc}}%
1401 }{}

```

7.2 Package subfigure

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

```

1402 \@ifpackageloaded{subfigure}{%
1403   \@ifundefined{sub@label}{%
1404     \Hy@hypertextnamesfalse
1405   }{%
1406     \renewcommand*{\sub@label}[1]{%
1407       \@bsphack
1408       \subfig@oldlabel{#1}%
1409       \if@filesw
1410         \begingroup
1411           \edef\@currentlabstr{%
1412             \expandafter\strip@prefix\meaning\@currentlabelname
1413           }%
1414           \protected@write\@auxout{}{%
1415             \string\newlabel{sub@#1}{%
1416               {\@nameuse{@@thesub\@capttype}}%
1417               {\thepage}%
1418               {\expandafter\strip@period\@currentlabstr\relax.\relax\@@@}%
1419               {\@currentHref}%
1420             }%
1421           }%
1422         }%
1423       \endgroup
1424     \fi
1425     \@esphack
1426   }%
1427   \@ifpackagelater{subfigure}{2002/03/26}{%
1428     \providecommand*\toclevel@subfigure{1}%
1429     \providecommand*\toclevel@subtable{1}%
1430   }%
1431 }%
1432 }{}

```

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:

```

1433 \@ifundefined{XR@addURL}{%
1434 }{}

```

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.

```

1435 \def\xr@addURL#1{\xr@dURL#1{}{}{}{}\\}%

```

```

1436 \def\XR@dURL#1#2#3#4#5\{%
1437   {#1}-{#2}%
1438   \if!#4!%
1439   \else
1440     {#3}-{#4}-{\XR@URL}%
1441   \fi
1442 }%
1443 }

1444 \def\Hy@true{true}
1445 \def\Hy@false{false}

    Providing dummy definitions.

1446 \let\literalps@out@gobble
1447 \newcommand\pdfbookmark[3] [] {}
1448 \let\Acrobatmenu@gobble
1449 \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

```

1450 \let\HyperRaiseLinkLength\@tempdima
1451 \let\HyperRaiseLinkHook\@empty
1452 \def\HyperRaiseLinkDefault{\baselineskip}

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

1453 \def\Hy@raisedlink#1{%
1454   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1455   \HyperRaiseLinkHook
1456   \ifvmode
1457     #1%
1458   \else
1459     \penalty\@M
1460     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1461   \fi
1462 }

```

<code>\Hy@SaveLastskip</code> <code>\Hy@RestoreLastskip</code>	Inserting a <code>\special</code> command to set a destination destroys the <code>\lastskip</code> value.
---	---

```

1463 \def\Hy@SaveLastskip{%
1464   \let\Hy@RestoreLastskip\relax
1465   \ifvmode
1466     \ifdim\lastskip=z@
1467       \let\Hy@RestoreLastskip\nobreak
1468     \else
1469       \begingroup
1470       \skip@=-\lastskip

```



```

1471     \edef\x{%
1472     \endgroup
1473     \def\noexpand\Hy@RestoreLastskip{%
1474     \noexpand\ifvmode
1475     \noexpand\nobreak
1476     \vskip\the\skip@
1477     \vskip\the\lastskip\relax
1478     \noexpand\fi
1479     }%
1480     }%
1481     \x
1482     \fi
1483   \else
1484     \ifhmode
1485       \ifdim\lastskip=\z@
1486         \let\Hy@RestoreLastskip\nobreak
1487       \else
1488         \begingroup
1489         \skip@=-\lastskip
1490         \edef\x{%
1491         \endgroup
1492         \def\noexpand\Hy@RestoreLastskip{%
1493         \noexpand\ifhmode
1494         \noexpand\nobreak
1495         \hskip\the\skip@
1496         \hskip\the\lastskip\relax
1497         \noexpand\fi
1498         }%
1499         }%
1500         \x
1501         \fi
1502       \fi
1503     \fi
1504   }%

```

9 Options

9.1 Help macros

\Hy@boolkey

```

1505 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1506 \def\Hy@@boolkey[#1]#2#3{%
1507   \lowercase{\def\Hy@tempa{#3}}%
1508   \ifx\Hy@tempa\@empty
1509     \let\Hy@tempa\Hy@true
1510   \fi
1511   \ifx\Hy@tempa\Hy@true
1512   \else
1513     \ifx\Hy@tempa\Hy@false
1514     \else
1515       \let\Hy@tempa\relax
1516     \fi
1517   \fi
1518   \ifx\Hy@tempa\relax
1519     \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1520   \else

```

```

1521 \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1522 \csname Hy@#2\Hy@tempa\endcsname
1523 \fi
1524 }

```

\Hy@WarnOptionValue

```

1525 \def\Hy@WarnOptionValue#1#2#3{%
1526 \Hy@Warning{%
1527 Unexpected value ‘#1’\MessageBreak
1528 of option ‘#2’ instead of\MessageBreak
1529 #3%
1530 }
1531 }

```

\Hy@DisableOption

```

1532 \def\Hy@DisableOption#1{%
1533 \@ifundefined{KV@Hyp@#1@default}{%
1534 \define@key{Hyp}{#1}%
1535 }{%
1536 \define@key{Hyp}{#1}[]%
1537 }%
1538 {\Hy@WarnOptionDisabled{#1}}%
1539 }

```

\Hy@WarnOptionDisabled

```

1540 \def\Hy@WarnOptionDisabled#1{%
1541 \Hy@Warning{%
1542 Option ‘#1’ has already been used,\MessageBreak
1543 setting the option has no effect%
1544 }%
1545 }

```

\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.

```

1546 \def\Hy@CheckOptionValue#1#2#3{%
1547 \begingroup
1548 \edef\x{#1}%
1549 \@onelevel@sanitize\x
1550 \let\y=y%
1551 \def\do##1##2{%
1552 \def\z{##1}%
1553 \@onelevel@sanitize\z
1554 \ifx\x\z
1555 \let\y=n%
1556 \let\do\@gobbletwo
1557 \fi
1558 }%
1559 #3%
1560 \ifx\y y%
1561 \def\do##1##2{%
1562 * ‘##1’%
1563 \ifx\\##2\\\else\space(##2)\fi
1564 \MessageBreak
1565 }%
1566 \Hy@Warning{%
1567 Values of option ‘#2’:\MessageBreak
1568 #3%

```

```

1569      * An empty value disables the option.\MessageBreak
1570      Unknown value '\x'%
1571    }%
1572  \fi
1573 \endgroup
1574 }

\Hy@DefNameKey #1: option name
#2: \do list with known values, first argument of \do is value, second argument is a
comment.
1575 \def\Hy@DefNameKey#1{%
1576   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1577 }

\Hy@@DefNameKey #1: macro for value storage
#2: option name
#3: \do list with known values.
1578 \def\Hy@@DefNameKey#1#2#3{%
1579   \define@key{Hyp}{#2}{%
1580     \edef#1{##1}%
1581     \ifx#1\@empty
1582       \else
1583         \Hy@CheckOptionValue{##1}{#2}{#3}%
1584       \fi
1585   }%
1586   \let#1\@empty
1587 }

\Hy@UseNameKey
1588 \def\Hy@UseNameKey#1#2{%
1589   \ifx#2\@empty
1590     \else
1591       /#1/#2%
1592     \fi
1593 }

```

9.2 Defining the options

```

1594 \define@key{Hyp}{implicit}[true]{%
1595   \Hy@boolkey{implicit}{#1}%
1596 }
1597 \define@key{Hyp}{draft}[true]{%
1598   \Hy@boolkey{draft}{#1}%
1599 }
1600 \define@key{Hyp}{final}[true]{%
1601   \Hy@boolkey{final}{#1}%
1602 }
1603 \let\KV@Hyp@nolinks\KV@Hyp@draft
1604 \define@key{Hyp}{a4paper}[true]{%
1605   \def\special@paper{210mm,297mm}%
1606   \def\Hy@pageheight{842}%
1607 }
1608 \define@key{Hyp}{a5paper}[true]{%
1609   \def\special@paper{148mm,210mm}%
1610   \def\Hy@pageheight{595}%
1611 }

```

```

1612 \define@key{Hyp}{b5paper}[true]{%
1613   \def\special@paper{176mm,250mm}%
1614   \def\Hy@pageheight{709}%
1615 }
1616 \define@key{Hyp}{letterpaper}[true]{%
1617   \def\special@paper{8.5in,11in}%
1618   \def\Hy@pageheight{792}%
1619 }
1620 \define@key{Hyp}{legalpaper}[true]{%
1621   \def\special@paper{8.5in,14in}%
1622   \def\Hy@pageheight{1008}%
1623 }
1624 \define@key{Hyp}{executivepaper}[true]{%
1625   \def\special@paper{7.25in,10.5in}%
1626   \def\Hy@pageheight{720}%
1627 }
1628 \define@key{Hyp}{setpagesize}[true]{%
1629   \Hy@boolkey{setpagesize}{#1}%
1630 }
1631 \define@key{Hyp}{debug}[true]{%
1632   \Hy@boolkey{debug}{verbose}{#1}%
1633 }
1634 \define@key{Hyp}{linktopage}[true]{%
1635   \Hy@boolkey{linktopage}{#1}%
1636 }
1637 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1638 \def\XR@ext{dvi}
1639 \define@key{Hyp}{verbose}[true]{%
1640   \Hy@boolkey{verbose}{#1}%
1641 }
1642 \define@key{Hyp}{typexml}[true]{%
1643   \Hy@boolkey{typexml}{#1}%
1644 }

```

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.

```

1645 \define@key{Hyp}{raiselinks}[true]{%
1646   \Hy@boolkey{raiselinks}{#1}%
1647 }

```

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

```

1648 \define@key{Hyp}{breaklinks}[true]{%
1649   \Hy@boolkey{breaklinks}{#1}%
1650 }

```

Determines whether an automatic anchor is put on each page

```

1651 \define@key{Hyp}{pageanchor}[true]{%
1652   \Hy@boolkey{pageanchor}{#1}%
1653 }

```

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.

```

1654 \define@key{Hyp}{plainpages}[true]{%
1655   \Hy@boolkey{plainpages}{#1}%
1656 }

```

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

```

1657 \define@key{Hyp}{naturalnames}[true]{%
1658   \Hy@boolkey{naturalnames}{#1}%
1659 }

```

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

```

1660 \define@key{Hyp}{hypertexnames}[true]{%
1661   \Hy@boolkey{hypertexnames}{#1}%
1662 }

```

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

```

1663 \define@key{Hyp}{nesting}[true]{%
1664   \Hy@boolkey{nesting}{#1}%
1665 }

```

```

1666 \define@key{Hyp}{unicode}[true]{%
1667   \Hy@boolkey{unicode}{#1}%
1668   \HyPsd@InitUnicode
1669 }

```

10 Options for different drivers

```

1670 \define@key{Hyp}{hyperref}[true]{%
1671 \define@key{Hyp}{tex4ht}[true]{%
1672   \def\XR@ext{html}%
1673   \Hy@texhttrue
1674   \def\Hy@raisedlink{}%
1675   \setkeys{Hyp}{colorlinks=true}%
1676   \def\BeforeTeXIVht{\usepackage{color}}%
1677   \def\Hy@driver{htex4ht}%
1678   \def\MaybeStopEarly{%
1679     \typeout{Hyperref stopped early}%
1680     \AfterBeginDocument{\PDF@FinishDoc}%
1681     \endinput
1682   }%
1683 }
1684 \define@key{Hyp}{pdftex}[true]{%
1685   \def\Hy@driver{hpdftex}%
1686   \def\XR@ext{pdf}%
1687   \PassOptionsToPackage{pdftex}{color}%
1688   \Hy@breaklinkstrue
1689 }
1690 \define@key{Hyp}{dvipdf}[true]{%
1691   \Hy@WarningNoLine{%
1692     Option 'dvipdf' is deprecated.\MessageBreak
1693     See the user manual for available driver options%
1694   }%
1695 }
1696 \define@key{Hyp}{nativepdf}[true]{%
1697   \def\Hy@driver{hdvips}%
1698   \def\Hy@raisedlink{}%
1699   \def\XR@ext{pdf}%
1700 }
1701 \define@key{Hyp}{dvipdfm}[true]{%
1702   \def\Hy@driver{hdvipdfm}%
1703   \def\XR@ext{pdf}%
1704   \Hy@breaklinkstrue
1705 }
1706 \define@key{Hyp}{dvipdfmx}[true]{%

```

```

1707 \def\Hy@driver{hdvipdfm}%
1708 \def\XR@ext{pdf}%
1709 \Hy@breaklinkstrue
1710 }
1711 \define@key{Hyp}{xetex}[true]{%
1712 \def\Hy@driver{hdvipdfm}%
1713 \def\XR@ext{pdf}%
1714 \Hy@breaklinkstrue
1715 }
1716 \define@key{Hyp}{pdfmark}[true]{%
1717 \def\Hy@driver{hdvips}%
1718 \def\Hy@raisedlink{}%
1719 \def\XR@ext{pdf}%
1720 }
1721 \define@key{Hyp}{dvips}[true]{%
1722 \def\Hy@driver{hdvips}%
1723 \def\Hy@raisedlink{}%
1724 \def\XR@ext{pdf}%
1725 }
1726 \define@key{Hyp}{hypertex}[true]{%
1727 \def\Hy@driver{hypertex}%
1728 }
1729 \let\Hy@MaybeStopNow\relax
1730 \define@key{Hyp}{vtex}[true]{%
1731 \begingroup\expandafter\expandafter\expandafter\endgroup
1732 \expandafter\ifx\csname OpMode\endcsname\relax
1733 \latex@error{Non-VTeX processor}{}%
1734 \global\let\Hy@MaybeStopNow\endinput
1735 \endinput
1736 \else
1737 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1738 \def\XR@ext{pdf}%
1739 \def\Hy@driver{hvtex}%
1740 \else
1741 \ifnum\OpMode=10\relax
1742 \def\XR@ext{htm}%
1743 \def\Hy@driver{hvtexhtm}%
1744 \def\MaybeStopEarly{%
1745 \typeout{Hyperref stopped early}%
1746 \AfterBeginDocument{\PDF@FinishDoc}%
1747 \endinput
1748 }%
1749 \else
1750 \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1751 \global\let\Hy@MaybeStopNow\endinput
1752 \endinput
1753 \fi
1754 \fi
1755 \fi
1756 }
1757 \define@key{Hyp}{vtexpdfmark}[true]{%
1758 \begingroup\expandafter\expandafter\expandafter\endgroup
1759 \expandafter\ifx\csname OpMode\endcsname\relax
1760 \latex@error{Non-VTeX processor}{}%
1761 \let\Hy@MaybeStopNow\endinput
1762 \endinput
1763 \else

```

```

1764 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1765 \def\XR@ext{pdf}%
1766 \def\Hy@driver{hvtexmrk}%
1767 \def\Hy@raisedlink{}%
1768 \else
1769 \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1770 \let\Hy@MaybeStopNow\endinput
1771 \endinput
1772 \fi
1773 \fi
1774 }
1775 \define@key{Hyp}{dviwindo}[true]{%
1776 \def\Hy@driver{hdviwind}%
1777 \setkeys{Hyp}{colorlinks}%
1778 \PassOptionsToPackage{dviwindo}{color}%
1779 }
1780 \define@key{Hyp}{dvipsone}[true]{%
1781 \def\XR@ext{pdf}%
1782 \def\Hy@driver{hdvipson}%
1783 \def\Hy@raisedlink{}%
1784 }
1785 \define@key{Hyp}{textures}[true]{%
1786 \def\XR@ext{pdf}%
1787 \def\Hy@driver{htexture}%
1788 }
1789 \define@key{Hyp}{latex2html}[true]{%
1790 \AtBeginDocument{\@latextohtmlX}%
1791 }

```

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

```

1792 \define@key{Hyp}{ps2pdf}[true]{%
1793 \def\Hy@driver{hdvips}%
1794 \def\Hy@raisedlink{}%
1795 \providecommand\@pdfborder{0 0 1}%
1796 }

```

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.

```

1797 \define@key{Hyp}{hyperfigures}[true]{%
1798 \Hy@boolkey[hyperfigures]{figures}{#1}%
1799 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

1800 \define@key{Hyp}{hyperfootnotes}[true]{%
1801 \Hy@boolkey[hyperfootnotes]{#1}%
1802 }

```

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

```

1803 \def\back@none{none}
1804 \def\back@section{section}
1805 \def\back@page{page}
1806 \def\back@slide{slide}
1807 \define@key{Hyp}{backref}[section]{%
1808 \lowercase{\def\Hy@tempa{#1}}%
1809 \ifx\Hy@tempa\@empty
1810 \let\Hy@tempa\back@section

```

```

1811 \fi
1812 \ifx\Hy@tempa\Hy@false
1813   \let\Hy@tempa\back@none
1814 \fi
1815 \ifx\Hy@tempa\back@slide
1816   \let\Hy@tempa\back@section
1817 \fi
1818 \ifx\Hy@tempa\back@page
1819   \PassOptionsToPackage{hyperpageref}{backref}%
1820   \Hy@backreftrue
1821 \else
1822   \ifx\Hy@tempa\back@section
1823     \PassOptionsToPackage{hyperref}{backref}%
1824     \Hy@backreftrue
1825   \else
1826     \ifx\Hy@tempa\back@none
1827       \Hy@backreffalse
1828     \else
1829       \Hy@WarnOptionValue{#1}{backref}{%
1830         'section', 'slide', 'page', 'none', \MessageBreak
1831         or 'false'}%
1832     \fi
1833   \fi
1834 \fi
1835 }
1836 \define@key{Hyp}{pagebackref}[true]{%
1837   \lowercase{\def\Hy@tempa{#1}}%
1838   \ifx\Hy@tempa\@empty
1839     \let\Hy@tempa\Hy@true
1840   \fi
1841   \ifx\Hy@tempa\Hy@true
1842     \PassOptionsToPackage{hyperpageref}{backref}%
1843     \Hy@backreftrue
1844   \else
1845     \ifx\Hy@tempa\Hy@false
1846       \Hy@backreffalse
1847     \else
1848       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
1849     \fi
1850   \fi
1851 }

```

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

```

1852 \define@key{Hyp}{hyperindex}[true]{%
1853   \Hy@boolkey{hyperindex}{#1}%
1854 }

```

Configuration of encap char.

```

1855 \define@key{Hyp}{encap}[\l]{%
1856   \def\HyInd@EncapChar{#1}%
1857 }

```

12 Language options

The \autoref feature depends on the language.

```

1858 \def\HyLang@english{%

```



```

1859 \def\equationautorefname{Equation}%
1860 \def\footnoteautorefname{footnote}%
1861 \def\itemautorefname{item}%
1862 \def\figureautorefname{Figure}%
1863 \def\tableautorefname{Table}%
1864 \def\partautorefname{Part}%
1865 \def\appendixautorefname{Appendix}%
1866 \def\chapterautorefname{chapter}%
1867 \def\sectionautorefname{section}%
1868 \def\subsectionautorefname{subsection}%
1869 \def\subsubsectionautorefname{subsubsection}%
1870 \def\paragraphautorefname{paragraph}%
1871 \def\subparagraphautorefname{subparagraph}%
1872 \def\FancyVerbLineautorefname{line}%
1873 \def\theoremautorefname{Theorem}%
1874 }
1875 \def\HyLang@german{%
1876 \def\equationautorefname{Gleichung}%
1877 \def\footnoteautorefname{Fu\ss note}%
1878 \def\itemautorefname{Punkt}%
1879 \def\figureautorefname{Abbildung}%
1880 \def\tableautorefname{Tabelle}%
1881 \def\partautorefname{Teil}%
1882 \def\appendixautorefname{Anhang}%
1883 \def\chapterautorefname{Kapitel}%
1884 \def\sectionautorefname{Abschnitt}%
1885 \def\subsectionautorefname{Unterabschnitt}%
1886 \def\subsubsectionautorefname{Unterunterabschnitt}%
1887 \def\paragraphautorefname{Absatz}%
1888 \def\subparagraphautorefname{Unterabsatz}%
1889 \def\FancyVerbLineautorefname{Zeile}%
1890 \def\theoremautorefname{Theorem}%
1891 }
1892 \def\HyLang@portuges{%
1893 \def\equationautorefname{Equa\c c\~ao}%
1894 \def\footnoteautorefname{Nota de rodap\~e}%
1895 \def\itemautorefname{Item}%
1896 \def\figureautorefname{Figura}%
1897 \def\tableautorefname{Tabela}%
1898 \def\partautorefname{Parte}%
1899 \def\appendixautorefname{Ap\~endice}%
1900 \def\chapterautorefname{Cap\~itulo}%
1901 \def\sectionautorefname{Se\c c\~ao}%
1902 \def\subsectionautorefname{Subse\c c\~ao}%
1903 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
1904 \def\paragraphautorefname{par\~agrafo}%
1905 \def\subparagraphautorefname{subpar\~agrafo}%
1906 \def\FancyVerbLineautorefname{linha}%
1907 \def\theoremautorefname{Teorema}%
1908 }
1909 \def\HyLang@spanish{%
1910 \def\equationautorefname{Ecuaci\~on}%
1911 \def\footnoteautorefname{Nota a pie de p\~agina}%
1912 \def\itemautorefname{Elemento}%
1913 \def\figureautorefname{Figura}%
1914 \def\tableautorefname{Tabla}%
1915 \def\partautorefname{Parte}%

```

```

1916 \def\appendixautorefname{Ap\'endice}%
1917 \def\chapterautorefname{Cap\'itulo}%
1918 \def\sectionautorefname{Secci\'on}%
1919 \def\subsectionautorefname{Subsecci\'on}%
1920 \def\subsubsectionautorefname{Subsubsecci\'on}%
1921 \def\paragraphautorefname{P\'arrafo}%
1922 \def\subparagraphautorefname{Subp\'arrafo}%
1923 \def\FancyVerbLineautorefname{L\'inea}%
1924 \def\theoremautorefname{Teorema}%
1925 }
1926 \def\HyLang@afrikaans{%
1927 \def\equationautorefname{Vergelyking}%
1928 \def\footnoteautorefname{Voetnota}%
1929 \def\itemautorefname{Item}%
1930 \def\figureautorefname{Figuur}%
1931 \def\tableautorefname{Tabel}%
1932 \def\partautorefname{Deel}%
1933 \def\appendixautorefname{Bylae}%
1934 \def\chapterautorefname{Hoofstuk}%
1935 \def\sectionautorefname{Afdeling}%
1936 \def\subsectionautorefname{Subafdeling}%
1937 \def\subsubsectionautorefname{Subsubafdeling}%
1938 \def\paragraphautorefname{Paragraaf}%
1939 \def\subparagraphautorefname{Subparagraaf}%
1940 \def\FancyVerbLineautorefname{Lyn}%
1941 \def\theoremautorefname{Teorema}%
1942 }
1943 \def\HyLang@french{%
1944 \def\equationautorefname{\'Equation}%
1945 \def\footnoteautorefname{note}%
1946 \def\itemautorefname{item}%
1947 \def\figureautorefname{Figure}%
1948 \def\tableautorefname{Tableau}%
1949 \def\partautorefname{Partie}%
1950 \def\appendixautorefname{Appendice}%
1951 \def\chapterautorefname{chapitre}%
1952 \def\sectionautorefname{section}%
1953 \def\subsectionautorefname{sous-section}%
1954 \def\subsubsectionautorefname{sous-sous-section}%
1955 \def\paragraphautorefname{paragraphe}%
1956 \def\subparagraphautorefname{sous-paragraphe}%
1957 \def\FancyVerbLineautorefname{ligne}%
1958 \def\theoremautorefname{Th\'eor\'eme}%
1959 }
1960 \def\HyLang@vietnamese{%
1961 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
1962 \def\footnoteautorefname{Ch\'u th\'ich}%
1963 \def\itemautorefname{m\du{c}}%
1964 \def\figureautorefname{H\'inh}%
1965 \def\tableautorefname{B\h{a}ng}%
1966 \def\partautorefname{Ph\'acircumflex{}n}%
1967 \def\appendixautorefname{Ph\d{u} l\d{u}c}%
1968 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
1969 \def\sectionautorefname{m\du{c}}%
1970 \def\subsectionautorefname{m\du{c}}%
1971 \def\subsubsectionautorefname{m\du{c}}%
1972 \def\paragraphautorefname{\dj{}o\d{a}n}%

```

```

1973 \def\subparagraphautorefname{\dj}{o}{d}{a}{n}%
1974 \def\FancyVerbLineautorefname{d\'ong}%
1975 \def\theoremautorefname{DJ}{d}{i}{nh} 1\'y}%
1976 }

```

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

```

1977 \def\HyLang@addto#1#2{%
1978   #2%
1979   \@temptokena{#2}%
1980   \ifx#1\relax
1981     \let#1\@empty
1982   \fi
1983   \ifx#1\undefined
1984     \edef#1{\the\@temptokena}%
1985   \else
1986     \toks@\expandafter{#1}%
1987     \edef#1{\the\toks@\the\@temptokena}%
1988   \fi
1989   \@temptokena{}\toks@\@temptokena
1990 }

1991 \def\HyLang@DeclareLang#1#2{%
1992   \begingroup
1993     \edef\x##1##2{%
1994       \noexpand\ifx##2\relax
1995         \errmessage{No definitions for language #2' found!}%
1996       \noexpand\fi
1997     \endgroup
1998     \noexpand\define@key{Hyp}{#1}[]{%
1999       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2000     }%
2001   }%
2002   \expandafter\x\csname extras#1\expandafter\endcsname
2003     \csname HyLang@#2\endcsname
2004 }

2005 \HyLang@DeclareLang{english}{english}
2006 \HyLang@DeclareLang{UKenglish}{english}
2007 \HyLang@DeclareLang{british}{english}
2008 \HyLang@DeclareLang{USenglish}{english}
2009 \HyLang@DeclareLang{american}{english}
2010 \HyLang@DeclareLang{german}{german}
2011 \HyLang@DeclareLang{austrian}{german}
2012 \HyLang@DeclareLang{ngerman}{german}
2013 \HyLang@DeclareLang{naustrian}{german}
2014 \HyLang@DeclareLang{brazil}{portuges}
2015 \HyLang@DeclareLang{brazilian}{portuges}
2016 \HyLang@DeclareLang{portuguese}{portuges}
2017 \HyLang@DeclareLang{spanish}{spanish}
2018 \HyLang@DeclareLang{afrikaans}{afrikaans}
2019 \HyLang@DeclareLang{french}{french}
2020 \HyLang@DeclareLang{frenchb}{french}
2021 \HyLang@DeclareLang{francais}{french}
2022 \HyLang@DeclareLang{acadian}{french}
2023 \HyLang@DeclareLang{canadien}{french}

```

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

```

2024 \define@key{Hyp}{vietnamese}[]{}%
2025 \HyLang@addto\extrasvietnamese\HyLang@vietnamese

```

```

2026 \AtEndOfPackage{%
2027   \ifundefined{T@PU}{-}{%
2028     \input{puvnenc.def}%
2029   }%
2030 }%
2031 }
2032 \define@key{Hyp}{vietnam}[]{%
2033   \HyLang@addto\extrasvietnam\HyLang@vietnamese
2034 \AtEndOfPackage{%
2035   \ifundefined{T@PU}{-}{%
2036     \input{puvnenc.def}%
2037   }%
2038 }%
2039 }

```

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

```

2040 \define@key{Hyp}{arabic}[]{%
2041   \AtEndOfPackage{%
2042     \ifundefined{T@PU}{-}{%
2043       \input{puarenc.def}%
2044     }%
2045   }%
2046 }

```

13 Options to change appearance of links

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

```

2047 \define@key{Hyp}{colorlinks}[true]{%
2048   \Hy@boolkey{colorlinks}{#1}%
2049   \ifHy@colorlinks
2050     \def\@pdfborder{0 0 0}%
2051   \fi
2052 }
2053 \define@key{Hyp}{frenchlinks}[true]{%
2054   \Hy@boolkey{frenchlinks}{#1}%
2055 }

```

14 Bookmarking

```

2056 \define@key{Hyp}{bookmarks}[true]{%
2057   \Hy@boolkey{bookmarks}{#1}%
2058 }
2059 \define@key{Hyp}{bookmarksopen}[true]{%
2060   \Hy@boolkey{bookmarksopen}{#1}%
2061 }

```

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.

```

2062 \let\Hy@bookmarksdepth\c@tocdepth
2063 \define@key{Hyp}{bookmarksdepth}[]{%
2064   \begingroup
2065     \edef\x{#1}%
2066     \ifx\x\empty
2067       \global\let\Hy@bookmarksdepth\c@tocdepth
2068     \else
2069       \@ifundefined{toclevel@\x}{%
2070         \@onelevel@sanitize\x
2071         \edef\y{\expandafter\@car\x\@nil}%
2072         \ifcase 0\expandafter\ifx\y-1\fi
2073           \expandafter\ifnum\expandafter'\y>47 %
2074             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2075           \Hy@Warning{Unknown document division name (\x)}%
2076         \else
2077           \setbox\z@=\hbox{%
2078             \count@=\x
2079             \xdef\Hy@bookmarksdepth{\the\count@}%
2080           }%
2081         \fi
2082       }{%
2083         \setbox\z@=\hbox{%
2084           \count@=\csname toclevel@\x\endcsname
2085           \xdef\Hy@bookmarksdepth{\the\count@}%
2086         }%
2087       }%
2088     \fi
2089   \endgroup
2090 }

```

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

```

2091 \define@key{Hyp}{bookmarksopenlevel}{%
2092   \def\@bookmarksopenlevel{#1}%
2093 }
2094 \def\@bookmarksopenlevel{\maxdimen}
2095 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2096 \define@key{Hyp}{bookmarkstype}{%
2097   \def\Hy@bookmarkstype{#1}%
2098 }
2099 \def\Hy@bookmarkstype{toc}

```

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

```

2100 \define@key{Hyp}{bookmarksnumbered}[true]{%
2101   \Hy@boolkey{bookmarksnumbered}{#1}%
2102 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2103 \define@key{Hyp}{CJKbookmarks}[true]{%
2104   \Hy@boolkey{CJKbookmarks}{#1}%
2105 }
2106 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
2107 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2108 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2109 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2110 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2111 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2112 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```
2113 \def\@linkcolor{red}
2114 \def\@anchorcolor{black}
2115 \def\@citecolor{green}
2116 \def\@filecolor{cyan}
2117 \def\@urlcolor{magenta}
2118 \def\@menucolor{red}
2119 \def\@pagecolor{red}
2120 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2121 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2122 \let\@baseurl\empty
2123 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2124 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2125 \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.

```
2126 \let\@pdfpagetransition\relax
2127 \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.

```
2128 \let\@pdfpageduration\relax
2129 \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.

```
2130 \newif\ifHy@useHidKey
2131 \Hy@useHidKeyfalse
2132 \define@key{Hyp}{pdfpagehidden}[true]{%
2133   \Hy@boolkey{pdfpagehidden}{#1}%
2134   \ifHy@pdfpagehidden
2135     \global\Hy@useHidKeytrue
2136   \fi
2137 }
```

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).

```
2138 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2139 \@for\Hy@temp:=\Hy@ColorList\do{%
2140   \edef\Hy@temp{%
2141     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2142       \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2143     }%
2144   }%
2145   \Hy@temp
2146 }
```

```

2147 \def\Hy@bordercolor#1#2#3{%
2148   \begingroup
2149     \Hy@safe@activetrue
2150     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2151     \expandafter\Hy@CheckColorSpec\x#3#3\@nil{#1}{#2}%
2152 }
2153 \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2154   \ifx\#3\%
2155     \@ifundefined{XC@bordercolor}{%
2156       \Hy@Warning{%
2157         Unsupported color specification (#4bordercolor).\MessageBreak
2158         Load package 'xcolor' (version >= 1.11) first.\MessageBreak
2159         Ignoring color specification%
2160       }%
2161     \endgroup
2162   }{%
2163     \endgroup
2164     \XC@bordercolor{#4}{#5}%
2165   }%
2166 \else
2167   \endgroup
2168   \@namedef{@#4bordercolor}{#5}%
2169 \fi
2170 }

2171 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2172 \Hy@DefNameKey{pdfhighlight}{%
2173   \do{/I}{Invert}%
2174   \do{/N}{None}%
2175   \do{/O}{Outline}%
2176   \do{/P}{Push}%
2177 }
2178 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2179 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2180 \def\Hy@setpdfborder{%
2181   \ifx\@pdfborder\@empty
2182   \else
2183     /Border[\@pdfborder]%
2184   \fi
2185   \ifx\@pdfborderstyle\@empty
2186   \else
2187     /BS<<\@pdfborderstyle>>%
2188   \fi
2189 }
2190 \Hy@DefNameKey{pdfpagemode}{%
2191   \do{UseNone}{}%
2192   \do{UseOutlines}{}%
2193   \do{UseThumbs}{}%
2194   \do{FullScreen}{}%
2195   \do{UseOC}{PDF 1.5}%
2196   \do{UseAttachments}{PDF 1.6}%
2197 }
2198 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2199   \do{UseNone}{}%
2200   \do{UseOutlines}{}%
2201   \do{UseThumbs}{}%
2202   \do{FullScreen}{}%
2203   \do{UseOC}{PDF 1.5}%

```

```

2204 \do{UseAttachments}{PDF 1.6}%
2205 }
2206 \Hy@DefNameKey{pdfdirection}{%
2207 \do{L2R}{Left to right}%
2208 \do{R2L}{Right to left}%
2209 }
2210 \Hy@DefNameKey{pdfviewarea}{%
2211 \do{MediaBox}{}%
2212 \do{CropBox}{}%
2213 \do{BleedBox}{}%
2214 \do{TrimBox}{}%
2215 \do{ArtBox}{}%
2216 }
2217 \Hy@DefNameKey{pdfviewclip}{%
2218 \do{MediaBox}{}%
2219 \do{CropBox}{}%
2220 \do{BleedBox}{}%
2221 \do{TrimBox}{}%
2222 \do{ArtBox}{}%
2223 }
2224 \Hy@DefNameKey{pdfprintarea}{%
2225 \do{MediaBox}{}%
2226 \do{CropBox}{}%
2227 \do{BleedBox}{}%
2228 \do{TrimBox}{}%
2229 \do{ArtBox}{}%
2230 }
2231 \Hy@DefNameKey{pdfprintclip}{%
2232 \do{MediaBox}{}%
2233 \do{CropBox}{}%
2234 \do{BleedBox}{}%
2235 \do{TrimBox}{}%
2236 \do{ArtBox}{}%
2237 }
2238 \Hy@DefNameKey{pdfprintscaling}{%
2239 \do{AppDefault}{}%
2240 \do{None}{}%
2241 }
2242 \Hy@DefNameKey{pdfduplex}{%
2243 \do{Simplex}{}%
2244 \do{DuplexFlipShortEdge}{}%
2245 \do{DuplexFlipLongEdge}{}%
2246 }
2247 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2248 \do{true}{}%
2249 \do{false}{}%
2250 }
2251 \define@key{Hyp}{pdfprintpagerange}{%
2252 \def\@pdfprintpagerange{#1}%
2253 }
2254 \Hy@DefNameKey{pdfnumcopies}{%
2255 \do{2}{two copies}%
2256 \do{3}{three copies}%
2257 \do{4}{four copies}%
2258 \do{5}{five copies}%
2259 }
2260 \define@key{Hyp}{pdfusetitle}[true]{%

```



```

2261 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2262 }
2263 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2264 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2265 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2266 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2267 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2268 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2269 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2270 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2271 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
2272 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2273 \let\setpdflinkmargin\gobble
2274 \def\calculate@pdfview#1 #2\{%
2275   \def\@pdfview{#1}%
2276   \ifx\#2\%
2277     \def\@pdfviewparams{ -32768}%
2278   \else
2279     \def\@pdfviewparams{ #2}%
2280   \fi
2281 }
2282 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
2283 \define@key{Hyp}{pdfstartview}{%
2284   \ifx\#1\%
2285     \def\@pdfstartview{}%
2286   \else
2287     \hypercalcbpdef\@pdfstartview{ /#1 }%
2288   \fi
2289 }
2290 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2291 \define@key{Hyp}{pdftoolbar}[true]{%
2292   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2293 }
2294 \define@key{Hyp}{pdfmenubar}[true]{%
2295   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2296 }
2297 \define@key{Hyp}{pdfwindowui}[true]{%
2298   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2299 }
2300 \define@key{Hyp}{pdffitwindow}[true]{%
2301   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2302 }
2303 \define@key{Hyp}{pdfcenterwindow}[true]{%
2304   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2305 }
2306 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2307   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2308 }
2309 \define@key{Hyp}{pdfnewwindow}[true]{%
2310   \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2311 }
2312 \Hy@DefNameKey[pdfpagelayout]{%
2313   \do{SinglePage}{}%
2314   \do{OneColumn}{}%
2315   \do{TwoColumnLeft}{}%
2316   \do{TwoColumnRight}{}%
2317   \do{TwoPageLeft}{PDF 1.5}%

```

```

2318 \do{TwoPageRight}{PDF 1.5}%
2319 }
2320 \define@key{Hyp}{pdflang}{%
2321   \def\@pdflang{#1}%
2322 }
2323 \define@key{Hyp}{pdfpagelabels}[true]{%
2324   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2325 }
2326 \define@key{Hyp}{pdfescapeform}[true]{%
2327   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2328 }

```

Default values:

```

2329 \def\@linkbordercolor{1 0 0}
2330 \def\@urlbordercolor{0 1 1}
2331 \def\@menubordercolor{1 0 0}
2332 \def\@filebordercolor{0 .5 .5}
2333 \def\@runbordercolor{0 .7 .7}
2334 \def\@citebordercolor{0 1 0}
2335 \def\@pagebordercolor{1 1 0}
2336 \def\@pdfhighlight{/I}
2337 \def\@pdftitle{}
2338 \def\@pdfauthor{}
2339 \let\@pdfproducer\relax
2340 \def\@pdfcreator{LaTeX with hyperref package}
2341 \def\@pdfcreationdate{}
2342 \def\@pdfmoddate{}
2343 \def\@pdfsubject{}
2344 \def\@pdfkeywords{}
2345 \def\@pdfpagescrop{}
2346 \def\@pdfstartview{/Fit }
2347 \def\@pdfstartpage{1}
2348 \def\@pdfprintpagerange{}
2349 \def\@pdflang{}
2350 \let\PDF@SetupDoc\@empty
2351 \let\PDF@FinishDoc\@empty
2352 \let\phantomsection\@empty
2353 \@ifundefined{stockwidth}{%
2354   \edef\special@paper{\the\paperwidth,\the\paperheight}
2355 }{%
2356   \edef\special@paper{\the\stockwidth,\the\stockheight}
2357 }
2358 \begingroup
2359   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2360   \dimen@=0.99626401\dimen@
2361   \xdef\Hy@pageheight{\strip@pt\dimen@}
2362 \endgroup
2363 \def\HyInd@EncapChar{\\}
2364 \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.

```

2365 \let\hyper@normalise\ExecuteOptions
2366 \let\ExecuteOptions\hypersetup
2367 \Hy@RestoreCatcodes
2368 \InputIfFileExists{hyperref.cfg}{-}{-}

```

```

2369 \Hy@SetCatcodes
2370 \let\ExecuteOptions\hyper@normalise
2371 \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`.

```

2372 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2373 \@ifpackageloaded{tex4ht}{%
2374   \@ifpackagewith{hyperref}{tex4ht}{%}{%
2375     \PassOptionsToPackage{tex4ht}{hyperref}%
2376   }%
2377 }{}

```

```

2378 \let\ReadBookmarks\relax
2379 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2380 \AtBeginDocument{%
2381   \ifHy@draft
2382     \let\hyper@@anchor\@gobble
2383     \gdef\hyper@link#1#2#3{#3}%
2384     \let\hyper@anchorstart\@gobble
2385     \let\hyper@anchorend\@empty
2386     \let\hyper@linkstart\@gobbletwo
2387     \let\hyper@linkend\@empty
2388     \def\hyper@linkurl#1#2{#1}%
2389     \def\hyper@linkfile#1#2#3{#1}%
2390     \def\Acrobatmenu#1#2{#2}%
2391     \let\PDF@SetupDoc\@empty
2392     \let\PDF@FinishDoc\@empty
2393     \let\@fifthoffive\@secondoftwo
2394     \let\@secondoffive\@secondoftwo
2395     \let\ReadBookmarks\relax
2396     \let\WriteBookmarks\relax
2397     \Hy@WarningNoLine{ draft mode on}%
2398   \fi
2399   \Hy@DisableOption{draft}%
2400   \Hy@DisableOption{nolinks}%
2401   \Hy@DisableOption{final}%
2402 }%

```

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`.

```

2403 \ifx\HyPsd@InitUnicode\relax
2404   \define@key{Hyp}{unicode}[true]{%
2405     \Hy@boolkey{unicode}{#1}%
2406   }
2407 \else
2408   \define@key{Hyp}{unicode}[true]{%
2409     \Hy@boolkey{unicode}{#1}%
2410     \ifHy@unicode
2411       \Hy@WarningNoLine{Set package option ‘unicode’ first\MessageBreak
2412         in order to load unicode support%
2413     }%

```

```

2414      \Hy@unicodedefalse
2415      \fi
2416    }
2417 \fi

```

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

```

2418 \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.

```

2419 \Hy@nextfalse
2420 \ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2421 \ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2422 \ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2423 \ifHy@next
2424   \let\texttilde\~%
2425 \fi

2426 \ifHy@figures
2427   \Hy@Info{Hyper figures ON}
2428 \else
2429   \Hy@Info{Hyper figures OFF}
2430 \fi

2431 \ifHy@nesting
2432   \Hy@Info{Link nesting ON}
2433 \else
2434   \Hy@Info{Link nesting OFF}
2435 \fi

2436 \ifHy@hyperindex
2437   \Hy@Info{Hyper index ON}
2438 \else
2439   \Hy@Info{Hyper index OFF}
2440 \fi

2441 \ifHy@plainpages
2442   \Hy@Info{Plain pages ON}
2443 \else
2444   \Hy@Info{Plain pages OFF}
2445 \fi

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

2451 \ifHy@typexml
2452   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2453 \fi
2454 \Hy@DisableOption{typexml}
2455 \ifHy@implicit
2456   \typeout{Implicit mode ON; LaTeX internals redefined}%
2457 \else
2458   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2459   \def\MaybeStopEarly{%
2460     \typeout{Hyperref stopped early}%
2461     \AfterBeginDocument{\PDF@FinishDoc}%
2462     \endinput
2463   }%

```

```

2464 \AtBeginDocument{%
2465   \let\autoref\ref
2466   \ifx\@pdfpagemode\@empty
2467     \gdef\@pdfpagemode{UseNone}%
2468   \fi
2469   \global\Hy@backreffalse
2470 }%
2471 \AtEndOfPackage{%
2472   \global\let\ReadBookmarks\relax
2473   \global\let\WriteBookmarks\relax
2474 }%
2475 \fi
2476 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2477 \AtEndOfPackage{%
2478   \@ifpackageloaded{tex4ht}{%
2479     \def\Hy@driver{htex4ht}%
2480     \Hy@texhttrue
2481   }{%
2482     \ifx\Hy@driver\@empty
2483       \providecommand*{\Hy@defaultdriver}{hypertex}%
2484       \begingroup\expandafter\expandafter\expandafter\endgroup
2485       \expandafter\ifx\csname pdfoutput\endcsname\relax
2486         \begingroup\expandafter\expandafter\expandafter\endgroup
2487         \expandafter\ifx\csname OpMode\endcsname\relax
2488           \begingroup\expandafter\expandafter\expandafter\endgroup
2489           \expandafter\ifx\csname XeTeXversion\endcsname\relax
2490             \let\Hy@driver\Hy@defaultdriver
2491           \else
2492             \def\Hy@driver{hdvipdfm}%
2493           \fi
2494         \else
2495           \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2496             \def\Hy@driver{hvtex}%
2497             \def\XR@ext{pdf}%
2498           \else
2499             \ifnum\OpMode=10\relax
2500               \def\XR@ext{htm}%
2501             \def\Hy@driver{hvtexhtm}%
2502             \def\MaybeStopEarly{%
2503               \typeout{Hyperref stopped early}%
2504               \AfterBeginDocument{\PDF@FinishDoc}%
2505             \endinginput
2506           }%
2507         \else
2508           \let\Hy@driver\Hy@defaultdriver
2509         \fi
2510       \fi
2511     \fi
2512   \else
2513     \ifnum\pdfoutput<1 %
2514       \let\Hy@driver\Hy@defaultdriver
2515     \else
2516       \def\Hy@driver{hpdfetex}%
2517       \def\XR@ext{pdf}%

```

```

2518         \PassOptionsToPackage{pdftex}{color}%
2519         \Hy@breaklinkstrue
2520     \fi
2521 \fi
2522 \ifx\Hy@driver\Hy@defaultdriver
2523     \def\Hy@temp{hdvips}%
2524     \ifx\Hy@temp\Hy@driver
2525         \def\Hy@raisedlink{}%
2526         \def\XR@ext{pdf}%
2527     \fi
2528     \def\Hy@temp{hdvipdfm}%
2529     \ifx\Hy@temp\Hy@driver
2530         \def\XR@ext{pdf}%
2531         \Hy@breaklinkstrue
2532     \fi
2533     \def\Hy@temp{hdviwind}%
2534     \ifx\Hy@temp\Hy@driver
2535         \setkeys{Hyp}{colorlinks}%
2536         \PassOptionsToPackage{dviwindo}{color}%
2537     \fi
2538     \def\Hy@temp{hdvipson}%
2539     \ifx\Hy@temp\Hy@driver
2540         \def\XR@ext{pdf}%
2541         \def\Hy@raisedlink{}%
2542     \fi
2543     \def\Hy@temp{textures}%
2544     \ifx\Hy@temp\Hy@driver
2545         \def\XR@ext{pdf}%
2546     \fi
2547 \fi
2548 \typeout{*hyperref using default driver \Hy@driver*}%
2549 \else
2550 \typeout{*hyperref using driver \Hy@driver*}%
2551 \fi
2552 \input{\Hy@driver.def}%
2553 \let\@unprocessedoptions\relax
2554 \Hy@RestoreCatcodes
2555 }
2556 \Hy@DisableOption{tex4ht}
2557 \Hy@DisableOption{pdftex}
2558 \Hy@DisableOption{dvipdf}
2559 \Hy@DisableOption{nativepdf}
2560 \Hy@DisableOption{dvipdfm}
2561 \Hy@DisableOption{pdfmark}
2562 \Hy@DisableOption{dvips}
2563 \Hy@DisableOption{hypertex}
2564 \Hy@DisableOption{vtex}
2565 \Hy@DisableOption{vtexpdfmark}
2566 \Hy@DisableOption{dviwindo}
2567 \Hy@DisableOption{dvipsone}
2568 \Hy@DisableOption{textures}
2569 \Hy@DisableOption{latex2html}
2570 \Hy@DisableOption{ps2pdf}
2571 \Hy@DisableOption{xetex}

```

15.1.2 Bookmarks

```

2572 \def\WriteBookmarks{0}

```

```

2573 \def\@bookmarkopenstatus#1{%
2574   \ifHy@bookmarksopen

```

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

```

2575     \ifnum#1<\expandafter\@firstofone\expandafter
2576         {\number\@bookmarksopenlevel} % explicit space
2577     \else
2578         -%
2579     \fi
2580 \else
2581     -%
2582 \fi
2583 }
2584 \ifHy@bookmarks
2585   \Hy@Info{Bookmarks ON}%
2586   \ifx\@pdfpagemode\@empty
2587     \def\@pdfpagemode{UseOutlines}%
2588   \fi
2589 \else
2590   \def\@bookmarkopenstatus#1{%
2591     \Hy@Info{Bookmarks OFF}%
2592     \AtEndOfPackage{%
2593       \global\let\ReadBookmarks\relax
2594       \global\let\WriteBookmarks\relax
2595     }
2596     \ifx\@pdfpagemode\@empty
2597       \def\@pdfpagemode{UseNone}%
2598     \fi
2599 \fi
2600 \Hy@DisableOption{bookmarks}

```

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

```

2601 \AtBeginDocument{%
2602   \ifHy@colorlinks
2603     \ifHy@typexml\else\RequirePackage{color}\fi
2604     \def\Hy@colorlink#1{%
2605       \begingroup
2606         \expandafter\Hy@colorscan\expandafter#1#\@nil%
2607     }%
2608     \def\Hy@colorscan#1{%
2609       \@ifnextchar[% ]
2610       {%
2611         \Hy@@colorscan
2612       }{%
2613         \expandafter\color\expandafter#1\@car{}%
2614       }%
2615     }%
2616     \def\Hy@@colorscan#1\@nil{\color#1}%
2617     \def\Hy@endcolorlink{\endgroup}%
2618     \Hy@Info{Link coloring ON}%
2619 \else
2620   \ifHy@frenchlinks
2621     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2622     \def\Hy@endcolorlink{\endgroup}%
2623     \Hy@Info{French linking ON}%
2624   \else

```

for grouping consistency:

```

2625 \def\Hy@colorlink#1{\begingroup}%
2626 \def\Hy@endcolorlink{\endgroup}%
2627 \Hy@Info{Link coloring OFF}%
2628 \fi
2629 \fi
2630 \Hy@DisableOption{colorlinks}%
2631 \Hy@DisableOption{frenchlinks}%
2632 \ifHy@texht
2633 \long\def\@firstoffive#1#2#3#4#5{#1}%
2634 \long\def\@secondoffive#1#2#3#4#5{#2}%
2635 \long\def\@thirdoffive#1#2#3#4#5{#3}%
2636 \long\def\@fourthoffive#1#2#3#4#5{#4}%
2637 \long\def\@fifthoffive#1#2#3#4#5{#5}%
2638 \providecommand*\@safe@activestruer{}%
2639 \providecommand*\@safe@activesfalse{}%
2640 \def\T@ref#1{%
2641 \Hy@safe@activestruer
2642 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2643 \Hy@safe@activesfalse
2644 }%
2645 \def\T@pageref#1{%
2646 \Hy@safe@activestruer
2647 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2648 \Hy@safe@activesfalse
2649 }%
2650 \else
2651 \ifHy@typexml\else\RequirePackage{nameref}\fi
2652 \fi
2653 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2654 \DeclareRobustCommand\pageref{%
2655 \@ifstar\@pagerefstar\T@pageref
2656 }%
2657 }
2658 \AfterBeginDocument{%
2659 \ifHy@texht
2660 \else
2661 \ReadBookmarks
2662 \fi
2663 }
2664 \ifHy@backref
2665 \RequirePackage{backref}
2666 \else
2667 \let\Hy@backout\@gobble
2668 \fi
2669 \Hy@DisableOption{backref}
2670 \Hy@DisableOption{pagebackref}
2671 \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.


```

2672 \begingroup
2673 \endlinechar=-1
2674 \catcode'\^M\active
2675 \catcode'\%\active
2676 \catcode'\#\active
2677 \catcode'\_\active
2678 \catcode'\$\active
2679 \gdef\hyper@normalise{
2680   \begingroup
2681   \catcode'\^M\active
2682   \def^M{ }
2683   \catcode'\%\active
2684   \let%\@percentchar
2685   \let%\@percentchar
2686   \catcode'\#\active
2687   \def#{\hyper@hash}
2688   \def\#{\hyper@hash}
2689   \@makeother\&
2690   \edef\textunderscore{\string_}
2691   \let\_ \textunderscore
2692   \catcode'\_\active
2693   \let\_ \textunderscore
2694   \let~\hyper@tilde
2695   \let~\hyper@tilde
2696   \let\textasciitilde\hyper@tilde
2697   \let\\\@backslashchar
2698   \edef$\string$}
2699   \Hy@safe@activetrue
2700   \hyper@n@rmalise
2701 }
2702 \catcode'\#=6
2703 \gdef\hyper@n@rmalise#1#2{
2704   \edef\Hy@tempa{
2705     \endgroup
2706     \noexpand#1{\Hy@RemovePercentCr#2%\^M\@nil}
2707   }
2708   \Hy@tempa
2709 }
2710 \gdef\Hy@RemovePercentCr#1%\^M#2\@nil{
2711   #1
2712   \ifx\limits#2\limits
2713   \else
2714     \Hy@ReturnAfterFi{
2715       \Hy@RemovePercentCr #2\@nil
2716     }
2717   \fi
2718 }
2719 \endgroup
2720 \providecommand\hyper@chars{%
2721   \let#\hyper@hash
2722   \let%\@percentchar
2723 }
2724 \def\hyperlink#1#2{%
2725   \hyper@@link#{#1}{#2}%
2726 }
2727 \DeclareRobustCommand*\href{\hyper@normalise\href@}
2728 \begingroup

```

```

2729 \catcode'\$=6
2730 \catcode'\#=12
2731 \gdef\href@#1{\expandafter\href@split$1##\}
2732 \gdef\href@split$1#$2#$3\{\%
2733     \hyper@@link{#1}{#2}%
2734 }
2735 \endgroup

```

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

```

2736 \RequirePackage{url}
2737 \let\HyOrg@url\url
2738 \def\Hurl{\begingroup \Url}
2739 \let\nolinkurl\Hurl
2740 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2741 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2742 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2743 \providecommand\hyper@image[2]{#2}

2744 \def\hypertarget#1#2{\%
2745     \ifHy@nesting
2746         \hyper@@anchor{#1}{#2}%
2747     \else
2748         \hyper@@anchor{#1}{\relax}#2%
2749     \fi
2750 }

```

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

```

2751 \DeclareRobustCommand*\hyperref{\%
2752     \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
2753 }
2754 \def\Hy@babelnormalise#1[#2]{\%
2755     \begingroup
2756         \Hy@safe@activestrue
2757         \edef\Hy@tempa{\%
2758             \endgroup
2759             \noexpand#1[#2]}%
2760     }%
2761     \Hy@tempa
2762 }
2763 \def\@hyperref{\hyper@normalise\@hyperref}
2764 \def\@hyperref#1#2#3{\%
2765     \edef\ref@one{\ifx\\#2\\\else#2.\fi#3}%
2766     \expandafter\tryhyper@link\ref@one\{#1}%
2767 }
2768 \def\tryhyper@link#1\\#2{\%
2769     \hyper@@link{#2}{#1}%
2770 }

2771 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
2772 \def\@hyperdef#1#2#3{\%, category, name, text
2773     \ifHy@nesting
2774         \hyper@@anchor{#1.#2}{#3}%
2775     \else

```

```

2776 \hyper@@anchor{#1.#2}{\relax}#3%
2777 \fi
2778 }

```

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.

```

2779 \def\label@hyperref[#1]{%
2780 \expandafter\label@hyperref\csname r@#1\endcsname{#1}%
2781 }%
2782 \def\label@hyperref#1#2#3{%
2783 \ifx#1\relax
2784 \protect\G@refundefinedtrue
2785 \@latex@warning{%
2786 Hyper reference ‘#2’ on page \thepage \space undefined%
2787 }%
2788 \hyper@@link{}{??}{#3}%
2789 \else
2790 \hyper@@link{\expandafter\@fifthoffive#1}%
2791 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2792 \fi
2793 }
2794 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
2795 % anchor text
2796 \@bspack
2797 \if@filesw
2798 \protected@write\@auxout{%
2799 {\string\newlabel{#1}{#2}{#3}{#4}\@#2.#3}}%
2800 \fi
2801 \@espack
2802 \ifHy@nesting
2803 \hyper@@anchor{#2.#3}{#4}%
2804 \else
2805 \hyper@@anchor{#2.#3}{\relax}#4%
2806 \fi
2807 }

```

17 Underlying basic hypertext macros

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

```

2808 \def\hyper@@link{\let\Hy@reserved@a\relax
2809 \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2810 }
2811 \def\hyper@link@[#1]#2#3#4{%
2812 \begingroup
2813 \protected@edef\Hy@tempa{#2}%
2814 \Hy@safe@activestrue
2815 \edef\x{#3}%
2816 \ifx\Hy@tempa\@empty
2817 \toks0{\hyper@link{#1}}%
2818 \else
2819 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2820 \fi
2821 \toks1{{#4}}%

```

```

2822 \edef\x{\endgroup
2823 \the\toks0 {\x}\the\toks1 %
2824 }%
2825 \x
2826 }

```

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.

```

2827 \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.

```

2828 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1:.\#1}%
2829 }

```

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

```

2830 \def\@pdftempwordfile{file}%
2831 \def\@pdftempwordrun{run}%
2832 \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:

```

2833 \ifx\#6\%
2834 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2835 \else
2836 \ifx\#4\%
2837 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2838 \else

```

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

```

2839 \def\@pdftempa{#4}%
2840 \ifx\@pdftempa\@pdftempwordfile
2841 \expandafter\@hyper@linkfile#7\#{3}{#2}%
2842 \else

```

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

```

2843 \ifx\@pdftempa\@pdftempwordrun
2844 \expandafter\@hyper@launch#7\#{3}{#2}%
2845 \else

```

otherwise its a URL

```

2846 \hyper@linkurl{#3}{#7\ifx\#2\#2\else\hyper@hash#2\fi}%
2847 \fi
2848 \fi

```

```

2849 \fi
2850 \fi
2851 }

```

By default, turn run: into file:

```

2852 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2853 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\#3\\\else\hyper@hash#3\fi}%
2854 }

```

D P Story jstory@uakron.edu; pointed out that relative paths starting .. fell over.

Switched to using \filename@parse to solve this.

```

2855 \def\@hyper@linkfile file:#1\#2#3{%
2856 %file url,link string, name
2857 \filename@parse{#1}%
2858 \ifx\filename@ext\relax
2859 \edef\filename@ext{\XR@ext}%
2860 \fi
2861 \def\use@file{\filename@area\filename@base.\filename@ext}%
2862 \ifx\filename@ext\XR@ext
2863 \hyper@linkfile{#2}{\use@file}{#3}%
2864 \else
2865 \ifx\@baseurl\@empty
2866 \hyper@linkurl{#2}{%
2867 \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
2868 }%
2869 \else
2870 \hyper@linkurl{#2}{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
2871 \fi
2872 \fi
2873 }

```

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.

```

2874 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2875 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2876 \ifx\#1\%
2877 #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2878 \else
2879 \def\anchor@spot{#2#3}%
2880 \let\put@me@back\@empty
2881 \ifx\relax#2\relax
2882 \else
2883 \ifHy@nesting
2884 \else
2885 \ifcat a\noexpand#2\relax
2886 \else
2887 \ifcat 0\noexpand#2 \relax
2888 \else
2889 % \typeout{Anchor start is not alphanumeric %
2890 % on input line\the\inputlineno%
2891 % }%
2892 \let\anchor@spot\@empty
2893 \def\put@me@back{#2#3}%

```

```

2894         \fi
2895     \fi
2896 \fi
2897 \fi
2898 \ifHy@activeanchor
2899     \anchor@spot
2900 \else
2901     \hyper@anchor{#1}%
2902 \fi
2903 \expandafter\put@me@back
2904 \fi
2905 \let\anchor@spot\@empty
2906 }

```

18 Compatibility with the *L^AT_EX2html* package

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

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

```

2907 \let\htmladdimg\hyperimage
2908 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2909 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2910 \def\htmlref#1#2{% anchor text, label
2911     \label@hyperref[{#2}]{#1}%
2912 }

```

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

```

2913 \def\@latex2htmlX{%
2914     \let\hyperref\hyperref
2915     \def\hyperref##1##2##3##4{% anchor text for HTML
2916                                     % text to print before label in print
2917                                     % label
2918                                     % post-label text in print
2919     ##2\ref{##4}##3%
2920 }%
2921 }

```

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.

```

2922 \newif\ifFld@checked
2923 \newif\ifFld@hidden
2924 \newif\ifFld@multiline
2925 \newif\ifFld@readonly
2926 \newif\ifFld@disabled
2927 \newif\ifFld@password

```

```

2928 \newif\ifFld@radio
2929 \newif\ifFld@combo
2930 \newif\ifFld@popdown
2931 \Fld@multilinefalse
2932 \Fld@checkedfalse
2933 \Fld@hiddenfalse
2934 \Fld@readonlyfalse
2935 \Fld@disabledfalse
2936 \Fld@radiofalse
2937 \Fld@combobfalse
2938 \Fld@popdownfalse
2939 \Fld@passwordfalse
2940 \newcount\Fld@menulength
2941 \newdimen\Fld@Width
2942 \newdimen\Fld@charsize
2943 \Fld@charsize=10\p@
2944 \def\Fld@maxlen{0}
2945 \def\Fld@align{0}
2946 \def\Fld@color{0 0 0}
2947 \def\Fld@bcolor{1 1 1}
2948 \def\Fld@bordercolor{1 0 0}
2949 \def\Fld@bordersep{1\p@}
2950 \def\Fld@borderwidth{1}
2951 \def\Fld@borderstyle{S}
2952 \def\Fld@cbsymbol{4}
2953 \newtoks\Choice@toks
2954 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2955 \def\endForm{\@endForm}
2956 \newif\ifForm@html
2957 \Form@htmlfalse
2958 \def\Form@boolkey#1#2{%
2959   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2960 }
2961 \define@key{Form}{action}{%
2962   \hyper@normalise\Hy@DefFormAction{#1}%
2963 }
2964 \def\Hy@DefFormAction{\def\Form@action}
2965 \def\enc@html{html}
2966 \define@key{Form}{encoding}{%
2967   \def\Hy@tempa{#1}%
2968   \ifx\Hy@tempa\enc@html
2969     \Form@htmltrue
2970   \else
2971     \typeout{hyperref: form 'encoding' key set to #1 %
2972     -- unknown type%
2973   }%
2974   \Form@htmlfalse
2975   \fi
2976 }
2977 \define@key{Form}{method}{%
2978   \def\Form@method{#1}%
2979 }
2980 \def\Form@method{}
2981 \def\Field@boolkey#1#2{%
2982   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2983 }
2984 \newtoks\Field@toks

```

```

2985 \Field@toks={ }%
2986 \def\Field@addtoks#1#2{%
2987   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
2988   \@processme
2989 }
2990 \def\Fld@checkequals#1=#2=#3\\{%
2991   \def\@currDisplay{#1}%
2992   \ifx\#2\\%
2993     \def\@currValue{#1}%
2994   \else
2995     \def\@currValue{#2}%
2996   \fi
2997 }
2998 \define@key{Field}{loc}{%
2999   \def\Fld@loc{#1}%
3000 }
3001 \define@key{Field}{multiline}[true]{%
3002   \lowercase{\Field@boolkey{#1}}{multiline}%
3003 }
3004 \define@key{Field}{checked}[true]{%
3005   \lowercase{\Field@boolkey{#1}}{checked}%
3006 }
3007 \define@key{Field}{hidden}[true]{%
3008   \lowercase{\Field@boolkey{#1}}{hidden}%
3009 }
3010 \define@key{Field}{readonly}[true]{%
3011   \lowercase{\Field@boolkey{#1}}{readonly}%
3012 }
3013 \define@key{Field}{disabled}[true]{%
3014   \lowercase{\Field@boolkey{#1}}{disabled}%
3015 }
3016 \define@key{Field}{password}[true]{%
3017   \lowercase{\Field@boolkey{#1}}{password}%
3018 }
3019 \define@key{Field}{radio}[true]{%
3020   \lowercase{\Field@boolkey{#1}}{radio}%
3021 }
3022 \define@key{Field}{combo}[true]{%
3023   \lowercase{\Field@boolkey{#1}}{combo}%
3024 }
3025 \define@key{Field}{popdown}[true]{%
3026   \lowercase{\Field@boolkey{#1}}{popdown}%
3027 }
3028 \define@key{Field}{accesskey}{%
3029   \Field@addtoks{accesskey}{#1}%
3030 }
3031 \define@key{Field}{tabkey}{%
3032   \Field@addtoks{tabkey}{#1}%
3033 }
3034 \define@key{Field}{name}{%
3035   \def\Fld@name{#1}%
3036 }
3037 \define@key{Field}{width}{%
3038   \def\Fld@width{#1}%
3039   \Field@Width#1\setbox0=\hbox{m}%
3040 }
3041 \define@key{Field}{maxlen}{%

```



```

3042 \def\Fld@maxlen{#1}%
3043 }
3044 \define@key{Field}{menulength}{%
3045 \Fld@menulength=#1\relax
3046 }
3047 \define@key{Field}{height}{%
3048 \def\Fld@height{#1}%
3049 }
3050 \define@key{Field}{charsize}{%
3051 \Fld@charsize#1%
3052 }
3053 \define@key{Field}{fillcolor}{%
3054 \def\Fld@fillcolor{#1}%
3055 }
3056 \define@key{Field}{bordercolor}{%
3057 \def\Fld@bordercolor{#1}%
3058 }
3059 \define@key{Field}{color}{%
3060 \def\Fld@color{#1}%
3061 }
3062 \define@key{Field}{borderwidth}{%
3063 \def\Fld@borderwidth{#1}%
3064 }
3065 \define@key{Field}{borderstyle}{%
3066 \def\Fld@borderstyle{#1}%
3067 }
3068 \define@key{Field}{bordersep}{%
3069 \def\Fld@bordersep{#1}%
3070 }
3071 \define@key{Field}{default}{%
3072 \def\Fld@default{#1}%
3073 }
3074 \define@key{Field}{align}{%
3075 \def\Fld@align{#1}%
3076 }
3077 \define@key{Field}{value}{%
3078 \def\Fld@value{#1}%
3079 }
3080 \define@key{Field}{backgroundcolor}{%
3081 \def\Fld@bcolor{#1}%
3082 }
3083 \define@key{Field}{checkboxsymbol}{%
3084 \def\Fld@cbsymbol{#1}%
3085 }
3086 \def\Fld@format@code{}
3087 \def\Fld@validate@code{}
3088 \def\Fld@calculate@code{}
3089 \def\Fld@keystroke@code{}
3090 \def\Fld@onfocus@code{}
3091 \def\Fld@onblur@code{}
3092 \def\Fld@onmousedown@code{}
3093 \def\Fld@onmouseup@code{}
3094 \def\Fld@onenter@code{}
3095 \def\Fld@onexit@code{}
3096 \define@key{Field}{keystroke}{%
3097 \def\Fld@keystroke@code{#1}%
3098 }

```

```

3099 \define@key{Field}{format}{%
3100   \def\Fld@format@code{#1}%
3101 }
3102 \define@key{Field}{validate}{%
3103   \def\Fld@validate@code{#1}%
3104 }
3105 \define@key{Field}{calculate}{%
3106   \def\Fld@calculate@code{#1}%
3107 }
3108 \define@key{Field}{onfocus}{%
3109   \def\Fld@onfocus@code{#1}%
3110 }
3111 \define@key{Field}{onblur}{%
3112   \def\Fld@onblur@code{#1}%
3113 }
3114 \define@key{Field}{onenter}{%
3115   \def\Fld@onenter@code{#1}%
3116 }
3117 \define@key{Field}{onexit}{%
3118   \def\Fld@onexit@code{#1}%
3119 }
3120 \define@key{Field}{onselect}{%
3121   \Field@addtoks{onselect}{#1}%
3122 }
3123 \define@key{Field}{onchange}{%
3124   \Field@addtoks{onchange}{#1}%
3125 }
3126 \define@key{Field}{onclick}{%
3127   \def\Fld@onclick{#1}%
3128   \Field@addtoks{onclick}{#1}%
3129 }
3130 \define@key{Field}{ondblclick}{%
3131   \Field@addtoks{ondblclick}{#1}%
3132 }
3133 \define@key{Field}{onmousedown}{%
3134   \Field@addtoks{onmousedown}{#1}%
3135 }
3136 \define@key{Field}{onmouseup}{%
3137   \Field@addtoks{onmouseup}{#1}%
3138 }
3139 \define@key{Field}{onmouseover}{%
3140   \Field@addtoks{onmouseover}{#1}%
3141 }
3142 \define@key{Field}{onmousemove}{%
3143   \Field@addtoks{onmousemove}{#1}%
3144 }
3145 \define@key{Field}{onmouseout}{%
3146   \Field@addtoks{onmouseout}{#1}%
3147 }
3148 \define@key{Field}{onkeypress}{%
3149   \Field@addtoks{onkeypress}{#1}%
3150 }
3151 \define@key{Field}{onkeydown}{%
3152   \Field@addtoks{onkeydown}{#1}%
3153 }
3154 \define@key{Field}{onkeyup}{%
3155   \Field@addtoks{onkeyup}{#1}%

```

```

3156 }
3157 %
3158 \DeclareRobustCommand\TextField{%
3159   \@ifnextchar[{\@TextField}{\@TextField[]}%
3160 }
3161 \DeclareRobustCommand\ChoiceMenu{%
3162   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
3163 }
3164 \DeclareRobustCommand\CheckBox{%
3165   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
3166 }
3167 \DeclareRobustCommand\PushButton{%
3168   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
3169 }
3170 \DeclareRobustCommand\Gauge{%
3171   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3172 }
3173 \DeclareRobustCommand\Submit{%
3174   \@ifnextchar[{\@Submit}{\@Submit[]}%
3175 }
3176 \DeclareRobustCommand\Reset{%
3177   \@ifnextchar[{\@Reset}{\@Reset[]}%
3178 }
3179 \def\LayoutTextField#1#2{% label, field
3180   #1 #2%
3181 }
3182 \def\LayoutChoiceField#1#2{% label, field
3183   #1 #2%
3184 }
3185 \def\LayoutCheckField#1#2{% label, field
3186   #1 #2%
3187 }
3188 \def\LayoutPushButtonField#1{% button
3189   #1%
3190 }
3191 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3192 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3193 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3194 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3195 \def\MakeButtonField#1{%
3196   \sbox0{%
3197     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3198   }%
3199   \@tempdima\ht0
3200   \advance\@tempdima by \Fld@borderwidth bp
3201   \advance\@tempdima by \Fld@borderwidth bp
3202   \ht0\@tempdima
3203   \@tempdima\dp0
3204   \advance\@tempdima by \Fld@borderwidth bp
3205   \advance\@tempdima by \Fld@borderwidth bp
3206   \dp0\@tempdima
3207   \box0\relax
3208 }
3209 \def\DefaultHeightofSubmit{14pt}
3210 \def\DefaultWidthofSubmit{2cm}
3211 \def\DefaultHeightofReset{14pt}
3212 \def\DefaultWidthofReset{2cm}

```

```

3213 \def\DefaultHeightofCheckBox{\baselineskip}
3214 \def\DefaultWidthofCheckBox{\baselineskip}
3215 \def\DefaultHeightofChoiceMenu{\baselineskip}
3216 \def\DefaultWidthofChoiceMenu{\baselineskip}
3217 \def\DefaultHeightofText{\baselineskip}
3218 \def\DefaultWidthofText{3cm}

```

20 Setup

```

3219 \ifHy@figures
3220   \Hy@Info{Hyper figures ON}
3221 \else
3222   \Hy@Info{Hyper figures OFF}
3223 \fi
3224 \ifHy@nesting
3225   \Hy@Info{Link nesting ON}
3226 \else
3227   \Hy@Info{Link nesting OFF}
3228 \fi
3229 \ifHy@hyperindex
3230   \Hy@Info{Hyper index ON}
3231 \else
3232   \Hy@Info{Hyper index OFF}
3233 \fi
3234 \ifHy@backref
3235   \Hy@Info{backreferencing ON}
3236 \else
3237   \Hy@Info{backreferencing OFF}
3238 \fi
3239 \ifHy@colorlinks
3240   \Hy@Info{Link coloring ON}
3241 \else
3242   \Hy@Info{Link coloring OFF}
3243 \fi

```

21 Low-level utility macros

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

```

3244 \edef\hyper@hash{\string#}
3245 \edef\hyper@tilde{\string~}
3246 \edef\hyper@quote{\string"}
3247 \let\@currentHref\@empty
3248 \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.

```

3249 \AfterBeginDocument{%
3250   \Hy@pdfstringtrue
3251   \PDF@SetupDoc
3252   \let\PDF@SetupDoc\@empty
3253   \Hy@DisableOption{pdfpagescrop}%
3254   \Hy@DisableOption{pdfpagemode}%
3255   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3256   \Hy@DisableOption{pdfdirection}%
3257   \Hy@DisableOption{pdfviewarea}%
3258   \Hy@DisableOption{pdfviewclip}%

```

```

3259 \Hy@DisableOption{pdfprintarea}%
3260 \Hy@DisableOption{pdfprintclip}%
3261 \Hy@DisableOption{pdfprintscaling}%
3262 \Hy@DisableOption{pdfduplex}%
3263 \Hy@DisableOption{pdfpicktraybypdfsize}%
3264 \Hy@DisableOption{pdfprintpagerange}%
3265 \Hy@DisableOption{pdfnumcopies}%
3266 \Hy@DisableOption{pdfstartview}%
3267 \Hy@DisableOption{pdfstartpage}%
3268 \Hy@DisableOption{pdftoolbar}%
3269 \Hy@DisableOption{pdfmenubar}%
3270 \Hy@DisableOption{pdfwindowui}%
3271 \Hy@DisableOption{pdffitwindow}%
3272 \Hy@DisableOption{pdfcenterwindow}%
3273 \Hy@DisableOption{pdfdisplaydoctitle}%
3274 \Hy@DisableOption{pdfpagelayout}%
3275 \Hy@DisableOption{pdflang}%
3276 \Hy@DisableOption{baseurl}%
3277 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3278 \Hy@pdfstringfalse
3279 }

```

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.

```

3280 \def\NoHyper{%
3281   \def\hyper@link@{##1}##2##3##4{##4}%
3282   \def\hyper@@anchor##1{%
3283     \global\let\hyper@livelink\hyper@link
3284     \gdef\hyper@link##1##2##3{##3}%
3285     \def\hyper@anchorstart##1{%
3286       \let\hyper@anchorend\@empty
3287       \def\hyper@linkstart##1##2{%
3288         \let\hyper@linkend\@empty
3289         \def\hyper@linkurl##1##2{##1}%
3290         \def\hyper@linkfile##1##2##3{##1}%
3291         \let\Hy@backout\@gobble
3292       }
3293     \def\stop@hyper{%
3294       \def\hyper@link@{##1}##2##3##4{##4}%
3295       \let\Hy@backout\@gobble
3296       \def\hyper@@anchor##1{%
3297         \def\hyper@link##1##2##3{##3}%
3298         \def\hyper@anchorstart##1{%
3299           \let\hyper@anchorend\@empty
3300           \def\hyper@linkstart##1##2{%
3301             \let\hyper@linkend\@empty
3302             \def\hyper@linkurl##1##2{##1}%
3303             \def\hyper@linkfile##1##2##3{##1}%
3304           }
3305         \def\endNoHyper{%
3306           \global\let\hyper@link\hyper@livelink
3307         }

```

3308 `\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:

```
3309 \nohyperref
3310 \let\hyper@@anchor\@gobble
3311 \def\hyper@link#1#2#3{#3}%
3312 \let\hyper@anchorstart\@gobble
3313 \let\hyper@anchorend\@empty
3314 \let\hyper@linkstart\@gobbletwo
3315 \let\hyper@linkend\@empty
3316 \def\hyper@linkurl#1#2{#1}%
3317 \def\hyper@linkfile#1#2#3{#1}%
3318 \let\PDF@SetupDoc\@empty
3319 \let\PDF@FinishDoc\@empty
```

Some top-level commands:

```
3320 \let\Acrobatmenu\@gobble
3321 \let\pdfstringdefDisableCommands\@gobbletwo
3322 \let\texorpdfstring\@firstoftwo
3323 \let\pdfbookmark\@undefined
3324 \newcommand\pdfbookmark[3][]{}
3325 \let\phantomsection\@empty
3326 \let\hypersetup\@gobble
3327 \let\hyperbaseurl\@gobble
3328 \let\href\@gobble
3329 \let\hyperdef\@gobbletwo
3330 \let\hyperlink\@gobble
3331 \let\hypertarget\@gobble
3332 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}}
3333 \long\def\@gobbleopt[#1]{}%
3334 \let\hyperpage\@empty
3335 \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}`

```
3336 \package
3337 \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.

```
3338 \if@filesw
3339 \ifHy@typexml
3340 \immediate\closeout\@mainaux
3341 \immediate\openout\@mainaux\jobname.aux
```

```

3342 \immediate\write\@auxout{<relaxxml>\relax}%
3343 \fi
3344 \immediate\write\@auxout{%
3345     \string\ifx\string\hyper@anchor\string\@undefined^^J%
3346     \global\let\string\oldcontentsline\string\contentsline^^J%
3347     \gdef\string\contentsline%
3348         \string#1\string#2\string#3\string#4{%
3349         \string\oldcontentsline%
3350         {\string#1}{\string#2}{\string#3}}^^J%
3351     \global\let\string\oldnewlabel\string\newlabel^^J%
3352     \gdef\string\newlabel\string#1\string#2{%
3353         \string\newlabelxx{\string#1}\string#2^^J%
3354     \gdef\string\newlabelxx%
3355         \string#1\string#2\string#3\string#4\string#5\string#6{%
3356         \string\oldnewlabel{\string#1}{\string#2}{\string#3}}^^J%

```

```

3357 \string\AtEndDocument{%
3358 \let\string\contentsline\string\oldcontentsline^^J%
3359 \let\string\newlabel\string\oldnewlabel^^J%

```

```

3360         \string\else^^J%
3361         \global\let\string\hyper@last\relax^^J%
3362         \string\fi^^J%
3363     }%
3364 \fi

```

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

25 Title strings

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

```

3384 \ifHy@usetitle
3385   \let\HyOrg@title\title
3386   \let\HyOrg@author\author
3387   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3388   \def\Hy@scanopttitle[#1]{%
3389     \gdef\Hy@title{#1}%
3390     \HyOrg@title[{#1}]%
3391   }%
3392   \def\Hy@scantitle#1{%
3393     \gdef\Hy@title{#1}%
3394     \HyOrg@title{#1}%
3395   }
3396   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3397   \def\Hy@scanoptauthor[#1]{%
3398     \gdef\Hy@author{#1}%
3399     \HyOrg@author[{#1}]%
3400   }%
3401   \def\Hy@scanauthor#1{%
3402     \gdef\Hy@author{#1}%
3403     \HyOrg@author{#1}%
3404   }

```

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.

```

3405 \begingroup
3406   \def\process@me#1\@nil#2{%
3407     \expandafter\let\expandafter\x\csname @#2\endcsname
3408     \edef\y{\expandafter\strip@prefix\meaning\x}%
3409     \def\c##1#1##2\@nil{%
3410       \ifx\\##1\\%
3411       \else
3412         \expandafter\gdef\csname Hy@#2\expandafter\endcsname
3413           \expandafter{\x}%
3414       \fi
3415     }%
3416     \expandafter\c\y\relax#1\@nil
3417   }%
3418   \expandafter\process@me\string\@latex@\@nil{title}%
3419   \expandafter\process@me\string\@latex@\@nil{author}%
3420 \endgroup
3421 \fi
3422 \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.

```

3423 \def\Hy@UseMaketitleString#1{%

```



```

3424 \@ifundefined{Hy@#1}{\{%
3425   \begingroup
3426   \let\Hy@saved@hook\pdfstringdefPreHook
3427   \pdfstringdefDisableCommands{%
3428     \expandafter\let\expandafter\\csname Hy@newline@#1\endcsname
3429     \let\newline\\%
3430   }%
3431   \expandafter\ifx\csname @pdf#1\endcsname\@empty
3432     \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3433       \csname Hy@#1\endcsname\@empty
3434     }%
3435   \fi
3436   \global\let\pdfstringdefPreHook\Hy@saved@hook
3437 \endgroup
3438 }%
3439 }
3440 \def\Hy@newline@title#1{ #1}
3441 \def\Hy@newline@author#1{, #1}
3442 \def\Hy@UseMaketitleInfos{%
3443   \Hy@UseMaketitleString{title}%
3444   \Hy@UseMaketitleString{author}%
3445 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

26.1 PDF /PageLabels

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

```

3446 \ifHy@pagelabels

```

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

```

3447 \def\thispdfpagelabel#1{%
3448   \gdef\HyPL@thisLabel{#1}%
3449 }
3450 \global\let\HyPL@thisLabel\relax

```

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

```

3451 \def\HyPL@Labels{}

```

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

```

3452 \newcount\Hy@abspage
3453 \Hy@abspage=0

```

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

```

3454 \def\HyPL@LastType{init}%
3455 \def\HyPL@LastNumber{0}%
3456 \def\HyPL@LastPrefix{}%

```

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

```

3457 \def\HyPL@arabic{D}%
3458 \def\HyPL@Roman{R}%
3459 \def\HyPL@roman{r}%

```

```

3460 \def\HyPL@Alph{A}%
3461 \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.

```

3462 \def\HyPL@EveryPage{%
3463   \begingroup
3464   \ifx\HyPL@thisLabel\relax
3465     \let\HyPL@page\thepage
3466   \else
3467     \let\HyPL@page\HyPL@thisLabel
3468     \global\let\HyPL@thisLabel\relax
3469   \fi
3470   \let\HyPL@Type\relax
3471   \ifnum\the\c@page>0
3472     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3473   \fi
3474   \let\Hy@temp Y%
3475   \ifx\HyPL@Type\HyPL@LastType
3476   \else
3477     \let\Hy@temp N%
3478   \fi
3479   \ifx\HyPL@Type\relax
3480     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3481   \else
3482     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3483   \fi
3484   \ifx\HyPL@Prefix\HyPL@LastPrefix
3485   \else
3486     \let\Hy@temp N%
3487   \fi
3488   \if Y\Hy@temp
3489     \advance\c@page by -1
3490     \ifnum\HyPL@LastNumber=\the\c@page\relax
3491     \else
3492       \let\Hy@temp N%
3493     \fi
3494     \Hy@StepCount\c@page
3495   \fi
3496   \if N\Hy@temp
3497     \ifx\HyPL@Type\relax
3498       \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
3499     \else
3500       \HyPL@StorePageLabel{%
3501         \ifx\HyPL@Prefix\@empty
3502         \else
3503           /P (\HyPL@Prefix)
3504         \fi
3505         /S /\csname HyPL\HyPL@Type\endcsname
3506         \ifnum\the\c@page=1
3507         \else
3508           \space/St \the\c@page
3509         \fi
3510       }%
3511     \fi
3512   \fi
3513   \xdef\HyPL@LastNumber{\the\c@page}%

```

```

3514     \global\let\HyPL@LastType\HyPL@Type
3515     \global\let\HyPL@LastPrefix\HyPL@Prefix
3516   \endgroup
3517   \Hy@GlobalStepCount\Hy@abspage
3518 }

```

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

```

3519   \def\HyPL@CheckThePage#1\@nil{%
3520     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3521   }

```

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

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

```

3522   \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3523     \def\Hy@tempa{#4}%
3524     \def\Hy@tempb{\csname\endcsname\c@page}%
3525     \ifx\Hy@tempa\Hy@tempb
3526       \expandafter\ifx\csname HyPL#3\endcsname\relax
3527       \else
3528         \def\HyPL@Type{#3}%
3529         \def\HyPL@Prefix{#2}%
3530       \fi
3531     \else
3532       \begingroup
3533       \let\Hy@next\endgroup
3534       \let\HyPL@found\@undefined
3535       \def\arabic{\HyPL@Format{arabic}}%
3536       \def\Roman{\HyPL@Format{Roman}}%
3537       \def\roman{\HyPL@Format{roman}}%
3538       \def\Alph{\HyPL@Format{Alph}}%
3539       \def\alph{\HyPL@Format{alph}}%
3540       \protected@edef\Hy@temp{#1}%
3541       \ifx\HyPL@found\relax
3542         \toks@{\expandafter{\Hy@temp}}%
3543         \edef\Hy@next{\endgroup
3544           \noexpand\HyPL@@CheckThePage\the\toks@
3545           \noexpand\HyPL@found\relax\noexpand\@nil
3546         }%
3547       \fi
3548       \Hy@next
3549     \fi
3550   }

```

`\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`.

```

3551   \def\HyPL@Format#1#2{%
3552     \ifx\HyPL@found\@undefined
3553       \expandafter\ifx\csname c@#2\endcsname\c@page
3554       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3555     \else
3556       \expandafter\noexpand\csname#1\endcsname{#2}%
3557     \fi
3558   \else
3559     \expandafter\noexpand\csname#1\endcsname{#2}%

```

```

3560     \fi
3561   }

\HyPL@@@CheckThePage If the second check method is successful, \HyPL@@@CheckThePage scans the result of
\HyPL@Format and stores the found values.
3562   \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3563     \def\Hy@tempa{#3}%
3564     \def\Hy@tempb{\HyPL@found\relax}%
3565     \ifx\Hy@tempa\Hy@tempb
3566       \def\HyPL@Type{#2}%
3567       \def\HyPL@Prefix{#1}%
3568     \fi
3569   }

\HyPL@StorePageLabel Dummy for drivers that does not support /PageLabel.
3570   \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.
3571   \def\HyPL@Useless{0 << /S /D >> }%
3572   \@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.
3573   \def\HyPL@SetPageLabels{%
3574     \@onelevel@sanitize\HyPL@Labels
3575     \ifx\HyPL@Labels\@empty
3576     \else
3577       \ifx\HyPL@Labels\HyPL@Useless
3578       \else
3579         \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3580       \fi
3581     \fi
3582   }

\HyPL@EveryPage Without option 'pdfpagelabels' we need a dummy for \HyPL@EveryPage.
3583 \else
3584   \let\HyPL@EveryPage\@empty
3585 \fi

Option 'pdfpagelabels' has been used and is now disabled.
3586 \Hy@DisableOption{pdfpagelabels}
3587 \</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

```
3588 \<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.

```

3589 < *vtex>
3590 \edef\Hy@VTeXversion{%
3591   \ifx\VTeXversion\@undefined
3592     \z@
3593   \else
3594     \ifx\VTeXversion\relax
3595       \z@
3596     \else
3597       \VTeXversion
3598     \fi
3599   \fi
3600 }
3601 \beginngroup
3602   \ifnum\Hy@VTeXversion<660 %
3603     \gdef\Hy@PutCatalog#1{%
3604       \Hy@WarningNoLine{%
3605         VTeX 6.59g or above required for pdfpagelabels%
3606       }%
3607   }
3608   \else
3609     \gdef\Hy@PutCatalog#1{%
3610       \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3611     }
3612     \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3613       \ifx\#2\%
3614         \else
3615           \immediate\special{!pdfpagelabels #2}%
3616         \fi
3617     }
3618   \fi
3619 \endngroup
3620 < /vtex>
3621 < *pdfTeX | vtex>

```

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

```

3622 \ifHy@pagelabels
3623   \def\HyPL@StorePageLabel#1{%
3624     \toks@ \expandafter{\HyPL@Labels}%
3625     \xdef\HyPL@Labels{%
3626       \the\toks@
3627       \the\Hy@abspage\space<< #1 >> %
3628     }%
3629   }

```

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.

```

3630 \AtEndDocument{\clearpage\HyPL@SetPageLabels}
3631 \fi
3632 < /pdfTeX | vtex>

```

26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

3633 < dvipdfm> \def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
3634 < *pdfmarkbase>

```

```

3635 \def\Hy@PutCatalog#1{%
3636   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}}%
3637 }
3638 \pdfmarkbase>

3639 <*\pdfmarkbase | dvipdfm>
3640 \ifHy@pagelabels

```

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

```

3641   \def\HyPL@StorePageLabel#1{%
3642     \if@filesw
3643       \begingroup
3644         \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
3645         \immediate\write\@mainaux{%
3646           \string\HyPL@Entry{\Hy@tempa}%
3647         }%
3648       \endgroup
3649     \fi
3650   }

```

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.

```

3651   \AfterBeginDocument{%
3652     \if@filesw
3653       \immediate\write\@mainaux{%
3654         \string\providecommand\string*\string\HyPL@Entry[1]{}%
3655       }%
3656     \fi
3657     \ifx\HyPL@Labels\@empty
3658       \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3659     \else
3660       \HyPL@SetPageLabels
3661     \fi
3662     \let\HyPL@Entry\@gobble
3663   }%

```

`\HyPL@Entry`

```

3664   \def\HyPL@Entry#1{%
3665     \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3666       \HyPL@Labels
3667       #1%
3668     }%
3669   }

3670 \fi
3671 \pdfmarkbase | dvipdfm>

3672 <*\package>

3673 \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

```

3674 \newcommand\theHequation{\theHsection.\arabic{equation}}
3675 \@ifundefined{thepart}{}{\newcommand\theHpart{\arabic{part}}}
3676 \@ifundefined{thechapter}{%
3677   \newcommand\theHsection    {\arabic{section}}
3678   \newcommand\theHfigure     {\arabic{figure}}
3679   \newcommand\theHtable      {\arabic{table}}
3680 }{%
3681   \newcommand\theHchapter    {\arabic{chapter}}
3682   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}
3683   \newcommand\theHtable      {\theHchapter.\arabic{table}}
3684   \newcommand\theHsection    {\theHchapter.\arabic{section}}
3685 }
3686 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
3687 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3688 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
3689 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3690 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
3691 \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.

```

3692 \let\H@item\item
3693 \newcounter{Item}
3694 \def\theHItem{\arabic{Item}}
3695 \def\item{%
3696   \@hyper@itemfalse
3697   \if@nmbbrlist\@hyper@itemtrue\fi
3698   \H@item
3699 }
3700 \newcommand\theHenumi       {\theHItem}
3701 \newcommand\theHenumii      {\theHItem}
3702 \newcommand\theHenumiii     {\theHItem}
3703 \newcommand\theHenumiv      {\theHItem}
3704 \newcommand\theHHfootnote   {\arabic{Hfootnote}}
3705 \newcommand\theHmpfootnote {\arabic{mpfootnote}}
3706 \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.

```

3707 \let\H@refstepcounter\refstepcounter

```

```

3708 \edef\name@of@eq{equation}%
3709 \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.

```

3710 \newif\if@hyper@item
3711 \newif\if@skiphyperref
3712 \@hyper@itemfalse
3713 \@skiphyperreffalse
3714 \def\refstepcounter#1{%
3715   \H@refstepcounter{#1}%
3716   \edef\This@name{#1}%
3717   \ifx\This@name\name@of@slide
3718   \else
3719     \if@skiphyperref
3720     \else
3721       \if@hyper@item
3722         \stepcounter{Item}%
3723         \hyper@refstepcounter{Item}%
3724       \else
3725         \hyper@refstepcounter{#1}%
3726       \fi
3727     \fi
3728   \fi
3729 }

```

AMS¹TeX 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.

```

3730 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

3731 \def\hyper@refstepcounter#1{%
3732   \edef\This@name{#1}%
3733   \ifx\This@name\name@of@eq
3734     \make@stripped@name{\theequation}%
3735     \let\theHequation\newname
3736   \fi
3737   \@ifundefined{theH#1}{%
3738     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3739   }{}%
3740   \hyper@makecurrent{#1}%
3741   \ifmeasuring@
3742   \else
3743     \Hy@raisedlink{%
3744       \hyper@anchorstart{\@currentHref}\hyper@anchorend
3745     }%
3746   \fi
3747 }

```

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

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

```

3748 \begingroup\expandafter\expandafter\expandafter\endgroup

```



```

3749 \expandafter\ifx\csname chapter\endcsname\relax
3750 \def\Hy@chapterstring{section}%
3751 \else
3752 \def\Hy@chapterstring{chapter}%
3753 \fi
3754 \def\Hy@appendixstring{appendix}
3755 \def\Hy@chapapp{\Hy@chapterstring}
3756 \let\HyOrg@appendix\appendix
3757 \def\appendix{%
3758 \ifundefined{chapter}%
3759 {\gdef\theHsection{\Alph{section}}}%
3760 {\gdef\theHchapter{\Alph{chapter}}}%
3761 \xdef\Hy@chapapp{\Hy@appendixstring}%
3762 \HyOrg@appendix
3763 }

```

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

```

3764 \def\hyper@makecurrent#1{%
3765 \begingroup
3766 \edef\Hy@param{#1}%
3767 \ifx\Hy@param\Hy@chapterstring
3768 \let\Hy@param\Hy@chapapp
3769 \fi
3770 \ifHy@hypertextnames
3771 \let\@number\@firstofone
3772 \ifHy@naturalnames
3773 \let\textlatin\@firstofone
3774 \xdef\@currentHlabel{\csname the#1\endcsname}%
3775 \else
3776 \xdef\@currentHlabel{\csname theH#1\endcsname}%
3777 \fi
3778 \xdef\@currentHref{%
3779 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3780 }%
3781 \else
3782 \Hy@GlobalStepCount\Hy@linkcounter
3783 \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
3784 \fi
3785 \endgroup
3786 }

3787 \ifpackageloaded{fancyvrb}{%
3788 \def\FV@StepLineNo{%
3789 \FV@SetLineNo
3790 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3791 \FV@StepLineNo
3792 }%
3793 }{}

```

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

```

3794 \AtBeginDocument{%
3795   \@ifpackageloaded{lastpage}{%
3796     \ifHy@pageanchor
3797     \else
3798       \Hy@WarningNoLine{%
3799         The \string\pageref{LastPage} link doesn't work\MessageBreak
3800         with disabled option 'pageanchor'%
3801       }%
3802     \fi
3803     \def\lastpage@putlabel{%
3804       \addtocounter{page}{-1}%
3805       \if@filesw
3806         \begingroup
3807           \let\@number\@firstofone
3808           \ifHy@pageanchor
3809             \ifHy@hypertexnames
3810               \ifHy@plainpages
3811                 \def\Hy@temp{\arabic{page}}%
3812               \else
3813                 \Hy@unicodedefalse
3814                 \pdfstringdef\Hy@temp{\thepage}%
3815               \fi
3816             \else
3817               \def\Hy@temp{\the\Hy@pagecounter}%
3818             \fi
3819           \fi
3820           \immediate\write\@auxout{%
3821             \string\newlabel
3822             {LastPage}{\the\Hy@temp}{\thepage}{\thepage}%
3823             \ifHy@pageanchor page.\Hy@temp\fi}{}}%
3824         }%
3825       \endgroup
3826     \fi
3827     \addtocounter{page}{1}%
3828   }%
3829 }{}%
3830 }
3831 \</package>
3832 \< *check>
3833 \checkpackage{lastpage}[1994/06/25]
3834 \checkcommand\def\lastpage@putlabel{%
3835   \addtocounter{page}{-1}%
3836   \immediate\write\@auxout{%
3837     \string\newlabel{LastPage}{\the\Hy@temp}{\thepage}{\thepage}%
3838   }%
3839   \addtocounter{page}{1}%
3840 }
3841 \</check>
3842 \< *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.

```
3843 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
3844 \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:

```
3845 \@ifpackageloaded{titlesec}{%
3846   \def\ttl@Hy@steplink#1{%
3847     \Hy@GlobalStepCount\Hy@linkcounter
3848     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3849     \def\ttl@Hy@saveanchor{%
3850       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3851     }%
3852   }%
3853   \def\ttl@Hy@refstepcounter#1{%
3854     \let\ttl@b\Hy@raisedlink
3855     \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3856     \refstepcounter{#1}%
3857     \let\Hy@raisedlink\ttl@b
3858   }%
3859 }
```

Package titletoc support:

```
3860 \@ifpackageloaded{titletoc}{%
3861   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3862 }
```

31 Package varioref support

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

```
3863 \def\Hy@varioref@undefined{{??}{??}{}}{}}
3864 \@ifpackageloaded{varioref}{%
3865   \def\vref#1#2{%
3866     \@ifundefined{r@#2}{%
3867       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3868     }{}%
3869     \edef#1{\getpagerefnumber{#2}}%
3870   }%
3871 }
```

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

```

3872 \ifpackageloaded{longtable}{%
3873   \begingroup
3874     \def\y{\LT@array}%
3875     \ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
3876     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3877       \expandafter\endgroup
3878       \expandafter\def\y[#1]##2{%
3879         \H@refstepcounter{#1}%
3880         \hyper@makecurrent{table}%
3881         #2\@sharp####4%
3882       }%
3883     }%
3884   \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

3885   \begingroup
3886     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3887     \endgroup
3888     \def\LT@start{%
3889       #1%
3890       \hyper@refstepcounter{table}%
3891       \ifvoid\LT@firsthead\copy
3892       #2%
3893     }%
3894   }%
3895   \expandafter\x\LT@start\@nil
3896 }{}

```

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.

```

3897 \let\new@refstepcounter\refstepcounter
3898 \let\H@equation\equation
3899 \let\H@endequation\endequation
3900 \ifpackageloaded{amsmath}{%
3901   \long\def\Hy@temp{%
3902     \incr@eqnum
3903     \mathdisplay@push
3904     \st@rredfalse \global\@eqnswtrue
3905     \mathdisplay{equation}%
3906   }%
3907   \ifx\Hy@temp\equation
3908     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3909       \csname iftrue\endcsname
3910   \else
3911     \long\def\equation{%
3912       \mathdisplay@push
3913       \st@rredfalse \global\@eqnswtrue
3914       \mathdisplay{equation}%

```

```

3915         \incr@eqnum
3916     }%
3917 \fi
3918 \fi
3919 }{%
3920 \def\equation{%
3921     \let\refstepcounter\H@refstepcounter
3922     \H@equation
3923     \make@stripped@name{\theequation}%
3924     \let\theHequation\newname
3925     \hyper@makecurrent{equation}%
3926     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3927     \let\refstepcounter\new@refstepcounter
3928 }%
3929 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3930 }

```

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.

```

3931 \newif\if@eqnstar
3932 \@eqnstarfalse
3933 \let\H@eqnarray\eqnarray
3934 \let\H@endeqnarray\endeqnarray
3935 \def\eqnarray{%
3936     \let\Hy@reserved@a\relax
3937     \def\@currentHref{}%
3938     \H@eqnarray
3939     \if@eqnstar
3940     \else
3941         \ifx\\\@currentHref\\%
3942         \else
3943             \make@stripped@name{\theequation}%
3944             \let\theHequation\newname
3945             \hyper@makecurrent{equation}%
3946             \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3947         \fi
3948     \fi
3949 }
3950 \def\endeqnarray{%
3951     \H@endeqnarray
3952 }

```

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.

```

3953 \@namedef{eqnarray*}{%
3954     \def\@eqnrcr{\nonumber\@seqnrcr}\@eqnstartrue\eqnarray
3955 }
3956 \@namedef{endeqnarray*}{%
3957     \nonumber\endeqnarray\@eqnstarfalse
3958 }

```

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

```

3959 \@ifundefined{subeqnarray}{%
3960     \let\H@subeqnarray\subeqnarray
3961     \let\H@endsubeqnarray\endsubeqnarray

```

```

3962 \def\subeqnarray{%
3963   \let\Hy@reserved@a\relax
3964   \H@subeqnarray
3965   \make@stripped@name{\theequation}%
3966   \let\theHequation\newname
3967   \hyper@makecurrent{equation}%
3968   \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3969 }%
3970 \def\endsubeqnarray{%
3971   \H@endsubeqnarray
3972 }%
3973 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3974 }

```

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

```

3975 \def\make@stripped@name#1{%
3976   \begingroup
3977   \escapechar\m@ne
3978   \global\let\newname\empty
3979   \protected@edef\Hy@tempa{#1}%
3980   \edef\@tempb{%
3981     \noexpand\@tfor\noexpand\Hy@tempa:=%
3982     \expandafter\strip@prefix\meaning\Hy@tempa
3983   }%
3984   \@tempb\do{%
3985     \if{\Hy@tempa\else
3986       \if}\Hy@tempa\else
3987       \xdef\newname{\newname\Hy@tempa}%
3988     \fi
3989   \fi
3990   }%
3991 \endgroup
3992 }

```

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.

```

3993 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{ }
3994 \ifHy@hyperfootnotes
3995   \newcounter{Hfootnote}
3996   \let\H@@footnotetext\@footnotetext
3997   \let\H@@footnotemark\@footnotemark
3998   \def\@xfootnotenext[#1]{%
3999     \begingroup
4000     \csname c@\@mpfn\endcsname #1\relax
4001     \unrestored@protected\xdef\@thefnmark{\thempfn}%
4002     \endgroup
4003     \ifx\@footnotetext\@mpfootnotetext
4004       \expandafter\H@@mpfootnotetext
4005     \else
4006       \expandafter\H@@footnotetext

```

```

4007 \fi
4008 }%
4009 \def\xfootnotemark[#1]{%
4010 \begingroup
4011 \c@footnote #1\relax
4012 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
4013 \endgroup
4014 \H@@footnotemark
4015 }%
4016 \let\H@@mpfootnotetext\@mpfootnotetext
4017 \long\def\@mpfootnotetext#1{%
4018 \H@@mpfootnotetext{%
4019 \ifHy@nesting
4020 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4021 \else
4022 \Hy@raisedlink{%
4023 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4024 }#1%
4025 \fi
4026 }%
4027 }%
4028 \long\def\@footnotetext#1{%
4029 \H@@footnotetext{%
4030 \ifHy@nesting
4031 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4032 \else
4033 \Hy@raisedlink{%
4034 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4035 }%
4036 \let\@currentHlabel\Hy@footnote@currentHlabel
4037 \let\@currentHref\Hy@footnote@currentHref
4038 \let\@currentlabelname\@empty
4039 #1%
4040 \fi
4041 }%
4042 }%

```

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.

```

4043 \def\@footnotemark{%
4044 \leavevmode
4045 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
4046 \stepcounter{Hfootnote}%
4047 \global\let\Hy@saved@currentHlabel\@currentHlabel
4048 \global\let\Hy@saved@currentHref\@currentHref
4049 \hyper@makecurrent{Hfootnote}%
4050 \global\let\Hy@footnote@currentHlabel\@currentHlabel
4051 \global\let\Hy@footnote@currentHref\@currentHref
4052 \global\let\@currentHlabel\Hy@saved@currentHlabel
4053 \global\let\@currentHref\Hy@saved@currentHref
4054 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
4055 \@makefnmark
4056 \hyper@linkend
4057 \ifhmode\spacefactor\x@sf\fi
4058 \relax
4059 }%

```

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.

```

4060 \ifpackageloaded{longtable}{%
4061   \CheckCommand*{\LT@p@ftntext}[1]{%
4062     \edef\@tempa{%
4063       \the\LT@p@ftn
4064       \noexpand\footnotetext[\the\c@footnote]%
4065     }%
4066     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
4067   }%
4068   \long\def\LT@p@ftntext#1{%
4069     \edef\@tempa{%
4070       \the\LT@p@ftn
4071       \begingroup
4072         \noexpand\c@footnote=\the\c@footnote\relax
4073         \noexpand\protected@xdef
4074           \noexpand\@thefnmark{\noexpand\thempfn}%
4075         \noexpand\protected@xdef\noexpand\@thefnmark{%
4076           \noexpand\thempfn
4077         }%
4078         \expandafter\expandafter\expandafter\noexpand
4079         \expandafter\expandafter\expandafter\Hy@LT@footnotetext
4080         \expandafter\expandafter\expandafter{%
4081           \expandafter\Hy@footnote@currentHref\expandafter
4082           }\expandafter{\Hy@footnote@currentHlabel}%
4083       }%
4084       \global\LT@p@ftn\expandafter{%
4085         \@tempa{#1}%
4086       }\endgroup
4087     }%
4088   }%
4089   \long\def\Hy@LT@footnotetext#1#2#3{%
4090     \H@@footnotetext{%
4091       \ifHy@nesting
4092         \hyper@@anchor{#1}{#3}%
4093       \else
4094         \Hy@raisedlink{%
4095           \hyper@@anchor{#1}{\relax}%
4096         }%
4097         \def\@currentHlabel{#2}%
4098         \def\@currentHref{#1}%
4099         \let\@currentlabelname\@empty
4100         #3%
4101       \fi
4102     }%
4103   }%
4104 }-%

```

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.

```

4105 \let\HyOrg@maketitle\maketitle
4106 \def\maketitle{%
4107   \let\Hy@saved@footnotemark\@footnotemark
4108   \let\Hy@saved@footnotetext\@footnotetext
4109   \let\@footnotemark\H@@footnotemark

```



```

4110 \let\@footnotetext\H@@footnotetext
4111 \@ifnextchar[\Hy@maketitle@optarg{% ]
4112 \HyOrg@maketitle
4113 \Hy@maketitle@end
4114 }%
4115 }%
4116 \def\Hy@maketitle@optarg[#1]{%
4117 \HyOrg@maketitle[{#1}]%
4118 \Hy@maketitle@end
4119 }%
4120 \def\Hy@maketitle@end{%
4121 \ifx\@footnotemark\H@@footnotemark
4122 \let\@footnotemark\Hy@saved@footnotemark
4123 \fi
4124 \ifx\@footnotetext\H@@footnotetext
4125 \let\@footnotetext\Hy@saved@footnotetext
4126 \fi
4127 }%

```

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

```

4128 \def\realfootnote{%
4129 \@ifnextchar[\@xfootnote{%
4130 \stepcounter{\@mpfn}%
4131 \protected@xdef\@thefnmark{\thempfn}%
4132 \H@@footnotemark\H@@footnotetext
4133 }%
4134 }%

4135 \fi
4136 \Hy@DisableOption{hyperfootnotes}

4137 </package>
4138 <*check>
4139 \checklatex
4140 \checkcommand\def\@xfootnotenext[#1]{%
4141 \begingroup
4142 \csname c@\@mpfn\endcsname #1\relax
4143 \unrestored@protected@xdef\@thefnmark{\thempfn}%
4144 \endgroup
4145 \@footnotetext
4146 }
4147 \checkcommand\def\@xfootnotemark[#1]{%
4148 \begingroup
4149 \c@footnote #1\relax
4150 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
4151 \endgroup
4152 \@footnotemark
4153 }
4154 \checkcommand\def\@footnotemark{%
4155 \leavevmode
4156 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
4157 \@makefnmark
4158 \ifhmode\spacefactor\@x@sf\fi
4159 \relax
4160 }
4161 </check>
4162 <*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.

```

4163 \def\caption{%
4164   \ifx\@capttype\undefined
4165     \@latex@error{\noexpand\caption outside float}\@ehd
4166     \expandafter\@gobble
4167   \else
4168     \H@refstepcounter\@capttype
4169     \@ifundefined{fst@\@capttype}{%
4170       \let\Hy@tempa\@caption
4171     }{%
4172       \let\Hy@tempa\Hy@float@caption
4173     }%
4174     \expandafter\@firstofone
4175   \fi
4176   {\@dblarg{\Hy@tempa\@capttype}}%
4177 }
4178 \long\def\@caption#1[#2]#3{%
4179   \hyper@makecurrent{\@capttype}%
4180   \def\@currentlabelname{#2}%
4181   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
4182     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
4183   }%
4184   \begingroup
4185     \@parboxrestore
4186     \if@minipage
4187       \setminipage
4188     \fi
4189     \normalsize
4190     \makecaption{\csname fnum@#1\endcsname}{%
4191       \ignorespaces
4192       \ifHy@nesting
4193         \hyper@@anchor{\@currentHref}{#3}%
4194       \else
4195         \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4196       \fi
4197     }%
4198   \par
4199 \endgroup
4200 }

```

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.

```

4201 \let\Hy@float@caption\@caption
4202 \@ifpackageloaded{float}{%
4203   \def\Hy@float@caption{%
4204     \hyper@makecurrent{\@capttype}%
4205     \float@caption
4206   }
4207   \let\HyOrg@float@makebox\float@makebox
4208   \renewcommand{\float@makebox}[1]{%
4209     \HyOrg@float@makebox{%
4210       #1\relax
4211     }

```

```

4212         \hyper@makecurrent{\@capytype}%
4213         \hyper@@anchor{\@currentHref}{\relax}%
4214     \endgroup
4215 }%
4216 }%
4217 }{}

4218 \</package>
4219 \<*check>
4220 \checklatex[1999/06/01 - 2000/06/01]
4221 \checkcommand\def\caption{%
4222     \ifx\@capytype\@undefined
4223         \latex@error{\noexpand\caption outside float}\@ehd
4224         \expandafter\@gobble
4225     \else
4226         \refstepcounter\@capytype
4227         \expandafter\@firstofone
4228     \fi
4229     {\@dblarg{\@caption\@capytype}}%
4230 }
4231 \checkcommand\long\def\@caption#1[#2]#3{%
4232     \par
4233     \addcontentsline{\csname ext@#1\endcsname}{#1}%
4234     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
4235     \begingroup
4236         \@parboxrestore
4237         \if@minipage
4238             \setminipage
4239         \fi
4240         \normalsize
4241         \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
4242     \endgroup
4243 }
4244 \</check>
4245 \<*package>

```

36 Bibliographic references

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

However, 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.

```

4246 \def\hyper@natlinkstart#1{%
4247     \Hy@backout{#1}%
4248     \hyper@linkstart{cite}{cite.#1}%
4249     \def\hyper@nat@current{#1}%
4250 }
4251 \def\hyper@natlinkend{%
4252     \hyper@linkend
4253 }
4254 \def\hyper@natlinkbreak#1#2{%
4255     \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%

```

```

4256 }
4257 \def\hyper@natanchorstart#1{%
4258   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4259 }
4260 \def\hyper@natanchorend{\hyper@anchorend}

```

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

```

4261 \ifundefined{NAT@parse}{%
4262   \def\bibcite#1#2{%
4263     \newl@bel{b}{#1\@extra@binfo}{\hyper@@link[cite]{#1}{#2}}%
4264   }%
4265   \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.”.

```

4266   \let\Hy@bibcite\bibcite
4267   \begingroup
4268     \ifundefined{bbl@cite@choice}{%
4269       \g@addto@macro\bbl@cite@choice{%
4270         \let\bibcite\Hy@bibcite
4271       }%
4272     }%
4273   \endgroup

```

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

```

4274   \providecommand*\@BIBLABEL{\@biblabel}%
4275   \def\@lbibitem[#1]#2{%
4276     \@skiphyperreftrue
4277     \H@item[%
4278       \ifx\Hy@raisedlink\@empty
4279         \hyper@anchorstart{cite.#2}\@BIBLABEL{#1}\hyper@anchorend
4280       \else
4281         \Hy@raisedlink{\hyper@anchorstart{cite.#2}\hyper@anchorend}%
4282       \@BIBLABEL{#1}%
4283     \fi
4284     \hfill
4285   ]%
4286   \@skiphyperreffalse
4287   \if@filesw
4288     \begingroup
4289       \let\protect\noexpand
4290       \immediate\write\@auxout{%
4291         \string\bibcite{#2}{#1}%
4292       }%
4293     \endgroup
4294     \fi
4295     \ignorespaces
4296   }%

```

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

```

4297   \def\@bibitem#1{%
4298     \@skiphyperreftrue\H@item\@skiphyperreffalse
4299     \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax\hyper@anchorend}%
4300     \if@filesw
4301       \begingroup
4302         \let\protect\noexpand
4303         \immediate\write\@auxout{%

```

```

4304         \string\bibcite{#1}{\the\value{\@listctr}}}%
4305     }%
4306     \endgroup
4307     \fi
4308     \ignorespaces
4309 }%
4310 }{}

4311 </package>
4312 <*check>
4313 \checklatex
4314 \checkcommand\def\@lbibitem[#1]#2{%
4315     \item[\@biblabel{#1}\hfill]%
4316     \if@filesw
4317     {%
4318         \let\protect\noexpand
4319         \immediate\write\@auxout{%
4320             \string\bibcite{#2}{#1}%
4321         }%
4322     }%
4323     \fi
4324     \ignorespaces
4325 }
4326 \checkcommand\def\@bibitem#1{%
4327     \item
4328     \if@filesw
4329         \immediate\write\@auxout{%
4330             \string\bibcite{#1}{\the\value{\@listctr}}}%
4331         }%
4332     \fi
4333     \ignorespaces
4334 }
4335 </check>
4336 <*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.

```

4337 \@ifclassloaded{revtex}{%
4338     \Hy@Info{*** compatibility with revtex **** }%
4339     \def\revtex@checking#1#2{%
4340         \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4341         \expandafter\def\csname b@#1\endcsname{#2}%
4342         \@SetMaxRnhefLabel{#1}%
4343         \expandafter\let\csname b@#1\endcsname\T@temp
4344     }%

```

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

```

4345 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
4346 \providecommand*\@extra@b@citeb{}%
4347 \def\CITE[#1]#2{%
4348     \let\@citea\@empty
4349     \leavevmode
4350     \unskip
4351     $\sim$%
4352     \scriptstyle
4353     \@CITE{%

```

```

4354 \for\@citeb:=#2\do{%
4355 \citea
4356 \def\@citea{\penalty\@m\ }%
4357 \edef\@citeb{\expandafter\@firstofone\@citeb}%
4358 \if@filesw
4359 \immediate\write\@auxout{\string\citation{\@citeb}}%
4360 \fi
4361 \@ifundefined{b@\@citeb\extra@b@citeb}{%
4362 \mbox{\reset@font\bfseries ?}%
4363 \G@refundefinedtrue
4364 \@latex@warning{%
4365 Citation '\@citeb' on page \thepage \space undefined%
4366 }%
4367 }{%
4368 {\csname b@\@citeb\extra@b@citeb\endcsname}%
4369 }%
4370 }%
4371 }{#1}%
4372 }$%
4373 }%

```

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

```

4374 \def\@citex[#1]#2{%
4375 \let\@citea\@empty
4376 \@cite{%
4377 \for\@citeb:=#2\do{%
4378 \citea
4379 \def\@citea{\penalty\@m\ }%
4380 \edef\@citeb{\expandafter\@firstofone\@citeb}%
4381 \if@filesw
4382 \immediate\write\@auxout{\string\citation{\@citeb}}%
4383 \fi
4384 \@ifundefined{b@\@citeb\extra@b@citeb}{%
4385 \mbox{\reset@font\bfseries ?}%
4386 \G@refundefinedtrue
4387 \@latex@warning{%
4388 Citation '\@citeb' on page \thepage \space undefined%
4389 }%
4390 }{%
4391 \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
4392 }%
4393 }%
4394 }{#1}%
4395 }%
4396 }{}

```

36.1 Package harvard

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

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

```

4397 \@ifpackageloaded{harvard}{%
4398 \AtBeginDocument{%

```

```

4399 \Hy@Info{*** compatibility with harvard *** }%
4400 \Hy@raiselinksfalse
4401 \def\harvardcite#1#2#3#4{%
4402   \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{\cite.#1}{#2}}%
4403   \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{\cite.#1}{#3}}%
4404   \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{\cite.#1}{#4}}%
4405   \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4406 }%
4407 \def\HAR@citetoaux#1{%
4408   \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4409   \ifHy@backref
4410     \ifx\@empty\@currentlabel
4411       \else
4412         \@bsphack
4413         \if@filesw
4414           \protected@write\@auxout{}{%
4415             \string\writefile{brf}{%
4416               \string\backcite{#1}{%
4417                 {\thepage}{\@currentlabel}{\@currentHref}%
4418               }%
4419             }%
4420           }%
4421         \fi
4422         \@esphack
4423       \fi
4424     \fi
4425   }%
4426 \def\harvarditem{%
4427   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4428 }%
4429 \def\@harvarditem[#1]#2#3#4#5\par{%
4430   \item[]%
4431   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4432   \if@filesw
4433     \begingroup
4434       \def\protect##1{\string ##1\space}%
4435       \ifthenelse{\equal{#1}{\null}}{%
4436         {\def\next{{#4}{#2}{#3}}}%
4437         {\def\next{{#4}{#2}{#1}{#3}}}%
4438       \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4439     \endgroup
4440   \fi
4441   \protect\hspace*{-\labelwidth}%
4442   \protect\hspace*{-\labelsep}%
4443   \ignorespaces
4444   #5%
4445   \ifHy@backref
4446     \newblock
4447     \backref{\csname br@#4\endcsname}%
4448   \fi
4449   \par
4450 }%

```

\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:

```

4451 \long\def\HAR@checkcitations#1#2#3#4{%

```

```

4452 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4453 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4454 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4455 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4456 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4457 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4458 \else
4459 \@tempswatrue
4460 \fi
4461 \else
4462 \@tempswatrue
4463 \fi
4464 \else
4465 \@tempswatrue
4466 \fi
4467 }%
4468 }%

4469 }{}

```

36.2 Package chicago

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

```

4470 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

4471 \def\citeN{%
4472 \def\@citesepen{-1000}%
4473 \def\@cite##1##2{##1}%
4474 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
4475 \@citedata@opt
4476 }%

```

`\shortciteN`

```

4477 \def\shortciteN{%
4478 \def\@citesepen{-1000}%
4479 \def\@cite##1##2{##1}%
4480 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
4481 \@citedata@opt
4482 }%

```

`\@citedata@opt`

```

4483 \def\@citedata@opt{%
4484 \let\@cite@opt\@empty
4485 \@ifnextchar [{%
4486 \@tempswatrue
4487 \@citedatax@opt
4488 }{%
4489 \@tempswafalse
4490 \@citedatax[]%
4491 }%
4492 }%

```

`\@citedatax@opt`

```

4493 \def\@citedatax@opt[#1]{%
4494 \def\@cite@opt{, #1}%

```



```

4495 \citedatax[{\#1}]%
4496 }
4497 }{}

```

37 Page numbers

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

```

4498 \def\@begindvi{%
4499 \unvbox \@begindvibox
4500 \Hy@begindvi
4501 \global\let\@begindvi\Hy@begindvi
4502 }
4503 \def\Hy@begindvi{%
4504 \@hyperfixhead
4505 \HyPL@EveryPage
4506 }
4507 \def\pagenumbering#1{%
4508 \global\c@page \@ne
4509 \gdef\thepage{\csname @#1\endcsname\c@page}%
4510 }

```

This is needed for some unremembered reason. . .

```

4511 \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`.

```

4512 \providecommand\hyper@pagetransition{}
4513 \providecommand\hyper@pageduration{}
4514 \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`

```

4515 \def\@hyperfixhead{%
4516 \Hy@DistillerDestFix
4517 \ifHy@pageanchor
4518 \ifHy@hypertextnames
4519 \ifHy@plainpages
4520 \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4521 \else
4522 \begingroup
4523 \let\@number\@firstofone
4524 \Hy@unicodedefalse
4525 \pdfstringdef\@the@H@page{\thepage}%
4526 \endgroup
4527 \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
4528 \fi
4529 \else

```

```

4530 \Hy@GlobalStepCount\Hy@pagecounter
4531 \gdef\Hy@TempPageAnchor{\hyper@anchor{page.\the\Hy@pagecounter}}%
4532 \fi
4533 \else
4534 \let\Hy@TempPageAnchor\@empty
4535 \fi
4536 \let\H@old@thehead\@thehead
4537 \if^@\thehead~%
4538 \def\H@old@thehead{\hfil}%
4539 \fi
4540 \ifHy@texht
4541 \def\@thehead{%
4542 \else
4543 \ifHy@seminarslides
4544 \begingroup
4545 \let\leavevmode\relax
4546 \Hy@TempPageAnchor\relax
4547 \hyper@pagetransition
4548 \hyper@pageduration
4549 \hyper@pagehidden
4550 \endgroup
4551 \else
4552 \def\@thehead{%
4553 \Hy@TempPageAnchor\relax
4554 \hyper@pagetransition
4555 \hyper@pageduration
4556 \hyper@pagehidden
4557 \H@old@thehead
4558 }%
4559 \fi
4560 \fi
4561 \ifx\PDF@FinishDoc\@empty
4562 \else
4563 \PDF@FinishDoc
4564 \gdef\PDF@FinishDoc{%
4565 \fi
4566 }

```

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.

```

4567 \begingroup\expandafter\expandafter\expandafter\endgroup
4568 \expandafter\ifx\csname chapter\endcsname\relax
4569 \def\toclevel@part{0}
4570 \else
4571 \def\toclevel@part{-1}
4572 \fi
4573 \def\toclevel@chapter{0}
4574 \def\toclevel@section{1}
4575 \def\toclevel@subsection{2}
4576 \def\toclevel@subsubsection{3}
4577 \def\toclevel@paragraph{4}
4578 \def\toclevel@subparagraph{5}
4579 \def\toclevel@figure{0}

```

```

4580 \def\toclevel@table{0}
4581 \@ifpackageloaded{listings}{%
4582   \providecommand*\theHlstlisting{\thelstlisting}%
4583   \providecommand*\toclevel@lstlisting{0}%
4584 }{}
4585 \@ifpackageloaded{listing}{%
4586   \providecommand*\theHlisting{\thelisting}%
4587   \providecommand*\toclevel@listing{0}%
4588 }{}
4589 \def\addcontentsline#1#2#3{% toc extension, type, tag
4590   \begingroup
4591     \let\label\@gobble
4592     \let\textlatin\@firstofone
4593     \ifx\@currentHref\@empty
4594       \Hy@Warning{%
4595         No destination for bookmark of \string\addcontentsline,%
4596         \MessageBreak destination is added%
4597       }%
4598       \phantomsection
4599     \fi
4600     \expandafter\ifx\csname toclevel@#2\endcsname\relax
4601       \begingroup
4602         \def\Hy@tempa{#1}%
4603         \ifx\Hy@tempa\Hy@bookmarkstype
4604           \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
4605         \else
4606           \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4607         \fi
4608       \endgroup
4609       \expandafter\gdef\csname toclevel@#2\endcsname{0}%
4610     \fi
4611     \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
4612     \Hy@writebookmark{\csname the#2\endcsname}%
4613       {#3}%
4614       {\@currentHref}%
4615       {\Hy@toclevel}%
4616       {#1}%
4617     \ifHy@verbose
4618       \def\Hy@tempa{#3}%
4619       \onelevel@sanitize\Hy@tempa
4620       \typeout{pdfTeX: bookmark at \the\inputlineno:
4621         {\csname the#2\endcsname}
4622         {\Hy@tempa}
4623         {\@currentHref}%
4624         {\Hy@toclevel}%
4625         {#1}%
4626       }%
4627     \fi
4628     \addtocontents{#1}{%
4629       \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4630     }%
4631   \endgroup
4632 }
4633 \def\contentsline#1#2#3#4{%
4634   \ifx\\#4\\%
4635     \csname l@#1\endcsname{#2}{#3}%
4636   \else

```

```

4637 \ifHy@linktocpage
4638 \csname l@#1\endcsname{#2}}{#3}{#4}{#3}\hyper@linkend
4639 }%
4640 \else
4641 \csname l@#1\endcsname{#2}{#3}{#4}{#3}\hyper@linkend
4642 }{#3}%
4643 \fi
4644 \fi
4645 }
4646 }
4647 }
4648 \end{package}
4649 \end{check}
4650 \end{checklatex}
4651 \checkcommand\def\addcontentsline#1#2#3{%
4652 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
4653 }
4654 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4655 \end{check}
4656 \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.

```

4657 \let\H@definecounter\@definecounter
4658 \def\@definecounter#1{%
4659 \H@definecounter{#1}%
4660 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4661 }

```

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.

```

4662 \let\H@newctr\@newctr
4663 \def\@newctr#1[#2]{%
4664 \H@newctr#1[#2]}%
4665 \expandafter\def\csname theH#1\endcsname{%
4666 \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}}%
4667 }%
4668 }

```

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.

```

4669 \let\Hmake@df@tag@@\make@df@tag@@
4670 \def\make@df@tag@@#1{%
4671 \Hmake@df@tag@@{#1}%
4672 \Hy@GlobalStepCount\Hy@linkcounter
4673 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4674 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

4675 }
4676 \let\Hmake@df@tag@@@make@df@tag@@@
4677 \def\make@df@tag@@@#1{%
4678   \Hmake@df@tag@@@{#1}%
4679   \Hy@GlobalStepCount\Hy@linkcounter
4680   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4681   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4682 }

```

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

```

4683 \ifpackagewith{hyperref}{pdfTeX}{%
4684   \let\H@seteqlebal\@seteqlebal
4685   \def\@seteqlebal#1{%
4686     \H@seteqlebal{#1}%
4687     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4688     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4689   }%
4690 }{}

```

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.

```

4691 \let\HyOrg@addtoreset\@addtoreset
4692 \def\@addtoreset#1#2{%
4693   \HyOrg@addtoreset{#1}{#2}%
4694   \expandafter\xdef\csname theH#1\endcsname{%
4695     \expandafter\noexpand
4696     \csname the\@ifundefined{theH#2}{H#2\endcsname
4697     .\noexpand\the\noexpand\value{#1}%
4698   }%
4699 }

```

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

```

4700 </package>
4701 <*check>
4702 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4703 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4704   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4705     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4706       \@addtoreset{#2}{#3}%
4707       \@xp\xdef\csname the#2\endcsname{%
4708         \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
4709       }%
4710     }%

```

```

4711 }%
4712 }%
4713 </check>
4714 <*package>
4715 \@ifpackageloaded{amsmath}{%
4716   \@ifpackagelater{amsmath}{1999/12/14}{%
4717     \renewcommand*{\numberwithin}[3][\arabic]{%
4718       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4719         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4720           \HyOrg@addtoreset{#2}{#3}%
4721           \xp\xdef\csname the#2\endcsname{%
4722             \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4723           }%
4724           \@xp\xdef\csname theH#2\endcsname{%
4725             \@xp\@nx
4726             \csname the\@ifundefined{theH#3}{}H#3\endcsname
4727             .\@nx#1{#2}%
4728           }%
4729         }%
4730       }%
4731     }%
4732   }{%
4733     \Hy@WarningNoLine{%
4734       \string\numberwithin\space of package ‘amsmath’
4735       only fixed\MessageBreak
4736       for version 2000/06/06 v2.12 or newer%
4737     }%
4738   }
4739 }{}

```

41 Included figures

Simply intercept the low level graphics package macro.

```

4740 \ifHy@figures
4741   \let\Hy@Gin@setfile\Gin@setfile
4742   \def\Gin@setfile#1#2#3{%
4743     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4744   }
4745 \fi
4746 \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.

```

4747 \ifHy@hyperindex
4748   \def\HyInd@ParenLeft{()%

```

```

4749 \def\HyInd@ParenRight{}}%
4750 \Hy@nextfalse
4751 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4752 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4753 \begingroup
4754 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
4755 \lowercase{\endgroup
4756 \ifHy@next
4757 \let\HyInd@org@wrindex\@wrindex
4758 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
4759 \def\HyInd@@wrindex#1#2|#3|#4\{\%
4760 \ifx\|#3\%
4761 \HyInd@org@wrindex{#1}{#2|hyperpage}%
4762 \else
4763 \def\Hy@temp@A{#3}%
4764 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4765 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4766 \relax
4767 \HyInd@org@wrindex{#1}{#2|#3}%
4768 \else
4769 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4770 \fi
4771 \fi
4772 }%
4773 \else
4774 \def\@wrindex#1{\@@wrindex#1||\}%
4775 \def\@@wrindex#1|#2|#3\{\%
4776 \if@filesw
4777 \ifx\|#2\%
4778 \protected@write\@indexfile{}\%
4779 \string\indexentry{#1|hyperpage}{\thepage}%
4780 }%
4781 \else
4782 \def\Hy@temp@A{#2}%
4783 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4784 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4785 \relax
4786 \protected@write\@indexfile{}\%
4787 \string\indexentry{#1|#2}{\thepage}%
4788 }%
4789 \else
4790 \protected@write\@indexfile{}\%
4791 \string\indexentry{#1|#2hyperpage}{\thepage}%
4792 }%
4793 \fi
4794 \fi
4795 \fi
4796 \endgroup
4797 \@esphack
4798 }%
4799 \fi
4800 }%
4801 \fi
4802 \Hy@DisableOption{hyperindex}
4803 \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.

```

4804 \def\hyperpage#1{\@hyperpage#1----\}
4805 \def\@hyperpage#1--#2--#3\{%
4806   \ifx\#2\%
4807     \@commahyperpage{#1}%
4808   \else
4809     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4810   \fi
4811 }
4812 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4813 \def\@commahyperpage#1, #2,#3\{%
4814   \ifx\#2\%
4815     \HyInd@pagelink{#1}%
4816   \else
4817     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4818   \fi
4819 }

```

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

```

4820 \def\HyInd@pagelink#1{%
4821   \begingroup
4822     \toks@={}%
4823     \HyInd@removespaces#1 \@nil
4824   \endgroup
4825 }
4826 \def\HyInd@removespaces#1 #2\@nil{%
4827   \toks@=\expandafter{\the\toks@#1}%
4828   \ifx\#2\%
4829     \edef\x{\the\toks@}%
4830     \ifx\x\empty
4831     \else
4832       \hyperlink{page.\the\toks@}{\the\toks@}%
4833     \fi
4834   \else
4835     \Hy@ReturnAfterFi{%
4836       \HyInd@removespaces#2\@nil
4837     }%
4838   \fi
4839 }

```

43 Compatibility with foiltex

```

4840 \@ifclassloaded{foils}{%
4841   \providecommand*\ext@table{lot}%
4842   \providecommand*\ext@figure{lof}%
4843 }{}

```

44 Compatibility with seminar slide package

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

```

4844 \@ifclassloaded{seminar}{%
4845   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
4846 }{}
4847 \Hy@seminarslidesfalse
4848 }

```



```

4849 \@ifpackageloaded{slidesec}{%
4850   \newcommand\theHslidesection  {\arabic{slidesection}}%
4851   \newcommand\theHslidesubsection{%
4852     \theHslidesection.\arabic{slidesubsection}}%
4853   }%
4854   \def\slide@heading[#1]#2{%
4855     \H@refstepcounter{slidesection}%
4856     \@addtoreset{slidesubsection}{slidesection}%
4857     \addtocontents{los}{%
4858       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4859       {\@SCTR}{\slideheading.\theslidesection}}%
4860     }%
4861   \def\Hy@tempa{#2}%
4862   \ifx\Hy@tempa\@empty
4863   \else
4864     {%
4865       \edef\@currentlabel{%
4866         \csname p@slidesection\endcsname\theslidesection
4867       }%
4868       \makeslideheading{#2}%
4869     }%
4870   \fi
4871   \gdef\theslideheading{#1}%
4872   \gdef\theslidesubheading{}%
4873   \ifHy@bookmarksnumbered
4874     \def\Hy@slidetitle{\theslidesection\space #1}%
4875   \else
4876     \def\Hy@slidetitle{#1}%
4877   \fi
4878   \ifHy@hypertextnames
4879     \ifHy@naturalnames
4880       \hyper@@anchor{slideheading.\theslidesection}{\relax}%
4881       \Hy@writebookmark
4882         {\theslidesection}%
4883         {\Hy@slidetitle}%
4884         {slideheading.\theslidesection}%
4885         {1}%
4886         {toc}%
4887     \else
4888       \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
4889       \Hy@writebookmark
4890         {\theslidesection}%
4891         {\Hy@slidetitle}%
4892         {slideheading.\theHslidesection}%
4893         {1}%
4894         {toc}%
4895     \fi
4896   \else
4897     \Hy@GlobalStepCount\Hy@linkcounter
4898     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4899     \Hy@writebookmark
4900       {\theslidesection}%
4901       {\Hy@slidetitle}%
4902       {slideheading.\the\Hy@linkcounter}%
4903       {1}%
4904       {toc}%
4905   \fi

```

```

4906 }%
4907 \def\slide@subheading[#1]#2{%
4908   \H@refstepcounter{slidessubsection}%
4909   \addtocontents{los}{%
4910     \protect\l@subslide{\the\c@slidessubsection}{\ignorespaces#1}%
4911     {\@SCTR}{slideheading.\theslidessubsection}%
4912   }%
4913   \def\Hy@tempa{#2}%
4914   \ifx\Hy@tempa\@empty
4915   \else
4916   {%
4917     \edef\@currentlabel{%
4918       \csname p@slidessubsection\endcsname\theslidessubsection
4919     }%
4920     \makeslidesubheading{#2}%
4921   }%
4922   \fi
4923   \gdef\theslidesubheading{#1}%
4924   \ifHy@bookmarksnumbered
4925     \def\Hy@slidetitle{\theslidessubsection\space #1}%
4926   \else
4927     \def\Hy@slidetitle{#1}%
4928   \fi
4929   \ifHy@hypertextnames
4930     \ifHy@naturalnames
4931       \hyper@@anchor{slideheading.\theslidessubsection}{\relax}%
4932       \Hy@writebookmark
4933         {\theslidessubsection}%
4934         {\Hy@slidetitle}%
4935         {slideheading.\theslidessubsection}%
4936         {2}%
4937         {toc}%
4938     \else
4939       \hyper@@anchor{slideheading.\theHslidessubsection}{\relax}%
4940       \Hy@writebookmark
4941         {\theslidessubsection}%
4942         {\Hy@slidetitle}%
4943         {slideheading.\theHslidessubsection}%
4944         {2}%
4945         {toc}%
4946     \fi
4947   \else
4948     \Hy@GlobalStepCount\Hy@linkcounter
4949     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4950     \Hy@writebookmark
4951       {\theslidessubsection}%
4952       {\Hy@slidetitle}%
4953       {slideheading.\the\Hy@linkcounter}%
4954       {1}%
4955       {toc}%
4956   \fi
4957 }%
4958 \providecommand*\{listslidenam}{List of Slides}%
4959 \def\listofslides{%
4960   \section*{%
4961     \listslidenam
4962     \@mkboth{%

```

```

4963         \expandafter\MakeUppercase\listslidenam
4964     }{%
4965         \expandafter\MakeUppercase\listslidenam
4966     }%
4967 }%
4968 \def\l@slide##1##2##3##4{%
4969     \slide@undottedcline{%
4970         \slidenumberline{##3}{\hyperlink{##4}{##2}}%
4971     }{%}%
4972 }%
4973 \let\l@subslide\l@slide
4974 \@startlos
4975 }%
4976 \def\slide@contents{%
4977     \def\l@slide##1##2##3##4{%
4978         \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
4979     }%
4980     \let\l@subslide\@gobblefour
4981     \@startlos
4982 }%
4983 \def\Slide@contents{%
4984     \def\l@slide##1##2##3##4{%
4985         \ifcase\lslide@flag
4986             \message{##1 ** \the\c@slidesection}%
4987             \ifnum##1>\c@slidesection
4988                 \def\lslide@flag{1}%
4989                 {%
4990                     \large
4991                     \slide@ccline{%
4992                         \slidenumberline{$\Rightarrow\bullet$}%
4993                         {\hyperlink{##4}{##2}}%
4994                     }{##3}%
4995                 }%
4996             \else
4997                 {%
4998                     \large
4999                     \slide@ccline{%
5000                         \slidenumberline{$\surd\;\bullet$}%
5001                         {\hyperlink{##4}{##2}}%
5002                     }{##3}%
5003                 }%
5004             \fi
5005         \or
5006             \def\lslide@flag{2}%
5007             {%
5008                 \large
5009                 \slide@ccline{%
5010                     \slidenumberline{$\bullet$}%
5011                     {\hyperlink{##4}{##2}}%
5012                 }{##3}%
5013             }%
5014         \or
5015             {%
5016                 \large
5017                 \slide@ccline{%
5018                     \slidenumberline{$\bullet$}%
5019                     {\hyperlink{##4}{##2}}%

```

```

5020         }{##3}%
5021     }%
5022     \fi
5023 }%
5024 \def\l@subslide##1##2##3##4{%
5025     \ifnum\l@slide@flag=1
5026         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
5027     \fi
5028 }%
5029 \def\l@slide@flag{0}%
5030 \@startlos
5031 }%
5032 }{}

```

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.)

```

5033 \ifHy@texht
5034     \expandafter\@endinput
5035 \fi
5036 \let\real@setref\@setref
5037 \def\@setref#1#2#3{% csname, extract group, refname
5038     \ifx#1\relax
5039         \protect\G@refundefinedtrue
5040         \nfss@text{\reset@font\bfseries ??}%
5041         \@latex@warning{%
5042             Reference ‘#3’ on page \thepage \space undefined%
5043         }%
5044     \else
5045         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
5046     \fi
5047 }

```

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

```

5048 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
5049     \begingroup
5050     \toks0={\hyper@@link{#5}{#4}}%
5051     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
5052     \edef\x{\endgroup
5053         \the\toks0 {\the\toks1 }%
5054     }%
5055     \x
5056 }
5057 \def\@pagesetref#1#2#3{% csname, extract macro, ref
5058     \ifx#1\relax
5059         \protect\G@refundefinedtrue
5060         \nfss@text{\reset@font\bfseries ??}%
5061         \@latex@warning{%
5062             Reference ‘#3’ on page \thepage \space undefined%
5063         }%
5064     \else
5065         \protect\hyper@@link
5066         {\expandafter\@fifthoffive#1}%
5067         {page.\expandafter\@secondoffive#1}%
5068         {\expandafter\@secondoffive#1}%
5069     \fi
5070 }

```

```

5071 </package>
5072 <*check>
5073 \checklatex
5074 \checkcommand\def\@setref#1#2#3{%
5075   \ifx#1\relax
5076     \protect\G@refundefinedtrue
5077     \nfss@text{\reset@font\bfseries ??}%
5078     \@latex@warning{%
5079       Reference ‘#3’ on page \thepage\space undefined%
5080     }%
5081   \else
5082     \expandafter#2#1\null
5083   \fi
5084 }
5085 </check>
5086 <*package>

```

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

```

5087 \def\@refstar#1{%
5088   \Hy@safe@activetrue
5089   \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
5090   \Hy@safe@activesfalse
5091 }
5092 \def\@pagerefstar#1{%
5093   \Hy@safe@activetrue
5094   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
5095   \Hy@safe@activesfalse
5096 }
5097 \DeclareRobustCommand\autoref{%
5098   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@{link}}%
5099 }
5100 \def\HyRef@autoref#1#2{%
5101   \begingroup
5102     \Hy@safe@activetrue
5103     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
5104   \endgroup
5105 }
5106 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
5107   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
5108     \edef\HyRef@thisref{\expandafter\@fourthoffive#1\@empty\@empty\@empty}%
5109     \expandafter\HyRef@testreftype\HyRef@thisref\\%
5110     \Hy@safe@activesfalse
5111     #3{%
5112       \expandafter\@fifthoffive#1%
5113     }{%
5114       \expandafter\@fourthoffive#1\@empty\@empty\@empty
5115     }{%
5116       \HyRef@currentHtag
5117       \expandafter\@firstoffive#1\@empty\@empty\@empty
5118       \null
5119     }%
5120   \else
5121     \protect\G@refundefinedtrue
5122     \nfss@text{\reset@font\bfseries ??}%
5123     \@latex@warning{%
5124       Reference ‘#2’ on page \thepage\space undefined%
5125     }%

```

```

5126 \fi
5127 }
5128 \def\HyRef@testreftype#1.#2\{\%
5129 \@ifundefined{#1autorefname}\%
5130 \@ifundefined{#1name}\%
5131 \def\HyRef@currentHtag{\%
5132 \@latex@warning{no tag name for #1 at \the\inputlineno}\%
5133 }\%
5134 \edef\HyRef@currentHtag{\%
5135 \expandafter\noexpand\csname#1name\endcsname
5136 \noexpand~\%
5137 }\%
5138 }\%
5139 }\%
5140 \edef\HyRef@currentHtag{\%
5141 \expandafter\noexpand\csname#1autorefname\endcsname
5142 \noexpand~\%
5143 }\%
5144 }\%
5145 }
5146 \def\HyRef@currentHtag{}

Defaults for the names that \autoref uses.

5147 \providecommand\AMSautorefname{\equationautorefname}
5148 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
5149 \providecommand\Itemautorefname{\itemautorefname}
5150 \providecommand\itemautorefname{item}
5151 \providecommand\equationautorefname{Equation}
5152 \providecommand\footnoteautorefname{footnote}
5153 \providecommand\itemautorefname{item}
5154 \providecommand\figureautorefname{Figure}
5155 \providecommand\tableautorefname{Table}
5156 \providecommand\partautorefname{Part}
5157 \providecommand\appendixautorefname{Appendix}
5158 \providecommand\chapterautorefname{chapter}
5159 \providecommand\sectionautorefname{section}
5160 \providecommand\subsectionautorefname{subsection}
5161 \providecommand\subsubsectionautorefname{subsubsection}
5162 \providecommand\paragraphautorefname{paragraph}
5163 \providecommand\subparagraphautorefname{subparagraph}
5164 \providecommand\FancyVerbLineautorefname{line}
5165 \providecommand\theoremautorefname{Theorem}
5166 \endpackage

```

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_TE_X offers `\pdfescapestring`.

```
5167 < *pdfTex | dvipdfm | vtex | pdfmarkbase | dviwindo >
```

```

5168 \begingroup\expandafter\expandafter\expandafter\endgroup
5169 \expandafter\ifx\csname pdfescapestring\endcsname\relax
5170   \begingroup
5171     \catcode'\|=0 %
5172     \@makeother\|%
5173   \@firstofone{\endgroup
5174     |def|Hy@pstringdef#1#2{%
5175       |edef#1{#2}%
5176       |@onelevel@sanitize#1%
5177       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
5178       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
5179       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
5180     }%
5181     |def|Hy@ExchangeBackslash#1\#2|@nil{%
5182       #1%
5183       |ifx|\#2\|
5184       |else
5185         \|
5186         |Hy@ReturnAfterFi{%
5187           |Hy@ExchangeBackslash#2|@nil
5188         }%
5189       |fi
5190     }%
5191   }
5192   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
5193     #1%
5194     \ifx\#2\|
5195     \else
5196       \@backslashchar(%
5197       \Hy@ReturnAfterFi{%
5198         \Hy@ExchangeLeftParenthesis#2\@nil
5199       }%
5200     \fi
5201   }
5202   \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
5203     #1%
5204     \ifx\#2\|
5205     \else
5206       \@backslashchar)%
5207       \Hy@ReturnAfterFi{%
5208         \Hy@ExchangeRightParenthesis#2\@nil
5209       }%
5210     \fi
5211   }
5212 \else
5213   \def\Hy@pstringdef#1#2{%
5214     \edef#1{\pdfescapestring{#2}}%
5215   }%
5216 \fi
5217 </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>

```

45.2 pdfTeX

5218 <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:

```

5219 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5220 \ifx\pdfstartlink\@undefined% less than version 14
5221   \let\pdfstartlink\pdfannotlink
5222   \let\pdflinkmargin\@tempdima
5223   \let\pdfxform\pdfform
5224   \let\pdflastxform\pdflastform
5225   \let\pdfrefxform\pdfrefform
5226 \else
5227   \pdflinkmargin1pt
5228 \fi

```

First set up the default linking

```

5229 \providecommand\@pdfview{XYZ}

```

First define the anchors:

```

5230 \def\new@pdflink#1{%
5231   \ifHy@verbose
5232     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
5233   \fi
5234   \Hy@SaveLastskip
5235   \Hy@pstringdef\Hy@pstringDest{#1}%
5236   \Hy@DestName\Hy@pstringDest\@pdfview
5237   \Hy@RestoreLastskip
5238 }
5239 \let\pdf@endanchor\@empty

```

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

```

5240 \def\Hy@DestName#1#2{%
5241   \pdfdest name{#1}#2\relax
5242 }

```

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.

```

5243 \providecommand\@pdfborder{0 0 1}
5244 \providecommand*\@pdfborderstyle{}
5245 \def\Hy@undefinedname{UNDEFINED}
5246 \def\find@pdflink#1#2{%
5247   \leavevmode
5248   \protected@edef\Hy@testname{#2}%
5249   \ifx\Hy@testname\@empty
5250     \let\Hy@testname\Hy@undefinedname
5251   \else
5252     \Hy@pstringdef\Hy@testname\Hy@testname
5253   \fi
5254   \Hy@StartlinkName{%
5255     \Hy@setpdfborder
5256     \ifx\@pdfhighlight\@empty
5257       \else
5258         /H\@pdfhighlight
5259       \fi
5260     /C[\CurrentBorderColor]%
5261   }\Hy@testname
5262   \expandafter\Hy@colorlink\csname @#1color\endcsname
5263 }
5264 \def\Hy@StartlinkName#1#2{%

```



```

5265 \pdfstartlink attr{#1}goto name{#2}\relax
5266 }
5267 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
5268 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
5269 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
5270 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
5271 \def\hyper@linkstart#1#2{%
5272   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5273   \find@pdflink{#1}{#2}}
5274 \def\hyper@linkend{\close@pdflink}
5275 \def\hyper@link#1#2#3{%
5276   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5277   \find@pdflink{#1}{#2}#3\close@pdflink
5278 }
5279 \def\CurrentBorderColor{\@linkbordercolor}
5280 \def\hyper@linkurl#1#2{%
5281   \begingroup
5282     \Hy@pstringdef\Hy@pstringURI{#2}%
5283     \hyper@chars
5284     \leavevmode
5285     \pdfstartlink
5286     attr{%
5287       \Hy@setpdfborder
5288       \ifx\@pdfhighlight\@empty
5289         \else
5290           /H\@pdfhighlight
5291         \fi
5292       /C[\@urlbordercolor]%
5293     }%
5294     user{%
5295       /Subtype/Link%
5296       /A<<%
5297         /Type/Action%
5298         /S/URI%
5299         /URI(\Hy@pstringURI)%
5300       >>%
5301     }%
5302     \relax
5303     \Hy@colorlink\@urlcolor#1%
5304     \close@pdflink
5305   \endgroup
5306 }
5307 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5308   \begingroup
5309     \Hy@pstringdef\Hy@pstringF{#2}%
5310     \Hy@pstringdef\Hy@pstringD{#3}%
5311     \leavevmode
5312     \pdfstartlink
5313     attr{%
5314       \Hy@setpdfborder
5315       \ifx\@pdfhighlight\@empty
5316         \else
5317           /H\@pdfhighlight
5318         \fi
5319       /C[\@filebordercolor]%
5320     }%
5321     user {%

```

```

5322      /Subtype/Link%
5323      /A<<%
5324      /F(\Hy@pstringF)%
5325      /S/GoToR%
5326      \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}

```

```

5327      \ifx\#3\%
5328      /D[0 \@pdfstartview]%
5329      \else
5330      /D(\Hy@pstringD)%
5331      \fi
5332      >>%
5333      }%
5334      \relax
5335      \Hy@colorlink\@filecolor#1%
5336      \close@pdflink
5337      \endgroup
5338 }
5339 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5340   \begingroup
5341     \Hy@pstringdef\Hy@pstringF{#1}%
5342     \Hy@pstringdef\Hy@pstringP{#3}%
5343     \leavevmode
5344     \pdfstartlink
5345     attr{%
5346       \Hy@setpdfborder
5347       \ifx\@pdfhighlight\@empty
5348       \else
5349       /H\@pdfhighlight
5350       \fi
5351       /C[\@runbordercolor]%
5352     }%
5353     user {%
5354       /Subtype/Link%
5355       /A<<%
5356       /F(\Hy@pstringF)%
5357       /S/Launch%
5358       \ifHy@newwindow /NewWindow true\fi
5359       \ifx\#3\%
5360       \else
5361       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5362       \fi
5363       >>%
5364     }%
5365     \relax
5366     \Hy@colorlink\@filecolor#2%
5367     \close@pdflink

```

```

5368 \endgroup
5369 }

\@pdfproducer

5370 \ifx\@pdfproducer\relax
5371 \def\@pdfproducer{pdfTeX}
5372 \ifx\eTeXversion\undefined
5373 \else
5374 \ifx\eTeXversion\relax
5375 \else
5376 \ifnum\eTeXversion>0 %
5377 \def\@pdfproducer{pdfTeX}
5378 \fi
5379 \fi
5380 \fi
5381 \ifx\pdfTeXversion\undefined
5382 \else
5383 \ifnum\pdfTeXversion<100 %
5384 \edef\@pdfproducer{%
5385 \@pdfproducer
5386 \the\pdfTeXversion.\pdfTeXrevision
5387 }
5388 \else
5389 \ifnum\pdfTeXversion<130 %
5390 \edef\@pdfproducer{%
5391 \@pdfproducer-
5392 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5393 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5394 \pdfTeXrevision
5395 }
5396 \else
5397 \ifnum\pdfTeXversion<140 %
5398 \else
5399 \def\@pdfproducer{pdfTeX}%
5400 \fi
5401 \edef\@pdfproducer{%
5402 \@pdfproducer-
5403 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5404 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5405 \pdfTeXrevision
5406 }%
5407 \fi
5408 \fi
5409 \fi
5410 \fi

\PDF@SetupDox

5411 \def\PDF@SetupDoc{%
5412 \ifx\@pdfpagescrop\@empty
5413 \else
5414 \edef\process@me{%
5415 \pdfpagesattr={%
5416 /CropBox[\@pdfpagescrop]%
5417 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
5418 \else
5419 ^^J\the\pdfpagesattr
5420 \fi

```

```

5421     }%
5422 }%
5423 \process@me
5424 \fi
5425 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5426 \pdfcatalog{%
5427   /PageMode/\@pdfpagemode
5428   \ifx\@baseurl\@empty
5429     \else
5430       /URI<</Base(\Hy@pstringB)>>%
5431     \fi
5432 }%
5433 \ifx\@pdfstartview\@empty
5434 \else
5435   openaction goto page \@pdfstartpage {\@pdfstartview}%
5436 \fi
5437 \edef\Hy@temp{%
5438   \ifHy@toolbar\else /HideToolbar true\fi
5439   \ifHy@menubar\else /HideMenubar true\fi
5440   \ifHy@windowui\else /HideWindowUI true\fi
5441   \ifHy@fitwindow /FitWindow true\fi
5442   \ifHy@centerwindow /CenterWindow true\fi
5443   \ifHy@displaydoctitle /DisplayDocTitle true\fi
5444   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5445   \Hy@UseNameKey{Direction}\@pdfdirection
5446   \Hy@UseNameKey{ViewArea}\@pdfviewarea
5447   \Hy@UseNameKey{ViewClip}\@pdfviewclip
5448   \Hy@UseNameKey{PrintArea}\@pdfprintarea
5449   \Hy@UseNameKey{PrintClip}\@pdfprintclip
5450   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5451   \Hy@UseNameKey{Duplex}\@pdfduplex
5452   \ifx\@pdfpicktraybypdfsize\@empty
5453     \else
5454       /PickTrayByPDFSize \@pdfpicktraybypdfsize
5455     \fi
5456   \ifx\@pdfprintpagerange\@empty
5457     \else
5458       /PrintPageRange[\@pdfprintpagerange]%
5459     \fi
5460   \ifx\@pdfnumcopies\@empty
5461     \else
5462       /NumCopies \@pdfnumcopies
5463     \fi
5464 }%
5465 \pdfcatalog{%
5466   \ifx\Hy@temp\@empty
5467     \else
5468       /ViewerPreferences<<\Hy@temp>>%
5469     \fi
5470   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5471   \ifx\@pdflang\@empty
5472     \else
5473       /Lang(\@pdflang)%
5474     \fi
5475 }%
5476 }

```

\PDF@FinishDoc

```
5477 \def\PDF@FinishDoc{%
5478   \Hy@UseMaketitleInfos
5479   \pdfinfo{%
5480     /Author(\@pdfauthor)%
5481     /Title(\@pdftitle)%
5482     /Subject(\@pdfsubject)%
5483     /Creator(\@pdfcreator)%
5484     \ifx\@pdfcreationdate\@empty
5485     \else
5486       /CreationDate(\@pdfcreationdate)%
5487     \fi
5488     \ifx\@pdfmoddate\@empty
5489     \else
5490       /ModDate(\@pdfmoddate)%
5491     \fi
5492     \ifx\@pdfproducer\relax
5493     \else
5494       /Producer(\@pdfproducer)%
5495     \fi
5496     /Keywords(\@pdfkeywords)%
5497   }%
5498   \Hy@DisableOption{pdfauthor}%
5499   \Hy@DisableOption{pdftitle}%
5500   \Hy@DisableOption{pdfsubject}%
5501   \Hy@DisableOption{pdfcreator}%
5502   \Hy@DisableOption{pdfcreationdate}%
5503   \Hy@DisableOption{pdfmoddate}%
5504   \Hy@DisableOption{pdfproducer}%
5505   \Hy@DisableOption{pdfkeywords}%
5506 }
```

\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.

```
5507 \def\hyper@pagetransition{%
5508   \ifx\@pdfpagetransition\relax
5509   \else
5510     \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{>>\END
5511     \ifx\@pdfpagetransition\@empty
5512     \else
5513       \edef\@processme{%
5514         \global\pdfpageattr{%
5515           \the\pdfpageattr
5516             ^^J/Trans << /S /\@pdfpagetransition\space >>%
5517         }%
5518       }%
5519       \@processme
5520     \fi
5521   \fi
5522 }
```

\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.

```

5523 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5524   \ifx\#2\%
5525     \global\pdfpageattr{#1}%
5526   \else
5527     \Hy@RemoveTransPageAttr#1#4\END
5528   \fi
5529 }

```

`\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`.

```

5530 \def\hyper@pageduration{%
5531   \ifx\@pdfpageduration\relax
5532   \else
5533     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
5534     \ifx\@pdfpageduration\empty
5535     \else
5536       \edef\@processme{%
5537         \global\pdfpageattr{%
5538           \the\pdfpageattr
5539           ^^J/Dur \@pdfpageduration\space
5540         }%
5541       }%
5542       \@processme
5543     \fi
5544   \fi
5545 }

```

`\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.

```

5546 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5547   \ifx\#2\%
5548     \global\pdfpageattr{#1}%
5549   \else
5550     \Hy@RemoveDurPageAttr#1#4\END
5551   \fi
5552 }

```

`\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).

```

5553 \def\hyper@pagehidden{%
5554   \ifHy@useHidKey
5555     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
5556     \ifHy@pdfpagehidden
5557       \edef\@processme{%
5558         \global\pdfpageattr{%
5559           \the\pdfpageattr
5560           ^^J/Hid true % SPACE
5561         }%
5562       }%
5563       \@processme
5564     \fi
5565   \fi
5566 }

```

`\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.

```

5567 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5568   \ifx\#2\%
5569     \global\pdfpageattr{#1}%
5570   \else
5571     \Hy@RemoveHidPageAttr#1#4\END
5572   \fi
5573 }

```

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.

```

5574 \pdfoutput=1
5575 \pdfcompresslevel=9
5576 \AtBeginDocument{%
5577   \ifHy@setpagesize
5578     \expandafter\@firstofone
5579   \else
5580     \expandafter\@gobble
5581   \fi
5582   {%
5583     \@ifclassloaded{seminar}{%
5584       \setlength{\pdfhorigin}{1truein}%
5585       \setlength{\pdfvorigin}{1truein}%
5586     \ifportrait
5587       \ifdim\paperwidth=\z@
5588       \else
5589         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5590       \fi
5591       \ifdim\paperheight=\z@
5592       \else
5593         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
5594       \fi
5595     \else
5596       \ifdim\paperheight=\z@
5597       \else
5598         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
5599       \fi
5600       \ifdim\paperwidth=\z@
5601       \else
5602         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5603       \fi
5604     \fi
5605   }{%
5606     \@ifundefined{stockwidth}{%
5607       \ifdim\paperwidth=\z@
5608       \else
5609         \setlength{\pdfpagewidth}{\paperwidth}%
5610       \fi
5611       \ifdim\paperheight=\z@
5612       \else
5613         \setlength{\pdfpageheight}{\paperheight}%
5614       \fi
5615     }{%
5616       \ifdim\stockwidth=\z@

```

```

5617         \else
5618             \setlength{\pdfpagewidth}{\stockwidth}%
5619         \fi
5620         \ifdim\stockheight=\z@
5621         \else
5622             \setlength{\pdfpageheight}{\stockheight}%
5623         \fi
5624     }%
5625 }%
5626 }%
5627 \Hy@DisableOption{setpagesize}%
5628 }
5629 \def\Acrobatmenu#1#2{%
5630     \leavevmode
5631     \pdfstartlink
5632     attr{%
5633         \Hy@setpdfborder
5634         \ifx\@pdfhighlight\@empty
5635         \else
5636             /H\@pdfhighlight
5637         \fi
5638         /C[\@menubordercolor]%
5639     }%
5640     user{
5641         /Subtype /Link
5642         /A<<%
5643             /S/Named/N/#1%
5644         >>%
5645     }%
5646     \relax
5647     \Hy@colorlink\@menucolor#2\close@pdflink
5648 }
5649 </pdfTeX>
5650 <*hypertex>

```

45.3 hypertex

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

href: `html:`

name: `html:`

end: `html:`

image: `html:`

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

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

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

```

5651 \def\PDF@FinishDoc{}
5652 \def\PDF@SetupDoc{%
5653   \ifx\@baseurl\@empty
5654   \else
5655     \special{html:<base href="\@baseurl">}%
5656   \fi
5657 }
5658 \def\hyper@anchor#1{%
5659   \Hy@SaveLastskip
5660   \begingroup
5661     \let\protect=\string
5662     \hyper@chars
5663     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5664   \endgroup
5665   \Hy@activeanchortrue
5666   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5667   \special{html:</a>}%
5668   \Hy@activeanchorfalse
5669   \Hy@RestoreLastskip
5670 }
5671 \def\hyper@anchorstart#1{%
5672   \Hy@SaveLastskip
5673   \begingroup
5674     \hyper@chars
5675     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5676   \endgroup
5677   \Hy@activeanchortrue
5678 }
5679 \def\hyper@anchorend{%
5680   \special{html:</a>}%
5681   \Hy@activeanchorfalse
5682   \Hy@RestoreLastskip
5683 }
5684 \def\@urltype{url}
5685 \def\hyper@linkstart#1#2{%
5686   \expandafter\Hy@colorlink\csname @#1color\endcsname
5687   \def\Hy@tempa{#1}%
5688   \ifx\Hy@tempa\@urltype
5689     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5690   \else
5691     \begingroup
5692       \hyper@chars
5693       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
5694     \endgroup
5695   \fi

```

```

5696 }
5697 \def\hyper@linkend{%
5698   \special{html:</a>}}%
5699   \Hy@endcolorlink
5700 }
5701 \def\hyper@linkfile#1#2#3{%
5702   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
5703 }
5704 \def\hyper@linkurl#1#2{%

```

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

```

5705   \leavevmode
5706   \ifHy@raiselinks
5707     \setbox\@tempboxa=\color@hbox #1\color@endbox
5708     \@linkdim\dp\@tempboxa
5709     \lower\@linkdim\hbox{%
5710       \hyper@chars
5711       \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5712     }%
5713     \Hy@colorlink\@urlcolor#1%
5714     \@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).

```

5715     \advance\@linkdim by -6.5\p@
5716     \raise\@linkdim\hbox{\special{html:</a>}}%
5717     \Hy@endcolorlink
5718   \else
5719     \begingroup
5720     \hyper@chars
5721     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5722     \Hy@colorlink\@urlcolor#1%
5723     \special{html:</a>}}%
5724     \Hy@endcolorlink
5725   \endgroup
5726   \fi
5727 }
5728 \def\hyper@link#1#2#3{%
5729   \hyper@linkurl{#3}{\##2}%
5730 }
5731 \def\hyper@image#1#2{%
5732   \begingroup
5733   \hyper@chars
5734   \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
5735   \endgroup
5736 }
5737 </hypertex>
5738 <*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 hypertext 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.

```

5739 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
5740 \def\hyper@anchor#1{%
5741   \Hy@SaveLastskip
5742   \begingroup
5743     \let\protect=\string
5744     \special{mark: #1}%
5745   \endgroup
5746   \Hy@activeanchortrue
5747   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5748   \Hy@activeanchorfalse
5749   \Hy@RestoreLastskip
5750 }
5751 \def\hyper@anchorstart#1{%
5752   \Hy@SaveLastskip
5753   \special{mark: #1}%
5754   \Hy@activeanchortrue
5755 }
5756 \def\hyper@anchorend{%
5757   \Hy@activeanchorfalse
5758   \Hy@RestoreLastskip
5759 }
5760 \def\hyper@linkstart#1#2{%
5761   \expandafter\Hy@colorlink\csname @#1color\endcsname
5762   \special{button:
5763     10000000
5764     \number\baselineskip\space
5765     #2%
5766   }%
5767 }
5768 \def\hyper@linkend{%
5769   \Hy@endcolorlink
5770 }
5771 \def\hyper@link#1#2#3{%
5772   \setbox\@tempboxa=\color@hbox #3\color@endbox
5773   \leavevmode
5774   \ifHy@raiselinks
5775     \@linkdim\dp\@tempboxa
5776     \lower\@linkdim\hbox{%
5777       \special{button:
5778         \number\wd\@tempboxa\space
5779         \number\ht\@tempboxa\space
5780         #2%
5781       }%
5782       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5783       \Hy@endcolorlink
5784     }%
5785     \@linkdim\ht\@tempboxa
5786     \advance\@linkdim by -6.5\p@
5787     \raise\@linkdim\hbox{}%
5788   \else

```

```

5789 \special{button:
5790 \number\wd\@tempboxa\space
5791 \number\ht\@tempboxa\space
5792 #2%
5793 }%
5794 \exandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5795 \fi
5796 }
5797 \def\hyper@linkurl#1#2{%
5798 \begingroup
5799 \hyper@chars
5800 \leavevmode
5801 \setbox\@tempboxa=\color@hbox #1\color@endbox
5802 \ifHy@raiselinks
5803 \@linkdim\dp\@tempboxa
5804 \lower\@linkdim\hbox{%
5805 \special{button:
5806 \number\wd\@tempboxa\space
5807 \number\ht\@tempboxa\space
5808 launch: \wwwbrowser\space
5809 #2%
5810 }%
5811 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5812 }%
5813 \@linkdim\ht\@tempboxa
5814 \advance\@linkdim by -6.5\p@
5815 \raise\@linkdim\hbox{}}%
5816 \else
5817 \special{button:
5818 \number\wd\@tempboxa\space
5819 \number\ht\@tempboxa\space
5820 launch: \wwwbrowser\space
5821 #2%
5822 }%
5823 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5824 \fi
5825 \endgroup
5826 }
5827 \def\hyper@linkfile#1#2#3{%
5828 \begingroup
5829 \hyper@chars
5830 \leavevmode
5831 \setbox\@tempboxa=\color@hbox #1\color@endbox
5832 \ifHy@raiselinks
5833 \@linkdim\dp\@tempboxa
5834 \lower\@linkdim\hbox{%
5835 \special{button:
5836 \number\wd\@tempboxa\space
5837 \number\ht\@tempboxa\space
5838 #3,
5839 file: #2%
5840 }%
5841 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5842 }%
5843 \@linkdim\ht\@tempboxa
5844 \advance\@linkdim by -6.5\p@
5845 \raise\@linkdim\hbox{}}%

```

```

5846     \else
5847         \special{button:
5848             \number\wd\@tempboxa\space
5849             \number\ht\@tempboxa\space
5850             #3,
5851             file: #2
5852         }%
5853         \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5854     \fi
5855 \endgroup
5856 }
5857 \ifx\@pdfproducer\relax
5858 \def\@pdfproducer{dviwindo + Distiller}
5859 \fi
5860 \def\PDF@FinishDoc{%
5861     \Hy@UseMaketitleInfos
5862     \special{PDF: Keywords \@pdfkeywords}%
5863     \special{PDF: Title \@pdftitle}%
5864     \special{PDF: Creator \@pdfcreator}%
5865     \ifx\@pdfcreationdate\@empty
5866     \else
5867         \special{PDF: CreationDate \@pdfcreationdate}%
5868     \fi
5869     \ifx\@pdfmoddate\@empty
5870     \else
5871         \special{PDF: ModDate \@pdfmoddate}%
5872     \fi
5873     \special{PDF: Author \@pdfauthor}%
5874     \ifx\@pdfproducer\relax
5875     \else
5876         \special{PDF: Producer \@pdfproducer}%
5877     \fi
5878     \special{PDF: Subject \@pdfsubject}%
5879     \Hy@DisableOption{pdfauthor}%
5880     \Hy@DisableOption{pdftitle}%
5881     \Hy@DisableOption{pdfsubject}%
5882     \Hy@DisableOption{pdfcreator}%
5883     \Hy@DisableOption{pdfcreationdate}%
5884     \Hy@DisableOption{pdfmoddate}%
5885     \Hy@DisableOption{pdfproducer}%
5886     \Hy@DisableOption{pdfkeywords}%
5887 }
5888 \def\PDF@SetupDoc{%
5889     \ifx\@baseurl\@empty
5890     \else
5891         \special{PDF: Base \@baseurl}%
5892     \fi
5893     \ifx\@pdfpagescrop\@empty\else
5894         \special{PDF: BBox \@pdfpagescrop}%
5895     \fi
5896     \pdfmark{pdfmark=/DOCVIEW,
5897         Page=\@pdfstartpage,
5898         View=\@pdfstartview,
5899         PageMode=/\@pdfpagemode
5900     }%
5901     \ifx\@pdfpagescrop\@empty
5902     \else

```

```

5903     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5904 \fi
5905 \edef\Hy@temp{%
5906     \ifHy@toolbar\else /HideToolbar true\fi
5907     \ifHy@menubar\else /HideMenubar true\fi
5908     \ifHy>windowui\else /HideWindowUI true\fi
5909     \ifHy@fitwindow /FitWindow true\fi
5910     \ifHy@centerwindow /CenterWindow true\fi
5911     \ifHy@displaydoctitle /DisplayDocTitle true\fi
5912     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5913     \Hy@UseNameKey{Direction}\@pdfdirection
5914     \Hy@UseNameKey{ViewArea}\@pdfviewarea
5915     \Hy@UseNameKey{ViewClip}\@pdfviewclip
5916     \Hy@UseNameKey{PrintArea}\@pdfprintarea
5917     \Hy@UseNameKey{PrintClip}\@pdfprintclip
5918     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5919     \Hy@UseNameKey{Duplex}\@pdfduplex
5920     \ifx\@pdfpicktraybypdfsize\@empty
5921     \else
5922         /PickTrayByPDFSize \@pdfpicktraybypdfsize
5923     \fi
5924     \ifx\@pdfprintpagerange\@empty
5925     \else
5926         /PrintPageRange[\@pdfprintpagerange]%
5927     \fi
5928     \ifx\@pdfnumcopies\@empty
5929     \else
5930         /NumCopies \@pdfnumcopies
5931     \fi
5932 }%
5933 \pdfmark{pdfmark=/PUT,
5934     Raw={%
5935         \string{Catalog}\string} <<
5936         \ifx\Hy@temp\@empty
5937         \else
5938             /ViewerPreferences<<\Hy@temp>>%
5939         \fi
5940         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5941         \ifx\@pdflang\@empty
5942         \else
5943             /Lang(\@pdflang)%
5944         \fi
5945     >>%
5946 }%
5947 }%
5948 }
5949 </dviwindo>
5950 <*dvi pdfm>

```

45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

5951 \newsavebox{\pdfm@box}
5952 \def\@pdfm@mark#1{\special{pdf:#1}}
5953 \def\@pdfm@dest#1{%
5954     \Hy@SaveLastskip
5955     \Hy@pstringdef\Hy@pstringDest{#1}%

```

```

5956 \pdfmark{dest (\Hy@pstringDest) [@thispage /\pdfview\space @xpos @ypos]}%
5957 \Hy@RestoreLastskip
5958 }
5959 \providecommand\pdfview{XYZ}
5960 \providecommand\pdfborder{0 0 1}
5961 \providecommand*\pdfborderstyle{}
5962 \def\hyper@anchor#1{%
5963   \pdfmark{dest{#1}}%
5964 }
5965 \def\hyper@anchorstart#1{%
5966   \Hy@activeanchortrue
5967   \pdfmark{dest{#1}}%
5968 }
5969 \def\hyper@anchorend{%
5970   \Hy@activeanchorfalse
5971 }
5972 \def\Hy@undefinedname{UNDEFINED}
5973 \def\hyper@linkstart#1#2{%
5974   \protected@edef\Hy@testname{#2}%
5975   \ifx\Hy@testname\@empty
5976     \let\Hy@testname\Hy@undefinedname
5977   \else
5978     \Hy@pstringdef\Hy@testname\Hy@testname
5979   \fi
5980   \pdfmark{%
5981     bann <<
5982     /Type /Annot
5983     /Subtype /Link
5984     \Hy@setpdfborder
5985     /C [\csname @#1bordercolor\endcsname]
5986     /A <<
5987     /S /GoTo
5988     /D (\Hy@testname)
5989     >>
5990   }%
5991 }
5992 \expandafter\Hy@colorlink\csname @#1color\endcsname
5993 }
5994 \def\hyper@linkend{%
5995   \Hy@endcolorlink
5996   \pdfmark{eann}%
5997 }
5998 \def\hyper@link#1#2#3{%
5999   \hyper@linkstart{#1}{#2}#3\hyper@linkend
6000 }
6001 \def\hyper@linkfile#1#2#3{%
6002   \Hy@pstringdef\Hy@pstringF{#2}%
6003   \Hy@pstringdef\Hy@pstringD{#3}%
6004   \leavevmode
6005   \pdfmark{%
6006     bann <<
6007     /Type /Annot
6008     /Subtype /Link
6009     \Hy@setpdfborder
6010     /C [\@filebordercolor]
6011     /A <<
6012     /S /GoToR

```

```

6013         /F (\Hy@pstringF)
6014         /D \ifx\#3\ [0 \@pdfstartview]\else(\Hy@pstringD)\fi\space
6015         \ifHy@newwindow /NewWindow true \fi
6016     >>
6017     >>%
6018 }%
6019 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6020 \@pdfmark{eann}%
6021 }
6022 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
6023 \Hy@pstringdef\Hy@pstringF{#1}%
6024 \Hy@pstringdef\Hy@pstringP{#3}%
6025 \leavevmode
6026 \@pdfmark{%
6027     bann <<
6028     /Type /Annot
6029     /Subtype /Link
6030     \Hy@setpdfborder
6031     /C [\@filebordercolor]
6032     /A <<
6033     /S /Launch
6034     /F (\Hy@pstringF)
6035     \ifHy@newwindow /NewWindow true \fi
6036     \ifx\#3\%
6037     \else
6038         /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6039     \fi
6040     >>
6041     >>%
6042 }%
6043 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6044 \@pdfmark{eann}%
6045 }
6046 \def\hyper@linkurl#1#2{%
6047 \Hy@pstringdef\Hy@pstringURI{#2}%
6048 \leavevmode
6049 \@pdfmark{%
6050     bann <<
6051     /Type /Annot
6052     /Subtype /Link
6053     \Hy@setpdfborder
6054     /C [\@urlbordercolor]
6055     /A <<
6056     /S /URI
6057     /URI (\Hy@pstringURI)
6058     >>
6059     >>%
6060 }%
6061 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6062 \@pdfmark{eann}%
6063 }
6064 \def\Acrobatmenu#1#2{%
6065 \leavevmode
6066 \@pdfmark{%
6067     bann <<
6068     /Type /Annot
6069     /Subtype /Link

```



```

6070      /A <<
6071      /S /Named
6072      /N /#1
6073      >>
6074      \Hy@setpdfborder
6075      /C [\@menubordercolor]
6076      >>%
6077  }%
6078  \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6079  \@pdfm@mark{eann}%
6080 }
6081 \ifx\@pdfproducer\relax
6082 \def\@pdfproducer{dvipdfm}
6083 \fi
6084 \def\PDF@FinishDoc{%
6085 \Hy@UseMaketitleInfos
6086 \@pdfm@mark{%
6087   docinfo <<
6088     /Title (\@pdftitle)
6089     /Subject (\@pdfsubject)
6090     /Creator (\@pdfcreator)
6091     \ifx\@pdfcreationdate\@empty
6092     \else
6093       /CreationDate(\@pdfcreationdate) %
6094     \fi
6095     \ifx\@pdfmoddate\@empty
6096     \else
6097       /ModDate(\@pdfmoddate) %
6098     \fi
6099     /Author (\@pdfauthor)
6100     \ifx\@pdfproducer\relax
6101     \else
6102       /Producer (\@pdfproducer)
6103     \fi
6104     /Keywords (\@pdfkeywords)
6105   >>%
6106 }%
6107 \Hy@DisableOption{pdfauthor}%
6108 \Hy@DisableOption{pdftitle}%
6109 \Hy@DisableOption{pdfsubject}%
6110 \Hy@DisableOption{pdfcreator}%
6111 \Hy@DisableOption{pdfcreationdate}%
6112 \Hy@DisableOption{pdfmoddate}%
6113 \Hy@DisableOption{pdfproducer}%
6114 \Hy@DisableOption{pdfkeywords}%
6115 }
6116 \def\PDF@SetupDoc{%
6117 \edef\Hy@temp{%
6118   \ifHy@toolbar\else /HideToolbar true\fi
6119   \ifHy@menubar\else /HideMenubar true\fi
6120   \ifHy>windowui\else /HideWindowUI true\fi
6121   \ifHy@fitwindow /FitWindow true\fi
6122   \ifHy@centerwindow /CenterWindow true\fi
6123   \ifHy@displaydoctitle /DisplayDocTitle true\fi
6124   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6125   \Hy@UseNameKey{Direction}\@pdfdirection
6126   \Hy@UseNameKey{ViewArea}\@pdfviewarea

```

```

6127 \Hy@UseNameKey{ViewClip}\@pdfviewclip
6128 \Hy@UseNameKey{PrintArea}\@pdfprintarea
6129 \Hy@UseNameKey{PrintClip}\@pdfprintclip
6130 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6131 \Hy@UseNameKey{Duplex}\@pdfduplex
6132 \ifx\@pdfpicktraybypdfsize\@empty
6133 \else
6134 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6135 \fi
6136 \ifx\@pdfprintpagerange\@empty
6137 \else
6138 /PrintPageRange[\@pdfprintpagerange]%
6139 \fi
6140 \ifx\@pdfnumcopies\@empty
6141 \else
6142 /NumCopies \@pdfnumcopies
6143 \fi
6144 }%
6145 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6146 \@pdfm@mark{%
6147 docview <<%
6148 \ifx\@pdfstartview\@empty
6149 \else
6150 /OpenAction[\@page\@pdfstartpage\@pdfstartview]%
6151 \fi
6152 \ifx\@baseurl\@empty
6153 \else
6154 /URI<</Base(\Hy@pstringB)>>%
6155 \fi
6156 /PageMode/\@pdfpagemode
6157 \ifx\Hy@temp\@empty
6158 \else
6159 /ViewerPreferences<<\Hy@temp>>%
6160 \fi
6161 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6162 \ifx\@pdflang\@empty
6163 \else
6164 /Lang(\@pdflang)%
6165 \fi
6166 >>%
6167 }%
6168 \ifx\@pdfpagescrop\@empty
6169 \else
6170 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}
6171 \fi
6172 }
6173 </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.

```

6174 <*vtexhtml>
6175 \RequirePackage{vtexhtml}
6176 \newif\if@Localurl
6177 \def\PDF@FinishDoc{}
6178 \def\PDF@SetupDoc{%

```

```

6179 \ifx\@baseurl\@empty
6180 \else
6181   \special{!direct <base href="\@baseurl">}%
6182 \fi
6183 }
6184 \def\@urltype{url}
6185 \def\hyper@link#1#2#3{%
6186   \leavevmode
6187   \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
6188   #3%
6189   \special{!direct </a>}%
6190 }
6191 \def\hyper@linkurl#1#2{%
6192   \begingroup
6193     \hyper@chars
6194     \leavevmode
6195     \MathBSuppress=1\relax
6196     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6197     #1%
6198     \MathBSuppress=0\relax
6199     \special{!direct </a>}%
6200   \endgroup
6201 }
6202 \def\hyper@linkfile#1#2#3{%
6203   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
6204 }
6205 \def\hyper@linkstart#1#2{%
6206   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
6207     \@Localurltrue
6208     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6209   \else
6210     \@Localurlfalse
6211     \begingroup
6212       \hyper@chars
6213       \special{!aref #2}%
6214     \endgroup
6215   \fi
6216 }
6217 \def\hyper@linkend{%
6218   \if@Localurl
6219     \special{!endaref}%
6220   \else
6221     \special{!direct </a>}%
6222   \fi
6223 }
6224 \def\hyper@anchorstart#1{%
6225   \Hy@SaveLastskip
6226   \begingroup
6227     \hyper@chars
6228     \special{!aname #1}%
6229     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
6230   \endgroup
6231   \Hy@activeanchortrue
6232 }
6233 \def\hyper@anchorend{%
6234   \special{!direct </a>}%
6235   \Hy@activeanchorfals

```

```

6236 \Hy@RestoreLastskip
6237 }
6238 \def\hyper@anchor#1{%
6239 \Hy@SaveLastskip
6240 \begingroup
6241 \let\protect=\string
6242 \hyper@chars
6243 \leavevmode
6244 \special{!aname #1}%
6245 \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
6246 \endgroup
6247 \Hy@activeanchortrue
6248 \bgroup\anchor@spot\egroup
6249 \special{!direct </a>}%
6250 \Hy@activeanchorfalse
6251 \Hy@RestoreLastskip
6252 }
6253 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
6254 \def\@endForm{}
6255 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6256 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
6257 }
6258 \def\@TextField[#1]#2{% parameters, label
6259 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
6260 }
6261 \def\@CheckBox[#1]#2{% parameters, label
6262 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
6263 }
6264 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6265 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
6266 }
6267 \def\@PushButton[#1]#2{% parameters, label
6268 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
6269 }
6270 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6271 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6272 \</vtexhtml>
6273 < *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.

```

6274 \ifx\mediaheight\@undefined
6275 \else
6276 \ifx\mediaheight\relax
6277 \else
6278 \ifHy@setpagesize
6279 \providecommand*{\VTeXInitMediaSize}{%
6280 \@ifundefined{stockwidth}{%
6281 \ifdim\paperheight>0pt %
6282 \setlength\mediaheight\paperheight
6283 \fi
6284 \ifdim\paperheight>0pt %
6285 \setlength\mediawidth\paperwidth
6286 \fi
6287 }{%
6288 \ifdim\stockheight>0pt %

```

```

6289         \setlength\mediaheight\stockheight
6290     \fi
6291     \ifdim\stockwidth>0pt %
6292         \setlength\mediawidth\stockwidth
6293     \fi
6294 }%
6295 }%
6296 \AtBeginDocument{\VTeXInitMediaSize}%
6297 \fi
6298 \Hy@DisableOption{setpagesize}%
6299 \fi
6300 \fi

```

Older versions of VTeX require xyz in lower case.

```

6301 \providecommand\pdfview{xyz}
6302 \providecommand\pdfborder{0 0 1}
6303 \providecommand*\pdfborderstyle{}
6304 \def\CurrentBorderColor{\linkbordercolor}
6305 \def\hyper@anchor#1{%
6306     \Hy@SaveLastskip
6307     \begingroup
6308         \let\protect=\string
6309         \hyper@chars
6310         \special{!aname #1;\pdfview}%
6311     \endgroup
6312     \Hy@activeanchortrue
6313     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6314     \Hy@activeanchorfalse
6315     \Hy@RestoreLastskip
6316 }
6317 \def\hyper@anchorstart#1{%
6318     \Hy@SaveLastskip
6319     \begingroup
6320         \hyper@chars
6321         \special{!aname #1;\pdfview}%
6322     \endgroup
6323     \Hy@activeanchortrue
6324 }
6325 \def\hyper@anchorend{%
6326     \Hy@activeanchorfalse
6327     \Hy@RestoreLastskip
6328 }
6329 \def\@urltype{url}
6330 \def\Hy@undefinedname{UNDEFINED}
6331 \def\hyper@linkstart#1#2{%
6332     \Hy@pstringdef\Hy@pstringURI{#2}%
6333     \expandafter\Hy@colorlink\csname @#1color\endcsname
6334     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6335     \def\Hy@tempa{#1}%
6336     \ifx\Hy@tempa\@urltype
6337         \special{!%
6338             aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6339             a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6340         }%
6341     \else
6342         \protected@edef\Hy@testname{#2}%
6343         \ifx\Hy@testname\@empty
6344             \let\Hy@testname\Hy@undefinedname

```

```

6345 \fi
6346 \special{!%
6347   aref \Hy@testname;%
6348   a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6349 }%
6350 \fi
6351 }
6352 \def\hyper@linkend{%
6353 \special{!endaref}%
6354 \Hy@endcolorlink
6355 }
6356 \def\hyper@linkfile#1#2#3{%
6357 \leavevmode
6358 \special{!%
6359   aref <%
6360     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6361     f=#2>#3;%
6362     a=<\Hy@setpdfborder /C [\@filebordercolor]>%
6363 }%
6364 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6365 \special{!endaref}%
6366 }
6367 \def\hyper@linkurl#1#2{%
6368 \begingroup
6369   \Hy@pstringdef\Hy@pstringURI{#2}%
6370   \hyper@chars
6371   \leavevmode
6372   \special{!%
6373     aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6374     a=<\Hy@setpdfborder /C [\@urlbordercolor]>%
6375 }%
6376 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6377 \special{!endaref}%
6378 \endgroup
6379 }
6380 \def\hyper@link#1#2#3{%
6381 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6382 \leavevmode
6383 \protected@edef\Hy@testname{#2}%
6384 \ifx\Hy@testname\empty
6385 \let\Hy@testname\Hy@undefinedname
6386 \fi
6387 \special{!%
6388   aref \Hy@testname;%
6389   a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6390 }%
6391 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6392 \special{!endaref}%
6393 }
6394 \def\hyper@image#1#2{%
6395 \hyper@linkurl{#2}{#1}%
6396 }
6397 \def\@hyper@launch run:#1\#2#3{%
6398 \Hy@pstringdef\Hy@pstringF{#1}%
6399 \Hy@pstringdef\Hy@pstringP{#3}%
6400 \leavevmode
6401 \special{!aref

```

```

6402 <u=%
6403 /Type /Action
6404 /S /Launch
6405 /F (\Hy@pstringF)
6406 \ifHy@newwindow /NewWindow true \fi
6407 \ifx\#3\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6408 >;%
6409 a=<\Hy@setpdfborder /C [\@runbordercolor]>%
6410 }%
6411 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6412 \special{!endaref}%
6413 }
6414 \def\Acrobatmenu#1#2{%
6415 \leavevmode
6416 \special{!%
6417 aref <u=/S /Named /N /#1>;%
6418 a=<\Hy@setpdfborder /C [\@menubordercolor]>%
6419 }%
6420 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6421 \special{!endaref}%
6422 }

```

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

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

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

```

6423 \ifnum\Hy@VTeXversion<702 %
6424 \else
6425 \def\hyper@pagetransition{%
6426 \ifx\@pdfpagetransition\relax
6427 \else
6428 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

6429 \else
6430 \hvtex@parse@trans\@pdfpagetransition
6431 \fi
6432 \fi
6433 }

```

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

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

```

<transition\_effect> ::= <transition\_style>[,<transition\_duration>]
<transition\_style> ::= <Blinds\_effect> | <Box\_effect> |
                        <Dissolve\_effect> | <Glitter\_effect> |
                        <Split\_effect> | <Wipe\_effect>
<Blinds\_effect> ::= B[<effect\_dimension>]
<Box\_effect> ::= X[<effect\_motion>]
<Dissolve\_effect> ::= D
<Glitter\_effect> ::= G[<effect\_direction>]
<Split\_effect> ::= S[<effect\_motion>][<effect\_dimension>]
<Wipe\_effect> ::= W[<effect\_direction>]
<Replace\_effect> ::= R
<effect\_direction> ::= <number>
<effect\_dimension> ::= H | V
<effect\_motion> ::= I | O
<transition\_duration> ::= <number>

```

Transition codes:

```

6434 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
6435 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
6436 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
6437 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
6438 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
6439 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}
6440 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}

```

Optional parameters:

```

6441 \def\hvtex@par@dimension{/Dm}
6442 \def\hvtex@par@direction{/Di}
6443 \def\hvtex@par@duration{/D}
6444 \def\hvtex@par@motion{/M}

```

Tokenizer:

```

6445 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}

```

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

```

6446 \def\hvtex@gettoken@#1 #2\@nil{%
6447   \edef\hvtex@token{#1}%
6448   \edef\hvtex@buffer{#2}%
6449 }
6450 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

6451 \let\hvtex@trans@code\@empty
6452 \let\hvtex@param@dimension\@empty
6453 \let\hvtex@param@direction\@empty
6454 \let\hvtex@param@duration\@empty
6455 \let\hvtex@param@motion\@empty
6456 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

6457 \hvtex@gettoken
6458 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

6459 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

6460 \else
6461 \hvtex@gettoken
6462 \fi
6463 \fi
6464 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

6465 \hvtex@trans@params
6466 }

```

Reentrant macro to parse optional parameters.

```

6467 \def\hvtex@trans@params{%
6468 \ifx\hvtex@buffer\@empty
6469 \else
6470 \hvtex@gettoken
6471 \let\hvtex@trans@par\hvtex@token
6472 \ifx\hvtex@buffer\@empty
6473 \else
6474 \hvtex@gettoken
6475 \ifx\hvtex@trans@par\hvtex@par@duration

```


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

```
6476      \let\hvtex@param@duration\hvtex@token
6477      \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
6478      \expandafter\edef\expandafter\hvtex@param@motion
6479      \expandafter{\expandafter\@gobble\hvtex@token}%
6480      \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
6481      \expandafter\edef\expandafter\hvtex@param@dimension
6482      \expandafter{\expandafter\@gobble\hvtex@token}%
6483      \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).

```
6484      \let\hvtex@param@direction\hvtex@token
6485      \fi\fi\fi\fi
6486      \fi
6487      \fi
6488      \ifx\hvtex@buffer\@empty
6489      \let\next\hvtex@produce@trans
6490      \else
6491      \let\next\hvtex@trans@params
6492      \fi
6493      \next
6494  }
```

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

```
6495  \def\hvtex@produce@trans{%
6496    \let\vtex@trans@special\@empty
6497    \if S\hvtex@trans@code
6498      \edef\vtex@trans@special{\hvtex@trans@code
6499        \hvtex@param@dimension\hvtex@param@motion}%
6500    \else \if B\hvtex@trans@code
6501      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6502    \else \if X\hvtex@trans@code
6503      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6504    \else \if W\hvtex@trans@code
6505      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6506    \else \if D\hvtex@trans@code
6507      \let\vtex@trans@special\hvtex@trans@code
6508    \else \if R\hvtex@trans@code
6509      \let\vtex@trans@special\hvtex@trans@code
6510    \else \if G\hvtex@trans@code
6511      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6512    \fi\fi\fi\fi\fi\fi
6513    \ifx\vtex@trans@special\@empty
6514      \else
6515        \ifx\hvtex@param@duration\@empty
6516        \else
6517          \setlength{\dimen@}{\hvtex@param@duration\p}%
```

I'm not guilty of possible overflow.

```
6518      \multiply\dimen@\@m
6519      \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6520      \fi
```

And all the mess is just for this.

```

6521     \special{!trans \vtx@trans@special}%
6522   \fi
6523 }

6524 \def\hyper@pageduration{%
6525   \ifx\@pdfpageduration\relax
6526   \else
6527     \ifx\@pdfpageduration\@empty
6528       \special{!duration-}%
6529     \else
6530       \special{!duration \@pdfpageduration}%
6531     \fi
6532   \fi
6533 }

6534 \def\hyper@pagehidden{%
6535   \ifHy@useHidKey
6536     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6537   \fi
6538 }
6539 \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

```

6540 \ifx\@pdfproducer\relax
6541   \def\@pdfproducer{VTeX}
6542   \ifnum\Hy@VTeXversion>\z@
6543     \count@\VTeXversion
6544     \divide\count@ 100
6545     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6546     \multiply\count@ -100
6547     \advance\count@\VTeXversion
6548     \edef\@pdfproducer{%
6549       \@pdfproducer
6550       .\ifnum\count@<10 0\fi\the\count@
6551       \ifx\VTeXOS\@undefined\else
6552         \ifnum\VTeXOS>0 %
6553           \ifnum\VTeXOS<6 %
6554             \space(
6555             \ifcase\VTeXOS
6556               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6557             \fi
6558           )%
6559         \fi
6560       \fi
6561     ,\space
6562     \ifnum\OpMode=\@ne PDF\else PS\fi
6563     \space backend%

```

```

6565     \ifx\gexmode\@undefined\else
6566         \ifnum\gexmode>\z@\space with GeX\fi
6567     \fi
6568 }
6569 \fi
6570 \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).

```

6571 \def\PDF@SetupDoc{%
6572     \ifx\@pdfpagescrop\@empty
6573     \else
6574         \special{!pdfinfo b=<\@pdfpagescrop>}%
6575     \fi
6576     \special{!onopen Page\@pdfstartpage}%
6577     \special{!pdfinfo p=</\@pdfpagemode>}%
6578     \ifx\@baseurl\@empty
6579     \else
6580         \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6581     \fi
6582     \special{!pdfinfo v=<<<%
6583         \ifHy@toolbar\else /HideToolbar true\fi
6584         \ifHy@menubar\else /HideMenubar true\fi
6585         \ifHy>windowui\else /HideWindowUI true\fi
6586         \ifHy@fitwindow /FitWindow true\fi
6587         \ifHy@centerwindow /CenterWindow true\fi
6588         \ifHy@displaydoctitle /DisplayDocTitle true\fi
6589         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6590         \Hy@UseNameKey{Direction}\@pdfdirection
6591         \Hy@UseNameKey{ViewArea}\@pdfviewarea
6592         \Hy@UseNameKey{ViewClip}\@pdfviewclip
6593         \Hy@UseNameKey{PrintArea}\@pdfprintarea
6594         \Hy@UseNameKey{PrintClip}\@pdfprintclip
6595         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6596         \Hy@UseNameKey{Duplex}\@pdfduplex
6597         \ifx\@pdfpicktraybypdfsize\@empty
6598         \else
6599             /PickTrayByPDFSize \@pdfpicktraybypdfsize
6600         \fi
6601         \ifx\@pdfprintpagerange\@empty
6602         \else
6603             /PrintPageRange[\@pdfprintpagerange]%
6604         \fi
6605         \ifx\@pdfnumcopies\@empty
6606         \else

```

```

6607      /NumCopies \@pdfnumcopies
6608      \fi
6609    >>>}%
6610    \ifx\@pdfpagelayout\@empty
6611    \else
6612      \special{!pdfinfo l=</\@pdfpagelayout\space>}%
6613    \fi
6614  }%
6615  \def\PDF@FinishDoc{%
6616    \Hy@UseMaketitleInfos
6617    \special{!pdfinfo a=<\@pdfauthor>}%
6618    \special{!pdfinfo t=<\@pdftitle>}%
6619    \special{!pdfinfo s=<\@pdfsubject>}%
6620    \special{!pdfinfo c=<\@pdfcreator>}%
6621    \ifx\@pdfproducer\relax
6622    \else
6623      \special{!pdfinfo r=<\@pdfproducer>}%
6624    \fi
6625    \special{!pdfinfo k=<\@pdfkeywords>}%
6626    \Hy@DisableOption{pdfauthor}%
6627    \Hy@DisableOption{pdftitle}%
6628    \Hy@DisableOption{pdfsubject}%
6629    \Hy@DisableOption{pdfcreator}%
6630    \Hy@DisableOption{pdfcreationdate}%
6631    \Hy@DisableOption{pdfmoddate}%
6632    \Hy@DisableOption{pdfproducer}%
6633    \Hy@DisableOption{pdfkeywords}%
6634  }
6635  </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.

```

6636 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
6637 <package>\providecommand*{\Hy@DistillerDestFix}{}
6638 <*pdfmark | dviwindo>
6639 \def\Hy@DistillerDestFix{%
6640   \begingroup
6641     \let\x\literalps@out

```

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

```

6642   \ifnum \@ifundefined{OpMode}{0}{}%
6643     \@ifundefined{gexmode}{0}{}%
6644     \ifnum\gexmode>0 \OpMode\else 0\fi
6645   }>1 %
6646   \def\x##1{%
6647     \immediate\special{!##1}%
6648   }%

```

```

6649 \fi
6650 \x{%
6651 /product where{%
6652     pop %
6653     product(Distiller)search{%
6654         pop pop pop %
6655         version(.)search{%
6656             exch pop exch pop%
6657             (3011)eq{%
6658                 gsave %
6659                 newpath 0 0 moveto closepath clip%
6660                 /Courier findfont 10 scalefont setfont %
6661                 72 72 moveto(.)show %
6662                 grestore%
6663             }if%
6664         }{pop}ifelse%
6665     }{pop}ifelse%
6666 }if%
6667 }%
6668 \endgroup
6669 }
6670 </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

```

```

6671 <(*pdfmark | dvipdf)
6672 \def\hyper@anchor#1{%
6673     \Hy@SaveLastskip
6674     \begingroup
6675         \pdfmark[\anchor@spot]{%
6676             pdfmark=/DEST,%
6677             linktype=anchor,%
6678             View=/\@pdfview \@pdfviewparams,%
6679             DestAnchor={#1}%
6680         }%
6681     \endgroup
6682     \Hy@RestoreLastskip
6683 }
6684 <(*dvipdf)
6685 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6686 \def\hyper@anchorend{\Hy@activeanchorfalse}
6687 \def\hyper@linkstart#1#2{%
6688     \expandafter\Hy@colorlink\csname @#1color\endcsname
6689     \xdef\hyper@currentanchor{#2}%

```

```

6690 }
6691 \def\hyper@linkend{%
6692   \Hy@endcolorlink
6693 }
6694 </dvipdf>
6695 <*pdfmark>
6696 \@ifundefined{hyper@anchorstart}{\endinput}
6697 \def\hyper@anchorstart#1{%
6698   \Hy@SaveLastskip
6699   \literalps@out{H.S}%
6700   \xdef\hyper@currentanchor{#1}%
6701   \Hy@activeanchortrue
6702 }
6703 \def\hyper@anchorend{%
6704   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6705   \pdfmark{%
6706     pdfmark=/DEST,%
6707     linktype=anchor,%
6708     View=/\@pdfview \@pdfviewparams,%
6709     DestAnchor=\hyper@currentanchor,%
6710     Raw=H.B%
6711   }%
6712   \Hy@activeanchorfalse
6713   \Hy@RestoreLastskip
6714 }
6715 \def\hyper@linkstart#1#2{%
6716   \ifHy@breaklinks
6717   \else
6718     \leavevmode\hbox\bgroup
6719     \fi
6720     \expandafter\Hy@colorlink\csname @#1color\endcsname
6721     \literalps@out{H.S}%
6722     \xdef\hyper@currentanchor{#2}%
6723     \gdef\hyper@currentlinktype{#1}%
6724 }
6725 \def\hyper@linkend{%
6726   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6727   \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%
6728   \pdfmark{%
6729     pdfmark=/ANN,%
6730     linktype=link,%
6731     Subtype=/Link,%
6732     Dest=\hyper@currentanchor,%
6733     AcroHighlight=\@pdfhighlight,%
6734     Border=\@pdfborder,%
6735     BorderStyle=\@pdfborderstyle,%
6736     Color=\Hy@tempcolor,%
6737     Raw=H.B%
6738   }%
6739   \Hy@endcolorlink
6740   \ifHy@breaklinks
6741   \else
6742     \egroup
6743     \fi
6744 }
6745 <*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.

```

6746 \begingroup
6747   \catcode'P=12
6748   \catcode'T=12
6749   \lowercase{\endgroup}
6750   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
6751 }
6752 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6753 \pdfmark

```

\hyper@pagetransition

```

6754 \def\hyper@pagetransition{%
6755   \ifx\@pdfpagetransition\relax
6756   \else
6757     \ifx\@pdfpagetransition\@empty
6758       % 1. Does an old entry have to be deleted?
6759       % 2. If 1=yes, how to delete?
6760     \else
6761       \pdfmark{%
6762         pdfmark=/PUT,%
6763         Raw={%
6764           \string{ThisPage\string}%
6765           <</Trans << /S /\@pdfpagetransition\space >> >>%
6766         }%
6767       }%
6768     \fi
6769   \fi
6770 }

```

\hyper@pageduration

```

6771 \def\hyper@pageduration{%
6772   \ifx\@pdfpageduration\relax
6773   \else
6774     \ifx\@pdfpageduration\@empty
6775       % 1. Does an old entry have to be deleted?
6776       % 2. If 1=yes, how to delete?
6777     \else
6778       \pdfmark{%
6779         pdfmark=/PUT,%
6780         Raw={%
6781           \string{ThisPage\string}%
6782           <</Dur \@pdfpageduration>>%
6783         }%
6784       }%
6785     \fi
6786   \fi
6787 }

```

\hyper@pagehidden

```

6788 \def\hyper@pagehidden{%
6789   \ifHy@useHidKey
6790   \pdfmark{%
6791     pdfmark=/PUT,%
6792     Raw={%

```

```

6793         \string{ThisPage\string}%
6794         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
6795     }%
6796 }%
6797 \fi
6798 }

6799 </pdfmark>
6800 \def\hyper@image#1#2{%
6801     \hyper@linkurl{#2}{#1}}
6802 \def\Hy@undefinedname{UNDEFINED}
6803 \def\hyper@link#1#2#3{%
6804     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
6805     \begingroup
6806         \protected@edef\Hy@testname{#2}%
6807         \ifx\Hy@testname\@empty
6808             \let\Hy@testname\Hy@undefinedname
6809         \fi
6810 <*dvipdf>
6811     \pdfmark[#{#3}]{%
6812         pdfmark=/LNK,%
6813         {},%
6814         linktype={#1},%
6815         AcroHighlight=\@pdfhighlight,%
6816         Border=\@pdfborder,%
6817         BorderStyle=\@pdfborderstyle,%
6818         Color=\Hy@tempcolor,%
6819         Dest=\Hy@testname
6820     }%
6821 </dvipdf>
6822 <*pdfmarkbase>
6823     \pdfmark[#{#3}]{%
6824         Color=\Hy@tempcolor,%
6825         linktype={#1},%
6826         AcroHighlight=\@pdfhighlight,%
6827         Border=\@pdfborder,%
6828         BorderStyle=\@pdfborderstyle,%
6829         pdfmark=/ANN,%
6830         Subtype=/Link,%
6831         Dest=\Hy@testname
6832     }%
6833 </pdfmarkbase>
6834 \endgroup
6835 }

6836 \newtoks\pdf@docset
6837 \def\PDF@FinishDoc{%
6838     \Hy@UseMaketitleInfos
6839     \let\Hy@temp\@empty
6840     \ifx\@pdfcreationdate\@empty
6841     \else
6842         \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6843     \fi
6844     \ifx\@pdfmoddate\@empty
6845     \else
6846         \expandafter\def\expandafter\Hy@temp\expandafter{%
6847             \Hy@temp
6848             ModDate=\@pdfmoddate,%
6849         }%

```



```

6850 \fi
6851 \ifx\@pdfproducer\relax
6852 \else
6853   \expandafter\def\expandafter\Hy@temp\expandafter{%
6854     \Hy@temp
6855     Producer=\@pdfproducer,%
6856   }%
6857 \fi
6858 \expandafter
6859 \pdfmark\expandafter{%
6860   \Hy@temp
6861   pdfmark=/DOCINFO,%
6862   Title=\@pdftitle,%
6863   Subject=\@pdfsubject,%
6864   Creator=\@pdfcreator,%
6865   Author=\@pdfauthor,%
6866   Keywords=\@pdfkeywords
6867 }%
6868 \Hy@DisableOption{pdfauthor}%
6869 \Hy@DisableOption{pdftitle}%
6870 \Hy@DisableOption{pdfsubject}%
6871 \Hy@DisableOption{pdfcreator}%
6872 \Hy@DisableOption{pdfcreationdate}%
6873 \Hy@DisableOption{pdfmoddate}%
6874 \Hy@DisableOption{pdfproducer}%
6875 \Hy@DisableOption{pdfkeywords}%
6876 }
6877 \def\PDF@SetupDoc{%
6878   \pdfmark{%
6879     pdfmark=/DOCVIEW,%
6880     Page=\@pdfstartpage,%
6881     View=\@pdfstartview,%
6882     PageMode=/\@pdfpagemode
6883   }%
6884   \ifx\@pdfpagescrop\@empty
6885   \else
6886     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6887   \fi
6888   \edef\Hy@temp{%
6889     \ifHy@toolbar\else /HideToolbar true\fi
6890     \ifHy@menubar\else /HideMenubar true\fi
6891     \ifHy>windowui\else /HideWindowUI true\fi
6892     \ifHy@fitwindow /FitWindow true\fi
6893     \ifHy@centerwindow /CenterWindow true\fi
6894     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6895     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6896     \Hy@UseNameKey{Direction}\@pdfdirection
6897     \Hy@UseNameKey{ViewArea}\@pdfviewarea
6898     \Hy@UseNameKey{ViewClip}\@pdfviewclip
6899     \Hy@UseNameKey{PrintArea}\@pdfprintarea
6900     \Hy@UseNameKey{PrintClip}\@pdfprintclip
6901     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6902     \Hy@UseNameKey{Duplex}\@pdfduplex
6903     \ifx\@pdfpicktraybypdfsize\@empty
6904     \else
6905       /PickTrayByPDFSize \@pdfpicktraybypdfsize
6906     \fi

```

```

6907 \ifx\@pdfprintpagerange\@empty
6908 \else
6909 /PrintPageRange[\@pdfprintpagerange]%
6910 \fi
6911 \ifx\@pdfnumcopies\@empty
6912 \else
6913 /NumCopies \@pdfnumcopies
6914 \fi
6915 }%
6916 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6917 \pdfmark{%
6918 pdfmark=/PUT,%
6919 Raw={%
6920 \string{Catalog\string} <<
6921 \ifx\Hy@temp\@empty
6922 \else
6923 /ViewerPreferences<<\Hy@temp>>%
6924 \fi
6925 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6926 \ifx\@pdflang\@empty
6927 \else
6928 /Lang(\@pdflang)%
6929 \fi
6930 \ifx\@baseurl\@empty
6931 \else
6932 /URI << /Base (\Hy@pstringB) >>%
6933 \fi
6934 >>%
6935 }%
6936 }%
6937 }
6938 </pdfmark | dvipdf>
6939 <*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.

```

6940 \newif\ifHy@pdfmarkerror
6941 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}
6942 \def\pdfmark@[#1]#2{%
6943 \Hy@pdfmarkerrorfalse
6944 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
6945 \@processme
6946 \let\pdf@type\relax
6947 \setkeys{PDF}{#2}%
6948 \ifHy@pdfmarkerror
6949 \else
6950 \ifx\pdf@type\relax
6951 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
6952 \ifx\#1\\\relax\else\pdf@rect{#1}\fi
6953 \else
6954 \ifx\#1\\\relax
6955 \pdfmarkbase \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
6956 \dvipdf \literalps@out{/ANN >>}%
6957 \else

```

```

6958      \ifundefined{@\pdf@linktype color}{%
6959      \Hy@colorlink\@linkcolor
6960      }{%
6961      \expandafter\Hy@colorlink
6962      \csname @\pdf@linktype color\endcsname
6963      }%
6964      \pdf@rect{#1}%
6965 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
6966 \dvipdf) \literalps@out{/ANN >>}%
6967 \Hy@endcolorlink
6968 \fi
6969 \fi
6970 \fi
6971 }

```

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}

6972 \newsavebox{\pdf@box}
6973 \providecommand{\Hy@setouterhbox}{\sbox}
6974 \providecommand{\Hy@breaklinksunhbox}{\unhbox}
6975 \def\pdf@rect#1{%
6976 \dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
6977 \leavevmode
6978 \ifHy@breaklinks
6979 \Hy@setouterhbox\pdf@box{#1}%
6980 \else
6981 \sbox\pdf@box{#1}%
6982 \fi
6983 \dimen@ \ht\pdf@box
6984 \ifdim\dp\pdf@box=\z@
6985 \literalps@out{H.S}%
6986 \else
6987 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
6988 \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...).

```

6989 \ifHy@breaklinks
6990 \expandafter\Hy@breaklinksunhbox
6991 \else
6992 \expandafter\box
6993 \fi
6994 \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

```

```

6995 \ifdim\dimen@=\z@
6996 \literalps@out{H.R.}%
6997 \else
6998 \raise\dimen@hbox{\literalps@out{H.R.}}%
6999 \fi
7000 \pdf@addtoksx{H.B}%
7001 }

```

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.

```

7002 \newtoks\pdf@toks
7003 \newtoks\pdf@defaulttoks
7004 \pdf@defaulttoks={}
7005 \def\pdf@addtoks#1#2{%
7006 \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
7007 \@processme
7008 }
7009 \def\pdf@addtoksx#1{%
7010 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
7011 \@processme
7012 }
7013 \def\PDFdefaults#1{%
7014 \pdf@defaulttoks={#1}%
7015 }

```

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

```

7016 % what is the type of pdfmark?
7017 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
7018 % what is the link type?
7019 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
7020 \def\pdf@linktype{link}
7021 % parameter is a stream of PDF
7022 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
7023 % parameter is a name
7024 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
7025 % parameter is a array
7026 \define@key{PDF}{Border}{%
7027 \edef\Hy@temp{#1}%
7028 \ifx\Hy@temp\@empty
7029 \else
7030 \pdf@addtoks{[#1]}{Border}%
7031 \fi
7032 }
7033 % parameter is a dictionary
7034 \define@key{PDF}{BorderStyle}{%
7035 \edef\Hy@temp{#1}%
7036 \ifx\Hy@temp\@empty
7037 \else
7038 \pdf@addtoks{<<#1>>}{BS}%
7039 \fi
7040 }
7041 % parameter is a array
7042 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
7043 % parameter is a string
7044 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
7045 % parameter is a integer
7046 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
7047 % parameter is a array

```

```

7048 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
7049 % parameter is a string
7050 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
7051 % parameter is a string or file
7052 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
7053 % parameter is a destination
7054 \define@key{PDF}{Dest}{%
7055   \Hy@pstringdef\Hy@pstringDest{#1}%
7056   \ifx\Hy@pstringDest\@empty
7057     \Hy@pdfmarkerrortrue
7058     \Hy@Warning{Destination with empty name ignored}%
7059   \else
7060     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7061   \fi
7062 }
7063 \define@key{PDF}{DestAnchor}{%
7064   \Hy@pstringdef\Hy@pstringDest{#1}%
7065   \ifx\Hy@pstringDest\@empty
7066     \Hy@pdfmarkerrortrue
7067     \Hy@Warning{Destination with empty name ignored}%
7068   \else
7069     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7070   \fi
7071 }
7072 % parameter is a string
7073 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
7074 % parameter is a string
7075 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
7076 % parameter is a int
7077 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
7078 % parameter is a name
7079 \define@key{PDF}{AcroHighlight}{%
7080   \begingroup
7081     \edef\x{#1}%
7082     \expandafter\endgroup\ifx\x\@empty
7083     \else
7084       \pdf@addtoks{#1}{H}%
7085     \fi
7086 }
7087 % parameter is a string
7088 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
7089 % parameter is a string
7090 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
7091 % parameter is a string
7092 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7093 % parameter is a string
7094 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
7095 % parameter is a Boolean
7096 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
7097 % parameter is a integer or name
7098 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
7099 % parameter is a name
7100 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
7101 % parameter is a string
7102 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
7103 % parameter is a array
7104 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}

```

```

7105 % parameter is a integer
7106 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
7107 % parameter is a name
7108 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
7109 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
7110 % parameter is a string
7111 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
7112 % parameter is a string
7113 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
7114 % parameter is a string
7115 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
7116 % parameter is an array
7117 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}
7118 % parameter is a string
7119 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

7120 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
7121 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
7122 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
7123 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7124 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
7125 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
7126 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
7127 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7128 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
7129 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
7130 \pdfmarkbase | dvipdf
7131 \*pdfmark | dvipdf
7132 \def\Acrobatmenu#1#2{%
7133   \pdfmark[{#2}]{%
7134     linktype=menu,%
7135     pdfmark=/ANN,%
7136     AcroHighlight=\pdfhighlight,%
7137     Border=\pdfborder,%
7138     BorderStyle=\pdfborderstyle,%
7139     Action={<< /Subtype /Named /N /#1 >>},%
7140     Subtype=/Link%
7141   }%
7142 }

```

And now for some useful examples:

```

7143 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
7144 \def\PDFNextPage@[#1]#2{%
7145   \pdfmark[{#2}]{%
7146     #1,%
7147     Border=\pdfborder,%
7148     BorderStyle=\pdfborderstyle,%
7149     Color=.2 .1 .5,%
7150     pdfmark=/ANN,%
7151     Subtype=/Link,%
7152     Page=/Next%
7153   }%
7154 }
7155 \def\PDFPreviousPage{%
7156   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
7157 }
7158 \def\PDFPreviousPage@[#1]#2{%

```

```

7159 \pdfmark[{#2}]{%
7160   #1,%
7161   Border=\pdfborder,%
7162   BorderStyle=\pdfborderstyle,%
7163   Color=.4 .4 .1,%
7164   pdfmark=/ANN,%
7165   Subtype=/Link,%
7166   Page=/Prev%
7167 }%
7168 }
7169 \def\PDFOpen#1{%
7170   \pdfmark{#1,pdfmark=/DOCVIEW}%
7171 }

```

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!

```

7172 \def\PDFPage{\@ifnextchar[{\PDFPage@}{\PDFPage@[]}}
7173 \def\PDFPage@[#1]#2#3{%
7174   \let\pageref\simple@pageref
7175   \pdfmark[{#3}]{%
7176     #1,%
7177     Page={#2},%
7178     AcroHighlight=\pdfhighlight,%
7179     Border=\pdfborder,%
7180     BorderStyle=\pdfborderstyle,%
7181     Color=\pagebordercolor,%
7182     pdfmark=/ANN,%
7183     Subtype=/Link%
7184   }%
7185 }
7186 \def\simple@pageref#1{%
7187   \expandafter\ifx\csname r@#1\endcsname\relax
7188     0%
7189   \else
7190     \expandafter\expandafter\expandafter
7191       \@secondoffive\csname r@#1\endcsname
7192   \fi}

```

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

```

7193 \def\hyper@linkurl#1#2{%
7194   \begingroup
7195   \Hy@pstringdef\Hy@pstringURI{#2}%
7196   \hyper@chars
7197   \leavevmode
7198 \pdfmarkbase)
7199   \pdfmark[{#1}]{%
7200     pdfmark=/ANN,%
7201     linktype=url,%
7202     AcroHighlight=\pdfhighlight,%
7203     Border=\pdfborder,%
7204     BorderStyle=\pdfborderstyle,%
7205     Color=\urlbordercolor,%
7206     Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
7207     Subtype=/Link%
7208   }%
7209 \pdfmarkbase)
7210 \dvi pdf)

```

```

7211 \pdfmark[{#1}]{%
7212 pdfmark=/LNK,%
7213 linktype=url,%
7214 AcroHighlight=\pdfhighlight,%
7215 Border=\pdfborder,%
7216 BorderStyle=\pdfborderstyle,%
7217 Color=\urlbordercolor,%
7218 Action={URI /URI <\Hy@hstringURI>}%
7219 }%
7220 </dvipdf>
7221 \endgroup
7222 }
7223 \def\hyper@linkfile#1#2#3{%
7224 \begingroup
7225 \Hy@pstringdef\Hy@pstringF{#2}%
7226 \Hy@pstringdef\Hy@pstringD{#3}%
7227 \leavevmode
7228 <*pdfmark>
7229 \pdfmark[{#1}]{%
7230 pdfmark=/ANN,%
7231 Subtype=/Link,%
7232 AcroHighlight=\pdfhighlight,%
7233 Border=\pdfborder,%
7234 BorderStyle=\pdfborderstyle,%
7235 linktype=file,%
7236 Color=\@filebordercolor,%
7237 Action={<<
7238 /S /GoToR
7239 \ifHy@newwindow /NewWindow true \fi
7240 /F (\Hy@pstringF)
7241 /D \ifx\#3\[/0 \pdfstartview\else(\Hy@pstringD) cvn\fi
7242 >>}%
7243 }%
7244 </pdfmark>
7245 <*dvipdf>
7246 \pdfmark[{#1}]{%
7247 pdfmark=/LNK,%
7248 linktype=file,%
7249 AcroHighlight=\pdfhighlight,%
7250 Border=\pdfborder,%
7251 BorderStyle=\pdfborderstyle,%
7252 Color=\@filebordercolor,%
7253 Action={<<
7254 /S /GoToR
7255 \ifHy@newwindow /NewWindow true \fi
7256 /F (\Hy@pstringF)
7257 /D \ifx\#3\[/0 \pdfstartview\else(\Hy@pstringD) cvn\fi
7258 >>}%
7259 }%
7260 </dvipdf>
7261 \endgroup
7262 }
7263 \def\hyper@launch run:#1\#2#3{%
7264 \begingroup
7265 \Hy@pstringdef\Hy@pstringF{#1}%
7266 \Hy@pstringdef\Hy@pstringP{#3}%
7267 \leavevmode

```



```

7268 <*pdfmark>
7269   \pdfmark[{#2}]{%
7270     pdfmark=/ANN,%
7271     Subtype=/Link,%
7272     AcroHighlight=\pdfhighlight,%
7273     Border=\pdfborder,%
7274     BorderStyle=\pdfborderstyle,%
7275     linktype=file,%
7276     Color=\@filebordercolor,%
7277     Action={<<
7278       /S /Launch
7279       \ifHy@newwindow /NewWindow true \fi
7280       /F (\Hy@pstringF)
7281       \ifx\#3\%
7282       \else
7283         /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7284       \fi
7285     >>}%
7286   }%
7287 </pdfmark>
7288 <*dvipdf>
7289   \pdfmark[{#2}]{%
7290     pdfmark=/LNK,%
7291     linktype=file,%
7292     AcroHighlight=\pdfhighlight,%
7293     Border=\pdfborder,%
7294     BorderStyle=\pdfborderstyle,%
7295     Color=\@filebordercolor,%
7296     Action={<<
7297       /S /GoToR
7298       \ifHy@newwindow /NewWindow true \fi
7299       /F (\Hy@pstringF)
7300       \ifx\#3\%
7301       \else
7302         /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7303       \fi
7304     >>}%
7305   }%
7306 </dvipdf>
7307 \endgroup
7308 }
7309 </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.

```

7310 <*dvips>
7311 \input{pdfmark.def}%
7312 \ifx\@pdfproducer\relax
7313   \def\@pdfproducer{dvips + Distiller}
7314 \fi
7315 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%

```

```

7316 \def\headerps@out#1{\special{! #1}}%
7317 \providecommand\@pdfborder{0 0 12}
7318 \providecommand*\@pdfborderstyle{}
7319 \providecommand\@pdfview{XYZ}
7320 \providecommand\@pdfviewparams{ H.V}

7321 \AtBeginDvi{%
7322   \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.

```

7323   /DvipsToPDF { 72.27 mul Resolution div } def
7324   /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.

```

7325   /HyperBorder { 1 PDFToDvips } def
7326   /H.V {pdf@hoff pdf@voff null} def
7327   /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

```

7328   /H.S {
7329     currentpoint
7330     HyperBorder add /pdf@lly exch def
7331     dup DvipsToPDF /pdf@hoff exch def
7332     HyperBorder sub /pdf@llx exch def
7333   } 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`

```

7334   /H.L {
7335     2 sub dup
7336     /HyperBasePt exch def
7337     PDFToDvips /HyperBaseDvips exch def
7338     currentpoint
7339     HyperBaseDvips sub /pdf@ury exch def
7340     /pdf@urx exch def
7341   } def
7342   /H.A {
7343     H.L
7344 % |pdf@voff| = the distance from the top of the page to a point
7345 % |\baselineskip| above the current point in PDF coordinates

```

```

7346     currentpoint exch pop
7347     vsize 72 sub exch DvipsToPDF
7348     HyperBasePt sub % baseline skip
7349     sub /pdf@voff exch def
7350   } def
7351   /H.R {
7352     currentpoint
7353     HyperBorder sub /pdf@ury exch def
7354     HyperBorder add /pdf@urx exch def
7355   % | /pdf@voff | = the distance from the top of the page to the current point, in
7356   % PDF coordinates
7357     currentpoint exch pop vsize 72 sub
7358     exch DvipsToPDF sub /pdf@voff exch def
7359   } def
7360   systemdict /pdfmark known
7361   {
7362     userdict /?pdfmark systemdict /exec get put
7363   }{
7364     userdict /?pdfmark systemdict /pop get put
7365     userdict /pdfmark systemdict /cleartomark get put
7366   }
7367   ifelse
7368   }%
7369 }
7370 \AfterBeginDocument{%
7371   \ifx\special@paper\@empty\else
7372     \ifHy@setpagesize
7373       \special{papersize=\special@paper}%
7374     \fi
7375     \Hy@DisableOption{setpagesize}%
7376   \fi
7377 }
7378 </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.

```

7379 < *vtexpdfmark >
7380 \input{pdfmark.def}%
7381 \ifx\@pdfproducer\relax
7382   \ifnum\OpMode=\@ne
7383     \def\@pdfproducer{VTeX}
7384   \else
7385     \def\@pdfproducer{VTeX + Distiller}
7386   \fi
7387 \fi
7388 \def\literalps@out#1{\special{pS:#1}}%
7389 \def\headerps@out#1{\immediate\special{pS:#1}}%
7390 \providecommand\@pdfborder{0 0 1}
7391 \providecommand*\@pdfborderstyle{}
7392 \providecommand\@pdfview{XYZ}
7393 \providecommand\@pdfviewparams{ H.V}
7394 \AtBeginDvi{%

```

```

7395 \headerps@out{%
7396     /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.

```

7397     /HyperBorder {1} def
7398     /H.V {pdf@hoff pdf@voff null} def
7399     /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

7400     /H.S {
7401         currentpoint
7402         HyperBorder sub
7403         /pdf@lly exch def
7404         dup 72 add /pdf@hoff exch def
7405         HyperBorder sub
7406         /pdf@llx exch def
7407     } def

```

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

```

7408     /H.L {
7409         2 sub
7410         /HyperBasePt exch def
7411         currentpoint
7412         HyperBasePt add HyperBorder add
7413         /pdf@ury exch def
7414         HyperBorder add
7415         /pdf@urx exch def
7416     } def
7417     /H.A {
7418         H.L
7419         currentpoint exch pop
7420         vsize 72 sub exch
7421         HyperBasePt add add
7422         /pdf@voff exch def
7423     } def

```

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

```

7424     /H.R {
7425         currentpoint
7426         HyperBorder add
7427         /pdf@ury exch def
7428         HyperBorder add
7429         /pdf@urx exch def
7430         currentpoint exch pop vsize 72 sub add
7431         /pdf@voff exch def
7432     } def
7433     systemdict /pdfmark known
7434     {
7435         userdict /?pdfmark systemdict /exec get put
7436     }{
7437         userdict /?pdfmark systemdict /pop get put
7438         userdict /pdfmark systemdict /cleartomark get put
7439     }
7440     ifelse
7441 }%

```

```

7442 }
7443 </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.

```

7444 <*textures>
7445 \begingroup
7446   \obeylines %
7447   \gdef\Hy@ps@CR{\noexpand
7448     }%
7449 \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`.

```

7450 \def\literalps@out#1{%
7451   \special{postscript 0 0 transform}%
7452   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7453 }%
7454 %

```

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.

```

7455 \def\headerps@out#1{%
7456   \special{%
7457     prepostscript TeXdict begin\Hy@ps@CR
7458       #1\Hy@ps@CR
7459     end%
7460   }%
7461 }%
7462 %

```

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.

```

7463 \AtBeginDvi{%
7464   \headerps@out{%
7465     /betterpdfmark {%
7466       systemdict begin
7467         dup /BP eq

```

```

7468      {cleartomark gsave nulldevice []
7469      {dup /EP eq
7470      {cleartomark cleartomark grestore}
7471      {cleartomark}
7472      ifelse
7473      }ifelse
7474      end
7475      }def\Hy@ps@CR
7476      __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7477      systemdict /pdfmark known
7478      {
7479      userdict /?pdfmark systemdict /load get put
7480      }{
7481      userdict /?pdfmark systemdict /pop get put
7482      }
7483      ifelse
7484      }% end of \headerps@out
7485      }% end of \AtBeginDvi
7486      %
7487      \input{pdfmark.def}%
7488      %
7489      \ifx\@pdfproducer\relax
7490      \def\@pdfproducer{Textures + Distiller}%
7491      \fi
7492      \providecommand\@pdfborder{0 0 1}
7493      \providecommand*\@pdfborderstyle{}
7494      \providecommand\@pdfview{XYZ}
7495      \providecommand\@pdfviewparams{ H.V}
7496      %

```

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 .

```

7497 \headerps@out{%

```

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

```

7498 /vsize {\Hy@pageheight} def
7499 /DvipsToPDF {} def
7500 /PDFToDvips {} def
7501 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7502 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7503 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7504 /H.S {
7505   currentpoint
7506   HyperBorder add /pdf@lly exch def
7507   dup DvipsToPDF /pdf@hoff exch def
7508   HyperBorder sub /pdf@llx exch def
7509 } def\Hy@ps@CR
7510 /H.L {
7511   2 sub
7512   PDFToDvips /HyperBase exch def
7513   currentpoint
7514   HyperBase sub /pdf@ury exch def
7515   /pdf@urx exch def
7516 } def\Hy@ps@CR
7517 /H.A {

```

```

7518   H.L
7519   currentpoint exch pop
7520   vsize 72 sub exch DvipsToPDF
7521   HyperBase sub % baseline skip
7522   sub /pdf@voff exch def
7523 } def\Hy@ps@CR
7524 /H.R {
7525   currentpoint
7526   HyperBorder sub /pdf@ury exch def
7527   HyperBorder add /pdf@urx exch def
7528   currentpoint exch pop vsize 72 sub
7529   exch DvipsToPDF sub /pdf@voff exch def
7530 } def\Hy@ps@CR
7531 }

7532 \AfterBeginDocument{%
7533   \ifHy@colorlinks
7534     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7535   \fi
7536 }

```

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.

```

7537 \expandafter\let\expandafter\keepPDF@SetupDoc
7538   \csname PDF@SetupDoc\endcsname
7539 \def\PDF@SetupDoc{%
7540   \ifx\@baseurl\@empty
7541   \else
7542     \special{html:<base href="\@baseurl">}%
7543   \fi
7544   \keepPDF@SetupDoc
7545 }

7546 \def\hyper@anchor#1{%
7547   \Hy@SaveLastskip
7548   \begingroup
7549     \let\protect=\string
7550     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7551   \endgroup
7552   \Hy@activeanchortrue
7553   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7554   \special{html:</a>}%
7555   \Hy@activeanchorfalse
7556   \Hy@RestoreLastskip
7557 }

7558 \def\hyper@anchorstart#1{%
7559   \Hy@SaveLastskip
7560   \begingroup
7561     \hyper@chars
7562     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7563   \endgroup
7564   \Hy@activeanchortrue
7565 }

7566 \def\hyper@anchorend{%
7567   \special{html:</a>}%
7568   \Hy@activeanchorfalse
7569   \Hy@RestoreLastskip
7570 }

7571 \def\@urltype{url}

```

```

7572 \def\hyper@linkstart#1#2{%
7573   \expandafter\Hy@colorlink\csname @#1color\endcsname
7574   \def\Hy@tempa{#1}%
7575   \ifx\Hy@tempa\@urltype
7576     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7577   \else
7578     \begingroup
7579     \hyper@chars
7580     \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7581   \endgroup
7582   \fi
7583 }
7584 \def\hyper@linkend{%
7585   \special{html:</a>}%
7586   \Hy@endcolorlink
7587 }
7588 \def\hyper@linkfile#1#2#3{%
7589   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7590 }
7591 \def\hyper@linkurl#1#2{%
7592   \leavevmode
7593   \ifHy@raiselinks
7594     \setbox\@tempboxa=\color@hbox #1\color@endbox
7595     \@linkdim\dp\@tempboxa
7596     \lower\@linkdim\hbox{%
7597       \hyper@chars
7598       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7599     }%
7600     \Hy@colorlink\@urlcolor#1%
7601     \@linkdim\ht\@tempboxa
7602     \advance\@linkdim by -6.5\p@
7603     \raise\@linkdim\hbox{\special{html:</a>}}%
7604     \Hy@endcolorlink
7605   \else
7606     \begingroup
7607     \hyper@chars
7608     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7609     \Hy@colorlink\@urlcolor#1%
7610     \special{html:</a>}%
7611     \Hy@endcolorlink
7612   \endgroup
7613   \fi
7614 }
7615 \def\hyper@link#1#2#3{%
7616   \hyper@linkurl{#3}{\##2}%
7617 }
7618 \def\hyper@image#1#2{%
7619   \begingroup
7620   \hyper@chars
7621   \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7622   \endgroup
7623 }
7624 </textures>

```

45.12 dvipsone

```

7625 % \subsection{dvipsone driver}

```



```

7626 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
7627 % |\special| commands.
7628 (*dvipsone)
7629 \providecommand\@pdfborder{0 0 65781}
7630 \providecommand*\@pdfborderstyle{}
7631 \input{pdfmark.def}%
7632 \ifx\@pdfproducer\relax
7633   \def\@pdfproducer{dvipsone + Distiller}
7634 \fi
7635 \def\literalps@out#1{\special{ps:#1}}%
7636 \def\headerps@out#1{\special{! #1}}%
7637 \def\PDF@FinishDoc{%
7638   \Hy@UseMaketitleInfos
7639   \special{PDF: Keywords \@pdfkeywords}%
7640   \special{PDF: Title \@pdftitle}%
7641   \special{PDF: Creator \@pdfcreator}%
7642   \ifx\@pdfcreationdate\@empty
7643   \else
7644     \special{PDF: CreationDate \@pdfcreationdate}%
7645   \fi
7646   \ifx\@pdfmoddate\@empty
7647   \else
7648     \special{PDF: ModDate \@pdfmoddate}%
7649   \fi
7650   \special{PDF: Author \@pdfauthor}%
7651   \ifx\@pdfproducer\relax
7652   \else
7653     \special{PDF: Producer \@pdfproducer}%
7654   \fi
7655   \special{PDF: Subject \@pdfsubject}%
7656   \Hy@DisableOption{pdfauthor}%
7657   \Hy@DisableOption{pdftitle}%
7658   \Hy@DisableOption{pdfsubject}%
7659   \Hy@DisableOption{pdfcreator}%
7660   \Hy@DisableOption{pdfcreationdate}%
7661   \Hy@DisableOption{pdfmoddate}%
7662   \Hy@DisableOption{pdfproducer}%
7663   \Hy@DisableOption{pdfkeywords}%
7664 }
7665 \def\PDF@SetupDoc{%
7666   \pdfmark{%
7667     pdfmark=/DOCVIEW,
7668     Page=\@pdfstartpage,
7669     View=\@pdfstartview,
7670     PageMode=/\@pdfpagemode
7671   }%
7672   \ifx\@pdfpagescrop\@empty
7673   \else
7674     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7675   \fi
7676   \edef\Hy@temp{%
7677     \ifHy@toolbar\else /HideToolbar true\fi
7678     \ifHy@menubar\else /HideMenubar true\fi
7679     \ifHy>windowui\else /HideWindowUI true\fi
7680     \ifHy@fitwindow /FitWindow true\fi
7681     \ifHy@centerwindow /CenterWindow true\fi
7682     \ifHy@displaydoctitle /DisplayDocTitle true\fi

```

```

7683 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7684 \Hy@UseNameKey{Direction}\@pdfdirection
7685 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7686 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7687 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7688 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7689 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7690 \Hy@UseNameKey{Duplex}\@pdfduplex
7691 \ifx\@pdfpicktraybypdfsize\@empty
7692 \else
7693 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7694 \fi
7695 \ifx\@pdfprintpagerange\@empty
7696 \else
7697 /PrintPageRange[\@pdfprintpagerange]%
7698 \fi
7699 \ifx\@pdfnumcopies\@empty
7700 \else
7701 /NumCopies \@pdfnumcopies
7702 \fi
7703 }%
7704 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7705 \pdfmark{%
7706 pdfmark=/PUT,%
7707 Raw={%
7708 \string{Catalog\string} <<
7709 \ifx\Hy@temp\@empty
7710 \else
7711 /ViewerPreferences<<\Hy@temp>>%
7712 \fi
7713 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7714 \ifx\@pdflang\@empty
7715 \else
7716 /Lang(\@pdflang)%
7717 \fi
7718 \ifx\@baseurl\@empty
7719 \else
7720 /URI << /Base (\Hy@pstringB) >>%
7721 \fi
7722 >>%
7723 }%
7724 }%
7725 }
7726 \providecommand\@pdfview{XYZ}
7727 \providecommand\@pdfviewparams{ %
7728 gsave revscl currentpoint grestore
7729 72 add exch pop null exch null
7730 }

```

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 .

```
7731 \special{headertext=
```

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

```
7732 /DvipsToPDF { 65781 div } def
```

```

7733 /PDFToDvips { 65781 mul } def
7734 /HyperBorder { 1 PDFToDvips } def
7735 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7736 /H.S {
7737   currentpoint
7738   HyperBorder add /pdf@lly exch def
7739   dup DvipsToPDF /pdf@hoff exch def
7740   HyperBorder sub /pdf@llx exch def
7741 } def
7742 /H.L {
7743   2 sub
7744   PDFToDvips /HyperBase exch def
7745   currentpoint
7746   HyperBase sub /pdf@ury exch def
7747   /pdf@urx exch def
7748 } def
7749 /H.A {
7750   H.L
7751   currentpoint exch pop
7752   HyperBase sub % baseline skip
7753   DvipsToPDF /pdf@voff exch def
7754 } def
7755 /H.R {
7756   currentpoint
7757   HyperBorder sub /pdf@ury exch def
7758   HyperBorder add /pdf@urx exch def
7759   currentpoint exch pop DvipsToPDF /pdf@voff exch def
7760 } def
7761 systemdict
7762 /pdfmark known
7763 {
7764   userdict /?pdfmark /exec load put
7765 }{
7766   userdict /?pdfmark /pop load put
7767   userdict /pdfmark systemdict /cleartomark get put
7768 }
7769 ifelse
7770 }
7771 </dvipsone>
7772 <*dvipdf>
7773 \def\literalps@out#1{\special{pdf: #1}}%
7774 \providecommand\@pdfborder{0 0 1}
7775 \providecommand*\@pdfborderstyle{}
7776 </dvipdf>

```

45.13 TeX4ht

```

7777 <*tex4ht>
7778 \@ifpackageloaded{tex4ht}
7779 {\typeout{hyperref tex4ht: tex4ht already loaded}}%
7780 {\RequirePackage[hx4ht]{tex4ht}}
7781 \def\PDF@FinishDoc{}
7782 \def\PDF@SetupDoc{%
7783   \ifx\@baseurl\@empty
7784   \else
7785     \special{t4ht=<base href="\@baseurl">}%
7786   \fi
7787 }

```

```

7788 \def\hyper@anchor#1{%
7789   \Hy@SaveLastskip
7790   \begingroup
7791     \let\protect=\string
7792     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
7793   \endgroup
7794   \Hy@activeanchortrue
7795   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7796   \special{t4ht=</a>}%
7797   \Hy@activeanchorfalse
7798   \Hy@RestoreLastskip
7799 }
7800 \def\hyper@anchorstart#1{%
7801   \Hy@SaveLastskip
7802   \begingroup
7803     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
7804   \endgroup
7805   \Hy@activeanchortrue
7806 }
7807 \def\hyper@anchorend{%
7808   \special{t4ht=</a>}%
7809   \Hy@activeanchorfalse
7810   \Hy@RestoreLastskip
7811 }
7812 \def\@urlltype{url}
7813 \def\hyper@linkstart#1#2{%
7814   \expandafter\Hy@colorlink\csname @#1color\endcsname
7815   \def\Hy@tempa{#1}%
7816   \ifx\Hy@tempa\@urlltype
7817     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7818   \else
7819     {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
7820   \fi
7821 }
7822 \def\hyper@linkend{%
7823   \special{t4ht=</a>}%
7824   \Hy@endcolorlink
7825 }
7826 \def\hyper@linkfile#1#2#3{%
7827   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7828 }
7829 \def\hyper@linkurl#1#2{%
7830   \leavevmode
7831   \ifHy@raiselinks
7832     \setbox\@tempboxa=\color@hbox #1\color@endbox
7833     \@linkdim\dp\@tempboxa
7834     \lower\@linkdim\hbox{%
7835       \begingroup
7836         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7837       \endgroup
7838     }%
7839     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7840     \@linkdim\ht\@tempboxa
7841     \advance\@linkdim by -6.5\p@
7842     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
7843   \else
7844     \begingroup

```

```

7845 \hyper@chars
7846 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7847 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7848 \special{t4ht=</a>}%
7849 \endgroup
7850 \fi
7851 }
7852 \def\hyper@link#1#2#3{%
7853 \hyper@linkurl{#3}{\##2}%
7854 }
7855 \def\hyper@image#1#2{%
7856 \begingroup
7857 \hyper@chars
7858 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
7859 \endgroup
7860 }
7861 \let\autoref\ref
7862 \ifx \rEfLiNK \UnDef
7863 \def\rEfLiNK #1#2{#2}%
7864 \fi
7865 \def\backref#1{}
7866 </tex4ht>
7867 <*tex4htcfg>
7868 \IfFileExists{\jobname.cfg}{\endinput}{}
7869 \Preamble{html}
7870 \begin{document}
7871 \EndPreamble
7872 \def\TeX{TeX}
7873 \def\OMEGA{\Omega}
7874 \def\LaTeX{LaTeX}
7875 \def\LaTeXe{\LaTeX2e}
7876 \def\eTeX{e-TeX}
7877 \def\MF{Metafont}
7878 \def\MP{Metapost}
7879 </tex4htcfg>

```

46 Driver-specific form support

46.1 pdfmarks

```

7880 <*pdfmark>
7881 \long\def\@Form[#1]{%
7882 \AtBeginDvi{%
7883 \headerps@out{%
7884 [ /_objdef {pdfDocEncoding}
7885 /type /dict
7886 /OBJ pdfmark
7887 [ {pdfDocEncoding}
7888 << /Type /Encoding
7889 /Differences [ 24 /breve /caron /circumflex /dotaccent
7890 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7891 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7892 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7893 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7894 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7895 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
7896 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
7897 /degree /plusminus /twosuperior /threesuperior /acute /mu 183

```

```

7898 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
7899 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
7900 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
7901 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
7902 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
7903 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
7904 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /ccedilla
7905 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
7906 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
7907 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
7908 /yacute /thorn /ydieresis ]
7909 >>
7910 /PUT pdfmark
7911 [ /_objdef {ZaDb}
7912   /type /dict
7913 /OBJ pdfmark
7914 [ {ZaDb}
7915   <<
7916     /Type /Font
7917     /Subtype /Type1
7918     /Name /ZaDb
7919     /BaseFont /ZapfDingbats
7920   >>
7921 /PUT pdfmark
7922 [ /_objdef {Helv}
7923   /type /dict
7924 /OBJ pdfmark
7925 [ {Helv}
7926   <<
7927     /Type /Font
7928     /Subtype /Type1
7929     /Name /Helv
7930     /BaseFont /Helvetica
7931     /Encoding {pdfDocEncoding}
7932   >>
7933 /PUT pdfmark
7934 [ /_objdef {aform}
7935   /type /dict
7936 /OBJ pdfmark
7937 [ /_objdef {afields}
7938   /type /array
7939 /OBJ pdfmark
7940 {
7941   [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
7942   1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
7943   [/EP pdfmark
7944   [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
7945   1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
7946   [/EP pdfmark
7947   [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
7948   100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
7949   lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
7950   lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7951   /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
7952   [/EP pdfmark
7953   [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
7954   250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246

```

```

7955 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
7956 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7957 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
7958 [/EP pdfmark
7959 } ?pdfmark
7960 [ {aform}
7961 <<
7962   /Fields {afields}
7963   /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
7964   /DA (/Helv 10 Tf 0 g )
7965   /CO {corder}
7966   /NeedAppearances true
7967 >>
7968 /PUT pdfmark
7969 [ \string{Catalog\string}
7970 <<
7971   /AcroForm {aform}
7972 >>
7973 /PUT pdfmark
7974 [ /_objdef {corder} /type /array /OBJ pdfmark    % dps
7975 }}%
7976 \setkeys{Form}{#1}%
7977 }
7978 \def\@endForm{}
7979 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7980 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
7981 }
7982 \def\@TextField[#1]#2{% parameters, label
7983 \def\Fld@name{#2}%
7984 \def\Fld@default{}%
7985 \let\Fld@value\@empty
7986 \def\Fld@width{\DefaultWidthofText}%
7987 \def\Fld@height{\DefaultHeightofText}%
7988 \ifFld@multiline
7989 \begingroup
7990 \dimen@=\DefaultHeightofText
7991 \dimen@=4\dimen@
7992 \edef\x{\endgroup
7993 \def\noexpand\Fld@height{\the\dimen@}%
7994 }%
7995 \x
7996 \fi
7997 \bgroup
7998 \Field@toks={ }%
7999 \setkeys{Field}{#1}%
8000 \ifFld@hidden\def\Fld@width{1sp}\fi
8001 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8002 \LayoutTextField{#2}{%
8003 \Hy@escapeform\PDFForm@Text
8004 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
8005 pdfmark=/ANN,Raw={\PDFForm@Text}%
8006 }%
8007 }%
8008 \egroup
8009 }
8010 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8011 \def\Fld@name{#2}%

```

```

8012 \let\Fld@default\relax
8013 \let\Fld@value\relax
8014 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8015 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8016 \bgroup
8017   \Fld@menulength=0
8018   \@tempdima\z@
8019   \for\@curropt:=#3\do{%
8020     \expandafter\Fld@checkequals\@curropt==\%
8021     \Hy@StepCount\Fld@menulength
8022     \settowidth{\@tempdimb}{\@currDisplay}%
8023     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8024   }%
8025   \advance\@tempdima by 15\p@
8026   \Field@toks={ }%
8027   \setkeys{Field}{#1}%
8028   \ifFld@hidden\def\Fld@width{1sp}\fi
8029   \LayoutChoiceField{#2}{%
8030     \ifFld@radio
8031       \@@Radio{#3}%
8032     \else
8033       {%
8034         \ifdim\Fld@width<\@tempdima
8035           \ifdim\@tempdima<1cm\@tempdima1cm\fi
8036           \edef\Fld@width{\the\@tempdima}%
8037         \fi
8038         \def\Fld@flags{%
8039           \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8040           \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8041           \ifx\Fld@flags\@empty
8042             \@tempdima=\the\Fld@menulength\Fld@charsize
8043             \advance\@tempdima by \Fld@borderwidth bp
8044             \advance\@tempdima by \Fld@borderwidth bp
8045             \edef\Fld@height{\the\@tempdima}%
8046           \fi
8047           \@@ListBox{#3}%
8048         }%
8049       \fi
8050     }%
8051   \egroup
8052 }
8053 \def\@@Radio#1{%
8054   \Fld@listcount=0
8055   \for\@curropt:=#1\do{%
8056     \expandafter\Fld@checkequals\@curropt==\%
8057     \Hy@StepCount\Fld@listcount
8058     \@currDisplay\space
8059     \Hy@escapeform\PDFForm@Radio
8060     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
8061       pdfmark=/ANN,%
8062       Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
8063     } % deliberate space between radio buttons
8064   }%
8065 }
8066 \newcount\Fld@listcount
8067 \def\@@ListBox#1{%
8068   \Choice@toks={ }%

```



```

8069 \Fld@listcount=0
8070 \@for\@curropt:=#1\do{%
8071   \expandafter\Fld@checkequals\@curropt==\%
8072   \Hy@StepCount\Fld@listcount
8073   \edef\@processme{%
8074     \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8075   }\@processme
8076 }%
8077 \Hy@escapeform\PDFForm@List
8078 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
8079   pdfmark=/ANN,Raw={\PDFForm@List}%
8080 }%
8081 }
8082 \def\@PushButton[#1]#2{% parameters, label
8083   \def\Fld@name{#2}%
8084   \bgroup
8085     \Field@toks={ }%
8086     \setkeys{Field}{#1}%
8087     \ifFld@hidden\def\Fld@width{1sp}\fi
8088     \LayoutPushButtonField{%
8089       \Hy@escapeform\PDFForm@Push
8090       \pdfmark[\MakeButtonField{#2}]{%
8091         pdfmark=/ANN,Raw={\PDFForm@Push}%
8092       }%
8093     }%
8094   \egroup
8095 }
8096 \def\@Submit[#1]#2{%
8097   \Field@toks={ }%
8098   \def\Fld@width{\DefaultWidthofSubmit}%
8099   \def\Fld@height{\DefaultHeightofSubmit}%
8100   \bgroup
8101     \def\Fld@name{Submit}%
8102     \setkeys{Field}{#1}%
8103     \ifFld@hidden\def\Fld@width{1sp}\fi
8104     \Hy@escapeform\PDFForm@Submit
8105     \pdfmark[\MakeButtonField{#2}]{%
8106       pdfmark=/ANN,%
8107       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
8108     }%
8109   \egroup
8110 }
8111 \def\@Reset[#1]#2{%
8112   \Field@toks={ }%
8113   \def\Fld@width{\DefaultWidthofReset}%
8114   \def\Fld@height{\DefaultHeightofReset}%
8115   \bgroup
8116     \def\Fld@name{Reset}%
8117     \setkeys{Field}{#1}%
8118     \ifFld@hidden\def\Fld@width{1sp}\fi
8119     \Hy@escapeform\PDFForm@Reset
8120     \pdfmark[\MakeButtonField{#2}]{%
8121       pdfmark=/ANN,Raw={\PDFForm@Reset}%
8122     }%
8123   \egroup
8124 }
8125 \def\@CheckBox[#1]#2{% parameters, label

```

```

8126 \def\Fld@name{#2}%
8127 \def\Fld@default{0}%
8128 \bgroup
8129 \def\Fld@width{\DefaultWidthofCheckBox}%
8130 \def\Fld@height{\DefaultHeightofCheckBox}%
8131 \Field@toks={ }%
8132 \setkeys{Field}{#1}%
8133 \ifFld@hidden\def\Fld@width{1sp}\fi
8134 \LayoutCheckField{#2}{%
8135 \Hy@escapeform\PDFForm@Check
8136 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
8137 pdfmark=/ANN,Raw={\PDFForm@Check}%
8138 }%
8139 }%
8140 \egroup
8141 }
8142 </pdfmark>

```

46.2 dvipdf

```

8143 <*dvipdf>
8144 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
8145 \def\@endForm{}
8146 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8147 \typeout{Sorry, dvipdf does not support FORM gauges}%
8148 }
8149 \def\@TextField[#1]#2{% parameters, label
8150 \typeout{Sorry, dvipdf does not support FORM text fields}%
8151 }
8152 \def\@CheckBox[#1]#2{% parameters, label
8153 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
8154 }
8155 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8156 \typeout{Sorry, dvipdf does not support FORM choice menus}%
8157 }
8158 \def\@PushButton[#1]#2{% parameters, label
8159 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
8160 }
8161 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8162 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8163 </dvipdf>

```

46.3 HyperTeX

```

8164 <*hypertext>
8165 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
8166 \def\@endForm{}
8167 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8168 \typeout{Sorry, HyperTeX does not support FORM gauges}%
8169 }
8170 \def\@TextField[#1]#2{% parameters, label
8171 \typeout{Sorry, HyperTeX does not support FORM text fields}%
8172 }
8173 \def\@CheckBox[#1]#2{% parameters, label
8174 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
8175 }
8176 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8177 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
8178 }

```

```

8179 \def\@PushButton[#1]#2{% parameters, label
8180   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
8181 }
8182 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8183 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8184 \end{hypertex}

```

46.4 TeX4ht

```

8185 \def\@Form[#1]{%
8186   \setkeys{Form}{#1}%
8187   \HCode{<form action="\Form@action" method="\Form@method">}%
8188 }
8189 \def\@endForm{\HCode{</form>}}
8190 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8191   \typeout{Sorry, TeX4ht does not support gauges}%
8192 }
8193 \def\@TextField[#1]#2{% parameters, label
8194   \let\Hy@reserved@a\@empty
8195   \def\Fld@name{#2}%
8196   \def\Fld@default{}%
8197   \bgroup
8198     \Field@toks={ }%
8199     \setkeys{Field}{#1}%
8200     \HCode{<label for="\Fld@name">#2</label>}%
8201     \ifFld@password
8202       \@@PasswordField
8203     \else
8204       \@@TextField
8205     \fi
8206   \egroup
8207 }
8208 \def\@@PasswordField{%
8209   \HCode{%
8210     <input type="password"
8211       id="\Fld@name"
8212       name="\Fld@name"
8213       \ifFld@hidden type="hidden"\fi
8214       value="\Fld@default"
8215       \the\Field@toks
8216     >%
8217   }%
8218 }
8219 \def\@@TextField{%
8220   \ifFld@multiline
8221     \HCode{<textarea
8222       \ifFld@readonly readonly \fi
8223       id="\Fld@name"
8224       name="\Fld@name"
8225       \ifFld@hidden type="hidden"\fi
8226       \the\Field@toks>%
8227     }%
8228     \Fld@default
8229     \HCode{</textarea>}%
8230   \else
8231     \HCode{<input type="text"
8232       \ifFld@readonly readonly \fi

```

```

8234         id="\Fld@name"
8235         name="\Fld@name"
8236         \ifFld@hidden type="hidden"\fi
8237         value="\Fld@default" \the\Field@toks>
8238     }%
8239 \fi
8240 }
8241 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8242 \def\Fld@name{#2}%
8243 \def\Fld@default{}%
8244 \let\Hy@reserved@a\relax
8245 \bgroup
8246 \expandafter\Fld@findlength#3\\%
8247 \Field@toks={ }%
8248 \setkeys{Field}{#1}%
8249 #2%
8250 \ifFld@radio
8251 \expandafter\@@Radio#3\\%
8252 \else
8253 \expandafter\@@Menu#3\\%
8254 \fi
8255 \egroup
8256 }
8257 \def\Fld@findlength#1\\{%
8258 \Fld@menulength=0
8259 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
8260 }
8261 \def\@@Menu#1\\{%
8262 \HCode{<select size="\the\Fld@menulength"
8263     name="\Fld@name" \the\Field@toks>}%
8264 \@for\@curropt:=#1\do{%
8265 \expandafter\Fld@checkequals\@curropt==\\%
8266 \HCode{<option
8267     \ifx\@curropt\Fld@default selected \fi
8268     value="\@currValue">\@currDisplay</option>%
8269 }%
8270 }%
8271 \HCode{</select>}}%
8272 }
8273 \def\@@Radio#1\\{%
8274 \@for\@curropt:=#1\do{%
8275 \expandafter\Fld@checkequals\@curropt==\\%
8276 \HCode{<input type="radio"
8277     \ifx\@curropt\Fld@default checked \fi
8278     name="\Fld@name"
8279     value="\@currValue"
8280     \the\Field@toks>%
8281 }%
8282 \@currDisplay
8283 }%
8284 }
8285 \def\@PushButton[#1]#2{% parameters, label
8286 \def\Fld@name{#2}%
8287 \bgroup
8288 \Field@toks={ }%
8289 \setkeys{Field}{#1}%
8290 \HCode{<input type="button"

```

```

8291     name="\Fld@name"
8292     value="#2"
8293     \the\Fld@toks>%
8294   }%
8295   \HCode{</button>}%
8296 \egroup
8297 }
8298 \def\@Submit[#1]#2{%
8299   \HCode{<button type="submit">#2</button>}%
8300 }
8301 \def\@Reset[#1]#2{%
8302   \HCode{<button type="reset">#2</button>}%
8303 }
8304 \def\@CheckBox[#1]#2{% parameters, label
8305   \let\Hy@reserved@a\@empty
8306   \def\Fld@name{#2}%
8307   \def\Fld@default{0}%
8308   \bgroup
8309     \Fld@toks={ }%
8310     \setkeys{Field}{#1}%
8311     \HCode{<input type="checkbox"
8312       \ifFld@checked checked \fi
8313       \ifFld@disabled disabled \fi
8314       \ifFld@readonly readonly \fi
8315       name="\Fld@name"
8316       \ifFld@hidden type="hidden"\fi
8317       value="\Fld@default"
8318       \the\Fld@toks>%
8319     #2%
8320   }%
8321 \egroup
8322 }
8323 </tex4ht>

```

46.5 pdfTeX

```

8324 <*pdfTeX>
8325 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8326   \typeout{Sorry, pdfTeX does not support FORM gauges}%
8327 }
8328 \def\MakeFieldObject#1#2{\sbox0{#1}%
8329   \immediate\pdfxform0 %
8330   \expandafter\edef\csname #2Object\endcsname{%
8331     \the\pdflastxform\space 0 R%
8332   }%
8333 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
8334 }%
8335 \def\@Form[#1]{%
8336   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
8337   \setkeys{Form}{#1}%
8338   \ifnum\pdfTeXversion>13
8339     \pdfrefobj\OBJ@pdfdocencoding
8340     \pdfrefobj\OBJ@ZaDb
8341     \pdfrefobj\OBJ@Helv
8342     \pdfrefobj\OBJ@acroform
8343   \fi
8344   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8345   \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

8346 \beginpgroup
8347 \fontfamily{pzd}%
8348 \fontencoding{U}%
8349 \fontseries{m}%
8350 \fontshape{n}%
8351 \selectfont
8352 \char123 %
8353 \endpgroup
8354 }{Ding}%
8355 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8356 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8357 }
8358 \def\@endForm{}
8359 \def\@TextField[#1]#2{% parameters, label
8360 \def\Fld@name{#2}%
8361 \def\Fld@default{}%
8362 \let\Fld@value\@empty
8363 \def\Fld@width{\DefaultWidthofText}%
8364 \def\Fld@height{\DefaultHeightofText}%
8365 \ifFld@multiline
8366 \beginpgroup
8367 \dimen@=\DefaultHeightofText
8368 \dimen@=4\dimen@
8369 \edef\x{\endpgroup
8370 \def\noexpand\Fld@height{\the\dimen@}%
8371 }%
8372 \x
8373 \fi
8374 \bgroup
8375 \Field@toks={ }%
8376 \setkeys{Field}{#1}%
8377 \ifFld@hidden\def\Fld@width{1sp}\fi
8378 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8379 \LayoutTextField{#2}{%
8380 \Hy@escapeform\PDFForm@Text
8381 \pdfstartlink user {\PDFForm@Text}\relax
8382 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8383 }%
8384 \egroup
8385 }
8386 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8387 \def\Fld@name{#2}%
8388 \let\Fld@default\relax
8389 \let\Fld@value\relax
8390 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8391 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8392 \bgroup
8393 \Fld@menulength=0
8394 \@tempdima\z@
8395 \@for\@curropt:=#3\do{%
8396 \expandafter\Fld@checkequals\@curropt==\%
8397 \Hy@StepCount\Fld@menulength
8398 \settowidth{\@tempdimb}{\@currDisplay}%
8399 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8400 }%
8401 \advance\@tempdima by 15\p@

```

```

8402 \Field@toks={ }%
8403 \setkeys{Field}{#1}%
8404 \ifFld@hidden\def\Fld@width{1sp}\fi
8405 \ifx\Fld@value\relax
8406 \let\Fld@value\Fld@default
8407 \fi
8408 \LayoutChoiceField{#2}{%
8409 \ifFld@radio
8410 \@@Radio{#3}%
8411 \else
8412 {%
8413 \ifdim\Fld@width<\@tempdima
8414 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8415 \edef\Fld@width{\the\@tempdima}%
8416 \fi
8417 \def\Fld@flags{}%
8418 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8419 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8420 \ifx\Fld@flags\@empty
8421 \@tempdima=\the\Fld@menulength\Fld@charsize
8422 \advance\@tempdima by \Fld@borderwidth bp
8423 \advance\@tempdima by \Fld@borderwidth bp
8424 \edef\Fld@height{\the\@tempdima}%
8425 \fi
8426 \@@ListBox{#3}%
8427 }%
8428 \fi
8429 }%
8430 \egroup
8431 }
8432 \def\@@Radio#1{%
8433 \Fld@listcount=0
8434 \@for\@curropt:=#1\do{%
8435 \expandafter\Fld@checkequals\@curropt==\%
8436 \Hy@StepCount\Fld@listcount
8437 \@currDisplay\space
8438 \leavevmode
8439 \Hy@escapeform\PDFForm@Radio
8440 \pdfstartlink user {%
8441 \PDFForm@Radio
8442 /AP <<
8443 /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.

```

8444 /\@currValue\space \DingObject
8445 >>
8446 >>
8447 }%
8448 \relax
8449 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8450 \space% deliberate space between radio buttons
8451 }%
8452 }
8453 \newcount\Fld@listcount
8454 \def\@@ListBox#1{%
8455 \Choice@toks={ }%

```

```

8456 \Fld@listcount=0
8457 \@for\@curropt:=#1\do{%
8458   \expandafter\Fld@checkequals\@curropt==\%
8459   \Hy@StepCount\Fld@listcount
8460   \edef\@processme{%
8461     \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8462   }\@processme
8463 }%
8464 \leavevmode
8465 \Hy@escapeform\PDFForm@List
8466 \pdfstartlink user {\PDFForm@List}\relax
8467 \MakeChoiceField{\Fld@width}{\Fld@height}%
8468 \pdfendlink
8469 }
8470 \def\@PushButton[#1]#2{% parameters, label
8471   \def\Fld@name{#2}%
8472   \bgroup
8473     \Field@toks={ }%
8474     \setkeys{Field}{#1}%
8475     \ifFld@hidden\def\Fld@width{1sp}\fi
8476     \LayoutPushButtonField{%
8477       \leavevmode
8478       \Hy@escapeform\PDFForm@Push
8479       \pdfstartlink user {\PDFForm@Push}\relax
8480       \MakeButtonField{#2}%
8481       \pdfendlink
8482     }%
8483   \egroup
8484 }
8485 \def\@Submit[#1]#2{%
8486   \Field@toks={ }%
8487   \def\Fld@width{\DefaultWidthofSubmit}%
8488   \def\Fld@height{\DefaultHeightofSubmit}%
8489   \bgroup
8490     \def\Fld@name{Submit}%
8491     \setkeys{Field}{#1}%
8492     \ifFld@hidden\def\Fld@width{1sp}\fi
8493     \leavevmode
8494     \Hy@escapeform\PDFForm@Submit
8495     \pdfstartlink user {%
8496       \PDFForm@Submit
8497       /AP << /N \SubmitObject\space /D \SubmitPObject >>
8498     }%
8499     \relax
8500     \MakeButtonField{#2}%
8501     \pdfendlink
8502   \egroup
8503 }
8504 \def\@Reset[#1]#2{%
8505   \Field@toks={ }%
8506   \def\Fld@width{\DefaultWidthofReset}%
8507   \def\Fld@height{\DefaultHeightofReset}%
8508   \bgroup
8509     \def\Fld@name{Reset}%
8510     \setkeys{Field}{#1}%
8511     \ifFld@hidden\def\Fld@width{1sp}\fi
8512     \leavevmode

```



```

8513 \Hy@escapeform\PDFForm@Reset
8514 \pdfstartlink user {\PDFForm@Reset}\relax
8515 \MakeButtonField{#2}%
8516 \pdfendlink
8517 \egroup
8518 }
8519 \def\@CheckBox[#1]#2{% parameters, label
8520 \def\Fld@name{#2}%
8521 \def\Fld@default{0}%
8522 \bgroup
8523 \def\Fld@width{\DefaultWidthofCheckBox}%
8524 \def\Fld@height{\DefaultHeightofCheckBox}%
8525 \Field@toks={ }%
8526 \setkeys{Field}{#1}%
8527 \ifFld@hidden\def\Fld@width{1sp}\fi
8528 \LayoutCheckField{#2}{%
8529 \Hy@escapeform\PDFForm@Check
8530 \pdfstartlink user {\PDFForm@Check}\relax
8531 \MakeCheckField{\Fld@width}{\Fld@height}%
8532 \pdfendlink
8533 }%
8534 \egroup
8535 }
8536 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8537 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8538 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8539 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8540 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8541 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /lslash /OE
8542 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
8543 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8544 /logicalnot /.notdef /registered /macron /degree /plusminus
8545 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8546 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
8547 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8548 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8549 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8550 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8551 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8552 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8553 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8554 /ograde /oacute /ocircumflex /otilde /odieresis /divide /oslash
8555 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8556 }
8557 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
8558 \pdfobj {
8559 <<
8560 /Type /Font
8561 /Subtype /Type1
8562 /Name /ZaDb
8563 /BaseFont /ZapfDingbats
8564 >>
8565 }
8566 \edef\OBJ@ZaDb{\the\pdflastobj}
8567 \pdfobj { <<
8568 /Type /Font
8569 /Subtype /Type1

```

```

8570 /Name /Helv
8571 /BaseFont /Helvetica
8572 /Encoding \OBJ@pdfdocencoding\space 0 R
8573 >>
8574 }
8575 \edef\OBJ@Helv{\the\pdflastobj}
8576 \pdfobj {
8577 <<
8578 /Fields []
8579 /DR <<
8580 /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8581 >>
8582 /DA (/Helv 10 Tf 0 g )
8583 /NeedAppearances true
8584 >>
8585 }
8586 \edef\OBJ@acroform{\the\pdflastobj}
8587 \pdfTeX

```

46.6 dvipdfm

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

```

8588 \dvipdfm

```

\@Gauge

```

8589 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8590 \typeout{Sorry, dvipdfm does not support FORM gauges}%
8591 }

```

\@Form

```

8592 \def\@Form[#1]{%
8593 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8594 \setkeys{Form}{#1}%
8595 \@pdfm@mark{obj @afields [ ]}%
8596 \@pdfm@mark{obj @corder [ ]}%
8597 \@pdfm@mark{%
8598 obj @aform <<
8599 /Fields @afields
8600 /DR << /Font << /ZaDb \OBJ@ZaDb /Helv \OBJ@Helv >> >>
8601 /DA (/Helv 10 Tf 0 g )
8602 /CO @corder
8603 /NeedAppearances true
8604 >>%
8605 }%
8606 \@pdfm@mark{put @catalog << /AcroForm @aform >>}%
8607 }

```

\@endForm

```

8608 \def\@endForm{}

```

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

```

8609 \def\dvipdfm@setdim{%
8610 height \the\ht\pdfm@box\space
8611 width \the\wd\pdfm@box\space
8612 depth \the\dp\pdfm@box\space
8613 }

```

\@TextField

```

8614 \def \@TextField[#1]#2{% parameters, label
8615   \def \Fld@name{#2}%
8616   \def \Fld@default{}%
8617   \let \Fld@value \@empty
8618   \def \Fld@width{\DefaultWidthofText}%
8619   \def \Fld@height{\DefaultHeightofText}%
8620   \ifFld@multiline
8621     \begingroup
8622       \dimen@=\DefaultHeightofText
8623       \dimen@=4\dimen@
8624       \edef\x{\endgroup
8625         \def\noexpand\Fld@height{\the\dimen@}%
8626       }%
8627     \x
8628   \fi
8629   \bgroup
8630     \Field@toks={ }%
8631     \setkeys{Field}{#1}%
8632     \ifFld@hidden\def\Fld@width{1sp}\fi
8633     \ifx\Fld@value \@empty\def\Fld@value{\Fld@default}\fi
8634     \setbox\pdfm@box=\hbox{%
8635       \MakeTextField{\Fld@width}{\Fld@height}%
8636     }%
8637     \LayoutTextField{#2}{%
8638       \Hy@escapeform\PDFForm@Text
8639       \@pdfm@mark{%
8640         ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8641       }%
8642     }%
8643     \unhbox\pdfm@box
8644     \@pdfm@mark{put @afields @\Fld@name}% record in @afields array
8645   \egroup
8646 }

```

\@ChoiceMenu

```

8647 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
8648   \def \Fld@name{#2}%
8649   \let \Fld@default\relax
8650   \let \Fld@value\relax
8651   \def \Fld@width{\DefaultWidthofChoiceMenu}%
8652   \def \Fld@height{\DefaultHeightofChoiceMenu}%
8653   \bgroup
8654     \Fld@menulength=0
8655     \@tempdima\z@
8656     \@for\@curropt:=#3\do{%
8657       \expandafter\Fld@checkequals\@curropt==\%
8658       \Hy@StepCount\Fld@menulength
8659       \settowidth{\@tempdimb}{\@currDisplay}%
8660       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8661     }%
8662     \advance\@tempdima by 15\p@
8663     \Field@toks={ }%
8664     \setkeys{Field}{#1}%
8665     \ifFld@hidden\def\Fld@width{1sp}\fi
8666     \LayoutChoiceField{#2}{%
8667       \ifFld@radio

```

```

8668      \@@Radio{#3}%
8669      \else
8670      {%
8671          \ifdim\Fld@width<\@tempdima
8672              \ifdim\@tempdima<1cm\@tempdima1cm\fi
8673              \edef\Fld@width{\the\@tempdima}%
8674          \fi
8675          \def\Fld@flags{%
8676              \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8677              \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8678              \ifx\Fld@flags\@empty
8679                  \@tempdima=\the\Fld@menulength\Fld@charsize
8680                  \advance\@tempdima by \Fld@borderwidth bp
8681                  \advance\@tempdima by \Fld@borderwidth bp
8682                  \edef\Fld@height{\the\@tempdima}%
8683              \fi
8684              \@@ListBox{#3}%
8685          }%
8686      \fi
8687  }%
8688  \egroup
8689 }

```

\@@Radio

```

8690 \def\@@Radio#1{%
8691     \Fld@listcount=0
8692     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8693     \@for\@curropt:=#1\do{%
8694         \expandafter\Fld@checkequals\@curropt==\%
8695         \Hy@StepCount\Fld@listcount
8696         \@currDisplay\space
8697         \leavevmode
8698         \Hy@escapeform\PDFForm@Radio
8699         \@pdfm@mark{%
8700             ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8701             \dvipdfm@setdim
8702             <<
8703             \PDFForm@Radio\space
8704             /AP << /N << /\@currValue /null >> >>
8705             >>%
8706         }%
8707         \unhcopy\pdfm@box\space% deliberate space between radio buttons
8708         \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8709     }%
8710 }

```

\Fld@listcount

```

8711 \newcount\Fld@listcount

```

\@@ListBox

```

8712 \def\@@ListBox#1{%
8713     \Choice@toks={ }%
8714     \Fld@listcount=0
8715     \@for\@curropt:=#1\do{%
8716         \expandafter\Fld@checkequals\@curropt==\%
8717         \Hy@StepCount\Fld@listcount
8718         \edef\@processme{%

```

```

8719     \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8720   }\@processme
8721 }%
8722 \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8723 \leavevmode
8724 \Hy@escapeform\PDFForm@List
8725 \@pdfm@mark{%
8726   ann @\Fld@name\space\dvipdfm@setdim
8727   << \PDFForm@List >>%
8728 }%
8729 \unhbox\pdfm@box
8730 \@pdfm@mark{put @afields @\Fld@name}%
8731 }

```

\@PushButton

```

8732 \def\@PushButton[#1]#2{% parameters, label
8733   \def\Fld@name{#2}%
8734   \bgroup
8735     \Field@toks={}%
8736     \setkeys{Field}{#1}%
8737     \ifFld@hidden\def\Fld@width{1sp}\fi
8738     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8739     \LayoutPushButtonField{%
8740       \leavevmode
8741       \Hy@escapeform\PDFForm@Push
8742       \@pdfm@mark{%
8743         ann @\Fld@name\space\dvipdfm@setdim
8744         << \PDFForm@Push >>%
8745       }%
8746     }%
8747     \unhbox\pdfm@box
8748     \@pdfm@mark{put @afields @\Fld@name}%
8749   \egroup
8750 }

```

\@Submit

```

8751 \def\@Submit[#1]#2{%
8752   \Field@toks={}%
8753   \def\Fld@width{\DefaultWidthofSubmit}%
8754   \def\Fld@height{\DefaultHeightofSubmit}%
8755   \bgroup
8756     \def\Fld@name{Submit}%
8757     \setkeys{Field}{#1}%
8758     \ifFld@hidden\def\Fld@width{1sp}\fi
8759     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8760     \leavevmode
8761     \Hy@escapeform\PDFForm@Submit
8762     \@pdfm@mark{%
8763       ann @\Fld@name\space\dvipdfm@setdim
8764       << \PDFForm@Submit >>%
8765     }%
8766     \unhbox\pdfm@box%
8767     \@pdfm@mark{put @afields @\Fld@name}%
8768   \egroup
8769 }

```

\@Reset

```

8770 \def \@Reset [#1]#2{%
8771   \Field@toks={ }%
8772   \def \Fld@width{\DefaultWidthofReset}%
8773   \def \Fld@height{\DefaultHeightofReset}%
8774   \bgroup
8775     \def \Fld@name{Reset}%
8776     \setkeys{Field}{#1}%
8777     \ifFld@hidden\def \Fld@width{1sp}\fi
8778     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8779     \leavevmode
8780     \Hy@escapeform\PDFForm@Reset
8781     \@pdfm@mark{%
8782       ann @\Fld@name\space\dvipdfm@setdim
8783       << \PDFForm@Reset >>%
8784     }%
8785     \unhbox\pdfm@box
8786     \@pdfm@mark{put @afields @\Fld@name}%
8787   \egroup
8788 }

```

\@CheckBox

```

8789 \def \@CheckBox [#1]#2{% parameters, label
8790   \def \Fld@name{#2}%
8791   \def \Fld@default{0}%
8792   \bgroup
8793     \def \Fld@width{\DefaultWidthofCheckBox}%
8794     \def \Fld@height{\DefaultHeightofCheckBox}%
8795     \Field@toks={ }%
8796     \setkeys{Field}{#1}%
8797     \ifFld@hidden\def \Fld@width{1sp}\fi
8798     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
8799     \LayoutCheckField{#2}{%
8800       \Hy@escapeform\PDFForm@Check
8801       \@pdfm@mark{%
8802         ann @\Fld@name\space\dvipdfm@setdim
8803         << \PDFForm@Check >>%
8804       }%
8805       \unhbox\pdfm@box
8806       \@pdfm@mark{put @afields @\Fld@name}%
8807     }%
8808   \egroup
8809 }

8810 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
8811   24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8812     /tilde
8813   39 /quotesingle
8814   96 /grave
8815  128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8816     /fraction /guilsinglleft /guilsinglright /minus /perthousand
8817     /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8818     /quotesinglbase /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis
8819     /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8820  164 /currency
8821  166 /brokenbar
8822  168 /dieresis /copyright /ordfeminine
8823  172 /logicalnot /.notdef /registered /macron /degree /plusminus
8824     /twosuperior /threesuperior /acute /mu

```

```

8825 183 /periodcentered /cedilla /onesuperior /ordmasculine
8826 188 /onequarter /onehalf /threequarters
8827 192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8828 /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8829 /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8830 /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8831 /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8832 /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8833 /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8834 /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8835 /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8836 /thorn /ydieresis%
8837 ] >>
8838 }
8839 \pdfmark{obj @OBJZaDb
8840 <<
8841 /Type /Font
8842 /Subtype /Type1
8843 /Name /ZaDb
8844 /BaseFont /ZapfDingbats
8845 >>
8846 }
8847 \pdfmark{obj @OBJHelv
8848 <<
8849 /Type /Font
8850 /Subtype /Type1
8851 /Name /Helv
8852 /BaseFont /Helvetica
8853 /Encoding @OBJpdfdocencoding
8854 >>
8855 }
8856 </dvipdfm>

```

46.7 Common forms part

```
8857 <*pdfform>
```

\Hy@escapestring

```

8858 \begingroup\expandafter\expandafter\expandafter\endgroup
8859 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8860 \let\Hy@escapestring\@firstofone
8861 \def\Hy@escapeform#1{%
8862   \ifHy@escapeform
8863     \def\Hy@escapestring##1{%
8864       \noexpand\Hy@escapestring{\noexpand##1}%
8865     }%
8866   \edef\Hy@temp{#1}%
8867   \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
8868   \def\Hy@escapestring##1{%
8869     \ifundefined{Hy@esc@\string##1}{%
8870       ##1%
8871       \ThisShouldNotHappen
8872     }{%
8873       \csname Hy@esc@\string##1\endcsname
8874     }%
8875   }%
8876   \else

```

```

8877     \let\Hy@escapestring\@firstofone
8878     \fi
8879 }%
8880 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
8881     \ifx\#3\%
8882     \else
8883     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8884     \Hy@ReturnAfterFi{%
8885         \Hy@@escapeform#3\@nil
8886     }%
8887     \fi
8888 }%
8889 \else
8890 \def\Hy@escapeform#1{%
8891     \ifHy@escapeform
8892     \let\Hy@escapestring\pdfescapestring
8893     \else
8894     \let\Hy@escapestring\@firstofone
8895     \fi
8896 }%
8897 \Hy@escapeform{}%
8898 \fi

```

\PDFForm@Check

```

8899 \def\PDFForm@Check{%
8900     /Subtype /Widget
8901     \ifFld@hidden /F 6 \else /F 4 \fi
8902     /T (\Hy@escapestring{\Fld@name})
8903     /Q \Fld@align\space
8904     /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8905     /MK <<
8906         /BC [\Fld@bordercolor]
8907         \ifx\Fld@bcolor\@empty
8908         \else
8909         /BG [\Fld@bcolor]
8910         \fi
8911     /CA (\Hy@escapestring{\Fld@cbsymbol})
8912     >>
8913     /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8914     /FT /Btn
8915     /H /P
8916     \ifFld@checked /V /Yes \else /V /Off \fi
8917 }

```

\PDFForm@Push

```

8918 \def\PDFForm@Push{%
8919     /Subtype /Widget
8920     \ifFld@hidden /F 6 \else /F 4 \fi
8921     /T (\Hy@escapestring{\Fld@name})
8922     /FT /Btn
8923     /Ff 65540
8924     /H /P
8925     /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8926     /MK <<
8927         /BC [\Fld@bordercolor]
8928     >>
8929     /A << /S /JavaScript /JS (\Hy@escapestring{\Fld@onclick}) >>

```


8930 }

\Fld@additionalactions

```
8931 \def\Fld@additionalactions{%  
8932 /AA <<
```

K input (keystroke) format

```
8933 \ifx\Fld@keystroke@code\@empty  
8934 \else  
8935 /K << /S /JavaScript /JS (\Hy@escapestring{\Fld@keystroke@code}) >>  
8936 \fi
```

F display format

```
8937 \ifx\Fld@format@code\@empty  
8938 \else  
8939 /F << /S /JavaScript /JS (\Hy@escapestring{\Fld@format@code}) >>  
8940 \fi
```

V validation

```
8941 \ifx\Fld@validate@code\@empty  
8942 \else  
8943 /V << /S /JavaScript /JS (\Hy@escapestring{\Fld@validate@code}) >>  
8944 \fi
```

C calculation

```
8945 \ifx\Fld@calculate@code\@empty  
8946 \else  
8947 /C << /S /JavaScript /JS (\Hy@escapestring{\Fld@calculate@code}) >>  
8948 \fi
```

Fo receiving the input focus

```
8949 \ifx\Fld@onfocus@code\@empty  
8950 \else  
8951 /Fo << /S /JavaScript /JS (\Hy@escapestring{\Fld@onfocus@code}) >>  
8952 \fi
```

Bl loosing the input focus (blurred)

```
8953 \ifx\Fld@onblur@code\@empty  
8954 \else  
8955 /Bl << /S /JavaScript /JS (\Hy@escapestring{\Fld@onblur@code}) >>  
8956 \fi
```

D pressing the mouse button (down)

```
8957 \ifx\Fld@onmousedown@code\@empty  
8958 \else  
8959 /D << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmousedown@code}) >>  
8960 \fi
```

U releasing the mouse button (up)

```
8961 \ifx\Fld@onmouseup@code\@empty  
8962 \else  
8963 /U << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmouseup@code}) >>  
8964 \fi
```

E cursor enters the annotation's active area.

```
8965 \ifx\Fld@onenter@code\@empty  
8966 \else  
8967 /E << /S /JavaScript /JS (\Hy@escapestring{\Fld@onenter@code}) >>  
8968 \fi
```

X cursor exits the annotation's active area.

```
8969     \ifx\Fld@onexit@code\@empty
8970     \else
8971     /X << /S /JavaScript /JS (\Hy@escapestring{\Fld@onexit@code}) >>
8972     \fi
8973 >>
8974 }
```

\PDFForm@List

```
8975 \def\PDFForm@List{%
8976 /Subtype/Widget%
8977 \ifFld@hidden /F 6\else /F 4\fi
8978 /T(\Hy@escapestring{\Fld@name})%
8979 /FT/Ch%
8980 /Q \Fld@align
8981 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
8982 /MK<<%
8983 /BC[\Fld@bordercolor]%
8984 \ifx\Fld@bcolor\@empty
8985 \else
8986 /BG[\Fld@bcolor]%
8987 \fi
8988 >>%
8989 /DA(/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)%
8990 /Opt[\the\Choice@toks]%
8991 \ifx\Fld@default\relax
8992 \else
8993 /DV(\Hy@escapestring{\Fld@default})%
8994 \fi
8995 \ifx\Fld@value\relax
8996 \else
8997 /V(\Hy@escapestring{\Fld@value})%
8998 \fi
8999 \Fld@additionalactions
9000 \Fld@flags
9001 }
```

\PDFForm@Radio

```
9002 \def\PDFForm@Radio{%
9003 /Subtype /Widget
9004 \ifFld@hidden /F 6 \else /F 4 \fi
9005 /T (\Hy@escapestring{\Fld@name})
9006 /FT /Btn
9007 /Ff 49152
9008 /H /P
9009 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9010 /MK <<
9011 /BC [\Fld@bordercolor]
9012 \ifx\Fld@bcolor\@empty
9013 \else
9014 /BG [\Fld@bcolor]
9015 \fi
9016 /CA (H)
9017 >>
9018 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
9019 \ifx\@currValue\Fld@default
9020 /V /\Fld@default\space
```

```

9021 \else
9022     /V /Off
9023 \fi
9024 \Fld@additionalactions
9025 }

```

\PDFForm@Text

```

9026 \def\PDFForm@Text{%
9027     /Subtype /Widget
9028     \ifFld@hidden /F 6 \else /F 4 \fi
9029     /T (\Hy@escapestring{\Fld@name})
9030     /Q \Fld@align\space
9031     /FT /Tx
9032     /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9033     /MK <<
9034         /BC [\Fld@bordercolor]
9035         \ifx\Fld@bcolor\@empty
9036             \else
9037                 /BG [\Fld@bcolor]
9038             \fi
9039     >>
9040     /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
9041     /DV (\Hy@escapestring{\Fld@default})
9042     /V (\Hy@escapestring{\Fld@value})
9043     \Fld@additionalactions
9044     \ifFld@multiline
9045         \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
9046     \else
9047         \ifFld@password
9048             \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
9049         \else
9050             \ifFld@readonly /Ff 1 \fi
9051         \fi
9052     \fi
9053     \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
9054 }

```

\PDFForm@Submit

```

9055 \def\PDFForm@Submit{%
9056     /Subtype /Widget
9057     \ifFld@hidden /F 6 \else /F 4 \fi
9058     /T (\Hy@escapestring{\Fld@name})
9059     /FT /Btn
9060     /Ff 65540
9061     /H /P
9062     /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9063     /MK <<
9064         /BC [\Fld@bordercolor]
9065     >>
9066     /A <<
9067         /S /SubmitForm
9068         /F <<
9069             /FS /URL
9070             /F (\Hy@escapestring{\Form@action})
9071         >>
9072         \ifForm@html /Flags 4 \fi
9073     >>

```

```

9074 }

\PDFForm@Reset

9075 \def\PDFForm@Reset{%
9076   /Subtype /Widget
9077   \ifFld@hidden /F 6 \else /F 4 \fi
9078   /T (\Hy@escapestring{\Fld@name})
9079   /FT /Btn
9080   /H /P
9081   /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
9082   /Ff 65540
9083   /MK <<
9084     /BC [\Fld@bordercolor]
9085     /CA (Clear)
9086     /AC (Done)
9087   >>
9088   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9089   /A << /S /ResetForm >>
9090 }

9091 </pdfform>
9092 <*package>

```

47 Bookmarks in the PDF file

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

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

9093 \def\phantomsection{%
9094   \Hy@GlobalStepCount\Hy@linkcounter
9095   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9096   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9097 }
9098 </package>

```

47.1 Bookmarks

```

9099 <*outlines>

```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

```

9100 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
9101   \ifx\WriteBookmarks\relax%
9102   \else
9103     \ifnum#4>\Hy@bookmarksdepth\relax
9104     \else
9105       \@@writetorep{#1}{#2}{#3}{#4}{#5}%

```

```

9106 \fi
9107 \fi}
9108 \def\Hy@currentbookmarklevel{0}
9109 \def\Hy@numberline#1{#1 }
9110 \def\@@writetorep#1#2#3#4#5{%
9111 \begingroup
9112 \edef\Hy@tempa{#5}%
9113 \ifx\Hy@tempa\Hy@bookmarkstype
9114 \edef\Hy@level{#4}%
9115 \ifx\Hy@levelcheck Y%
9116 \@tempcnta\Hy@level\relax
9117 \advance\@tempcnta by -1
9118 \ifnum\Hy@currentbookmarklevel<\@tempcnta
9119 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
9120 \advance\@tempcnta by 1
9121 \Hy@Warning{%
9122 Difference (\the\@tempcnta) between bookmark levels is %
9123 greater \MessageBreak than one, level fixed%
9124 }%
9125 \@tempcnta\Hy@currentbookmarklevel
9126 \advance\@tempcnta by 1
9127 \edef\Hy@level{\the\@tempcnta}%
9128 \fi
9129 \else
9130 \global\let\Hy@levelcheck Y%
9131 \fi
9132 \global\let\Hy@currentbookmarklevel\Hy@level
9133 \@tempcnta\Hy@level\relax
9134 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
9135 \advance\@tempcnta by -1
9136 \edef\Hy@tempa{#3}%
9137 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
9138 \ifx\Hy@tempa\Hy@tempb
9139 \Hy@Warning{%
9140 The anchor of a bookmark and its parent's must not%
9141 \MessageBreak be the same. Added a new anchor%
9142 }%
9143 \phantomsection
9144 \fi
9145 \ifHy@bookmarksnumbered
9146 \let\numberline\Hy@numberline
9147 \let\partnumberline\Hy@numberline
9148 \let\chapternumberline\Hy@numberline
9149 \else
9150 \let\numberline@gobble
9151 \let\partnumberline@gobble
9152 \let\chapternumberline@gobble
9153 \fi
9154 \pdfstringdef\Hy@tempa{#2}%
9155 \if@filesw
9156 \protected@write\@outlinefile{}{%
9157 \protect\BOOKMARK
9158 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
9159 {\Hy@tempa}{\Hy@tempb}%
9160 }%
9161 \fi
9162 \fi

```

```

9163 \endgroup
9164 }

```

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

```

9165 \newcommand{\currentpdfbookmark}{%
9166 \pdfbookmark[\Hy@currentbookmarklevel]%
9167 }
9168 \newcommand{\subpdfbookmark}{%
9169 \@tempcnta\Hy@currentbookmarklevel
9170 \Hy@StepCount\@tempcnta
9171 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
9172 }
9173 \newcommand{\belowpdfbookmark}[2]{%
9174 \@tempcnta\Hy@currentbookmarklevel
9175 \Hy@StepCount\@tempcnta
9176 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
9177 \advance\@tempcnta by -1
9178 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
9179 }

```

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.

```

9180 \renewcommand\pdfbookmark[3][0]{%
9181 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
9182 \hyper@anchorstart{#3.#1}\hyper@anchorend
9183 }
9184 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}}
9185 \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 texinfopdf macros.

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

```

9186 (*vtex)
9187 \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.

```

9188 \begingroup
9189 \catcode'\'=12
9190 \ifnum\Hy@VTeXversion<650 %
9191 \catcode'\=12
9192 \gdef\hv@pdf@char#1#2#3{%
9193 \char
9194 \ifcase'#1#2#3
9195 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
9196 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
9197 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
9198 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
9199 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
9200 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
9201 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
9202 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%

```

```

9203 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
9204 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
9205 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
9206 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
9207 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
9208 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
9209 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
9210 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
9211 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
9212 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
9213 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
9214 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
9215 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
9216 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
9217 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
9218 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
9219 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
9220 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
9221 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
9222 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
9223 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
9224 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
9225 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
9226 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
9227 \fi
9228 }
9229 \else
9230 \gdef\hv@pdf@char{\char'}
9231 \fi
9232 \endgroup

```

\@@BOOKMARK

```

9233 \def\@@BOOKMARK[#1][#2]#3#4#5{%
9234 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
9235 \edef\@mycount{\the\@serial@counter}%
9236 \Hy@StepCount\@serial@counter
9237 \edef\@parcount{%
9238 \expandafter\ifx\csname @count@#5\endcsname\relax
9239 0%
9240 \else
9241 \csname @count@#5\endcsname
9242 \fi
9243 }%
9244 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
9245 o\fi,t=#4}%
9246 }%

```

\ReadBookmarks

```

9247 \def\ReadBookmarks{%
9248 \begingroup
9249 \def\0{\hv@pdf@char 0}%
9250 \def\1{\hv@pdf@char 1}%
9251 \def\2{\hv@pdf@char 2}%
9252 \def\3{\hv@pdf@char 3}%
9253 \def\{({}%
9254 \def\)}{)%
9255 \def\do##1{%

```

```

9256     \ifnum\the\catcode'##1=\active
9257         \@makeother##1%
9258     \fi
9259 }%
9260 \dospecials
9261 \InputIfFileExists{\jobname.out}{\}{}%
9262 \endgroup
9263 \ifx\WriteBookmarks\relax
9264 \else
9265     \if@files
9266         \newwrite\@outlinefile
9267         \immediate\openout\@outlinefile=\jobname.out
9268         \ifHy@typexml
9269             \immediate\write\@outlinefile{<relaxxml>\relax}%
9270         \fi
9271     \fi
9272 \fi
9273 }

9274 </vtx>
9275 <!*vtx>
9276 \def\ReadBookmarks{%
9277     \begingroup
9278         \escapechar='\\%
9279         \let\escapechar\@gobble %
9280         \def\@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
9281         \InputIfFileExists{\jobname.out}{\}{}%
9282         \ifx\WriteBookmarks\relax
9283             \global\let\WriteBookmarks\relax
9284         \fi
9285         \def\@BOOKMARK[##1][##2]##3##4##5{%
9286             \def\Hy@temp{##4}%
9287 <*pdftex>
9288             \Hy@pstringdef\Hy@pstringName{##3}%
9289             \Hy@OutlineName{}\Hy@pstringName{%
9290                 ##2\check@bm@number{##3}%
9291             }{%
9292                 \expandafter\strip@prefix\meaning\Hy@temp
9293             }%
9294 </pdftex>
9295 <*pdfmark>
9296             \Hy@pstringdef\Hy@pstringName{##3}%
9297             \pdfmark{%
9298                 pdfmark=/OUT,%
9299                 Count={##2\check@bm@number{##3}},%
9300                 Dest={\Hy@pstringName},%
9301                 Title=\expandafter\strip@prefix\meaning\Hy@temp
9302             }%
9303 </pdfmark>
9304 <*dvipdfm>
9305             \Hy@pstringdef\Hy@pstringName{##3}%
9306             \@pdfm@mark{%
9307                 outline ##1 <<
9308                 /Title (\expandafter\strip@prefix\meaning\Hy@temp)
9309                 /A <<
9310                 /S /GoTo
9311                 /D (\Hy@pstringName)
9312                 >>

```



```

9313      >>
9314      }%
9315 </dvipdfm>
9316 }%
9317 {%
9318   \def\WriteBookmarks{0}%
9319   \InputIfFileExists{\jobname.out}{-}{-}%
9320 }%
9321 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
9322 \ifx\WriteBookmarks\relax
9323 \else
9324   \if@files
9325     \newwrite\@outlinefile
9326     \immediate\openout\@outlinefile=\jobname.out
9327     \ifHy@typexml
9328       \immediate\write\@outlinefile{<relaxxml>\relax}%
9329     \fi
9330   \fi
9331   \fi
9332   \endgroup
9333 }
9334 <*pdfTeX>
9335 \def\Hy@OutlineName#1#2#3#4{%
9336   \pdfoutline goto name{#2}count#3{#4}%
9337 }
9338 </pdfTeX>
9339 \def\check@bm@number#1{%
9340   \expandafter\ifx\csname B_#1\endcsname\relax
9341     0%
9342   \else
9343     \csname B_#1\endcsname
9344   \fi
9345 }
9346 \def\calc@bm@number#1{%
9347   \@tempcnta=\check@bm@number{#1}\relax
9348   \advance\@tempcnta by1
9349   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
9350 }
9351 </!vTeX>

```

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

```

9352 \ifHy@implicit
9353 \else
9354   \def\@begindvi{%
9355     \unvbox\@begindvibox
9356     \HyPL@EveryPage
9357     \global\let\@begindvi\HyPL@EveryPage
9358   }%
9359   \expandafter\endinput
9360 \fi

9361 </outlines>
9362 <*outlines | hypertex>

9363 \let\H@old@ssect\@ssect
9364 \def\@ssect#1#2#3#4#5{%
9365   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9366   \phantomsection

```

```

9367 }
9368 \let\H@old@schapter\@schapter
9369 \def\@schapter#1{%
9370   \H@old@schapter{#1}%
9371   \begingroup
9372     \let\@mkboth\@gobbletwo
9373     \Hy@GlobalStepCount\Hy@linkcounter
9374     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9375     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9376   \endgroup
9377 }

```

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:

```

9378 \@ifundefined{@chapter}{}{%
9379   \let\Hy@org@chapter\@chapter
9380   \def\@chapter{%
9381     \def\Hy@next{%
9382       \Hy@GlobalStepCount\Hy@linkcounter
9383       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9384       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9385     }%
9386     \ifnum\c@secnumdepth>\m@ne
9387       \@ifundefined{if@mainmatter}%
9388       \iftrue{csname if@mainmatter\endcsname}%
9389       \let\Hy@next\relax
9390     \fi
9391     \fi
9392     \Hy@next
9393     \Hy@org@chapter
9394   }%
9395 }

9396 \let\H@old@part\@part
9397 \begingroup\expandafter\expandafter\expandafter\endgroup
9398 \expandafter\ifx\csname chapter\endcsname\relax
9399   \let\Hy@secnum@part\z@
9400 \else
9401   \let\Hy@secnum@part\m@ne
9402 \fi
9403 \def\@part{%
9404   \ifnum\Hy@secnum@part>\c@secnumdepth
9405     \phantomsection
9406   \fi
9407   \H@old@part
9408 }

9409 \let\H@old@spart\@spart
9410 \def\@spart#1{%
9411   \H@old@spart{#1}%
9412   \Hy@GlobalStepCount\Hy@linkcounter
9413   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9414   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9415 }
9416 \let\H@old@sect\@sect
9417 \def\@sect#1#2#3#4#5#6[#7]#8{%
9418   \ifnum #2>\c@secnumdepth
9419     \Hy@GlobalStepCount\Hy@linkcounter

```

```

9420 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9421 \fi
9422 \H@old@ssect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
9423 \ifnum #2>\c@secnumdepth
9424 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9425 \fi
9426 }

9427 </outlines | hypertex>
9428 <*outlines>

9429 \expandafter\def\csname Parent-4\endcsname{}
9430 \expandafter\def\csname Parent-3\endcsname{}
9431 \expandafter\def\csname Parent-2\endcsname{}
9432 \expandafter\def\csname Parent-1\endcsname{}
9433 \expandafter\def\csname Parent0\endcsname{}
9434 \expandafter\def\csname Parent1\endcsname{}
9435 \expandafter\def\csname Parent2\endcsname{}
9436 \expandafter\def\csname Parent3\endcsname{}
9437 \expandafter\def\csname Parent4\endcsname{}
9438 </outlines>

```

48 Compatibility with koma-script classes

```

9439 <*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.

```

9440 \def\Hy@tempa{%
9441 \def\@addchap[##1]##2{%
9442 \typeout{##2}%
9443 \if@twoside
9444 \mkboth{##1}{}%
9445 \else
9446 \mkboth{}{##1}%
9447 \fi
9448 \addtocontents{lof}{\protect\addvspace{10\p@}}%
9449 \addtocontents{lot}{\protect\addvspace{10\p@}}%
9450 \Hy@GlobalStepCount\Hy@linkcounter
9451 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9452 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9453 \if@twocolumn
9454 \topnewpage[\@makeschapterhead{##2}]%
9455 \else
9456 \@makeschapterhead{##2}%
9457 \afterheading
9458 \fi
9459 \addcontentsline{toc}{chapter}{##1}%
9460 }%
9461 }

9462 \@ifclassloaded{scrbook}{%
9463 \@ifclasslater{scrbook}{2001/01/01}{%
9464 \let\Hy@tempa\@empty
9465 }{}%
9466 }{%
9467 \@ifclassloaded{scrreprt}{%
9468 \@ifclasslater{scrreprt}{2001/01/01}{%

```

```

9469 \let\Hy@tempa\@empty
9470 }{}%
9471 }{%
9472 \let\Hy@tempa\@empty
9473 }%
9474 }%
9475 \Hy@tempa
9476 </outlines | hypertex>

```

49 Encoding definition files for encodings of PDF strings

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

49.1 PD1 encoding

```

9477 <*pd1enc>
9478 \DeclareFontEncoding{PD1}{-}{-}

```

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

```

9479 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9480 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9481 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9482 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9483 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

9484 \DeclareTextAccent{\'}{PD1}{\textgrave}
9485 \DeclareTextAccent{\'}{PD1}{\textacute}
9486 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
9487 \DeclareTextAccent{\~}{PD1}{\texttilde}
9488 \DeclareTextAccent{\"}{PD1}{\textdieresis}
9489 \DeclareTextAccent{\r}{PD1}{\textring}
9490 \DeclareTextAccent{\v}{PD1}{\textcaron}
9491 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
9492 \DeclareTextAccent{\c}{PD1}{\textcedilla}
9493 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textgrave}
9494 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
9495 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
9496 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
9497 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
9498 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
9499 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
9500 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
9501 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
9502 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

```

Accent glyph names

```

9503 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
9504 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9505 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
9506 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9507 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9508 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9509 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9510 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

```

\040: space

\041: exclam

```

9511 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042

```

```

9512 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9513 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9514 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9515 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand
\047: quotesingle
9516 \DeclareTextCommand{\textparenleft}{PD1}{\string\() % parenleft \050
9517 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051
\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
9518 \DeclareTextCommand{\textless}{PD1}{<} % less \074
\075: equal
9519 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076
\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
9520 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
9521 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9522 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9523 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141... \172: a...z
9524 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9525 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9526 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9527 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9528 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
9529 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9530 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9531 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
9532 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9533 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9534 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9535 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9536 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9537 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
9538 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9539 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9540 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9541 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9542 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9543 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9544 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9545 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9546 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9547 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark

```

```

9548 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9549 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9550 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9551 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9552 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
9553 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
9554 \DeclareTextCommand{\IJ}{PD1}{\230}
9555 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9556 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9557 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9558 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9559 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9560 \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.

```

9561 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9562 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9563 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9564 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9565 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9566 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9567 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9568 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9569 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9570 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
9571 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
9572 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
9573 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

9574 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
9575 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
9576 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
9577 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
9578 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
9579 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
9580 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
9581 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
9582 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
9583 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
9584 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
9585 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
9586 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
9587 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
9588 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
9589 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
9590 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
9591 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
9592 \DeclareTextCompositeCommand{`}{PD1}{A}{\300} % Agrave
9593 \DeclareTextCompositeCommand{'}{PD1}{A}{\301} % Aacute
9594 \DeclareTextCompositeCommand{^}{PD1}{A}{\302} % Acircumflex
9595 \DeclareTextCompositeCommand{~}{PD1}{A}{\303} % Atilde
9596 \DeclareTextCompositeCommand{"}{PD1}{A}{\304} % Adieresis
9597 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
9598 \DeclareTextCommand{\AE}{PD1}{\306} % AE
9599 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
9600 \DeclareTextCompositeCommand{'}{PD1}{E}{\310} % Egrave
9601 \DeclareTextCompositeCommand{'}{PD1}{E}{\311} % Eacute

```

9602 \DeclareTextCompositeCommand{\~}{PD1}{E}{\312} % Ecircumflex
 9603 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
 9604 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314} % Igrave
 9605 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
 9606 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex
 9607 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
 9608 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
 9609 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
 9610 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
 9611 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322} % Ograve
 9612 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
 9613 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex
 9614 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
 9615 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
 9616 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
 9617 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
 9618 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
 9619 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
 9620 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
 9621 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
 9622 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
 9623 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
 9624 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
 9625 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340} % agrave
 9626 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
 9627 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex
 9628 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
 9629 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
 9630 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
 9631 \DeclareTextCommand{\ae}{PD1}{\346} % ae
 9632 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
 9633 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave
 9634 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
 9635 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex
 9636 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
 9637 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
 9638 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
 9639 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9640 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9641 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
 9642 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
 9643 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
 9644 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
 9645 \DeclareTextCommand{\dh}{PD1}{\360} % eth
 9646 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
 9647 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
 9648 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
 9649 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
 9650 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
 9651 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
 9652 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
 9653 \DeclareTextCommand{\o}{PD1}{\370} % oslash
 9654 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave
 9655 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
 9656 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
 9657 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
 9658 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute

```

9659 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9660 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
9661 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9662 \DeclareTextCommand{\SS}{PD1}{SS}
9663 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9664 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9665 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9666 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9667 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9668 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9669 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9670 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9671 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9672 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9673 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9674 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9675 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9676 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9677 \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;

```

9678 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9679 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
9680 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9681 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
9682 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
9683 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
9684 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot

9685 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9686 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
9687 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9688 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
9689 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
9690 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
9691 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

9692 \end{pd1enc}

```

49.2 PU encoding

```

9693 \newcommand{*puenc}
9694 \DeclareFontEncoding{PU}{}{}

```

49.2.1 Basic Latin

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

```

9695 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9696 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9697 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9698 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9699 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

Accents

```

9700 \DeclareTextAccent{\'}{PU}{\textgrave}
9701 \DeclareTextAccent{\'}{PU}{\textacute}

```



```

9702 \DeclareTextAccent{\~}{PU}{\textcirc{}}
9703 \DeclareTextAccent{\~}{PU}{\text{tilde}}
9704 \DeclareTextAccent{\"}{PU}{\text{dieresis}}
9705 \DeclareTextAccent{\r}{PU}{\text{ring}}
9706 \DeclareTextAccent{\v}{PU}{\text{caron}}
9707 \DeclareTextAccent{\.}{PU}{\text{dotaccent}}
9708 \DeclareTextAccent{\c}{PU}{\text{cedilla}}
9709 \DeclareTextAccent{\U}{PU}{\text{breve}}
9710 \DeclareTextAccent{\C}{PU}{\text{doublegrave}}
9711 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
9712 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9713 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcirc{}}
9714 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\text{tilde}}
9715 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\text{dieresis}}
9716 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\text{ring}}
9717 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\text{caron}}
9718 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\text{dotaccent}}
9719 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\text{cedilla}}
9720 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\text{breve}}
9721 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\text{doublegrave}}
9722 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
9723 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9724 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9725 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

Accent glyph names

9726 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9727 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9728 \DeclareTextCommand{\textcirc{}}{PU}{\80\032} % circumflex
9729 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9730 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9731 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9732 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9733 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9734 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

9735 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9736 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9737 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9738 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9739 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

9740 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
9741 \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

9742 \DeclareTextCommand{\textless}{PU}{<} % less \80\074

```

\075: equal
 9743 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076
 \077: question
 \100: at
 \101... \132: A...Z
 \133: bracketleft
 9744 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
 \135: bracketright
 9745 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
 9746 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
 9747 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
 \141... \172: a...z
 9748 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
 9749 \DeclareTextCommand{\j}{PU}{j} % jdotless
 9750 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
 9751 \DeclareTextCommand{\textbar}{PU}{|} % bar
 9752 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
 9753 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
 No glyph \177 in PDFDocEncoding.

49.2.2 Latin-1 Supplement

9754 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
 9755 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
 9756 \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.

9757 \DeclareTextCommand{\OE}{PU}{OE} % OE
 9758 \DeclareTextCommand{\oe}{PU}{oe} % oe

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

9759 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
 9760 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
 9761 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
 9762 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
 9763 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
 9764 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
 9765 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
 9766 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
 9767 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
 9768 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
 9769 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
 9770 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9771 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
 9772 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
 9773 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
 9774 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
 9775 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
 9776 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
 9777 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
 9778 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
 9779 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph

9780 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
 9781 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
 9782 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
 9783 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
 9784 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
 9785 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
 9786 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
 9787 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
 9788 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
 9789 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
 9790 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
 9791 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\302} % Acircumflex
 9792 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\303} % Atilde
 9793 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
 9794 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
 9795 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
 9796 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
 9797 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
 9798 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
 9799 \DeclareTextCompositeCommand{\~}{PU}{E}{\80\312} % Ecircumflex
 9800 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
 9801 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
 9802 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
 9803 \DeclareTextCompositeCommand{\~}{PU}{I}{\80\316} % Icircumflex
 9804 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
 9805 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
 9806 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
 9807 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve
 9808 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
 9809 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\324} % Ocircumflex
 9810 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
 9811 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
 9812 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
 9813 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
 9814 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave
 9815 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
 9816 \DeclareTextCompositeCommand{\~}{PU}{U}{\80\333} % Ucircumflex
 9817 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
 9818 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
 9819 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
 9820 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
 9821 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave
 9822 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute
 9823 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\342} % acircumflex
 9824 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\343} % atilde
 9825 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
 9826 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
 9827 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
 9828 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
 9829 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350} % egrave
 9830 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
 9831 \DeclareTextCompositeCommand{\~}{PU}{e}{\80\352} % ecircumflex
 9832 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
 9833 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
 9834 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
 9835 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
 9836 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute

```

9837 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356} % icircumflex
9838 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
9839 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9840 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9841 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9842 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
9843 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362} % ograve
9844 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
9845 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
9846 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
9847 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
9848 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9849 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9850 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371} % ugrave
9851 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
9852 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
9853 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
9854 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
9855 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9856 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
9857 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
9858 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

9859 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9860 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9861 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9862 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9863 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9864 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9865 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9866 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9867 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9868 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9869 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9870 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9871 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

49.2.3 Latin Extended-A

```

9872 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9873 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
9874 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9875 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9876 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004} % Aogonek
9877 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005} % aogonek
9878 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006} % Cacute
9879 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007} % cacute
9880 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010} % Ccircumflex
9881 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011} % ccircumflex
9882 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012} % Cdot
9883 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013} % cdot
9884 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014} % Ccaron
9885 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015} % ccaron
9886 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016} % Dcaron
9887 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017} % dcaron

```

```

9888 \DeclareTextCommand{\DJ}{PU}{\81\020} % Dslash
9889 \DeclareTextCommand{\dj}{PU}{\81\021} % dslash
9890 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022} % Emacron
9891 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023} % emacron
9892 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024} % Ebreve
9893 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025} % ebreve
9894 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026} % Edot
9895 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027} % edot
9896 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030} % Eogonek
9897 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031} % eogonek
9898 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032} % Ecaron
9899 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033} % ecaron
9900 \DeclareTextCompositeCommand{\~}{PU}{G}{\81\034} % Gcircumflex
9901 \DeclareTextCompositeCommand{\~}{PU}{g}{\81\035} % gcircumflex
9902 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036} % Gbreve
9903 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037} % gbreve
9904 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040} % Gdot
9905 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041} % gdot
9906 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042} % Gcedilla
9907 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043} % gcedilla
9908 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044} % Hcircumflex
9909 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045} % hcircumflex
9910 \DeclareTextCommand{\textHslash}{PU}{\81\046} % Hslash
9911 \DeclareTextCommand{\texthslash}{PU}{\81\047} % hslash
9912 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050} % Itilde
9913 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
9914 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
9915 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
9916 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
9917 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
9918 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
9919 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
9920 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
9921 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
9922 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
9923 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
9924 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
9925 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
9926 % IJlig
9927 % ijlig
9928 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
9929 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
9930 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
9931 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
9932 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
9933 % kgreen
9934 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
9935 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
9936 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
9937 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
9938 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
9939 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
9940 % L middle dot
9941 % l middle dot
9942 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
9943 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
9944 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute

```

```

9945 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
9946 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
9947 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
9948 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
9949 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
9950 % n apostrophe
9951 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
9952 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
9953 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
9954 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
9955 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
9956 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
9957 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
9958 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
9959 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
9960 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
9961 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
9962 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
9963 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
9964 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
9965 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
9966 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
9967 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
9968 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
9969 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
9970 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
9971 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
9972 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
9973 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
9974 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
9975 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
9976 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
9977 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
9978 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
9979 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
9980 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
9981 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
9982 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
9983 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
9984 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
9985 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
9986 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
9987 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
9988 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
9989 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
9990 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
9991 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
9992 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
9993 \DeclareTextCompositeCommand{\`}{PU}{W}{\81\164} % Wcircumflex
9994 \DeclareTextCompositeCommand{\`}{PU}{w}{\81\165} % wcircumflex
9995 \DeclareTextCompositeCommand{\`}{PU}{Y}{\81\166} % Ycircumflex
9996 \DeclareTextCompositeCommand{\`}{PU}{y}{\81\167} % ycircumflex
9997 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
9998 \DeclareTextCommand{\IJ}{PU}{\81\170}
9999 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
10000 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
10001 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot

```

```

10002 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
10003 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
10004 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

49.2.4 Latin Extended-B

```

10005 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
10006 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
10007 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
10008 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
10009 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
10010 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
10011 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
10012 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
10013 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
10014 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
10015 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
10016 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
10017 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
10018 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
10019 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
10020 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
10021 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
10022 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

49.2.5 Greek

```

10023 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
10024 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
10025 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
10026 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
10027 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
10028 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
10029 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
10030 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
10031 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
10032 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
10033 \DeclareTextCommand{\textBeta}{PU}{\83\222}
10034 \DeclareTextCommand{\textGamma}{PU}{\83\223}
10035 \DeclareTextCommand{\textDelta}{PU}{\83\224}
10036 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
10037 \DeclareTextCommand{\textZeta}{PU}{\83\226}
10038 \DeclareTextCommand{\textEta}{PU}{\83\227}
10039 \DeclareTextCommand{\textTheta}{PU}{\83\230}
10040 \DeclareTextCommand{\textIota}{PU}{\83\231}
10041 \DeclareTextCommand{\textKappa}{PU}{\83\232}
10042 \DeclareTextCommand{\textLambda}{PU}{\83\233}
10043 \DeclareTextCommand{\textMu}{PU}{\83\234}
10044 \DeclareTextCommand{\textNu}{PU}{\83\235}
10045 \DeclareTextCommand{\textXi}{PU}{\83\236}
10046 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
10047 \DeclareTextCommand{\textPi}{PU}{\83\240}
10048 \DeclareTextCommand{\textRho}{PU}{\83\241}
10049 \DeclareTextCommand{\textSigma}{PU}{\83\243}
10050 \DeclareTextCommand{\textTau}{PU}{\83\244}
10051 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
10052 \DeclareTextCommand{\textPhi}{PU}{\83\246}
10053 \DeclareTextCommand{\textChi}{PU}{\83\247}
10054 \DeclareTextCommand{\textPsi}{PU}{\83\250}

```

```

10055 \DeclareTextCommand{\textOmega}{PU}{\83\251}
10056 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
10057 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
10058 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}
10059 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}
10060 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}
10061 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}
10062 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
10063 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
10064 \DeclareTextCommand{\textalpha}{PU}{\83\261}
10065 \DeclareTextCommand{\textbeta}{PU}{\83\262}
10066 \DeclareTextCommand{\textgamma}{PU}{\83\263}
10067 \DeclareTextCommand{\textdelta}{PU}{\83\264}
10068 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
10069 \DeclareTextCommand{\textzeta}{PU}{\83\266}
10070 \DeclareTextCommand{\texteta}{PU}{\83\267}
10071 \DeclareTextCommand{\texttheta}{PU}{\83\270}
10072 \DeclareTextCommand{\textiota}{PU}{\83\271}
10073 \DeclareTextCommand{\textkappa}{PU}{\83\272}
10074 \DeclareTextCommand{\textlambda}{PU}{\83\273}
10075 \DeclareTextCommand{\textmu}{PU}{\83\274}
10076 \DeclareTextCommand{\textnu}{PU}{\83\275}
10077 \DeclareTextCommand{\textxi}{PU}{\83\276}
10078 \DeclareTextCommand{\textomicron}{PU}{\83\277}
10079 \DeclareTextCommand{\textpi}{PU}{\83\300}
10080 \DeclareTextCommand{\textrho}{PU}{\83\301}
10081 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
10082 \DeclareTextCommand{\textsigma}{PU}{\83\303}
10083 \DeclareTextCommand{\texttau}{PU}{\83\304}
10084 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
10085 \DeclareTextCommand{\textphi}{PU}{\83\306}
10086 \DeclareTextCommand{\textchi}{PU}{\83\307}
10087 \DeclareTextCommand{\textpsi}{PU}{\83\310}
10088 \DeclareTextCommand{\textomega}{PU}{\83\311}
10089 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
10090 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
10091 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
10092 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
10093 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
10094 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
10095 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
10096 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
10097 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}
10098 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
10099 %\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.

```

10100 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
10101 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
10102 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
10103 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
10104 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
10105 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
10106 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
10107 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI

```


10108 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
10109 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
10110 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
10111 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
10112 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% KJE
10113 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
10114 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
10115 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
10116 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
10117 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
10118 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
10119 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
10120 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
10121 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
10122 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
10123 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
10124 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
10125 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
10126 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
10127 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
10128 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
10129 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
10130 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
10131 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
10132 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
10133 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
10134 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
10135 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
10136 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
10137 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
10138 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
10139 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
10140 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
10141 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
10142 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
10143 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
10144 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
10145 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
10146 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
10147 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
10148 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
10149 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
10150 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
10151 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
10152 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
10153 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
10154 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
10155 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
10156 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
10157 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
10158 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
10159 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
10160 \DeclareTextCommand{\cyr1}{PU}{\84\073}% el
10161 \DeclareTextCommand{\cyrm}{PU}{\84\074}% em
10162 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
10163 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
10164 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe

10165 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
10166 \DeclareTextCommand{\cyrS}{PU}{\84\101}% es
10167 \DeclareTextCommand{\cyrT}{PU}{\84\102}% te
10168 \DeclareTextCommand{\cyru}{PU}{\84\103}% u
10169 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef
10170 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
10171 \DeclareTextCommand{\cyrC}{PU}{\84\106}% tse
10172 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che
10173 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha
10174 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
10175 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
10176 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
10177 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% soft sign
10178 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
10179 \DeclareTextCommand{\cyrYu}{PU}{\84\116}% yu
10180 \DeclareTextCommand{\cyrYa}{PU}{\84\117}% ya
10181 \DeclareTextCommand{\cyrYo}{PU}{\84\121}% io
10182 \DeclareTextCompositeCommand{"}{PU}{\cyrE}{\84\121}%
10183 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
10184 \DeclareTextCompositeCommand{'}{PU}{\cyrG}{\84\123}% gje
10185 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
10186 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
10187 \DeclareTextCommand{\cyrIi}{PU}{\84\126}% byelorussian-ukrainian i
10188 \DeclareTextCommand{\cyrYi}{PU}{\84\127}% yi
10189 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je
10190 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% lje
10191 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% nje
10192 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe
10193 \DeclareTextCompositeCommand{'}{PU}{\cyrK}{\84\134}% kje
10194 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
10195 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
10196 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
10197 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
10198 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
10199 \DeclareTextCommand{\cyrYat}{PU}{\84\143}% yat
10200 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
10201 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
10202 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
10203 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
10204 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
10205 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus
10206 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
10207 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus
10208 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
10209 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus
10210 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
10211 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi
10212 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
10213 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
10214 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
10215 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
10216 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
10217 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
10218 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
10219 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
10220 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
10221 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk

10222 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
10223 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
10224 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
10225 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
10226 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
10227 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
10228 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
10229 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
10230 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
10231 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
10232 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
10233 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
10234 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
10235 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
10236 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
10237 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
10238 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
10239 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
10240 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
10241 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
10242 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
10243 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
10244 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
10245 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
10246 \DeclareTextCommand{\cyrkdsd}{PU}{\84\233}% ka descender
10247 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
10248 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
10249 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
10250 \DeclareTextCommand{\cyrkhcrrs}{PU}{\84\237}% ka stroke
10251 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
10252 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
10253 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
10254 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
10255 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
10256 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
10257 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
10258 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
10259 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
10260 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
10261 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
10262 \DeclareTextCommand{\cyrdsdsc}{PU}{\84\253}% es descender
10263 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
10264 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% te descender
10265 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
10266 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u
10267 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
10268 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke
10269 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
10270 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
10271 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
10272 \DeclareTextCommand{\cyrtdsc}{PU}{\84\265}% ligature te tse
10273 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
10274 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
10275 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
10276 \DeclareTextCommand{\cyrchvcrrs}{PU}{\84\271}% che vertical stroke
10277 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
10278 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha

```

10279 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
10280 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
10281 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
10282 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
10283 \DeclareTextCommand{\CYRpaloChka}{PU}{\84\300}% paloChka
10284 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
10285 \DeclareTextCompositeCommand{\U}{PU}{\cyrzH}{\84\302}% zhe breve
10286 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
10287 \DeclareTextCommand{\cyrkHk}{PU}{\84\304}% ka hook
10288 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
10289 \DeclareTextCommand{\cyrnHk}{PU}{\84\310}% en hook
10290 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
10291 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
10292 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
10293 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
10294 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis
10295 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
10296 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
10297 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
10298 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
10299 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
10300 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
10301 \DeclareTextCommand{\cyrSchwa}{PU}{\84\331}% schwa
10302 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
10303 \DeclareTextCompositeCommand{"}{PU}{\cyrSchwa}{\84\333}% schwa diaeresis
10304 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
10305 \DeclareTextCompositeCommand{"}{PU}{\cyrzH}{\84\335}% zhe diaeresis
10306 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
10307 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
10308 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
10309 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
10310 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% I macron
10311 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% i macron
10312 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
10313 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
10314 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
10315 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
10316 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
10317 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
10318 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
10319 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
10320 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U macron
10321 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% u macron
10322 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
10323 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
10324 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
10325 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
10326 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
10327 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
10328 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
10329 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

```

49.2.7 Symbols

```

10330 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
10331 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
10332 \DeclareTextCommand{\textquotleft}{PU}{\9040\030} % quotleft

```

```

10333 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
10334 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
10335 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
10336 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
10337 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
10338 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
10339 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
10340 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
10341 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
10342 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
10343 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
10344 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
10345 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
10346 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
10347 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
10348 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
10349 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
10350 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
10351 \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
10352 \DeclareTextCommand{\cyrrangle}{PU}{\9043\052}

10353 </puenc>

```

49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

10354 <*puvnenc>

10355 \DeclareTextCommand{\abreve}{PU}{\81\003}
10356 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10357 \DeclareTextCommand{\dj}{PU}{\81\021}
10358 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10359 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10360 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10361 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10362 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10363 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10364 \DeclareTextCommand{\DJ}{PU}{\81\020}
10365 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10366 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10367 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10368 \DeclareTextCommand{\UHORN}{PU}{\81\257}

10369 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
10370 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
10371 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
10372 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
10373 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
10374 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
10375 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
10376 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
10377 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
10378 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
10379 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
10380 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
10381 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
10382 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
10383 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
10384 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}

```

10385 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
10386 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
10387 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
10388 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
10389 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
10390 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
10391 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
10392 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
10393 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
10394 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
10395 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
10396 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
10397 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
10398 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
10399 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
10400 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
10401 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
10402 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
10403 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
10404 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}
10405 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}
10406 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}
10407 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}
10408 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}
10409 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}
10410 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}
10411 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}
10412 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}
10413 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}
10414 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}
10415 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}
10416 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}
10417 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}
10418 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}
10419 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}
10420 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}
10421 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}
10422 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}
10423 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}
10424 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}
10425 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}
10426 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}
10427 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}
10428 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}
10429 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}
10430 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}
10431 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}
10432 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}
10433 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}
10434 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}
10435 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}
10436 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}
10437 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}
10438 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}
10439 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}
10440 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
10441 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}

```

10442 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
10443 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
10444 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}
10445 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
10446 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}
10447 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
10448 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
10449 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}
10450 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
10451 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}
10452 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
10453 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
10454 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}
10455 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
10456 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
10457 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
10458 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
10459 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
10460 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
10461 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
10462 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
10463 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
10464 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
10465 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
10466 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
10467 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
10468 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
10469 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
10470 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
10471 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
10472 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
10473 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
10474 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
10475 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
10476 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
10477 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
10478 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
10479 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
10480 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
10481 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
10482 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
10483 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
10484 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
10485 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
10486 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
10487 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
10488 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
10489 </puvnenc>

```

49.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
10490 <*puarenc>
```

```

10491 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
10492 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
10493 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A

```

10494 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
10495 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HAMZA ABOVE
10496 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
10497 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
10498 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
10499 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
10500 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
10501 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
10502 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
10503 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
10504 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
10505 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
10506 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
10507 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
10508 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
10509 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
10510 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
10511 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
10512 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
10513 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
10514 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
10515 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
10516 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
10517 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEEL
10518 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
10519 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
10520 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
10521 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
10522 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
10523 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
10524 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
10525 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
10526 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
10527 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH
10528 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
10529 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
10530 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
10531 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
10532 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
10533 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
10534 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
10535 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

Farsi
10536 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
10537 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
10538 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
10539 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
10540 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
10541 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

10542 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
10543 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ%
10544 </puarenc>

50 End of file hycheck.tex

10545 `<*check>`
 10546 `<\typeout{>`
 10547 `<\begin{document}>`
 10548 `<\end{document}>`
 10549 `</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		1918, 1919, 1920,	\)	190, 215, 553, 559,	
\!	194, 219	1921, 1922, 1923,		562, 9254, 9517	
\"	201, 226, 9191,	1944, 1958, 1962,	\+	199, 224	
	9488, 9497, 9553,	1975, 9189, 9485,	\-	200, 225	
	9596, 9603, 9607,	9494, 9593, 9601,	\.	197, 222,	
	9615, 9621, 9629,	9605, 9612, 9619,		9491, 9500, 9524,	
	9636, 9643, 9644,	9622, 9626, 9634,		9684, 9691, 9707,	
	9651, 9657, 9660,	9639, 9640, 9648,		9718, 9748, 9882,	
	9704, 9715, 9793,	9655, 9658, 9679,		9883, 9894, 9895,	
	9800, 9804, 9811,	9681, 9682, 9683,		9904, 9905, 9924,	
	9817, 9825, 9832,	9686, 9688, 9689,		10001, 10002	
	9839, 9840, 9847,	9690, 9701, 9712,	\/	193, 218, 497, 498,	
	9853, 9856, 9997,	9790, 9798, 9802,		499, 564, 1020	
	10056, 10057,	9808, 9815, 9818,	\:	188, 213	
	10063, 10089,	9822, 9830, 9835,	\;	198, 223, 5000	
	10090, 10101,	9836, 9844, 9851,	\<	195, 220	
	10182, 10294,	9854, 9878, 9879,	\=	166, 172, 179, 182,	
	10295, 10302,	9934, 9935, 9944,		9722, 9872, 9873,	
	10303, 10304,	9945, 9961, 9962,		9890, 9891, 9915,	
	10305, 10306,	9967, 9968, 9999,		9916, 9917, 9953,	
	10307, 10312,	10000, 10023,		9954, 9983, 9984,	
	10313, 10314,	10024, 10025,		10310, 10311,	
	10315, 10318,	10026, 10027,		10320, 10321	
	10319, 10322,	10028, 10029,	\>	196, 221	
	10323, 10326,	10031, 10058,	\@@@	1418	
	10327, 10328,	10059, 10060,	\@@BOOKMARK	9184,	
	10329	10061, 10091,		9185, <u>9233</u> , 9280,	
\#	390, 1266, 1267, 2676,	10092, 10093,		9285	
	2686, 2688, 2702,	10103, 10112,	\@@Listbox	8047, 8067,	
	2721, 2730, 2799,	10184, 10193,		8426, 8454, 8684,	
	5181, 5183, 5693,	10369, 10374,		<u>8712</u>	
	5702, 5729, 6203,	10379, 10384,	\@@Menu	8253, 8261	
	7580, 7589, 7616,	10389, 10394,	\@@PasswordField	..	
	7819, 7827, 7853	10399, 10404,		.. 8203, 8209	
\\$	183, 208, 391, 2678,	10409, 10414,	\@@Radio	8031, 8053,	
	2729	10419, 10424,		8251, 8273, 8410,	
\%	392, 1241, 1242,	10429, 10434,		8432, 8668, <u>8690</u>	
	2675, 2683, 2685,	10439, 10444,	\@@TextField	.. 8205,	
	2722, 5183	10449, 10454,		8220	
\&	184, 209, 393, 2689,	10459, 10464,	\@@commahyperpage	..	
	7626	10469, 10474,		.. 4812, 4813	
\'	202, 227, 1894, 1900,	10479, 10484	\@@hyperref	2763, 2764	
	1904, 1905, 1910,	\(189, 214, 581, 584,	\@@latextohtmlX	1790,
	1911, 1916, 1917,		586, 9253, 9516		2913

<code>\@wrindex</code> 4774, 4775	<code>\@baseurl</code> 2120, 2122,	8268, 8282, 8398,
<code>\@writetorep</code> . 9105,	2865, 5425, 5428,	8437, 8461, 8659,
9110	5653, 5655, 5889,	8696, 8719
<code>\@BIBLABEL</code> 4274, 4279,	5891, 6145, 6152,	<code>\@currValue</code> . . 2993,
4282	6179, 6181, 6578,	2995, 8062, 8074,
<code>\@BOOKMARK</code> 9184, 9185	6580, 6916, 6930,	8268, 8279, 8444,
<code>\@CITE</code> . . . 4345, 4353	7540, 7542, 7704,	8461, 8704, 8719,
<code>\@CITEX</code> 4347	7718, 7783, 7785	9019
<code>\@CheckBox</code> 3165, 6261,	<code>\@begindiv</code> 4498, 4501,	<code>\@currentHlabel</code> 3774,
8125, 8152, 8173,	9354, 9357	3776, 3779, 4036,
8304, 8519, 8789	<code>\@begindivbox</code> . 4499,	4047, 4050, 4052,
<code>\@ChoiceMenu</code> . . 3162,	9355	4097
6264, 8010, 8155,	<code>\@bibitem</code> 4297, 4326	<code>\@currentHref</code> . 1419,
8176, 8241, 8386,	<code>\@biblabel</code> 4274, 4315	3247, 3744, 3778,
8647	<code>\@bookmarkopenstatus</code>	3783, 3848, 3850,
<code>\@Form</code> . . . 2954, 6253,	2573, 2590, 9158	3926, 3937, 3941,
7881, 8144, 8165,	<code>\@bookmarksopenlevel</code>	3946, 3968, 4037,
8186, 8335, 8592	2092, 2094, 2576	4048, 4051, 4053,
<code>\@Gauge</code> . . 3171, 6255,	<code>\@bsphack</code> 1407, 2796,	4098, 4193, 4195,
7979, 8146, 8167,	4412	4213, 4417, 4593,
8191, 8325, 8589	<code>\@caption</code> 4170, 4178,	4614, 4623, 4629,
<code>\@Localurlfalse</code> 6210	4201, 4229, 4231	4673, 4674, 4680,
<code>\@Localurltrue</code> . 6207	<code>\@capter</code> 1416, 4164,	4681, 4687, 4688,
<code>\@M</code> 1459	4168, 4169, 4176,	9095, 9096, 9374,
<code>\@PushButton</code> . . 3168,	4179, 4204, 4212,	9375, 9383, 9384,
6267, 8082, 8158,	4222, 4226, 4229	9413, 9414, 9420,
8179, 8285, 8470,	<code>\@car</code> . . 883, 899, 2071,	9424, 9451, 9452
8732	2613, 5392, 5403	<code>\@currentlabel</code> 4410,
<code>\@Reset</code> . . 3177, 6270,	<code>\@cdr</code> 5393, 5404	4417, 4865, 4917
8111, 8161, 8182,	<code>\@chapter</code> 9379, 9380	<code>\@currentlabelname</code>
8301, 8504, 8770	<code>\@cite</code> . . . 4345, 4376,	. . . . 1412, 4038,
<code>\@Roman</code> 442	4473, 4479	4099, 4180
<code>\@SCTR</code> . . . 4859, 4911	<code>\@cite@opt</code> 4474, 4480,	<code>\@currentlabstr</code> 1411,
<code>\@SetMaxRnhefLabel</code>	4484, 4494	1418
. . . . 4342	<code>\@citea</code> . . 4348, 4355,	<code>\@curropt</code> 8019, 8020,
<code>\@Submit</code> . . 3174, 6271,	4356, 4375, 4378,	8055, 8056, 8070,
8096, 8162, 8183,	4379	8071, 8259, 8264,
8298, 8485, 8751	<code>\@citeb</code> . . 4354, 4357,	8265, 8267, 8274,
<code>\@TextField</code> . . 3159,	4359, 4361, 4365,	8275, 8277, 8395,
6258, 7982, 8149,	4368, 4377, 4380,	8396, 8434, 8435,
8170, 8194, 8359,	4382, 4384, 4388,	8457, 8458, 8656,
8614	4391	8657, 8693, 8694,
<code>\@addchap</code> 9441	<code>\@citebordercolor</code> .	8715, 8716
<code>\@addtoreset</code> . . 4691,	. . . . 2334	<code>\@dblarg</code> . 1505, 4176,
4692, 4706, 4856	<code>\@citecolor</code> 2108, 2115	4229
<code>\@afterheading</code> . 9457	<code>\@citedata@opt</code> 4475,	<code>\@definecounter</code> 4657,
<code>\@anchorcolor</code> . 2107,	4481, 4483	4658
2114, 5666, 5747,	<code>\@citedatax</code> 4490, 4495	<code>\@ehd</code> . . 63, 4165, 4223
6313, 7553, 7795	<code>\@citedatax@opt</code> 4487,	<code>\@empt</code> 463
<code>\@auxout</code> . . 1414, 2798,	4493	<code>\@endForm</code> 2955, 6254,
3342, 3344, 3820,	<code>\@citeseppen</code> . . 4472,	7978, 8145, 8166,
3836, 4290, 4303,	4478	8190, 8358, 8608
4319, 4329, 4359,	<code>\@citex</code> 4374	<code>\@eqnncr</code> 3954
4382, 4408, 4414,	<code>\@commahyperpage</code> . .	<code>\@eqnstarfalse</code> 3932,
4438	. . 4807, 4812	3957
<code>\@backslashchar</code> 1169,	<code>\@currDisplay</code> . 2991,	<code>\@eqnstartrue</code> . . 3954
2697, 5196, 5206	8022, 8058, 8074,	<code>\@eqnswtrue</code> 3904, 3913

<code>\@esphack</code> 1425, 2801, 4422, 4797	3320, 3326, 3327, 3328, 3330, 3331, 3332, 3662, 4166, 4224, 4591, 5580, 6479, 6482, 8336, 8593, 9150, 9151, 9152, 9279	2478, 3730, 3787, 3795, 3845, 3860, 3864, 3872, 3900, 3993, 4060, 4202, 4397, 4470, 4581, 4585, 4715, 4751, 4752, 4849, 7778
<code>\@extra@b@citeb</code> 4346, 4368, 4384, 4391		
<code>\@extra@binfo</code> . 4263, 4265		
<code>\@fifthoffive</code> . 2393, 2637, 2790, 5066, 5112	<code>\@gobblefour</code> 505, 748, 749, 750, 4980	<code>\@ifpackagewith</code> 640, 647, 648, 655, 661, 662, 669, 670, 671, 680, 681, 682, 690, 691, 699, 700, 701, 702, 709, 710, 718, 719, 726, 732, 737, 2374, 2420, 2421, 2422, 4683
<code>\@filebordercolor</code> 2332, 5319, 6010, 6031, 6362, 7236, 7252, 7276, 7295	<code>\@gobbleopt</code> 3332, 3333 <code>\@gobbletwo</code> 500, 506, 507, 747, 943, 947, 951, 1556, 2386, 3314, 3321, 3329, 3332, 5098, 9372	
<code>\@filecolor</code> .. 2111, 2116, 5335, 5366, 5841, 5853, 6019, 6043, 6364, 6411	<code>\@harvarditem</code> . 4427, 4429	<code>\@ifstar</code> ... 66, 2653, 2655, 5098
<code>\@firstoffive</code> . 2633, 2642, 5089, 5117	<code>\@hyper@anchor</code> 2874, 2875	<code>\@ifundefined</code> 34, 235, 436, 492, 565, 601, 606, 619, 622, 854, 1403, 1433, 1533, 2027, 2035, 2042, 2069, 2150, 2155, 2353, 2359, 3424, 3675, 3676, 3737, 3758, 3866, 3875, 3959, 4169, 4261, 4268, 4345, 4361, 4384, 4666, 4696, 4704, 4705, 4718, 4719, 4726, 5129, 5130, 5606, 6280, 6642, 6643, 6696, 6958, 8336, 8593, 8869, 9378, 9387
<code>\@firstofone</code> 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 435, 2575, 3771, 3773, 3807, 4174, 4227, 4357, 4380, 4523, 4592, 5578, 8860, 8877, 8894	<code>\@hyper@itemfalse</code> . .. 3696, 3712 <code>\@hyper@itemtrue</code> 3697 <code>\@hyper@launch</code> 2844, 2852, 5339, 6022, 6397, 7263 <code>\@hyper@linkfile</code> 2834, 2837, 2841, 2855 <code>\@hyper@readexternallink</code> .. 2828, 2832 <code>\@hyperdef</code> 2771, 2772 <code>\@hyperfixhead</code> 4504, 4515 <code>\@hyperpage</code> 4804, 4805 <code>\@hyperref</code> 2752, 2763 <code>\@ifclasslater</code> 9463, 9468 <code>\@ifclassloaded</code> 1399, 4337, 4840, 4844, 5583, 9462, 9467 <code>\@ifnextchar</code> 12, 88, 103, 123, 501, 502, 942, 2609, 2752, 2771, 2809, 2954, 3159, 3162, 3165, 3168, 3171, 3174, 3177, 3332, 3387, 3396, 4111, 4129, 4427, 4485, 6941, 7143, 7156, 7172, 9184, 9185 <code>\@ifpackagelater</code> 1427, 4716 <code>\@ifpackageloaded</code> . 346, 1402, 2373,	
<code>\@firstoftwo</code> 451, 616, 3322		<code>\@indexfile</code> .. 4778, 4786, 4790 <code>\@inmathwarn</code> 384, 385 <code>\@latex@</code> . 3418, 3419 <code>\@latex@error</code> . 1733, 1750, 1760, 1769, 4165, 4223 <code>\@latex@warning</code> 2785, 4364, 4387, 5041, 5061, 5078, 5123, 5132 <code>\@lbibitem</code> 4275, 4314 <code>\@linkbordercolor</code> . 2329, 5279, 6304 <code>\@linkcolor</code> .. 2106, 2113, 6959 <code>\@linkdim</code> . 316, 5708, 5709, 5714, 5715,
<code>\@footnotemark</code> 3997, 4043, 4107, 4109, 4121, 4122, 4152, 4154		
<code>\@footnotetext</code> 3996, 4003, 4028, 4108, 4110, 4124, 4125, 4145		
<code>\@for</code> 2139, 4354, 4377, 8019, 8055, 8070, 8259, 8264, 8274, 8395, 8434, 8457, 8656, 8693, 8715		
<code>\@fourthoffive</code> . 463, 2636, 2791, 5108, 5114		
<code>\@gobble</code> 49, 56, 117, 454, 455, 456, 482, 623, 822, 835, 839, 900, 911, 912, 919, 924, 938, 943, 947, 1446, 1448, 2273, 2382, 2384, 2667, 3291, 3295, 3310, 3312,		

5716, 5775, 5776,	3545, 3562, 3610,	7391, 7493, 7630,
5785, 5786, 5787,	3612, 3876, 3884,	7775
5803, 5804, 5813,	3886, 3895, 4823,	\@pdfcreationdate .
5814, 5815, 5833,	4826, 4836, 5045,	.... 2267, 2341,
5834, 5843, 5844,	5048, 5192, 5198,	5484, 5486, 5865,
5845, 7595, 7596,	5202, 5208, 5392,	5867, 6091, 6093,
7601, 7602, 7603,	5393, 5403, 5404,	6840, 6842, 7642,
7833, 7834, 7840,	6445, 6446, 8867,	7644
7841, 7842	8880, 8885	\@pdfcreator .. 2266,
\@listctr 4304, 4330	\@nobreakefalse . 3378	2340, 5483, 5864,
\@m . 4356, 4379, 6518	\@nocnterr 4705, 4719	6090, 6620, 6864,
\@mainaux 3340, 3341,	\@nocounterr .. 4704,	7641
3645, 3653	4718	\@pdfdirection 5445,
\@makecaption . 4190,	\@number . 3771, 3807,	5913, 6125, 6590,
4241	4523	6896, 7684
\@makefnmark .. 4055,	\@nx . 4708, 4722, 4725,	\@pdfduplex .. 5451,
4157	4727	5919, 6131, 6596,
\@makeother 165, 166,	\@onelevel@sanitize	6902, 7690
178, 179, 181,	.... 1549, 1553,	\@pdfhighlight 2171,
182, 187, 188,	2070, 3572, 3574,	2336, 5256, 5258,
189, 190, 191,	4619	5290, 5315, 5317,
192, 193, 194,	\@outlinefile . 9156,	5347, 5349, 5634,
195, 196, 197,	9266, 9267, 9269,	5636, 6733, 6815,
198, 199, 200,	9325, 9326, 9328	6826, 7136, 7178,
201, 202, 2689,	\@pagebordercolor .	7202, 7214, 7232,
5172, 9257	.. 2335, 7181	7249, 7272, 7292
\@makeschapterhead	\@pagecolor 2112, 2119	\@pdfhightlight 5288
.. 9454, 9456	\@pagerefstar . 2655,	\@pdfkeywords . 2270,
\@menubordercolor .	5092	2344, 5496, 5862,
.... 2331, 5638,	\@pagesetref ... 5057	6104, 6625, 6866,
6075, 6418	\@parboxrestore 4185,	7639
\@menucolor .. 2110,	4236	\@pdflang 2321, 2349,
2118, 5647, 6078,	\@parcount 9237, 9244	5471, 5473, 5941,
6420	\@part ... 9396, 9403	5943, 6162, 6164,
\@mkboth . 4962, 9372,	\@pdfauthor .. 2264,	6926, 6928, 7714,
9444, 9446	2338, 5480, 5873,	7716
\@mpfn 4000, 4130, 4142	6099, 6617, 6865,	\@pdfm@dest .. 5953,
\@mpfootnotetext ..	7650	5963, 5967
4003, 4016, 4017	\@pdfborder .. 1795,	\@pdfm@mark .. 3633,
\@mycount 9235, 9244	2050, 2178, 2181,	5952, 5956, 5980,
\@namedef 2168, 3953,	2183, 5243, 5960,	5996, 6005, 6020,
3956, 4402, 4403,	6302, 6734, 6816,	6026, 6044, 6049,
4404, 4405	6827, 7137, 7147,	6062, 6066, 6079,
\@nameuse 1416	7161, 7179, 7203,	6086, 6146, 6170,
\@ne . 4508, 6563, 7382	7215, 7233, 7250,	8595, 8596, 8597,
\@newctr . 4662, 4663	7273, 7293, 7317,	8606, 8639, 8644,
\@newl@bel 3381, 4263	7390, 7492, 7629,	8699, 8708, 8725,
\@nil .. 332, 336, 341,	7774	8730, 8742, 8748,
345, 360, 460,	\@pdfborderstyle ..	8762, 8767, 8781,
463, 883, 901,	.... 2179, 2185,	8786, 8801, 8806,
1293, 1295, 1311,	2187, 5244, 5961,	8810, 8839, 8847,
1313, 2071, 2151,	6303, 6735, 6817,	9306
2153, 2606, 2616,	6828, 7138, 7148,	\@pdfmoddate .. 2268,
2706, 2710, 2715,	7162, 7180, 7204,	2342, 5488, 5490,
3406, 3409, 3416,	7216, 7234, 7251,	5869, 5871, 6095,
3418, 3419, 3472,	7274, 7294, 7318,	6097, 6844, 6848,
3519, 3520, 3522,		7646, 7648

\@pdfnonfullscreenpagemode	5494, 5857, 5858, 5444, 5912, 6124, 6589, 6895, 7683	8720
\@pdfnumcopies	5460, 5462, 5928, 5930, 6140, 6142, 6605, 6607, 6911, 6913, 7699, 7701	\@protected@testopt 503
\@pdfpageduration	.... 2128, 5531, 5534, 5539, 6525, 6527, 6530, 6772, 6774, 6782	\@refstar 2653, 5087
\@pdfpagelayout	5470, 5940, 6161, 6610, 6612, 6925, 7713	\@runbordercolor .. 2333, 5351, 6409
\@pdfpagemode	.. 2466, 2467, 2586, 2587, 2596, 2597, 5427, 5899, 6156, 6577, 6882, 7670	\@safe@activesfalse .. 440, 2639
\@pdfpagescrop	2290, 2345, 5412, 5416, 5893, 5894, 5901, 5903, 6168, 6170, 6572, 6574, 6884, 6886, 7672, 7674	\@safe@activetrue .. 439, 2638
\@pdfpagetransition	.... 2126, 5508, 5511, 5516, 6426, 6428, 6430, 6755, 6757, 6765	\@schapter 9368, 9369
\@pdfpicktraybypdfsize	.... 5452, 5454, 5920, 5922, 6132, 6134, 6597, 6599, 6903, 6905, 7691, 7693	\@secondoffive 2394, 2634, 2647, 5067, 5068, 5094, 7191
\@pdfprintarea	5448, 5916, 6128, 6593, 6899, 7687	\@secondoftwo
\@pdfprintclip	5449, 5917, 6129, 6594, 6900, 7688	.. 434, 457, 614, 2393, 2394
\@pdfprintpagerange	.... 2252, 2348, 5456, 5458, 5924, 5926, 6136, 6138, 6601, 6603, 6907, 6909, 7695, 7697	\@sect ... 9416, 9417
\@pdfprintscaling	.... 5450, 5918, 6130, 6595, 6901, 7689	\@seqncr 3954
\@pdfproducer	.. 2265, 2339, 5370, 5492,	\@serial@counter 9187, 9234, 9235, 9236
		\@seteqlabel .. 4684, 4685
		\@setminipage . 4187, 4238
		\@setref . 2642, 2647, 5036, 5037, 5074
		\@sharp ... 3876, 3881
		\@skiphyperreffalse 3713, 4286, 4298
		\@skiphyperreftrue .. 4276, 4298
		\@spart .. 9409, 9410
		\@sssect .. 9363, 9364
		\@startlos 4974, 4981, 5030
		\@starttoc 3366
		\@tempa .. 4062, 4066, 4069, 4085
		\@tempb .. 3980, 3984
		\@tempboxa 5707, 5708, 5714, 5772, 5775, 5778, 5779, 5785, 5790, 5791, 5801, 5803, 5806, 5807, 5813, 5818, 5819, 5831, 5833, 5836, 5837, 5843, 5848, 5849, 7594, 7595, 7601, 7832, 7833, 7840
		\@tempcnta 9116, 9117, 9118, 9119, 9120, 9122, 9125, 9126, 9127, 9133, 9135, 9137, 9169, 9170,
	\@pdfstartpage 2282, 2347, 5435, 5897, 6150, 6576, 6880, 7668	
	\@pdfstartview 2285, 2287, 2346, 5328, 5433, 5435, 5898, 6014, 6148, 6150, 6881, 7241, 7257, 7669	
	\@pdfsubject .. 2269, 2343, 5482, 5878, 6089, 6619, 6863, 7655	
	\@pdftempa 2839, 2840, 2843	
	\@pdftempwordfile . .. 2830, 2840	
	\@pdftempwordrun 2831, 2843	
	\@pdftitle 2263, 2337, 5481, 5863, 6088, 6618, 6862, 7640	
	\@pdfview 2275, 5229, 5236, 5956, 5959, 6301, 6310, 6321, 6678, 6708, 7319, 7392, 7494, 7726	
	\@pdfviewarea . 5446, 5914, 6126, 6591, 6897, 7685	
	\@pdfviewclip . 5447, 5915, 6127, 6592, 6898, 7686	
	\@pdfviewparams 2277, 2279, 6678, 6708, 7320, 7393, 7495, 7727	
	\@percentchar . 2684, 2685, 2722	
	\@processme .. 2987, 2988, 5513, 5519, 5536, 5542, 5557, 5563, 6944, 6945, 7006, 7007, 7010, 7011, 8073, 8075, 8460, 8462, 8718,	

9171, 9174, 9175, 9176, 9177, 9178, 9347, 9348, 9349	6336, 7571, 7575, 7812, 7816	10461, 10466, 10471, 10476, 10481, 10486
\@tempdima 1450, 3199, 3200, 3201, 3202, 3203, 3204, 3205, 3206, 5222, 8018, 8023, 8025, 8034, 8035, 8036, 8042, 8043, 8044, 8045, 8394, 8399, 8401, 8413, 8414, 8415, 8421, 8422, 8423, 8424, 8655, 8660, 8662, 8671, 8672, 8673, 8679, 8680, 8681, 8682	\@whilenum 764 \@wrindex 4757, 4758, 4774 \@writefile ... 4415 \@x@sf ... 4045, 4057, 4156, 4158 \@xfootnote ... 4129 \@xfootnotemark 4009, 4147 \@xfootnotenext 3998, 4140 \@exp . 4707, 4708, 4721, 4722, 4724, 4725 \[..... 191, 216 \{ 387 \} 388 \] 192, 217 \^ 185, 210, 1899, 2674, 2681, 9486, 9495, 9594, 9602, 9606, 9613, 9620, 9627, 9635, 9641, 9642, 9649, 9656, 9702, 9713, 9791, 9799, 9803, 9809, 9816, 9823, 9831, 9837, 9838, 9845, 9852, 9880, 9881, 9900, 9901, 9908, 9909, 9928, 9929, 9930, 9969, 9970, 9993, 9994, 9995, 9996	\| 187, 212, 1132, 1223, 1855, 2363, 4754, 5171, 5177 \~ 394, 766, 1893, 1901, 1902, 1903, 2424, 2695, 9487, 9496, 9595, 9610, 9614, 9628, 9646, 9650, 9703, 9714, 9792, 9806, 9810, 9824, 9842, 9846, 9912, 9913, 9914, 9981, 9982, 10373, 10378, 10383, 10388, 10393, 10398, 10403, 10408, 10413, 10418, 10423, 10428, 10433, 10438, 10443, 10448, 10453, 10458, 10463, 10468, 10473, 10478, 10483, 10488
\@tempdimb 8022, 8023, 8398, 8399, 8659, 8660		
\@tempswafalse . 4489		
\@tempswattrue . 4459, 4462, 4465, 4486		
\@temptokena .. 1979, 1984, 1987, 1989		
\@tfor 3981		
\@theH@page .. 4525, 4527		
\@thefnmark .. 4001, 4012, 4074, 4075, 4131, 4143, 4150		
\@thehead 4536, 4537, 4541, 4552		
\@thirdoffive .. 2635		
\@topnewpage ... 9454		
\@undefined 508, 2418, 3323, 3345, 3365, 3534, 3552, 3591, 4164, 4222, 5220, 5372, 5381, 6274, 6551, 6565	_ 186, 211, 395, 2677, 2691, 2692 \' 165, 171, 178, 181, 1958, 1961, 1964, 1966, 1974, 9484, 9493, 9592, 9600, 9604, 9611, 9618, 9625, 9633, 9637, 9638, 9647, 9654, 9700, 9711, 9789, 9797, 9801, 9807, 9814, 9821, 9829, 9833, 9834, 9843, 9850, 10371, 10376, 10381, 10386, 10391, 10396, 10401, 10406, 10411, 10416, 10421, 10426, 10431, 10436, 10441, 10446, 10451, 10456,	Numbers \3 374, 808, 809, 810, 811, 812, 813, 814, 815, 1379, 9252, 9592, 9593, 9594, 9595, 9596, 9597, 9598, 9599, 9600, 9601, 9602, 9603, 9604, 9605, 9606, 9607, 9608, 9609, 9610, 9611, 9612, 9613, 9614, 9615, 9616, 9617, 9618, 9619, 9620, 9621, 9622, 9623, 9624, 9625, 9626, 9627, 9628, 9629, 9630, 9631, 9632, 9633, 9634, 9635, 9636, 9637, 9638, 9639, 9640, 9641, 9642, 9643, 9644, 9645, 9646, 9647, 9648, 9649, 9650, 9651, 9652, 9653, 9654, 9655, 9656, 9657, 9658, 9659, 9660, 9661, 9789, 9790, 9791,
\@undottedtocline 5026		
\@unprocessedoptions 2553		
\@urlbordercolor 2330, 5292, 6054, 6374, 7205, 7217		
\@urlcolor 2109, 2117, 5303, 5713, 5722, 5811, 5823, 6061, 6376, 7600, 7609, 7839, 7847		
\@urltype 5684, 5688, 6184, 6206, 6329,		

9792, 9793, 9794,	10314,	10315,	10332,	10333,
9795, 9796, 9797,	10316,	10317,	10334,	10335,
9798, 9799, 9800,	10318,	10319,	10336,	10337,
9801, 9802, 9803,	10320,	10321,	10338,	10339,
9804, 9805, 9806,	10322,	10323,	10340,	10341,
9807, 9808, 9809,	10324,	10325,	10342,	10343,
9810, 9811, 9812,	10326,	10327,	10344,	10345,
9813, 9814, 9815,	10328,	10329,	10346,	10347,
9816, 9817, 9818,	10356,	10358,	10348,	10349,
9819, 9820, 9821,	10359,	10363,	10350,	10351,
9822, 9823, 9824,	10365,	10366,	10352,	10370,
9825, 9826, 9827,	10369,	10371,	10372,	10374,
9828, 9829, 9830,	10373,	10384,	10375,	10376,
9831, 9832, 9833,	10386,	10390,	10377,	10378,
9834, 9835, 9836,	10391,	10392,	10379,	10380,
9837, 9838, 9839,	10393,	10394,	10381,	10382,
9840, 9841, 9842,	10395,	10396,	10383,	10385,
9843, 9844, 9845,	10397,	10399,	10387,	10388,
9846, 9847, 9848,	10400,	10401,	10389,	10390,
9849, 9850, 9851,	10402,	10403,	10391,	10392,
9852, 9853, 9854,	10404,	10405,	10393,	10395,
9855, 9856, 9857,	10406,	10407,	10397,	10400,
10006, 10007,	10408,	10409,	10402,	10404,
10008, 10009,	10410,	10411,	10405,	10406,
10010, 10011,	10412,	10413,	10407,	10408,
10012, 10013,	10414,	10415,	10409,	10410,
10014, 10015,	10416,	10417,	10411,	10412,
10016, 10017,	10419,	10420,	10413,	10415,
10018, 10019,	10421,	10422,	10417,	10419,
10020, 10021,	10423,	10424,	10420,	10421,
10022, 10062,	10425,	10426,	10422,	10423,
10079, 10080,	10427,	10428,	10425,	10426,
10081, 10082,	10429,	10431,	10427,	10428,
10083, 10084,	10433,	10444,	10430,	10432,
10085, 10086,	10446,	10450,	10434,	10435,
10087, 10088,	10451,	10452,	10436,	10437,
10089, 10090,	10453,	10454,	10438,	10439,
10091, 10092,	10455,	10456,	10440,	10441,
10093, 10094,	10457,	10459,	10442,	10443,
10095, 10096,	10460,	10461,	10445,	10447,
10097, 10098,	10462,	10463,	10448,	10449,
10099, 10283,	10464,	10465,	10450,	10451,
10284, 10285,	10466,	10467,	10452,	10453,
10286, 10287,	10468,	10469,	10455,	10457,
10288, 10289,	10470,	10471,	10460,	10462,
10290, 10291,	10472,	10473,	10464,	10465,
10292, 10293,	10474,	10475,	10466,	10467,
10294, 10295,	10476,	10477,	10468,	10469,
10296, 10297,	10479,	10480,	10470,	10471,
10298, 10299,	10481,	10482,	10472,	10473,
10300, 10301,	10483,	10484,	10475,	10477,
10302, 10303,	10485,	10486,	10479,	10480,
10304, 10305,	10487,	10488,	10481,	10482,
10306, 10307,	10541, 10543		10483,	10485,
10308, 10309,			10486,	10487,
10310, 10311,	\9 377, 1314,		10488, 10542	
10312, 10313,	1335, 1359, 1379,			
	10330, 10331,			

<code>\l</code> ... 489, 4356, 4379	<code>\aleflowerhamza</code> ... 3216, 3217, 5764, 6704, 6726, 7345	
A	<code>\alefmadda</code> ... 10495	
<code>\ABREVE</code> 10362, 10434, 10435, 10436, 10437, 10438	<code>\alefmadda</code> ... 10492	<code>\bbl@cite@choice</code> ... 4269
<code>\abreve</code> 10355, 10374, 10375, 10376, 10377, 10378	<code>\alefmaqsura</code> ... 10526	<code>\BeforeTeXIVht</code> . 1676
<code>\ACIRCUMFLEX</code> . 10363, 10439, 10440, 10441, 10442, 10443	<code>\Alph</code> 3538, 3759, 3760	<code>\begin</code> ... 7870, 10547
<code>\acircumflex</code> .. 1966, 10356, 10379, 10380, 10381, 10382, 10383	<code>\alph</code> 3539, 3973	<code>\belowpdfbookmark</code> . 9173
<code>\Acrobatmenu</code> .. 1448, 2390, 3320, 5629, 6064, 6414, 7132	<code>\AMSautorefname</code> 5147	<code>\bfseries</code> . 422, 4362, 4385, 5040, 5060, 5077, 5122
<code>\active</code> 744, 751, 2674, 2675, 2676, 2677, 2678, 2681, 2683, 2686, 2692, 9256	<code>\anchor@spot</code> .. 2879, 2892, 2899, 2905, 5268, 5666, 5747, 6248, 6313, 6675, 7553, 7795	<code>\bgroup</code> ... 498, 6248, 6718, 7997, 8016, 8084, 8100, 8115, 8128, 8198, 8245, 8287, 8308, 8374, 8392, 8472, 8489, 8508, 8522, 8629, 8653, 8734, 8755, 8774, 8792
<code>\add@accent</code> ... 386	<code>\appendix</code> 3756, 3757	<code>\bibcite</code> . 4262, 4266, 4270, 4291, 4304, 4320, 4330
<code>\addcontentsline</code> .. 4181, 4233, 4589, 4595, 4651, 9459	<code>\appendixautorefname</code> 1865, 1882, 1899, 1916, 1933, 1950, 1967, 5157	<code>\BOOKMARK</code> 9157, 9184
<code>\addtocontents</code> 4628, 4652, 4857, 4909, 9448, 9449	<code>\arabic</code> .. 3535, 3674, 3675, 3677, 3678, 3679, 3681, 3682, 3683, 3684, 3686, 3687, 3688, 3689, 3690, 3691, 3694, 3704, 3705, 3738, 3811, 4660, 4666, 4703, 4717, 4845, 4850, 4852	<code>\box</code> 3207, 6992
<code>\addtocounter</code> . 3804, 3827, 3835, 3839	<code>\AtBeginDocument</code> 236, 1790, 2380, 2464, 2601, 3794, 4398, 5576, 6296	<code>\bullet</code> .. 4992, 5000, 5010, 5018
<code>\addvspace</code> 9448, 9449	<code>\AtBeginDvi</code> .. 7321, 7394, 7463, 7485, 7882	C
<code>\advance</code> 314, 315, 765, 3200, 3201, 3204, 3205, 3489, 5715, 5786, 5814, 5844, 6547, 7602, 7841, 8025, 8043, 8044, 8401, 8422, 8423, 8662, 8680, 8681, 9117, 9119, 9120, 9126, 9135, 9177, 9348	<code>\AtEndDocument</code> 3357, 3630	<code>\C</code> . 9710, 9721, 10218, 10219
<code>\AE</code> 9598, 9795	<code>\AtEndOfPackage</code> 1400, 2026, 2034, 2041, 2452, 2471, 2477, 2592	<code>\c</code> .. 1893, 1901, 1902, 1903, 3409, 3416, 9492, 9501, 9599, 9632, 9708, 9719, 9796, 9828, 9906, 9907, 9931, 9932, 9936, 9937, 9946, 9947, 9963, 9964, 9971, 9972, 9975, 9976
<code>\ae</code> 9631, 9827	<code>\author</code> .. 3386, 3396	<code>\c@footnote</code> .. 4011, 4064, 4072, 4149
<code>\afterassignment</code> .. 1032, 1038, 1044	<code>\auto@setref</code> ... 465	<code>\c@page</code> .. 3471, 3489, 3490, 3494, 3506, 3508, 3513, 3520, 3522, 3524, 3553, 4508, 4509, 4520
<code>\AfterBeginDocument</code> 235, 1680, 1746, 2461, 2504, 2658, 3249, 3337, 3651, 7370, 7532	<code>\autoref</code> . 2465, 5097, 7861	<code>\c@secnumdepth</code> 9386, 9404, 9418, 9423
<code>\alef</code> 10497	<code>\ayn</code> 10515	<code>\c@slidesection</code> 4858, 4986, 4987
<code>\alefhamza</code> ... 10493	B	<code>\c@slidesubsection</code> 4910
	<code>\baa</code> 10498	<code>\c@tocdepth</code> 2062, 2067
	<code>\back@none</code> 1803, 1813, 1826	<code>\calc@bm@number</code> 9280, 9346
	<code>\back@page</code> 1805, 1818	
	<code>\back@section</code> . 1804, 1810, 1816, 1822	
	<code>\back@slide</code> 1806, 1815	
	<code>\backcite</code> 4416	
	<code>\backref</code> . 4447, 7865	
	<code>\baselineskip</code> . 1452, 3213, 3214, 3215,	

\calculate@pdfview	5336, 5367, 5647	\cyrchvcrs ...	10276
.. 2271, 2274		\CYRD	10119
\caption . 4163, 4165,	\closeout 3340	\cyrdd	10152
4221, 4223	\codeof 4438	\CYRDJE	10102
\catcode 171, 172, 183,	\color ... 2613, 2616	\cyrdje	10183
184, 185, 186,	\color@endbox . 5707,	\CYRDZE	10105
205, 744, 751,	5772, 5801, 5831,	\cyrdze	10186
1132, 1133, 1223,	7594, 7832	\CYRDZHE	10114
1224, 2674, 2675,	\color@hbox .. 5707,	\cyrdzhe	10195
2676, 2677, 2678,	5772, 5801, 5831,	\CYRE .. 10101, 10120,	
2681, 2683, 2686,	7594, 7832	10298	
2692, 2702, 2729,	\COMBINING	\cyre .. 10153, 10182,	
2730, 5171, 6747,	.. 10231, 10232,	10299	
6748, 9189, 9191,	10233, 10234	\CYREREV 10145	
9256	\contentsline . 3346,	\cyrerev 10178	
\cf@encoding ... 820	3347, 3358, 4629,	\CYRERY . 10143, 10328	
\chapterautorefname	4633, 4652, 4654	\cyrery . 10176, 10329	
.... 1866, 1883,	\copy 3886, 3891	\CYRF 10136	
1900, 1917, 1934,	\count@ 763, 764, 765,	\cyrf 10169	
1951, 1968, 5158	766, 1033, 2078,	\CYRFITA 10214	
\chapternumberline	2079, 2084, 2085,	\cyrfita 10215	
.. 9148, 9152	6543, 6544, 6545,	\CYRG ... 10103, 10118	
\char 8352, 9193, 9230	6546, 6547, 6550	\cyrghcrs ... 10237	
\check@bmnnumber ..	\CurrentBorderColor	\cyrghcrs ... 10238	
.... 9290, 9299,	.... 5260, 5272,	\CYRGHK 10239	
9339, 9347	5276, 5279, 6304,	\cyrghk 10240	
\CheckBox 3164	6334, 6339, 6348,	\CYRGUP 10235	
\CheckCommand .. 4061	6381, 6389	\cyrghup 10236	
\checkcommand ... 42,	\currentpdfbookmark	\CYRH 10137	
3834, 4140, 4147,	.... 9165	\cyrh 10170	
4154, 4221, 4231,	\cyr 441	\CYRHDSC 10269	
4314, 4326, 4651,	\CYRA .. 10115, 10292,	\cyrhdsc 10270	
4654, 4703, 5074	10294	\CYRHRDSN 10142	
\checklatex . 4, 4139,	\cyra .. 10148, 10293,	\cyrhrdsn 10175	
4220, 4313, 4650,	10295	\CYRI .. 10123, 10125,	
5073	\CYRABHCH 10279	10310, 10312	
\checkpackage 9, 3833,	\cyrabhch 10280	\cyri .. 10156, 10158,	
4702	\CYRABHCHDSC .. 10281	10311, 10313	
\Choice@toks .. 2953,	\cyrabhchdsc .. 10282	\CYRIE 10104	
8068, 8074, 8455,	\CYRABHDZE ... 10308	\cyrie 10185	
8461, 8713, 8719,	\cyrabhdze ... 10309	\CYRII 10106	
8990	\CYRABHHA 10259	\cyrrii 10187	
\ChoiceMenu ... 3161	\cyrabhha 10260	\CYRIOTBYUS .. 10208	
\citation 4359, 4382,	\CYRAE 10296	\cyriotbyus .. 10209	
4408	\cyrae 10297	\CYRIOTE 10200	
\citeauthoryear 4474,	\CYRB 10116	\cyriote 10201	
4480	\cyrb 10149	\CYRIOTLYUS .. 10204	
\citeN 4471	\CYRBYUS 10206	\cyriotlyus .. 10205	
\CJK@char 747	\cyrbyus 10207	\CYRISHRT 10124	
\CJK@charx 748	\CYRC 10138	\cyrishrt 10157	
\CJK@ignorespaces .	\cyrch 10171	\CYRIZH . 10216, 10218	
.... 746	\CYRCH .. 10139, 10326	\cyrizh . 10217, 10219	
\CJK@punctchar . 749	\cyrch .. 10172, 10327	\CYRJE 10108	
\CJK@punctcharx 750	\CYRCHLDSC ... 10290	\cyrje 10189	
\clearpage 3630	\cyrchldsc ... 10291	\CYRK ... 10112, 10126	
\close@pdflink 5267,	\CYRCHRDSC ... 10273	\cyrk ... 10159, 10193	
5274, 5277, 5304,	\cyrchrdsc ... 10274		
	\CYRCHVCRS ... 10275		

\CYRKBEAK	10251	\CYRSCHWA	10300, 10302	D	
\cyrkbeak	10252	\cyrschwa	10301, 10303	\d	1963, 1967,
\CYRKDSC	10245	\CYRSDSC	10261		1969, 1970, 1971,
\cyrkdsc	10246	\cyrsdsc	10262		1972, 1973, 1975,
\CYRKHCERS	10249	\CYRSFTSN	10144		10370, 10375,
\cyrkhcrs	10250	\cyrstsn	10177		10380, 10385,
\CYRKHK	10286	\CYRSH	10140		10390, 10395,
\cyrkhk	10287	\cyrsh	10173		10400, 10405,
\CYRKOPPA	10228	\CYRSHCH	10141		10410, 10415,
\cyrkoppa	10229	\cyrshch	10174		10420, 10425,
\CYRKSI	10210	\CYRSHHA	10277		10430, 10435,
\cyrksi	10211	\cyrshha	10278		10440, 10445,
\CYRKVCERS	10247	\CYRT	10134		10450, 10455,
\cyrkvcrs	10248	\cyrt	10167		10460, 10465,
\CYRL	10127	\CYRTDSC	10263		10470, 10475,
\cyr1	10160	\cyrt	10264		10480, 10485
\cyr1angle . . .	10351	\CYRTETSE	10271	\dad	10512
\CYRLJE	10109	\cyrtetse	10272	\dal	10505
\cyr1je	10190	\cyrthousands .	10230	\damma	10532
\CYRLYUS	10202	\CYRTSHE	10111	\declare@shorthand	
\cyrlyus	10203	\cyrtshe	10192	. . .	642, 643, 651,
\CYRM	10128	\CYRU . . .	10135, 10320,		652, 657, 674,
\cyrm	10161		10322, 10324		675, 676, 685,
\CYRN	10129	\cyr . . .	10168, 10321,		686, 694, 695,
\cyrn	10162		10323, 10325		705, 713, 714,
\CYRNDSC	10253	\CYRUK	10220		722, 723, 728,
\cyrndsc	10254	\cyruk	10221		729, 734, 739,
\CYRNG	10255	\CYRUSHRT	10113	\DeclareFontEncoding	
\cyrng	10256	\cyrushrt	10194	. . .	9478, 9694
\CYRNHK	10288	\CYRV	10117	\DeclareFontFamily	
\cyrnhk	10289	\cyrv	10150	. . .	602, 607
\CYRNJE	10110	\CYRY	10265	\DeclareFontShape .	
\cyrnje	10191	\cyr	10266	. . .	603, 608
\CYRO . . .	10130, 10314	\CYRYA	10147	\DeclareFontSubstitution	
\cyro . . .	10163, 10315	\cyr	10180	. . .	604, 609
\CYROMEGA	10196	\CYRYAT	10198	\DeclareRobustCommand	
\cyromega	10197	\cyr	10199	. . . .	2653, 2654,
\CYROMEGARND . .	10222	\CYRYHCRS	10267		2727, 2740, 2742,
\cyromegarnd . .	10223	\cyrhcrs	10268		2751, 3158, 3161,
\CYROMEGATITLO	10224	\CYRYI	10107		3164, 3167, 3170,
\cyromegatitlo	10225	\cyr	10188	\DeclareTextAccent	
\CYROT	10226	\CYRYO	10100	. . . .	9484, 9485,
\cyrot	10227	\cyr	10181		9486, 9487, 9488,
\CYROTLD	10316, 10318	\CYRYU	10146		9489, 9490, 9491,
\cyrotld	10317, 10319	\cyr	10179		9492, 9700, 9701,
\CYRP	10131	\CYRZ . . .	10122, 10306		9702, 9703, 9704,
\cyrp	10164	\cyrz . . .	10155, 10307		9705, 9706, 9707,
\CYRpalochka . .	10283	\CYRZDSC	10243		9708, 9709, 9710
\CYRPHK	10257	\cyrzdsc	10244	\DefaultHeightofCheckBox	
\cyrphk	10258	\CYRZH . .	10121, 10284,	. . . .	3213, 8130,
\CYRPSI	10212		10304		8524, 8794
\cyrpsi	10213	\cyrzh . .	10154, 10285,	\DefaultHeightofChoiceMenu	
\CYRR	10132		10305	. . . .	3215, 8015,
\cyr	10165	\CYRZHDSC	10241		8391, 8652
\cyrangle . . .	10352	\cyrzhdsc	10242	\DefaultHeightofReset	
\CYRS	10133				
\cyr	10166				

..... 3211, 8114, 8507, 8773	2300, 2303, 2306, 2309, 2320, 2323, 2326, 2404, 2408, 2961, 2966, 2977, 2998, 3001, 3004, 3007, 3010, 3013, 3016, 3019, 3022, 3025, 3028, 3031, 3034, 3037, 3041, 3044, 3047, 3050, 3053, 3056, 3059, 3062, 3065, 3068, 3071, 3074, 3077, 3080, 3083, 3096, 3099, 3102, 3105, 3108, 3111, 3114, 3117, 3120, 3123, 3126, 3130, 3133, 3136, 3139, 3142, 3145, 3148, 3151, 3154, 7017, 7019, 7022, 7024, 7026, 7034, 7042, 7044, 7046, 7048, 7050, 7052, 7054, 7063, 7073, 7075, 7077, 7079, 7088, 7090, 7092, 7094, 7096, 7098, 7100, 7102, 7104, 7106, 7108, 7109, 7111, 7113, 7115, 7117, 7119, 7120, 7121, 7122, 7123, 7124, 7125, 7126, 7127, 7128, 7129	\discretionary . 500 \divide 6544 \DJ . 1975, 9609, 9888, 10364 \dj . 1972, 1973, 9889, 10357 \do . . 764, 1551, 1556, 1561, 2139, 2173, 2174, 2175, 2176, 2191, 2192, 2193, 2194, 2195, 2196, 2199, 2200, 2201, 2202, 2203, 2204, 2207, 2208, 2211, 2212, 2213, 2214, 2215, 2218, 2219, 2220, 2221, 2222, 2225, 2226, 2227, 2228, 2229, 2232, 2233, 2234, 2235, 2236, 2239, 2240, 2243, 2244, 2245, 2248, 2249, 2255, 2256, 2257, 2258, 2313, 2314, 2315, 2316, 2317, 2318, 3984, 4354, 4377, 8019, 8055, 8070, 8259, 8264, 8274, 8395, 8434, 8457, 8656, 8693, 8715, 9255 \documentclass . . . 2 \dospecials . . . 9260 \dots 398 \dp . 3203, 3206, 5708, 5775, 5803, 5833, 6984, 6987, 7595, 7833, 8612 \dvipdfm@setdim 8609, 8640, 8701, 8726, 8743, 8763, 8782, 8802 E \ECIRCUMFLEX . 10365, 10449, 10450, 10451, 10452, 10453 \ecircumflex . 10358, 10389, 10390, 10391, 10392, 10393 \egroup . . . 499, 6248, 6742, 8008, 8051, 8094, 8109, 8123, 8140, 8207, 8255, 8296, 8321, 8384,
\DefaultHeightofSubmit 3209, 8099, 8488, 8754		
\DefaultHeightofText 3217, 7987, 7990, 8364, 8367, 8619, 8622		
\DefaultWidthofCheckBox 3214, 8129, 8523, 8793		
\DefaultWidthofChoiceMenu 3216, 8014, 8390, 8651		
\DefaultWidthofReset 3212, 8113, 8506, 8772		
\DefaultWidthofSubmit 3210, 8098, 8487, 8753		
\DefaultWidthofText 3218, 7986, 8363, 8618		
\define@key . . 1534, 1536, 1579, 1594, 1597, 1600, 1604, 1608, 1612, 1616, 1620, 1624, 1628, 1631, 1634, 1637, 1639, 1642, 1645, 1648, 1651, 1654, 1657, 1660, 1663, 1666, 1670, 1671, 1684, 1690, 1696, 1701, 1706, 1711, 1716, 1721, 1726, 1730, 1757, 1775, 1780, 1785, 1789, 1792, 1797, 1800, 1807, 1836, 1852, 1855, 1998, 2024, 2032, 2040, 2047, 2053, 2056, 2059, 2063, 2091, 2096, 2100, 2103, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2121, 2124, 2127, 2129, 2132, 2141, 2171, 2178, 2179, 2251, 2260, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2282, 2283, 2290, 2291, 2294, 2297,	\DH 9608, 9805 \dh 9645, 9841 \dhal 10506 \dimen@ 352, 353, 357, 1039, 1102, 1103, 1106, 1108, 2359, 2360, 2361, 6517, 6518, 6519, 6983, 6995, 6998, 7990, 7991, 7993, 8367, 8368, 8370, 8622, 8623, 8625 \dimexpr . . 364, 1290, 1292, 1300, 1305, 1308, 1310, 1328, 1330, 1332, 1336, 1338, 1349, 1354, 1362, 1366, 1371, 1381, 1384, 1388, 1391, 1395, 1396 \DingObject . . . 8444	

8430, 8483, 8502,	\extrasvietnamese .	\Fld@bordercolor ..
8517, 8534, 8645,	.... 2025	.... 2948, 3057,
8688, 8749, 8768,		8906, 8927, 8983,
8787, 8808	F	9011, 9034, 9064,
\emph 407	\fa 10518	9084
\empty 746, 2066	\FancyVerbLineautorefname	\Fld@bordersep 2949,
\enc@html 2965, 2968	.... 1872, 1889,	3069
\enc@update ... 383	1906, 1923, 1940,	\Fld@borderstyle ..
\END 845, 846, 871, 872,	1957, 1974, 5164	.... 2951, 3066,
886, 887, 1181,	\farsikaf 10539	8904, 8925, 8981,
1187, 1192, 1275,	\farsiya 10541	9009, 9032, 9062,
1277, 5510, 5523,	\fatha 10531	9088
5527, 5533, 5546,	\fbox 8355, 8356	\Fld@borderwidth ..
5550, 5555, 5567,	\Field@addtoks 2986,	.... 2950, 3063,
5571	3029, 3032, 3121,	3197, 3200, 3201,
\end 10548	3124, 3128, 3131,	3204, 3205, 8043,
\endeqnarray .. 3934,	3134, 3137, 3140,	8044, 8422, 8423,
3950, 3957	3143, 3146, 3149,	8680, 8681, 8904,
\endequation .. 3899,	3152, 3155	8925, 8981, 9009,
3929	\Field@boolkey 2981,	9032, 9062, 9088
\endForm 2955	3002, 3005, 3008,	\Fld@calculate@code
\endinput .. 64, 1681,	3011, 3014, 3017,	.... 3088, 3106,
1734, 1735, 1747,	3020, 3023, 3026	8945, 8947
1751, 1752, 1761,	\Field@toks .. 2984,	\Fld@cbsymbol . 2952,
1762, 1770, 1771,	2985, 2987, 7998,	3084, 8911
2462, 2505, 5034,	8026, 8085, 8097,	\Fld@charsize . 2942,
6696, 7868, 9359	8112, 8131, 8199,	2943, 3051, 8042,
\endlinechar ... 2673	8216, 8227, 8237,	8421, 8679, 8913,
\endNoHyper ... 3305	8247, 8263, 8280,	8989, 9018, 9040,
\EndPreamble ... 7871	8288, 8293, 8309,	9081
\endsubeqnarray 3961,	8318, 8375, 8402,	\Fld@checkedfalse .
3970	8473, 8486, 8505,	.... 2932
\eqnarray 3933, 3935,	8525, 8630, 8663,	\Fld@checkequals ..
3954	8735, 8752, 8771,	.... 2990, 8020,
\equal 4435	8795	8056, 8071, 8265,
\equation 3898, 3907,	\Field@Width .. 2941,	8275, 8396, 8435,
3911, 3920	3039	8458, 8657, 8694,
\equationautorefname	\figureautorefname	8716
.... 1859, 1876,	.... 1862, 1879,	\Fld@color 2946, 3060,
1893, 1910, 1927,	1896, 1913, 1930,	8913, 8989, 9018,
1944, 1961, 5147,	1947, 1964, 5154	9040
5151	\filename@area . 2861	\Fld@combofalse 2937
\errmessage ... 1995	\filename@base . 2861	\Fld@default .. 3072,
\es@roman 442	\filename@ext . 2858,	7984, 8001, 8012,
\escapechar 370, 3977,	2859, 2861, 2862	8127, 8197, 8215,
9278, 9279, 9321	\filename@parse 2857	8229, 8237, 8243,
\eTeX 404, 7876	\find@pdflink . 5246,	8267, 8277, 8307,
\eTeXversion .. 5372,	5273, 5277	8317, 8361, 8378,
5374, 5376	\Fld@additionalactions	8388, 8406, 8521,
\exandafter ... 5794	.... 8931, 8999,	8616, 8633, 8649,
\ExecuteOptions 2365,	9024, 9043	8791, 8991, 8993,
2366, 2370	\Fld@align 2945, 3075,	9019, 9020, 9041
\ext@figure ... 4842	8903, 8980, 9030	\Fld@disabledfalse
\ext@table 4841	\Fld@bcolor .. 2947,	.... 2935
\extra@b@citeb . 4361	3081, 8907, 8909,	\Fld@fillcolor . 3054
\extrasvietnam . 2033	8984, 8986, 9012,	\Fld@findlength 8246,
	9014, 9035, 9037	8257

\Fld@flags	8038, 8039, 8040, 8041, 8417, 8418, 8419, 8420, 8675, 8676, 8677, 8678, 9000	8767, 8775, 8782, 8786, 8790, 8802, 8806, 8902, 8921, 8978, 9005, 9029, 9058, 9078	\float@caption	4205	
\Fld@format@code	.... 3086, 3100, 8937, 8939	\Fld@onblur@code	.... 3091, 3112, 8953, 8955	\float@makebox	4207, 4208
\Fld@height	.. 3048, 7987, 7993, 8004, 8015, 8045, 8060, 8078, 8099, 8114, 8130, 8136, 8364, 8370, 8382, 8391, 8424, 8449, 8467, 8488, 8507, 8524, 8531, 8619, 8625, 8635, 8652, 8682, 8692, 8722, 8754, 8773, 8794, 8798	\Fld@onclick	.. 3127, 8929	\flq	..... 449
\Fld@hiddenfalse	.... 2933	\Fld@onenter@code	.... 3094, 3115, 8965, 8967	\flqq	..... 447
\Fld@keystroke@code	.... 3089, 3097, 8933, 8935	\Fld@onexit@code	.... 3095, 3118, 8969, 8971	\fmtname	..... 7
\Fld@listcount	8054, 8057, 8066, 8069, 8072, 8433, 8436, 8453, 8456, 8459, 8691, 8695, 8700, 8708, 8711, 8714, 8717	\Fld@onfocus@code	.... 3090, 3109, 8949, 8951	\fmtversion	..... 7
\Fld@loc	..... 2999	\Fld@onmousedown@code	3092, 8957, 8959	\fontencoding	.. 378, 381, 8348
\Fld@maxlen	.. 2944, 3042, 9053	\Fld@onmouseup@code	3093, 8961, 8963	\fontfamily	... 8347
\Fld@menulength	2940, 3045, 8017, 8021, 8042, 8258, 8259, 8262, 8393, 8397, 8421, 8654, 8658, 8679	\Fld@passwordfalse	.... 2939	\fontseries	... 8349
\Fld@multilinefalse	.... 2931	\Fld@popdownfalse	.... 2938	\fontshape	2621, 8350
\Fld@name	3035, 7983, 8011, 8083, 8101, 8116, 8126, 8196, 8201, 8212, 8213, 8224, 8225, 8234, 8235, 8242, 8263, 8278, 8286, 8291, 8306, 8315, 8360, 8387, 8471, 8490, 8509, 8520, 8615, 8640, 8644, 8648, 8700, 8708, 8726, 8730, 8733, 8743, 8748, 8756, 8763,	\Fld@radiofalse	2936	\footnote	..... 2909
		\Fld@readonlyfalse	.... 2934	\footnoteautorefname	.... 1860, 1877, 1894, 1911, 1928, 1945, 1962, 5148, 5152
		\Fld@validate@code	.... 3087, 3103, 8941, 8943	\footnotesize	.. 427
		\Fld@value	3078, 7985, 8001, 8013, 8362, 8378, 8389, 8405, 8406, 8617, 8633, 8650, 8995, 8997, 9042	\footnotetext	.. 4064
		\Fld@width	3038, 7986, 8000, 8004, 8014, 8028, 8034, 8036, 8060, 8078, 8087, 8098, 8103, 8113, 8118, 8129, 8133, 8136, 8363, 8377, 8382, 8390, 8404, 8413, 8415, 8449, 8467, 8475, 8487, 8492, 8506, 8511, 8523, 8527, 8531, 8618, 8632, 8635, 8651, 8665, 8671, 8673, 8692, 8722, 8737, 8753, 8758, 8772, 8777, 8793, 8797, 8798	\Form	..... 2954
				\Form@action	.. 2964, 8188, 9070
				\Form@boolkey	.. 2958
				\Form@htmlfalse	2957, 2974
				\Form@htmltrue	.. 2969
				\Form@method	.. 2978, 2980, 8188
				\frq	..... 450
				\frqq	..... 448
				\futurelet	.. 517, 839
				\FV@SetLineNo	.. 3789
				\FV@StepLineNo	3788, 3790, 3791
				G	
				\g@addto@macro	.. 4269
				\G@refundefinedtrue	.... 2784, 4363, 4386, 5039, 5059, 5076, 5121
				\gaf	..... 10540
				\Gauge	..... 3170
				\GenericError	.. 505
				\GenericInfo	... 507
				\GenericWarning	506
				\getpagerefnumber	.. 3869
				\getrefbykeydefault	.. 3843, 3844
				\gexmode	.. 6565, 6566, 6644
				\ghayn	..... 10516
				\Gin@setfile	.. 4741, 4742
				\glossary	..... 456

<code>\glq</code>	445	<code>\H@old@ssect</code> . .	9363, 9365	<code>\Hmake@df@tag@@@</code> . .	.. 4676, 4678
<code>\glqq</code>	443	<code>\H@old@thehead</code>	4536, 4538, 4557	<code>\href</code> .	457, 2727, 2908, 2909, 3328
<code>\grqq</code>	444	<code>\H@refstepcounter</code> .	.. 3707, 3715, 3790, 3879, 3921, 4168, 4855, 4908	<code>\href@</code> . . .	2727, 2731
<code>\guill@spacing</code> .	665	<code>\H@seteqlabel</code> .	4684, 4686	<code>\href@split</code>	2731, 2732
<code>\guillemotleft</code>	9572, 9668, 9769, 9863	<code>\H@subeqnarray</code>	3960, 3964	<code>\hskip</code> . . .	1042, 1115, 1495, 1496, 3197, 8333
<code>\guillemotright</code>	9587, 9669, 9784, 9864	<code>\ha</code>	10524	<code>\hspace</code>	453, 4441, 4442
<code>\guilsinglleft</code>	9537, 9670, 9865, 10344	<code>\Haa</code>	10503	<code>\ht</code> .	3199, 3202, 5714, 5779, 5785, 5791, 5807, 5813, 5819, 5837, 5843, 5849, 6983, 7601, 7840, 8610
<code>\guilsinglright</code>	9538, 9671, 9866, 10345	<code>\halign</code>	482	<code>\htmladdimg</code> . . .	2907
H					
<code>\H</code>	9723, 9957, 9958, 9989, 9990, 10324, 10325	<code>\hamza</code>	10491	<code>\htmladdnormallink</code>	.. 2908
<code>\h</code> .	1965, 10372, 10377, 10382, 10387, 10392, 10397, 10402, 10407, 10412, 10417, 10422, 10427, 10432, 10437, 10442, 10447, 10452, 10457, 10462, 10467, 10472, 10477, 10482, 10487	<code>\HAR@checkcitations</code>	.. 4451	<code>\htmladdnormallinkfoot</code>	.. 2909
<code>\H@footnotemark</code> . .	.. 3997, 4014, 4109, 4121, 4132	<code>\HAR@citetoaux</code> .	4407	<code>\htmlref</code>	2910
<code>\H@footnotetext</code> . .	.. 3996, 4006, 4029, 4090, 4110, 4124, 4132	<code>\HAR@tempa</code>	4452, 4453, 4454, 4455, 4456, 4457	<code>\Huge</code>	424
<code>\H@mpfootnotetext</code>	4004, 4016, 4018	<code>\harvardcite</code> . .	4401, 4438	<code>\huge</code>	428
<code>\H@definecounter</code> . .	.. 4657, 4659	<code>\harvarditem</code> . . .	4426	<code>\Hurl</code>	2738, 2739, 2741
<code>\H@endeqnarray</code>	3934, 3951	<code>\hbox</code>	1031, 1037, 1043, 1460, 2077, 2083, 3039, 3191, 3192, 3193, 3194, 4391, 5709, 5716, 5776, 5787, 5804, 5815, 5834, 5845, 6718, 6987, 6998, 7596, 7603, 7834, 7842, 8333, 8634, 8692, 8722, 8738, 8759, 8778, 8798	<code>\hv@pdf@char</code> . .	9188, 9249, 9250, 9251, 9252
<code>\H@endequation</code>	3899, 3929	<code>\HCode</code> . . .	8188, 8190, 8201, 8210, 8222, 8230, 8232, 8262, 8266, 8271, 8276, 8290, 8295, 8299, 8302, 8311	<code>\hvtex@buffer</code> .	6445, 6448, 6456, 6459, 6468, 6472, 6488
<code>\H@endsubeqnarray</code> .	.. 3961, 3971	<code>\headerps@out</code> .	7316, 7322, 7389, 7395, 7455, 7464, 7484, 7497, 7534, 7636, 7883	<code>\hvtex@gettoken</code>	6445, 6457, 6461, 6470, 6474
<code>\H@eqnarray</code>	3933, 3938	<code>\hfill</code>	4538	<code>\hvtex@gettoken@</code> . .	.. 6445, 6446
<code>\H@equation</code>	3898, 3922	<code>\hfill</code> . . .	3191, 3192, 3193, 3194, 4284, 4315	<code>\hvtex@par@dimension</code>	.. 6441, 6480
<code>\H@item</code> . .	3692, 3698, 4277, 4298	<code>\Hfootnoteautorefname</code>	.. 5148	<code>\hvtex@par@direction</code>	.. 6442, 6483
<code>\H@newctr</code>	4662, 4664	<code>\hhyperref</code>	2914	<code>\hvtex@par@duration</code>	.. 6443, 6475
<code>\H@old@part</code>	9396, 9407	<code>\Hmake@df@tag@@</code>	4669, 4671	<code>\hvtex@par@motion</code>	.. 6444, 6477
<code>\H@old@schapter</code>	9368, 9370			<code>\hvtex@param@dimension</code>	.. 6452, 6481, 6499, 6501
<code>\H@old@ssect</code>	9416, 9422			<code>\hvtex@param@direction</code>	.. 6453, 6484, 6505, 6511
<code>\H@old@spart</code> . .	9409, 9411			<code>\hvtex@param@duration</code>	.. 6454, 6476, 6515, 6517

<code>\hvtex@parse@trans</code>	6312, 6323, 6685,	9383, 9451
... 6430, 6450	6701, 7552, 7564,	<code>\Hy@chapterstring</code> .
<code>\hvtex@produce@trans</code>	7794, 7805	... 3750, 3752,
... 6489, 6495	<code>\Hy@appendixstring</code>	3755, 3767
<code>\hvtex@token</code> .. 6447,	... 3754, 3761	<code>\Hy@CheckColorSpec</code>
6458, 6464, 6471,	<code>\Hy@author</code> 3398, 3402	... 2151, 2153
6476, 6479, 6482,	<code>\Hy@babelnormalise</code>	<code>\Hy@CheckOptionValue</code>
6484	... 2752, 2754	... 1546, 1583
<code>\hvtex@trans@code</code> .	<code>\Hy@backout</code> .. 2667,	<code>\Hy@CJKbookmarksfalse</code>
... 6434, 6435,	3291, 3295, 4247	... 286
6436, 6437, 6438,	<code>\Hy@backreffalse</code> 280,	<code>\Hy@cjkpu</code> 757, 759, 778
6439, 6440, 6451,	1827, 1846, 2469	<code>\Hy@colorlink</code> . 2604,
6497, 6498, 6500,	<code>\Hy@backreftrue</code> 1820,	2621, 2625, 5262,
6501, 6502, 6503,	1824, 1843	5303, 5335, 5366,
6504, 6505, 6506,	<code>\Hy@begindvi</code> .. 4500,	5647, 5666, 5686,
6507, 6508, 6509,	4501, 4503	5713, 5722, 5747,
6510, 6511	<code>\Hy@bibcite</code> 4266, 4270	5761, 5782, 5794,
<code>\hvtex@trans@effect@Blinds</code>	<code>\Hy@bookmarksdepth</code>	5811, 5823, 5841,
... 6434	... 2062, 2067,	5853, 5992, 6019,
<code>\hvtex@trans@effect@Box</code>	2079, 2085, 9103	6043, 6061, 6078,
... 6435	<code>\Hy@bookmarksnumberedfalse</code>	6313, 6333, 6364,
<code>\hvtex@trans@effect@Dissolve</code>	... 281	6376, 6391, 6411,
... 6436	<code>\Hy@bookmarksopenfalse</code>	6420, 6688, 6720,
<code>\hvtex@trans@effect@Glitter</code>	... 282	6959, 6961, 7553,
... 6437	<code>\Hy@bookmarkstrue</code> .	7573, 7600, 7609,
<code>\hvtex@trans@effect@R</code>	... 283	7795, 7814, 7839,
... 6440	<code>\Hy@bookmarkstype</code> .	7847
<code>\hvtex@trans@effect@Split</code>	... 2097, 2099,	<code>\Hy@ColorList</code> . 2138,
... 6438	4603, 9113	2139
<code>\hvtex@trans@effect@Wipe</code>	<code>\Hy@boolkey</code> .. 1505,	<code>\Hy@colorscan</code> . 2606,
... 6439	1595, 1598, 1601,	2608
<code>\hvtex@trans@par</code> ..	1629, 1632, 1635,	<code>\Hy@currentbookmarklevel</code>
... 6471, 6475,	1640, 1643, 1646,	... 9108, 9118,
6477, 6480, 6483	1649, 1652, 1655,	9119, 9125, 9132,
<code>\hvtex@trans@params</code>	1658, 1661, 1664,	9166, 9169, 9174,
6465, 6467, 6491	1667, 1798, 1801,	9178
<code>\Hy@boolkey</code> .. 1505,	1853, 2048, 2054,	<code>\Hy@defaultdriver</code> .
1506	2057, 2060, 2101,	... 2483, 2490,
<code>\Hy@colorscan</code> 2611,	2104, 2133, 2261,	2508, 2514, 2522
2616	2292, 2295, 2298,	<code>\Hy@DefFormAction</code> .
<code>\Hy@DefNameKey</code> 1576,	2301, 2304, 2307,	... 2962, 2964
1578	2310, 2324, 2327,	<code>\Hy@DefNameKey</code> 1575,
<code>\Hy@@escapeform</code> 8867,	2405, 2409	2172, 2190, 2198,
8880, 8885	<code>\Hy@bordercolor</code> 2142,	2206, 2210, 2217,
<code>\Hy@abspage</code> .. 3452,	2147	2224, 2231, 2238,
3517, 3627, 3644	<code>\Hy@breaklinksfalse</code>	2242, 2247, 2254,
<code>\Hy@activeanchorfalse</code>	... 284	2312
... 2671, 5270,	<code>\Hy@breaklinkstrue</code>	<code>\Hy@DestName</code> .. 5236,
5668, 5681, 5748,	... 1688, 1704,	5240
5757, 5970, 6235,	1709, 1714, 2519,	<code>\Hy@DisableOption</code> .
6250, 6314, 6326,	2531	... 1532, 2399,
6686, 6712, 7555,	<code>\Hy@breaklinksunhbox</code>	2400, 2401, 2454,
7568, 7797, 7809	... 6974, 6990	2476, 2556, 2557,
<code>\Hy@activeanchortrue</code>	<code>\Hy@centerwindowfalse</code>	2558, 2559, 2560,
... 5269, 5665,	... 285	2561, 2562, 2563,
5677, 5746, 5754,	<code>\Hy@chapapp</code> .. 3755,	2564, 2565, 2566,
5966, 6231, 6247,	3761, 3768, 9374,	2567, 2568, 2569,

2570, 2571, 2600,	6078, 6313, 6354,	\Hy@hyperfootnotesfalse
2630, 2631, 2669,	6364, 6376, 6391,	.... 3993
2670, 3253, 3254,	6411, 6420, 6692,	\Hy@hyperfootnotetrue
3255, 3256, 3257,	6739, 6967, 7553,	.... 290
3258, 3259, 3260,	7586, 7604, 7611,	\Hy@hyperindextrue
3261, 3262, 3263,	7795, 7824, 7839,	.... 291
3264, 3265, 3266,	7847	\Hy@hypertextnamesfalse
3267, 3268, 3269,	\Hy@escapeform 8003,	.... 1404
3270, 3271, 3272,	8059, 8077, 8089,	\Hy@hypertextnametrue
3273, 3274, 3275,	8104, 8119, 8135,	.... 292
3276, 3422, 3586,	8380, 8439, 8465,	\Hy@implicittrue 293
4136, 4746, 4802,	8478, 8494, 8513,	\Hy@Info .. 234, 1521,
4803, 5498, 5499,	8529, 8638, 8698,	2427, 2429, 2432,
5500, 5501, 5502,	8724, 8741, 8761,	2434, 2437, 2439,
5503, 5504, 5505,	8780, 8800, 8861,	2442, 2444, 2447,
5627, 5879, 5880,	8890, 8897	2449, 2585, 2591,
5881, 5882, 5883,	\Hy@escapeformfalse	2618, 2623, 2627,
5885, 5886, 6107,	.... 287	3220, 3222, 3225,
6108, 6109, 6110,	\Hy@escapestring ..	3227, 3230, 3232,
6111, 6112, 6113,	.... 8858, 8902,	3235, 3237, 3240,
6114, 6298, 6626,	8911, 8921, 8929,	3242, 4338, 4399,
6627, 6628, 6629,	8935, 8939, 8943,	4606
6630, 6631, 6632,	8947, 8951, 8955,	\Hy@level 9114, 9116,
6633, 6868, 6869,	8959, 8963, 8967,	9127, 9132, 9133,
6870, 6871, 6872,	8971, 8978, 8993,	9134, 9158
6873, 6874, 6875,	8997, 9005, 9029,	\Hy@levelcheck 9115,
7375, 7656, 7657,	9041, 9042, 9058,	9130
7658, 7659, 7660,	9070, 9078	\Hy@linkcounter ...
7661, 7662, 7663	\Hy@ExchangeLeftParenthesis	. 319, 321, 3782,
\Hy@disableOption .	.. 5192, 5198	3783, 3847, 3848,
.... 5884	\Hy@ExchangeRightParenthesis	4672, 4673, 4679,
\Hy@displaydoctitlefalse	.. 5202, 5208	4680, 4687, 4897,
.... 313	\Hy@false 1445, 1513,	4898, 4902, 4948,
\Hy@DistillerDestFix	1812, 1845	4949, 4953, 9094,
4516, 6637, 6639	\Hy@figuresfalse 288	9095, 9373, 9374,
\Hy@draftfalse . 249	\Hy@finalfalse . 250	9382, 9383, 9412,
\Hy@drafttrue .. 250	\Hy@finaltrue .. 249	9413, 9419, 9420,
\Hy@driver 317, 1677,	\Hy@fitwindowfalse	9450, 9451
1685, 1697, 1702,	.... 289	\Hy@linkfileprefix
1707, 1712, 1717,	\Hy@float@caption .	.... 2123, 2853,
1722, 1727, 1739,	4172, 4201, 4203	2867, 5702, 6203,
1743, 1766, 1776,	\Hy@footnote@currentHlabel	7589, 7827
1782, 1787, 1793,	4036, 4050, 4082	\Hy@linktocpagefalse
2479, 2482, 2490,	\Hy@footnote@currentHref	.... 294
2492, 2496, 2501,	.... 3248, 4020,	\Hy@LT@footnotetext
2508, 2514, 2516,	4023, 4031, 4034,	.. 4079, 4089
2522, 2524, 2529,	4037, 4051, 4054,	\Hy@maketitle@end .
2534, 2539, 2544,	4081	4113, 4118, 4120
2548, 2550, 2552	\Hy@Gin@setfile 4741,	\Hy@maketitle@optarg
\Hy@endcolorlink ..	4743	.. 4111, 4116
.... 2617, 2622,	\Hy@GlobalStepCount	\Hy@MaybeStopNow ..
2626, 5267, 5666,	315, 3517, 3782,	.... 1729, 1734,
5699, 5717, 5724,	3847, 4530, 4672,	1751, 1761, 1770,
5747, 5769, 5783,	4679, 4897, 4948,	2371
5794, 5811, 5823,	9094, 9373, 9382,	\Hy@menubartrue 295
5841, 5853, 5995,	9412, 9419, 9450	\Hy@naturalnamesfalse
6019, 6043, 6061,	\Hy@hstringURI . 7218	.... 296

6673, 6698, 7547, 7559, 7789, 7801	6157, 6159, 6839, 6842, 6846, 6847, 6853, 6854, 6860, 6888, 6921, 6923, 7027, 7028, 7035, 7036, 7676, 7709, 7711, 8866, 8867, 9286, 9292, 9301, 9308	6347, 6383, 6384, 6385, 6388, 6806, 6807, 6808, 6819, 6831
\Hy@scanauthor 3396, 3401		\Hy@texhtfalse . 306
\Hy@scanoptauthor . .. 3396, 3397		\Hy@texhttrue . 1673, 2480
\Hy@scanopttitle 3387, 3388		\Hy@title 3389, 3393
\Hy@scantitle . 3387, 3392		\Hy@toclevel .. 4611, 4615, 4624
\Hy@secnum@part 9399, 9401, 9404	\Hy@temp@A 543, 544, 986, 988, 1001, 1004, 1010, 1011, 1013, 4763, 4764, 4765, 4782, 4783, 4784	\Hy@toolbarttrue 307
\Hy@seminarslidesfalse 4847		\Hy@true . 1444, 1509, 1511, 1839, 1841
\Hy@seminarslidestrue 4845	\Hy@temp@B . 987, 988	\Hy@typexmlfalse 308
\Hy@SetCatcodes 180, 230, 2369	\Hy@tempa 1507, 1508, 1509, 1511, 1513, 1515, 1518, 1521, 1522, 1808, 1809, 1810, 1812, 1813, 1815, 1816, 1818, 1822, 1826, 1837, 1838, 1839, 1841, 1845, 2704, 2708, 2757, 2761, 2813, 2816, 2967, 2968, 3523, 3525, 3563, 3565, 3644, 3646, 3979, 3981, 3982, 3985, 3986, 3987, 4170, 4172, 4176, 4602, 4603, 4618, 4619, 4622, 4861, 4862, 4913, 4914, 5687, 5688, 6206, 6335, 6336, 7574, 7575, 7815, 7816, 9112, 9113, 9136, 9138, 9154, 9159, 9440, 9464, 9469, 9472, 9475	\Hy@undefinedname 5245, 5250, 5972, 5976, 6330, 6344, 6385, 6802, 6808
\Hy@setouterhbox 6973, 6979		\Hy@unicodefalse 309, 2414, 3813, 4524
\Hy@setpagesizetrue 305		\Hy@usehidkeyfalse 2131
\Hy@setpdfborder 2180, 5255, 5287, 5314, 5346, 5633, 5984, 6009, 6030, 6053, 6074, 6339, 6348, 6362, 6374, 6389, 6409, 6418		\Hy@usehidkeytrue 2135
\Hy@setref@link 5045, 5048		\Hy@UseMaketitleInfos 3442, 5478, 5861, 6085, 6616, 6838, 7638
\Hy@slidetitle 4874, 4876, 4883, 4891, 4901, 4925, 4927, 4934, 4942, 4952		\Hy@UseMaketitleString 3423, 3443, 3444
\Hy@StartlinkName . .. 5254, 5264		\Hy@UseNameKey 1588, 5444, 5445, 5446, 5447, 5448, 5449, 5450, 5451, 5470, 5912, 5913, 5914, 5915, 5916, 5917, 5918, 5919, 5940, 6124, 6125, 6126, 6127, 6128, 6129, 6130, 6131, 6161, 6589, 6590, 6591, 6592, 6593, 6594, 6595, 6596, 6895, 6896, 6897, 6898, 6899, 6900, 6901, 6902, 6925, 7683, 7684, 7685, 7686, 7687, 7688, 7689, 7690, 7713
\Hy@StepCount .. 314, 3494, 8021, 8057, 8072, 8259, 8397, 8436, 8459, 8658, 8695, 8717, 9170, 9175, 9236	\Hy@tempb 3524, 3525, 3564, 3565, 9137, 9138, 9159	\Hy@usetitlefalse 310
\Hy@temp ... 512, 519, 2139, 2140, 2141, 2142, 2145, 2523, 2524, 2528, 2529, 2533, 2534, 2538, 2539, 2543, 2544, 3474, 3477, 3486, 3488, 3492, 3496, 3540, 3542, 3811, 3814, 3817, 3823, 3901, 3907, 5437, 5466, 5468, 5905, 5936, 5938, 6117,	\Hy@tempcolor . 6727, 6736, 6804, 6818, 6824	\Hy@varioref@undefined 3863, 3867, 5107
	\Hy@TempPageAnchor 4520, 4527, 4531, 4534, 4546, 4553	\Hy@verbosefalse 311
	\Hy@testname .. 5248, 5249, 5250, 5252, 5261, 5974, 5975, 5976, 5978, 5988, 6342, 6343, 6344,	\Hy@vt@PutCatalog . .. 3610, 3612

<code>\Hy@VTeXversion</code> 3590, 3602, 6360, 6423, 6542, 9190	<code>\HyC@next</code> 48, 55, 60, 83 <code>\HyC@noValue</code> . 80, 81, 82, 85, 139	<code>\HyLang@vietnamese</code> 1960, 2025, 2033
<code>\Hy@Warning</code> 232, 347, 956, 1526, 1541, 1566, 2075, 2156, 4594, 7058, 7067, 9121, 9139	<code>\HyC@optcmd</code> 107, 111 <code>\HyC@org@cmd</code> 76 <code>\HyC@org@optcmd</code> . 80, 111 <code>\HyC@org@robustcmd</code> 81, 120 <code>\HyC@org@robustoptcmd</code> 82	<code>\HyOrg@addtoreset</code> . 4691, 4693, 4720 <code>\HyOrg@appendix</code> 3756, 3762 <code>\HyOrg@author</code> . 3386, 3399, 3403 <code>\HyOrg@float@makebox</code> .. 4207, 4209 <code>\HyOrg@maketitle</code> . . 4105, 4112, 4117 <code>\HyOrg@title</code> . . 3385, 3390, 3394 <code>\HyOrg@url</code> 2737 <code>\hyper@anchor</code> 2382, 2746, 2748, 2774, 2776, 2803, 2805, 2874, 3282, 3296, 3310, 4020, 4023, 4031, 4034, 4092, 4095, 4193, 4195, 4213, 4520, 4527, 4531, 4880, 4888, 4898, 4931, 4939, 4949
<code>\Hy@WarningNoLine</code> . 233, 1691, 2397, 2411, 2877, 3370, 3604, 3658, 3798, 4604, 4733, 6951	<code>\HyC@package</code> . 10, 22, 28, 34, 37, 38 <code>\HyC@param</code> 78, 96, 102 <code>\HyC@robustcmd</code> . 115, 120, 121, 122 <code>\HyC@star</code> . 67, 70, 94 <code>\HyC@string</code> 131, 152, 155, 157 <code>\HyC@Toks</code> . 79, 90, 96, 106, 126 <code>\HyCal@do</code> . . 341, 345 <code>\HyCal@scan</code> 332, 336, 360 <code>\HyInd@wrindex</code> 4758, 4759 <code>\HyInd@EncapChar</code> . . 1856, 2363, 4754 <code>\HyInd@org@wrindex</code> 4757, 4761, 4767, 4769 <code>\HyInd@pagelink</code> 4809, 4815, 4817, 4820 <code>\HyInd@ParenLeft</code> . . 4748, 4764, 4783 <code>\HyInd@ParenRight</code> . 4749, 4765, 4784 <code>\HyInd@removespaces</code> 4823, 4826, 4836 <code>\HyLang@addto</code> . 1977, 1999, 2025, 2033 <code>\HyLang@afrikaans</code> 1926 <code>\HyLang@DeclareLang</code> 1991, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023 <code>\HyLang@english</code> 1858 <code>\HyLang@french</code> . 1943 <code>\HyLang@german</code> . 1875 <code>\HyLang@portuges</code> 1892 <code>\HyLang@spanish</code> 1909	
<code>\Hy@WarnOptionDisabled</code> .. 1538, 1540 <code>\Hy@WarnOptionValue</code> 1519, 1525, 1829, 1848 <code>\Hy@windowittrue</code> 312 <code>\Hy@writebookmark</code> 1449, 4612, 4881, 4889, 4899, 4932, 4940, 4950, 9100, 9181 <code>\HyC@cmd</code> 87, 109, 122 <code>\HyC@check</code> 68, 71, 74 <code>\HyC@checkcommand</code> 50, 57, 59 <code>\HyC@checkFailed</code> 146, 156 <code>\HyC@checkItem</code> . 132, 133, 134, 135, 138 <code>\HyC@checklong</code> 45, 53 <code>\HyC@checkOk</code> 144, 154 <code>\HyC@checkPackage</code> 12, 16, 18 <code>\HyC@cmd</code> 62, 75, 87, 95, 118, 131 <code>\HyC@date</code> . 11, 15, 23, 29, 31 <code>\HyC@DeclareRobustCommand</code> 114 <code>\HyC@def</code> 125 <code>\HyC@defcmd</code> 47, 54, 93 <code>\HyC@doCheck</code> . 99, 130 <code>\HyC@edef</code> 125 <code>\HyC@getDate</code> . . 12, 14 <code>\HyC@meaning</code> 152, 159 <code>\HyC@nc@default</code> 103, 105 <code>\HyC@nc@noopt</code> . . . 88, 91, 103, 112, 123, 127 <code>\HyC@nc@opt</code> . 88, 101, 123 <code>\HyC@newcommand</code> . 86	<code>\HyLang@vietnamese</code> 1960, 2025, 2033 <code>\HyOrg@addtoreset</code> . 4691, 4693, 4720 <code>\HyOrg@appendix</code> 3756, 3762 <code>\HyOrg@author</code> . 3386, 3399, 3403 <code>\HyOrg@float@makebox</code> .. 4207, 4209 <code>\HyOrg@maketitle</code> . . 4105, 4112, 4117 <code>\HyOrg@title</code> . . 3385, 3390, 3394 <code>\HyOrg@url</code> 2737 <code>\hyper@anchor</code> 2382, 2746, 2748, 2774, 2776, 2803, 2805, 2874, 3282, 3296, 3310, 4020, 4023, 4031, 4034, 4092, 4095, 4193, 4195, 4213, 4520, 4527, 4531, 4880, 4888, 4898, 4931, 4939, 4949 <code>\hyper@link</code> . . 2725, 2733, 2769, 2788, 2790, 2808, 4263, 4402, 4403, 4404, 4452, 4454, 4456, 5050, 5065, 5098 <code>\hyper@anchor</code> . 2901, 3345, 5268, 5658, 5740, 5962, 6238, 6305, 6672, 7546, 7788 <code>\hyper@anchorend</code> 2385, 3277, 3286, 3299, 3313, 3744, 3850, 3929, 3946, 3968, 4260, 4279, 4281, 4299, 4431, 4674, 4681, 4688, 5270, 5679, 5756, 5969, 6233, 6325, 6686, 6703, 7566, 7807, 9096, 9182, 9375, 9384, 9414, 9424, 9452 <code>\hyper@anchorstart</code> 2384, 3277, 3285, 3298, 3312, 3744, 3850, 3926, 3946, 3968, 4258, 4279, 4281, 4299, 4431, 4674, 4681,	

4688, 5269, 5671, 5751, 5965, 6224, 6317, 6685, 6697, 7558, 7800, 9096, 9182, 9375, 9384, 9414, 9424, 9452	6205, 6331, 6687, 6715, 7572, 7813	7817, 7819, 7836, 7846, 7858
\hyper@chars .. 2720, 5283, 5662, 5674, 5692, 5710, 5720, 5733, 5799, 5829, 6193, 6212, 6227, 6242, 6309, 6320, 6370, 7196, 7561, 7579, 7597, 7607, 7620, 7803, 7819, 7836, 7845, 7857	\hyper@linkurl 2388, 2741, 2846, 2853, 2866, 2870, 3289, 3302, 3316, 5280, 5702, 5704, 5729, 5797, 6046, 6191, 6203, 6367, 6395, 6801, 7193, 7589, 7591, 7616, 7827, 7829, 7853	\hyper@readexternallink .. 2819, 2827
\hyper@currentanchor 6689, 6700, 6709, 6722, 6732	\hyper@livelink 3283, 3306	\hyper@refstepcounter 3723, 3725, 3731, 3890
\hyper@currentlinktype .. 6723, 6727	\hyper@makecurrent 3740, 3764, 3880, 3925, 3945, 3967, 4049, 4179, 4204, 4212	\hyper@tilde .. 2694, 2695, 2696, 3245
\hyper@hash .. 2687, 2688, 2721, 2846, 2853, 2867, 2870, 3244, 6187	\hyper@n@rmalise 2700, 2703	\hyperbaseurl . 2120, 2121, 3327
\hyper@image .. 2742, 2743, 5731, 6394, 6800, 7618, 7855	\hyper@nat@current 4249	\hypercalcbp 327, 327
\hyper@last 3361, 3365	\hyper@nat@anchorend 4260	\hypercalcbpdef 329, 366, 2287
\hyper@link .. 2383, 2817, 3283, 3284, 3297, 3306, 3311, 5275, 5728, 5771, 5998, 6185, 6380, 6803, 7615, 7852	\hyper@nat@anchorstart 4257	\hyperdef 2771, 3329
\hyper@link@ .. 2809, 2811, 3281, 3294	\hyper@nat@linkbreak 4254	\hypergetpageref 3844
\hyper@linkend 2387, 3288, 3301, 3315, 4056, 4252, 4255, 4639, 4643, 5274, 5697, 5768, 5994, 5999, 6217, 6352, 6691, 6725, 7584, 7822	\hyper@nat@linkend 4251	\hypergetref ... 3843
\hyper@linkfile 2389, 2863, 3290, 3303, 3317, 5307, 5701, 5827, 6001, 6202, 6356, 7223, 7588, 7826	\hyper@nat@linkstart 4246	\hyperimage .. 2742, 2907, 4743
\hyper@linkstart 2386, 3287, 3300, 3314, 4054, 4248, 4255, 4639, 4643, 5271, 5685, 5760, 5973, 5999,	\hyper@normalise 2365, 2370, 2679, 2727, 2740, 2742, 2763, 2962	\hyperlink 2724, 3330, 4832, 4970, 4978, 4993, 5001, 5011, 5019, 5026
	\hyper@pageduration 4513, 4548, 4555, 5530, 6524, 6771	\hyperlinkfileprefix 2123, 2124, 2125
	\hyper@pagehidden 4514, 4549, 4556, 5553, 6534, 6788	\hyperpage 3334, 4804
	\hyper@pagetransition 4512, 4547, 4554, 5507, 6425, 6754	\HYPERPAGEANCHOR 4511
	\hyper@quote .. 3246, 5663, 5675, 5689, 5693, 5711, 5721, 5734, 6187, 6196, 6208, 6229, 6245, 7550, 7562, 7576, 7580, 7598, 7608, 7621, 7792, 7803,	\hyperpageanchor 4511
		\HyperRaiseLinkDefault .. 1452, 1454
		\HyperRaiseLinkHook .. 1451, 1455
		\HyperRaiseLinkLength 1450, 1454, 1460
		\hyperref 2751, 2914, 2915, 3332
		\hypersetup .. 2364, 2366, 3326
		\hypertarget .. 2744, 3331
		\HyPL@@@CheckThePage .. 3544, 3562
		\HyPL@@CheckThePage .. 3520, 3522
		\HyPL@Alph 3460
		\HyPL@alph 3461
		\HyPL@arabic ... 3457
		\HyPL@CheckThePage .. 3472, 3519
		\HyPL@Entry .. 3646, 3654, 3662, 3664
		\HyPL@EveryPage 3462, 3583, 4505, 9356, 9357

\HyPL@Format .. 3535, 3536, 3537, 3538, 3539, 3551	\HyPsd@@RemoveBraces ... 981, 985	\HyPsd@CJKhook . 484, 743
\HyPL@found .. 3534, 3541, 3545, 3552, 3562, 3564	\HyPsd@@RemoveCmdPrefix .. 1135, 1138	\HyPsd@ConvertToUnicode .. 596, 1225
\HyPL@Labels .. 3451, 3574, 3575, 3577, 3579, 3624, 3625, 3657, 3665, 3666	\HyPsd@@Replace 1181, 1187, 1192	\HyPsd@DecimalToOctal ... 753, 782
\HyPL@LastNumber .. 3455, 3490, 3513	\HyPsd@add@accent 386, 834	\HyPsd@DefCommand . .. 513, 514, 515, 516, 904
\HyPL@LastPrefix .. 3456, 3484, 3515	\HyPsd@AfterCountRemove .. 1032, 1098	\HyPsd@DisableCommands ... 628, 630
\HyPL@LastType 3454, 3475, 3514	\HyPsd@AfterDimenRemove .. 1038, 1101	\HyPsd@DoConvert 1227, 1237
\HyPL@page 3465, 3467, 3472, 3480	\HyPsd@AfterSkipRemove .. 1044, 1113	\HyPsd@DoEscape 1251
\HyPL@Prefix .. 3480, 3482, 3484, 3498, 3501, 3503, 3515, 3529, 3567	\HyPsd@AMScsclassfix . 452, 855, 857	\HyPsd@doxspace 570, 1198
\HyPL@Roman ... 3458	\HyPsd@AppendItalcorr 1002, 1011, 1019	\HyPsd@empty 555, 557, 561, 562, 564, 572, 579
\HyPL@roman ... 3459	\HyPsd@ar@get .. 460, 462	\HyPsd@end . 530, 534, 961, 963, 965, 969, 973, 981, 985, 1025, 1033, 1039, 1045, 1085, 1093, 1098, 1101, 1113
\HyPL@SetPageLabels 3573, 3630, 3660	\HyPsd@babel@danish 641	\HyPsd@endWithElse ... 824, 833
\HyPL@storePageLabel 3498, 3500, 3570, 3622, 3641	\HyPsd@babel@dutch 650	\HyPsd@GetNextTwoTokens 1275
\HyPL@thisLabel 3448, 3450, 3464, 3467, 3468	\HyPsd@babel@finnish 656	\HyPsd@GetOneBye 1270
\HyPL@Type 3470, 3475, 3479, 3497, 3505, 3514, 3528, 3566	\HyPsd@babel@frenchb 664	\HyPsd@GetTwoBytes 1266
\HyPL@Useless . 3571, 3577	\HyPsd@babel@german 673	\HyPsd@GLYPHERR 535, 821, 835, 842
\HyPsd@@@pageref 889, 891, 894	\HyPsd@babel@macedonian 727	\HyPsd@GlyphProcess 537, 1154, 1171
\HyPsd@@@ref 874, 876, 879	\HyPsd@babel@ngerman 684	\HyPsd@GlyphProcessWarning .. 1161, 1165
\HyPsd@@AppendItalcorr 1019	\HyPsd@babel@portuges 704	\HyPsd@GobbleFiFi 826, 832
\HyPsd@@ConvertToUnicode 1277	\HyPsd@babel@russian 712	\HyPsd@hspace .. 453, 845
\HyPsd@@GetNextTwoTokens 1275	\HyPsd@babel@slovene 733	\HyPsd@hspacetest . . 848, 850, 853
\HyPsd@@hspace . 845, 846	\HyPsd@babel@swedish 738	\HyPsd@ifnextchar 501, 941
\HyPsd@@LetCommand ... 915, 936	\HyPsd@babel@ukrainian 721	\HyPsd@InitUnicode 605, 1668, 2403, 2418
\HyPsd@@pageref 886, 887	\HyPsd@babel@usorbian 693	\HyPsd@inmathwarn 385, 818
\HyPsd@@ProtectSpaces ... 960, 963	\HyPsd@CatcodeWarning 1048, 1060, 1063, 1066, 1069, 1125	\HyPsd@ITALCORR 493, 497, 842
\HyPsd@@ref 871, 872	\HyPsd@CheckCatcodes .. 530, 1025	\HyPsd@LetCommand . . 517, 518, 904
	\HyPsd@CJKActiveChars ... 761, 774	

8977, 9004, 9028, 9057, 9077	\ifHy@frenchlinks . .. 254, 2620	\ifHy@texht 273, 2632, 2659, 3277, 4540, 5033
\ifFld@multiline 2924, 7988, 8221, 8365, 8620, 9044	\ifHy@hyperfootnotes .. 255, 3994	\ifHy@toolbar .. 274, 5438, 5906, 6118, 6583, 6889, 7677
\ifFld@password 2927, 8202, 9047	\ifHy@hyperindex 256, 2436, 3229, 4747	\ifHy@typexml .. 238, 2451, 2603, 2651, 3339, 9268, 9327
\ifFld@popdown 2930, 8040, 8419, 8677	\ifHy@hypertextnames 257, 3770, 3809, 4518, 4878, 4929	\ifHy@unicode .. 275, 375, 540, 552, 580, 588, 595, 756, 1168, 1342, 2410
\ifFld@radio .. 2928, 8030, 8250, 8409, 8667	\ifHy@implicit . 258, 2455, 9352	\ifHy@useHidKey 2130, 5554, 6535, 6789
\ifFld@readonly 2925, 8223, 8233, 8314, 9045, 9048, 9050	\ifHy@linktocpage . .. 259, 4637	\ifHy@usetitle . 276, 3384
\ifForm@html .. 2956, 9072	\ifHy@menubar .. 260, 5439, 5907, 6119, 6584, 6890, 7678	\ifHy@verbose .. 277, 4617, 5231
\ifhmode . 1484, 1493, 4045, 4057, 4156, 4158	\ifHy@naturalnames 261, 3772, 4879, 4930	\ifHy>windowui . 278, 5440, 5908, 6120, 6585, 6891, 7679
\ifHy@activeanchor .. 239, 2898	\ifHy@nesting .. 262, 2431, 2745, 2773, 2802, 2883, 3224, 4019, 4030, 4091, 4192	\ifmeasuring@ . 3730, 3741
\ifHy@backref .. 240, 2446, 2664, 3234, 4409, 4445	\ifHy@newwindow 263, 5326, 5358, 6015, 6035, 6360, 6406, 7239, 7255, 7279, 7298	\ifnum ... 1307, 1343, 1346, 1358, 1737, 1741, 1764, 2073, 2074, 2495, 2499, 2513, 2575, 3471, 3490, 3506, 3602, 4987, 5025, 5376, 5383, 5389, 5397, 6360, 6423, 6542, 6550, 6552, 6553, 6563, 6566, 6642, 6644, 6750, 7382, 8338, 8700, 8708, 9053, 9103, 9118, 9190, 9256, 9386, 9404, 9418, 9423
\ifHy@bookmarks 241, 2584	\ifHy@next . 639, 649, 663, 672, 683, 692, 703, 711, 720, 2423, 4756	\ifodd 1337
\ifHy@bookmarksnumbered 242, 4873, 4924, 9145	\ifHy@pageanchor 264, 3796, 3808, 3823, 4517	\ifportrait ... 5586
\ifHy@bookmarksopen .. 243, 2574	\ifHy@pagelabels 265, 3446, 3622, 3640	\ifthenelse ... 4435
\ifHy@breaklinks 244, 6716, 6740, 6978, 6989	\ifHy@pdfmarkerror .. 6940, 6948	\iftrue 9388
\ifHy@centerwindow 245, 5442, 5910, 6122, 6587, 6893, 7681	\ifHy@pdfpagehidden 266, 2134, 5556, 6536, 6794	\ifvmode . 1456, 1465, 1474
\ifHy@CJKbookmarks ... 246, 483	\ifHy@pdfstring 267, 613	\ifvoid .. 3886, 3891
\ifHy@colorlinks 247, 2049, 2602, 3239, 7533	\ifHy@plainpages 268, 2441, 3810, 4519	\ignorespaces . 3861, 4182, 4191, 4234, 4241, 4295, 4308, 4324, 4333, 4443, 4858, 4910
\ifHy@displaydoctitle 279, 5443, 5911, 6123, 6588, 6894, 7682	\ifHy@psize ... 269	\IJ 9554, 9998
\ifHy@draft 248, 2381	\ifHy@raiselinks 270, 5706, 5774, 5802, 5832, 7593, 7831	\ij 9661, 9857
\ifHy@escapeform 251, 8862, 8891	\ifHy@seminarslides .. 271, 4543	\immediate 3340, 3341, 3342, 3344, 3376,
\ifHy@figures .. 252, 2426, 3219, 4740	\ifHy@setpagesize . 272, 5577, 6278, 7372	
\ifHy@fitwindow 253, 5441, 5909, 6121, 6586, 6892, 7680		

3615, 3645, 3653, 3820, 3836, 4290, 4303, 4319, 4329, 4359, 4382, 4408, 4438, 6647, 7389, 8329, 9244, 9267, 9269, 9326, 9328			
\incr@eqnum 3902, 3915			
\index 455			
\indexentry .. 4779, 4787, 4791			
\input . 601, 606, 2028, 2036, 2043, 2552, 7311, 7380, 7487, 7631			
\InputIfFileExists 2368, 9261, 9281, 9319, 9321			
\inputlineno .. 2890, 4620, 5132, 5232			
\item 3692, 3695, 4315, 4327, 4430			
\Itemautorefname 5149			
\itemautorefname 1861, 1878, 1895, 1912, 1929, 1946, 1963, 5149, 5150, 5153			
\itshape 420			
J			
\j 9749, 9930			
\jarr 10530			
\jeem 10502			
\jeh 10538			
\jobname . 3341, 3369, 3376, 7868, 9261, 9267, 9281, 9319, 9321, 9326			
K			
\k .. 9502, 9678, 9680, 9685, 9687, 9724, 9876, 9877, 9896, 9897, 9921, 9922, 9923, 9991, 9992, 10021, 10022			
\kaf 10520			
\kasra 10533			
\keepPDF@SetupDoc . .. 7537, 7544			
\kern 1036, 1103, 1108, 1120			
\kha 10504			
\KV@Hyp@draft .. 1603			
\KV@Hyp@nolinks 1603			
	L		
	\L 9550, 9942		
	\l 9557, 9943		
	\l@slide . 4858, 4968, 4973, 4977, 4984		
	\l@subslide .. 4910, 4973, 4980, 5024		
	\label 454, 4591		
	\label@hyperref 2780, 2782		
	\label@hyperdef 2771, 2794		
	\label@hyperref 2752, 2779, 2911		
	\labelsep 4442		
	\labelwidth ... 4441		
	\lam 10521		
	\language@group 437		
	\LARGE 425		
	\Large 426		
	\large 429, 4990, 4998, 5008, 5016		
	\lastpage@putlabel 3794		
	\lastskip 1466, 1470, 1477, 1485, 1489, 1496		
	\LaTeX . 402, 403, 7874, 7875		
	\LaTeXe ... 403, 7875		
	\LayoutCheckField 3185, 8134, 8528, 8799		
	\LayoutChoiceField 3182, 8029, 8408, 8666		
	\LayoutPushButtonField 3188, 8088, 8476, 8739		
	\LayoutTextField 3179, 8002, 8379, 8637		
	\lccode ... 766, 4754		
	\ldots 397		
	\leavevmode 480, 4044, 4155, 4349, 4545, 5247, 5284, 5311, 5343, 5630, 5705, 5773, 5800, 5830, 6004, 6025, 6048, 6065, 6186, 6194, 6243, 6357, 6371, 6382, 6400, 6415, 6718, 6977, 7197, 7227, 7267, 7592, 7830, 8438, 8464, 8477, 8493, 8512,		
		8697, 8723, 8740, 8760, 8779	
		\limits 2712	
		\listofslides .. 4959	
		\listslidenam 4958, 4961, 4963, 4965	
		\literalps@out 1446, 6636, 6641, 6699, 6704, 6721, 6726, 6955, 6956, 6965, 6966, 6976, 6985, 6987, 6996, 6998, 7315, 7388, 7450, 7635, 7773	
		\lower ... 5709, 5776, 5804, 5834, 6987, 7596, 7834	
		\lowercase 767, 1507, 1808, 1837, 3002, 3005, 3008, 3011, 3014, 3017, 3020, 3023, 3026, 4755, 6749	
		\lslide@flag .. 4985, 4988, 5006, 5025, 5029	
		\LT@array 3874	
		\LT@firsthead . 3886, 3891	
		\LT@p@ftn 4063, 4066, 4070, 4084	
		\LT@p@ftntext . 4061, 4068	
		\LT@start 3888, 3895	
		M	
		\m@ne 3977, 9321, 9386, 9401	
		\make@df@tag@@ 4669, 4670	
		\make@df@tag@@@ 4676, 4677	
		\make@stripped@name 3734, 3923, 3943, 3965, 3975	
		\makeatletter 3, 627, 3368	
		\MakeButtonField 3195, 8090, 8105, 8120, 8480, 8500, 8515, 8738, 8759, 8778	
		\MakeCheckField 3192, 8136, 8531, 8798	
		\MakeChoiceField 3194, 8078, 8467, 8722	

<code>\MakeFieldObject</code> ..	<code>\new@refstepcounter</code>	<code>\nfss@text</code> 5040, 5060,
.... 8328, 8345,	.. 3897, 3927	5077, 5122
8355, 8356	<code>\newblock</code> 4446	<code>\NG</code> 9951
<code>\MakeRadioField</code> 3191,	<code>\newcommand</code> 4,	<code>\ng</code> 9952
8060, 8449, 8692	9, 42, 612, 1447,	<code>\noboundary</code> .. 10543
<code>\makeslideheading</code> .	3324, 3674, 3675,	<code>\nobreak</code> . 1467, 1475,
.... 4868	3677, 3678, 3679,	1486, 1494, 4045,
<code>\makeslidesubheading</code>	3681, 3682, 3683,	4156
.... 4920	3684, 3686, 3687,	<code>\nobreakspace</code> .. 491
<code>\MakeTextField</code> 3193,	3688, 3689, 3690,	<code>\noexpand</code> ... 22, 93,
8004, 8382, 8635	3691, 3700, 3701,	95, 108, 116, 168,
<code>\maketitle</code> 4105, 4106	3702, 3703, 3704,	170, 171, 172,
<code>\MakeUppercase</code> 4963,	3705, 3973, 4703,	175, 205, 637,
4965	4845, 4850, 4851,	778, 910, 927,
<code>\MathBSuppress</code> 6195,	9165, 9168, 9173	1027, 1473, 1474,
6198	<code>\newcount</code> .. 319, 320,	1475, 1478, 1492,
<code>\mathdisplay</code> .. 3905,	2940, 3452, 8066,	1493, 1494, 1497,
3914	8453, 8711, 9187	1994, 1996, 1998,
<code>\mathdisplay@push</code> .	<code>\newcounter</code> 3693, 3995	1999, 2141, 2142,
.. 3903, 3912	<code>\newdimen</code> . 316, 2941,	2706, 2759, 2885,
<code>\maxdimen</code> 2094, 8333	2942	2887, 3544, 3545,
<code>\MaybeStopEarly</code> 318,	<code>\newif</code> . 238, 239, 240,	3554, 3556, 3559,
1678, 1744, 2459,	241, 242, 243,	3981, 4064, 4072,
2502, 3673	244, 245, 246,	4073, 4074, 4075,
<code>\mbox</code> . 481, 4362, 4385	247, 248, 251,	4076, 4078, 4165,
<code>\meaning</code> 62, 153, 158,	252, 253, 254,	4223, 4289, 4302,
1412, 3408, 3779,	255, 256, 257,	4318, 4695, 4697,
3982, 9292, 9301,	258, 259, 260,	5135, 5136, 5141,
9308	261, 262, 263,	5142, 6944, 7447,
<code>\measuring@false</code> ..	264, 265, 266,	7993, 8370, 8625,
.... 3730	267, 268, 269,	8864
<code>\mediaheight</code> .. 6274,	270, 271, 272,	<code>\nofrenchguillemets</code>
6276, 6282, 6289	273, 274, 275,	... 508, 510
<code>\mediawidth</code> 6285, 6292	276, 277, 278,	<code>\NoHyper</code> 3280
<code>\meem</code> 10522	279, 639, 2130,	<code>\nolinkurl</code> 2739
<code>\message</code> 4986	2922, 2923, 2924,	<code>\nonumber</code> 3954, 3957
<code>\MessageBreak</code> .. 348,	2925, 2926, 2927,	<code>\normalsize</code> 430, 4189,
1128, 1143, 1150,	2928, 2929, 2930,	4240
1168, 1527, 1528,	2956, 3710, 3711,	<code>\null</code> 4427, 4435, 5082,
1542, 1564, 1567,	3730, 3931, 6176,	5118
1569, 1692, 1830,	6940	<code>\number</code> .. 1290, 1291,
2157, 2158, 2411,	<code>\newlabel</code> 1415, 2799,	1292, 1293, 1297,
3799, 4596, 4735,	3351, 3352, 3359,	1298, 1299, 1300,
9123, 9141	3381, 3821, 3837	1301, 1305, 1306,
<code>\MF</code> 405, 7877	<code>\newlabelxx</code> 3353, 3354	1307, 1308, 1309,
<code>\MP</code> 406, 7878	<code>\newline</code> .. 400, 3429	1310, 1311, 1315,
<code>\multiply</code> 6518, 6546	<code>\newname</code> . 3735, 3924,	1316, 1317, 1318,
	3944, 3966, 3978,	1319, 1320, 1323,
	3987	1326, 1327, 1328,
N	<code>\newsavebox</code> 5951, 6972	1329, 1330, 1331,
<code>\name@of@eq</code> 3708, 3733	<code>\newtoks</code> ... 90, 2953,	1332, 1336, 1337,
<code>\name@of@slide</code> 3709,	2984, 6836, 7002,	1338, 1348, 1349,
3717	7003	1353, 1354, 1361,
<code>\nasb</code> 10528	<code>\newwrite</code> 3375, 9266,	1362, 1366, 1369,
<code>\netscape</code> 5739	9325	1370, 1371, 1381,
<code>\new@ifnextchar</code> 946	<code>\next</code> 4436, 4437, 4438,	1383, 1384, 1388,
<code>\new@pdflink</code> .. 5230,	6489, 6491, 6493	1390, 1391, 1395,
5268, 5269		

1396, 2576, 5764,	\or 784, 785, 786, 787,	\partnumberline 9147,
5778, 5779, 5790,	788, 789, 790,	9151
5791, 5806, 5807,	791, 792, 793,	\PassOptionsToPackage
5818, 5819, 5836,	794, 795, 796,	.... 1687, 1778,
5837, 5848, 5849	797, 798, 799,	1819, 1823, 1842,
\numberline .. 4182,	800, 801, 802,	2375, 2518, 2536
4234, 9146, 9150	803, 804, 805,	\pdf@addtoks .. 7005,
\numberwithin .. 4700	806, 807, 808,	7024, 7030, 7038,
\numexpr . 1297, 1298,	809, 810, 811,	7042, 7044, 7046,
1299, 1301, 1307,	812, 813, 814,	7048, 7050, 7052,
1315, 1316, 1317,	815, 5005, 5014,	7060, 7069, 7073,
1318, 1319, 1320,	6556, 9195, 9196,	7075, 7077, 7084,
1336, 1337, 1348,	9197, 9198, 9199,	7088, 7090, 7092,
1353, 1370, 1384,	9200, 9201, 9202,	7094, 7096, 7098,
1391, 1396	9203, 9204, 9205,	7100, 7102, 7104,
\nun 10523	9206, 9207, 9208,	7106, 7108, 7109,
O	9209, 9210, 9211,	7111, 7113, 7115,
\O 9617, 9813	9212, 9213, 9214,	7117, 7119, 7120,
\o 9653, 9849	9215, 9216, 9217,	7121, 7122, 7123,
\obeylines 7446	9218, 9219, 9220,	7124, 7125, 7126,
\OBJ@acroform . 8342,	9221, 9222, 9223,	7127, 7128, 7129
8344, 8586	9224, 9225, 9226	\pdf@addtoksx . 7000,
\OBJ@Helv 8341, 8575,	P	7009, 7022
8580	\P 396	\pdf@box . 6972, 6979,
\OBJ@pdfdocencoding	\p@ . 1349, 1354, 2943,	6981, 6983, 6984,
8339, 8557, 8572	2949, 5715, 5786,	6987, 6994
\OBJ@ZaDb 8340, 8566,	5814, 5844, 6517,	\pdf@defaulttoks ..
8580	7602, 7841, 8025,	.... 6944, 7003,
\OCIRCUFLEX . 10366,	8401, 8662, 9448,	7004, 7014
10464, 10465,	9449	\pdf@docset ... 6836
10466, 10467,	\PackageError ... 61	\pdf@endanchor 5239,
10468	\PackageInfo ... 234	5268, 5270
\ocircumflex . 10359,	\PackageWarning 232	\PDF@FinishDoc 1680,
10404, 10405,	\PackageWarningNoLine	1746, 2351, 2392,
10406, 10407,	.... 233	2461, 2504, 3319,
10408	\pagenumbering . 4507	4561, 4563, 4564,
\OE . 9551, 9757, 9959	\pageref .. 459, 2654,	5477, 5651, 5860,
\oe . 9558, 9758, 9960	3799, 7174	6084, 6177, 6615,
\OHORN . 10367, 10469,	\paperheight .. 2354,	6837, 7637, 7781
10470, 10471,	2359, 5591, 5593,	\pdf@linktype . 6958,
10472, 10473	5596, 5598, 5611,	6962, 7019, 7020
\ohorn ... 1961, 1968,	5613, 6281, 6282,	\pdf@rect 6952, 6964,
10360, 10409,	6284	6975
10410, 10411,	\paperwidth .. 2354,	\PDF@SetupDoc . 2350,
10412, 10413	5587, 5589, 5600,	2391, 3251, 3252,
\oldcontentsline ..	5602, 5607, 5609,	3318, 5411, 5652,
3346, 3349, 3358	6285	5888, 6116, 6178,
\oldnewlabel .. 3351,	\par . 4181, 4198, 4232,	6571, 6877, 7539,
3356, 3359	4241, 4429, 4449	7665, 7782
\OMEGA 7873	\paragraphautorefname	\PDF@SetupDox .. 5411
\openout . 3341, 3376,	.... 1870, 1887,	\pdf@toks 6944, 6955,
9267, 9326	1904, 1921, 1938,	6965, 6976, 7002,
\OpMode .. 1737, 1741,	1955, 1972, 5162	7006, 7010
1750, 1764, 1769,	\partautorefname ..	\pdf@type 6946, 6950,
2495, 2499, 6563,	.... 1864, 1881,	6955, 6965, 6976,
6644, 7382	1898, 1915, 1932,	7017
	1949, 1966, 5156	\pdfannotlink .. 5221

<code>\pdfbookmark</code> . . . 1447, 3323, 3324, 9166, 9171, 9176, 9180	6823, 6859, 6878, 6886, 6917, 6941, 7133, 7145, 7159, 7170, 7175, 7199, 7211, 7229, 7246, 7269, 7289, 7666, 7674, 7705, 8004, 8060, 8078, 8090, 8105, 8120, 8136, 9297	<code>\pdfstringdefPreHook</code> .. 487, <u>619</u> , 631, 633, 3426, 3436
<code>\pdfcatalog</code> . . . 3588, 5426, 5465, 8344	7170, 7175, 7199, 7211, 7229, 7246, 7269, 7289, 7666, 7674, 7705, 8004, 8060, 8078, 8090, 8105, 8120, 8136, 9297	<code>\pdfstringdefWarn</code> . .. 399, 400, 482, 636, 918, 923, 942, 946, 950
<code>\pdfcompresslevel</code> 5575	7170, 7175, 7199, 7211, 7229, 7246, 7269, 7289, 7666, 7674, 7705, 8004, 8060, 8078, 8090, 8105, 8120, 8136, 9297	<code>\pdftexrevision</code> 5386, 5394, 5405
<code>\PDFdefaults</code> . . . 7013	7170, 7175, 7199, 7211, 7229, 7246, 7269, 7289, 7666, 7674, 7705, 8004, 8060, 8078, 8090, 8105, 8120, 8136, 9297	<code>\pdftexversion</code> 5381, 5383, 5386, 5389, 5392, 5393, 5397, 5403, 5404, 8338
<code>\pdfdest</code> 5241	7170, 7175, 7199, 7211, 7229, 7246, 7269, 7289, 7666, 7674, 7705, 8004, 8060, 8078, 8090, 8105, 8120, 8136, 9297	<code>\pdfvorigin</code> . . . 5585
<code>\pdfendlink</code> . . . 5267, 8382, 8449, 8468, 8481, 8501, 8516, 8532	<code>\pdfmark@</code> 6941, 6942 <code>\PDFNextPage</code> . . . 7143 <code>\PDFNextPage@</code> . 7143, 7144	<code>\pdfxform</code> 5223, 8329 <code>\peh</code> 10536 <code>\penalty</code> . 1030, 1459, 4356, 4379
<code>\pdfescapestring</code> 5214, 8892	<code>\pdfobj</code> . . . 8536, 8558, 8567, 8576	<code>\phantomsection</code> 2352, 3325, 4598, 9093, 9143, 9366, 9405
<code>\pdfform</code> 5223	<code>\PDFOpen</code> 7169	<code>\Preamble</code> 7869
<code>\PDFForm@Check</code> 8135, 8137, 8529, 8530, 8800, 8803, <u>8899</u>	<code>\pdfoutline</code> . . . 9336	<code>\process@me</code> . . . 3406, 3418, 3419, 5414, 5423
<code>\PDFForm@List</code> . 8077, 8079, 8465, 8466, 8724, 8727, <u>8975</u>	<code>\pdfoutput</code> 2513, 5574	<code>\ProcessKeyvalOptions</code> 2379
<code>\PDFForm@Push</code> . 8089, 8091, 8478, 8479, 8741, 8744, <u>8918</u>	<code>\PDFPage</code> 7172	<code>\protect</code> . 1028, 2784, 4182, 4234, 4289, 4302, 4318, 4434, 4441, 4442, 4629, 4652, 4858, 4910, 5039, 5059, 5065, 5076, 5121, 5661, 5743, 6241, 6308, 7549, 7791, 9157, 9448, 9449
<code>\PDFForm@Radio</code> 8059, 8062, 8439, 8441, 8698, 8703, <u>9002</u>	<code>\PDFPage@</code> 7172, 7173	<code>\protected@edef</code> 2813, 3540, 3979, 5248, 5974, 6342, 6383, 6806
<code>\PDFForm@Reset</code> 8119, 8121, 8513, 8514, 8780, 8783, <u>9075</u>	<code>\pdfpageattr</code> . . 5510, 5514, 5515, 5525, 5533, 5537, 5538, 5548, 5555, 5558, 5559, 5569	<code>\protected@write</code> 1414, 2798, 4414, 4778, 4786, 4790, 9156
<code>\PDFForm@Submit</code> 8104, 8107, 8494, 8496, 8761, 8764, <u>9055</u>	<code>\pdfpageheight</code> 5593, 5602, 5613, 5622	<code>\protected@xdef</code> 4073, 4075, 4131
<code>\PDFForm@Text</code> . 8003, 8005, 8380, 8381, 8638, 8640, <u>9026</u>	<code>\pdfpagesattr</code> . 5415, 5417, 5419	<code>\providecommand</code> 1428, 1429, 1795, 2483, 2638, 2639, 2720, 2743, 3570, 3654, 4274, 4346, 4512, 4513, 4514, 4582, 4583, 4586, 4587, 4841, 4842, 4958, 5147, 5148, 5149, 5150, 5151, 5152,
<code>\pdfhorigin</code> . . . 5584	<code>\pdfpagewidth</code> . 5589, 5598, 5609, 5618	
<code>\pdfinfo</code> 5479	<code>\PDFPreviousPage</code> 7155	
<code>\pdflastform</code> . . . 5224	<code>\PDFPreviousPage@</code> . .. 7156, 7158	
<code>\pdflastobj</code> . . . 8557, 8566, 8575, 8586	<code>\pdfrefform</code> . . . 5225	
<code>\pdflastxform</code> . 5224, 8331, 8333	<code>\pdfrefobj</code> 8339, 8340, 8341, 8342	
<code>\pdflinkmargin</code> 5219, 5222, 5227	<code>\pdfrefxform</code> . . 5225, 8333	
<code>\pdfm@box</code> 5951, 8610, 8611, 8612, 8634, 8643, 8692, 8707, 8722, 8729, 8738, 8747, 8759, 8766, 8778, 8785, 8798, 8805	<code>\pdfstartlink</code> . 5220, 5221, 5265, 5285, 5312, 5344, 5631, 8381, 8440, 8466, 8479, 8495, 8514, 8530	
<code>\pdfmark</code> . 3636, 5896, 5903, 5933, 6675, 6705, 6728, 6761, 6778, 6790, 6811,	<code>\pdfstringdef</code> . . <u>368</u> , 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 3432, 3480, 3482, 3814, 4525, 9154	
	<code>\pdfstringdefDisableCommands</code> <u>625</u> , 3321, 3427	
	<code>\pdfstringdefPostHook</code> ... 598, <u>619</u>	

5153, 5154, 5155, 5156, 5157, 5158, 5159, 5160, 5161, 5162, 5163, 5164, 5165, 5229, 5243, 5244, 5739, 5959, 5960, 5961, 6279, 6301, 6302, 6303, 6637, 6973, 6974, 7317, 7318, 7319, 7320, 7390, 7391, 7392, 7393, 7492, 7493, 7494, 7495, 7629, 7630, 7726, 7727, 7774, 7775	\PushButton ... 3167 \put@me@back .. 2880, 2893, 2903		
Q			
\qaf 10519 \quotedblbase . 9541, 9664, 9859, 10337 \quotesinglbase 9546, 9666, 9861, 10334			
R			
\r .. 9489, 9498, 9597, 9630, 9705, 9716, 9794, 9826, 9987, 9988 \ra 10507 \raff 10529 \raise ... 1460, 5716, 5787, 5815, 5845, 6998, 7603, 7842 \ReadBookmarks 2378, 2395, 2472, 2593, 2661, 9247, 9276 \real@setref .. 5036, 5089, 5094 \realfootnote .. 4128 \ref .. 458, 2465, 2653, 2919, 7861 \ref@one . 2765, 2766 \rEfLiNK . 7862, 7863 \refstepcounter 3707, 3714, 3856, 3876, 3897, 3921, 3927, 4226 \rem@ptetc 6750, 6752 \renewcommand . 1406, 4208, 4717, 9180 \RequirePackage 22, 231, 1400, 2372, 2452, 2603, 2651, 2665, 2736, 6175, 7780		\Reset 3176 \reset@font .. 4362, 4385, 5040, 5060, 5077, 5122 \revtex@checking 4339 \Rightarrow ... 4992 \rm 423 \Roman 3536 \roman 3537	\sheen 10510 \shortciteN ... 4477 \simple@pageref 7174, 7186 \skip@ ... 1045, 1114, 1115, 1118, 1120, 1470, 1476, 1489, 1495 \slide@cline .. 4978, 4991, 4999, 5009, 5017 \Slide@contents 4983 \slide@contents 4976 \slide@heading . 4854 \slide@subheading 4907 \slide@undottedcline 4969 \slidenumberline 4970, 4978, 4992, 5000, 5010, 5018 \small 432 \smash 1460 \spacefactor .. 4045, 4057, 4156, 4158 \special@paper 1605, 1609, 1613, 1617, 1621, 1625, 2354, 2356, 7371, 7373 \SS 9662, 9858 \ss . 1877, 9624, 9677, 9820 \st@rredfalse . 3904, 3913 \stepcounter .. 3722, 4046, 4130 \stockheight .. 2356, 2359, 5620, 5622, 6288, 6289 \stockwidth .. 2356, 5616, 5618, 6291, 6292 \stop@hyper ... 3293 \strip@period .. 1418 \strip@prefix ... 62, 1412, 3408, 3779, 3982, 9292, 9301, 9308 \strip@pt .. 357, 364, 2361, 5589, 5593, 5598, 5602, 6519, 8913, 8989, 9018, 9040, 9081 \strip@pt@and@otherjunk 6704, 6726, 6752 \sub@label 1406
		S	
		\sad 10511 \sbox 3196, 6973, 6981, 8328 \scr@LT@array .. 3875 \scriptsize ... 431 \scriptstyle ... 4352 \scrollmode 964, 978, 993, 1082 \section 4960 \sectionautorefname 1867, 1884, 1901, 1918, 1935, 1952, 1969, 5159 \seen 10509 \selectfont 2621, 8351 \setbox .. 1031, 1037, 1043, 2077, 2083, 3039, 5707, 5772, 5801, 5831, 7594, 7832, 8634, 8692, 8722, 8738, 8759, 8778, 8798 \setkeys . 1675, 1777, 2364, 2535, 6947, 7976, 7999, 8027, 8086, 8102, 8117, 8132, 8187, 8200, 8248, 8289, 8310, 8337, 8376, 8403, 8474, 8491, 8510, 8526, 8594, 8631, 8664, 8736, 8757, 8776, 8796 \setlength . 352, 353, 1454, 5584, 5585, 5589, 5593, 5598, 5602, 5609, 5613, 5618, 5622, 6282, 6285, 6289, 6292, 6517 \setpdfinkmargin . 2272, 2273, 5219 \settowidth .. 8022, 8398, 8659 \sffamily 419 \shadda 10534	

<code>\subeqnarray</code> .. 3960, 3962	<code>\textBeta</code> 10033	<code>\textdoublegrave</code> .. 9710, 9721, 9734
<code>\subfig@oldlabel</code> 1408	<code>\textbeta</code> 9677, 10065	<code>\textellipsis</code> .. 397, 398, 9532, 10341
<code>\Submit</code> 3173	<code>\textbraceleft</code> . 387, 9525, 9750	<code>\textemdash</code> 573, 9533, 10331
<code>\SubmitObject</code> .. 8497	<code>\textbraceright</code> 388, 9527, 9752	<code>\textendash</code> 574, 9534, 10330
<code>\SubmitPObject</code> . 8497	<code>\textbreve</code> 9503, 9709, 9720, 9726	<code>\textEpsilon</code> . 10024, 10036
<code>\subparagraphautorefname</code> 1871, 1888, 1905, 1922, 1939, 1956, 1973, 5163	<code>\textbrokenbar</code> 9567, 9764	<code>\textepsilon</code> . 10059, 10068
<code>\subpdfbookmark</code> 9168	<code>\textBS</code> .. 9482, 9698	<code>\textEta</code> 10025, 10038
<code>\subsection</code> ... 7625	<code>\textbullet</code> .. 9529, 10340	<code>\texteta</code> 10060, 10070
<code>\subsectionautorefname</code> 1868, 1885, 1902, 1919, 1936, 1953, 1970, 5160	<code>\textcaron</code> 9490, 9499, 9504, 9706, 9717, 9727	<code>\texteuro</code> 9561, 10347
<code>\subsubsectionautorefname</code> 1869, 1886, 1903, 1920, 1937, 1954, 1971, 5161	<code>\textcdot</code> 9676, 9871	<code>\textexclamdown</code> 577, 9562, 9759
<code>\sukun</code> 10535	<code>\textcedilla</code> .. 9492, 9501, 9584, 9708, 9719, 9781	<code>\textFF</code> .. 9483, 9699
<code>\surd</code> 5000	<code>\textcelsius</code> .. 9663, 10348	<code>\textfi</code> 575, 9548, 9755
T	<code>\textcent</code> 9563, 9760	<code>\TextField</code> 3158
<code>\T</code> 10499	<code>\textChi</code> 10053	<code>\textfl</code> 576, 9549, 9756
<code>\T@pageref</code> 2645, 2655	<code>\textchi</code> 10086	<code>\textflorin</code> .. 9535, 10005
<code>\T@ref</code> ... 2640, 2653	<code>\textcircumflex</code> 9486, 9495, 9505, 9702, 9713, 9728	<code>\textflq</code> .. 449, 9670, 9865
<code>\T@temp</code> .. 4340, 4343	<code>\textcolor</code> 434, 8336, 8355, 8356, 8593	<code>\textflqq</code> . 447, 9668, 9863
<code>\Ta</code> 10513	<code>\textcopyright</code> 9570, 9767	<code>\textfractionmark</code> . 9536, 10346
<code>\taa</code> 10500	<code>\textCR</code> .. 9480, 9696	<code>\textfrq</code> .. 450, 9671, 9866
<code>\tableautorefname</code> 1863, 1880, 1897, 1914, 1931, 1948, 1965, 5155	<code>\textcurrency</code> . 9565, 9762	<code>\textfrqq</code> . 448, 9669, 9864
<code>\tatweel</code> 10517	<code>\textdagger</code> .. 9530, 10338	<code>\textGamma</code> ... 10034
<code>\tcheh</code> 10537	<code>\textdaggerdbl</code> 9531, 10339	<code>\textgamma</code> ... 10066
<code>\TeX</code> ... 401, 402, 404, 7872, 7874, 7876	<code>\textdegree</code> .. 9576, 9663, 9773	<code>\textglq</code> .. 445, 9666, 9861
<code>\texorpdfstring</code> 612, 3322	<code>\textDelta</code> ... 10035	<code>\textglqq</code> . 443, 9664, 9859
<code>\textacute</code> 9485, 9494, 9580, 9701, 9712, 9777	<code>\textdelta</code> ... 10067	<code>\textgrave</code> 9484, 9493, 9523, 9700, 9711, 9747
<code>\textAlpha</code> .. 10023, 10032	<code>\textdieresis</code> . 9488, 9497, 9569, 9704, 9715, 9766	<code>\textgreater</code> .. 9519, 9743
<code>\textalpha</code> .. 10058, 10064	<code>\textdigamma</code> .. 10097	<code>\textgrq</code> .. 446, 9667, 9862
<code>\textampersand</code> . 393, 9515, 9739	<code>\textdiv</code> . 9674, 9869	<code>\textgrqq</code> . 444, 9665, 9860
<code>\textasciicircum</code> .. . 9521, 9745	<code>\textdivide</code> .. 9652, 9674, 9848, 9869	<code>\textGslash</code> .. 10015
<code>\textasciitilde</code> 394, 2696, 9528, 9753	<code>\textdollar</code> 391, 9513, 9737	<code>\textgslash</code> .. 10016
<code>\textbackslash</code> . 389, 539, 9520, 9744	<code>\textdotaccent</code> 9491, 9500, 9506, 9707, 9718, 9729	<code>\textHslash</code> ... 9910
<code>\textbar</code> . 9526, 9751		<code>\texthslash</code> ... 9911
		<code>\textHT</code> .. 9481, 9697
		<code>\texthungarumlaut</code> . . 9507, 9730
		<code>\textIota</code> ... 10026, 10040, 10056

<code>\textiota</code> ... 10061, 10072, 10089	<code>\textperiodcentered</code> 9583, 9676, 9780, 9871	<code>\texttilde</code> 2424, 9487, 9496, 9510, 9703, 9714, 9733
<code>\textIotadieresis</code> . . 10030, 10031	<code>\textpertenthousand</code> ... 10343	<code>\textttimes</code> 9673, 9868
<code>\textit</code> 409	<code>\textperthousand</code> .. . 9540, 10342	<code>\texttrademark</code> 9547, 10350
<code>\textKappa</code> ... 10041	<code>\textPhi</code> 10052	<code>\textTslash</code> ... 9979
<code>\textkappa</code> ... 10073	<code>\textphi</code> 10085	<code>\texttslash</code> ... 9980
<code>\textLambda</code> .. 10042	<code>\textPi</code> 10047	<code>\textttt</code> 416
<code>\textlambda</code> .. 10074	<code>\textpi</code> 10079	<code>\textttwosuperior</code> 9578, 9775
<code>\textlatin</code> 435, 3773, 4592	<code>\textplusminus</code> 9577, 9675, 9774, 9870	<code>\textunderscore</code> 395, 2690, 2691, 2693, 9522, 9746
<code>\textless</code> 9518, 9742	<code>\textpm</code> .. 9675, 9870	<code>\textup</code> 417
<code>\textLF</code> .. 9479, 9695	<code>\textPsi</code> 10054	<code>\textUpsilon</code> .. 10028, 10051, 10057
<code>\textlogicalnot</code> 9573, 9672, 9770, 9867	<code>\textpsi</code> 10087	<code>\textupsilon</code> .. 10084, 10090, 10092
<code>\textmacron</code> 9575, 9772	<code>\textquestiondown</code> . 578, 9591, 9788	<code>\textupsilonacute</code> . . 10062, 10063
<code>\textmd</code> 410	<code>\textquotedbl</code> . 9511, 9735	<code>\textvarkappa</code> . 10098
<code>\textminus</code> 9539, 9754	<code>\textquotedblleft</code> 9542, 9665, 9860, 10335	<code>\textvarphi</code> .. 10095
<code>\textMu</code> 10043	<code>\textquotedblright</code> . 9543, 10336	<code>\textvarpi</code> ... 10096
<code>\textmu</code> .. 9581, 9778, 10075	<code>\textquoteleft</code> 9544, 9667, 9862, 10332	<code>\textvarrho</code> .. 10099
<code>\textmultiply</code> . 9616, 9673, 9812, 9868	<code>\textquoteright</code> 9545, 10333	<code>\textvarsigma</code> . 10081
<code>\textneg</code> . 9672, 9867	<code>\textregistered</code> 9574, 9771	<code>\textvartheta</code> . 10094
<code>\textnormal</code> ... 411	<code>\textRho</code> 10048	<code>\textXi</code> 10045
<code>\textNu</code> 10044	<code>\textrho</code> 10080	<code>\textxi</code> 10077
<code>\textnu</code> 10076	<code>\textring</code> 9489, 9498, 9509, 9705, 9716, 9732	<code>\textyen</code> . 9566, 9763
<code>\textnumbersign</code> 390, 9512, 9736	<code>\textrm</code> 412	<code>\textZeta</code> 10037
<code>\textnumero</code> .. 10349	<code>\textsc</code> 413	<code>\textzeta</code> 10069
<code>\textogonek</code> 9508, 9731	<code>\textsection</code> .. 9568, 9765	<code>\TH</code> 9623, 9819
<code>\textOmega</code> .. 10029, 10055	<code>\textsf</code> 414, 8355, 8356	<code>\th</code> 9659, 9855
<code>\textomega</code> .. 10088, 10093	<code>\textSigma</code> ... 10049	<code>\thaa</code> 10501
<code>\textOmicron</code> . 10027, 10046	<code>\textsigma</code> ... 10082	<code>\theequation</code> .. 3734, 3923, 3943, 3965
<code>\textomicron</code> . 10078, 10091	<code>\textsl</code> 415	<code>\thefootnote</code> .. 4012, 4150
<code>\textonehalf</code> .. 9589, 9786	<code>\textsterling</code> . 9564, 9761	<code>\theHchapter</code> .. 3681, 3682, 3683, 3684, 3760
<code>\textonequarter</code> 9588, 9785	<code>\TextSymbolUnavailable</code> 9502, 9722, 9723, 9724, 9725	<code>\theHenumi</code> 3700
<code>\textonesuperior</code> 9585, 9782	<code>\textTau</code> 10050	<code>\theHenumii</code> ... 3701
<code>\textordfeminine</code> 9571, 9768	<code>\textttau</code> 10083	<code>\theHenumiii</code> ... 3702
<code>\textordmasculine</code> . .. 9586, 9783	<code>\textTheta</code> ... 10039	<code>\theHenumiv</code> ... 3703
<code>\textparagraph</code> . 396, 9582, 9779	<code>\textthetas</code> ... 10071	<code>\theHequation</code> . 3674, 3735, 3924, 3944, 3966, 3973
<code>\textparenleft</code> . 581, 582, 9516, 9740	<code>\textthreequarters</code> .. 9590, 9787	<code>\theHfigure</code> 3678, 3682
<code>\textparenright</code> 9517, 9741	<code>\textthreesuperior</code> .. 9579, 9776	<code>\theHHfootnote</code> 3704, 3706
<code>\textpercent</code> ... 392, 9514, 9738		<code>\theHHmpfootnote</code> 3706
		<code>\theHitem</code> 3694, 3700, 3701, 3702, 3703
		<code>\theHlisting</code> ... 4586

<code>\theHlstlisting</code>	4582	<code>\ThisShouldNotHappen</code>	8871	<code>\ttl@Hy@saveanchor</code>	3849, 3855
<code>\theHmpfootnote</code>	3705	<code>\tiny</code>	433	<code>\ttl@Hy@steplink</code>	3846
<code>\theHparagraph</code>	3688, 3689	<code>\title</code>	3385, 3387	<code>\typeout</code>	5, 6, 7, 19, 26, 27, 36, 131, 155, 157, 158, 159, 1679, 1745, 2456, 2458, 2460, 2503, 2548, 2550, 2889, 2971, 4620, 5232, 6253, 6256, 6259, 6262, 6265, 6268, 6270, 6271, 7779, 7980, 8144, 8147, 8150, 8153, 8156, 8159, 8161, 8162, 8165, 8168, 8171, 8174, 8177, 8180, 8182, 8183, 8192, 8326, 8590, 9442, 10546
<code>\theHpart</code>	3675	<code>\tocappendix</code>	860		
<code>\theHsection</code>	3674, 3677, 3684, 3686, 3690, 3691, 3759	<code>\tocchapter</code>	859		
<code>\theHslide</code>	4845	<code>\toclevel@chapter</code>	4573		
<code>\theHslidesection</code>	4850, 4852, 4888, 4892	<code>\toclevel@figure</code>	4579		
<code>\theHslidesubsection</code>	4851, 4939, 4943	<code>\toclevel@listing</code>	4587		
<code>\theHsubequation</code>	3973	<code>\toclevel@lstlisting</code>	4583		
<code>\theHsubparagraph</code>	3689	<code>\toclevel@paragraph</code>	4577		
<code>\theHsubsection</code>	3686, 3687	<code>\toclevel@part</code>	4569, 4571		
<code>\theHsubsubsection</code>	3687, 3688	<code>\toclevel@section</code>	4574		
<code>\theHtable</code>	3679, 3683	<code>\toclevel@subfigure</code>	1428		
<code>\theHtheorem</code>	3690	<code>\toclevel@subparagraph</code>	4578		
<code>\theHthm</code>	3691	<code>\toclevel@subsection</code>	4575		
<code>\thelisting</code>	4586	<code>\toclevel@subsubsection</code>	4576		
<code>\thelstlisting</code>	4582	<code>\toclevel@subtable</code>	1429		
<code>\thempfn</code>	4001, 4074, 4076, 4131, 4143	<code>\toclevel@table</code>	4580		
<code>\theoremautorefname</code>	1873, 1890, 1907, 1924, 1941, 1958, 1975, 5165	<code>\tocparagraph</code>	864		
<code>\thepage</code>	1417, 2786, 3465, 3814, 3822, 3837, 4365, 4388, 4417, 4509, 4525, 4629, 4652, 4779, 4787, 4791, 5042, 5062, 5079, 5124	<code>\tocpart</code>	858		
<code>\theslideheading</code>	4871	<code>\tocsection</code>	861		
<code>\theslidesection</code>	4859, 4866, 4874, 4880, 4882, 4884, 4890, 4900	<code>\tocsubsection</code>	862		
<code>\theslidesubheading</code>	4872, 4923	<code>\tocsubsubsection</code>	863		
<code>\theslidesubsection</code>	4911, 4918, 4925, 4931, 4933, 4935, 4941, 4951	<code>\toks</code>	631, 632, 633, 2817, 2819, 2821, 2823, 5050, 5051, 5053		
<code>\This@name</code>	3716, 3717, 3732, 3733	<code>\toks@</code>	170, 207, 331, 334, 337, 355, 356, 745, 768, 771, 772, 974, 975, 1986, 1987, 1989, 3542, 3544, 3624, 3626, 4822, 4827, 4829, 4832		
<code>\thispdfpagelabel</code>	3447	<code>\tryhyper@link</code>	2766, 2768		
		<code>\ttfamily</code>	418		
		<code>\ttl@b</code>	3854, 3857		
		<code>\ttl@gobblecontents</code>	3861		
		<code>\ttl@Hy@refstepcounter</code>	3853		
				U	
				<code>\U</code>	9709, 9720, 10125, 10158, 10284, 10285, 10292, 10293, 10298, 10299
				<code>\u</code>	9725, 9874, 9875, 9892, 9893, 9902, 9903, 9918, 9919, 9920, 9955, 9956, 9985, 9986
				<code>\UHORN</code>	10368, 10479, 10480, 10481, 10482, 10483
				<code>\uhorn</code>	1961, 1968, 10361, 10419, 10420, 10421, 10422, 10423
				<code>\UnDef</code>	7862
				<code>\undefined</code>	1983
				<code>\unhbox</code>	6974, 8643, 8729, 8747, 8766, 8785, 8805
				<code>\unhcopy</code>	8707
				<code>\unichar</code>	1286
				<code>\unrestored@protected@xdef</code>	4001, 4012, 4143, 4150
				<code>\unskip</code>	4350
				<code>\unvbox</code>	4499, 9355
				<code>\upshape</code>	421
				<code>\Url</code>	2738
				<code>\url</code>	2737, 2740
				<code>\url@</code>	2740, 2741

<code>\use@file</code>	2861, 2863, 2867, 2870	W		7992, 7995, 8369, 8372, 8624, 8627			
<code>\usepackage</code>	... 1676	<code>\waw</code>	... 10525				
<code>\UTFviii@three@octets</code>	... 1285	<code>\wawhamza</code>	... 10494	<code>\XC@bordercolor</code>	2164		
<code>\UTFviii@two@octets</code>	... 1284	<code>\wd</code>	5778, 5790, 5806, 5818, 5836, 5848, 8611	<code>\XC@edef</code>	... 2150		
V		<code>\write</code>	... 3342, 3344, 3645, 3653, 3820, 3836, 4290, 4303, 4319, 4329, 4359, 4382, 4408, 4438, 9269, 9328	<code>\XR@dURL</code>	1435, 1436		
<code>\v</code>	... 9490, 9499, 9552, 9555, 9559, 9560, 9706, 9717, 9884, 9885, 9886, 9887, 9898, 9899, 9938, 9939, 9948, 9949, 9965, 9966, 9973, 9974, 9977, 9978, 10003, 10004, 10006, 10007, 10008, 10009, 10010, 10011, 10012, 10013, 10014, 10017, 10018, 10019, 10020	<code>\WriteBookmarks</code>	2396, 2473, 2572, 2594, 9101, 9263, 9282, 9283, 9318, 9322	<code>\XR@addURL</code>	... 1435		
<code>\value</code>	4304, 4330, 4697	<code>\wwwbrowser</code>	... 5739, 5808, 5820	<code>\XR@ext</code>	... 1637, 1638, 1672, 1686, 1699, 1703, 1708, 1713, 1719, 1724, 1738, 1742, 1765, 1781, 1786, 2497, 2500, 2517, 2526, 2530, 2540, 2545, 2859, 2862		
<code>\vbox</code>	3191, 3192, 3193, 3194	X		<code>\XR@URL</code>	... 1440		
<code>\vfill</code>	... 3191, 3192, 3193, 3194	<code>\x</code>	... 21, 25, 92, 98, 167, 168, 175, 177, 205, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 354, 359, 905, 933, 1471, 1481, 1490, 1500, 1548, 1549, 1554, 1570, 1993, 2002, 2065, 2066, 2069, 2070, 2071, 2075, 2078, 2084, 2150, 2151, 2815, 2822, 2823, 2825, 3407, 3408, 3413, 3876, 3884, 3886, 3895, 4829, 4830, 5052, 5055, 6641, 6646, 6650, 7081, 7082,	Y		<code>\xspace</code>	... 493, 495
<code>\vref@pagenum</code>	... 3865			<code>\y</code>	... 1550, 1555, 1560, 2071, 2072, 2073, 2074, 3408, 3416, 3874, 3875, 3878, 3884		
<code>\vskip</code>	... 1476, 1477			<code>\ya</code>	... 10527		
<code>\vtex@trans@special</code>	... 6496, 6498, 6501, 6503, 6505, 6507, 6509, 6511, 6513, 6519, 6521			<code>\yahamza</code>	... 10496		
<code>\VTeXInitMediaSize</code>	... 6279, 6296			Z			
<code>\VTeXOS</code>	... 6551, 6552, 6553, 6555			<code>\z</code>	... 1552, 1553, 1554		
<code>\VTeXversion</code>	... 3591, 3594, 3597, 6543, 6547			<code>\z@</code>	... 853, 1031, 1037, 1043, 1102, 1106, 1114, 1118, 1466, 1485, 2077, 2083, 3592, 3595, 5587, 5591, 5596, 5600, 5607, 5611, 5616, 5620, 6542, 6566, 6750, 6984, 6995, 8018, 8394, 8655, 9399		
				<code>\za</code>	... 10514		
				<code>\zay</code>	... 10508		
				<code>\ZWNJ</code>	... 10542		