1 Documentation overview for hyperref

The documentation for package hyperref consists of several files:

Manual The USER MANUAL (also available as HTML).

README The README file (also available as text file). 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 (also available as text file).

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 EuroTeX 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 hycheck.tex 7

4 Package options and setup 11
  4.1 Save catcodes 11
  4.2 Version check 13
  4.3 Checks with regular expressions 14
  4.4 Compatibility with format dumps 15
  4.5 Switches 16

5 Common help macros 17
  5.1 Macros for recursions 17
  5.2 Babel’s protection of shorthand characters 18
  5.3 Coordinate transformations 18

6 Dealing with PDF strings 19
  6.1 Description of PDF strings 19
  6.2 Definition of \pdfstringdef 19
    6.2.1 Preprocessing 20
    6.2.2 Expansion 26
    6.2.3 Postprocessing 27
  6.3 Encodings 31
    6.3.1 Xe\TeX 31
    6.3.2 Workaround for package linguex 33
    6.3.3 Catcodes saving and restoring for .def files 33
    6.3.4 PD\TeX encoding 34
    6.3.5 PU encoding 34
  6.4 Additional user commands 35
    6.4.1 \texorpdfstring 35
    6.4.2 Hooks for \pdfstringdef 35
  6.5 Help macros for expansion 36
    6.5.1 \ignorespaces 36
    6.5.2 Babel languages 37
    6.5.3 CJK patch 42
    6.5.4 CJK bookmarks 42
    6.5.5 CJK unicode 44
    6.5.6 \@inmathwarn-Patch 48
    6.5.7 Unexpandable spaces 50
    6.5.8 Marker for commands 50
    6.5.9 \hspace fix 50
    6.5.10 Fix for AMS classes 51
    6.5.11 Reference commands 51
    6.5.12 Redefining the defining commands 53
    6.5.13 \ifnextchar 54
    6.5.14 \@protected@testoptifnextchar 55
  6.6 Help macros for postprocessing 55
    6.6.1 Generic warning 55
    6.6.2 Protecting spaces 55
    6.6.3 Remove grouping braces 56
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.6.4</td>
<td>Catcode check</td>
<td>57</td>
</tr>
<tr>
<td>6.6.5</td>
<td>Check for wrong glyphs</td>
<td>61</td>
</tr>
<tr>
<td>6.6.6</td>
<td>Replacing tokens</td>
<td>62</td>
</tr>
<tr>
<td>6.6.7</td>
<td>Support for package <code>xspace</code></td>
<td>63</td>
</tr>
<tr>
<td>6.6.8</td>
<td>Converting to Unicode</td>
<td>63</td>
</tr>
<tr>
<td>6.6.9</td>
<td>Support for UTF-8 input encoding</td>
<td>66</td>
</tr>
<tr>
<td>6.6.10</td>
<td>Support for die faces (ifsym et. al.)</td>
<td>69</td>
</tr>
<tr>
<td>6.6.11</td>
<td>Support for moon phases of package <code>china2e</code></td>
<td>70</td>
</tr>
<tr>
<td>6.6.12</td>
<td>Support for package <code>pifont</code></td>
<td>70</td>
</tr>
<tr>
<td>7</td>
<td>Support of other packages</td>
<td>72</td>
</tr>
<tr>
<td>7.1</td>
<td>Class memoir</td>
<td>72</td>
</tr>
<tr>
<td>7.2</td>
<td>Package subfigure</td>
<td>72</td>
</tr>
<tr>
<td>7.3</td>
<td>Package <code>xr</code> and <code>xr-hyper</code></td>
<td>73</td>
</tr>
<tr>
<td>8</td>
<td>Help macros for links</td>
<td>73</td>
</tr>
<tr>
<td>9</td>
<td>Options</td>
<td>75</td>
</tr>
<tr>
<td>9.1</td>
<td>Help macros</td>
<td>75</td>
</tr>
<tr>
<td>9.2</td>
<td>Defining the options</td>
<td>77</td>
</tr>
<tr>
<td>10</td>
<td>Options for different drivers</td>
<td>82</td>
</tr>
<tr>
<td>11</td>
<td>Options to add extra features</td>
<td>86</td>
</tr>
<tr>
<td>12</td>
<td>Language options</td>
<td>87</td>
</tr>
<tr>
<td>13</td>
<td>Options to change appearance of links</td>
<td>94</td>
</tr>
<tr>
<td>14</td>
<td>Bookmarking</td>
<td>95</td>
</tr>
<tr>
<td>15</td>
<td>PDF-specific options</td>
<td>97</td>
</tr>
<tr>
<td>15.1</td>
<td>Package <code>xspace</code> support</td>
<td>111</td>
</tr>
<tr>
<td>15.2</td>
<td>Option draft</td>
<td>112</td>
</tr>
<tr>
<td>15.3</td>
<td>PDF/A</td>
<td>112</td>
</tr>
<tr>
<td>15.4</td>
<td>Patch for babel’s \texttilde</td>
<td>113</td>
</tr>
<tr>
<td>15.4.1</td>
<td>Driver loading</td>
<td>115</td>
</tr>
<tr>
<td>15.4.2</td>
<td>Bookmarks</td>
<td>118</td>
</tr>
<tr>
<td>16</td>
<td>User hypertext macros</td>
<td>121</td>
</tr>
<tr>
<td>16.1</td>
<td>Link box support for XeTeX</td>
<td>127</td>
</tr>
<tr>
<td>17</td>
<td>Underlying basic hypertext macros</td>
<td>128</td>
</tr>
<tr>
<td>18</td>
<td>Option ‘destlabel’</td>
<td>132</td>
</tr>
<tr>
<td>19</td>
<td>Compatibility with the <code>BfTeX2html</code> package</td>
<td>134</td>
</tr>
<tr>
<td>20</td>
<td>Forms creation</td>
<td>134</td>
</tr>
<tr>
<td>20.1</td>
<td>Field flags</td>
<td>134</td>
</tr>
<tr>
<td>20.1.1</td>
<td>Declarations of field flags</td>
<td>136</td>
</tr>
<tr>
<td>20.1.2</td>
<td>Set submit flags</td>
<td>138</td>
</tr>
<tr>
<td>20.1.3</td>
<td>Set annot flags in fields</td>
<td>139</td>
</tr>
<tr>
<td>20.1.4</td>
<td>Pushbutton field</td>
<td>139</td>
</tr>
<tr>
<td>20.1.5</td>
<td>Check box field</td>
<td>140</td>
</tr>
</tbody>
</table>
43 Included figures

44 hyperindex entries

45 Compatibility with foiltex

46 Compatibility with seminar slide package

47 Configuration files
   47.1 PS/PDF strings ........................................ 211
   47.2 pdftex .................................................. 212
      47.2.1 Fix for problem with different nesting levels ................................ 226
   47.3 hypertex ................................................. 227
   47.4 dviwindo ................................................ 229
   47.5 dvipdfm/xetex dvi to PDF converter ....................... 234
   47.6 VTeX typesetting system ................................ 244
   47.7 Fix for Adobe bug number 466320 ........................... 257
   47.8 Direct pdfmark support ................................ 257
   47.9 Rokicki’s dvips ........................................ 271
   47.10 VTeX’s vtxpdfmark driver ............................... 273
   47.11 Textures ............................................... 275
   47.12 dvipsone .............................................. 279
   47.13 TeX4ht ................................................. 283

48 Driver-specific form support .......................... 285
   48.1 pdfmarks ................................................ 285
   48.2 HyperTeX ............................................... 293
   48.3 TeX4ht ................................................. 294
   48.4 pdfTeX .................................................. 296
   48.5 dvipdfm, xetex ......................................... 305
   48.6 Common forms part ..................................... 313

49 Bookmarks in the PDF file ........................ 320
   49.1 Bookmarks ............................................. 320
      49.1.1 Rerun warning .................................. 323
      49.1.2 Driver stuff .................................. 323

50 Compatibility with koma-script classes .............. 329

51 Encoding definition files for encodings of PDF strings 330
   51.1 PD1 encoding ......................................... 330
   51.2 PU encoding ......................................... 338
      51.2.1 NFSS2 accents .................................. 338
      51.2.2 Basic Latin: U+0000 to U+007F ................. 341
      51.2.3 Latin-1 Supplement: U+0080 to U+00FF .......... 343
      51.2.4 Latin Extended-A: U+0080 to U+017F .......... 346
      51.2.5 Latin Extended-B: U+0180 to U+024F .......... 352
      51.2.6 IPA Extensions: U+0250 to U+02AF ............ 356
      51.2.7 Spacing Modifier Letters: U+02B0 to U+02FF .... 361
      51.2.8 Combining Diacritical Marks: U+0300 to U+036F .... 362
      51.2.9 Greek and Coptic: U+0370 to U+03FF .......... 362
      51.2.10 Cyrillic: U+0400 to U+04FF ................... 366
      51.2.11 Hebrew: U+0590 to U+05FF .................... 376
      51.2.12 Thai: U+0E00 to U+0E7F ...................... 377
3 File hycheck.tex

Many commands of \LaTeX{} 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 \LaTeX{}'s \CheckCommand{}, because it takes \DeclareRobustCommand{} and optional parameters better into account.

```
(~check)
\documentclass{article}
\makeatletter
\checklatex
Optional argument: release date of \LaTeX{}.
\newcommand*{\checklatex}{[#1]}{\typeout{}\typeout{* Format: `LaTeX2e' #1}\typeout{\space\space Loaded: `\fmtname' \fmtversion}\@ifnextchar[\HyC@getDate\HyC@checkPackage}
\HyC@getDate
The release date is scanned.
\def{\HyC@getDate}{[#1]}{\def\HyC@date{#1}\HyC@checkPackage}
\HyC@checkPackage
```

7
The macro `\checkcommand` parses the next tokens as a \LaTeX command and compares this definition with the current meaning of that command.

\newcommand*{\checkcommand}{% \egingroup \ifx\long#1\relax \expandafter\HyC@checklong \else \def\HyC@defcmd{#1}% \expandafter\let\expandafter\HyC@next\csname HyC@\expandafter\@gobble\string#1\endcsname \expandafter\HyC@checkcommand \fi \endgroup}

The definition command \`\def` or `\edef` is read.

\def{\HyC@checklong#1}{% \def{\HyC@defcmd}{\long#1}% \expandafter\let\expandafter{\HyC@next}\csname HyC@\expandafter\@gobble\string#1\endcsname \HyC@checkcommand}

The optional star of \LaTeX’s definitions is parsed.

\def{\HyC@check#1}{% \def{\HyC@cmd}{#1}% \let{\HyC@org@cmd}{#1}% \let{\HyC@param}{\@empty} \HyC@Toks{}% \let{\HyC@org@optcmd}{\HyC@noValue} \let{\HyC@org@robustcmd}{\HyC@noValue} \let{\HyC@org@robustoptcmd}{\HyC@noValue} \HyC@next}

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

\def{\HyC@check*}{% \let{\HyC@star}{\@empty} \HyC@check}

\def{\HyC@noValue}{NoValue}
\HyC@newcommand  The code for \newcommand.
86 \def\HyC@newcommand{%
87 \let\HyC@cmd\HyC@cmd
88 @ifnextchar{\HyC@nc@opt\HyC@nc@noopt
89 }

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

\HyC@nc@noopt  This macro \HyC@nc@noopt is called, if the parser has reached the definition text.
91 \long\def\HyC@nc@noopt#1{%
92 \edef\x{%
93 \expandafter\noexpand\HyC@defcmd
94 \HyC@star
95 \expandafter\noexpand\HyC@cmd
96 \HyC@param\the\HyC@Toks
97 }%
98 \x{#1}%
99 \HyC@doCheck
100 }

\HyC@nc@opt  This macro scans the first optional argument of a \LaTeX definition (number of arguments).
101 \def\HyC@nc@opt[#1]{%
102 \def\HyC@param{{[{#1}]}}%
103 @ifnextchar{\HyC@nc@default\HyC@nc@noopt
104 }

\HyC@nc@default  Macro \HyC@nc@default scans the default for an optional argument.
105 \def\HyC@nc@default[#1]{%
106 \HyC@Toks={{{[#1]}}}%
107 \expandafter\noexpand\HyC@optcmd{%
108 \expandafter\noexpand\csname\expandafter\expandafter\expandafter\@gobble
109 \expandafter\string\HyC@cmd\space\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 \newcommand chain.
114 \def\HyC@DeclareRobustCommand{%
115 \def\HyC@robustcmd{%
116 \expandafter\noexpand\csname\expandafter\expandafter\expandafter\@gobble
117 \expandafter\string\HyC@cmd\space\endcsname
118 }%
119 \expandafter\let\expandafter\HyC@org@robustcmd\HyC@robustcmd
120 \expandafter\let\expandafter\HyC@robustcmd\HyC@robustcmd
121 \let\HyC@cmd\HyC@robustcmd
122 @ifnextchar{\HyC@nc@opt\HyC@nc@noopt
123 }

9
\texttt{\HyC@def} \hspace{1em} The parameter text of \texttt{\def} or \texttt{\edef} is stored in the token register \texttt{\HyC@Toks}.

\texttt{\def}\HyC@def\#1\{% \texttt{\HyC@Toks}={\#1}\% \HyC@nc@noopt \} \let\HyC@edef=\HyC@def

\texttt{\HyC@doCheck} \hspace{1em} This command performs the checks and prints the result.
\texttt{\def}\HyC@doCheck\{% \texttt{\typeout{\* Checking `\HyC@string\HyC@cmd':}} \HyC@checkItem{\cmd}\% \HyC@checkItem{\robustcmd}\% \HyC@checkItem{\optcmd}\% \HyC@checkItem{\robustoptcmd}\% \} \endgroup

\texttt{\HyC@checkItem} \hspace{1em} A single check.
\texttt{\def}\HyC@checkItem\#1\{% \expandafter\ifx\csname HyC@org@\#1\endcsname\HyC@noValue \else \expandafter\expandafter\expandafter\ifx\csname HyC@\#1\expandafter\endcsname\csname HyC@org@\#1\endcsname\expandafter\HyC@checkOk\csname HyC@\#1\expandafter\endcsname \else \expandafter\HyC@checkFailed\csname HyC@\#1\expandafter\endcsname\csname HyC@org@\#1\endcsname \fi \fi \} \fi

\texttt{\HyC@string} \hspace{1em} Some shorthands.
\texttt{\def}\HyC@string\#1\{\expandafter\string\#1\} \texttt{\def}\HyC@meaning\#1\{\expandafter\meaning\#1\}

\texttt{\HyC@checkOk} \hspace{1em} The result, if the check succeeds.
\texttt{\def}\HyC@checkOk\#1\{% \texttt{\typeout{\space\space `\HyC@string\#1' ok.}} \} \}

\texttt{\HyC@checkFailed} \hspace{1em} The result, if the check fails.
\texttt{\def}\HyC@checkFailed\#1\#2\{% \texttt{\typeout{\space\space `\HyC@string\#1' failed.}} \texttt{\typeout{\space\space* original: \meaning\#2}} \} \}

%%% **************************************************
\langle /check \rangle
\langle */package \rangle

10
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.

\begingroup
\@makeother`%
\@makeother=%
\edef\x{%
\edef\noexpand\x{%
\endgroup
\noexpand\toks@{%
\catcode 96=\noexpand\the\catcode`\relax
\catcode 61=\noexpand\the\catcode`=\relax
}
%}
\noexpand\x
%}
\x
\@makeother`
\@makeother=

\Hy@SetCatcodes

\def\Hy@SetCatcodes{%
\@makeother`%
\@makeother=%
\catcode$=3%
\catcode&=4%
\catcode^=7%
\catcode_=%
\@makeother|%
\@makeother:%
\@makeother(%
\@makeother)%
\@makeother/<%
\@makeother>/<
\@makeother"><%
\@makeother">%
\@makeother.<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
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\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%
\@makeother<%}

\Hy@RestoreCatcodes

\begingroup
\def\x#1{%
\catcode`#1=\noexpand\the\catcode`#1\relax}%
\xdef\Hy@RestoreCatcodes{%
\the\toks@%
\x$%
It needs the December 95 release of \LaTeX, because it uses \texttt{\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!

Use package \texttt{hobsub-hyperref} for faster package loading.

\begin{verbatim}
\IfFileExists{hobsub-hyperref.sty}{%
  \RequirePackage{hobsub-hyperref}[2011/01/30]%
}{%
\RequirePackage{ltxcmds}[2010/11/12]
  \RequirePackage{ifpdf}[2006/02/20]
  \RequirePackage{pdfextcmds}[2009/04/10]
  \IfFilePackageLater{pdfextcmds}{2010/11/04}{}{%
    \If Undefined\{pdfdraftmode\}{{%
      \let\pdf@ifdraftmode\ltx@secondoftwo
    }{%
      \ifpdf
        \def\pdf@ifdraftmode{%
          \ifnum\pdfdraftmode=\ltx@one
            \expandafter\ltx@firstoftwo
          \else
            \expandafter\ltx@secondoftwo
          \fi
        }%
      \else
        \let\pdf@ifdraftmode\ltx@secondoftwo
      \fi
    }{%
      \IfFilePackageLater{pdfextcmds}{2010/11/04}{}{%
        \ cheated\}
    }{%
      \ltx@IfUndefined{pdfdraftmode}{}{%
        \ltx@firstoftwo
      }
    }{%
      \ltx@secondoftwo
    }
  }
}%
\RequirePackage{infwarerr}[2010/04/08]
\RequirePackage{keyval}[1997/11/10]
\RequirePackage{kvsetkeys}[2007/09/29]
\RequirePackage{kvdefinekeys}[2011/04/07]
\RequirePackage{pdfescape}[2007/11/11]
\RequirePackage{iftex}
\end{verbatim}
\RequirePackage{ifxetex}[2006/08/21]
\RequirePackage{hycolor}
\RequirePackage{letltxmacro}[2008/06/13]
\RequirePackage{auxhook}[2009/12/14]
\def\Hy@Error{\PackageError{hyperref}}
\def\Hy@Warning{\PackageWarning{hyperref}}
\def\Hy@WarningNoLine{\PackageWarningNoLine{hyperref}}
\def\Hy@Info{\PackageInfo{hyperref}}
\def\Hy@InfoNoLine{\PackageInfoNoLine{hyperref}}
\def\Hy@Message#1{%
\GenericWarning{(hyperref)\spaces\spaces\spaces\spaces}{Package hyperref Message: #1\ltx@gobble}
}%

4.2 Version check

\Hy@VersionCheck
\chardef\Hy@VersionChecked=0 %

\begin{verbatim}
def\Hy@VersionCheck#1{\begingroup\ltx@IfUndefined{ver@hyperref.sty}{\Hy@Error{This should not happen!\MessageBreak Missing hyperref version}\@ehd}{\ltx@IfUndefined{ver@#1}{\Hy@Error{This should not happen!\MessageBreak Missing version of `#1'}\@ehd}{\x{ }\y{hyperref.sty}%=\z{#1}%=\@nil\ifx\y\z\else\edef\a{#1}%=\edef\b{\HyOpt@CustomDriver.def}%=\ifx\a\b\Hy@WarningNoLine{Version mismatch (custom driver)!\MessageBreak \MessageBreak \* y: hyperref.sty\MessageBreak \* z: \a}\else\Hy@Error{Version mismatch!}\MessageBreak\}\@ehd}\endgroup}
def\z{1}\endgroup
\end{verbatim}

13
4.3 Checks with regular expressions

\ltx@ifundefined{pdfmatch}{% 
\def\Hy@Match#1#2#3{\begingroup 
\edef\^\ltx@backslashchar\string^% 
\edef\.{\ltx@backslashchar.}% 
\edef\[\ltx@backslashchar[}% 
\edef\]\ltx@rightbracechar}% 
\edef\{\ltx@backslashchar\ltx@leftbracechar}% 
\edef\}\ltx@backslashchar\ltx@rightbracechar}% 
\edef\\ltx@backslashchar\ltx@backslashchar}% 
\let\ \ltx@space% 
\ifcase\pdfmatch#2{#3}{#1} \endgroup 
\expandafter\ltx@secondoftwo% 
\or \endgroup \expandafter\ltx@firstoftwo% 
\else \Hy@Warning{\string Internal error: \string Wrong pattern!\MessageBreak 
Pattern check ignored}% 
\endgroup \expandafter\ltx@firstoftwo% 
\fi% 
\ltx@ifpackagelater{ltxcmds}{2010/09/11}{}{% 
\begingroup 
\lccode`0=`\{elax 
\lowercase\endgroup 
\ltx@IfUndefined{pdfmatch}{% 
\def\Hy@Match#1#2#3{\begingroup 
\edef\^\ltx@backslashchar\string^% 
\edef\.{\ltx@backslashchar.}% 
\edef\[\ltx@backslashchar[}% 
\edef\]\ltx@rightbracechar}% 
\edef\{\ltx@backslashchar\ltx@leftbracechar}% 
\edef\}\ltx@backslashchar\ltx@rightbracechar}% 
\edef\\ltx@backslashchar\ltx@backslashchar}% 
\let\ \ltx@space% 
\ifcase\pdfmatch#2{#3}{#1} \endgroup 
\expandafter\ltx@secondoftwo% 
\or \endgroup \expandafter\ltx@firstoftwo% 
\else \Hy@Warning{\string Internal error: \string Wrong pattern!\MessageBreak 
Pattern check ignored}% 
\endgroup \expandafter\ltx@firstoftwo% 
\fi% 
\ltx@ifpackagelater{ltxcmds}{2010/09/11}{}{% 
\begingroup 
\lccode`0=`\{elax 
\lowercase\endgroup
4.4 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 \LaTeX processing.

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

\Hy@AtBeginDocument

For the case that package ‘hyperref’ is loaded using \AtBeginDocument, we have to wrap the calls of \AtBeginDocument/\AfterBeginDocument in \AtEndOfPackage. However, packages must be loaded in \AtEndOfPackage before package ‘kvoptions’ has to perform its option cleanup. Therefore we use a hook.

\Hy@AtEndOfPackage

\Hy@AtBeginDocumentHook

\Hy@AtEndOfPackageHook

Install the hook, before package ‘kvoptions’ is loaded.

\Package{kvoptions}

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

\RequirePackage{kvoptions}[2009/07/21]
4.5 Switches

Defaults for the switches are now set.
\Hy@backreffalse
\Hy@bookmarksnumberedfalse
\Hy@bookmarksopenfalse
5 Common help macros

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

5.1 Macros for recursions

\let\Hy@ReturnAfterFiFiEnd\@empty
\long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{$#2}$\fi#1\%
5.2 Babel’s protection of shorthand characters

Babel’s switch setting commands cannot be used directly, because they can be undefined if babel is not loaded.

\def\Hy@safe@activestrue{\csname @safe@activestrue\endcsname}
\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 \hypercalcbpref. Limitations:
  - Works only in options that use \hypercalcbpref (currently only \pdfstartview).
  - For calculations package calc has to be loaded.
  - The expansion of the argument is done at definition time.

Example (TeX):
\usepackage{calc}
\usepackage{hyperref}
\hypersetup{
  pdfstartview={FitBH \hypercalcbp{\paperheight-\topmargin-1in
    -\headheight-\headsep}}
}

\hypercalcbp

497 \begingroup\expandafter\expandafter\expandafter\endgroup
498 \expandafter\ifx\csname dimexpr\endcsname\relax
499 \def\hypercalcbpref#1#2{%
500 \begingroup
501 \toks@{\%}
502 \HyCal@scan#2\hypercalcbp\@nil
503 \expandafter\endgroup
504 \expandafter\def\expandafter#1\expandafter{\the\toks@}%
505 }%
506 \def\HyCal@scan#1\hypercalcbp#2\@nil{%
507 \toks@{\expandafter{\the\toks@ \%}}%
508 \ifx\\#2\\%}
509 \else
510 \ltx@ReturnAfterFi{%
511 \HyCal@do\@nil
512 }%
6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

6.2 Definition of \pdfstringdef

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

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

The macro \texttt{\pdfstringdef} consists of three main parts:

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

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

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

The result is stored in the command token given in \texttt{#1}.

\begin{verbatim}
538 \edef\pdfstringdef#1#2{%
539 Many redefinitions are needed, so all the work is done in a group.
539 }\begingroup
540
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 \texttt{\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.

\begin{verbatim}
540 \escapechar`\\%
\end{verbatim}

From the view of \TeX{} a octal sequence consists of the command tokens \texttt{\0} until \texttt{\3} and two digits. For saving tokens \texttt{\0}, \texttt{\1}, \texttt{\2}, and \texttt{\3} are directly used without a preceding \texttt{\string} in the glyph definitions. This is done here locally by defining the \texttt{\0} until \texttt{\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.

\begin{verbatim}
541 \edef\0{\string\0}%
542 \edef\1{\string\1}%
543 \edef\2{\string\2}%
544 \edef\3{\string\3}%
\end{verbatim}
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 \texttt{enc@update} for optimizing reasons.

\begin{verbatim}
\ifHy@unicode
\edef\&8{\string\&8}\
\edef\&9{\string\&9}\
\fontencoding{PU}\
\HyPsd@UTFviii\
\ifpdfstringunicode##1##2{##1}\
\else\
\fontencoding{PD1}\
\ifpdfstringunicode##1##2{##2}\
\fi\
\fi\
\let\utf@viii@undeferr\HyPsd@utf@viii@undeferr\
\enc@update
\end{verbatim}

Internal encoding commands. \texttt{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 \texttt{@inmathwarn} will be disabled (see below).

\begin{verbatim}
\@inmathwarn\pdfstringdef\
\if\pdfstringdef\
\if\pdfstringdef\
\edef\&8{\string\&8}\
\edef\&9{\string\&9}\
\fontencoding{PU}\
\HyPsd@UTFviii\
\ifpdfstringunicode##1##2{##1}\
\else\
\fontencoding{PD1}\
\ifpdfstringunicode##1##2{##2}\
\fi\
\fi\
\let\Utf@viii@undeferr\HyPsd@utf@viii@undeferr\
\enc@update\
\end{verbatim}

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. UF 29.09.2017: added a mapping for \texttt{noboundary}, see issue \#37 https://github.com/ho-tex/hyperref/issues/37 No test for PU, if some definition for PD1 is added it will work too.

\begin{verbatim}
\let\textbraceleft\{\
\let\textbraceright\}\
\let\textbackslash\textbackslash\
\let\textnumbersign\#\
\let\textdollar\$\
\let\textpercent\%\
\let\textampersand\&\
\let\textasciitilde\~\
\let\textunderscore\_\
\let\textparagraph\P\
\let\textellipsis\ldots\
\let\textellipsis\ldots\
\let\textunderscore\_\
\let\textunderscore\_\
\let\textbraceright\}\
\let\textbackslash\textbackslash\
\let\textbraceright\}\
\let\textnumbersign\#\
\let\textdollar\$\
\let\textpercent\%\
\let\textampersand\&\
\let\textasciitilde\~\
\let\textunderscore\_\
\let\textparagraph\P\
\let\textellipsis\ldots\
\let\textellipsis\ldots\
\end{verbatim}
Newline \texttt{newline} or \texttt{\textbackslash \textbackslash} do not work in bookmarks, in text annotations they should expand to \texttt{\textbackslash r}. In pdf strings \texttt{\textbackslash \textbackslash} stands for a backslash. Therefore the commands are disabled now. The user can redefine them for a result what he want:

**backslash**: \texttt{\pdfstringdefDisableCommands{\let\textbackslash}}

**new line**: \texttt{\pdfstringdefDisableCommands{\let\textCR}}

**disabled**: \texttt{\pdfstringdefDisableCommands{\let\empty}}

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

\texttt{\def\{\pdfstringdefWarn\}}

\texttt{\def\newline{\pdfstringdefWarn\newline}}

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

\texttt{\def\TeX{\TeX}}

\texttt{\def\LaTeX{La\TeX}}

\texttt{\def\LaTeXe{\LaTeX2\ifHy@unicode\textepsilon\else e\fi}}

\texttt{\def\eTeX{\ifHy@unicode\textepsilon\else e\fi-\TeX}}

\texttt{\def\SliTeX{Sli\TeX}}

\texttt{\def\MF{Metafont}}

\texttt{\def\MP{Metapost}}

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

\texttt{\let\fontencoding\@gobble}

\texttt{\let\fontfamily\@gobble}

\texttt{\let\fontseries\@gobble}

\texttt{\let\fontshape\@gobble}

\texttt{\let\fontsize\@gobbletwo}

\texttt{\let\selectfont\@empty}

\texttt{\let\usefont\@gobblefour}

\texttt{\let\emph\@firstofone}

\texttt{\let\textnormal\@firstofone}

\texttt{\let\textsf\@firstofone}

\texttt{\let\texttt\@firstofone}

\texttt{\let\textbf\@firstofone}

\texttt{\let\textmd\@firstofone}

\texttt{\let\textit\@firstofone}

\texttt{\let\textsc\@firstofone}

\texttt{\let\textsl\@firstofone}

\texttt{\let\textup\@firstofone}

\texttt{\let\normalfont\@empty}
Package pifont.

\let\ding\HyPsd@ding
\let\Cube\HyPsd@DieFace
\let\psdmapshortnames\csname psdmapshortnames\endcsname
\let\psdaliasnames\csname psdaliasnames\endcsname

Environments.
\def\begin#1{\csname#1\endcsname}\
\def\end#1{\csname end#1\endcsname}\

Package color.
\def\textcolor##1##{\@secondoftwo}\

Upper- and lowercase.
\def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}\
\def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}\

Support of math commands without prefix text. This is controlled by option “psdextra” and only activated with Unicode PDF strings.
Package babel. Wherever “naturalnames” is used, disable `\textlatin` (from Babel 3.6k). Thanks to Felix Neubauer (Email: Felix.Neubauer@gmx.net).

\begin{verbatim}
\let\foreignlanguage@secondoftwo
\let\textlatin@firstofone
\ltx@ifundefined{language@group}{}{%
  \let\bbl@info@gobble
  \csname HyPsd@babel@\language@group\endcsname
}\%
\HyPsd@GreekPatch
\HyPsd@SpanishPatch
\HyPsd@RussianPatch
\HyPsd@BabelPatch
\let\@safe@activestrue\relax
\let\@safe@activesfalse\relax
\let\cyr\relax
\let\es@roman@Roman
\let\glqq\textglqq
\let\grqq\textgrqq
\let\glq\textglq
\let\grq\textgrq
\let\flqq\textflqq
\let\frqq\textfrqq
\let\flq\textflq
\let\frq\textfrq
\end{verbatim}

Package german.

\begin{verbatim}
\let\giqq\textgiqq
\let\grqq\textgrqq
\let\giq\textgiq
\let\grq\textgrq
\let\fqq\textfqq
\let\frqq\textfrqq
\let\f\textf
\let\fr\textfr
\end{verbatim}

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

Package FrenchPro. This package uses:

\begin{verbatim}
\if@mid@expandable{not fully expandable code}\{fully expandable code}\end{verbatim}

AMS classes.

\begin{verbatim}
\HyPsd@AMSclassfix
\end{verbatim}

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

\begin{verbatim}
\let\hspace\HyPsd@hspace
\end{verbatim}

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

\begin{verbatim}
\let\label@gobble
\let\index@gobble
\let\glossary@gobble
\let\href\HyPsd@href
\let\@mkboth\@gobbletwo
\end{verbatim}
The \ref and \pageref is much more complicated because of their star form.

Miscellaneous commands.

\begin{verbatim}
\let\ref\HyPsd@ref
\let\pageref\HyPsd@pageref
\let\nameref\HyPsd@nameref
\let\autoref\HyPsd@autoref
\end{verbatim}

\begin{verbatim}
\let\leavevmode\@empty
\let\mbox\@empty
\halign causes error messages because of the template character #.
\begin{verbatim}
\def\halign{\pdfstringdefWarn\halign\@gobble}%
\end{verbatim}
\end{verbatim}

\begin{verbatim}
\let\ignorespaces\HyPsd@ignorespaces
\let\Hy@SectionAnchorHref\@gobble
\let\ensuremath\@firstofone
\end{verbatim}

Patch for cjk bookmarks.

\begin{verbatim}
\HyPsd@CJKhook
\end{verbatim}

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

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

\begin{verbatim}
\Hy@pdfstringtrue
\end{verbatim}

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

\begin{verbatim}
\HyPsd@LetUnexpandableSpace\space
\HyPsd@LetUnexpandableSpace\%
\HyPsd@LetUnexpandableSpace~%
\HyPsd@LetUnexpandableSpace
\end{verbatim}

Package xspace.

\begin{verbatim}
\ltx@IfUndefined{@xspace}{%
\let\xspace\HyPsd@ITALCORR
}\{%
\let\xspace\HyPsd@XSPACE
\}%
\end{verbatim}

\begin{verbatim}
\let\HyPsd@ITALCORR
\let\egroup/\%
\end{verbatim}
Redefinitions of miscellaneous commands. Hyphenation does not make sense.

\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:
\def\@ifnextchar\HyPsd@ifnextchar\@ifnextchar
\def\kernel@ifnextchar\HyPsd@ifnextchar\kernel@ifnextchar
\def\new@ifnextchar\HyPsd@ifnextchar\new@ifnextchar
\let\@protected@testopt\HyPsd@protected@testopt

Support for package ‘xargs’:
\let\@protected@testopt@xargs\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 gets 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 \textorpdfstring). 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 \texttt{\textbackslash def} the \Generic\... messages don’t work and causes problems (error messages, invalid \texttt{.out} file). So they are disabled while expanding and removed silently, because a user warning would be too expensive (memory and runtime, \texttt{pdfstringdef} is slow enough).

\begin{verbatim}
709 \begingroup
710 \let\GenericError@gobblefour
711 \let\GenericWarning@gobbletwo
712 \let\GenericInfo@gobbletwo
\end{verbatim}

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

\begin{verbatim}
713 \ife\nofrenchguillemets@undefined
714 \else
715 \nofrenchguillemets
716 \fi
\end{verbatim}

**Definition commands and expansion.** Redefining the defining commands (see sec. 6.5.12). The original meaning of \texttt{\textbackslash def} is saved in \texttt{\Hy@temp}.

\begin{verbatim}
717 \let\Hy@temp\textbackslash def
718 \let\def\HyPsd@DefCommand
719 \let\gdef\HyPsd@DefCommand
720 \let\edef\HyPsd@DefCommand
721 \let\xdef\HyPsd@DefCommand
722 \let\futurelet\HyPsd@LetCommand
723 \let\let\HyPsd@LetCommand
724 \Hy@temp\#1{\#2}%
725 \endgroup
\end{verbatim}

### 6.2.3 Postprocessing

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

\begin{verbatim}
726 \ife\#1@empty
727 \else
\end{verbatim}

**Protecting spaces and removing grouping characters.** In order to check the tokens we must separate them. This will be done with T\TeX{}’s argument parsing. With this method we must the following item takes into account, that makes makes things a litte more complicate:

- T\TeX{} does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.

- An argument can be a single token or a group of many tokens. And within curly braces tokens aren’t find by T\TeX{}’s argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don’t vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by an marker for the xspace support.

- T\TeX{} silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character \texttt{|} 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.

\begin{verbatim}
    \Hypsd@ProtectSpaces#1%
    \let\Hypsd@String@empty
    \expandafter\Hypsd@RemoveBraces\expandafter\{#1|}%
    \global\let#1\Hypsd@String
\end{verbatim}

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

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

After `\Hypsd@CheckCatcodes` the command `\Hypsd@RemoveMask` is reused to remove the group protection character 1. 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.

\begin{verbatim}
    \let\Hypsd@SPACEOPTI\relax
    {%
    \let\Hypsd@String@empty
    \expandafter\Hypsd@CheckCatcodes#1\Hypsd@End
    \global\let#1\Hypsd@String
    %}
    \expandafter\Hypsd@RemoveMask\expandafter
    |\expandafter\@empty#1\Hypsd@End#1%
\end{verbatim}

`\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:

\begin{verbatim}
    \xdef#1{\expandafter\strip@prefix\meaning#1}%
\end{verbatim}

**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.

\begin{verbatim}
    \expandafter
    \Hypsd@Subst\expandafter{\Hypsd@GLYPHER}{\relax}#1%
    \let\Hypsd@String@empty
    \expandafter\Hypsd@GlyphProcess#1\relax\@empty
    \global\let#1\Hypsd@String
\end{verbatim}

**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.

\begin{verbatim}
    \Hypsd@StringSubst{\\textbackslash}{\textbackslash}#1%
\end{verbatim}
Spaces. All spaces have already the form \040. The last postprocessing step will be an optimizing of the spaces, so we already introduce already the necessary command \HyPsd@SPACEOPTI. But first it is defined to be \relax in order to prevent a too early expansion by an \edef. Secondly a \relax serves as a marker for a token that is detected by \xspace. The code of frenchb.ldf can produce an additional space before \guillemotright, because \lastskip and \unskip do not work. Therefore it is removed here.

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.

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.  

```
746 \iffHy@unicode
747 \expandafter\HyPsd@StringSubst\c@name 80\040\endc@name
748 \HyPsd@SPACEOPTI#1%
749 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\80\273}%
750 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
751 {\HyPsd@SPACEOPTI\80\273}#1%
752 \else
753 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
754 \expandafter\HyPsd@Subst\expandafter{%
755 \expandafter\HyPsd@SPACEOPTIexpandafter{\HyPsd@empty}%
756 \string\273}{\HyPsd@SPACEOPTI\273}#1%
757 \fi
```

```
758 \iffHy@unicode
759 \HyPsd@StringSubst{\051}{\80\051}#1%
760 \HyPsd@empty\{\80\051}#1%
761 \let\HyPsd@empty\relax
762 \expandafter\HyPsd@StringSubst\c@name 80\051\endc@name
763 {\HyPsd@empty\80\051}#1%
764 \else
765 \HyPsd@StringSubst{\051}{\051}#1%
766 \HyPsd@empty\{\051}#1%
767 \let\HyPsd@empty\relax
768 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\051}#1%
769 \fi
```

```
770 \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
771 \ltx@ifUndefined{\xspace}{%}
772 {%}
```

29
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 \textit{fi} and \textit{fl} glyphs, and the Linux version lacks the \textit{emdash} and \textit{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 \textit{\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 \texttt{xspace} is loaded.

Since newer AcrobatReader versions now show the en- and emdash in a correct way (AR7/Linux, AR8/Linux), the substitution code for them is enabled starting with version 6.78l.

Left parentheses. Left parentheses are now converted to safe forms to avoid problems with unmatched ones (\texttt{\textbackslash{} with PDFDocEncoding, the octal sequence with Unicode.}

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

Optimizing spaces. Spaces are often used, but they have a very long form \textbackslash{}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.
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.

Try conversion back to PDFDocEncoding.

User hook. The hook \pdfstringdefPostHook can be used for the purpose to postprocess the string further.

6.3 Encodings

6.3.1 Xe\TeX

\edef\Hy@temp{\catcode0=8\relax}
\catcode\@=12

\Hy@pdfstringdef#1#2{\pdfstringdef\Hy@gtemp{#2}{#1}{#2}{\Hy@gtemp}{\let\Hy@gtemp\pdfstringdef}{#1}}
\let\Hy@gtemp\pdfstringdef
\Hy@pdfstringdef\Hy@gtemp{\let\Hy@gtemp\pdfstringdef}{#1}{#2}{\Hy@gtemp}{\let\Hy@gtemp\pdfstringdef}{#1}{#2}
6.3.2 Workaround for package linguex

\@ifpackageloaded{linguex}{% 
\let\HyLinguex@OrgB=b 
\let\HyLinguex@OrgC=c 
\let\HyLinguex@OrgD=d 
\def\HyLinguex@Restore{\let b=\HyLinguex@OrgB \let c=\HyLinguex@OrgC \let d=\HyLinguex@OrgD} \Hy@AtEndOfPackage{% 
\pdfstringdefDisableCommands{% 
\ltx@IfUndefined{oldb}{}{\let b=oldb} 
\ltx@IfUndefined{oldc}{}{\let c=oldc} 
\ltx@IfUndefined{oldd}{}{\let d=oldd} 
}% 
% 
% 
% 
% 
% 
% \let\HyLinguex@Restore=\relax \Hy@temp

6.3.3 Catcodes saving and restoring for .def files

\Hy@SaveCatcodeSettings

\def\Hy@SaveCatcodeSettings#1{\% 
\expandafter\edef\csname Hy@cat#1\endcsname{\% 
\endlinechar=\the\endlinechar\relax 
\catcode32 \the\catcode32\relax \% (space) 
\catcode34 \the\catcode34\relax \% " 
\catcode35 \the\catcode35\relax \% # 
\catcode37 \the\catcode37\relax \% (percent) 
\catcode40 \the\catcode40\relax \% ( 
\catcode41 \the\catcode41\relax \% ) 
\catcode42 \the\catcode42\relax \% * 
\catcode46 \the\catcode46\relax \% . 
\catcode48 \the\catcode48\relax \% : 
\catcode60 \the\catcode60\relax \% < 
\catcode61 \the\catcode61\relax \% = 
\catcode62 \the\catcode62\relax \% > 
\catcode64 \the\catcode64\relax \% @ 
\catcode91 \the\catcode91\relax \% [ 
\catcode92 \the\catcode92\relax \% \ 
\catcode93 \the\catcode93\relax \% ] 
\}
6.3.4 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with \LaTeXe’s NFSS. Because the informational strings are not set by \TeX’s typesetting mechanism but for interpreting by the PDF reader, the glyphs of the PD1 encoding are implemented to be safely written to a file (PDF output file, .out file).

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

6.3.5 PU encoding

The PU encoding implements the Unicode encoding for use with \LaTeXe’s NFSS. Because of large memory requirements the encoding file for Unicode support is only loaded, if option \texttt{unicode} is specified as package option.
Because the file `puenc.def` takes a lot of memory, the loading is defined in the macro `\HyPsd@LoadUnicode` called by the package option `unicode`.

```latex
\def\HyPsd@LoadUnicode{% 
  \if@undefined{T@PU}{%
    \Hy@SaveCatcodeSettings{pu}%
    \input{puenc.def}%
    \Hy@RestoreCatcodeSettings{pu}%
    \HyLinguex@Restore%
  %}
  \DeclareFontFamily{PU}{pdf}{%}
  \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }%}
  \HyPsd@LoadExtra%
  \let\HyPsd@LoadUnicode\relax%
}
```

`\HyPsd@LoadExtra`

```latex
\def\HyPsd@LoadExtra{% 
  \ifHy@psdextra
    \if@iffileloaded{puenc.def}{%
      \Hy@SaveCatcodeSettings{psdextra}%
      \input{psdextra.def}%
      \Hy@RestoreCatcodeSettings{psdextra}%
      \let\HyPsd@LoadExtra\relax%
    %}
    \fi
  \fi
}
```

### 6.4 Additional user commands

#### 6.4.1 `\texorpdfstring`

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

```latex
\def\texorpdfstring{% 
  \ifHy@pdfstring
    \expandafter\@secondoftwo
  \else
    \expandafter\@firstoftwo
  \fi
}
```

#### 6.4.2 Hooks for `\pdfstringdef`

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

```latex
\pdfstringdefPreHook% \@ifundefined{pdfstringdefPreHook}{% \let pdfstringdefPreHook@empty \} % \pdfstringdefPostHook% \@ifundefined{pdfstringdefPostHook}{% \let pdfstringdefPostHook@gobble \} %
```

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 \texttt{\pdfstringdefPreHook} should not be replaced perhaps by an \texttt{\renewcommand}, because a previous meaning gets lost.

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

\begin{verbatim}
\pdfstringdefDisableCommands{
  \let\textasciitilde
  \def\url{\pdfstringdefWarn\url}
  \let\textcolor\@gobble
}\%
\end{verbatim}

In the argument of \texttt{\pdfstringdefDisableCommands} the character \texttt{@} can be used in command names. So it is easy to use useful \LaTeX{} commands like \texttt{\@gobble} or \texttt{\@firstofone}.

\begin{verbatim}
\def\pdfstringdefDisableCommands{
  \begingroup
  \makeatletter
  \HyPsd@DisableCommands
  \endgroup
}\HyPsd@DisableCommands
\end{verbatim}

(Partial) fix for bug in \texttt{frenchb.ldf} 2010/08/21 v2.5a that destroys \texttt{\pdfstringdefDisableCommands} after usage in \texttt{\AtBeginDocument}.

\begin{verbatim}
\let\HyPsd@pdfstringdefDisableCommands\pdfstringdefDisableCommands
\AtBeginDocument{\@ifundefined{pdfstringdefDisableCommands}{\let\pdfstringdefDisableCommands\HyPsd@pdfstringdefDisableCommands}{}%}
\end{verbatim}

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

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

\begin{verbatim}
\def\pdfstringdefWarn#1{\expandafter\noexpand\csname\textless-\string#1\endcsname}
\end{verbatim}

6.5 Help macros for expansion

6.5.1 \texttt{\ignorespaces}

\begin{verbatim}
\HyPsd@ignorespaces
\end{verbatim}

\texttt{\ignorespaces} With the help of a trick using \texttt{\romannumeral} the effect of \texttt{\ignorespaces} can be simulated a little. In a special case using an alphabetic constant \texttt{\romannumeral} eats an optional space. If the constant is zero, then the \texttt{\romannumeral} expression
vanishes. The following macro uses this trick twice, thus \texttt{\textbackslash Hyper@ignorespaces} eats up to two following spaces.

\begin{verbatim}
\begingroup
\catcode0=12 %
\def\x{\endgroup
\def\Hyper@ignorespaces{\romannumeral\expandafter\^^@\expandafter\^^@%}
\x
\end{verbatim}

6.5.2 Babel languages

Since version 2008/03/16 v3.8j babel uses inside \texttt{\texttt{AtBeginDocument}}:

\begin{verbatim}
\pdfstringdefDisableCommands{\languageshorthands{system}}%
\end{verbatim}

As consequence the shorthands are shown in the bookmarks, not its result. Therefore \texttt{\texttt{languageshorthands}} is disabled before the user hook. If there is a need to use the command, then \texttt{\texttt{\texttt{HyOrg@languageshorthands}}} can be used inside \texttt{\texttt{pdfstringdefDisableCommands}}.

\begin{verbatim}
\def\Hyper@BabelPatch{\let\HyOrg@languageshorthands\languageshorthands
\let\languageshorthands\Hyper@LanguageShorthands}
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname pdf@strcmp\endcsname\relax
\let\Hyper@langshort@system\@empty
\def\Hyper@LanguageShorthands#1{\expandafter\ifx\csname Hyper@langshort@#1\endcsname
\Hyper@langshort@system\expandafter\@gobble\else\expandafter\@firstofone\fi{\HyOrg@languageshorthands{#1}}}
\else
\def\Hyper@LanguageShorthands#1{\ifnum\pdf@strcmp{#1}{system}=\z@\expandafter\@gobble\else\expandafter\@firstofone\fi{\HyOrg@languageshorthands{#1}}}
\fi\def\Hyper@temp{\@ifpackageloaded{babel}{\@ifpackagelater{babel}{2008/03/16}{\ifnum\pdf@strcmp{\string\refname}{system}=\z@\expandafter\@gobble\else\expandafter\@firstofone\fi}{\HyOrg@languageshorthands{#1}}\else\expandafter\@firstofone\fi{\Hyper@temp}}}
\end{verbatim}
\let\Hy@temp\@empty
\def\HyPsdbabelPatch{%
\let\HyOrglanguageshorthandslanguageshand\%
}
\Hy@temp
\expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
\newiff\ifHy@next

Nothing to do for english.
\ltx@ifundefined{danish@sh@sel}{%\def\HyPsdbabel@danish{%\declare@shorthand{danish}{"|}{}\declare@shorthand{danish}{"~}{-}\%\def\HyPsdbabel@\%\}
\ltx@ifundefined{dutch@sh@sel}{%\def\HyPsdbabel@dutch{%\declare@shorthand{dutch}{"|}{}\declare@shorthand{dutch}{"~}{-}\%\def\HyPsdbabel@\%\}
\ltx@ifundefined{finnish@sh@sel}{%\def\HyPsdbabel@finnish{%\declare@shorthand{finnish}{"|}{}\%\}
\ltx@ifundefined{french@sh@sel}{%\def\HyPsdbabel@frenchb{%\def\guill@spacing{ }\%\}
\ltx@ifundefined{german@sh@sel}{%\def\HyPsdbabel@german{%\declare@shorthand{german}{"f}{f}\declare@shorthand{german}{"|}{}\declare@shorthand{german}{"~}{-}\%\def\HyPsdbabel@\%\}
\ltx@ifundefined{macedonian@sh@sel}{%\def\HyPsdbabel@macedonian{%\declare@shorthand{macedonian}{"|}{}\declare@shorthand{macedonian}{"~}{-}\%\}
\ltx@ifundefined{ngerman@sh@sel}{%\def\HyPsdbabel@ngerman{%\declare@shorthand{ngerman}{"|}{}\declare@shorthand{ngerman}{"~}{-}\%\}
\ltx@ifundefined{portuges@sh@sel}{%\def\HyPsdbabel@portuges{%\declare@shorthand{portuges}{"|}{}\%\}
\ltx@ifundefined{ngerman@sh@sel}{%\def\HyPsdbabel@{\%\}

38
Nested quoting environments are not supported (<, >>).
\def\HyPsd@GreekNumII#1#2#3#4{%  \ifnum#3>\z@
\textnumeralsignlowergreek
\fi
\expandafter#2%  \ifcase#3
{}{}%
\or\textiota\textIota
\or\textkappa\textKappa
\or\textlambda\textLambda
\or\textmu\textMu
\or\textnu\textNu
\or\textxi\textXi
\or\textomicron\textOmicron
\or\textpi\textPi
\or\textkoppagreek\textKoppagreek
\else
{}{}%
\fi
\HyPsd@GreekNumI#1#2#4%
}\def\HyPsd@GreekNumIII#1#2#3#4#5{%  \ifnum#3>\z@
\textnumeralsignlowergreek
\fi
\expandafter#2%  \ifcase#3
{}{}%
\or\textrho\textRho
\or\textsigma\textSigma
\or\texttau\textTau
\or\textupsilon\textUpsilon
\or\textphi\textPhi
\or\textchi\textChi
\or\textpsi\textPsi
\or\textomega\textOmega
\or\textsampigreek\textSampigreek
\else
{}{}%
\fi
\HyPsd@GreekNumII#1#2#4#5%
}\def\HyPsd@GreekNumIV#1#2#3#4#5{%  \HyPsd@GreekNumI\@firstofone#1#2%
\HyPsd@@GreekNum#1{#3#4#5}
Shorthand "-" of ‘russianb.ldf’ is not expandable, therefore it is disabled and replaced by -. 

6.5.4 CJK bookmarks

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:

```
<arg1>``````<arg2>``````
```

<arg1> is the first byte in the range (always > 0x80); <arg2> is the second byte in decimal notation (≥ 0x40).
The macro `\HyPsd@CJKActiveChars` is only defined to limit the memory consumption of `\HyPsd@CJKhook`.

The macro `\HyPsd@DecimalToOctal` is defined to convert a PDF character to a decimal number.
6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

\def\HyPsd@CJKhook@unicode{% 
\let\Unicode\HyPsd@CJK@Unicode 
\let\CJKnumber\HyPsd@CJKnumber 
\let\CJKdigits\HyPsd@CJKdigits 
} 

\HyPsd@CJK@Unicode

\def\HyPsd@CJK@Unicode#1#2{% 
\ifnum#1<256 
\HyPsd@DecimalToOctalFirst{#1}% 
\HyPsd@DecimalToOctalSecond{#2}% 
\else 
4 \or 5 \or 6 \or 7 % 
\fi 
\HyPsd@DecimalToOctalSecond{#2}% 
} 

\def\HyPsd@HighA#1!{% 
\IntCalcDiv{#1}{64}!! 
\IntCalcMod{#1}{64}!! 
\4 \or 5 \or 6 \or 7 
\fi 
\fi 
} 

\def\HyPsd@HighA#1!{% 
\IntCalcDiv{#1}{164}!! 
\IntCalcMod{#1}{164}!! 
} 

\def\HyPsd@HighB#1!{% 
\IntCalcDiv{#1}{164}!! 
\IntCalcMod{#1}{164}!! 
}
\newcommand{\HyPsd@HighC}[1]{\@backslashchar\IntCalcDiv{#1}{4}}
\newcommand{\HyPsd@HighD}[1]{\ifcase\IntCalcDiv{#1}{8}\else\ifcase\IntCalcMod{#1}{8}\else\fi\fi}
\newcommand{\HyPsd@DecimalToOctalFirst}[1]{000\or 001\or 002\or 003\or 004\or 005\or 006\or 007\or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017\or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027\or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037\or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047\or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057\or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067\or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077\or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107\or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117\or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127\or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137\or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147\or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157\or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167\or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177\or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207\or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217\or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227\or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237\or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247\or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257\or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267\or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277\or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307\or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317\or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327\or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337\or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347\or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357\or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367\or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377\or 000\or 001\or 002\or 003\or 004\or 005\or 006\or 007\or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017\or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
\def\HyPsd@CJKnumber#1{\
  \ifnum#1<\z@\
    \CJK@minus\expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}\
  \else\
    \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}\
  \fi\
}
\def\HyPsd@@CJKnumber#1{\
  \ifcase#1\
    \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or\
    \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or\
    \CJK@ten\CJK@one\CJK@two\CJK@three\CJK@four\CJK@five\CJK@six\CJK@seven\CJK@eight\CJK@nine\else\
    \ifnum#1<10000\
      \HyPsd@CJKnumberFour#1!@empty{20}\
    \else\
      \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour\
      \IntCalcDiv#1!10000!{}{20}\
      \CJK@tenthousand\
    \fi\
  \fi\
}
\ifnum#1<10000 %
  \HyPsd@CJKnumberFour#1!@empty{20}\
\else\
  \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour\
  \IntCalcDiv#1!10000!{}{20}\
  \CJK@tenthousand\
\fi

6.5.6 \@inmathwarn-Patch

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 \texttt{ltoutenc.dtx} changes. Checked with \TeX \texttt{2\epsilon} versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don’t work.
To understand the patch easier, the original code of `\@current@cmd` and `\@changed@cmd` follows (Knuth XeX 2e release [1998/12/01]). In the normal case, `\pdfstringdef` is executed in a context where `\protect` has the meaning of `\@typeset-protect` (= `\relax`).

\def\@current@cmd#1{%\iffalse
\protect\@typeset@protect
\@inmathwarn#1%
\else
\noexpand#1\expandafter\@gobble
\fi}
\def\@changed@cmd#1#2{%\iffalse
\protect\@typeset@protect
\@inmathwarn#1%
\expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
\expandafter\ifx\csname ?\string#1\endcsname\relax
\expandafter\def\csname ?\string#1\endcsname{%
\TextSymbolUnavailable#1%
}%
\else
\fi
\global\expandafter\let\csname\cf@encoding\string#1\expandafter\endcsname
\csname\cf@encoding\string#1\endcsname
\else
\noexpand#1%
\fi}
\def\TextSymbolUnavailable#1{%\iffalse
\@latex@error{Command \protect#1 unavailable in encoding \cf@encoding%}
\@eha}
\def\@inmathwarn#1{%\iffalse
\ifmmode
\@latex@warning{Command \protect#1 invalid in math mode}%
\fi}
\def\HyPsd@inmathwarn#1#2{%\iffalse
\expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
\HyPsd@GLYPHERR\expandafter\@gobble\string#1>%
\expandafter\expandafter\expandafter\HyPsd@EndWithElse
\else
\expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
\fi
\else
\expandafter#2%
\fi}
\def\HyPsd@GobbleFiFi#1\fi#2\fi{}%\iffalse
\def\HyPsd@EndWithElse#1\else{\else}
\HyPsd@add@accent
\def\HyPsd@add@accent#1#2{%\iffalse
\@latex@error{Command \protect#1 unavailable in encoding \cf@encoding%}
\@eha}
6.5.7 Unexpandable spaces

In \texttt{\hyprotectSpaces} 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 \texttt{\hycheckCatcodes}.

\begin{verbatim}
\let\HyLetUnexpandableSpace#1=%
\expandafter\let\expandafter#1\expandafter\@gobble\space\relax
\end{verbatim}

\texttt{\HyUnexpandableSpace} \texttt{\HyUnexpandableSpace} is used in \texttt{\yProtectSpaces}. In \texttt{\yProtectSpaces} the space tokens are replaced by unexpandable commands \texttt{\HyUnexpandableSpace}, but that have the effect of spaces.

6.5.8 Marker for commands

\texttt{\XSPACE} \texttt{\ITALCORR} \texttt{\GLYPHERR}

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

\begin{verbatim}
\edef\XSPACE{\string\#\string X}
\edef\ITALCORR{\string\#\string I}
\edef\GLYPHERR{\string\#\string G}
\end{verbatim}

6.5.9 \texttt{\hspace} fix

\texttt{\hspace}

\begin{verbatim}
\def\hspace#1{\ifdim#1>\z@\space\fi}
\end{verbatim}

\texttt{\hspace} checks whether \texttt{\hspace} is called in its star form.

\begin{verbatim}
\def\hspace#1#2\%{
\ifx\#2\%
\hspace{#1}\%
\else
\hspace{#1}\%
\fi
\end{verbatim}

\texttt{\hspace} replaces the \texttt{\hspace} by a space, if the length is greater than zero.
6.5.10 Fix for AMS classes

\let\HyPsd@AMSclassfix=\relax
\def\HyPsd@AMSclassfix{%
\let\tocpart=\HyPsd@tocsection
\let\tocchapter=\HyPsd@tocsection
\let\tocappendix=\HyPsd@tocsection
\let\tocsection=\HyPsd@tocsection
\let\tocsubsection=\HyPsd@tocsection
\let\tocsubsubsection=\HyPsd@tocsection
\let\tocparagraph=\HyPsd@tocsection
}%
\def\HyPsd@tocsection#1#2#3{%
\if@#2@\else\if@#1@\else#1 \fi#2. \fi
#3
}%

6.5.11 Reference commands

\HyPsd@href
\def\HyPsd@href#1#{\@secondoftwo}

\HyPsd@ref Macro \HyPsd@ref calls the macro \HyPsd@@ref for star checking. The same
methods like in \HyPsd@hspace is used.
\def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

\HyPsd@@ref Macro \HyPsd@@ref checks if a star is present.
\def\HyPsd@@ref#1*#2\END{%
\ifx\#2\%
\HyPsd@@@ref{#1}%
\else
\expandafter\HyPsd@@@ref
\fi
}%

\HyPsd@@@ref \HyPsd@@@ref does the work and extracts the first argument.
\def\HyPsd@@@ref#1{%
\expandafter\ifx\csname r@#1\endcsname\relax
??%
\else
\expandafter\expandafter\expandafter
\@car\csname r@#1\endcsname\@nil
\\n\fi
}%

\HyPsd@pageref Macro \HyPsd@pageref calls the macro \HyPsd@@pageref for star checking. The
same methods like in \HyPsd@hspace is used.
\def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

\HyPsd@@pageref Macro \HyPsd@@pageref checks if a star is present.
\def\HyPsd@@pageref#1*#2\END{%
\ifx\#2\%
\HyPsd@@@pageref{#1}%
\else
\expandafter\expandafter\expandafter
\@car\csname r@#1\endcsname\@nil
\fi
}%
\HyPsd@@@pageref  \HyPsd@@@pageref does the work and extracts the second argument.
1746 \def\HyPsd@@@pageref#1{%
1747 \expandafter\ifx\csname r@#1\endcsname\relax
1748 ??%
1749 \else
1750 \expandafter\expandafter\expandafter\expandafter
1751 \expandafter\expandafter\expandafter\expandafter
1752 \expandafter\expandafter\expandafter\expandafter
1753 \csname r@#1\endcsname\}@include
1754 \fi
1755 }
\HyPsd@nameref  Macro \HyPsd@nameref calls the macro \HyPsd@@@nameref for star checking. The same methods like in \HyPsd@hspace is used.
1756 \def\HyPsd@nameref#1{\HyPsd@@@nameref{#1}\END}
\HyPsd@@@nameref  Macro \HyPsd@@@nameref checks if a star is present.
1757 \def\HyPsd@@@nameref#1*#2\END{|%
1758 \ifx\#2\%
1759 \HyPsd@@@nameref{#1}|%
1760 \else
1761 \expandafter\HyPsd@@@nameref
1762 \fi
1763 }
\HyPsd@autoref  Macro \HyPsd@autoref calls the macro \HyPsd@@@autoref for star checking. The same methods like in \HyPsd@hspace is used.
1764 \def\HyPsd@autoref#1{\HyPsd@@@autoref{#1}\END}
\HyPsd@@@autoref  Macro \HyPsd@@@autoref checks if a star is present.
1765 \def\HyPsd@@@autoref#1*#2\END{|%
1766 \ifx\#2\%
1767 \HyPsd@@@autoref{#1}|%
1768 \else
1769 \expandafter\HyPsd@@@autoref
1770 \fi
1771 }
\HyPsd@@@autoref  \HyPsd@@@autoref does the work and extracts the second argument.
1772 \def\HyPsd@@@autoref#1{%
1773 \expandafter\ifx\csname r@#1\endcsname\relax
1774 \fi
1775 }
6.5.12 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 \endcsname 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 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 \HyPsdLetCommand expands to the commands \def-command and \let-command with the meaning of \def and \let. So it is detected by \HyPsd@CheckCatcodes and the command name \def-command or \let-command should indicate a forbidden definition command.

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

The difference between \HyPsd@DefCommand and \HyPsdLetCommand 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.

6.5.13 \ifnextchar

\edef\ifnextchar#1{\pdfstringdefWarn#1\let\expandafter\@gobble\csname\expandafter\@gobble\string#1\@empty\endcsname}\fi}

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. There are several variants of \@ifnextchar:

- \@ifnextchar

- \kernel@ifnextchar

- \new@ifnextchar from package amsgen.sty (bug report latex/3662).
6.5.14 \@protected@testopt

Macros with optional arguments don’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.

\def\HyPsd@protected@testopt#1{\pdfstringdefWarn#1\@gobbletwo\@gobble}

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:

\def\HyPsd@Warning#1{\begingroup\let\space\ltx@space\Hy@Warning{#1}\endgroup}

6.6.2 Protecting spaces

\RequirePackage{etexcmds}[2007/09/09]
\ifetex@unexpanded\expandafter\@secondoftwo\else\expandafter\@firstoftwo\fi{%\HyPsd@ProtectSpaces calls with the expanded string \HyPsd@@ProtectSpacesFi. The expanded string is protected by | at the beginning and end of the expanded string. Because of this there can be no group at the beginning or end of the string and grouping characters are not removed by the call of \HyPsd@@ProtectSpacesFi.} }%\HyPsd@@ProtectSpacesFi The string can contain command tokens, so it is better to use an \def instead of an \edef.

\def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%\HyPsd@ProtectSpacesFi#1 }
6.6.3 Remove grouping braces

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

\def\HyPsd@RemoveBraces#1\HyPsd@End#2{% #1 \#2\HyPsd@End#1%
\fi
\etex@unexpanded{#1}
\ifx\scrollmode#1\scrollmode
\else
  \HyPsd@@RemoveBracesFi#1#2\HyPsd@fi
\fi
\def\HyPsd@RemoveMask|#1|\HyPsd@End#2{% #1
\xdef#2{\etex@unexpanded\expandafter{#1}}%
}
}

\HyPsd@@RemoveBracesFi 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 \ltx@ReturnAfterFi.

\begin{verbatim}
\def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{% 
  \fi \def\Hy@temp@A{#1#2}% \def\Hy@temp@B{#3}%
  \ifx\Hy@temp@A\Hy@temp@B
    \expandafter\def\expandafter\HyPsd@String\expandafter{\Hy@temp@A}%
  \else
    \def\Hy@temp@A{#1}%
    \HyPsd@AppendItalcorr\Hy@temp@A
    \ifx\Hy@temp@A\@empty
      \Hy@ReturnAfterElseFiFiEnd{% \HyPsd@RemoveBraces{#2}% }
    \else
      \HyPsd@ProtectSpaces\Hy@temp@A
      \HyPsd@AppendItalcorr\Hy@temp@A
      \Hy@ReturnAfterFiFiEnd{% \expandafter\HyPsd@RemoveBraces\expandafter{\Hy@temp@A#2}% }
    \fi
  \fi
  \Hy@ReturnEnd
}
\end{verbatim}

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.

\begin{verbatim}
\def\HyPsd@AppendItalcorr#1{\expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%}
\def\HyPsd@@AppendItalcorr#1#2{\expandafter\def\expandafter#2\expandafter{#2#1}%}
\end{verbatim}

6.6.4 Catcode check

Workaround for LuaTeX. \HyPsd@CheckCatcodes might trigger a bug of LuaTeX (0.60.2, 0.70.1, 0.70.2, ...) in the comparison with \ifcat, see http://tracker.luatex.org/view.php?id=773.

\begin{verbatim}
\ltx@IfUndefined{directlua}{%}
\end{verbatim}
Check catcodes.

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

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

For the comparison with active characters, \texttt{-} cannot be used because it has the meaning of a blank space here. And active characters need to be checked, if they have been defined using \texttt{\protected}.
Remove counts, dimens, skips.

\HyPsd@AfterCountRemove

Counts like \penalty are removed silently.
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.

\def\HyPsd@AfterDimenRemove{\HyPsd@End{\ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@\fi>1ex\%
    \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}\%
    \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}\%
    }\else\fi\%
\def\HyPsd@AfterSkipRemove{\ifdim\ifx\HyPsd@String\@empty\z@\else\skip@\fi>1ex\%
    \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}\%
    \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}\%
    }\else\fi\%
\def\HyPsd@CatcodeWarning{\HyPsd@Warning{\ifHy@unicode\text{Unicode}\else\text{PDFDocEncoding}\fi\text{ Token not allowed in a PDF string (}%
    \ifHy@unicode\text{ Unicode}\else\text{PDFDocEncoding}\fi\text{)}}
\begingroup\catcode`|=0 \catcode`\|=12 \catcode`\|gdef\HyPsd@RemoveCmdPrefix#1{\expandafter\HyPsd@@RemoveCmdPrefix\string#1@empty<>-@empty@empty\}
\catcode`\|gdef\HyPsd@@RemoveCmdPrefix#1<->#2@empty#3@empty{#1#2}
\endgroup

Catcode warnings.
6.6.5 Check for wrong glyphs

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

\def\HyPsd@GlyphProcess#1\relax#2\@empty{\expandafter\def\expandafter\HyPsd@String\expandafter{\HyPsd@String#1}\ifx\#2\%\else\ltx@ReturnAfterFi{\HyPsd@GlyphProcessWarning#2\@empty}\fi}\ifx\#2\%\HyPsd@Warning{Glyph not defined in \ifHy@unicode U\else D1\fi space encoding, removing \@backslashchar#1}\fi}\else\fi}
Spaces.

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

\begin{verbatim}
\HyPsd@Subst
To save tokens \texttt{\HyPsd@StringSubst} is a wrapper for the command \texttt{\HyPsd@Subst} that does all the work: In string stored in command \texttt{#3} it replaces the tokens \texttt{#1} with \texttt{#2}.
#1 Exact the tokens that should be replaced.
#2 The replacement (don’t need to be expanded).
#3 Command with the string.
\end{verbatim}

\begin{verbatim}
\def\HyPsd@Subst#1#2#3{\def\HyPsd@@ReplaceFi##1#1##2\END\fi{\iftrue##1\else#2\HyPsd@@ReplaceFi##2\END\fi}\xdef#3{\expandafter\HyPsd@@ReplaceFi#3#1\END}}
\end{verbatim}

\HyPsd@EscapeTeX
\begin{verbatim}
\begingroup
\end{verbatim}

6.6.6 Replacing tokens

\texttt{\HyPsd@Subst} To save tokens \texttt{\HyPsd@StringSubst} is a wrapper for the command \texttt{\HyPsd@Subst} that does all the work: In string stored in command \texttt{#3} it replaces the tokens \texttt{#1} with \texttt{#2}.
#1 Exact the tokens that should be replaced.
#2 The replacement (don’t need to be expanded).
#3 Command with the string.

\begin{verbatim}
\def\HyPsd@Subst#1#2#3{\def\HyPsd@@ReplaceFi##1#1##2\END\fi{\iftrue##1\else#2\HyPsd@@ReplaceFi##2\END\fi}\xdef#3{\expandafter\HyPsd@@ReplaceFi#3#1\END}}
\end{verbatim}

\texttt{\HyPsd@StringSubst} To save tokens in \texttt{\pdftexdef \HyPsd@StringSubst} is a wrapper, that expands argument \texttt{#1} before calling \texttt{\HyPsd@Subst}.

\begin{verbatim}
\def\HyPsd@StringSubst#1{% \expandafter\HyPsd@Subst\expandafter{#1}%}\end{verbatim}

\texttt{\HyPsd@EscapeTeX}
6.6.7 Support for package `xspace`

`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.

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.
\HyPsd@ConvertToUnicode

\HyPsd@DoConvert

\HyPsd@DoEscape

\HyPsd@GetTwoBytes

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

```latex
\def\HyPsd@GetNextTwoTokens#1#2#3\END#4{\xdef#4{#4#1#2}\HyPsd@@ConvertToUnicode#3\END#4}
```

\HyPsd@Char

```latex
\begingroup\catcode0=9 \catcode`\^=7 \catcode`^^^=12 \xdef\x{\\^^0000}\expandafter\endgroup\ifx\x\@empty\def\HyPsd@Char#1{\xifnum#1<128 \@backslashchar 000#1\else\xifnum#1<65536 \expandafter\HyPsd@CharTwoByte\number#1!\else\expandafter\expandafter\expandafter\HyPsd@CharSurrogate\intcalcSub{#1}{65536}!\fi\fi\def\HyPsd@CharTwoByte#1!{\expandafter\expandafter\expandafter\HyPsd@CharOctByte\IntCalcDiv{#1}{256}!!!\expandafter\expandafter\expandafter\HyPsd@CharOctByte\IntCalcMod{#1}{256}!!\@backslashchar 33\expandafter\expandafter\expandafter\IntCalcAdd\intcalcDiv{\IntCalcMod{#1}{256}}{256}!4!\expandafter\expandafter\expandafter\HyPsd@CharOctByte\IntCalcMod{#1}{256}!!\fi\def\HyPsd@Char#1{\@backslashchar 000#1}\fi}
\def\HyPsd@CharTwoByte#1!{\IntCalcDiv{\IntCalcMod{#1}{128}}{16}!\@backslashchar 33\IntCalcDiv{\IntCalcMod{#1}{128}}{16}!8!\IntCalcMod{\IntCalcMod{#1}{128}}{16}!1!\@backslashchar 33\IntCalcDiv{\IntCalcMod{#1}{128}}{16}!1!1\@backslashchar 33}\else\def\HyPsd@Char#1{\@backslashchar 000#1}\fi
```

\end{verbatim}
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 \texttt{eTeX} here for performance reasons. Unhappily the results of divisions are rounded. Thus a circumvention via \texttt{\dimexpr} is used, e.g.:

\begin{verbatim}
\numexpr 123/4\relax is replaced by
\number\dimexpr 25\dimexpr 123sp\relax\relax
\end{verbatim}

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

\begin{align*}
a & := A/4 - 48 \quad (1) \\
b & := A - 4 \times (A/4) \quad (2) \\
c & := B/8 - 8 \times ((8 \times (B/8))/8) \quad (3) \\
d & := B - 8 \times (B/8) \quad (4)
\end{align*}

\begin{verbatim}
\def\HyPsd@UTFviii@two#1#2{% \
\expandafter\HyPsd@UTFviii@@two 
\number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter|%
\number`#1\expandafter|%
\number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter|%
\number`#2 \@nil
}
\def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{% \
\expandafter\8% 
\number\numexpr #1-48\relax
\csname\number\numexpr #2-4\times#1\relax\endcsname
\number\numexpr #3-8\times%
\end{verbatim}
Three octet form: 1110aabb (A), 10bcccdd (B), and 10eeefff (C). The result is \(\text{\textbackslash n}abc\text{\textbackslash def}\) (with a, ..., f as octal numbers). The conversion equations:

\[
\begin{align*}
a & := A/4 - 56 \\
b & := 2 \times (A - 4 \times (A/4)) + ((B - 128 < 32) ? 1 : 0) \\
c & := B/4 - 32 - ((B - 128 < 32) ? 0 : 8) \\
d & := B - 4 \times (B/4) \\
e & := C/8 - 16 \\
f & := C - 8 \times (C/8)
\end{align*}
\]

Surrogates: 4 octets in UTF-8, a surrogate pair in UTF-16. High surrogate range: U+D800–U+DBFF, low surrogate range: U+DC00-U+DFFF.
\number\numexpr ifodd#2 4+\fi
\dimexpr 0.625\dimexpr \#3sp-128sp \relax \relax \relax
\ifodd#2 4+\fi
\number\numexpr \#3-16+\dimexpr 0.625\dimexpr \#3sp-128sp \relax \relax \relax
\%\%
\def\HyPsd@@@UTFviii@four\number\numexpr \#3-16+\dimexpr 0.625\dimexpr \#3sp-128sp \relax \relax \relax
\%\%
\def\HyPsd@@@UTFviii@four#1|#2{\number\numexpr 4+\dimexpr 0.25\dimexpr \#1sp \relax \relax \relax
\csname \number\numexpr \#1-4*\dimexpr 0.25\dimexpr \#1sp \endcsname
\number\dimexpr 0.125\dimexpr \#2sp-128sp \relax \relax
\number\numexpr \#2-8*\dimexpr 0.125\dimexpr \#2sp \relax \relax \relax
}\%

Input encoding utf8x of package ucs uses macro \unichar. Values greater than "FFFF" are not supported.
\def\HyPsd@unichar#1{\ifHy@unicode
\ifnum#1>"10FFFF %
\HyPsd@UnicodeReplacementCharacter % illegal
\else
\ifnum#1>"FFFF %
High-surrogate code point. (*D800 = 55296, \p@ = 1pt = 65536sp)
\expandafter\HyPsd@unichar\expandafter{\number\numexpr 55296+\dimexpr 0.0009765625\dimexpr \number#1sp-\p@ \relax \relax \relax
}\%\%
Low-surrogate code point. (*DC00 = 56320, *DC00 - 65536 = -9216)
\expandafter\HyPsd@unichar\expandafter{\number\numexpr 56320+\dimexpr 0.0009765625\dimexpr \number#1sp-\p@ \relax \relax \relax
}\%\%
\else
\ifnum#1>"7FF %
\9%
\expandafter\HyPsd@unichar@first@byte\expandafter{\number\dimexpr 0.00390625\dimexpr \number#1sp \relax \relax \relax
}\%
\else
\8%
\number\dimexpr 0.00390625\dimexpr \number#1sp \relax \relax \relax
\fi
\fi
\else
\9%
\expandafter\HyPsd@unichar@first@byte\expandafter{\number\dimexpr 0.00390625\dimexpr \number#1sp \relax \relax \relax
\fi
\else
\8%
\number\dimexpr 0.00390625\dimexpr \number#1sp \relax \relax \relax
\fi
\fi
\else
\% unsupported (Unicode -> PDF Doc Encoding)
\fi
\def\HyPsd@UnicodeReplacementCharacter\9377\375}
\def\HyPsd@unichar@first@byte#1{\% 
\number\dimexpr.015625\dimexpr#1sp\relax\relax 
\expandafter\HyPsd@unichar@octtwo\expandafter{\number
\numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax
\relax\relax})\%
\def\HyPsd@unichar@second@byte#1{\csname
\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
\expandafter\HyPsd@unichar@octtwo\expandafter{\number
\numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax
\relax\relax})\%
\def\HyPsd@unichar@octtwo#1{\number\dimexpr.125\dimexpr#1sp\relax\relax
\number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp\relax\relax
\fi
\HyPsd@utf@viii@undeferr \utf@viii@undeferr comes from file utf8x.def from package ucs.
\def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{\if\@gobble#1\else
[Please insert \textbackslash PrerenderUnicode\textbraceleft#1\textbraceright\space into preamble]\fi
}

6.6.10 Support for die faces (ifsym et. al.)

\HyPsd@DieFace Die faces are provided by

<table>
<thead>
<tr>
<th>Package</th>
<th>Macro</th>
</tr>
</thead>
<tbody>
<tr>
<td>ifsym</td>
<td>\Cube</td>
</tr>
<tr>
<td></td>
<td>epsdice</td>
</tr>
<tr>
<td>hhcount</td>
<td></td>
</tr>
</tbody>
</table>

\Cube and epsdice restrict the range to the numbers one to six. fcdice generates for larger numbers several dice faces with the sum matching the number. The implementation for the PDF strings follows fcdice.

\def\HyPsd@DieFace#1{\if\@unicode\ifnum#1<1 %
\else\ifnum#1>6 %
\fi\expandafter\expandafter\expandafter\HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
\else \9046\20\intcalcDec{#1}%
\fi\fi\fi

\HyPsd@DieFaceLarge
\HyPsd@DieFaceLarge

\def\HyPsd@DieFaceLarge#1!{\
\ifnum#1>6 \%
\expandafter\ltx@firstoftwo
\else \expandafter\ltx@secondoftwo
\fi
\}

% Die faces are not part of PDFDocEncoding
\fi
\else
\fi

\HyPsd@MoonPha

\def\HyPsd@MoonPha#1{\
\ifcase\intcalcNum{#1} \%
\HyPsd@UnicodeReplacementCharacter
\or % 1
% U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
\9330\074\9337\032%
\or % 2
% U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
\9330\074\9337\035%
\or % 4
% U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
\9330\074\9337\034%
\else
\HyPsd@UnicodeReplacementCharacter
\fi
}

\* \HyPsd@MoonPha \rightarrow \MoonPha

\HyPsd@ding

\def\HyPsd@ding#1{\
\ifHy@unicode
\ifnum#1<32 \%
\HyPsd@UnicodeReplacementCharacter
\else
\ifnum#1>254 \%
\HyPsd@UnicodeReplacementCharacter
\else
\ifnum#1<127 \%
\expandafter\expandafter\expandafter
\HyPsd@@ding\intcalcNum{#1}!%
\else
\end{verbatim}

6.6.11 Support for moon phases of package china2e

6.6.12 Support for package pifont
\HyPsd@@ding

\def\HyPsd@@ding#1!{% 
\ltx@ifundefined{HyPsd@ding@#1}{% 
\ifnum#1<127 \%
9047\%
\else \ifnum#1<168 \%
9047\14\IntCalcSub#1!160!\%
\else \ifnum#1>181 \%
9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}\%
\else \ifnum#1>172\%
172..181 -> U+2460..U+2469
\else \ifnum#1>168 \%
\9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}\%
\fi \fi \fi \fi \fi \fi \fi \fi \fi \fi \fi \fi}
\csname HyPsd@ding@#1\endcsname
}

@namedef{HyPsd@ding@32}{\space}
% U+260E BLACK TELEPHONE
@namedef{HyPsd@ding@37}{\9046\016}\% U+260E
% U+261B BLACK RIGHT POINTING INDEX
@namedef{HyPsd@ding@42}{\9046\033}\% U+261B
% U+261E WHITE RIGHT POINTING INDEX
@namedef{HyPsd@ding@43}{\9046\036}\% U+261E
% U+2605 BLACK STAR
@namedef{HyPsd@ding@72}{\9046\005}\% U+2605
% U+25CF BLACK CIRCLE
@namedef{HyPsd@ding@108}{\9045\317}\% U+25CF
% U+25A0 BLACK SQUARE
@namedef{HyPsd@ding@110}{\9045\240}\% U+25A0
% U+25B2 BLACK UP-POINTING TRIANGLE
@namedef{HyPsd@ding@115}{\9045\262}\% U+25B2
% U+25BC BLACK DOWN-POINTING TRIANGLE
@namedef{HyPsd@ding@116}{\9045\274}\% U+25BC
% U+25C6 BLACK DIAMOND
@namedef{HyPsd@ding@117}{\9045\306}\% U+25C6
% U+25D7 RIGHT HALF BLACK CIRCLE
7 Support of other packages

7.1 Class memoir

% Support of other packages
%
\@ifclassloaded{memoir}{\Hy@AtEndOfPackage{\RequirePackage{memhfixc}}}{}

7.2 Package subfigure

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

\@ifpackageloaded{subfigure}{\ltx@IfUndefined{sub@label}{\Hy@hypertexnamesfalse}{\renewcommand*{\sub@label}[1]{\@bsphack\subfig@oldlabel{#1}\@esphack}}}{\Hy@hypertexnamesfalse}{\providecommand*{\toclevel@subfigure}{1}\providecommand*{\toclevel@subtable}{1}}
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:

\begin{verbatim}
\ltx@ifundefined{XR@addURL}{}{\ifx!#4!%\else\XR@addURL#1{#2}{#3}{#4}{\XR@URL}\fi}
\end{verbatim}

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.

\begin{verbatim}
\let\literalps@out\@gobble
\newcommand\pdfbookmark[3][]{}\def\Acrobatmenu#1#2{\leavevmode#2}\def\Hy@writebookmark#1#2#3#4#5{}% 
\end{verbatim}

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

\begin{verbatim}
\let\HyperRaiseLinkHook\@empty\def\HyperRaiseLinkDefault{\baselineskip} \HyperRaiseLinkHook allows the user to reassign \Hyper RaiseLinkLength. 
\end{verbatim}

\begin{verbatim}
\newcounter{Hy@SavedSpaceFactor}\def\Hy@SaveSpaceFactor{% \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi} \relax\def\Hy@RestoreSpaceFactor{% \ifhmode \ifnum\Hy@SavedSpaceFactor>\z@ \spacefactor=\Hy@SavedSpaceFactor \else\z@\fi \fi}
\end{verbatim}
Inserting a \special command to set a destination destroys the \lastskip value.

\def\Hy@SaveLastskip{\ifvmode\ifdim\lastskip=\z@\let\Hy@RestoreLastskip\nobreak\else\let\Hy@RestoreLastskip\noexpand\ifvmode\nobreak\vskip\the\lastskip\relax\fi\fi\else\ifhmode\ifdim\lastskip=\z@\let\Hy@RestoreLastskip\nobreak\else\let\Hy@RestoreLastskip\noexpand\ifvmode\nobreak\vskip\the\lastskip\relax\fi\fi\fi\edef\x{\endgroup\def\noexpand\Hy@RestoreLastskip{\noexpand\ifvmode\nobreak\vskip\the\lastskip\relax\fi}}\fi\edef\x{}}%
\endgroup
\def\noexpand\Hy@RestoreLastskip{%
\noexpand\ifhmode
\noexpand\nobreak
\hskip\the\skip@
\hskip\the\lastskip\relax
\noexpand\fi
}\%  %
\fi
\fi
\fi
}%
}
\x
\fi
\fi
\fi
}%

9 Options

\SetupKeyvalOptions{%
family=Hyp,%
prefix=HyOpt%
}%

9.1 Help macros

\IfHyperBooleanExists
\IfHyperBoolean

\Hy@boolkey 75
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.

\begin{verbatim}
\def\Hy@CheckOptionValue#1#2#3{% 
  \begingroup 
  \edef\x{#1} \@onelevel@sanitize\x 
  \let\y=y \@onelevel@sanitize\y 
  \ifx\x\y \@gobbletwo \else 
    \def\do##1##2{% \let\z{##1} \@onelevel@sanitize\z 
      \ifx\x\z \@gobbletwo \else 
        \let\do\@gobble 
      \fi 
    } \fi 
  }% 
  \ifx\y y \@gobbletwo \else 
    \def\do##1##2{% \let\y=y \@onelevel@sanitize\y 
      \ifx\x\y \@gobbletwo \else 
        \let\do\@gobbletwo 
      \fi 
    } \fi 
}\end{verbatim
Defining the options

\begin{verbatim}
\define@key{Hyp}{implicit}{true}{% \Hy@boolkey{implicit}{#1}%
\define@key{Hyp}{draft}{true}{% \Hy@boolkey{draft}{#1}%
\define@key{Hyp}{final}{true}{% \Hy@boolkey{final}{#1}%
\end{verbatim}

9.2 Defining the options

\begin{verbatim}
\define@key{Hyp}{implicit}{true}{% \Hy@boolkey{implicit}{#1}%
\define@key{Hyp}{draft}{true}{% \Hy@boolkey{draft}{#1}%
\define@key{Hyp}{final}{true}{% \Hy@boolkey{final}{#1}%
\end{verbatim}

77
\WarningNoLine{Option `#1' is no longer used}\ }
\def\Hy@temp{a4paper}
\Hy@temp{a5paper}
\Hy@temp{b5paper}
\Hy@temp{letterpaper}
\Hy@temp{legalpaper}
\Hy@temp{executivepaper}
\define@key{Hyp}{setpagesize}{true}{}
\define@key{Hyp}{debug}{true}{}
\define@key{Hyp}{linktocpage}{true}{}
\define@key{Hyp}{linktoc}{false}{}
\define@key{Hyp}{extension}{}
\define@key{Hyp}{typexml}{true}{}
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.

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

Determines whether an automatic anchor is put on each page

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.

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

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

Currently, dvips doesn’t allow anchors nested within targets, so this option tries to stop that happening. Other processors may be able to cope.
\Hy@boolkey{nesting}{#1}%
\define@key{Hyp}{destlabel}{true}%
\Hy@boolkey{destlabel}{#1}%
\define@key{Hyp}{unicode}{true}%
\Hy@boolkey{unicode}{#1}%
\ifHy@unicode
\def\HyPsd@pdfencoding{unicode}%
\HyPsd@LoadUnicode
\else
\def\HyPsd@pdfencoding{pdfdoc}%
\fi
\Hy@AtBeginDocument{%
\if\HyPsd@LoadUnicode\relax
\else
\def\HyPsd@LoadUnicode{%
\Hy@Error{Unicode support for bookmarks is not available.}\MessageBreak
Activate unicode support by using one of the options `unicode',
`pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
in the preamble%}
\@ehc
\global\let\HyPsd@LoadUnicode\relax
\global\let\HyPsd@LoadUnicode\Hy@unicodetrue
\fi
\fi
\define@key{Hyp}{pdfencoding}{%
\edef\HyPsd@temp{#1}%
\ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
\let\HyPsd@pdfencoding\HyPsd@temp
\Hy@unicodefalse
\else
\ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
\z@
\else
\ifx\HyPsd@temp\HyPsd@pdfencoding@auto
\z@
\else
\@ne
\fi
\fi
\let\HyPsd@pdfencoding\HyPsd@temp
\hypersetup{unicode}%
\if\Hy@unicode
\def\HyPsd@pdfencoding{#1}%
\if\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
\HyPsd@LoadStringEnc
\fi
\else
\Hy@Warning{Cannot switch to unicode bookmarks}%
\let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
\fi
\else
\fi
2980 \fi
2981 }%
2982 \define@key{Hyp}{pdfencoding}{%
Values of option `pdfencoding':
`pdfdoc', `unicode', `auto'.
Ignoring unknown value `\HyPsd@temp'%
}%
\fi
\fi
}%
\def\HyPsd@pdfencoding@auto{auto}
\def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
\def\HyPsd@pdfencoding@unicode{unicode}
\let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
\def\HyPsd@LoadStringEnc{%
\RequirePackage{stringenc}[2009/12/15]%
\let\HyPsd@LoadStringEnc\relax
}%
\Hy@AtBeginDocument{%
@ifpackageloaded{stringenc}{%
\let\HyPsd@LoadStringEnc\relax
}%
\def\HyPsd@LoadStringEnc{%
\Hy@WarningNoLine{%
Missing package `stringenc'. Use `pdfencoding=auto'
in the preamble or load the package there%
}%
}%
}%
}%
\define@key{Hyp}{psdextra}[true]{%
\Hy@boolkey{psdextra}{#1}%
\HyPsd@LoadExtra
}%
\hypersetup{\kvsetkeys{Hyp}}
\newif\ifHy@setpdfversion
\define@key{Hyp}{pdfversion}{%
@ifdefefined{Hy@pdfversion@#1}{%
 PackageWarning{hyperref}{%
 Unsupported PDF version `#1'.
Valid values: 1.2 until 1.9%
}%
}%
}%
\Hy@setpdfversiontrue
\edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
}%
\edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
}%
\namedef{Hy@pdfversion@1.2}{2}%
\namedef{Hy@pdfversion@1.3}{3}%
\namedef{Hy@pdfversion@1.4}{4}%
\namedef{Hy@pdfversion@1.5}{5}%
\namedef{Hy@pdfversion@1.6}{6}%
\namedef{Hy@pdfversion@1.7}{7}%
\namedef{Hy@pdfversion@1.8}{8}%
\namedef{Hy@pdfversion@1.9}{9}%
\def\Hy@pdfversion{5}
10 Options for different drivers

\ifpdf
  \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}\
\else
  \ifxetex
    \def\Hy@DviErrMsg{XeTeX is running}\
  \else
    \ifvtex
      \ifvtexdvi
        \Hy@DviModetrue\
      \else
        \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}\
      \fi
    \else
      \Hy@DviModetrue\
    \fi
  \fi
\fi
\def\HyOpt@CheckDvi#1{\
  \ifHy@DviMode
    \expandafter\ltx@firstofone
  \else
    \Hy@Error{Wrong DVI mode driver option `#1', MessageBreak because \Hy@DviErrMsg}\\
  \fi
}
\DeclareVoidOption{tex4ht}{\
  \Hy@texhttrue
  \kvsetkeys{Hyp}{colorlinks=true}\
  \def\BeforeTeXIVht{\RequirePackage{color}}\
  \def\Hy@driver{htex4ht}\
  \def\MaybeStopEarly{\
    \Hy@Message{Stopped early}\
    \Hy@AtBeginDocument{}\
    \PDF@FinishDoc\
    \gdef\PDF@FinishDoc{}}\
  \endinput}
\DeclareVoidOption{pdftex}{\
  \ifpdf
    \def\Hy@driver{hpdftex}\
    \PassOptionsToPackage{pdftex}{color}\
  \else
    \Hy@Error{Wrong driver option `pdftex', MessageBreak because pdfTeX in PDF mode is not detected}\\
  \fi}
\endinput
\DeclareVoidOption{luatex}{\ifpdf
\ifx\pdfextension@undefined
\def\Hy@driver{hpdftex}\PassOptionsToPackage{pdftex}{color}\else
\def\Hy@driver{hluatex}\PassOptionsToPackage{luatex}{color}\fi\else
\Hy@Error{Wrong driver option \texttt{luatex}, because luaTeX in PDF mode is not detected}\fi}
\DeclareVoidOption{nativepdf}{\HyOpt@CheckDvi{nativepdf}\
\def\Hy@driver{hdvips}\PassOptionsToPackage{dvips}{color}\
}\}
\DeclareVoidOption{dvipdfm}{\HyOpt@CheckDvi{dvipdfm}\
\def\Hy@driver{hdvipdfm}\
}\}
\DeclareVoidOption{dvipdfmx}{\HyOpt@CheckDvi{dvipdfmx}\
\def\Hy@driver{hdvipdfm}\PassOptionsToPackage{dvipdfmx}{color}\
}\}
\define@key{Hyp}{dvipdfmx-outline-open}[	rue]{\if\if\SpecialDvipdfmxOutlineOpen\@ne\else\chardef\SpecialDvipdfmxOutlineOpen\z@\fi}
\DeclareVoidOption{xetex}{\ifxetex
\def\Hy@driver{hxetex}\else
\Hy@Error{Wrong driver option \texttt{xetex}, because XeTeX is not detected}\fi}\}
\DeclareVoidOption{pdfmark}{\HyOpt@CheckDvi{pdfmark}\
\def\Hy@driver{hdvips}\}
\DeclareVoidOption{dvips}{\}
\define@key{Hyp}{dvpdfmx-outline-open}[	rue]{\if\if\SpecialDvipdfmxOutlineOpen\@ne\else\chardef\SpecialDvipdfmxOutlineOpen\z@\fi}
\DeclareVoidOption{xtex}{\ifxtex
\def\Hy@driver{hxetex}\else
\Hy@Error{Wrong driver option \texttt{xtex}, because XeTeX is not detected}\fi}\}
\DeclareVoidOption{pdfmark}{\HyOpt@CheckDvi{pdfmark}\
\def\Hy@driver{hdvips}\}
\DeclareVoidOption{dvips}{\}
\endinput
\HyOpt@CheckDvi\{dvips\}\{%
  \def\Hy@driver{hdvips}\%
  \PassOptionsToPackage\{dvips\}\{color\}\%
}\%
}
\DeclareVoidOption\{hypertex\}\{%
  \HyOpt@CheckDvi\{hypertex\}\{%
  \def\Hy@driver{hypertex}\%
  \let\Hy@MaybeStopNow\relax
}\%
}
\DeclareVoidOption\{vtex\}\{%
  if\vtex
    ifnum 0\ifnum\OpMode<1 \fi \ifnum\OpMode>3 \fi =0\
      \def\Hy@driver{hvtex}\%
    \else
      \ifnum\OpMode=10 \relax
        \def\Hy@driver{hvtexhtm}\%
        \def\MaybeStopEarly\{%
          \Hy@Message\{Stopped early\}\%
          \Hy@AtBeginDocument\{%
            \PDF@FinishDoc
            \edef\PDF@FinishDoc\{\%
            \endinput
          \}\%
        \}
      \else
        \Hy@Error\{Wrong driver option `vtex',\MessageBreak
          \because of wrong OpMode (\the\OpMode)\%
        \}@\ehc
      \fi
    \else
      \Hy@Error\{Wrong driver option `vtex',\MessageBreak
        \because VTeX is not running\%
      \}@\ehc
  \else
    \Hy@Error\{Wrong driver option `vtex',\MessageBreak
      \because VTeX is not running\%
  \}@\ehc
  \fi
}\%
}
\DeclareVoidOption\{vtexpdfmark\}\{%
  if\vtex
    ifnum 0\ifnum\OpMode<1 \fi \ifnum\OpMode>3 \fi =0\
      \def\Hy@driver{hvtexmrk}\%
    \else
      \Hy@Error\{Wrong driver option `vtexpdfmark',\MessageBreak
        \because of wrong OpMode (\the\OpMode)\%
    \else
      \Hy@Error\{Wrong driver option `vtexpdfmark',\MessageBreak
        \because VTeX is not running\%
  \else
    \Hy@Error\{Wrong driver option `vtexpdfmark',\MessageBreak
      \because VTeX is not running\%
  \}@\ehc
  \fi
}\%
\fi
\fi
No more special treatment for ps2pdf. Let it sink or swim.
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.

```latex
\define@key{Hyp}{hyperfigures}{true}
\Hy@boolkey{hyperfigures}{#1}
```

The automatic footnote linking can be disabled by option hyperfootnotes.

```latex
\define@key{Hyp}{hyperfootnotes}{true}
\Hy@boolkey{hyperfootnotes}{#1}
```

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

```latex
\def\back@none{none}
\def\back@section{section}
\def\back@page{page}
\def\back@slide{slide}
\define@key{Hyp}{backref}{section}
\lowercase\def\Hy@tempa{#1}
\ifx\Hy@tempa\@empty
\let\Hy@tempa\back@section
\fi
\ifx\Hy@tempa\Hy@false
\let\Hy@tempa\back@none
\fi
\ifx\Hy@tempa\back@slide
\let\Hy@tempa\back@section
\fi
\ifx\Hy@tempa\back@page
\PassOptionsToPackage{hyperpageref}{backref}%
\Hy@backreftrue
\else
\ifx\Hy@tempa\back@section
\PassOptionsToPackage{hyperref}{backref}%
\Hy@backreftrue
\else
\Hy@WarnOptionValue{#1}{backref}{section, slide, page, none, MessageBreak
or false}%
\fi
\fi
\fi
```

```latex
\define@key{Hyp}{pagebackref}{true}
\edef\Hy@tempa{#1}
\lowercase\expandafter{\expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}}
\ifx\Hy@tempa\@empty
\let\Hy@tempa\Hy@true
\fi
\ifx\Hy@tempa\Hy@true
\else
\ifx\Hy@tempa\Hy@false
\else
\Hy@WarnOptionValue{#1}{pagebackref}{%}
\section, slide, page, none, MessageBreak
or false}%
\fi
\fi
```

86
Make index entries be links back to the relevant pages. By default this is turned on, but may be stopped.

```
\define@key{Hyp}{hyperindex}[true]{%}
\Hy@boolkey{hyperindex}{#1}{%}
}\fi
```

Configuration of encap char.

```
\define@key{Hyp}{encap}{\|}{%}
\def\HyInd@EncapChar{#1}{%}
```

12 Language options

The \autoref feature depends on the language.

```
\def\HyLang@afrikaans{%}
\def\equationautorefname{Vergelyking}%
\def\footnoteautorefname{Voetnota}%
\def\itemautorefname{Item}%
\def\figureautorefname{Figuur}%
\def\tableautorefname{Tabel}%
\def\partautorefname{Deel}%
\def\appendixautorefname{Bylae}%
\def\chapterautorefname{Hoofstuk}%
\def\sectionautorefname{Afdeling}%
\def\subsectionautorefname{Subafdeling}%
\def\subsubsectionautorefname{Subsubafdeling}%
\def\paragraphautorefname{Paragraaf}%
\def\subparagraphautorefname{Subparagraaf}%
\def\FancyVerbLineautorefname{Lyn}%
\def\theoremautorefname{Teorema}%
\def\pageautorefname{Bladsy}%
}\fi
```

```
\def\HyLang@english{%}
\def\equationautorefname{Equation}%
\def\footnoteautorefname{footnote}%
\def\itemautorefname{item}%
\def\figureautorefname{Figure}%
\def\tableautorefname{Table}%
\def\partautorefname{Part}%
\def\appendixautorefname{Appendix}%
\def\chapterautorefname{chapter}%
\def\sectionautorefname{section}%
\def\subsectionautorefname{subsection}%
\def\subsubsectionautorefname{subsubsection}%
\def\paragraphautorefname{paragraph}%
\def\subparagraphautorefname{subparagraph}%
\def\FancyVerbLineautorefname{Lyn}%
\def\theoremautorefname{Theorema}%
\def\pageautorefname{Page}%
}\fi
```

87
Next commented section for Russian is provided by Olga Lapko.

Next follow the checked reference names with commented variants and explanations. All they are abbreviated and they won’t create a grammatical problems in the middle of sentences.

The most weak points in these abbreviations are the \texttt{equationautorefname}, \texttt{theoremautorefname} and the \texttt{FancyVerbLineautorefname}. But those three, and also the \texttt{footnoteautorefname} are not too often referenced. Another rather weak point is the \texttt{appendixautorefname}.

The abbreviated reference to the equation: it is not for “the good face of the book”, but maybe it will be better to get the company for the \texttt{theoremautorefname}?

The name of the equation reference has common form for both nominative and accusative but changes in other forms, like “of \texttt{autoref(auto)}” etc. The full name must follow full name of the \texttt{theoremautorefname}. 

\def\HyLang@russian{%
The variant of footnote has abbreviation form of the synonym of the word “footnote”. This variant of abbreviated synonym has alternative status (maybe obsolete?).

Commented form of the full synonym for “footnote”. It has common form for both nominative and accusative but changes in other forms, like “of \autoref{auto}”

Commented forms of the “footnote”: have different forms, the same is for the nominative and accusative. (The others needed?)

Name of the list item, can be confused with the paragraph reference name, but reader could understand meaning from context(?). Commented variant has common form for both nominative and accusative but changes in other forms, like “of \autoref{auto}” etc.

Names of the figure and table have stable (standard) abbreviation forms. No problem in the middle of sentence.

Names of the part, chapter, section(s) have stable (standard) abbreviation forms. No problem in the middle of sentence.

Name of the appendix can use this abbreviation, but it is not standard for books, i.e., not for “the good face of the book”. Commented variant has common form for both nominative and accusative but changes in other forms, like “of \autoref{auto}” etc.

The sectioning command have stable (almost standard) and common abbreviation form for all levels (the meaning of these references visible from the section number). No problem.

The names of references to paragraphs also have stable (almost standard) and common abbreviation form for all levels (the meaning of these references is visible from the section number). No problem in the middle of sentence.
Commented variant can be used in books but since it has common form for both
nominative and accusative but it changes in other forms, like “of \autoref{auto}”
etc.

The name of verbatim line. Here could be a standard of the abbreviation (used
very rare). But the author preprint publications (which have not any editor or
corrector) can use this abbreviation for the page reference. So the meaning of the
line reference can be read as reference to the page.

Commented names of the “verbatim line”: have different forms, also the nominative
and accusative.

The alternative, ve-e-e-ery professional abbreviation, was used in typography
markup for typesetters.

The names of theorem: if we want have “the good face of the book”, so the
theorem reference must have the full name (like equation reference). But ...

Commented forms of the “theorem”: have different forms, also the nominative
and accusative.

Name of the page stable (standard) abbreviation form. No problem.
Instead of package babel's definition of \addto the implementation of package varioref is used. Additionally argument #1 is checked for \relax.

\def\HyLang@addto#1#2{\def#2{\@temptokena{#2}\ifx#1\relax\let#1\@empty\fi\ifx#1\@undefined\edef#1{\the\@temptokena}\else\toks@\expandafter{#1}\edef#1{\the	oks@\the\@temptokena}\fi\@temptokena{}\toks@\@temptokena}\def\HyLang@DeclareLang#1#2#3{\@ifpackagewith{babel}{#1}{\expandafter\HyLang@addto\csname extras#1\expandafter\endcsname \csname HyLang@#2\endcsname \begingroup\edef\x{\endgroup\#3}\x\@namedef{HyLang@#1@done}{}\begingroup\edef\x##1##2{\noexpand\ifx##2\relax\errmessage{No definitions for language #2' found!}\noexpand\fi\endgroup\noexpand\define@key{Hyp}{#1}\[\]{\noexpand\@ifundefined{HyLang@#1@done}{\noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}\@namedef{HyLang@#1@done}{}\noexpand\HyLang@DeclareLang{english}{english}{}\HyLang@DeclareLang{UKenglish}{english}{}\HyLang@DeclareLang{british}{english}{}\HyLang@DeclareLang{USenglish}{english}{}\endgroup

93
More work is needed in case of options vietnamese and vietnam.

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

13 Options to change appearance of links

Colouring links at the \LaTeX{} level is useful for debugging, perhaps.

13 Options to change appearance of links
14 Bookmarking
The depth of the outlines is controlled by option \texttt{bookmarksdepth}. The option acts globally and distinguishes three cases:

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

\begin{verbatim}
\let\Hy@bookmarksdepth\c@tocdepth
\define@key{Hyp}{bookmarksdepth}[{}]{% 
  \begingroup 
  \edef\x{#1}% 
  \ifx\x\empty 
    \global\let\Hy@bookmarksdepth\c@tocdepth 
  \else 
    \@ifundefined{toclevel@\x}{% 
      \@onelevel@sanitize\x 
      \edef\y{\expandafter\@car\x\@nil}% 
      \ifcase0\expandafter\ifx\y-1\fi \expandafter\ifnum\expandafter\`\y>47 \expandafter\ifnum\expandafter\`\y<58 \relax 
      \Hy@Warning{Unknown document division name \texttt{\<x>}}% 
      \else 
      \setbox\z@=\hbox{\count@=\x \xdef\Hy@bookmarksdepth{\the\count@}}% 
      \fi 
    }{% 
      \setbox\z@=\hbox{\count@=\csname toclevel@\x\endcsname \xdef\Hy@bookmarksdepth{\the\count@}}% 
    }% 
  \fi 
  \endgroup 
}
\end{verbatim}

\texttt{bookmarksopenlevel}' to specify the open level. From Heiko Oberdiek.

\begin{verbatim}
\define@key{Hyp}{bookmarksopenlevel}[{}]{% 
  \def\@bookmarksopenlevel{#1} 
  \def\@bookmarksopenlevel{\maxdimen} 
  \% `bookmarkstype' to specify which `toc' file to mimic 
  \define@key{Hyp}{bookmarkstype}[{}]{% 
    \def\Hy@bookmarkstype{#1} 
    \def\Hy@bookmarkstype{toc} 
  }% 
  \def\Hy@bookmarkstype{toc} 
}
\end{verbatim}

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

\begin{verbatim}
\define@key{Hyp}{bookmarksnumbered}[true]{% 
  \Hy@boolkey{bookmarksnumbered}{#1} 
  \def\Hy@boolkey{\maxdimen} 
  \% `bookmarkstype' to specify which `toc' file to mimic 
  \define@key{Hyp}{bookmarksnumbered}[true]{% 
    \def\Hy@bookmarksnumbered{#1} 
    \def\Hy@bookmarksnumbered{toc} 
  }% 
  \def\Hy@bookmarksnumbered{toc} 
}
\end{verbatim}

Richard Curnow <richard@curnow.demon.co.uk> suggested this functionality. It adds section numbers etc to bookmarks.
Option CJKbookmarks enables the patch for CJK bookmarks.

\begin{verbatim}
3780 \define@key{Hyp}{CJKbookmarks}{true}{%
3781 \Hy@boolkey{CJKbookmarks}{#1}{%
3782 }
3783 \def\Hy@temp#1{%
3784 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}{%
3785 }
3786 \define@key{Hyp}{CJKbookmarks}{#1}{%
3787 \HyColor@HyperrefColor{#1}{%
3788 }
3789 }
3790 \def#1{#3}{%
3791 }
3792 \Hy@temp{link}{red}{%
3793 \Hy@temp{anchor}{black}{%
3794 \Hy@temp{cite}{green}{%
3795 \Hy@temp{file}{cyan}{%
3796 \Hy@temp{url}{magenta}{%
3797 \Hy@temp{menu}{red}{%
3798 \Hy@temp{run}{\@filecolor}{%
3799 \define@key{Hyp}{pagecolor}{%
3800 \Hy@WarningPageColor{%
3801 }
3802 \def\Hy@WarningPageColor{%
3803 \Hy@WarningNoLine{Option `pagecolor' is not available anymore}{%
3804 \global\let\Hy@WarningPageColor\relax{%
3805 }
3806 \define@key{Hyp}{allcolors}{%
3807 \HyColor@HyperrefColor{#1}{@linkcolor{%
3808 \HyColor@HyperrefColor{#1}{@anchorcolor{%
3809 \HyColor@HyperrefColor{#1}{@citecolor{%
3810 \HyColor@HyperrefColor{#1}{@filecolor{%
3811 \HyColor@HyperrefColor{#1}{@urlcolor{%
3812 \HyColor@HyperrefColor{#1}{@menucolor{%
3813 \HyColor@HyperrefColor{#1}{@runcolor{%
3814 }
3815 \\hyperbaseurl{1}{\def\@baseurl{#1}{%
3816 \define@key{Hyp}{baseurl}{
3817 \let\@baseurl{\@empty}{%
3818 \\hyperlinkfileprefix{1}{\def\Hy@linkfileprefix{#1}{%
3819 \define@key{Hyp}{linkfileprefix}{%
3820 \hyperlinkfileprefix{file:}{%}
\end{verbatim}

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.

\@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.

```latex
\let\@pdfpageduration\relax
\define@key{Hyp}{pdfpageduration}{%
  \def\@pdfpageduration{#1}%
  \Hy@Match\@pdfpageduration{}{%
    ^\([0-9]+\.[0-9]*|0-9\)*\.[0-9]+$%
  }{}{%
    \Hy@Warning{Invalid value \(@\@pdfpageduration\) of option `pdfpageduration' is replaced by an empty value%}
    \let\@pdfpageduration\ltx@empty
  }%
}%
\let\@pdfpageduration\ltx@empty
\newif\ifHy@useHidKey
\Hy@useHidKeyfalse
\define@key{Hyp}{pdfpagehidden}{true}{%
  \Hy@boolkey{pdfpagehidden}{#1}%
  \ifHy@pdfpagehidden
    \global\Hy@useHidKeytrue
  \fi
}%
\Hy@ColorList{cite,file,link,menu,run,url}
\@for\Hy@temp:=\Hy@ColorList\do{%
  \edef\Hy@temp{%
    \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
      \noexpand\HyColor@HyperrefBorderColor
      {##1}%
      \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
      \hyperref{\Hy@temp bordercolor}%
    }%
  }%
}%
\define@key{Hyp}{pagebordercolor}{%
  \Hy@WarningPageBorderColor%
}%
\def\Hy@WarningPageBorderColor{%
  \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
  \global\let\Hy@WarningPageBorderColor\relax%
}%
\define@key{Hyp}{allbordercolors}{%\n}\Hy@temp
```

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.

```latex
\newif\ifHy@useHidKey
\Hy@useHidKeyfalse
\define@key{Hyp}{pdfpagehidden}{true}{%
  \Hy@boolkey{pdfpagehidden}{#1}%
  \ifHy@pdfpagehidden
    \global\Hy@useHidKeytrue
  \fi
}%
```

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

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

```latex
\define\Hy@ColorList{cite,file,link,menu,run,url}
\edef\Hy@temp{%
  \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
    \noexpand\HyColor@HyperrefBorderColor
    {##1}%
    \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
    \hyperref{\Hy@temp bordercolor}%
  }%
}%
\define@key{Hyp}{pagebordercolor}{%
  \Hy@WarningPageBorderColor%
}%
\def\Hy@WarningPageBorderColor{%
  \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
  \global\let\Hy@WarningPageBorderColor\relax%
}%
\define@key{Hyp}{allbordercolors}{%
```

98
\def\Hy@setpdfborder{\ifx\@pdfborder\@empty\else\Border{\@pdfborder}\fi\ifx\@pdfborderstyle\@empty\else/BS<<\@pdfborderstyle>>\fi}
\Hy@DefNameKey{pdfpagemode}{\do{UseNone}{},\do{UseOutlines}{},\do{UseThumbs}{},\do{FullScreen}{},\do{UseOC}{PDF 1.5}{},\do{UseAttachments}{PDF 1.6}{}}
\Hy@DefNameKey{pdfnonfullscreenpagemode}{\do{UseNone}{},\do{UseOutlines}{},\do{UseThumbs}{},\do{FullScreen}{},\do{UseOC}{PDF 1.5}{},\do{UseAttachments}{PDF 1.6}{}}
\Hy@DefNameKey{pdfdirection}{\do{L2R}{Left to right}{},\do{R2L}{Right to left}{}}
\Hy@DefNameKey{pdfviewarea}{\do{MediaBox}{},\do{CropBox}{},\do{BleedBox}{},\do{TrimBox}{},\do{ArtBox}{}}
\Hy@DefNameKey{pdfviewclip}{\do{MediaBox}{},\do{CropBox}{},\do{BleedBox}{},\do{TrimBox}{},\do{ArtBox}{}}
\Hy@DefNameKey{pdfprintarea}{\do{MediaBox}{},\do{CropBox}{},\do{BleedBox}{},\do{TrimBox}{},\do{ArtBox}{}}
\Hy@DefNameKey{pdfprintclip}{\do{MediaBox}{},\do{CropBox}{},\do{BleedBox}{}}
\do{TrimBox}{}%
\do{ArtBox}{}%
\Hy@DefNameKey{pdfprintscaling}{% 
\do{AppDefault}{}%
\do{None}{}%
\Hy@DefNameKey{pdfduplex}{% 
\do{Simplex}{}%
\do{DuplexFlipShortEdge}{% 
\do{DuplexFlipLongEdge}{% 
\Hy@DefNameKey{pdfpicktraybypdfsize}{% 
\do{true}{}%
\do{false}{}%
\define@key{Hyp}{pdfprintpagerange}{% 
\def\@pdfprintpagerange{#1}%
\def\@pdfprintpagerange{#1}%
\Hy@DefNameKey{pdfnumcopies}{% 
\do{2}{two copies}%
\do{3}{three copies}%
\do{4}{four copies}%
\do{5}{five copies}%
\define@key{Hyp}{pdfusetitle}{true}{% 
\Hy@boolkey{pdfusetitle}{#1}%
\Hy@XeTeX@CheckUnicode{% 
\ifxetex
\if\Hy@unicode
\else
\Hy@WarningNoLine{%
XeTeX driver only supports unicode.\MessageBreak
Enabling option `unicode'%
\}%
\kvsetkeys{Hyp}{unicode}%
\else
\let\Hy@XeTeX@CheckUnicode\relax
\fi
\let\Hy@XeTeX@CheckUnicode\relax
\fi
\def\Hy@Psd@PrerenderUnicode#1{% 
\begingroup
\expandafter\ifx\csname PrerenderUnicode\endcsname\relax
\else
\GenericInfo\@gobbletwo
\GenericWarning\@gobbletwo
\GenericError\@gobblefour
\PrerenderUnicode{#1}%
\fi
\endgroup
\fi
\def\Hy@XeTeX@CheckUnicode{% 
\ifxetex
\if\Hy@unicode
\else
\Hy@WarningNoLine{%
XeTeX driver only supports unicode.\MessageBreak
Enabling option `unicode'%
\}%
\kvsetkeys{Hyp}{unicode}%
\else
\let\Hy@XeTeX@CheckUnicode\relax
\fi
\let\Hy@XeTeX@CheckUnicode\relax
\fi
\def\Hy@Psd@PrerenderUnicode#1{% 
\begingroup
\expandafter\ifx\csname PrerenderUnicode\endcsname\relax
\else
\GenericInfo\@gobbletwo
\GenericWarning\@gobbletwo
\GenericError\@gobblefour
\PrerenderUnicode{#1}%
\fi
\endgroup
\fi
\def\Hy@XeTeX@CheckUnicode{
\define@key{Hyp}{pdfstartview}{%}
\iffx\#1\%
\let@pdfstartview\ltx@empty
\else
\hypercalcbpdef\@pdfstartview{/#1}\
\fi
\def\HyPat@NonNegativeReal/{%
*([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *
%
}\define@key{Hyp}{pdfremotestartview}{%}
\iffx\#1\%
\def\@pdfremotestartview{/Fit}\
\else
\hypercalcbpdef\@pdfremotestartview{#1}\
\edef\@pdfremotestartview{\@pdfremotestartview}\
\Hy@Match\@pdfremotestartview{}{%
^XYZ(%
()| %
(?null|-?\HyPat@NonNegativeReal/) %
(?null|-?\HyPat@NonNegativeReal/) %
(?null|\HyPat@NonNegativeReal/)%
)|% end of "XYZ"
Fit(%
()|% 
B|%
(H|V|BH|BV)%
(0| %
(?null|\HyPat@NonNegativeReal/)%
)|%
R. %
\HyPat@NonNegativeReal/ %
\HyPat@NonNegativeReal/ %
\HyPat@NonNegativeReal/ %
\HyPat@NonNegativeReal/ %
)|% end of "Fit"
)}%$
)}{%
\Hy@Warning{%
Invalid value \@pdfremotestartview\MessageBreak
of \pdfremotestartview\MessageBreak
is replaced by "Fit"%
}%
\let\@pdfremotestartview\@empty
\fi
\edef\@pdfremotestartview{\@pdfremotestartview}%
\else
\edef\@pdfremotestartview{\@pdfremotestartview}%
\fi
\define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
\define@key{Hyp}{pdftoolbar}[true]{%
\Hy@boolkey{pdftoolbar}{#1}\
%
}
\define@key{Hyp}{pdfmenubar}[true]{%
\def\Hy@boolkey{pdfmenubar}{\#1}\%
4325 \}
4326 \define@key{Hyp}{pdfwindowui}{true}{\%
4327 \Hy@boolkey{pdfwindowui}{\#1}\%
4328 \}
4329 \define@key{Hyp}{pdffitwindow}{true}{\%
4330 \Hy@boolkey{pdffitwindow}{\#1}\%
4331 \}
4332 \define@key{Hyp}{pdfcenterwindow}{true}{\%
4333 \Hy@boolkey{pdfcenterwindow}{\#1}\%
4334 \}
4335 \define@key{Hyp}{pdfdisplaydoctitle}{true}{\%
4336 \Hy@boolkey{pdfdisplaydoctitle}{\#1}\%
4337 \}
4338 \define@key{Hyp}{pdfa}{true}{\%
4339 \Hy@boolkey{pdfa}{\#1}\%
4340 \}
4341 \define@key{Hyp}{pdfnewwindow}{true}{\%
4342 \def\Hy@temp{\#1}\%
4343 \ifx\Hy@temp\@empty
4344 \Hy@pdfnewwindowsetfalse
4345 \else
4346 \Hy@pdfnewwindowsettrue
4347 \Hy@boolkey{pdfnewwindow}{\#1}\%
4348 \fi
4349 \}
4350 \def\Hy@SetNewWindow{\%
4351 \ifHy@pdfnewwindowset
4352 /NewWindow \%
4353 \else
4354 \fi
4355 \}
4356 \Hy@DefNameKey{pdfpagelayout}{\%
4357 \do{SinglePage}{\{}\%
4358 \do{OneColumn}{\}\%
4359 \do{TwoColumnLeft}{\}\%
4360 \do{TwoColumnRight}{\}\%
4361 \do{TwoPageLeft}{PDF 1.5}\%
4362 \do{TwoPageRight}{PDF 1.5}\%
4363 \}
4364 \define@key{Hyp}{pdfflang}{\%
4365 \edef@pdfflang{\#1}\%
4366 \def\Hy@temp{\relax}\%
4367 \ifx\pdfflang\Hy@temp
4368 \let\pdfflang\relax
4369 \fi
4370 \ifx\pdfflang\relax
4371 \else
4372 \fi
4373 \else
4374 \Hy@Match@pdfflang{\{case\}{\%
4375 ~\%
4376 [a-z]{1,8}\%
4377 [-a-z0-9]{1,8}\%
4378 }\%
4379 \}
107
Test according to ABNF of RFC 5646.

\Hy@Match\@pdflang{icase}{\%
\~\%
\%
\% langtag
\%
\% language
\[a-z]\{2,3\}\%
\[a-z]\{3\}(-[a-z]\{3\}\{0,2\})% extlang
\[a-z]\{4\}% reserved for future use
\[a-z]\{5,8\}% registered language subtag
\}%
\(-[a-z]\{4\})% script
\(-[a-z]\{2\}\{0-9\}\{3\})% region
\(-[a-z]\{5,8\}\{0-9\}[a-z0-9]\{3\})% variant
\(-[0-9a-wyz][-[a-z0-9]\{2,8\}]+% extension
\(-[a-z0-9]\{1,8\})% privateuse
\}%
\%
\% privateuse
\% grandfathered/irregular
\% grandfathered/regular
\% art-lojban%
\% cel-gaulish%
\% no-(bok|nyn)%
\% zh-(guoyu|hakka|min|min-nan|xiang)%
\}%
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User-assigned country codes are forbidden in language tags (RFC 3066).

\ México\relax
\else
\Hy@Match\@pdflang{icase}{% ~% [a-zA-Z]{2}-% (% aa | AA | % [qQ][m-zM-Z]|% [xX][a-zA-Z]|% zz | ZZ | % )% (- | $ )% }{% \Hy@Warning{% Invalid language identifier `#1' for option `pdflang' because of invalid country code in second subtag (RFC 3066)% }{% \let\@pdflang\relax }{% \fi %}{% \fi %}{% \fi %}
Allow the user to use \texttt{\textbackslash ExecuteOptions} in the \texttt{cfg} file even though this package does not use the normal option mechanism. Use \texttt{\textbackslash hyper\textbackslash normalise} as a scratch macro, since it is going to be defined in a couple of lines anyway.

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

\SetupKeyvalOptions{family=Hyp}
\DeclareLocalOptions{%
a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
}

Add option \texttt{tex4ht} if package \texttt{tex4ht} is loaded.
\Ifpackagewith{hyperref}{\texttt{tex4ht}}{%
\PassOptionsToPackage{\texttt{tex4ht}}{hyperref}%
}{%\Ifpackageloaded{\texttt{tex4ht}}{%
\PassOptionsToPackage{\texttt{tex4ht}}{hyperref}%
}{%\ltx@IfUndefined{HCode}{%\begin{group}
\def\Hy@pkg{\texttt{tex4ht}}%
\def\Hy@temp@A#1\RequirePackage[#2]{#3}{#4}\Hy@NIL{%
\def\Hy@param{#2#3}%
\ifx\Hy@param\ltx@empty
\else
\def\Hy@param{#3}%
\ifx\Hy@param\Hy@pkg
\PassOptionsToPackage{#2}{\texttt{tex4ht}}%
\expandafter\expandafter\expandafter\@gobble
\else
\expandafter\expandafter\expandafter\ltx@firstofone
\fi
\fi
\{\Hy@temp@A\texttt{tex4ht}\Hy@NIL}%
\expandafter\expandafter\expandafter\ltx@gobble
\Hy@AtBeginDocument{%\Ifpackageloaded{\texttt{xspaceaddexceptions}}{%
\def\Hy@xspace@end{\ltx@gobble{end for xspace}}%
\xspaceaddexceptions{\Hy@xspace@end},\hyper@linkend,\hyper@anchorend
}{%\endgroup
\PassOptionsToPackage{\texttt{tex4ht}}{hyperref}%
\ltx@gobble{%}
\ltx@gobble{%}
\ltx@gobble{end for xspace}%
\xspaceaddexceptions{%}
\Hy@xspace@end,\hyper@linkend,\hyper@anchorend
}}%
\ltx@gobble{%}
15.1 Package \texttt{xspace} support

\def\Hy@xspace@end{%}
\ltx@IfUndefined{\texttt{xspaceaddexceptions}}{%
\Hy@AtBeginDocument{%\Ifpackageloaded{\texttt{xspaceaddexceptions}}{%
\ltx@gobble{%}
\ltx@gobble{%}
\ltx@gobble{%}
\xspaceaddexceptions{%}
\ltx@gobble{%}
\Hy@xspace@end,\hyper@linkend,\hyper@anchorend
}}%
15.2 Option draft

15.3 PDF/A
15.4 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.

\Hy@nextfalse
\ltx@ifundefined{spanish@sh@sel}\let\texttilde\~
\ltx@ifundefined{galician@sh@sel}\let\texttilde\~
\ltx@ifundefined{estonian@sh@sel}\let\texttilde\~
\if\texttilde\let\texttilde\~
\def\Hy@WrapperDef#1{\begingroup\escapechar=-\xdef\Hy@gtemp{\expandafter\noexpand\csname HyWrap@\string#1\endcsname}}\endgroup
\def\Hy@wrapper@babel#1#2{\begingroup\Hy@safe@activestrue\setdisplayprotect\edef\x{#2}\@onelevel@sanitize\x\toks@{#1}\edef\x{\endgroup\the\toks@{\x}}\x}

\def\Hy@Acrobatmenu#1#2{\leavevmode}
\def\Hy@Acrobatmenu#1#2{\leavevmode}
\edef#1{% 
\noexpand\Hy@wrapper@babel 
\expandafter\noexpand\Hy@gtemp 
\expandafter\def\Hy@gtemp 
} 

\ifHy@hyperfigures 
\Hy@Info{Hyper figures ON} 
\else 
\Hy@Info{Hyper figures OFF} 
\fi 

\ifHy@nesting 
\Hy@Info{Link nesting ON} 
\else 
\Hy@Info{Link nesting OFF} 
\fi 

\ifHy@hyperindex 
\Hy@Info{Hyper index ON} 
\else 
\Hy@Info{Hyper index OFF} 
\fi 

\ifHy@plainpages 
\Hy@Info{Plain pages ON} 
\else 
\Hy@Info{Plain pages OFF} 
\fi 

\ifHy@backref 
\Hy@Info{Backreferencing ON} 
\else 
\Hy@Info{Backreferencing OFF} 
\fi 

\ifHy@typexml 
\Hy@AtEndOfPackage{% 
\RequirePackage{color} 
\RequirePackage{nameref}[2012/07/28] 
} 
\fi 

\Hy@DisableOption{typexml} 

\ifHy@implicit 
\Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined} 
\else 
\Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals} 
\fi 

\def\MaybeStopEarly{% 
\Hy@Message{Stopped early} 
\Hy@AtBeginDocument{\% 
\PDF@FinishDoc 
\gdef\PDF@FinishDoc{} 
} 
\endinput 

\Hy@AtBeginDocument{% 
\let\autoref\ref 
\let\autopageref\pageref 
\ifx\pdfpagemode\empty 
\gdef\pdfpagemode{UseNone} 
\fi 
\global\Hy@backreffalse
15.4.1 Driver loading

Some drivers can be detected. Check for these drivers, whether the given driver option is ok. Otherwise force the right driver or use the default driver.

```latex
\if\Hy@driver\@empty
  \else
  \ifpdf
    \ifx\Hy@driver\Hy@temp
      \else
        \Hy@WarningNoLine{Wrong driver `\Hy@driver.def'; \MessageBreak pdfTeX is running in PDF mode.\MessageBreak Forcing driver `\Hy@temp.def'\MessageBreak}
        \let\Hy@driver\Hy@temp
    \else
      \let\Hy@driver\@empty
    \fi
  \fi
  \else
    \ifx\Hy@driver\Hy@temp
      \else
        \Hy@WarningNoLine{Wrong driver `\Hy@driver.def'; \MessageBreak pdfTeX is not running in PDF mode.\MessageBreak Using default driver\MessageBreak}
        \let\Hy@driver\@empty
    \fi
  \fi
\fi
\fi
```

```latex
\if\Hy@texht\else
  \if\Hy@driver\@empty
    \else
      \ifxetex
        \ifx\Hy@driver\Hy@temp
          \else
            \Hy@WarningNoLine{Wrong driver `\Hy@driver.def'; \MessageBreak XeTeX is running.\MessageBreak Forcing driver `\Hy@temp.def' for XeTeX\MessageBreak}
            \let\Hy@driver\Hy@temp
        \else
          \let\Hy@driver\@empty
        \fi
      \fi
    \else
      \let\Hy@driver\@empty
    \fi
  \fi
  \else
    \ifx\Hy@driver\@empty
      \else
        \def\Hy@temp{hxetex}
        \ifxetex
          \ifx\Hy@driver\Hy@temp
            \else
              \Hy@WarningNoLine{Wrong driver `\Hy@driver.def'; \MessageBreak XeTeX is running.\MessageBreak Forcing driver `\Hy@temp.def' for XeTeX\MessageBreak}
              \let\Hy@driver\Hy@temp
          \else
            \let\Hy@driver\@empty
          \fi
        \fi
      \fi
    \fi
  \fi
```

```latex
```

115
If the driver is not given, find the right driver or use the default driver.

\let\HyOpt@DriverType\ltx@empty
\ifx\HyOpt@CustomDriver\ltx@empty
\def\HyOpt@DriverType{(autodetected)}%
\providecommand*{\Hy@defaultdriver}{hypertex}%
\ifpdf
\ifx\pdfextension@undefined
\def\Hy@driver{hpdftex}%
\else
\def\Hy@driver{hluatex}%
\fi
\else
\ifetex
\def\Hy@driver{hxetex}%
\def\MaybeStopEarly{\Hy@Message{Stopped early}%%
\AtBeginDocument{\PDF@FinishDoc}
\gdef\PDF@FinishDoc{}%}
\else
\ifvtxhtml
\def\Hy@driver{hvtexhtm}%
\MaybeStopEarly{\Hy@Message{Stopped early}%%
\AtBeginDocument{\PDF@FinishDoc}
\gdef\PDF@FinishDoc{}%}
\else
%
Support for open outlines is enabled for Xe\TeX >= 0.9995. I don’t know, if older versions also support this. AFAIK older dvipdfmx versions will break, thus the switch cannot be turned on by default.

\newif\ifHy@DvipdfmxOutlineOpen
\ifxetex
\ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in \else\chardef\SpecialDvipdfmxOutlineOpen\@ne\Hy@DvipdfmxOutlineOpentrue\fi\fi
\begingroup\expandafter\expandafter\expandafter\endgroup \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax\else\ifnum\SpecialDvipdfmxOutlineOpen>\z@\Hy@DvipdfmxOutlineOpentrue\fi\fi

15.4.2 Bookmarks
\def\WriteBookmarks{0}
\def\@bookmarkopenstatus#1{\ifHy@bookmarksopen
\Hy@Info{Bookmarks ON}\if\@pdfpagemode\@empty\def\@pdfpagemode{UseOutlines}\fi\else\let\@bookmarkopenstatus\ltx@gobble\Hy@Info{Bookmarks OFF}\Hy@AtEndOfPackage{\global\let\ReadBookmarks\relax}\fi

The purpose of the \@firstofone-number-space-construct is that no \relax will be inserted by \TeX before the \else:
\ifnum#1<\expandafter\@firstofone\expandafter\@firstofone\expandafter\@firstofone\expandafter\@firstofone\fi
\else
\relax
\fi
\else
-\fi
\fi
\ifHy@bookmarks
\Hy@Info{Bookmarks ON}\fi
\ifx\@pdffagemode\@empty
\def\@pdffagemode{UseOutlines}\fi
\if\else\let\@bookmarkopenstatus\ltx@gobble\Hy@Info{Bookmarks OFF}\Hy@AtEndOfPackage{\global\let\ReadBookmarks\relax}\fi
Add wrapper for setting standard catcodes (babel's shorthands).

\def\Hy@CatcodeWrapper#1{\
    \let\Hy@EndWrap\ltx@empty\
    \def\TMP@EnsureCode##1##2{\edef\Hy@EndWrap{\Hy@EndWrap\catcode##1 \the\catcode##1\relax\catcode##1 ##2\relax}}\
    \TMP@EnsureCode{10}{12}% `\)
    \TMP@EnsureCode{33}{12}% !
    \TMP@EnsureCode{34}{12}% "
    \TMP@EnsureCode{36}{3}% $(math)$
    \TMP@EnsureCode{38}{4}% & (alignment)
    \TMP@EnsureCode{39}{12}% '
    \TMP@EnsureCode{40}{12}% (\
    \TMP@EnsureCode{41}{12}% )
    \TMP@EnsureCode{42}{12}% *
    \TMP@EnsureCode{43}{12}% +
    \TMP@EnsureCode{44}{12}% ,
    \TMP@EnsureCode{45}{12}% -
    \TMP@EnsureCode{46}{12}% .
    \TMP@EnsureCode{47}{12}% /
    \TMP@EnsureCode{58}{12}% :
    \TMP@EnsureCode{59}{12}% ;
    \TMP@EnsureCode{60}{12}% <
    \TMP@EnsureCode{61}{12}% =
    \TMP@EnsureCode{62}{12}% >
    \TMP@EnsureCode{63}{12}% ?
    \TMP@EnsureCode{91}{12}% [\
    \TMP@EnsureCode{93}{12}% ]
    \TMP@EnsureCode{94}{7}% ^ (superscript)
    \TMP@EnsureCode{95}{8}% _ (subscript)
    \TMP@EnsureCode{96}{12}% ~ (active)
    \TMP@EnsureCode{124}{12}% | \}

\HyColor@UseColor expects a macro as argument. It contains the color specification.
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 is 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.
\providecommand*\hyper@chars{\let\#\hyper@hash \let\%\@percentchar \Hy@safe@activestrue}
\def\hyperlink#1#2{\hyper@@link{}{#1}{#2}}
\def\Hy@VerboseLinkStart#1#2{\ifHy@verbose \begingroup \Hy@safe@activestrue \xdef\Hy@VerboseGlobalTemp{(#1) `#2'} \Hy@Info{Reference \Hy@VerboseGlobalTemp} \xdef\Hy@VerboseGlobalTemp{\Hy@VerboseGlobalTemp, line \the\inputlineno} \Hy@Info{Anchor \HyperDestNameFilter{#1}} \endgroup \fi}
\def\Hy@VerboseAnchor#1{\ifHy@verbose \begingroup \Hy@safe@activestrue \Hy@Info{Anchor \HyperDestNameFilter{#1}} \endgroup \fi}
\def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
\def\Hy@VerboseLinkStop{\ifHy@verbose \begingroup \edef\x{\endgroup \write\m@ne{Package `hyperref' Info: End of reference \Hy@VerboseLinkInfo.}} \x \fi}
\def\Hy@AllowHyphens{\relax \ifhmode \penalty\@M \hskip\z@skip \fi}
\DeclareRobustCommand*{\href}{[1][1]{\begingroup \relax \ifhmode \penalty\@M \hskip\z@skip \fi}}
Option `page`.

If a next action is set, then also a new window should be opened. Otherwise AR
reclaims that it closes the current file with discarding the next actions.

Option `pdfremotestartview`.

Option `pdfnewwindow`.
Option ‘ismap’.

```latex
\newif\ifHy@href@ismap
\define@key{href}{ismap}{true}{%
  \Hy@IfUndefined{Hy@href@ismap#1}{%
    \Hy@Error{Invalid value (#1) for key `ismap'.\MessageBreak
    Permitted values are `true' or `false'.\MessageBreak
    Ignoring `ismap'\}%
  }{%
    \csname Hy@href@ismap#1\endcsname
  }%
}%

Option ‘nextactionraw’.

```latex
\let\Hy@href@nextactionraw\@empty
\define@key{href}{nextactionraw}{%
  \edef\Hy@href@nextactionraw{#1}%
  \ifx\Hy@href@nextactionraw\@empty
    \else
    \Hy@Match\Hy@href@nextactionraw{}{(%
      ^\HyPat@ObjRef/|<<.*/S[\]/.+.]+\)?%}
    \}{}{%
      \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
      \Hy@href@nextactionraw\MessageBreak
      The action is discarded%}
    \}%
  \else
  \fi
  \ifx\Hy@href@nextactionraw\@empty
    \else
    \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
  \fi
  \fi
}%
\def\HyPat@ObjRef/{.+}
```

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

```latex
\RequirePackage{url}
\let\HyOrg@url\url
\def\Hurl{\begingroup \Url}
\DeclareRobustCommand*{\nolinkurl}{\hyper@normalise\nolinkurl@}
\def\nolinkurl@#1{\Hurl{#1}}
\DeclareRobustCommand*{\url}{\hyper@normalise\url@}
\def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
\DeclareRobustCommand*{\hyperimage}{\hyper@normalise\hyper@image}
\providecommand\hyper@image[2]{#2}
\def\hypertarget#1#2{%  \ifHy@nesting
\hyper@@anchor{#1}{#2}%
\else
\hyper@@anchor{#1}{relax}#2%
\fi
```

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

We also have a need to give a \LaTeX{} label to a hyper reference, to ease the pain of referring to it later. \texttt{\hyperrefundefinedlink} may be redefined by a user to add colour or other formatting.

We also have a need to give a \LaTeX{} label to a hyper reference, to ease the pain of referring to it later. \texttt{\hyperrefundefinedlink} may be redefined by a user to add colour or other formatting.
16.1 Link box support for XeTeX

\newdimen\XeTeXLinkMargin
\setlength{\XeTeXLinkMargin}{2pt}
\ifxetex
\font\XeTeXLink@font=pzdr at 1sp\relax
\newcommand*{\XeTeXLink@space}{\begingroup\XeTeXLink@font@iii\endgroup}
\newcommand{\XeTeXLinkBox}[1]{\begingroup\leavevmode\sbox\z@{#1}\begingroup\dimen@=\dp\z@\advance\dimen@\XeTeXLinkMargin\setbox\tw@=\llap{\hbox{\XeTeXLink@space}\hss}\dp\tw@=\dp\z@\ht\tw@=\ht\z@\copy\tw@\copy\z@\dimen@=\ht\z@\advance\dimen@\XeTeXLinkMargin\setbox\tw@=\rlap{\hbox{\XeTeXLink@space}}\hspace{\dimen@}}\endgroup
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.
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.

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.

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

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:

If the URL type is 'file', pass it for local opening
if it starts ‘run:’, its to launch an application.

By default, turn run: into file:

D P Story <story@uakron.edu> pointed out that relative paths starting .. fell over. Switched to using \filename@parse to solve this.
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.
18 Option ‘destlabel’

\hyper@newdestlabel

\edef\x{\endgroup
\noexpand\@newl@bel{HyDL}{#1}{#2} \expandafter
\x}

\hyper@destlabel@hook

\providecommand*{\hyper@destlabel@hook}{}
@gobbletwo

Provide a dummy default definition of \hyper@newdestlabel inside the .aux files.

AddLineBeginAux{\string\providecommand\string\hyper@newdestlabel[2]{}%}

19 Compatibility with the \LaTeX2html package

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

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

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

This is really too much. The \LaTeX2html 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.

\def\@latextohtmlX{%
\let\hhyperref\hyperref
\def\hyperref##1##2##3##4{% anchor text for HTML
% text to print before label in print
% label
% post-label text in print
##2\ref{##4}##3%
}
}

20 Forms creation

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

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

20.1 Field flags

The field flags are organized in a bit set.
\RequirePackage{bitset}
Each flag has a option name, an \if switch, and a bit position. The default is always ‘false’, the flag is clear. This is also the default of the switch created by \newif.

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

\HyField@NewFlag
\#1: type: F annot flags, Ff field flags
\#2: PDF name
\#3: PDF position
5724 \def\HyField@NewFlag#1#2{%
5725 \lowercase{\HyField@NewOption{#2}}%
5726 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5727 }

\HyField@NewFlagOnly
5728 \def\HyField@NewFlagOnly#1#2{%
5729 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5730 }

\HyField@NewOption
\#1: option name
5731 \def\HyField@NewOption#1{%
5732 \expandafter\newif\csname ifFld@#1\endcsname
5733 \define@key{Field}{#1}[true]{%
5734 \lowercase{\Field@boolkey{##1}}{#1}%
5735 }
5736 }

\HyField@NewBitsetFlag
Package ‘bitset’ uses zero based positions, the PDF specification starts with one.
\#1: option
\#2: PDF name
\#3: type: F annot flags, Ff field flags
\#4: PDF position
5737 \def\HyField@NewBitsetFlag#1#2#3#4{%
5738 \begingroup
5739 \count@=#4\relax
5740 \advance\count@\m@ne
5741 \def\x##1{%
5742 \endgroup
5743 \expandafter\def\csname HyField@##1\endcsname{##1}%
5744 \expandafter\ifx\csname HyField@##1\endcsname\relax
5745 \expandafter\edef\csname HyField@##1\endcsname{%
5746 \number#4} #2%
5747 )%
5748 \else
5749 \expandafter\edef\csname HyField@##1\endcsname{%
5750 \csname HyField@##1\endcsname
5751 /#2%
5752 )%
5753 \fi
5754 )%
5755 \expandafter\x\expandafter{\the\count@}%
5756 }

\HyField@UseFlag
The bit set is HyField@#1
5757 \def\HyField@UseFlag#1{%
5758 \lowercase{\HyField@UseFlag{#2}}{#1}%
5759 }
\texttt{\HyField@@UseFlag}
\begin{verbatim}
5760 \def\HyField@@UseFlag#1#2{%
5761  \bitsetSetValue{HyField@#2}{%\csname HyField@#2@#1\endcsname}
5762 )%(\csname ifFld@#1\endcsname 1\else 0\fi
5763 )%
5764 }
\end{verbatim}

\texttt{\HyField@SetFlag} \texttt{The bit set is HyField@#1}
\begin{verbatim}
5767 \def\HyField@SetFlag#1#2{%
5768  \lowercase{\HyField@@SetFlag{#2}}{#1}%
5769 }
\end{verbatim}

\texttt{\HyField@@SetFlag}
\begin{verbatim}
5770 \def\HyField@@SetFlag#1#2{%
5771  \bitsetSetValue{HyField@#2}{%\csname HyField@#2@#1\endcsname}
5772 ){1}%
5773 }
\end{verbatim}

\texttt{\HyField@PrintFlags}
\begin{verbatim}
5775 \def\HyField@PrintFlags#1#2{%
5776  \ifHy@verbose
5777    \begingroup
5778    \let\Hy@temp\@empty
5779    \let\MessageBreak\relax
5780    \expandafter\@for\expandafter\x\expandafter:=%
5781      \bitsetGetSetBitList{HyField@#1}\do{%
5782        \edef\Hy@temp{%
5783          \Hy@temp
5784          \csname HyField@#1@\x\endcsname\MessageBreak
5785      )%
5786    }%
5787    \edef\x{\endgroup
5788    \noexpand\Hy@Info{%
5789    Field flags: \%
5790      \expandafter\ifx\expandafter\@nil\x\else/\fi
5791      \bitsetGetDec{HyField@#1} \%
5792      0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5793    \Hy@temp
5794    for \#2\%
5795    )%
5796  )%
5797  }x
5798  \fi
5799 }
\end{verbatim}

\texttt{20.1.1 Declarations of field flags}

“Table 8.70 Field flags common to all field types”
\begin{verbatim}
5800 \HyField@NewFlag{Ff}{ReadOnly}{1}
5801 \HyField@NewFlag{Ff}{Required}{2}
5802 \HyField@NewFlag{Ff}{NoExport}{3}
\end{verbatim}

“Table 8.75 Field flags specific to button fields”
\begin{verbatim}
5803 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
\end{verbatim}
Table 8.77 Field flags specific to text fields

<table>
<thead>
<tr>
<th>Flag</th>
<th>Print</th>
<th>Invisible</th>
<th>Hidden</th>
<th>Locked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pushbutton</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RadioInUnison</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8.79 field flags specific to choice fields

<table>
<thead>
<tr>
<th>Flag</th>
<th>Print</th>
<th>Invisible</th>
<th>Hidden</th>
<th>Locked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sort</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MultiSelect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DoNotSpellCheck</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DoNotScroll</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CommitOnSelChange</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature fields are not supported.

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

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

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

Signature fields are not supported.

- Until 6.76i hyperref uses field option `combo` to set three flags `Combo`, `Edit`, and `Sort`. Option `popdown` sets flag `Combo` only.
- Annotation flags. The form objects are widget annotations. There are two flags for readonly settings, the one in the annotation flags is ignored, instead the other in the field flags is used.
- Flag `Print` is not much useful, because hyperref do not use the appearance entry of the annotations for most fields.
Submit flags. Flag 1 Include/Exclude is not supported, use option noexport instead.

```
\HyField@FlagsSubmit
\def\HyField@FlagsSubmit{% 
\ifcase\@nameuse{Fld@export@\Fld@export} %
% FDF
138
\or
% HTML
\or
% XFDF
\or
% PDF
\fi
\fi
```

20.1.2 Set submit flags
20.1.3 Set annot flags in fields

\HyField@FlagsAnnot

\def\HyField@FlagsAnnot#1{%
\bitsetReset{HyField@F}%
\HyField@UseFlag{F}{Invisible}%
\HyField@UseFlag{F}{Hidden}%
\HyField@UseFlag{F}{Print}%
\HyField@UseFlag{F}{NoZoom}%
\HyField@UseFlag{F}{NoRotate}%
\HyField@UseFlag{F}{NoView}%
\HyField@UseFlag{F}{Locked}%
\HyField@UseFlag{F}{ToggleNoView}%
\HyField@UseFlag{F}{LockedContents}%
\HyField@PrintFlags{F}{#1}%
\bitsetIsEmpty{HyField@F}{%\let\Fld@annotflags\ltx@empty\}%
\edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%\}
%
}

20.1.4 Pushbutton field

\HyField@FlagsPushButton

\def\HyField@FlagsPushButton{%
\HyField@FlagsAnnot{push button field}\
\bitsetReset{HyField@Ff}\
\HyField@UseFlag{Ff}{ReadOnly}\
\HyField@UseFlag{Ff}{Required}\
\HyField@UseFlag{Ff}{NoExport}\
\HyField@SetFlag{Ff}{Pushbutton}\
\HyField@PrintFlags{Ff}{push button field}\
\bitsetIsEmpty{HyField@Ff}{%\
\let\Fld@flags\ltx@empty\
}{}\%

\20.1.5 Check box field

\HyField@FlagsCheckBox\
\def\HyField@FlagsCheckBox{%\
\HyField@FlagsAnnot{check box field}\
\bitsetReset{HyField@Ff}\
\HyField@UseFlag{Ff}{ReadOnly}\
\HyField@UseFlag{Ff}{Required}\
\HyField@UseFlag{Ff}{NoExport}\
\bitsetIsEmpty{HyField@Ff}{%\
\let\Fld@flags\ltx@empty\
}{}\%

\20.1.6 Radio button field

\HyField@FlagsRadioButton\
\def\HyField@FlagsRadioButton{%\
\HyField@FlagsAnnot{radio button field}\
\bitsetReset{HyField@Ff}\
\HyField@UseFlag{Ff}{ReadOnly}\
\HyField@UseFlag{Ff}{Required}\
\HyField@UseFlag{Ff}{NoExport}\
\HyField@UseFlag{Ff}{NoToggleToOff}\
\HyField@SetFlag{Ff}{Radio}\
\HyField@UseFlag{Ff}{RadiosInUnison}\
\bitsetIsEmpty{HyField@Ff}{%\
\let\Fld@flags\ltx@empty\
}{}\%

\20.1.7 Text fields

\HyField@FlagsText\
\def\HyField@FlagsText{%\
\HyField@FlagsAnnot{text field}\
\bitsetReset{HyField@Ff}
20.1.8 Choice fields

```latex
\HyField@FlagsChoice
```

```latex
\def\HyField@FlagsChoice{% 
  \HyField@FlagsAnnot{choice field}% 
  \bitsetReset{HyField@Ff}% 
  \HyField@UseFlag{Ff}{ReadOnly}% 
  \HyField@UseFlag{Ff}{Required}% 
  \HyField@UseFlag{Ff}{NoExport}% 
  \HyField@UseFlag{Ff}{Combo}% 
  \ifFld@combo 
    \HyField@UseFlag{Ff}{Edit}% 
  \fi 
  \HyField@UseFlag{Ff}{Sort}% 
  \HyField@UseFlag{Ff}{MultiSelect}% 
  \ifFld@combo 
    \ifFld@edit 
      \HyField@UseFlag{Ff}{DoNotSpellCheck}% 
    \fi 
  \fi 
  \HyField@UseFlag{Ff}{CommitOnSelChange}% 
  \HyField@PrintFlags{Ff}{choice field}% 
  \bitsetIsEmpty{HyField@Ff}{% 
    \let\Fld@flags\ltx@empty 
  }{% 
    \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}% 
  }% 
} 

```
20.2 Choice field

\HyField@PDFChoices

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

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

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

\def\HyField@PDFChoices#1{% 
\begin{group} 
\global\let\Fld@choices\ltx@empty 
\let\HyTmp@optlist\ltx@empty 
\let\HyTmp@optitem\relax 
\count@=0 \% 
\kv@parse{#1}{\% 
\Hy@pdfstringdef\kv@key\kv@key 
\ifx\kv@value\relax 
\ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7 
\xdef\Fld@choices{\Fld@choices\[(\kv@key)(\kv@key)\]}\% 
\else 
\xdef\Fld@choices{\Fld@choices(\kv@key)}\% 
\fi 
\else 
\xdef\Fld@choices{\Fld@choices(\kv@value(\kv@key))}\% 
\fi 
\fi 
\edef\HyTmp@optlist{\HyTmp@optlist\HyTmp@optitem{\the\count@}{\kv@key}0}\% 
\advance\count@ by 1 \% 
\end{group} 
\xdef\Fld@choices{/Opt[\Fld@choices]} \% 
\ifx\kv@value\relax 
\else 
\pdfstringdef\kv@value\kv@value 
\xdef\Fld@choices{\Fld@choices/V(\kv@value)}\% 
\fi 
\ifx\Fld@default\relax 
\else 
\pdfstringdef\kv@default\kv@default 
\xdef\Fld@choices{\Fld@choices/DV(\kv@default)}\% 
\fi 
\ifx\Fld@value\relax 
\else 
\pdfstringdef\kv@value\kv@value 
\xdef\Fld@choices{\Fld@choices/V(\kv@value)}\% 
\fi 
\fi 
\fi 
\end{group} 

\HyField@@PDFChoices

\def\HyField@@PDFChoices#1#2{% 
\ifx#2\relax 
\else 
\count@=0 \% 
\else 
\pdffontdef\Hy@gtemp\Fld@default \Fld@default 
\xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}\% 
\fi 
\ifx\Fld@value\relax 
\else 
\pdffontdef\Hy@gtemp\Fld@value \Fld@value 
\xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}\% 
\fi 
\fi 
\fi 
\endgroup 

\HyField@PDFChoices
20.3 Forms

\HyField@SetKeys

\def\HyField@SetKeys{%}
\ksetkeys{Field}%
}

\newif\ifFld@checked
\newif\ifFld@disabled
\Fld@checkedfalse
\Fld@disabledfalse

\newcount\Fld@menulength
\newdimen\Field@Width
\newdimen\Fld@charsize
\Fld@charsize=10\p@
\def\Fld@maxlen{0}
\def\Fld@align{0}
\def\Fld@color{0 0 0 rg}
\def\Fld@bcolor{1 1 1}
\def\Fld@bordercolor{1 0 0}
\def\Fld@bordersep{1\p@}
\def\Fld@borderwidth{1}
\def\Fld@borderstyle{S}
\def\Fld@cbsymbol{4}
\def\Fld@rotation{0}
\def\Form{\@ifnextchar[\Form}{\Form[]}
\def\endForm{\@endForm}
\newif\ifForm@html
\Form@htmlfalse
\Form@boolkey#1#2{\
\csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
}
\define@key{Form}{action}{\hyper@normalise\Hy@DefFormAction{#1}}
\def\Hy@DefFormAction{\def\Form@action}
\define@key{Form}{encoding}{\ifx#1\enc@@html\Form@htmltrue\else\Hy@Warning{\MessageBreakForm `encoding' key with `#1'\MessageBreak}\Form@htmlfalse\fi}
\define@key{Form}{method}{\lowercase{\def\Hy@temp{#1}}\@ifundefined{Form@method@\Hy@temp}{\@onelevel@sanitize\Hy@temp}{\Hy@Error{\MessageBreakUnknown method `\Hy@temp'.\MessageBreakKnown values are `post' and `get'\MessageBreak}}}
\@ehc
\{%\let\Form@method\Hy@temp
\ifcase\@nameuse{Form@method@\Hy@temp}\%
\Fld@getmethodfalse
\else
\Fld@getmethodtrue
\fi\%
\}
\def\Form@method{}
\@namedef{Form@method@post}{0}
\@namedef{Form@method@get}{1}
\newif\ifHyField@NeedAppearances
\def\HyField@NeedAppearencestable{false}%
\global\let\ifHyField@NeedAppearaences\iffalse
\else
\global\let\ifHyField@NeedAppearances\iftrue
\fi
\}
\let\ifHyField@NeedAppearaences\iffalse
\edef\Hy@tempa{#1}%
\ifx\Hy@tempa\Hy@true
\HyField@NeedAppearaencestrue%
\else
\ifx\Hy@tempa\Hy@false
\HyField@NeedAppearaencesfalse%
\else
\Hy@Error{%
Unexpected value \Hy@tempa\MessageBreak
of option \@nameuse{NeedAppearances} instead of\MessageBreak
\Hy@true or \Hy@false%
}\@ehc
\fi
\fi
\fi
\fi
\def\Field@boolkey#1#2{%\csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
\else
\def\Hy@WarnHTMLFieldOption#1{%
\Hy@Warning{%
HTML field option \@nameuse{#1}
\MessageBreak
is ignored%
}\@ehc
\fi
\def\Fld@checkequals#1=#2=#3\%{\def\@currDisplay{#1}%
\newtoks\Field@toks
\Field@toks={ }%
\def\Field@addtoks#1#2{%\edef\@processme{\Field@toks{\the\Field@toks space #1="#2"}}%
\@processme
}\@procesme
}\%}
\ifHy@textht
\newtoks\Field@toks
\Field@toks={ }%
\def\Field@addtoks#1#2{%\edef\@processme{\Field@toks{\the\Field@toks space #1="#2"}}%
\@processme
}\@procesme
}\%
\else
\def\Hy@WarnHTMLFieldOption#1{%
\Hy@Warning{%
HTML field option \@nameuse{#1}
\MessageBreak
is ignored%
}\@ehc
\fi
\def\Fld@checkequals#1=#2=#3\%{\def\@currDisplay{#1}%
\def\@currValue{#1}\else
\def\@currValue{#2}\fi\}
def@key{Field}{loc}{%
\def\Fld@loc{#1}\}
def@key{Field}{checked}[true]{%
\lowercase{\Field@boolkey{#1}}{checked}\}%
def@key{Field}{disabled}[true]{%
\lowercase{\Field@boolkey{#1}}{disabled}\}%
\ifHy@texht
\define@key{Field}{accesskey}{%
\Field@addtoks{accesskey}{#1}\}%
\define@key{Field}{tabkey}{%
\Field@addtoks{tabkey}{#1}\}%
\else
\define@key{Field}{accesskey}{%
\Hy@WarnHTMLFieldOption{accesskey}\}%
\define@key{Field}{tabkey}{%
\Hy@WarnHTMLFieldOption{tabkey}\}%
\fi
\define@key{Field}{name}{%
\def\Fld@name{#1}\}
\let\Fld@altname\relax
\define@key{Field}{altname}{%
\def\Fld@altname{#1}\}
\let\Fld@mappingname\relax
\define@key{Field}{mappingname}{%
\def\Fld@mappingname{#1}\}
\define@key{Field}{width}{%
\def\Fld@width{#1}\Field@Width#1\setbox0=\hbox{m}\}%
\define@key{Field}{maxlen}{%
\def\Fld@maxlen{#1}\}%
\define@key{Field}{menulength}{%
\Fld@menulength=#1\relax\}
\define@key{Field}{height}{%
\def\Fld@height{#1}\}%
\define@key{Field}{charsize}{%
\setlength{\Fld@charsize}{#1}\}%

\def\Fld@default{#1}%
\define@key{Field}{align}{%}
\def\Fld@align{#1}%
\define@key{Field}{value}{%}
\Hy@pdfstringdef\Fld@value{#1}%
\define@key{Field}{checkboxsymbol}{%}
\Fld@DingDef\Fld@cbsymbol{#1}%
\define@key{Field}{radiosymbol}{%}
\Fld@DingDef\Fld@radiosymbol{#1}%
\def\Fld@DingDef#1#2{%
  \let\Fld@temp\ltx@empty
  \Fld@@DingDef#2\ding{}\@nil
  \let#1\Fld@temp
}
\def\Fld@@DingDef#1\ding#2#3\@nil{%
  \expandafter\def\expandafter\Fld@temp\expandafter{\Fld@temp#1%}
  \ifx\#3\%
    \expandafter\@gobble
  \else
    \begingroup
      \lccode`0=#2\relax
      \lowercase{\endgroup}
      \expandafter\def\expandafter\Fld@temp\expandafter{\Fld@temp0%}
  \fi
  \expandafter\@firstofone
}\expandafter\@firstofone
\define@key{Field}{rotation}{%}
\def\Fld@rotation{#1}%
\define@key{Field}{backgroundcolor}{%}
\HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
\define@key{Field}{bordercolor}{%}
\HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
\define@key{Field}{color}{%}
\HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
\let\Fld@onclick@code\ltx@empty
\let\Fld@format@code\ltx@empty
\let\Fld@validate@code\ltx@empty
\let\Fld@calculate@code\ltx@empty
\let\Fld@keystroke@code\ltx@empty
\let\Fld@onfocus@code\ltx@empty
\let\Fld@onblur@code\ltx@empty
\let\Fld@onmousedown@code\ltx@empty
\let\Fld@onmouseup@code\ltx@empty
\let\Fld@onenter@code\ltx@empty
\let\Fld@onexit@code\ltx@empty
\def\Hy@temp#1{\%
\expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
}
\def\Hy@temp#1{\%
  \ifHy@pdfa
    \define@key{Field}{#1}{\%
      \Hy@Error{\%
        PDF/A: Additional action `#1' is prohibited\%
      }\@ehc
    \%
  \else
    \define@key{Field}{#1}{\%
  \fi
}
\Hy@temp{keystroke}
\Hy@temp{format}
\Hy@temp{validate}
\Hy@temp{calculate}
\Hy@temp{onfocus}
\Hy@temp{onblur}
\Hy@temp{onenter}
\Hy@temp{onexit}
\let\Fld@calculate@sortkey\ltx@empty
\define@key{Field}{calculatesortkey}{\%
  \def\Fld@calculate@sortkey{#1}%
}
\ifHy@textht
  \def\Hy@temp#1{\%
    \define@key{Field}{#1}{\%
      \Field@addtoks{#1}{##1}%
    }\%
  }\%
\else
  \def\Hy@temp#1{\%
    \define@key{Field}{#1}{\%
      \Hy@WarnHTMLFieldOption{#1}%
    }\%
  }\%
\fi
\Hy@temp{ondblclick}
\Hy@temp{onmousedown}
\Hy@temp{onmouseup}
\Hy@temp{onmouseover}
\Hy@temp{onmousemove}
\Hy@temp{onmouseout}
\Hy@temp{onkeydown}
\Hy@temp{onkeyup}
\def\MakeButtonField#1{% 
  \sbox0{\hskip\Fld@borderwidth bp\#1\hskip\Fld@borderwidth bp} 
  \@tempdima\ht0 \% 
  \advance\@tempdima by \Fld@borderwidth bp \% 
  \ht0\@tempdima 
  \@tempdima\dp0 \% 
  \advance\@tempdima by \Fld@borderwidth bp \% 
  \dp0\@tempdima 
  \box0\relax 
}

\def\DefaultHeightofSubmit{14pt}
\def\DefaultWidthofSubmit{2cm}
\def\DefaultHeightofReset{14pt}
\def\DefaultWidthofReset{2cm}
\def\DefaultHeightofCheckBox{\baselineskip}
\def\DefaultWidthofCheckBox{\baselineskip}
\def\DefaultHeightofChoiceMenu{\baselineskip}
\def\DefaultWidthofChoiceMenu{\baselineskip}
\def\DefaultHeightofText{\baselineskip}
\def\DefaultHeightofTextMultiline{4\baselineskip}
\def\DefaultWidthofText{3cm}
\def\DefaultOptionsofSubmit{print,name=Submit,noexport}
\def\DefaultOptionsofReset{print,name=Reset,noexport}
\def\DefaultOptionsofPushButton{print}
\def\DefaultOptionsofCheckBox{print}
\def\DefaultOptionsofChoiceMenu{\baselineskip}
\def\DefaultOptionsofListBox{print}
\def\DefaultOptionsofComboBox{print,edit,sort}
\def\DefaultOptionsofPopdownBox{print}
\def\DefaultOptionsofRadio{print,notoggletooff}

Default options for the types of \ChoiceMenu.

\ifHy@hyperfigures
  \Hy@Info{Hyper figures ON}\%
\else
  \Hy@Info{Hyper figures OFF}\%
\fi

\ifHy@nesting
  \Hy@Info{Link nesting ON}\%
\else
  \Hy@Info{Link nesting OFF}\%
\fi

\ifHy@hyperindex
  \Hy@Info{Hyper index ON}\%
\else
  \Hy@Info{Hyper index OFF}\%
\fi

\ifHy@backref
  \Hy@Info{backreferencing ON}\%
\else
  \Hy@Info{backreferencing OFF}\%
\fi

21 Setup

\ifHy@hyperfigures
  \Hy@Info{Hyper figures ON}\%
\else
  \Hy@Info{Hyper figures OFF}\%
\fi
22 Low-level utility macros

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

\edef\hyper@hash{\string#}
\edef\hyper@tilde{\string~}
\edef\hyper@quote{\string"}

Support \label before \begin{document}.
\def\currentHref{Doc-Start}
\let\Hy@footnote\currentHref\Hy@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.

\Hy@AtBeginDocument{%
\Hy@pdfstringtrue
\PDF@SetupDoc\let\PDF@SetupDoc\@empty
\Hy@DisableOption{pdfpagecrop}%
\Hy@DisableOption{pdfpagemode}%
\Hy@DisableOption{pdfnonfullscreenpagemode}%
\Hy@DisableOption{pdfdirection}%
\Hy@DisableOption{pdfviewarea}%
\Hy@DisableOption{pdfviewclip}%
\Hy@DisableOption{pdffitclip}%
\Hy@DisableOption{pdfprintclip}%
\Hy@DisableOption{pdfprintarea}%
\Hy@DisableOption{pdfprintscaling}%
\Hy@DisableOption{pdfduplex}%
\Hy@DisableOption{pdfpicktraybypdfsize}%
\Hy@DisableOption{pdfprintpagerange}%
\Hy@DisableOption{pdfnumcopies}%
\Hy@DisableOption{pdfstartview}%
\Hy@DisableOption{pdfstartpage}%
\Hy@DisableOption{pdftoolbar}%
\Hy@DisableOption{pdfmenubar}%
\Hy@DisableOption{pdfwindowui}%
\Hy@DisableOption{pdffitwindow}%
\Hy@DisableOption{pdfcenterwindow}%
\Hy@DisableOption{pdfdisplaydoctitle}%
\Hy@DisableOption{pdfpagelayou}
23 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.

\def\NoHyper{% 
\def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}% 
\def\hyper@anchor##1##2{##2\Hy@xspace@end}% 
\global\let\hyper@livelink\hyper@link 
\def\hyper@link##1##2##3{##3\Hy@xspace@end}% 
\let\hyper@anchor\ltx@gobble 
\let\hyper@anchorstart\ltx@gobble 
\def\hyper@anchorend{\Hy@xspace@end}% 
\let\hyper@linkstart\ltx@gobbletwo 
\def\hyper@linkend{\Hy@xspace@end}% 
\def\hyper@linkurl##1##2{##1\Hy@xspace@end}% 
\def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}% 
\let\Hy@backout\@gobble% 
} 
\def\stop@hyper{% 
\def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}% 
\let\Hy@backout\@gobble 
\let\hyper@anchor\ltx@gobble 
\let\hyper@anchorstart\ltx@gobble 
\def\hyper@anchorend{\Hy@xspace@end}% 
\let\hyper@linkstart\ltx@gobbletwo 
\def\hyper@linkend{\Hy@xspace@end}% 
\def\hyper@linkurl##1##2{##1\Hy@xspace@end}% 
\def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}% 
} 
\def\endNoHyper{% 
\global\let\hyper@link\hyper@livelink 
} 
\let\ltx@gobbletwo\@gobble 
\let\ltx@gobble\@gobble 
\endNoHyper 
24 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 com-
mands, 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:

Some top-level commands:

Ignore star from referencing macros:

25 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
All the code is delayed to `\begin{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.

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

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

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

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

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.
26 Title strings

If options \texttt{pdftitle} and \texttt{pdfauthor} are not used, these informations for the pdf information dictionary can be extracted by the \texttt{\title} and \texttt{\author}.

The case, that \texttt{\title}, or \texttt{\author} are given before hyperref is loaded, is much more complicate, because LaTeX initializes the macros \texttt{\@title} and \texttt{\@author} with LaTeX error and warning messages.
Macro \Hy@UseMaketitleInfos is used in the driver files, before the information entries are used.

The newline macro \newline or \ is much more complicated. 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.

27 Page numbers

This stuff is done by Heiko Oberdiek.

28 Every page

\RequirePackage{atbegshi}[2007/09/09]
28.1 PDF /PageLabels

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

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

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

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

For comparisons with the values of the previous page, some variables are needed:
Definitions for the PDF names of the \TeX\ pendants.
6899 \def\HyPL@arabic{D}\%
6900 \def\HyPL@Roman{R}\%
6901 \def\HyPL@roman{r}\%
6902 \def\HyPL@Alph{A}\%
6903 \def\HyPL@alph{a}\%
6904 \let\HyPL@SlidesSetPage\ltx@empty
6905 \ltx@ifclassloaded{slides}{%
6906 \def\HyPL@SlidesSetPage{%
6907 \advance\c@page\ltx@one
6908 \ifnum\value{page}>\ltx@one
6909 \protected@edef\HyPL@SlidesOptionalPage{%
6910 \Hy@SlidesFormatOptionalPage{\thepage}\%
6911 }\%
6912 \else
6913 \let\HyPL@SlidesOptionalPage\ltx@empty
6914 \fi
6915 \advance\c@page-\ltx@one
6916 \def\HyPL@page{%
6917 \csname the\Hy@SlidesPage\endcsname
6918 \HyPL@SlidesOptionalPage
6919 \}
6920 \}
6921 \}

\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.
6922 \def\HyPL@EveryPage{%
6923 \begingroup
6924 \ifx\HyPL@thisLabel\relax
6925 \let\HyPL@page\thepage
6926 \HyPL@SlidesSetPage
6927 \else
6928 \let\HyPL@page\HyPL@thisLabel
6929 \global\let\HyPL@thisLabel\relax
6930 \fi
6931 \let\HyPL@Type\relax
6932 \ifnum\c@page>0 \%
6933 \ifx\HyPL@SlidesSetPage\ltx@empty
6934 \aftergroup\HyPL@CheckThePage\HyPL@page\@nil
6935 \fi
6936 \fi
6937 \let\Hy@temp Y\%
6938 \ifx\HyPL@Type\HyPL@LastType
6939 \else
6940 \let\Hy@temp N\%
6941 \fi
6942 \ifx\HyPL@Type\relax
6943 \pdfstringdef\HyPL@Prefix{\HyPL@page}\%
6944 \else
6945 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6946 \fi
6947 \pdfstringdef\HyPL@Prefix\HyPL@LastPrefix
6948 \else
6949 \let\Hy@temp N\%
6950 \fi
6951 \if Y\Hy@temp
\HyPL@CheckThePage Macro \HyPL@CheckThePage calls \HyPL@@CheckThePage that does the job.

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

The second check tries to detect \texttt{arabic\{page\}} at the end of the definition text of \thepage.
The help macro `\HyPL@Format` is executed while a `\protected@edef` in the second check method of `\HyPL@@CheckThePage`. The first occurrences of, for example, `\arabic{page}` is marked by `\HyPL@found` that is also defined by `\csname`.

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

Dummy for drivers that does not support `/PageLabel`

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`.

The page labels are written to the PDF catalogue. The command `\Hy@PutCatalog` is defined in the driver files.
28.1.1 pdfTeX and VTeX

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

\pdf@ifdraftmode{\let\Hy@PutCatalog\ltx@gobble}{\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.
This macro adds the entry #1 to \HyPL@Labels.

Package \texttt{atveryend} is used to get behind the final \texttt{\clearpage} and to avoid a \texttt{\clearpage} in \texttt{\AtEndDocument}. Then the PDF catalog entry for \texttt{\PageLabels} is set.

Package \texttt{xetex} is only supported \texttt{\ifx\Hy@pdfencoding\HyPsd@pdfencoding@auto\else\let\Hy@pdfencoding\HyPsd@pdfencoding@auto\fi}. Ignoring \texttt{\messageBreak option setting `unicode=false'}}
\ifx\HyPsd@temp\HyPsd@pdfencoding\auto\let\HyPsd@pdfencoding\HyPsd@temp\else\Hy@Warning{% Xe\TeX\ driver only supports `pdfencoding=unicode|auto'. Ignoring option\MessageBreak \setting `pdfencoding=\HyPsd@temp'\}%\fi\let\HyXeTeX@CheckUnicode\relax⟨/\xetex⟩

28.1.3 pdfmarkbase, dvipdfm, xetex

⟨*pdfmarkbase⟩\begin{group}\@ifundefined{headerps@out}{}{%\toks\expandafter{\Hy@FirstPageHook}\xdef\Hy@FirstPageHook{%\noexpand\headerps@out{systemdict /pdfmark known}{\% userdict /pdfmark systemdict /exec get put}{\% userdict /pdfmark systemdict /pop get put %}{\% userdict /pdfmark systemdict /cleartomark get put %}{\% elseif{%\the\toks@}{\%}\the\toks@\%\endgroup\end{group}\\Hy@PutCatalog⟨/pdfmarkbase⟩

\dvipdfm ⟨xetex⟩\def\Hy@PutCatalog\#1{\@pdfm@mark{docview <<\#1>>}}\def\Hy@PutCatalog\#1{\pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<\#1>>}}}\def\Hy@PutCatalog{\pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<\#1>>}}}\def\Hy@PutCatalog{\pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<\#1>>}}}\if\Hy@pdfpagelabels\HyPL@StorePageLabel\This macro writes a string to the .aux file.\def\HyPL@StorePageLabel\#1{\%\if@filesw\begingroup\edef\Hy@tempa{\the\Hy@abspage<<\#1>>}\immediate\write\@mainaux{\string\HyPL@Entry{\Hy@tempa}{}\endgroup\fi\%\iffHy@pdfpagelabels\}⟨/pdfmarkbase⟩\def\HyPL@StorePageLabel\#1{\%\if@filesw\begingroup\edef\Hy@tempa{\the\Hy@abspage<<\#1>>}\immediate\write\@mainaux{\string\HyPL@Entry{\Hy@tempa}{}\endgroup\fi\%\iffHy@pdfpagelabels\}⟨/pdfmarkbase⟩\def\HyPL@StorePageLabel{\%}164
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.

```
7180 \HyAtBeginDocument{%
7181 \if@filesw
7182 \immediate\write\@mainaux{%
7183 \string\providecommand\string*[1]{\HyPL@Entry[1]}%}
7184 %}
7185 \fi
7186 \ifx\HyPL@Labels@empty
7187 \HyWarningNoLine{Rerun to get /PageLabels entry}%
7188 \else
7189 \HyPL@SetPageLabels
7190 \fi
7191 \let\HyPL@Entry@gobble
7192 %}
\HyPL@Entry
7193 \def\HyPL@Entry#1{%
7194 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{\HyPL@Labels#1%}
7195 %}
7196 %}
7197 \fi
7200 ⟨/pdfmarkbase | dvipdfm | xetex⟩
7201 ⟨*package⟩
7202 \ifx\MaybeStopEarly\relax
7203 \else
7204 \Hy@stoppedearlytrue
7205 \expandafter\MaybeStopEarly
7206 \fi
7207 \Hy@stoppedearlyfalse
```

29 Automated \LaTeX 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 \LaTeX provides, which may be useable. But then it's up to you to make sure these are legal PDF and HTML names. The `hypertexnames=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`. 165
Start with a fallback for equations

\begin{document}

\def\Hy@CounterExists#1{% 
  \begingroup\expandafter\expandafter\expandafter\endgroup 
  \expandafter\ifx\csname c@#1\endcsname\relax 
  \expandafter\@gobble 
  \else 
  \begingroup\expandafter\expandafter\expandafter\endgroup 
  \expandafter\ifx\csname the#1\endcsname\relax 
  \expandafter\expandafter\expandafter\@gobble 
  \else 
  \expandafter\expandafter\expandafter\@firstofone 
  \fi 
  \fi 
  \fi 
  \Hy@CounterExists{section}{% 
  \providecommand\theHequation{\theHsection.\arabic{equation}}% 
  \Hy@CounterExists{part}{% 
  \providecommand\theHpart{\arabic{part}}% 
  \ltx@IfUndefined{thechapter}{% 
    \providecommand\theHsection {\arabic{section}}% 
    \providecommand\theHfigure {\arabic{figure}}% 
    \providecommand\theHtable {\arabic{table}}% 
  }{% 
    \providecommand\theHchapter {\arabic{chapter}}% 
    \providecommand\theHfigure {\theHchapter.\arabic{figure}}% 
    \providecommand\theHtable {\theHchapter.\arabic{table}}% 
  } 
  \providecommand\theHsection {\theHchapter.\arabic{section}}% 
  \providecommand\theHsubsection {\theHsection.\arabic{subsection}}% 
  \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}% 
  \providecommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}% 
  \providecommand\theHthm {\theHsection.\arabic{theorem}}% 
  \providecommand\theHthmhi {\theHsection.\arabic{thesubsection}}% 
  \providecommand\theHthmii {\theHsection.\arabic{thesubsubsection}}% 
  \providecommand\theHthmiii {\theHsection.\arabic{theparagraph}}% 
  \providecommand\theHthmiv {\theHsection.\arabic{theequation}}% 
  \providecommand\theHHfootnote {\arabic{Hfootnote}}% 
  \providecommand\theHmpfootnote{\arabic{mpfootnote}}% 
  \@ifundefined{theHHmpfootnote}{% 
    \let\theHHmpfootnote\theHHfootnote 
  }{% 
  \let\theHHmpfootnote\theHHfootnote 
  } 

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.

\let\H@item\item 
\newcounter{Item} 
\def\theHItem{\arabic{Item}} 
\def\item{% 
  \@hyper@itemfalse 
  \if@nmbrlist\@hyper@itemtrue\fi 
} 
\providecommand\theHenumi {\theHItem} 
\providecommand\theHenumii {\theHItem} 
\providecommand\theHenumiii {\theHItem} 
\providecommand\theHenumiv {\theHItem} 
\providecommand\theHHfootnote {\arabic{Hfootnote}} 
\providecommand\theHmpfootnote{\arabic{mpfootnote}} 
\@ifundefined{theHHmpfootnote}{% 
  \let\theHHmpfootnote\theHHfootnote 
}{} 

\end{document}
Tanmoy asked for this default handling of undefined \texttt{theH<\textit{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 \texttt{\texttt{arabic<\textit{name}>}}. We take the latter course, slightly worriedly.

\begin{verbatim}
\let\H@refstepcounter\refstepcounter
\edef\name@of@eq{equation}\
\edef\name@of@slide{slide}\
\newif\if@hyper@item\@hyper@itemfalse
\newif\if@skiphyperref\@skiphyperreffalse
\def\refstepcounter#1{\ifHy@pdfstring\else\H@refstepcounter{#1}\edef\This@name{#1}\
\ifx\This@name\name@of@slide\else\if@skiphyperref\else\if@hyper@item\stepcounter{Item}\hyper@refstepcounter{Item}\@hyper@itemfalse\else\hyper@refstepcounter{#1}\fi\fi\fi\fi\fi\fi}
\let\Hy@saved@refstepcounter\refstepcounter
\@ifpackageloaded{amsmath}{}{\newif\ifmeasuring@\measuring@false}
\hyper@refstepcounter
\begin{verbatim}
\def\hyper@refstepcounter#1{\edef\This@name{#1}\
\ifx\This@name\name@of@eq\@ifundefined{theH\textit{equation}}{\make@stripped@name{\theequation}}\let\theH\textit{equation}\newname
\HyCnt@ProvideTheHCounter{#1}\
\hyper@makecurrent{#1}\
\ifmeasuring@\else\Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}\fi
\fi\fi\fi}
\let\Hy@saved@refstepcounter\refstepcounter
\@ifpackageloaded{amsmath}{}{\newif\ifmeasuring@\measuring@false}
\hy@refstepcounter
\end{verbatim}
\end{verbatim}

AMSLATEX processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS \texttt{\texttt{ifmeasuring}}, initialized if AMS math is not used.

\begin{verbatim}
\@ifpackageloaded{amsmath}{}{\newif\ifmeasuring@\measuring@false}
\end{verbatim}

AMS
The \texttt{theH<counter>} is not set for counters that are defined before \texttt{hyperref} is loaded. In \texttt{vc\@ckpt}, the clear counter list of the artificial counter \texttt{@ckpt}, \LaTeX{} remembers the defined counters (needed for \texttt{include}). We check the clear counter lists, whether our counter is present. If we found it, then we add the parent counter value to \texttt{theH<counter>}. The \texttt{@elt} list is used in sanitized form for the comparison, because the list might contain other stuff than \texttt{@elts}. Also it simplifies the implementation, because \LaTeX{}, substring search \texttt{\in@} can be used.

\begin{verbatim}
def\HyCnt@ProvideTheHCounter#1{% 
  \@ifundefined{theH#1}{%
    \expandafter\def\csname theH#1\endcsname{}
    \def\Hy@temp{\@elt{#1}}
    \ltx@onelevel@sanitize\Hy@temp
    \let\HyOrg@elt\@elt
    \edef\@elt{\
      \noexpand\HyCnt@LookForParentCounter\theH#1}
    \cl@@ckpt
    \let\@elt\HyOrg@elt
    \expandafter
    \ltx@LocalAppendToMacro\csname theH#1\expandafter\endcsname {\
      \expandafter\@arabic\csname c@#1\endcsname}
  }{}%}
\end{verbatim}

After \texttt{appendix} “chapter” (or “section” for classes without chapter) should be replaced by “appendix” to get \texttt{autoref} work. Macro \texttt{\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.

\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname chapter\endcsname\relax
\def\Hy@chapterstring{section}\
\else
\def\Hy@chapterstring{chapter}\
\fi
\def\Hy@appendixstring{appendix}
\def\Hy@chapapp{\Hy@chapterstring}
\ltx@ifundefined{appendix}{%
\let\HyOrg@appendix\appendix
\def\Hy@AlphNoErr#1{\
\ifnum\value{#1}>26 %
Alph\number\value{#1}\
\else
\ifnum\value{#1}<1 %
Alph\number\value{#1}\
\else
\Alph{#1}\
\fi
\fi
}}%
Because of Babel mucking around, nullify \textlatin when making names. And
\@number because of babel's lrbabel.def.

\begin{verbatim}
\def\hyper@makecurrent#1{\begingroup\Hy@safe@activestrue\edef\Hy@param{#1}\ifx\Hy@param\Hy@chapterstring\let\Hy@param\Hy@chapapp\fi\if\Hy@hypertexnames\let\@number\@firstofone\def\@fnsymbol##1{fnsymbol\number##1}\def\@arabic##1{\number##1}\if\@alph\Hy@Test@alph\else\def\@alph{alph\number}\fi\if\@Alph\Hy@Test@Alph\else\def\@Alph{Alph\number}\fi\if\Hy@naturalnames\let\textlatin\@firstofone\xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}\else\xdef\HyperGlobalCurrentHref{\csname theH#1\endcsname\relax\else H\fi\Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref}\else\Hy@GlobalStepCount\Hy@linkcounter\xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}\fi\endgroup\let\HyperLocalCurrentHref\HyperGlobalCurrentHref\if\Hy@localanchorname\let\@currentHref\HyperLocalCurrentHref\else\global\let\@currentHref\HyperGlobalCurrentHref\fi\Hy@MakeCurrentHref\end{verbatim}

\end{verbatim}
30 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 hypertexnames and plainpages) is used to get the page anchor name as in \Hy@EveryPageAnchor (see sec. 39). The link will not work if option pageanchor is set to false.
31 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.

\def\hypergetref#1{\getrefbykeydefault{#1}{1}{}{??}}
\def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}
32 Package titlesec and titletoc support

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

Package titlesec support:

\ifpackage.loaded(titlesec){
\def\ttl@Hy@steplink#1{\Hy@MakeCurrentHrefAuto{#1*}}
\def\ttl@Hy@saveanchor{\noexpand\Hy@raisedlink{\noexpand\hyper@anchorstart{\@currentHref}\noexpand\hyper@anchorend}}
\def\ttl@Hy@PatchSaveWrite{\begingroup\toks@\expandafter{\ttl@savewrite}\edef\x{\endgroup\def\noexpand\ttl@savewrite{\let\noexpand\@currentHref\noexpand\ttl@Hy@SavedCurrentHref\the\toks@}}\ttl@Hy@refstepcounter{#1}{\let\ttl@b\Hy@raisedlink\def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}\refstepcounter{#1}\let\Hy@raisedlink\ttl@b}}}
\begingroup\toks@\expandafter{\ttl@savewrite}\edef\x{\endgroup\def\noexpand\ttl@savewrite{\let\noexpand\@currentHref\noexpand\ttl@Hy@SavedCurrentHref\the\toks@}}\endgroup
\def\ttl@Hy@refstepcounter{#1}{\let\ttl@b\Hy@raisedlink\def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}\refstepcounter{#1}\let\Hy@raisedlink\ttl@b}}
}\endgroup
\def\ttl@Hy@PatchSaveWrite{}

Package titletoc support:

\ifpackage.loaded(titletoc){
\def\ttl@gobblecontents#1#2#3#4{\ignorespaces}
}\endgroup
\def\ttl@Hy@saveanchor{\Hy@raisedlink{\noexpand\hyper@anchorstart{\@currentHref}\noexpand\hyper@anchorend}}
\def\ttl@Hy@PatchSaveWrite{\begingroup\toks@\expandafter{\ttl@savewrite}\edef\x{\endgroup\def\noexpand\ttl@savewrite{\let\noexpand\@currentHref\noexpand\ttl@Hy@SavedCurrentHref\the\toks@}}\endgroup
\def\ttl@Hy@refstepcounter{#1}{\let\ttl@b\Hy@raisedlink\def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}\refstepcounter{#1}\let\Hy@raisedlink\ttl@b}}
\begingroup\toks@\expandafter{\ttl@savewrite}\edef\x{\endgroup\def\noexpand\ttl@savewrite{\let\noexpand\@currentHref\noexpand\ttl@Hy@SavedCurrentHref\the\toks@}}\endgroup
\def\ttl@Hy@refstepcounter{#1}{\let\ttl@b\Hy@raisedlink\def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}\refstepcounter{#1}\let\Hy@raisedlink\ttl@b}}
}\endgroup
\def\ttl@Hy@PatchSaveWrite{}

33 Package varioref support

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

\ifpackage.loaded(varioref){
\def\Hy@varioref@undefined{{??}{??}{}{}{}}
\ifpackage.loaded(varioref){
\def\vref@pagenum#1#2{\@ifundefined{r@#2}{\expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined}{\edef#1{\getpagerefnumber{#2}}}}
\def\Hy@varioref@undefined{}}
\endgroup
\def\Hy@varioref@undefined{}}
\endgroup
\def\Hy@varioref@undefined{}}
Package varioref redefines \refstepcounter, thus it needs fixing, if the package is loaded *after* hyperref.

\begin{verbatim}
def\Hy@varioref@refstepcounter#1{\stepcounter{#1}\protected@edef\@currentlabel{\csname p@#1\expandafter\endcsname\csname the#1\endcsname}\
\AtBeginDocument{\ifx\refstepcounter\Hy@varioref@refstepcounter\let\H@refstepcounter\refstepcounter\let\refstepcounter\Hy@saved@refstepcounter\fi}
\end{verbatim}

34 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

\begin{verbatim}
@ifpackageloaded{longtable}{% \begingroup \def\y{\LT@array}% \@ifundefined{scr@LT@array}{\@ifundefined{adl@LT@array}{}{\def\y{\adl@LT@array}}}{\def\y{\scr@LT@array}}% \long\def\x\refstepcounter#1#2@sharp#3#4@nil{% \expandafter\endgroup \expandafter\def\y[##1]##2{% \H@refstepcounter{#1}\hyper@makecurrent{table}\let\Hy@LT@currentHref\@currentHref#2@sharp#####4% \expandafter\expandafter\expandafter\x\y[{#1}]{#2}@nil}
\end{verbatim}

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

\begin{verbatim}
\begingroup \def\y{\LT@array}% \@ifundefined{scr@LT@array}{% \@ifundefined{adl@LT@array}{}{\def\y{\adl@LT@array}}}{\def\y{\scr@LT@array}}% \long\def\x#1\ifvoid\LT@foot#2\fi#3@nil{% \endgroup \def\LT@start{#1% \ifvoid\LT@foot#2\fi% \let\@currentHref\Hy@LT@currentHref\Hy@raisedlink{% \hyper@anchorstart{\@currentHref}\hyper@anchorend#3%}}}
\end{verbatim}
35 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 42). 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.

\let\new@refstepcounter\refstepcounter
\let\H@equation\equation
\let\H@endequation\endequation
\@ifpackageloaded{amsmath}{%
  \long\def\Hy@temp{%
    \incr@eqnum
    \mathdisplay@push
    \st@rredfalse \global\@eqnswtrue
    \mathdisplay{equation}%
  }%
  \ifx\Hy@temp\equation%
    \expandafter\ifx\csname if@fleqn\expandafter\endcsname\csname iftrue\endcsname
    \else
      \long\def\equation{%
        \mathdisplay@push
        \st@rredfalse \global\@eqnswtrue
        \mathdisplay{equation}%
        \incr@eqnum
      }%
  \fi
  \fi
}{%
  \def\equation{%
    \let\refstepcounter\new@refstepcounter
    \H@equation
    \@ifundefined{theHequation}{% }
    \make@stripped@name{\theequation}%
    \let\theHequation\newname
    \hyper@makecurrent{equation}%
  }%
}\mathopen
is needed in case the equation starts with an unary minus, for example.

\mathopen
\let\refstepcounter\H@refstepcounter
\H@equation
\@ifundefined{theHequation}{% }
\make@stripped@name{\theequation}%
\let\theHequation\newname
\hyper@makecurrent{equation}%
\mathclose
My goodness, why can’t \LaTeX be consistent? Why is \eqnarray set up differently from other objects?
People (you know who you are, Thomas Beuth) sometimes make an \texttt{eqnarray} where all the lines end with \texttt{\notag}, so there is no suitable anchor at all. In this case, pass by on the other side.

\newif\if@eqnstar
\@eqnstarfalse
\let\H@eqnarray\eqnarray
\let\H@endeqnarray\endeqnarray
\def\eqnarray{\let\Hy@reserved@a\relax
\def\@currentHref{}%\H@eqnarray\if@eqnstar
\else\ifx\\@currentHref\%
\else\ifx\theequation\%
\make@stripped@name{\theequation}%
\let\theequation\newname
\fi
\fi\fi\mathopen{%\H@raisedlink{%\hyper@makecurrent{equation}%
\mathopen{%\H@raisedlink{%\hyper@anchorstart{\@currentHref}{}
\hyper@anchorend%\H@raisedlink{%}}%\fi}}%\else\fi\fi
\def\endeqnarray{\H@endeqnarray}
}

This is quite heavy-handed, but it works for now. If its an \texttt{eqnarray*} we need to disable the hyperref actions. There may well be a cleaner way to trap this. Bill Moss found this.

\@namedef{eqnarray*}{\def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray}
\@namedef{endeqnarray*}{\nonumber\endeqnarray\@eqnstarfalse}

Then again, we have the \texttt{subeqnarray} package. Tanmoy provided some code for this:

\ltx@IfUndefined{subeqnarray}{}{\let\H@subeqnarray\subeqnarray
\let\H@endsubeqnarray\endsubeqnarray
\def\subeqnarray{\let\Hy@reserved@a\relax
\@ifundefined{theHequation}{}{\make@stripped@name{\theequation}%
\let\theequation\newname
\hyper@makecurrent{equation}%
\mathopen{%\hyper@anchorstart{\@currentHref}{}
\hyper@anchorend%\fi}}%\else\fi\fi\def\endsubeqnarray{%\H@endsubeqnarray
}

\ltx@IfUndefined{subeqnarray}{}{\def\subeqnarray{%\let\Hy@reserved@a\relax
\@ifundefined{theHequation}{}{\make@stripped@name{\theequation}%
\let\theequation\newname
\hyper@makecurrent{equation}%
\mathopen{%\hyper@anchorstart{\@currentHref}{}
\hyper@anchorend%\fi}}%\else\fi\fi
\def\endsubeqnarray{%
The aim of this macro is to produce a sanitized version of its argument, to make it a safe label.

\def\make@stripped@name#1{\begingroup\escapechar\m@ne\global\let\newname@empty\protected@edef\Hy@tempa{#1}\edef\@tempb{%\noexpand\@tfor\noexpand\Hy@tempa:=%\expandafter\strip@prefix\meaning\Hy@tempa }%\@tempb\do{%\if\Hy@tempa\else\if\Hy@tempa\else\xdef\newname{\newname\Hy@tempa}\fi\fi}%\endgroup}

Support for amsmath's subequations:
\begin{group}\expandafter\expandafter\expandafter\endgroup\expandafter\ifx\csname subequations\endcsname\relax\else\let\HyOrg@subequations\subequations\def\subequations{%\stepcounter{equation}\protected@edef\theHparentequation{%\@ifundefined{theHequation}\theequation\theHequation}\addtocounter{equation}{-1}\HyOrg@subequations\def\theHequation{\theHparentequation\alph{equation}}\ignorespaces}\fi\endgroup\else\let\HyOrg@subequations\subequations\def\subequations{%\stepcounter{equation}\protected@edef\theHparentequation{%\@ifundefined{theHequation}\theequation\theHequation}\addtocounter{equation}{-1}\HyOrg@subequations\def\theHequation{\theHparentequation\alph{equation}}\ignorespaces}\fi\endgroup\fi

Support for package amsthm (Daniel Müllner): also cleveref.
\Hy@AtBeginDocument{%\@ifpackageloaded{cleveref}{%\let\Hy@savedthm\@thm\def\@thm{%\ifhmode\unskip\fi\Hy@savedthm}\let\thm@indent\indent % indent\thm@headfont\scshape% heading font small caps\def\Hy@tempa#1#2#3{%\let\Hy@temp#1\#2\#3\%\ifhmode\unskip\unskip\par\fi\normalfont}Class amsbook uses a different definition of \@thm, where two lines are added (thanks to Dan Luecking for his analysis):
\let\thm@indent\indent % indent\thm@headfont\scshape% heading font small caps\def\Hy@temp#1#2#3{%\let\Hy@temp#1\#2\#3\%\ifhmode\unskip\unskip\par\fi\normalfont}177
non \texttt{amsthm} case, remove final space on line before a theorem for github issue 11.

\begin{verbatim}
36 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 \texttt{\footnotemark} and \texttt{\footnotetext} are used, force them to use \texttt{un-hyper original}.

\begin{verbatim}
\ifHy@hyperfootnotes
\newcounter{Hfootnote}
\let\H@@footnotetext\@footnotetext
\let\H@@footnotemark\@footnotemark
\def\@xfootnotenext[#1]{
  \begingroup
  \csname c@\mpfn\endcsname #1\relax
  \unrestored@protected@xdef\@thefnmark{\thempfn}\endgroup
  \ifx\@footnotetext\@mpfootnotetext
    \expandafter\H@@mpfootnotetext
  \else
    \expandafter\H@@footnotetext
  \fi
}
\def\@xfootnotemark[#1]{
  \begingroup
  \c@footnote #1\relax
  \unrestored@protected@xdef\@thefnmark{\thefootnote}\endgroup
  \H@@footnotemark
}
\let\H@@mpfootnotetext\@mpfootnotetext
\long\def\@mpfootnotetext#1{\H@@mpfootnotetext{\ifHy@nesting
  \expandafter\ltx@firstoftwo
\else
  \expandafter\ltx@secondoftwo
\fi
\Hy@footnote@currentHref}{#1}}
\end{verbatim}
\end{verbatim}

\end{verbatim}

180
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.

Tabularx causes footnote problems, disable the linking if that is loaded. Since v6.82i footnotes are only disabled inside the environment ‘tabularx’.

\@ifpackageloaded{tabularx}{%
Support for footnotes in p columns of longtable. Here \footnote commands are split 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.

Footnotes for fancyvrb (Fix by Manuel Pégourié-Gonnard).
KOMA-Script defines \footref that uses both \ref and \@footnotemark resulting in two links, one of them wrong.

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

\caption 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.

37 Float captions
If we cannot have nesting, the anchor is empty.
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.

\HyNew@float@makebox is introduced as feature request of Axel Sommerfeldt to make the life easier for his package \texttt{caption}.

\let\Hy@float@c@ption\@caption
\newcommand\HyNew@float@makebox[1]{\HyOrg@float@makebox{#1}\relax
\ifx\Hy@float@currentHref@undefined
\else
\expandafter\hyper@anchor\expandafter{\Hy@float@currentHref}
\fi
\global\let\Hy@float@currentHref@undefined
\fi
\if\@ifpackageloaded{float}{}
\def\Hy@float@c@ption{\ifx\Hy@float@currentHref@undefined
\hyper@makecurrent{\@captype}\global\let\Hy@float@currentHref@currentHref
\else
\let\@currentHref\Hy@float@currentHref\@currentHref
\fi\float@c@ption}
\let\HyOrg@float@makebox\float@makebox
\let\float@makebox\HyNew@float@makebox
}}
\langle/package\rangle
\langle/*check*/\checklatex[1999/06/01 - 2000/06/01]
\checkcommand\def\caption{\if\@captype@undefined
\latex@error{\caption outside float}@ehd
\expandafter\gobble\expandafter{\caption outside float}@ehd
\else
\refstepcounter{captype}
\expandafter\firstofone\expandafter{\caption}
\fi
\fi
\if\@ifpackageloaded{float}{}
\def\caption{\if\@captype@undefined
\hyper@makecurrent{\@captype}\global\let\@currentHref\currentHref
\else
\let\@currentHref\currentHref\@currentHref
\fi\caption}
\let\float@makebox\HyNew@float@makebox
\let\float@makebox\HyOrg@float@makebox
}}
\endgroup
38 Bibliographic references

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

However, let’s make an attempt to get `natbib` right, because that’s a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```latex
\def\hyper@natlinkstart#1{% 
  \Hy@backout{#1} 
  \hyper@linkstart{cite}{cite.#1} 
  \def\hyper@nat@current{#1} }
\def\hyper@natlinkend{% 
  \hyper@linkend 
} 
\def\hyper@natlinkbreak#1#2{% 
  \hyper@linkend#1\hyper@linkstart{cite}{cite.#2} 
} 
\def\hyper@natanchorstart#1{% 
  \Hy@raisedlink{\hyper@anchorstart{cite.#1}} 
} 
\def\hyper@natanchorend{\hyper@anchorend} 
```

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

```latex
\ltx@IfUndefined{NAT@parse}{% 
  \providecommand*{\@extra@binfo}{} 
  \providecommand*{\@extra@b@citeb}{} 
  \def\bibcite#1#2{% 
    \@newl@bel{b}{#1\@extra@binfo}{% 
      \hyper@@link[\cite]{}{cite.#1\@extra@b@citeb}{#2} 
    }% 
  }% 
  \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.”.

```latex
\let\Hy@bibcite\bibcite 
\begin{group} 
\@ifundefined{bbl@cite@choice}{% 
  \g@addto@macro{bbl@cite@choice}{% 
    \let\bibcite\Hy@bibcite 
}{} 
```

187
\@BIBLABEL is working around a ‘feature’ of Rev\TeX.

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

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

\@ifundefined{@CITE}{\def\@CITE{\@cite}}{}
\providecommand*{\@extra@b@citeb}{}
\def\@CITEX[#1]#2{\let\@citea\@empty\leavevmode\unskip^{\scriptstyle\@CITE{\@for\@citeb:=#2\do{\@citea\def\@citea{,\penalty\@m\ }\edef\@citeb{\expandafter\@firstofone\@citeb}\if@filesw\immediate\write\@auxout{\string\citation{\@citeb}}\fi\@ifundefined{b@\@citeb\@extra@b@citeb}{\mbox{\reset@font\bfseries ?}\G@refundefinedtrue\@latex@warning{Citation `\@citeb' on page \thepage \space undefined}}{\csname b@\@citeb\@extra@b@citeb\endcsname}}}}
No, life is too short. I am not going to understand the Revtex \@collapse macro, I shall just restore the original behaviour of \cite; sigh. This is SO vile.

```latex
\def\cite[#1]{% 
  \let\@citea\@empty 
  \cite{ 
  \@for\@citeb:=#2\do{ 
    \@citea 
    \def\@citea{,\penalty\@m\ } 
    \edef\@citeb{\expandafter\@firstofone\@citeb} 
    \if@filesw 
      \immediate\write\@auxout{\string\citation{\@citeb}}% 
    \fi 
    \if@filesw 
      \immediate\write\@auxout{\string\citation{\@citeb}}% 
    \fi 
    \@ifundefined{b@\@citeb\@extra@b@citeb}{% 
      \mbox{\reset@font\bfseries ?} 
      \G@refundefinedtrue 
      \@latex@warning{Citation `\@citeb' on page \thepage \space undefined}% 
    }{% 
      \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}% 
    }% 
  }% 
}}%
```

38.1 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.

```latex
\if@fileswloaded{harvard}% 
\Hy@AtBeginDocument{% 
\Hy@Info{*** compatibility with harvard ****}% 
\Hy@raiselinksfalse 
\def\harvardcite#1#2#3#4{% 
\global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{cite.#1}{#2}}% 
\global\@namedef{HAR@an@#1}{\hyper@@link[cite]{cite.#1}{#3}}% 
\global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{cite.#1}{#4}}% 
\global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}% 
}% 
\HAR@citetoaux#1{% 
\if@filesw 
  \immediate\write\@auxout{\string\citation{#1}}% 
\fi 
\ifHy@backref 
  \ifx\@empty\@currentlabel 
    \else 
      \ifx\@empty\@currentlabel 
        \else 
          \ifx\@empty\@currentlabel 
            \else 
              \fi 
            \fi 
          \fi 
        \fi 
      \fi 
    \fi 
  \fi 
\fi 
\fi 
\fi 
\fi 
```
\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:

\long\def\HAR@checkcitations#1#2#3#4#5{%
  \def\HAR@tempa{\hyper@link[cite]{cite.#1}{#2}}%
  \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa%
    \def\HAR@tempa{\hyper@link[cite]{cite.#1}{#3}}%
    \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa%
      \def\HAR@tempa{\hyper@link[cite]{cite.#1}{#4}}%
      \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa%
        \else\fi
  \else\fi
  \fi
  \@tempswatrue
  \fi
  \@tempswatrue
  \else
  \@tempswatrue
  \fi
  \@tempswatrue
  \fi
  \@tempswatrue
  \fi
  \@tempswatrue
  \fi

\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:
38.2 Package chicago

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

\citeN
\def\citeN{% 
\def\@citeseppen{-1000}%
\def\@cite##1##2{##1}%
\def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
@citedata@opt}

\shortciteN
\def\shortciteN{% 
\def\@citeseppen{-1000}%
\def\@cite##1##2{##1}%
\def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
@citedata@opt}

@citedata@opt
\def\@citedata@opt{\let\@cite@opt\@empty 
@ifnextchar [ { 
\@tempswatrue 
\@citedata@opt 
}\@tempswafalse 
\@citedata@opt[]}

@citedata@opt
\def\@citedata@opt[#1]{\def\@cite@opt{, #1} 
\@citedata@opt[#1]}

39 Page numbers

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

This where we supply a destination for each page.

\ltx@ifclassloaded{slides}{

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.

% In newer \LaTeX\ releases this is defined to put a \verb|\%| at the end of the \texttt{toc} file.
\begin{macrocode}
\providecommand\protected@file@percent{}
\end{macrocode}

40 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.
8605 \Hy@Warning{%
8606  No destination for bookmark of \string\addcontentsline,%
8607  \MessageBreak destination is added%
8608 }%
8609 \phantomssection
8610 \fi
8611 \expandafter\ifx\csname toclevel@#2\endcsname\relax
8612 \begingroup
8613 \def\Hy@tempa{#1}%
8614 \ifx\Hy@tempa\Hy@bookmarkstype
8615 \Hy@WarningNoLine{%
8616  bookmark level for unknown #2 defaults to 0%
8617 }%
8618 \else
8619 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8620 \fi
8621 \endgroup
8622 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
8623 \fi
8624 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
8625 \Hy@writebookmark{\csname the#2\endcsname}{#3}{\@currentHref}{\Hy@toclevel}{#1}%
8626 \ifHy@verbose
8627 \begingroup
8628 \edef\Hy@tempa{#3}%
8629 \@onelevel@sanitize\Hy@tempa
8630 \let\temp@online\on@line
8631 \let\on@line\@empty
8632 \Hy@Info{%
8633  bookmark\temp@online:MessageBreak
8634  thecounter {\csname the#2\endcsname}MessageBreak
8635  text {\Hy@tempa}MessageBreak
8636  reference {\@currentHref}MessageBreak
8637  toclevel {\Hy@toclevel}MessageBreak
8638  type {#1}%
8639 }%
8640 \endgroup
8641 \fi
8642 \addtocontents{#1}{%
8643 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protect@file@percent
8644 }%
8645 \endgroup
8646 \fi
8647 \endgroup
8648 \contentsline The page number might be empty. In this case the link for the page number is suppressed to avoid little link boxes.
8651 \def\contentsline#1#2#3#4{%}
8652 \begingroup
8653 \Hy@safe@active@true
8654 \edef\x{\endgroup
8655 \def\noexpand\Hy@tocdestname{#4}%
8656 }\x
8657 \ix\Hy@tocdestname\ltz\empty
41 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.

\let\H@definecounter@#1\H@definecounter
\def\@definecounter#1{\H@definecounter{#1}\
\expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}}

But what if they have used the optional argument to e.g. \texttt{newtheorem} to
determine when the numbering is reset? OK, we’ll trap that too.

\let\H@newctr@#1\H@newctr
\let\H@newctr\@newctr
42 AMSLaTEX 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 (SR).

Version 6.77p uses a patch by Ross Moore.

Only play with \seteqlebal if we are using pdftex. Other drivers cause problems; requested by Michael Downes (AMS).
\maketag@@@{(\ignorespaces#1\unskip)}% 
}% \def\eqref#1{\textup{\H@tagform@{\ref{#1}}}}

42.1 \texttt{\@addtoreset} and \texttt{\numberwithin} patches

\texttt{\@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 \texttt{\theHcounter} is redefined in order to add the parent counter.

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

\texttt{\@ifpackageloaded{amsmath}{\renewcommand*{\numberwithin}[3]{\arabic}{% \@ifundefined{c@#2}{\@nocnterr{#2}}{\@ifundefined{c@#3}{\@nocnterr{#3}}{\HyOrg@addtoreset{#2}{#3}%; \@xp\xdef\csname the#2\endcsname{\@xp\@nx\csname the#3\endcsname .\@nx#1{#2}}}%; \@xp\xdef\csname theH#2\endcsname{\@xp\@nx\csname the\@ifundefined{theH#3}{}H#3\endcsname .\@nx#1{#2}}}%; \Hy@WarningNoLine{198}}}}
\string\numberwithin\space of package `amsmath' %
only fixed\MessageBreak
for version 2000/06/06 v2.12 or newer%
}\%
}\%
}\{}

43 Included figures
Simply intercept the low level graphics package macro.
\ifHy@hyperfigures
\let\Hy@Gin@setfile\Gin@setfile
\def\Gin@setfile#1#2#3{\hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}\}%
\fi
\Hy@DisableOption{hyperfigures}

44 hyperindex entries
Internal command names are prefixed with \HyInd@.

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

This section is poor stuff; it’s open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.
\ifHy@hyperindex
\def\HyInd@ParenLeft{(}%
\def\HyInd@ParenRight{)}%
\def\hyperindexformat#1#2{\let\HyOrg@hyperpage\hyperpage
\let\hyperpage\@firstofone
#1{\HyOrg@hyperpage{#2}}\%
\let\hyperpage\HyOrg@hyperpage
\Hy@nextfalse
\@ifpackageloaded{multind}{\Hy@nexttrue}{}%
\@ifpackageloaded{index}{\Hy@nexttrue}{}%
\@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
\begingroup
\lccode`|=`\HyInd@EncapChar\relax
\lccode`\|=`\relax
\lowercase{\endgroup
\ifHy@next
\let\HyInd@org@wrindex\@wrindex
\def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}
\def\HyInd@@wrindex#1#2|#3|#4\{
\ifx\#3\%
\HyInd@org@wrindex{#1}{#2|hyperpage}\
\else
\HyInd@@@wrindex{#1}{#2}#3\%
199
The definition of \texttt{\nohyperpage} is just a precaution. It is used to mark code that does not belong to a page number, but \texttt{\nohyperpage} is never executed.

\nohyperpage

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.

\texttt{\hyperpage\#1}(\#1)
The argument of \hyperpage can be empty. And the line breaking algorithm of Makeindex can introduce spaces. So we have to remove them.

\begin{verbatim}
\def\HyInd@pagelink#1{\begingroup\toks@={}\HyInd@removespaces#1 \@nil\endgroup}
\def\HyInd@removespaces#1 #2\@nil{\toks@=\expandafter{\the\toks@#1}\
\ifx#2\%\edef\x{\the\toks@}\ifx\x\@empty\hyperlink{page.\the\toks@}{\the\toks@}\else\fi\
\else\ltx@ReturnAfterFi{\HyInd@removespaces#2\@nil}\fi}
\def\@commahyperpage#1{\@@commahyperpage#1, ,\}
\def\@@commahyperpage#1, #2,#3\{\ifx#2\%\HyInd@pagelink{#1}\else\HyInd@pagelink{#1}, \HyInd@pagelink{#2}\fi}
\def\HyInd@hyperpage#3\@nil{\ifx\Hy@temp\@empty\else\ltx@ReturnAfterFi{\HyInd@hyperpage#3\@nil}\fi}
\def\HyInd@@hyperpage#1{\@hyperpage#1----\}
\def\@hyperpage#1--#2--#3\{\ifx\#2\%\@commahyperpage{#1}\else\HyInd@pagelink{#1}--\HyInd@pagelink{#2}\fi}
\def\@ifclassloaded{foils}{\providecommand*\ext@table{lot}\providecommand*\ext@figure{lof}}{}
\end{verbatim}

45 Compatibility with foiltex

\ifclassloaded{foils}{% 
\providecommand*\ext@table{lot} % 
\providecommand*\ext@figure{lof} % 
}
46 Compatibility with seminar slide package

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

\@ifclassloaded{seminar}{\Hy@seminarslidestrue\providecommand\theHslide{\arabic{slide}}}{\Hy@seminarslidesfalse}
\@ifpackageloaded{slidesec}{\providecommand\theHslidesection{\arabic{slidesection}}\providecommand\theHslidesubsection{\theHslidesection.\arabic{slidesubsection}}}{}
\def\slide@heading[#1]{\H@refstepcounter{slidesection}\@addtoreset{slidesubsection}{slidesection}\addtocontents{los}{\protect\l@slide{\the\c@slidesection}{\ignorespaces#1}{\@SCTR}{slideheading.\theslidesection}}}\def\Hy@tempa{#2}\ifx\Hy@tempa\@empty{}\else{\edef\@currentlabel{\csname p@slidesection\endcsname\theslidesection}}\gdef\theslideheading{#1}\gdef\theslidesubheading{}}\ifHy@bookmarksnumbered\def\Hy@slidetitle{\theslidesection\space #1}\else\def\Hy@slidetitle{#1}\fi\ifHy@hypertexnames\ifHy@naturalnames\hyper@@anchor{slideheading.\theslidesection}{\relax}\Hy@writebookmark{\theslidesection}{\Hy@slidetitle}{slideheading.\theslidesection}{1}{toc}\else\hyper@@anchor{slideheading.\theHslidesection}{\relax}\Hy@writebookmark{\theHslidesection}{\Hy@slidetitle}{slideheading.\theHslidesection}{1}{toc}\fi\fi\else\fi
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.)

\ifHy@texht
\expandafter\endinput
\fi
\let\real@setref\@setref
\def\@setref#1#2#3{% csname, extract group, refname
\ifx#1\relax
\protect\G@refundefinedtrue
\fss@text{\reset@font\bfseries ??}
\@latex@warning{Reference `#3' on page \thepage \space undefined%}
\else
\expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}{#3}{#4}{#5}{#6}
\fi}
\def\@pagesetref#1#2#3{% csname, extract macro, ref
\ifx#1\relax
\protect\G@refundefinedtrue
\fss@text{\reset@font\bfseries ??}
\else
\expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}{#3}{#4}{#5}{#6}
\fi

\Hy@setref@link extracts the reference information entries, because \hyper@@link does not expand arguments for the automatic link type detection.
Now some extended referencing. \ref* and \pageref* are not linked, and \autoref prefixes with a tag based on the type.

\def\HyRef@StarSetRef#1{\begingroup\Hy@safe@activestrue\edef\x{#1}\@onelevel@sanitize\x\edef\x{\endgroup\noexpand\HyRef@@StarSetRef\expandafter\noexpand\csname r@\x\endcsname\x}\%}
\def\HyRef@@StarSetRef#1#2#3{\ifx#1\@undefined\let#1\relax\fi\real@setref#1#3{#2}\%}
\def\@refstar#1{\HyRef@StarSetRef{#1}\@firstoffive\%}
\def\@pagerefstar#1{\HyRef@StarSetRef{#1}\@secondoffive\%}
\def\@namerefstar#1{\HyRef@StarSetRef{#1}\@thirdoffive\%}
\Hy@AtBeginDocument{%}
\if@ifpackageloaded{varioref}{%
\leavevmode is added to make package wrapfigure happy, if \autoref starts a paragraph.
Support for package \showkeys.

\providecommand*{\AMSautorefname}{\equationautorefname}
\providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
\providecommand*{\Itemautorefname}{\itemautorefname}
\providecommand*{\itemautorefname}{item}
\providecommand*{\equationautorefname}{Equation}
\providecommand*{\footnoteautorefname}{footnote}
\providecommand*{\itemautorefname}{item}
\providecommand*{\figureautorefname}{Figure}
\providecommand*{\tableautorefname}{Table}
\providecommand*{\partautorefname}{Part}
\providecommand*{\appendixautorefname}{Appendix}
\providecommand*{\chapterautorefname}{chapter}
47 Configuration files

47.1 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.

Therefore such strings should be passed through \texttt{\Hy@pstringdef}. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdfTeX offers \texttt{pdfescapestring}.
This driver is for Han The Thanh’s \TeX variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness. Set PDF version if requested by option pdfversion.

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

\let\Hy@pdfminorversion\relax
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname pdfminorversion\endcsname\relax
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
\else
\def\Hy@pdfminorversion{\pdfoptionpdfminorversion}\
\fi
\else
\def\Hy@pdfminorversion{\pdfminorversion}\
\fi
\@ifundefined{Hy@pdfminorversion}{%
\PackageInfo{hyperref}{PDF version is not set, because pdf\TeX is too old (<1.10a)}% 
}%
The PDF version number could not be set, because some PDF objects are already written:

The version should be set as early as possible:

\space
\expandafter\string\Hy@pdfminorversion=\Hy@pdfversion
\string\relax
\ifnum\Hy@pdfversion<5
\tx\ifundefined{pdfobjcompresslevel}{(%
}\%
\MessageBreak
\space
\string\pdfobjcompresslevel=0\string\relax
}%
\fi
\Hy@temp@A
}%
\fi
\PackageInfo{hyperref}{%
\expandafter\string\Hy@pdfminorversion=
umber\Hy@pdfversion%
}%
\edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
\Hy@DisableOption{pdfversion}%
\ifHy@ocgcolorlinks
\PDF@ifdraftmode{}{%
\immediate\pdfobj{%
<<
/Type/OCG
/Name(View)%
/Usage<%-
/Print<%-
/PrintState/OFF%
>>%
/View<%-
/ViewState/ON%
>>%
}%
\edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
}%
\edef\OBJ@OCG@view{\the\pdflastobj}\space 0 R}%
\immediate\pdfobj{%
<<
/Type/OCG
/Name(Print)%
/Usage<%-
/Print<%-
/PrintState/ON%
>>%
/View<%-
/ViewState/OFF%
>>%
}%
First, allow for some changes and additions to pdftex syntax:

First set up the default linking

First define the anchors:

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

\providecommand*{\@pdfborder}{0 0 1}
\providecommand*{\@pdfborderstyle{}}
\def{\Hy@undefinedname{UNDEFINED}}
\def{\find@pdflink#1#2{\leavevmode\protected@edef{\Hy@testname{#2}}\ifx{\Hy@testname{\@empty}\Hy@Warning{\Empty destination name, using `\Hy@undefinedname'}\let{\Hy@testname{\Hy@undefinedname}}\else{\Hy@pstringdef{\Hy@testname}{\expandafter{\HyperDestNameFilter{\expandafter{\Hy@testname}}}}\Hy@StartlinkName{\ifHy@pdfa/F 4\fi\Hy@setpdfborder\Hy@setpdfhighlight\ifx{\CurrentBorderColor{\relax}\else/C[\CurrentBorderColor]\fi\Hy@testname}\expandafter{\Hy@colorlink{\csname @#1color\endcsname}}}}\fi}}
\def{\Hy@StartlinkName#1#2{\pdfstartlink attr{#1}goto name{#2}}}\def{\close@pdflink{\Hy@endcolorlink\Hy@VerboseLinkStop\pdfendlink}}\def{\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}}\def{\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}}\def{\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}}\def{\hyper@linkstart#1#2{\Hy@VerboseLinkStart{#1}{#2}}}
\ltx@ifundefined{@#1bordercolor}{% 
\let\CurrentBorderColor\relax 
\edef\CurrentBorderColor{\csname @#1bordercolor\endcsname} %
\find@pdflink{#1}{#2}{% 
\def\hyper@linkend{\close@pdflink}
\def\hyper@link#1#2#3{% 
\Hy@VerboseLinkStart{#1}{#2} %
\ltx@ifundefined{@#1bordercolor}{% 
\let\CurrentBorderColor\relax 
\edef\CurrentBorderColor{\csname @#1bordercolor\endcsname} %
\find@pdflink{#1}{#2}{#3} %
\Hy@xspace@end 
\close@pdflink}
\let\CurrentBorderColor@linkbordercolor
\def\hyper@linkurl#1#2{% 
\begingroup
\Hy@pstringdef\Hy@pstringURI{#2} %
\hyper@chars
\leavevmode
\pdfstartlink 
attr{% 
\Hy@setpdfborder 
\Hy@setpdfhighlight 
\ifx\@urlbordercolor\relax 
\else 
/C[\@urlbordercolor]% 
\fi
/user{% 
/Subtype/Link%
\ifHy@pdfa /F 4 \fi 
/A<<% 
/Type/Action%
/S/URI%
/URI(\Hy@pstringURI)%
/IsMap true%
\fi 
/Href(\Hy@href@nextactionraw 
>>% 
\relax 
\Hy@colorlink\@urlcolor#1\Hy@xspace@end 
\close@pdflink
\endgroup
\def\hyper@linkfile#1#2#3{% anchor text, filename, linkname 
\begingroup
\def\Hy@pstringF{#2} %
\Hy@CleanupFile\Hy@pstringF %
\Hy@pstringdef\Hy@pstringF\Hy@pstringF 
\Hy@pstringdef\Hy@pstringD{#3} %
218
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#1xxx
      foo was an integer
   \else
      it wasnt
   \fi}
```

```
\ifx\#3\%
   /D\``Hy@href``page``@pdfremotestartview``%
\else
   /D``Hy@hrefD``%
\fi
```

```
\if\#3\%
   \Hy@href@nextactionraw
\relax
\fi
```

```
\Hy@colorlink\@filecolor#1\Hy@xspace\endgroup
```

```
\def`@hyper@launch run:#1\#2#3{% filename, anchor text linkname
\begingroup
\Hy@pstringdef`Hy@pstringF{#1}%
\Hy@pstringdef`Hy@pstringP{#3}%
\leavevmode
\pdfstartlink
```

```
\Hy@MakeRemoteAction
\leavevmode
\pdfstartlink
attr{%}
```

```
\ifx\@runbordercolor\relax
   \else
   /C\``@runbordercolor``%
\fi
```

```
\fi
```

219
\hyper@pagetransition  
\@pdfpagetransition is initialized with \relax. So it indicates, if option pdfpage-transition is used. First previous /Trans entries are removed. If a new /Trans key exists, it is appended to /pdfpageattr.

\def\hyper@pagetransition{% 
  \ifx\@pdfpagetransition\relax 
  \else 
  \expandafter\Hy@RemoveTransPageAttr \the\pdfpageattr^^J/Trans{}>>\END
  \ifx\@pdfpagetransition\@empty 
  \else 
    \edef\@processme{% 
      \global\pdfpageattr{% 
        \the\pdfpageattr 
        \^
        \j /Trans << /S /\@pdfpagetransition\space >>% 
      }% 
    }% 
    \@processme 
  \fi 
  \fi 
}%

\@pdfpagetransition is initialized with \relax. So it indicates, if option pdfpage-transition is used. First previous /Trans entries are removed. If a new /Trans key exists, it is appended to /pdfpageattr.

\@pdfpagetransition is initialized with \relax. So it indicates, if option pdfpage-transition is used. First previous /Trans entries are removed. If a new /Trans key exists, it is appended to /pdfpageattr.
exists, it is appended to \pdfpageattr.
10094 \def\hyper@pageduration{%
10095 \ifx@\pdfpageduration\relax
10096 \else
10097 \expandafter
10098 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
10099 \ifx@\pdfpageduration\@empty
10100 \else
10101 \edef@processme{%
10102 \global\pdfpageattr{%
10103 \the\pdfpageattr
10104 ^^J/Dur \@\pdfpageduration\space
10105 %}
10106 %
10107 \@processme
10108 \fi
10109 \fi
10110 \}

\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.
10111 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
10112 \if\#2\%
10113 \global\pdfpageattr{#1}\
10114 \else
10115 \Hy@RemoveDurPageAttr#1#4\END
10116 \fi
10117 \}

\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).
10118 \def\hyper@pageduration{%
10119 \ifHy@useHidKey
10120 \expandafter
10121 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
10122 \ifHy@pdfpagehidden
10123 \edef@processme{%
10124 \global\pdfpageattr{%
10125 \the\pdfpageattr
10126 ^^J/Hid true % SPACE
10127 %}
10128 %
10129 \@processme
10130 \fi
10131 \fi
10132 }

\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.
10133 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
10134 \if\#2\%

224
Also XeTeX support \pdffigwidth and \pdffigheight, but it does not provide \pdfhorigin and \pdfvorigin.
47.2.1 Fix for problem with different nesting levels

\AtBeginShipoutFirst adds an additional box layer around the first output page. This disturbs pdfTeX’s low level link commands \pdfstartlink and \pdfendlink, if a link is broken across the first and second output page.

The problem could be fixed by replacing \AtBeginShipoutFirst, because the box layer is not necessary for pdfTeX – no \specials need to be inserted. However it’s easier to add an additional box level for the pages after the first one. Also \AtBeginShipoutFirst could be invoked independently from hyperref.

Since version 2011/10/05 v1.16 of package ‘atbegshi’ \AtBeginShipoutFirst does not add a additional box layer.

\def\Hy@FixNotFirstPage{% 
\gdef\Hy@FixNotFirstPage{% 
\setbox\AtBeginShipoutBox=\hbox{% 
\copy\AtBeginShipoutBox

226
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:<a href = "href_string">
- **name**: html:<a name = "name_string">
- **end**: html:</a>
- **image**: html:<img src = "href_string">
- **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 used to communicate to the **dvi** viewer the full (URL) location of the current document so that files specified by relative URL’s may be retrieved correctly.

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

Very poor implementation of \hyper@link without considering #1.

Very poor implementation of \hyper@link without considering #1.

47.4 dviwindo

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

This was more or less blindly copied from the hypertex cfg. For dviwindo, \LaTeX must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.
\leavevmode
\ifHy@raiselinks
\Hy@SaveSpaceFactor
\Hy@SaveSavedSpaceFactor
\sbox@tempboxa{\Hy@RestoreSpaceFactor#1}%
\Hy@RestoreSavedSpaceFactor
\@linkdim\dp\@tempboxa
\lower\@linkdim\hbox{%
\special{button: %
\number\wd\@tempboxa\space
\number\ht\@tempboxa\space
#3,%
file: #2%
}%
\Hy@colorlink\@filecolor
\Hy@RestoreSpaceFactor
\#1\Hy@xspace@end
\Hy@SaveSpaceFactor
\Hy@endcolorlink
}%
\@linkdim\ht\@tempboxa
\advance\@linkdim by -6.5\p@
\raise\@linkdim\hbox{%
\special{button: %
\number\wd\@tempboxa\space
\number\ht\@tempboxa\space
#3,%
file: #2%
}%
\Hy@colorlink\@filecolor
\Hy@RestoreSpaceFactor
\#1\Hy@xspace@end
\Hy@SaveSpaceFactor
\Hy@endcolorlink
\fi
\endgroup
\ifx\@pdfproducer\relax
\def\@pdfproducer{dviwindo + Distiller}%
\fi
\HyInfo@AddonUnsupportedtrue
\PDF@FinishDoc{\Hy@UseMaketitleInfos
\HyInfo@TrappedUnsupported
\special{PDF: Keywords \@pdfkeywords}%
\special{PDF: Title \@pdftitle}%
\special{PDF: Creator \@pdfcreator}%
\ifx\@pdfcreationdate\@empty
\else
\special{PDF: CreationDate \@pdfcreationdate}%
\fi
\ifx\@pdfmoddate\@empty
\else
\special{PDF: ModDate \@pdfmoddate}%
\fi
\special{PDF: Author \@pdfauthor}%
47.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)
\def\x{FitH}\
\ifx\x@pdfview
\def\x{FitH @ypos}\
\else\
\def\x{FitBH}\
\ifx\x@pdfview
\def\x{FitBH @ypos}\
\else\
\def\x{FitV}\
\ifx\x@pdfview
\def\x{FitV @xpos}\
\else\
\def\x{FitBV}\
\ifx\x@pdfview
\def\x{FitBV @xpos}\
\else\
\def\x{Fit}\
\ifx\x@pdfview
\let\x@pdfview\
\else\
\def\x{FitB}\
\ifx\x@pdfview
\let\x@pdfview\
\else\
\def\x{FitR}\
\Hy@Warning{`pdfview=FitR' is not supported}\
\def\x{XYZ @xpos @ypos null}\
\else\
\@onelevel@sanitize@pdfview\
\Hy@Warning{Unknown value `@pdfview' for pdfview}\
\def\x{XYZ @xpos @ypos null}\
\fi
\fi
\fi
\fi
\fi
\@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}\%
\endgroup
\Hy@RestoreLastskip
\providecommand*\@pdfview{XYZ}
\providecommand*\@pdfborder{0 0 1}
\providecommand*\@pdfborderstyle{}
\def\hyper@anchor#1{\@pdfm@dest{#1}}
\def\hyper@anchorstart#1{\Hy@activeanchortrue
\@pdfm@dest{#1}}
\endgroup
\Hy@RestoreLastskip
\providecommand*\@pdfview{XYZ}
\providecommand*\@pdfborder{0 0 1}
\providecommand*\@pdfborderstyle{}
\def\hyper@anchor#1{\@pdfm@dest{#1}}
\def\hyper@anchorstart#1{\Hy@activeanchortrue
\@pdfm@dest{#1}}
\endgroup
\Hy@RestoreLastskip
235
\newcounter{Hy@AnnotLevel}

\ifHy@ocgcolorlinks
\def\OBJ@OCG@view{@OCG@view}\
\@pdfm@mark{%
\obj \OBJ@OCG@view <<%
\Type/OCG
\Name(\ OBJ@OCG@view\ )%
\Usage<<%
\Print<<%
\PrintState/OFF%
\>>%
\ViewState/ON%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(Print)
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%}
\@pdfm@mark{close \OBJ@OCG@view}%
\def\OBJ@OCG@print{%
\obj \OBJ@OCG@print <<%
\Type/OCG
\Name(Print)
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%}
\@pdfm@mark{close \OBJ@OCG@print}%
\def\OBJ@OCG@print{%
\obj \OBJ@OCG@print <<%
\Type/OCG
\Name(Print)
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%}
\@pdfm@mark{close \OBJ@OCG@print}%
\def\OBJ@OCG@print{%
\obj \OBJ@OCG@print <<%
\Type/OCG
\Name(Print)
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
\OBJ@OCG@print <<%
\Type/OCG
\Name(\ OBJ@OCG@print\ )%
\Usage<<%
\Print<<%
\PrintState/ON%
\>>%
\ViewState/OFF%
\>>%
\>
% /Event/Print
% /OCGs \\OBJ@OCGs
% /Category/[Print]
% >>
% <<
% /Event/Export
% /OCGs \\OBJ@OCGs
% /Category/[Print]
% >>
% ]
% ]
% ]
% >>
% >>
% >>
% }
% }
% 
% \AtBeginShipout{%
% \setbox\AtBeginShipoutBox=\hbox{%
% \copy\AtBeginShipoutBox
% \@pdfm@mark{%
% put @resources <<%
% /Properties<<%
% /OCView \OBJ@OCG@view
% /OCPrint \OBJ@OCG@print
% >>%
% >>%
% }%
% }
% }
% \Hy@AtBeginDocument{%
% \def\Hy@colorlink#1{%
% \begingroup
% ifHy@ocgcolorlinks
% \def\Hy@ocgcolor{#1}%
% \setbox0=\hbox{\color@begingroup
% \else
% \HyColor@UseColor#1%
% \endgroup
% }
% \HyColor@UseColor#1%
% \fi
% }%
% }
% \else
% \Hy@DisableOption{ocgcolorlinks}%
% \fi
% \fi
% \def\Hy@endcolorlink{%
% ifHy@ocgcolorlinks
% color@endgroup\egroup
% @pdfm@mark{content /OC/OCPrint BDC}%
% @pdfm@mark{content EMC/OCView BDC}%
% \begingroup
% \expandafter\HyColor@UseColor\Hy@ocgcolor
% \box0 %
% }%
% \endgroup
% \@pdfm@mark{content EMC}%
% }%
% \fi
% \fi
% \def\Hy@endendcolorlink{%
% ifHy@ocgcolorlinks
% color@endgroup\egroup
% \mbox{%
% @pdfm@mark{content /OC/OCPrint BDC}%
% @pdfm@mark{content EMC/OCView BDC}%
% \begingroup
% \expandafter\HyColor@UseColor\Hy@ocgcolor
% \box0 %
% }%
% \endgroup
% \@pdfm@mark{content EMC}%
% }%
% \fi
% \fi
% \else
% \Hy@DisableOption{ocgcolorlinks}%
% \fi
% }%
Use primitive counter arithmetic here to avoid amsmath redefining \stepcounter (github issue/13)
\begin{verbatim}
10797 \def\Hy@BeginAnnot#1{%
10798 \global\advance\c@Hy@AnnotLevel\@ne
10799 \ifnum\c@Hy@AnnotLevel=\@ne
10800 \if1%
10801 \fi
10802 }
10803 \def\Hy@EndAnnot{%
10804 \ifnum\value{Hy@AnnotLevel}=\@ne
10805 \Hy@endcolorlink
10806 \@pdfm@mark{eann}%
10807 \fi
10808 \global\advance\c@Hy@AnnotLevel\m@ne
10809 }
10810 \def\Hy@undefinedname{UNDEFINED}
10811 \def\hyper@linkstart#1#2{%
10812 \Hy@VerboseLinkStart{#1}{#2}%
10813 \leavevmode
10814 \Hy@BeginAnnot{%
10815 \protected@edef\Hy@testname{#2}%
10816 \ifx\Hy@testname\@empty
10817 \Hy@Warning{%
10818 Empty destination name,\MessageBreak
10819 using \`\Hy@undefinedname'%
10820 }%
10821 \let\Hy@testname\Hy@undefinedname
10822 \else
10823 \Hy@pstringdef\Hy@testname{%
10824 \expandafter\HyperDestNameFilter\expandafter{%
10825 \Hy@testname%
10826 }%
10827 }%
10828 \fi
10829 \@pdfm@mark{%
10830 \bann<%/
10831 /Type/Annot%
10832 /Subtype/Link%
10833 \iff@pdfa /F 4 \fi
10834 \Hy@setpdfborder
10835 \Hy@setpdfhighlight
10836 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
10837 \else
10838 /C[@\csname @#1bordercolor\endcsname]%
10839 \fi
10840 /A<%/
10841 /S/GoTo%
10842 /D(\Hy@testname)%
10843 \Hy@href@nextactionraw
10844 }%
10845 }%
10846 }%
10847 \expandafter\Hy@colorlink\csname @#1color\endcsname
10848 }%
10849 }
10850 \def\hyper@linkend{\Hy@EndAnnot}%
10851 \def\hyper@link#1#2#3{%
\end{verbatim}

238
Detect Xe\TeX{}. However, but \texttt{xdvipdfmx} will overwrite it in the final PDF file.
\def\PDF@SetupDoc{% 
\edef\Hy@temp{% 
\ifHy@pdftoolbar\else /HideToolbar true\fi 
\ifHy@pdfmenubar\else /HideMenuBar true\fi 
\ifHy@pdfwindowui\else /HideWindowUI true\fi 
\ifHy@pdffitwindow /FitWindow true\fi 
\ifHy@pdfcenterwindow /CenterWindow true\fi 
\ifHy@pdfdisplaydoctitle /DisplayDocumentTitle true\fi 
\\Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode 
\\Hy@UseNameKey{Direction}\@pdfdirection 
\\Hy@UseNameKey{ViewArea}\@pdfviewarea 
\\Hy@UseNameKey{ViewClip}\@pdfviewclip 
\\Hy@UseNameKey{PrintArea}\@pdfprintarea 
\\Hy@UseNameKey{PrintClip}\@pdfprintclip 
\\Hy@UseNameKey{PrintScaling}\@pdfprintscaling 
\\Hy@UseNameKey{Duplex}\@pdfduplex 
\\ifx\@pdfpicktraybypdfsize\@empty 
\else /PickTrayByPDFSize \@pdfpicktraybypdfsize \fi 
\\ifx\@pdfprintpagerange\@empty 
\else /PrintPageRange[\@pdfprintpagerange]\fi 
\\ifx\@pdfnumcopies\@empty 
\else /NumCopies \@pdfnumcopies \fi 
\}
\ifx\Hy@temp\@empty 
\else /URI<</Base(\Hy@pstringB)>> 
\fi 
/PageMode/\@pdfpagemode 
\ifx\Hy@temp\@empty 
\else 
\fi 
\fi}
\def\PDF@SetupDoc{% 
\edef\Hy@temp{% 
\ifHy@pdftoolbar\else /HideToolbar true\fi 
\ifHy@pdfmenubar\else /HideMenuBar true\fi 
\ifHy@pdfwindowui\else /HideWindowUI true\fi 
\ifHy@pdffitwindow /FitWindow true\fi 
\ifHy@pdfcenterwindow /CenterWindow true\fi 
\ifHy@pdfdisplaydoctitle /DisplayDocumentTitle true\fi 
\\Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode 
\\Hy@UseNameKey{Direction}\@pdfdirection 
\\Hy@UseNameKey{ViewArea}\@pdfviewarea 
\\Hy@UseNameKey{ViewClip}\@pdfviewclip 
\\Hy@UseNameKey{PrintArea}\@pdfprintarea 
\\Hy@UseNameKey{PrintClip}\@pdfprintclip 
\\Hy@UseNameKey{PrintScaling}\@pdfprintscaling 
\\Hy@UseNameKey{Duplex}\@pdfduplex 
\\ifx\@pdfpicktraybypdfsize\@empty 
\else /PickTrayByPDFSize \@pdfpicktraybypdfsize \fi 
\\ifx\@pdfprintpagerange\@empty 
\else /PrintPageRange[\@pdfprintpagerange]\fi 
\\ifx\@pdfnumcopies\@empty 
\else /NumCopies \@pdfnumcopies \fi 
\}
\ifx\Hy@temp\@empty 
\else /URI<</Base(\Hy@pstringB)>> 
\fi 
/PageMode/\@pdfpagemode 
\ifx\Hy@temp\@empty 
\else 
\fi 
\fi}
Xe\TeX\ uses pdf\TeX\’s method \texttt{\pdfpagewidth} and \texttt{\pdfpageheight} for setting the paper size.

\AtBeginShipoutFirst{\
\simple{papersize=\the\paperwidth,\the\paperheight}\% 
\ifHy@setpagesize
\begingroup
\ifdim\paperwidth>\z@ 
\ifdim\paperheight>\z@
\special{papersize=\the\paperwidth,\the\paperheight}\% 
\fi 
\fi 
\fi 
\endgroup
\fi 
\else
\ifdim\stockwidth>\z@ 
\ifdim\stockheight>\z@ 
\special{papersize=\the\stockwidth,\the\stockheight}\% 
\fi 
\fi 
\fi 
\fi 
\Hy@DisableOption{setpagesize}\% 
}\}

\section{VTeX typesetting system}

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see \url{http://www.micropress-inc.com/} for details.
\hyper@quote\HyperDestNameFilter{#2}\hyper@quote} %
#1\Hy@xspace@end
\MathBSuppress=0\relax
\special{!direct </a>}%
@endgroup
}
def\hyper@linkfile#1#2#3{%
\hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\else\##3\fi}%
def\hyper@linkstart#1#2{%
\Hy@VerboseLinkStart{#1}{#2}%
\def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
\@Localurltrue
\special{!direct <a href=\hyper@quote#2\hyper@quote>}%
@else
\@Localurlfalse
\begingroup
\hyper@chars
\special{!aref \HyperDestNameFilter{#2}}%
@endgroup
\fi

\special{!direct </a>}%
def\hyper@linkend{%
\if@Localurl
\special{!endaref}%
@else
\fi
}
def\hyper@linkend{%
\if@Localurl
\special{!direct </a>}%
def\hyper@anchorstart#1{%
\Hy@SaveLastskip
\Hy@VerboseAnchor{#1}%
\begingroup
\let\protect=\string
\leavevmode
\special{!aname #1}%
\special{!direct <a name=%
\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
@endgroup
\Hy@activeanchortrue
}
def\hyper@anchor#1{%
\Hy@SaveLastskip
\Hy@VerboseAnchor{#1}%
\begingroup
\let\protect=\string
\leavevmode
\special{!aname #1}%
\special{!direct <a name=%
\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
@endgroup
\Hy@activeanchorfalse
\Hy@RestoreLastskip
}
def\hyper@anchorend{%
\Hy@activeanchortrue
}
def\hyper@anchorend{%
\special{!direct </a>}%
def\hyper@anchor#1{%
\Hy@SaveLastskip
\Hy@VerboseAnchor{#1}%
\begingroup
\let\protect=\string
\leavevmode
\special{!aname #1}%
\special{!direct <a name=%
\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
@endgroup
\Hy@activeanchortrue

245
VTeX version 6.68 supports \texttt{\textbackslash mediawidth} and \texttt{\textbackslash mediaheight}. The \texttt{\textbackslash ifx} construct is better than a \texttt{\textbackslash csname}, because it avoids the definition and the hash table entry of a previous undefined macro.

\begin{verbatim}
\ifx\mediaheight\@undefined
\else
  \ifx\mediaheight\relax
    \else
      \if\Hy@setpagesize
        \providecommand*{\VTeXInitMediaSize}{%
          \ltx@IfUndefined{stockwidth}{%
            \ifdim\paperheight>0pt%
              \setlength{\mediaheight}{\paperheight}
            \fi
            \ifdim\paperheight>0pt%
              \setlength{\mediawidth}{\paperwidth}
            \fi
          }{%
            \ifdim\stockheight>0pt%
              \setlength{\mediaheight}{\stockheight}
            \fi
            \ifdim\stockwidth>0pt%
              \setlength{\mediawidth}{\stockwidth}
            \fi
          }%  
        \fi
      \fi
    \fi
\fi\end{verbatim}
Older versions of VTeX require \texttt{xyz} in lower case.

\providecommand*{\@pdfview}{\texttt{xyz}}
\providecommand*{\@pdfborder}{0 0 1}
\providecommand*{\@pdfborderstyle}{ }
\let\CurrentBorderColor\@linkbordercolor
\Hy@WrapperDef\hyper@anchor#1{% 
\Hy@SaveLastskip
\Hy@VerboseAnchor{#1}%
\begingroup
\let\protect=\string
\hyper@chars
\special{!aname \HyperDestNameFilter{#1};\@pdfview}%
\endgroup
\Hy@activeanchortrue
\Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
\Hy@activeanchorfalse
\Hy@RestoreLastskip
}%
\Hy@WrapperDef\hyper@anchorstart#1{% 
\Hy@SaveLastskip
\Hy@VerboseAnchor{#1}%
\begingroup
\hyper@chars
\special{!aname \HyperDestNameFilter{#1};\@pdfview}%
\endgroup
\Hy@activeanchortrue
}%
\def\hyper@anchorend{% 
\Hy@activeanchorfalse
\Hy@RestoreLastskip
}
\def\@urltype{url}
\def\Hy@undefinedname{UNDEFINED}
\def\hyper@linkstart#1#2{% 
\Hy@VerboseLinkStart{#1}{#2}%
\Hy@pstringdef\Hy@pstringURI{#2}%
\expandafter\Hy@colorlink\csname @#1color\endcsname
\ltx@if Undefined{@#1bordercolor}{}
\def\Hy@tempa{#1}%
\ifx\Hy@tempa\@urltype
\special{!% 
aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
\if\Hy@href@ismap
/IsMap true%
\fi
}%
\fi
\edef\CurrentBorderColor{%
\csname @#1bordercolor\endcsname
}%
\HyperDestNameFilter{#1}%;\@pdfview
}%
\Hy@RestoreLastskip
  }%
The following code (transition effects) is made by Alex Kostin. The code below makes sense for VTeX 7.02 or later. Please never use \@ifundefined{VTeXversion}{..}{..} globally.

\ifnum\Hy@VTeXversion<702
\else
\def\hyper@pagetransition{\relax}
\fi
\if\@empty
Standard incantation.
1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?
\else
\hvtex@parse@trans\@pdfpagetransition\relax
\fi
\fi

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

Syntax of VTeX \special{\trans <transition_effect>}:

<transition_effect> ::= <transition_style>[<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> | <Dissolve_effect> | <Glitter_effect> | <Split_effect> | <Wipe_effect> | <Replace_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_dimension> ::= <number>
<effect_motion> ::= H | V
<effect_direction> ::= I | O
<transition_duration> ::= <number>

Transition codes:

\def\hvtex@trans@Blinds{\def\hvtex@trans@code{B}}%
\def\hvtex@trans@Box{\def\hvtex@trans@code{X}}%
\def\hvtex@trans@Dissolve{\def\hvtex@trans@code{D}}%
\def\hvtex@trans@Glitter{\def\hvtex@trans@code{G}}%
\def\hvtex@trans@Split{\def\hvtex@trans@code{S}}%
\def\hvtex@trans@Wipe{\def\hvtex@trans@code{W}}%
\def\hvtex@trans@R{\def\hvtex@trans@code{R}}%

Optional parameters:

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

Tokenizer:

\def\hvtex@gettoken{%
\expandafter\hvtex@gettoken\hvtex@buffer\nil
Notice that tokens in the input buffer must be space delimited.

\def\hvtex@gettoken@#1 #2\@nil{% 
  \edef\hvtex@token{#1}% 
  \edef\hvtex@buffer{#2}% 
}% 
\def\hvtex@parse@trans#1{% 
  Initializing code: 
  \let\hvtex@trans@code\@empty 
  \let\hvtex@param@dimension\@empty 
  \let\hvtex@param@direction\@empty 
  \let\hvtex@param@duration\@empty 
  \let\hvtex@param@motion\@empty 
  \edef\hvtex@buffer{#1\space}% First token is the PDF transition name without escape. 
  \hvtex@gettoken 
  \ifx\hvtex@token\@empty 
    Leading space(s)? 
    \ifx\hvtex@buffer\@empty 
      The buffer is empty, nothing to do. 
    \else 
      \hvtex@gettoken 
    \fi 
  \fi 
  \csname hvtex@trans@effect@\hvtex@token\endcsname 
  Now is time to parse optional parameters. 
  \hvtex@trans@params 
}% 
\def\hvtex@trans@params{% 
  \ifx\hvtex@buffer\@empty 
  \else 
    \hvtex@gettoken 
    \let\hvtex@trans@par\hvtex@token 
    \ifx\hvtex@buffer\@empty 
    \else 
      \hvtex@gettoken 
      \ifx\hvtex@trans@par\hvtex@par@duration 
        /D is the effect duration in seconds. \TeX special takes it in milliseconds. 
        \let\hvtex@param@duration\hvtex@token 
      \else 
        \ifx\hvtex@trans@par\hvtex@par@motion 
          /M can be either /I or /O 
          \expandafter\edef\expandafter\hvtex@param@motion\expandafter{\expandafter\@gobble\hvtex@token}% 
        \else 
          \ifx\hvtex@trans@par\hvtex@par@dimension 
            /Dm can be either /H or /V 
            \expandafter\edef\expandafter\hvtex@param@dimension\expandafter{\expandafter\@gobble\hvtex@token}% 
          \else 
            \ifx\hvtex@trans@par\hvtex@par@direction 
          \fi 
        \fi 
      \fi 
    \fi 
  \fi 
}%

252
Valid values for /Di are 0, 270, 315 (the Glitter effect) or 0, 90, 180, 270 (the Wipe effect).

\let\hvtex@param@direction\hvtex@token
\fi\fi\fi\fi
\fi
\fi
\ifx\hvtex@buffer\@empty
\let\next\hvtex@produce@trans
\else
\let\next\hvtex@trans@params
\fi
\next
%

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

\def\hvtex@produce@trans{%
\let\vtex@trans@special\@empty
\if S\hvtex@trans@code
\edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension\hvtex@param@motion}%
\else\if B\hvtex@trans@code
\edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
\else\if X\hvtex@trans@code
\edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
\else\if W\hvtex@trans@code
\edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
\else\if D\hvtex@trans@code
\let\vtex@trans@special\hvtex@trans@code
\else\if R\hvtex@trans@code
\let\vtex@trans@special\hvtex@trans@code
\else\if G\hvtex@trans@code
\edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
\fi\fi\fi\fi\fi\fi\fi\fi
\ifx\vtex@trans@special\@empty
\else
\ifx\hvtex@param@duration\@empty
\else
\multiply\dimen@\@m
\edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
\fi
\special{!trans \vtex@trans@special}%
\fi
%
I'm not guilty of possible overflow.

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

And all the mess is just for this.

\special{!trans \vtex@trans@special}%
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
Current `pdfinfo` key syntax:

<table>
<thead>
<tr>
<th>Key</th>
<th>Field</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Author</td>
<td>String</td>
</tr>
<tr>
<td>b</td>
<td>CropBox</td>
<td>String</td>
</tr>
<tr>
<td>c</td>
<td>Creator</td>
<td>String</td>
</tr>
<tr>
<td>k</td>
<td>Keywords</td>
<td>String</td>
</tr>
<tr>
<td>l</td>
<td>PageLayout</td>
<td>PS</td>
</tr>
<tr>
<td>p</td>
<td>PageMode</td>
<td>PS</td>
</tr>
<tr>
<td>r</td>
<td>Producer</td>
<td>String</td>
</tr>
<tr>
<td>s</td>
<td>Subject</td>
<td>String</td>
</tr>
<tr>
<td>t</td>
<td>Title</td>
<td>String</td>
</tr>
<tr>
<td>u</td>
<td>URI</td>
<td>PS</td>
</tr>
<tr>
<td>v</td>
<td>ViewPreferences</td>
<td>PS</td>
</tr>
</tbody>
</table>

Note: PS objects that are dicts are in `<<<..>>>` (yuck; no choice).
47.7 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.

```
\def\literalps@out#1{\special{ps:#1}}%
\providecommand*{\Hy@DistillerDestFix}{%}
\pdfmark|dviwindo\def\Hy@DistillerDestFix{%
\begingroup
\let\x\literalps@out
The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.
\ifnum \@ifundefined{OpMode}{0}{%\ifnum\@ifundefined{gexmode}{0}{%\ifnum\gexmode>0 \OpMode\else 0\fi}}>1 %}
\def\x##1{%\immediate\special{!=##1}%}
\fi\x{%}
\if\product where{%\pop %\product(Distiller)search{%\pop\pop\pop %\version(,)search{%\exch\pop\exch\pop%\(3011)eq{%\gsave %\newpath 0 0 moveto closepath clip%\Courier findfont 10 scalefont setfont %\72 72 moveto(.)show %\grestore%\}if%\{\{pop\}ifelse%\}if%\}if%\endgroup}
\pdfmark|dviwindo
```

47.8 Direct pdfmark support

Drivers that load `pdfmark.def` have to provide the correct macro definitions of

```latex
\@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:

- \texttt{H.S} start of anchor, link or rect
- \texttt{#1 H.A} end of anchor, argument=baselineskip in pt
- \texttt{#1 H.L} end of link, argument=baselineskip in pt
- \texttt{H.R} end of rect
- \texttt{H.B} raw rect code

\begin{verbatim}
11807 ⟨"pdfmark⟩
11808 Hy@breaklinks@unsupported
11809 \def\HyPat@ObjRef{%
11810 \{[^{}]+\}\%
11811 }
11812 \Hy@WrapperDef\hyper@anchor#1{%
11813 \Hy@SaveLastskip
11814 \Hy@VerboseAnchor(#1)%
11815 \begingroup
11816 pdfmark\anchor@spot{%
11817 pdfmark=/DEST,%
11818 linktype=anchor,%
11819 View=/@pdfview @pdfviewparams,%
11820 DestAnchor=(#1)%
11821 }
11822 \endgroup
11823 \Hy@RestoreLastskip
11824 }
11825 \ltx@IfUndefined{hyper@anchorstart}{}{\endinput}
11826 \Hy@WrapperDef\hyper@anchorstart#1{%
11827 \Hy@SaveLastskip
11828 \Hy@VerboseAnchor(#1)%
11829 \literalps@out{H.S}%
11830 \pdfmark{%
11831 pdfmark=/DEST,%
11832 linktype=anchor,%
11833 View=/@pdfview @pdfviewparams,%
11834 DestAnchor=\hyper@currentanchor,%
11835 }
11836 \Hy@RestoreLastskip
11837 \def\hyper@anchorend{%
11838 \literalps@out{strip@pt@and@otherjunk\baselineskip\space H.A}%
11839 \pdfmark{%
11840 pdfmark=/DEST,%
11841 linktype=anchor,%
11842 View=/@pdfview @pdfviewparams,%
11843 DestAnchor=\hyper@currentanchor,%
11844 }
11845 \Hy@RestoreLastskip
11846 \def\hyper@linkstart#1#2{%
11847 \ifHy@breaklinks
11848 \leavevmode
11849 \ifmmode
11850 \def\Hy@LinkMath{$}%
11851 \else
11852 \fi
11853 \let\Hy@LinkMath\ltx@empty
11854 \fi
11855 \Hy@SaveSpaceFactor
11856 \bbox\bgroup
\end{verbatim}
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.

\begin{verbatim}
\begingroup
\catcode`P=12  %
\catcode`T=12  %
\lowercase{\endgroup}
\gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}
\end{verbatim}

\hyper&pagetransition
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.
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 (tobyt@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@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox\#1{\my@temp}
\newsavebox{\pdf@box}
\providecommand*{\Hy@setouterhbox}{\sbox}
\providecommand*{\Hy@breaklinksunhbox}{\unhbox}
\def\Hy@DEST{/DEST}
\def\pdf@rect#1{% 
\begingroup
\chardef\x=1 \%
\def\Hy@temp{#1}\
\ifx\Hy@temp\ltx@empty 
\chardef\x=0 \%
\else
\def\y{\anchor@spot}\
\ifx\Hy@temp\y 
\def\y{\relax}\
\ifx\anchor@spot\y
\chardef\x=0 \%
\fi
\fi
\fi
\expandafter\endgroup
\ifcase\x
\literalps@out{H.S}\
\literalps@out{H.R}\
\else
\leavevmode
\Hy@SaveSpaceFactor
\ifmmode
\def\Hy@LinkMath{$}\
\else
\let\Hy@LinkMath\ltx@empty
\fi
\ifHy@breaklinks
\Hy@setouterhbox\pdf@box{\
\Hy@RestoreSpaceFactor 
\Hy@LinkMath
\Hy@AllowHyphens#1\Hy@xspace\end
\Hy@LinkMath
\Hy@SaveSpaceFactor
\}%
\else
\abox\pdf@box{\
\Hy@RestoreSpaceFactor 
\Hy@LinkMath
\#1\Hy@xspace\end 
\Hy@LinkMath 
\Hy@SaveSpaceFactor
\}%
\fi
\fi
\ifdim\ht\pdf@box
\fdim\dp\pdf@box=\x@ 
\literalps@out{H.S}%
\else
\lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
\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...).

\ifHy@breaklinks
\ifhmode
\Hy@breaklinksunhbox\pdf@box 
\else
\Hy@breaklinksunhbox\pdf@box
\fi
\else
\box\pdf@box

265
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.

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
to experiment.

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

\begin{itemize}
  \item \texttt{\% what is the type of pdfmark?}
  \item \texttt{\% what is the link type?}
  \item \texttt{\% named object?}
  \item \texttt{\% parameter is a stream of PDF}
  \item \texttt{\% parameter is a name}
  \item \texttt{\% parameter is a array}
\end{itemize}
\else
  \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}\% hash-ok
\fi
\let\Hy@BorderArrayPatch\@empty
\edef\Hy@temp{#1}\
\ifx\Hy@temp\@empty
\else
  \pdf@addtoks{<<#1>>}{BS}\%
\fi
\let\Hy@BorderArrayPatch\@empty
\let\relax\relax
\fi
\pdf@addtoks{[#1]}{Color}\% hash-ok
\fi
\pdf@addtoks{[#1]}{CropBox}\% hash-ok
\pdf@addtoks{(#1)}{DOSFile}\%
\pdf@addtoks{(#1)}{DataSource}\%
\pdf@addtoks{(#1)}{Dest}\%
\pdf@addtoks{(#1)}{DestAnchor}\%
\pdf@addtoks{(#1)}{Dir}\%
\pdf@addtoks{(#1)}{File}\%
\pdf@addtoks{#1}{Flags}\%
\pdf@addtoks{PDFAFlags}{%
\pdfaddtoks{#1}{F} \%
\pdfaddtoks{#1}{H} \%
% parameter is a name
\define@key{PDF}{AcroHighlight}{
  \begingroup
  \edef\x{#1} \%
  \expandafter\endgroup\ifx\x\@empty \else \pdfaddtoks{#1}{H} \fi
}
% parameter is a string
\define@key{PDF}{ID}{\pdfaddtoks{[#1]}{ID}}% hash-ok
\define@key{PDF}{MacFile}{\pdfaddtoks{(#1)}{MacFile}}% parameter is a string
\define@key{PDF}{ModDate}{\pdfaddtoks{(#1)}{ModDate}}% parameter is a string
\define@key{PDF}{Op}{\pdfaddtoks{(#1)}{Op}}% parameter is a Boolean
\define@key{PDF}{Open}{\pdfaddtoks{#1}{Open}}% parameter is an integer or name
\define@key{PDF}{Page}{\pdfaddtoks{#1}{Page}}% parameter is a name
\define@key{PDF}{PageMode}{\pdfaddtoks{#1}{PageMode}}% parameter is a string
\define@key{PDF}{Params}{\pdfaddtoks{(#1)}{Params}}% parameter is a array
\define@key{PDF}{Rect}{\pdfaddtoks{[#1]}{Rect}}% hash-ok
\define@key{PDF}{SrcPg}{\pdfaddtoks{#1}{SrcPg}}% parameter is a name
\define@key{PDF}{Subtype}{\pdfaddtoks{#1}{Subtype}}% parameter is a string
\define@key{PDF}{Title}{\pdfaddtoks{(#1)}{Title}}% parameter is a string
\define@key{PDF}{Unix}{\pdfaddtoks{(#1)}{Unix}}% parameter is a string
\define@key{PDF}{UnixFile}{\pdfaddtoks{(#1)}{UnixFile}}% parameter is an array
\define@key{PDF}{View}{\pdfaddtoks{#1}{View}}% hash-ok
\define@key{PDF}{WinFile}{\pdfaddtoks{#1}{WinFile}}% parameter is a string
These are the keys used in the DOCINFO section.
\define@key{PDF}{Author}{\pdfaddtoks{#1}{Author}}% parameter is a name
\define@key{PDF}{Creator}{\pdfaddtoks{#1}{Creator}}% parameter is a string
\define@key{PDF}{CreationDate}{\pdfaddtoks{#1}{CreationDate}}% parameter is a string
\define@key{PDF}{ModDate}{\pdfaddtoks{#1}{ModDate}}% parameter is a string
\define@key{PDF}{Producer}{\pdfaddtoks{#1}{Producer}}% parameter is a string
\define@key{PDF}{Subject}{\pdfaddtoks{#1}{Subject}}% parameter is an array
\define@key{PDF}{Keywords}{\pdfaddtoks{#1}{Keywords}}% parameter is a string
\define@key{PDF}{ModDate}{\pdfaddtoks{#1}{ModDate}}% parameter is a string
\define@key{PDF}{Base}{\pdfaddtoks{#1}{Base}}% parameter is a string
\define@key{PDF}{URI}{\pdfaddtoks{#1}{URI}}% parameter is a string
\define@key{PDF}{Trapped}{\%}
\edef\Hy@temp{#1} \%
And now for some useful examples:

```
\def\PDFNextPage{\@ifnextchar[\PDFNextPage@}{\PDFNextPage[]}%
\def\PDFNextPage@[#1]#2{%
  pdfmark{#2}{{% #1,%
    Border=\@pdfborder,%
    BorderStyle=\@pdfborderstyle,%
    Color=.2 .1 .5,%
    pdfmark=/ANN,%
    Subtype=/Link,%
    PDFAFlags=4,%
    Page=/Next%}}%
\def\PDFPreviousPage{%
  \@ifnextchar[\PDFPreviousPage@}{\PDFPreviousPage[]}%
\def\PDFPreviousPage@[#1]#2{%
  pdfmark{#2}{{% #1,%
    Border=\@pdfborder,%
    BorderStyle=\@pdfborderstyle,%
    Color=.4 .4 .1,%
    pdfmark=/ANN,%
    Subtype=/Link,%
    PDFAFlags=4,%
    Page=/Prev%}}%
\def\PDFOpen#1{%
  pdfmark{#1,pdfmark=/DOCVIEW}%
```

269
This will only work if you use Distiller 2.1 or higher.

\def\hyper@linkurl#1#2{\begingroup
\Hy@pstringdef\Hy@pstringURI{#2}\
\hyper@chars\
\leavevmode
\pdfmark{{#1}}{%
\pdfmark=/ANN,\%
linkytype=ur1,\%
AcroHighlight=\@pdfhighlight,\%
Border=\@pdfborder,\%
BorderStyle=\@pdfborderstyle,\%
Color=\@urlbordercolor,\%
Action=\{<<\%
/Subtype/URI\%
/URI(\Hy@pstringURI)\%
\ifHy@href@ismap\%
/IsMap true\%
\fi\%
>>\},\%
Subtype=/Link,\%
PDFAFlags=4\%
}%
\endgroup}

\def\hyper@linkfile#1#2#3{\begingroup
\def\Hy@pstringF{#2}\
\Hy@CleanupFile\Hy@pstringF\
\Hy@pstringdef\Hy@pstringF\Hy@pstringF\
\Hy@pstringdef\Hy@pstringD{#3}\
\Hy@MakeRemoteAction\
\leavevmode
\pdfmark{{#1}}{%
pdfmark=/ANN,\%
Subtype=/Link,\%
PDFAFlags=4,\%
AcroHighlight=\@pdfhighlight,\%
Border=\@pdfborder,\%
BorderStyle=\@pdfborderstyle,\%
linktype=file,\%
Color=\@filebordercolor,\%
Action=\%\%
<<\%
/S/GoToR\%
\Hy@SetNewWindow\%
/F(\Hy@pstringF)\%
/D\%
\fx\%\%
\Hy@href@page@pdfremotestartview\%
\else\%
(\Hy@pstringD)cvn\%
\fi\%
\Hy@href@nextactionraw\%
>>\%
}%
\endgroup}
Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

47.9 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.
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 <mgelderma@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.

/DvipsToPDF{72.27 mul Resolution div} def
/PDFToDvips{72.27 div Resolution mul} def
/BPToDvips{72 div Resolution mul}def

The values inside the /Boder array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don’t know how other distiller programs behaves in this manner.

(BorderArrayPatch{% exch{ dup dup type/integertype eq exch type/realtype eq or{BPToDvips}if }forall% }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.

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

/H.S {% currentpoint % HyperBorder add /pdf@lly exch def % dup DvipsToPDF 72 add /pdf@hoff exch def % HyperBorder sub /pdf@lly exch def % } 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

/H.L {% 2 sub dup% HyperBasePt exch def % PDFToDvips /HyperBaseDvips exch def % currentpoint % HyperBaseDvips sub /pdf@ury exch def% /pdf@urx exch def% } def%
\AtBeginShipoutFirst{%
  \ifHy@setpagesize
    \begingroup
      \ifdim\paperwidth>\z@ \ifdim\paperheight>\z@
        \special{papersize=\the\paperwidth,\the\paperheight}%
      \fi
    \fi
  \fi
  \Hy@DisableOption{setpagesize}%
  \fi
}
\setpdflinkmargin#1{%
  \begingroup
    \setlength{\dimen@}{#1}\
    \literalps@out{\
      /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
    }
  \endgroup
}

47.10 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.

\providecommand*{\XR@ext}{pdf}
\let\Hy@raisedlink\ltx@empty
\def\literalps@out#1{\special{pS:#1}}%
\def\headerps@out#1{\immediate\special{pS:#1}}%
\input{pdfmark.def}%
\ifx\@pdfproducer\relax
\ifnum\OpMode=\@ne
\def\@pdfproducer{VTeX}%
\else
\def\@pdfproducer{VTeX + Distiller}%
\fi
\fi
\providecommand*{\@pdfborder}{0 0 1}
\providecommand*{\@pdfborderstyle}{}
\providecommand*{\@pdfview}{XYZ}
\providecommand*{\@pdfviewparams}{ H.V}
\g@addto@macro\Hy@FirstPageHook{%
\headerps@out{%
/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.

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

\g@addto@macro\Hy@FirstPageHook{%
\headerps@out{%
/vsize {\Hy@pageheight} def%

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

\g@addto@macro\Hy@FirstPageHook{%
\headerps@out{%
/vsize {\Hy@pageheight} def%

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

\g@addto@macro\Hy@FirstPageHook{%
\headerps@out{%
/vsize {\Hy@pageheight} def%

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

\g@addto@macro\Hy@FirstPageHook{%
\headerps@out{%
/vsize {\Hy@pageheight} def%

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

\g@addto@macro\Hy@FirstPageHook{%
\headerps@out{%
/vsize {\Hy@pageheight} def%
\texttt{pdf@ury} = Y_c + \text{HyperBorder}, \texttt{pdf@urx} = X_c + \text{HyperBorder}

12663 \ /H.R \{ %
12664 \hspace{1mm} \text{currentpoint} \%
12665 \hspace{1mm} \text{HyperBorder add} \%
12666 \hspace{1mm} /pdf@ury exch def \%
12667 \hspace{1mm} \text{HyperBorder add} \%
12668 \hspace{1mm} /pdf@urx exch def \%
12669 \hspace{1mm} \text{currentpoint exch pop} \hspace{1mm} \text{vsize} \hspace{1mm} 72 \hspace{1mm} \text{sub} \hspace{1mm} \text{add} \%
12670 \hspace{1mm} /pdf@voff exch def %
12671 \} \text{ def} %
12672 \} %
12673 \}

12674 \texttt{\textbackslash def setpdflinkmargin#1\{ %}
12675 \hspace{1mm} \texttt{\begin{group}}
12676 \hspace{1mm} \setlength{\texttt{\dimen0}{\#1}\}%
12677 \hspace{1mm} \texttt{literalps\texttt{@out}\{ %}
12678 \hspace{1mm} \texttt{HyperBorder{\strip@pt\texttt{\dimen0}}\texttt{def}}%
12679 \hspace{1mm} \}} %
12680 \hspace{1mm} \texttt{\endgroup}
12681 \hspace{1mm} \}

12682 \texttt{/\textbackslash vexpdfmark}

\section*{47.11 Textures}

12683 \{ *\texttt{textures} \}
12684 \texttt{\texttt{\texttt{\texttt{\providecommand*{\XR@ext}{pdf}}}}}

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.

\begin{verbatim}
\texttt{Hy@ps@CR}
\end{verbatim}

The macro \texttt{Hy@ps@CR} contains the end-of-line character.

12685 \texttt{\begin{group}}
12686 \texttt{\obeylines \%}
12687 \texttt{\gdef{\texttt{Hy@ps@CR}{\noexpand}}
12688 \texttt{\}} %
12689 \texttt{\endgroup \%}

Textures has two types of \texttt{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 \texttt{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 \texttt{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’ \texttt{special}.

12690 \texttt{\def{\texttt{literalps\texttt{@out}\#1\{ \%}
12691 \texttt{\texttt{\texttt{\special{postscript 0 0 transform}}\}%}
12692 \texttt{\special{rawpostscript itransform moveto\texttt{Hy@ps@CR \#1}}\}%
12693 \} %

275
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.

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.

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.

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.
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.
Very poor implementation of \hyper@link without considering \#1.

\def\hyper@linkurl#1#2{\%
  \ifHy@raiselinks
    \Hy@SaveSpaceFactor
    \Hy@SaveSavedSpaceFactor
    \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
    \Hy@RestoreSavedSpaceFactor
    \@linkdim\dp\@tempboxa
    \lower\@linkdim\hbox{\%
      \hyper@chars
      \special{html:<a href=\hyper@quote#2\hyper@quote>}%
      \Hy@colorlink\@urlcolor
      \Hy@RestoreSpaceFactor
      \#1\Hy@xspace@end
    }%
    \Hy@colorlink\@urlcolor
    \Hy@SaveSpaceFactor
    \@linkdim\ht\@tempboxa
    \advance\@linkdim by -6.5\p@
    \raise\@linkdim\hbox{\special{html:</a>}}%
    \Hy@endcolorlink
  \else
    \begingroup
    \hyper@chars
    \special{html:<a href=\hyper@quote#2\hyper@quote>}%
    \Hy@colorlink\@urlcolor#1\Hy@xspace@end
    \special{html:</a>}%
    \Hy@endcolorlink
  \endgroup
  \fi
}\%

\def\hyper@image#1#2{\%
  \hyper@chars
  \special{html:<img src=\hyper@quote#1\hyper@quote>}%
  \endgroup
}\%

⟨/textures⟩

47.12 dvipsone

\% \subsection{dvipsone driver}
\% Over-ride the default setup macro in pdfmark driver to use \texttt{Y\&Y}
\% | \special| commands.
\% dvipsone
\providecommand*{\XR@ext}{pdf}
\let\Hy@raisedlink\ltx@empty
\providecommand*{\pdfborder}{0 0 1}
\providecommand*{\pdfborderstyle}{}
\def\literalps@out#1{\special{ps:#1}}%
\def\headerps@out#1{\special{headertext=#1}}%
\def\headerps@out#1{\special{headertext=#1}}%

279
12954 \Hy@temp
12955 \ifx\@pdfpagescrop\@empty
12956 \else
12957 \pdfmark{%PAGES,CropBox=\@pdfpagescrop}%
12958 \fi
12959 \edef\Hy@temp{%
12960 \ifHy@pdftoolbar\else /HideToolbar true\fi
12961 \ifHy@pdfmenubar\else /HideMenubar true\fi
12962 \ifHy@pdfwindow\else /HideWindowUI true\fi
12963 \ifHy@pdffitwindow /FitWindow true\fi
12964 \ifHy@pdfcenterwindow /CenterWindow true\fi
12965 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12966 \Hy@UseNameKey{NonFullScreenPageMode}\pdfnonfullscreenpagemode
12967 \Hy@UseNameKey{Direction}\@pdfdirection
12968 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12969 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12970 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12971 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12972 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12973 \Hy@UseNameKey{Duplex}\@pdfduplex
12974 \ifx\@pdfpicktraybypdfsize\@empty
12975 \else
12976 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12977 \fi
12978 \ifx\@pdfprintpagerange\@empty
12979 \else
12980 /PrintPageRange[\@pdfprintpagerange]%
12981 \fi
12982 \ifx\@pdfnumcopies\@empty
12983 \else
12984 /NumCopies \@pdfnumcopies
12985 \fi
12986 }%
12987 \if\@pstringdef\Hy@pstringB{\@baseurl}%
12988 \pdfmark{%
12989 \string{Catalog}\string{}</string>
12990 \providecommand\@pdfview{XYZ}
12991 \providecommand\@pdfviewparams{ %
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.

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

The values inside the `/Border` array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don’t know how other distiller programs behaves in this manner.
\setlength{\dimen@}{#1}\% 
\literalps@out{\% 
/HyperBorder{\strip@pt\dimen@\space PDFToDvips}def\% 
\endgroup 
\}} 
\langle /dvipsone \rangle 

47.13 \texttt{TeX4ht}

\providecommand*{\XR@ext}{html} 
\let\Hy@raisedlink\ltx@empty 
\if@ifpackageloaded{tex4ht}{\Hy@InfoNoLine{tex4ht is already loaded}}{\RequirePackage[htex4ht]{tex4ht}} 
\hyperlinkfileprefix{} 
\let\PDF@FinishDoc\ltx@empty 
\def\PDF@SetupDoc{\ifx\@baseurl\@empty\else\special{t4ht=<base href="\@baseurl">}\fi} 
\Hy@WrapperDef\hyper@anchor#1{\Hy@SaveLastskip\Hy@VerboseAnchor{#1}\begingroup\let\protect=\string\special{t4ht=<a name=%\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}\endgroup\Hy@activeanchortrue\Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink \Hy@RestoreLastskip 
\Hy@RestoreLastskip 
\Hy@WrapperDef\hyper@anchorstart#1{\Hy@SaveLastskip\Hy@VerboseAnchor{#1}\begingroup\hyper@chars\special{t4ht=<a name=%\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}\endgroup\Hy@activeanchorfalse\Hy@activeanchortrue 
\let\@urltype=url \def\hyper@linkstart#1#2{\Hy@VerboseLinkStart{#1}{#2}\expandafter\Hy@colorlink\csname @#1color\endcsname} 
\def\@uritype{url} 
\def\hyper@linkstart#1#2{\special{t4ht=<a name=%\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}} 
\def\hyper@linkstart#1#2{\special{t4ht=<a name=%\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}} 
\def\hyper@linkstart#1#2{\special{t4ht=<a name=%\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}} 
\def\hyper@linkstart#1#2{\special{t4ht=<a name=%\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}} 
\def\hyper@linkstart#1#2{\special{t4ht=<a name=%\hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}
Poor implementation of \hyper@link without considering \#1.
48 Driver-specific form support

48.1 pdfmarks

\long\def@Form[#1]{% 
\headerps@out{% /_objdef{pdfDocEncoding}\% 
/type/dict%}

285
(4) show

(8) show

fill
/AcroForm{aform}%
>>
/PUT pdfmark%
}]
/kvsetkeys{Form}{#1}%
}
\let\@endForm\ltx@empty
\def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
\Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
}
\newcount\HyField@AnnotCount
\HyField@AnnotCount=\z@
\def\HyField@AdvanceAnnotCount{%
\global\advance\HyField@AnnotCount\@ne
}
\def\HyField@TheAnnotCount{%
\the\HyField@AnnotCount
}
\edef\Fld@pageobjectref{/P{ThisPage}}
\def\HyField@AddToFields#1{%
\pdfmark{%
\pdfmark=/APPEND,\
Raw={%
\string{afields}\string#1\HyField@TheAnnotCount\string}%
}%
\ifx\Fld@calculate@code\ltx@empty
\else
\pdfmark{%
\pdfmark=/APPEND,\
Raw={%
\string{corder}\string#1\HyField@TheAnnotCount\string}%
}%
\fi
}
\def\@TextField[#1]#2{% parameters, label
\def\Fld@name{#2}
\let\Fld@default\ltx@empty
\let\Fld@value\@empty
\def\Fld@width{\DefaultWidthofText}
\def\Fld@height{%
\if\Fld@multiline
\DefaultHeightofTextMultiline
\else
\DefaultHeightofText
\fi
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofText,#1}%
\HyField@FlagsText
\if\Fld@hidden\def\Fld@width{1sp}\fi
}}
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofText,\#1}%
\let\Fld@default\ltx@empty
\let\Fld@value\@empty
\def\Fld@width{\DefaultWidthofText}\def\Fld@height{%
\if\Fld@multiline
\DefaultHeightofTextMultiline
\else
\DefaultHeightofText
\fi
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofText,\#1}%
\HyField@FlagsText
\if\Fld@hidden\def\Fld@width{1sp}\fi
\endgroup
}
\def\@ChoiceMenu[#1]{\def\Fld@name{#2}\let\Fld@default\relax\let\Fld@value\relax\def\Fld@width{\DefaultWidthofChoiceMenu}\def\Fld@height{\DefaultHeightofChoiceMenu}\begingroup\Fld@menulength=0\@tempdima\z@\@for\@curropt:=#3\do{\expandafter\Fld@checkequals\@curropt==\%\Hy@StepCount\Fld@menulength\settowidth{\@tempdimb}{\@currDisplay}\ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi\advance\@tempdima by 15\p@\begingroup\HyField@SetKeys{#1}\edef\x{\endgroup\noexpand\expandafter\noexpand\HyField@SetKeys\noexpand\expandafter{\noexpand\csname DefaultOptionsof\if\Fld@radio\else\if\Fld@combo\if\Fld@popdown\PopdownBox\else\ComboBox\fi\else\ListBox\fi\endcsname}}\x\HyField@SetKeys{#1}\if\Fld@hidden\def\Fld@width{1sp}\fi\ifx\Fld@value\relax\let\Fld@value\Fld@default\fi\HyField@AddToFields{\text}\endgroup}
\LayoutChoiceField{#2}{%}
\ifFld@radio
  \HyField@FlagsRadioButton
\@Radio{#3}{%}
\else
  \begingroup
    \HyField@FlagsChoice
    \ifdim\Fld@width<\@tempdima
      \ifdim\@tempdima<1cm\@tempdima1cm\fi
      \edef\Fld@width{\the\@tempdima}%
    \fi
    \ifFld@combo
      \else
        \@@Listbox{#3}{%}
    \endgroup
  \endgroup
\fi
\@@Radio#1{%
\Fld@listcount=0 %
\EdefEscapeName\Fld@default{\Fld@default}%
\@for\@curropt:=#1\do{%
  \expandafter\Fld@checkequals\@curropt==\%
  \EdefEscapeName\@currValue{\@currValue}%
  \Hy@StepCount\Fld@listcount
  \@currDisplay space
  \Hy@escapeform\PDFForm@Radio
  \ifnum\Fld@listcount=1%
    \HyField@AdvanceAnnotCount
  \fi
  pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}{%}
    pdfmark=/ANN,%
    objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount,\fi,%
    Raw=,%
    \PDFForm@Radio /AP <</N <</\@currValue space {Check}>> >>%}
  }%
\} % deliberate space between radio buttons
\ifnum\Fld@listcount=1 %
  \HyField@AddToFields\{radio\}%
\fi
\} %
\newcount\Fld@listcount
\begin{ quotations}{%}
\endgroup
\\@Listbox{#3}{%}
\endgroup
Raw={\PDFForm@List}%
\HyField@AddToFields{list}%
\begin{group}
def\PushButton[#1]{% parameters, label
def\Fld@name{#2}%
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofPushButton,#1%}
\ifHy@pdfa
\Hy@Error{PDF/A: Push button with JavaScript is prohibited\@ehc}
\LayoutPushButtonField{\leavevmode\MakeButtonField{#2}%}
\else
\HyField@FlagsPushButton
\ifFld@hidden\def\Fld@width{1sp}\fi
\HyField@AdvanceAnnotCount
\LayoutPushButtonField{\leavevmode\Hy@escapeform\PDFForm@Push\pdfmark\[\MakeButtonField{#2}%
\pdfmark=/ANN,%
\objdef=push\HyField@TheAnnotCount,%
\Raw={\PDFForm@Push}%
\HyField@AddToFields{push}%
\endgroup
}
def\Submit[#1]{% parameters, label
def\Fld@width{\DefaultWidthofSubmit}%
def\Fld@height{\DefaultHeightofSubmit}%
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofSubmit,#1%}
\HyField@FlagsPushButton\HyField@FlagsSubmit
\ifFld@hidden\def\Fld@width{1sp}\fi
\HyField@AdvanceAnnotCount
\Hy@escapeform\PDFForm@Submit
\pdfmark\[\MakeButtonField{#2}%
\pdfmark=/ANN,%
\objdef=submit\HyField@TheAnnotCount,%
\Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}%
\HyField@AddToFields{submit}%
\endgroup
}
def\Reset[#1]{% parameters, label
def\Fld@width{\DefaultWidthofReset}%
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofSubmit,#1%}
\HyField@FlagsPushButton\HyField@FlagsSubmit
\ifFld@hidden\def\Fld@width{1sp}\fi
\Hy@escapeform\PDFForm@Push
\pdfmark\[\MakeButtonField{#2}%
\pdfmark=/ANN,%
\objdef=submit\HyField@TheAnnotCount,%
\Raw={\PDFForm@Push}%
\HyField@AddToFields{push}%
\endgroup
}
def\Submit[#1]{% parameters, label
def\Fld@width{\DefaultWidthofSubmit}%
def\Fld@height{\DefaultHeightofSubmit}%
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofSubmit,#1%}
\ifHy@pdfa
\Hy@Error{PDF/A: Push button with JavaScript is prohibited\@ehc}
\LayoutPushButtonField{\leavevmode\MakeButtonField{#2}%}
\else
\HyField@FlagsPushButton
\ifFld@hidden\def\Fld@width{1sp}\fi
\HyField@AdvanceAnnotCount
\LayoutPushButtonField{\leavevmode\Hy@escapeform\PDFForm@Push\pdfmark\[\MakeButtonField{#2}%
\pdfmark=/ANN,%
\objdef=push\HyField@TheAnnotCount,%
\Raw={\PDFForm@Push}%
\HyField@AddToFields{push}%
\endgroup
}
def\Submit[#1]{% parameters, label
def\Fld@width{\DefaultWidthofSubmit}%
\def\Fld@height{\DefaultHeightofReset}
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofReset,#1}
\leavevmode
\ifHy@pdfa
\Hy@Error{PDF/A: Reset action is prohibited}
\else
\HyField@FlagsPushButton
\ifFld@hidden\def\Fld@width{1sp}\fi
\Hy@escapeform\PDFForm@Reset
\HyField@AdvanceAnnotCount
\pdfform{\MakeButtonField{#2}}{\pdfmark{/ANN,\objdef=reset\HyField@TheAnnotCount,\Raw={\PDFForm@Reset}}}
\HyField@AddToFields{reset}
\fi
\endgroup
\def\@CheckBox[#1]{% parameters, label
\def\Fld@name{#2}
\def\Fld@default{0}
\begingroup
\def\Fld@width{\DefaultWidthofCheckBox}
\def\Fld@height{\DefaultHeightofCheckBox}
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofCheckBox,#1}
\HyField@FlagsCheckBox
\ifFld@hidden\def\Fld@width{1sp}\fi
\HyField@AdvanceAnnotCount
\LayoutCheckField{#2}{\MakeCheckField{\Fld@width}{\Fld@height}}{\pdfmark{/ANN,\objdef=check\HyField@TheAnnotCount,\Raw={\PDFForm@Check}}}
\HyField@AddToFields{check}
\endgroup}
\let\@endForm\ltx@empty
\def\@Form[#1]{% parameters
\Hy@Message{Sorry, HyperTeX does not support FORMs}
}
\def\@endForm\ltx@empty
\def&{\pdfmark}

48.2 HyperTeX

(*hypertex)
\def\@Form[#1]{% parameters
\Hy@Message{Sorry, HyperTeX does not support FORMs}
}
\let\@endForm\ltx@empty
\def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
  \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%}
\def\@TextField[#1]#2{% parameters, label
  \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%}
\def\@CheckBox[#1]#2{% parameters, label
  \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%}
\def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
  \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%}
\def\@PushButton[#1]#2{% parameters, label
  \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%}
\def\@Reset[#1]#2{% parameters
  \Hy@Message{Sorry, HyperTeX does not support FORMs}%}
\def\@Submit[#1]#2{% parameters
  \Hy@Message{Sorry, HyperTeX does not support FORMs}%}
⟨hypertex⟩
48.3 TeX4ht

\def\@Form[#1]{%
  \kvsetkeys{Form}{#1}%
  \HCode{<form action="\Form@action" method="\Form@method">}%
}
\def\@endForm{\HCode{</form>}}
\def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
  \Hy@Message{Sorry, TeX4ht does not support gauges}%}
\def\@TextField[#1]#2{% parameters, label
  \let\Hy@reserved@a\@empty
  \def\Fld@name{#2}%
  \let\Fld@default\ltx@empty
  \bgroup
  \Field@toks={ }%
  \kvsetkeys{Field}{#1}%
  \HCode{<label for="\Fld@name">#2</label>}%
  \ifFld@password
    \@@PasswordField
  \else
    \@@TextField
  \fi
  \egroup
}
\def\@@PasswordField{%
  \HCode{<input type="password" id="\Fld@name" name="\Fld@name"
    value="\Fld@default" \the\Field@toks>}%
}
\def\@@Submit{%
  \HCode{<input type="submit" id="\Fld@name" name="\Fld@name"
    value="\Fld@default" \the\Field@toks>}%
}
\def\@@TextField{\
  \ifFld@multiline
  \HCode{<textarea\
    \ifFld@readonly\ readonly \fi\
    id=\"Fld@name\"\
    name=\"Fld@name\"\
    \ifFld@hidden\ type=\"hidden\" \fi\
    \the\Field@toks>\
  \}
  \Fld@default\
  \HCode{</textarea>}}\
\else
  \HCode{<input type=\"textbox\"\
    \ifFld@readonly\ readonly \fi\
    id=\"Fld@name\"\
    name=\"Fld@name\"\
    \ifFld@hidden\ type=\"hidden\" \fi\
    \the\Field@toks>\
  }\fi
}
\def\@ChoiceMenu[#1][#2][#3]{{
  \def\Fld@name{#2}\
  \let\Fld@default\ltx@empty\
  \let\Hy@reserved@a\relax\
  \begingroup\
  \expandafter\Fld@findlength#3\%\
  \Field@toks={ }\
  \kvsetkeys{Field}{#1}\
  #2\%\
  \ifFld@radio\expandafter\@@Radio#3\%\else\expandafter\@@Menu#3\%\fi\
  \endgroup
}
\def\@@Menu#1\%{
  \HCode{<select size=\the\Fld@menulength\%\
    name=\"Fld@name\"\%\
    \the\Field@toks>\
  }\%\
  \@for\@curropt:=#1\do{\expandafter\Fld@checkequals\@curropt==\
  \HCode{<option\
    \ifx\@curropt\Fld@default\ selected \fi\
    value=\"\@currValue\">\@currDisplay</option>\%}\%\
  }\%\
  \HCode{</select>}}%
13784 \def\@Radio\#1\{\% 13785 \@for\@curropt:=#1\do{\% 13786 \expandafter\Fld@checkequals\@curropt==\% 13787 \HCode{<input type="radio" \% 13788 \ifx\@curropt\Fld@default checked \fi 13789 \name="\Fld@name" \% 13790 \value="\@currValue" \% 13791 \the\Field@toks>\% 13792 \}\% 13793 \currDisplay 13794 \}\% 13795 \} 13796 \def\@PushButton[#1]#2{\% parameters, label 13797 \def\Fld@name{#2}\% 13798 \bgroup 13799 \Field@toks={ }\% 13800 \kvsetkeys{Field}{#1}\% 13801 \HCode{<input type="button" \% 13802 \name="\Fld@name" \% 13803 \value="#2" \% 13804 \the\Field@toks>\% 13805 \HCode{</button>}\% 13806 \egroup \% 13807 \HCode{</button>}\% 13808 \egroup \% 13809 }\% 13810 \def\@Submit[#1]#2{\% 13811 \HCode{<button type="submit">#2</button>}\% 13812 }\% 13813 \def\@Reset[#1]#2{\% 13814 \HCode{<button type="reset">#2</button>}\% 13815 }\% 13816 \def\@CheckBox[#1]#2#3#4{\% parameters, label 13817 \let\Hy@reserved@a\@empty 13818 \def\Fld@default{0}\% 13819 \def\Fld@name{#2}\% 13820 \bgroup 13821 \Field@toks={ }\% 13822 \kvsetkeys{Field}{#1}\% 13823 \HCode{<input type="checkbox" \% 13824 \if\Fld@checked checked \fi 13825 \if\Fld@disabled disabled \fi 13826 \if\Fld@readonly readonly \fi 13827 \name="\Fld@name" \% 13828 \if\Fld@hidden type="hidden" \fi 13829 \value="\Fld@default" \% 13830 \the\Field@toks>\% 13831 #2\% 13832 \}\% 13833 \egroup \% 13834 }\% 13835 }\% 13836 \langle \tex4ht \rangle 48.4 pdfTeX 13837 \def\@Gauge[#1]#2#3#4{\% parameters, label, minimum, maximum 13838 \Hy@Message{Sorry, pdftex does not support FORM gauges}%
Insertion sort for calculation field list. In case of equal sort keys (for example, if `calculatesortkey` is not used at all) the keys keep document calling order.

```latex
\begin{group}
\Hy@safe@activetrue
\let\ltx@secondoftwo\relax
\ifx\HyField@cofields\ltx@empty
\xdef\HyField@cofields{\ltx@secondoftwo{#1}{ #2 0 R}\
\xdef\HyField@cofields{\expandafter\HyField@AddCoField\HyField@cofields\ltx@empty\ltx@empty\ltx@empty}\}
\else
\let\ltx@secondoftwo\relax
\def\HyField@AddCoField##1##2##3{\ifx##1\ltx@empty\ltx@secondoftwo{#1}{ #2 0 R}\
\expandafter\expandafter\expandafter\ltx@secondoftwo{##2}{##3}\
\else\ltx@secondoftwo{##2}{##3}\fi}
\HyField@AddCoField
\xdef\HyField@cofields{\HyField@cofields\ltx@empty\ltx@empty\ltx@empty}\}
\fi
\end{group}
```
Same as \ding{123} of package pifont.
\let\Fld@value\relax
\def\Fld@width{\DefaultWidthofChoiceMenu}\% 
\def\Fld@height{\DefaultHeightofChoiceMenu}\%
\begingroup
\Fld@menulength=0 \%
\@tempdima\z@ 
\@for\@curropt:=#3\do{% 
\expandafter\Fld@checkequals\@curropt==\%
\Hy@StepCount\Fld@menulength 
\settowidth{\@tempdimb}{\@currDisplay}\%
\ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
\advance\@tempdima by 15\p@
\begingroup
\HyField@SetKeys{#1}\% 
\edef\x{\endgroup
\noexpand\expandafter
\noexpand\HyField@SetKeys
\noexpand\expandafter{\%
\expandafter\noexpand\csname DefaultOptionsof\%
\if\Fld@radio
\Radio\%
\else
\@if\Fld@combo 
\if\Fld@popdown
\PopdownBox\%
\else
\ComboBox\%
\fi
\fi
\else
\ListBox\%
\fi
\fi
\endcsname}
\x
\HyField@SetKeys{#1}\%
\PDFForm@Name
\if\Fld@hidden\def\Fld@width{1sp}\fi
\ifx\Fld@value\relax\relax
\let\Fld@value\Fld@default
\fi
\LayoutChoiceField{#2}\% 
\if\Fld@radio
\HyField@FlagsRadioButton 
\fi
\HyField@FlagsRadio Button
\@Radio{#3}\%
\else
\begingroup
\HyField@FlagsChoice 
\ifdim\Fld@width<\@tempdima 
\ifdim\@tempdima<1cm\@tempdima1cm\fi
\edef\Fld@width{\the\@tempdima}\%
\fi
\if\Fld@combo
\\fi
\else
\@tempdima=\the\Fld@menulength\Fld@charsize
\advance\@tempdima by \Fld@borderwidth bp \%
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.
PDF/A: Push button with JavaScript is prohibited

```tex
\def\@ehc \MakeButtonField{#2}\%
\else \HyField@FlagsPushButton
\ifFld@hidden \def\Fld@width{1sp}\fi
\HyAnn@AbsPageLabel \Hy@escapeform \PDFForm@Reset
\pdfstartlink user {\PDFForm@Reset}\relax
\MakeButtonField{#2}\%
\pdfendlink
\HyField@AddToFields
\fi \endgroup
\def\@CheckBox[#1]{#2}{% parameters, label
\def\Fld@name{#2}\%
\def\Fld@default{0}\%
\begingroup
\def\Fld@width{\DefaultWidthofCheckBox}\%
\def\Fld@height{\DefaultHeightofCheckBox}\%
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofCheckBox,#1}\%
\PDFForm@Name \HyField@FlagsCheckBox
\ifFld@hidden \def\Fld@width{1sp}\fi
\LayoutCheckField{#2}{% leavevmode
\HyAnn@AbsPageLabel \Hy@escapeform \PDFForm@Check
\pdfstartlink user {\PDFForm@Check}\relax
\MakeCheckField{\Fld@width}{\Fld@height}\%
\pdfendlink
\HyField@AddToFields
}\endgroup
\def\Hy@FormObjects{\pdfobj{\<<
/Type/Encoding
/Differences[24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek
/ring/tilde % 39/quoting single % 96/grave % 128/bullet/dagger/daggerslash/ellipsis/emdash/endash/florin %
/fraction/guilsinglleft/guilsinglright/minus/perthousand %
/quotenleft/divisum/quotenright/quotefract/quoteright/divisumbase/divisumfract/quoterightbase/quoterightfract/trademark/% 5/fl/lslash/oe/scaron/zcaron %
/Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
164/currency %
166/brokenbar %
168/dieresis/copyright/ordfeminine %
172/logicalnot/_notdef/registered/macron/degree/plusminus %
/twosuperior/threesuperior/acute/mu %
183/periodcentered/cedilla/onesuperior/ordmasculine %
\>>}}}
```
D. P. Story adapted the pdfTEX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.
/Fields @afields%
/DR<<%
/Font<<
/ZaDb @OBJZaDb%
/ Helv @OBJHelv%
>>%
>>%
/DA(/Helv 10 Tf 0 g)%
/CO @corder%
\ifHy@pdfa
\else
\ifHyField@NeedAppearances
/NeedAppearances true%
\fi
\fi
\@pdfm@mark{put @catalog </AcroForm @aform>>}%
\@endForm
\let\@endForm\ltx@empty
\dvipdfm@setdim
\dvipdfm@setdim sets dimensions for ann using \pdfm@box.
\def\dvipdfm@setdim{%
height \the\ht\pdfm@box\space
width \the\wd\pdfm@box\space
depth \the\dp\pdfm@box\space
}

\HyField@AnnotCount
\newcount\HyField@AnnotCount
\HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
\def\HyField@AdvanceAnnotCount{%
\global\advance\HyField@AnnotCount\@ne
}

\HyField@TheAnnotCount
\def\HyField@TheAnnotCount{%
\the\HyField@AnnotCount
}

\Fld@pageobjref
\def\Fld@pageobjref{/P @thispage}%

\HyField@AddToFields
\def\HyField@AddToFields#1{%
@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
@fr\Fld@calculate@code\ltx@empty
\else
@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
\fi
}

306
\edef\x{\noexpand\expandafter \noexpand\HyField@SetKeys{ }%}
\edef\x{\endgroup}
\noexpand\expandafter \noexpand\HyField@SetKeys{ }%}
\edef\x{\endgroup
\noexpand\expandafter \noexpand\HyField@SetKeys{ %}
\edef\x{\endgroup
\noexpand\expandafter \noexpand\HyField@SetKeys{ %}
\edef\x{\endgroup
\def\@@Radio#1{ %
\Fld@listcount=0 %
\EdefEscapeName\Fld@default{\Fld@default}{%}
\setbox\pdfm@box=\hbox{%
\edef\Fld@width{\the\@tempdima}{%}
\edef\Fld@height{\the\@tempdima}{%}
\@@@@Listbox{#3}{%}
\@@Listbox{#3}{%}
\@@@@Radio{ }%
\DefaultOptionsofPushButton,#1\%
\PDFForm@Name
\ifHy@pdfa\Hy@Error{PDF/A: Push button with JavaScript is prohibited}\@ehc
\LayoutPushButtonField{%\leavevmode
\PDFForm@Push\@pdfm@mark{\ann @push\HyField@TheAnnotCount\space\dvipdfm@setdim<<\PDFForm@Push>>%}
}else
\setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
\ifFld@hidden\def\Fld@width{1sp}\fi
\HyField@AdvanceAnnotCount
\LayoutPushButtonField{%\leavevmode
\Hy@escapeform\PDFForm@Push\@pdfm@mark{%\ann @push\HyField@TheAnnotCount\space\dvipdfm@setdim<<\PDFForm@Push>>%}
}else
\unhbox\pdfm@box
\HyField@AddToFields{push}%
\fi
\endgroup

\Submit
\def\Submit[#1][#2]{%
\def\Fld@width{\DefaultWidthofSubmit}\%
\def\Fld@height{\DefaultHeightofSubmit}\%
\begingroup
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofSubmit,#1%\}
\HyField@FlagsPushButton\HyField@FlagsSubmit\ifFld@hidden\def\Fld@width{1sp}\fi
\setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
\leavevmode
\Hy@escapeform\PDFForm@Submit\@pdfm@mark{%\ann @submit\HyField@TheAnnotCount\space\dvipdfm@setdim<<\PDFForm@Submit>>%}
\unhbox\pdfm@box%
\HyField@AddToFields{submit}%
\endgroup
}

\Reset
\def\@Reset[#1]{% 
\def\Fld@width{\DefaultWidthofReset}\
\def\Fld@height{\DefaultHeightofReset}\
\begingroup 
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofReset,#1}\
\leavevmode 
\ifHy@pdfa
\Hy@Error{PDF/A: Reset action is prohibited}%
\else
\HyField@FlagsPushButton 
\ifFld@hidden\def\Fld@width{1sp}\fi 
\setbox\pdfm@box=\hbox{\MakeButtonField{#2}}\% 
\Hy@escapeform\PDFForm@Reset 
\HyField@AdvanceAnnotCount 
\@pdfm@mark{ann @reset\HyField@TheAnnotCount space\%} 
\dvipdfm@setdim <<\PDFForm@Reset>>% 
\fi 
\unhbox\pdfm@box 
\HyField@AddToFields{reset}\
\fi 
\endgroup}

\@CheckBox 
\def\@CheckBox[#1]{% parameters, label 
\def\Fld@name{#2}\
\def\Fld@default{0}\
\begingroup 
\def\Fld@width{\DefaultWidthofCheckBox}\
\def\Fld@height{\DefaultHeightofCheckBox}\
\expandafter\HyField@SetKeys\expandafter{\DefaultOptionsofCheckBox,#1}\
\PDFForm@Name 
\HyField@FlagsCheckBox 
\ifFld@hidden\def\Fld@width{1sp}\fi 
\setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}\% 
\HyField@AdvanceAnnotCount 
\LayoutCheckField{#2}{% 
\leavevmode 
\Hy@escapeform\PDFForm@Check 
\@pdfm@mark{ann @check\HyField@TheAnnotCount space\%} 
\dvipdfm@setdim <<\PDFForm@Check>>% 
\fi 
\unhbox\pdfm@box 
\HyField@AddToFields{check}\
\fi 
\endgroup}
48.6 Common forms part

\( *\text{pdfform} \)

providecommand*{\Fld@pageobjref}{}

\PDFForm@Name

\( *\text{pdfform} \)

providecommand*{\PDFForm@Name}{\Fld@pageobjref\textendash }

\PDFForm@Name
\ifx\Fld@mappingname\relax
\else
\PDFForm@@Name\Fld@mappingname
\fi

\PDFForm@@Name
\def\PDFForm@@Name#1{%
\begingroup
\ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
\ifHy@unicode
\Hy@unicodefalse
\fi
\fi
\HyPsd@XeTeXBigCharstrue
\pdfstringdef\Hy@gtemp#1%
\endgroup
\let#1\Hy@gtemp
}

\Fld@additionalactions
\def\Fld@additionalactions{%
K input (keystroke) format
\ifx\Fld@keystroke@code\@empty
\else
/K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
\fi

F display format
\ifx\Fld@format@code\@empty
\else
/F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
\fi

V validation
\ifx\Fld@validate@code\@empty
\else
/V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
\fi

C calculation
\ifx\Fld@calculate@code\@empty
\else
/C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
\fi

Fo receiving the input focus
\ifx\Fld@onfocus@code\@empty
\else
/Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
\fi

Bl loosing the input focus (blurred)
\ifx\Fld@onblur@code\@empty
\else
/Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
\fi
D pressing the mouse button (down)
14796 \ifx\Fld@onmousedown@code\@empty
14797 \else
14798 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
14799 \fi
U releasing the mouse button (up)
14800 \ifx\Fld@onmouseup@code\@empty
14801 \else
14802 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
14803 \fi
E cursor enters the annotation’s active area.
14804 \ifx\Fld@onenter@code\@empty
14805 \else
14806 /E<</S/JavaScript/JS(\Fld@onenter@code)>>%
14807 \fi
X cursor exits the annotation’s active area.
14808 \ifx\Fld@onexit@code\@empty
14809 \else
14810 /X<</S/JavaScript/JS(\Fld@onexit@code)>>%
14811 \fi
14812 }\def\Fld@additionalactions{%
14813 \if\Fld@@additionalactions-%
14814 \else
14815 \if\Hy@pdfa
14816 \else
14817 /AA<<\Fld@@additionalactions>>%
14818 \fi
14819 \fi
14820 \fi
14821 }

\Fld@annotnames
14822 \def\Fld@annotnames{%
14823 /T(\Fld@name)%
14824 \if\Fld@altname\relax
14825 \else
14826 /TU(\Fld@altname)%
14827 \fi
14828 \if\Fld@mappingname\relax
14829 \else
14830 /TM(\Fld@mappingname)%
14831 \fi
14832 }

\PDFForm@Check
14833 \def\PDFForm@Check{%
14834 /Subtype/Widget%
14835 \Fld@annotflags
14836 \Fld@pageobjref
14837 \Fld@annotnames
14838 /FT/Btn%
14839 \Fld@flags
14840 \Q\Fld@align
14841 /ES<</W/Fld@borderwidth /S/Fld@borderstyle>>%
14842 /AP<< /N <</Yes<<<<<<<<>> %new string /Yes is from below
\PDFForm@Radio

\def\PDFForm@Radio{% 
/Subtype/Widget% 
/Fld@annotflags 
/Fld@pageobjref 
/Fld@annotnames 
/F/Btn% 
/H/P% 
/BS]<</W/Fld@borderwidth/S/Fld@borderstyle>>% 
/ifnum/Fld@rotation=\z@
  \else 1\fi 
/BC[Fld@bordercolor]% 
/FLd@bcolor\relax \else 1\fi 
/FG[Fld@bordercolor]% 
/DA(\Hy@escapestring{\Fld@radiosymbol})% 
>>% 
/DA(\Helv \strip@pt\Fld@charsize\space Tf% 
/FLd@color@empty\else\space\FLd@color\fi)% 
/FLd@choices 
/FLd@additionalactions 
}

317
New code, the default value is used for all buttons

```latex
\newcommand{\Fld@default}{\empty}
\newcommand{\Fld@value}{\Hy@escapestring{\default}}
\newcommand{\Fld@maxlen}{\z@}
```

318
\PDFForm@Reset

\ifHy@pdfa
\else
\def\PDFForm@Reset{%
/Subtype/Widget%
/Fld@annotflags
/Fld@pageobjref
/Fld@annotnames
/FT/Btn%
/Fld@flags
/H/P%
/DA(/Helv
strip@pt/Fld@charsize
Tf 0 0 1 rg)/%
\ifcase0\ifnum/Fld@rotation=\z@ \else 1\fi
\ifx/Fld@bordercolor\relax\else 1\fi
\space
\else
\MK<<%
\ifnum/Fld@rotation=\z@
\else
/R/Fld@rotation
\fi
\fi
/Fld@bordercolor\relax
\else

\BC/Fld@bordercolor]/%
\fi
\fi
>>%
/A<<%
/S/SubmitForm%
/F<<%
/FS/URL%
/F(\Hy@escapestring(\Form@action))/%
>>%
/Fld@submitflags
>>%
/Fld@additionalactions
}
\fi
\endinput
49 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.

49.1 Bookmarks

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.

When using the right-to-left typesetting based on \e-\TeX, the order of the \BOOKMARK commands written to the \@outlinefile could appear wrong, because of mis-feature of \e-\TeX’s implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the bookmark@seq@number counter is used to write the bookmark’s sequential number into a comment in the \@outlinefile, which could be used to post-process it to achieve the proper ordering of \BOOKMARK commands in that file.
In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

\newcommand{\currentpdfbookmark}{% \pdfbookmark{\Hy@currentbookmarklevel} %}
\newcommand{\subpdfbookmark}{% \@tempcnta\Hy@currentbookmarklevel
\Hy@StepCount\@tempcnta
\expandafter\pdfbookmark\expandafter{\the\@tempcnta} %}
\newcommand{\belowpdfbookmark}[2]{% \@tempcnta\Hy@currentbookmarklevel
\Hy@StepCount\@tempcnta
\@tempcnta
{\the\@tempcnta}{\the\@tempcnta}{%}
\advance\@tempcnta by -1
\xdef\Hy@currentbookmarklevel{\the\@tempcnta} %
}

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.

\renewcommand{\pdfbookmark[3][0]}{% \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc} %
\hyper@anchorstart{#3.#1}\hyper@anchorend %}

\def{\BOOKMARK}{% \@ifnextchar[{{@BOOKMARK}{\@BOOKMARK[#1][-]}%}
\@ifnextchar[{{@BOOKMARK[1][-]}%}
\@ifnextchar[{{@BOOKMARK[1][-]}%}
\@ifnextchar[{{@BOOKMARK[1][-]}%}

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

49.1.1 Rerun warning

\Hy@OutlineRerunCheck

\renewcommand{\pdfbookmark[3][0]}{2009/12/10,%
\def\Hy@OutlineRerunCheck{% \RerunFileCheck{\jobname.out}{{% \immediate\closeout\@outlinefile
\MessageBreak
\Rerun to get outlines right\MessageBreak
or use package `bookmark' %
\MessageBreak %

49.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by Taco Hoekwater (taco.hoekwater@wkap.nl). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.
Plain octal codes don’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.
\@makeother##1\%
else
\ifnum\catcode`##1=6 
\@makeother##1\%
\fi
\fi
\if\escapechar=`\% 
\def\@@BOOKMARK[##1][##2][##3][##4][##5]{
\calc@bm@number{##5}\%
}\InputIfFileExists{\jobname.out}{\relax}{\relax}
\if\WriteBookmarks\relax
\global\let\WriteBookmarks\relax
\fi
\def\@@BOOKMARK[##1][##2][##3][##4][##5]{
\def\Hy@temp{##4}\%
⟨pdftex⟩
\Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}\%
\Hy@OutlineName{}\Hy@pstringName{##2}\check@bm@number{##3}\%
\{\%
\expandafter\strip@prefix\meaning\Hy@temp \%
⟨pdfmark⟩
\pdfmark{pdfmark=/OUT,Count={##2\check@bm@number{##3}},Dest={##3},Title=\expandafter\strip@prefix\meaning\Hy@temp} \%
⟨pdfmark⟩
⟨dvipdfm⟩ xetex
\Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}\%
\@pdfm@mark(\%
\ifHy@DvipdfmxOutlineOpen
\ifnum##21>\z@\else-%\fi
\] %
\fi
##1<<%
/Title(\expandafter\strip@prefix\meaning\Hy@temp)%
/Outline /DvipdfmxOutlineOpen
⟨dvipdfm⟩ xetex
⟨dvipdfm⟩
\begingroup
If there is no chapter number (\frontmatter or \backmatter) then the counting by \refstepcounter{chapter} is not executed, so there will be no destination for \ddcontentsline. So @chapter is overloaded to avoid this:

\ltx@IfUndefined{@chapter}{}{%
  \let\Hy@org@chapter\@chapter
  \def@chapter{%
    \def@Hy@next{%
      \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
      \Hy@raisedlink{%
        \hyper@anchorstart{\@currentHref}\hyper@anchorend
      }%
    }
    \ifnum\c@secnumdepth>\m@ne
      \ltx@IfUndefined{if@mainmatter}{}{%
        \let@Hy@next\relax
      }
    \fi
    \Hy@org@chapter}
  }
\let@H@old@part\@part
\begingroup\expandafter\expandafter\expandafter\endgroup
  \if\csname chapter\endcsname\relax
    \let\Hy@secnum@part\z@
  \else
    \let\Hy@secnum@part\m@ne
  \fi
\fi
\Hy@next
\Hy@org@chapter
}\%
50 Compatibility with koma-script classes

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

15555 \def\Hy@tempa{%
15556 \def\@addchap[#1][#2]{%
15557 \typeout[#2]{%
15558 \if@twoside
15559 \@mkboth{#1}{}%
15560 \else
15561 \@mkboth{#1}{}%
15562 \fi
15563 \addtocontents{lof}{\protect\addvspace{10\p@}}%
15564 \addtocontents{lot}{\protect\addvspace{10\p@}}%
15565 \HyQMakeCurrentHrefAuto{\Hy@chapapp*}%
15566 \Hy@raisedlink{%
15567 \hyper@anchorstart{\@currentHref}\hyper@anchorend
15568 }%
15569 \if@twocolumn
15570 \@topnewpage{\@makeschapterhead{#2}{}%}
15571 \else
15572 \@makeschapterhead{#2}%
15573 \@afterheading
15574 \fi
15575 \addcontentsline{toc}{chapter}{#1}%
15576 }%
15577 }
15578 \@ifclassloaded{scrbook}{%
15579 \@ifclasslater{scrbook}{2001/01/01}{%
15580 \let\Hy@tempa\@empty
15581 }%
15582 }%
15583 \@ifclassloaded{scrreprt}{%
15584 \@ifclasslater{scrreprt}{2001/01/01}{%
15585 \let\Hy@tempa\@empty
15586 }%
15587 }%
15588 \let\Hy@tempa\@empty
15589 }%
15590 }%
15591 \Hy@tempa
15592 ⟨/outlines | hypertext⟩

51 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

51.1 PD1 encoding

15593 ⟨\*pd1enc⟩
15594 \DeclareFontEncoding{PD1}{}{}

Accents
15595 \DeclareTextAccent{\'}{PD1}{\textasciigrave}
15596 \DeclareTextAccent{\textasciigrave}{PD1}{}{}
15597 \DeclareTextAccent{\textasciicircum}{PD1}{}{}
15598 \DeclareTextAccent{\textasciitilde}{PD1}{}{}
15599 \DeclareTextAccent{\textasciieresis}{PD1}{}{}`
Special white space escape characters not for use in bookmarks but for other PDF strings.

Accent glyph names

\DeclareTextAccent{\r}{PD1}{\textring}
\DeclareTextAccent{\v}{PD1}{\textasciicaron}
\DeclareTextAccent{\.}{PD1}{\textdotaccent}
\DeclareTextAccent{\c}{PD1}{\textcedilla}
\DeclareTextAccent{\=}{PD1}{\textasciimacron}
\DeclareTextAccent{\b}{PD1}{\textmacronbelow}
\DeclareTextAccent{\d}{PD1}{\textdotbelow}
\DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
\DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
\DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
\DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
\DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
\DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
\DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
\DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
\DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
\DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
\DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
\DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
\DeclareTextCommand{\k}{PD1}[,1]{\TextSymbolUnavailable{\k{#1}}#1}
\DeclareTextCommand{\t}{PD1}[,1]{\TextSymbolUnavailable{\t{#1}}#1}
\DeclareTextCompositeCommand{\newtie}{PD1}[,1]{\TextSymbolUnavailable{\newtie{#1}}#1}

% U+0009 (CHARACTER TABULATION)
% U+000A (LINE FEED)
% U+000D (CARRIAGE RETURN)
\DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
\DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
\DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

\DeclareTextAccent{\textasciibreve}{PD1}{\030}% U+02D8
\DeclareTextAccent{\textasciicaron}{PD1}{\031}% U+02C7
\DeclareTextAccent{\textasciicircum}{PD1}{\032}% U+02D9
\DeclareTextAccent{\textasciicircumflex}{PD1}{\033}% U+02DD
\DeclareTextAccent{\texthungarumlaut}{PD1}{\034}% U+02DB
\DeclareTextAccent{\textogonek}{PD1}{\035}% U+02D9

\DeclareTextAccent{\textasciicaron}{PD1}{\032}% U+02C7
\DeclareTextAccent{\textasciicircum}{PD1}{\033}% U+02D9
\DeclareTextAccent{\textasciicircumflex}{PD1}{\034}% U+02DD
\DeclareTextAccent{\texthungarumlaut}{PD1}{\035}% U+02DB
\DeclareTextAccent{\textogonek}{PD1}{\036}% U+02D9
\textring{PD1} \texttilde{PD1} \textquotedbl{PD1} \textnumbersign{PD1} \textdollar{PD1} \textpercent{PD1} \textampersand{PD1} \textparenleft{PD1} \textparenright{PD1} \textdotbelow{PD1} \textbackslash{PD1} \textsetminus{PD1} \textasciicircum{PD1} \textunderscore{PD1} \textasciicircum{PD1} \textsetminus{PD1} \textunderscore{PD1}
Slot \textbackslash 177 (0x7F) is undefined in PDFDocEncoding.

333
The euro € is inserted in version 1.3 of the PDF specification.槽 \237 (0x9F) is not defined in PDFDocEncoding.
Glyphs that consist of several characters.

Aliases (german.sty)

Aliases (math names)

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).

Polish accents. 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).

**51.2 PU encoding**

orous.

**51.2.1 NFSS2 accents**

 seamless.

orous.

orous.

ialis.
Double accents.

\empty is an artefact of the NFSS2 machinery, it gets inserted for empty arguments and spaces.

\DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}
\DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
\DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}
Accents for capitals (see encoding TS1)

\DeclareTextCommand{\capitalcedilla}{PU}{\textcircled{#1}}
\DeclareTextCommand{\capitalogonek}{PU}{\textcircled{#1}}
\DeclareTextCommand{\capitalgrave}{PU}{\textcircled{#1}}
\DeclareTextCommand{\capitalacute}{PU}{\textcircled{#1}}
\DeclareTextCommand{\capitaltilde}{PU}{\textcircled{#1}}
\DeclareTextCommand{\capitaldieresis}{PU}{\textcircled{#1}}
\DeclareTextCommand{\textcircled{#1}}
\DeclareTextCommand{\textcircled{#1}}
51.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

<table>
<thead>
<tr>
<th>ASCII</th>
<th>Unicode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textHT</td>
<td>\textLF</td>
<td>\textCR</td>
</tr>
<tr>
<td>\textquotedbl</td>
<td>\textnumbersign</td>
<td>\textdollar</td>
</tr>
<tr>
<td>\textpercent</td>
<td>\textampersand</td>
<td>\textquotesingle</td>
</tr>
<tr>
<td>\textparenleft</td>
<td>\textparenright</td>
<td>\textasteriskcentered</td>
</tr>
<tr>
<td>\textMVPlus</td>
<td>\textMVComma</td>
<td>\textMVMinus</td>
</tr>
<tr>
<td>\textMVPeriod</td>
<td>\textMVDivision</td>
<td>\textMVZero</td>
</tr>
</tbody>
</table>

51.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

<table>
<thead>
<tr>
<th>ASCII</th>
<th>Unicode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>\textHT</td>
<td>\textLF</td>
</tr>
<tr>
<td>%</td>
<td>\textCR</td>
<td>\textCR</td>
</tr>
<tr>
<td>%</td>
<td>\textQUOTATION MARK</td>
<td>\textQUOTATION MARK</td>
</tr>
<tr>
<td>%</td>
<td>\textPERCENT SIGN</td>
<td>\textPERCENT SIGN</td>
</tr>
<tr>
<td>%</td>
<td>\textAMPERSAND</td>
<td>\textAMPERSAND</td>
</tr>
<tr>
<td>%</td>
<td>\textAPOSTROPHE</td>
<td>\textAPOSTROPHE</td>
</tr>
<tr>
<td>%</td>
<td>\textLEFT PARENTHESIS</td>
<td>\textLEFT PARENTHESIS</td>
</tr>
<tr>
<td>%</td>
<td>\textRIGHT PARENTHESIS</td>
<td>\textRIGHT PARENTHESIS</td>
</tr>
<tr>
<td>%</td>
<td>\textASTERISK</td>
<td>\textASTERISK</td>
</tr>
<tr>
<td>%</td>
<td>\textPLUS SIGN</td>
<td>\textPLUS SIGN</td>
</tr>
<tr>
<td>%</td>
<td>\textCOMMA</td>
<td>\textCOMMA</td>
</tr>
<tr>
<td>%</td>
<td>\textHYPHEN-MINUS</td>
<td>\textHYPHEN-MINUS</td>
</tr>
<tr>
<td>%</td>
<td>\textFULL STOP</td>
<td>\textFULL STOP</td>
</tr>
<tr>
<td>%</td>
<td>\textSOLIDUS</td>
<td>\textSOLIDUS</td>
</tr>
</tbody>
</table>

341
16196 % U+007C VERTICAL LINE; *bar, verticalbar
16197 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
16198 %* \textbar -> \textvertline (tipa)
16199 % U+007D RIGHT CURLY BRACKET; braceright
16200 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
16201 % U+007E TILDE; asciitilde
16202 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

51.2.3 Latin-1 Supplement: U+0080 to U+00FF
\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace
16203 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
16204 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1
16205 % U+00A2 CENT SIGN; cent
16206 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
16207 % U+00A3 POUND SIGN; sterling
16208 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
16209 %* \textsterling -> \mathsterling (LaTeX)
16210 %* \textsterling -> \pounds (LaTeX)
16211 % U+00A4 CURRENCY SIGN; currency
16212 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
16213 % U+00A5 YEN SIGN; yen
16214 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
16215 % U+00A6 BROKEN BAR; brokenbar
16216 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6
16217 %* \textbrokenbar -> \brokenvert (wasysym)
16218 % U+00A7 SECTION SIGN; section
16219 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7
16220 %* \textsection -> \mathsection (LaTeX)
16221 %* \textsection -> \S (LaTeX)
16222 % U+00A8 DIAERESIS; dieresis
16223 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8
16224 % U+00A9 COPYRIGHT SIGN; copyright
16225 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%* U+00A9
16226 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine
16227 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA
16228 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-
16229 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB
16230 % U+00AC NOT SIGN; logicalnot
16231 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC
16232 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC
\80\255: U+00AD SOFT HYPHEN; sfhyphen, softhyphen
16233 % U+00AE REGISTERED SIGN; registered
16234 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE
16235 % U+00AF MACRON; *macron, overscore
16236 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF
16237 % U+00B0 DEGREE SIGN; degree
16238 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0
16239 % U+00B1 PLUS-MINUS SIGN; plusminus
16240 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1
16241 % U+00B2 SUPERSCRIPT TWO; twosuperscript
16242 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%* U+00B2
16243 % U+00B3 SUPERSCRIPT THREE; threesuperscript
16244 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%* U+00B3
16245 % U+00B4 ACUTE ACCENT; acute
16246 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4
\DeclareTextCompositeCommand{"}{PU}{I}{\80\317}\% U+00CF
\DeclareTextCompositeCommand\DH{PU}{\80\320}\% U+00D0
\DeclareTextCompositeCommand\~{PU}{N}{\80\321}\% U+00D1
\DeclareTextCompositeCommand\"{PU}{O}{\80\326}\% U+00D6
\DeclareTextCompositeCommand\textmultiply{PU}{\80\327}\%* \textmultiply \rightarrow \vartimes (stmaryrd)
\DeclareTextCompositeCommand\O{PU}{\80\330}\% U+00D8
\DeclareTextCompositeCommand\textThorn{PU}{\80\336}\%* U+00DE
\DeclareTextCompositeCommand\ss{PU}{\80\337}\% U+00DF
\DeclareTextCompositeCommand\ae{PU}{\80\346}\% U+00E6
\DeclareTextCompositeCommand\c{PU}{\80\347}\% U+00E7
\DeclareTextCompositeCommand\texttimes{PU}{\80\350}\% U+00D7
\DeclareTextCompositeCommand\r{PU}{\80\345}\% U+00E5
\DeclareTextCompositeCommand\textcircledcirc{PU}{\80\351}\% U+00E9
\endinput
51.2.4 Latin Extended-A: U+0080 to U+017F

% U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex
\DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA
% U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis
\DeclareTextCompositeCommand{"}{PU}{e}{\80\353}% U+00EB
% U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave
\DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
% U+00ED LATIN SMALL LETTER I WITH ACUTE; lacute
\DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
% U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex
\DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE
% U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis
\DeclareTextCompositeCommand{"}{PU}{i}{\80\357}% U+00EF
% U+00F0 LATIN SMALL LETTER ETH; eth
\DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0
%* \dh -> \eth (wsuipa, phonetic)
% U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde
\DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1
% U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve
\DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2
% U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute
\DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
% U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex
\DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4
% U+00F5 LATIN SMALL LETTER O WITH STROKE; oslash
\DeclareTextCommand{\o}{PU}{\80\370}% U+00F5
% U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis
\DeclareTextCompositeCommand{"}{PU}{o}{\80\365}% U+00F6
% U+00F7 DIVISION SIGN; divide
\DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7
% U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash
\DeclareTextCommand{\o}{PU}{\80\368}% U+00F8
% U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave
\DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9
% U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
\DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA
% U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
\DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB
% U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
\DeclareTextCompositeCommand{"}{PU}{u}{\80\374}% U+00FC
% U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
\DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD
% U+00FE LATIN SMALL LETTER THORN; thorn;
% th, thorn (wasysym), \textthorn (tipa)
\DeclareTextCommand{\th}{PU}{\80\376}% U+00FE
\DeclareTextCommand{\textthorn}{PU}{\80\376}% U+00FE
% U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
\DeclareTextCompositeCommand{"}{PU}{y}{\80\377}% U+00FF

51.2.4 Latin Extended-A: U+0080 to U+017F
The canonical name of U+0138, small letter kra, would be \textkgreenlandic, following the glyph naming convention. However \texttt{latex/base/inputenc.dtx} has chosen \textkra.

There seems to be no variants of letters 'L' and 'l' with a dot above (reasonable). Therefore the \texttt{\cdot} accent is reused instead of making a separate accent macro \textmiddledot.
51.2.5 Latin Extended-B: U+0180 to U+024F

- U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)
- U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausaB (phonetic)
- U+0185 LATIN SMALL LETTER F WITH HOOK; florin
- U+0187 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)
- U+018D LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegrightlong
- U+0198 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)
- U+019E LATIN SMALL LETTER Z WITH CARON; zcaron
- U+019F LATIN SMALL LETTER LONG S; longs, slong
51.2.6 IPA Extensions: U+0250 to U+02AF

51.2.6.1 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)
\DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250
\textturna -> \inva (wasysym)
\textturna -> \rotvara (phonetic)

51.2.6.2 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)
\DeclareTextCommand{\textscripta}{PU}{\82\121}% U+0251
\textscripta -> \vara (phonetic)
\textscripta -> \invscripta (wsuipa)
\textscripta -> \rotvara (phonetic)

51.2.6.3 LATIN SMALL LETTER TURNED ALPHA; ascriptturned; \textturnscripta (tipa)
\DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252
\textturnscripta -> \invscripta (wsuipa)
\textturnscripta -> \rotvara (phonetic)

51.2.6.4 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)
\DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253
\texthtb -> \hookb (wsuipa)
\texthtb -> \hausab (phonetic)

51.2.6.5 LATIN SMALL LETTER OPEN O; oopen; \textopeno (tipa), \openo (wasysym)
\DeclareTextCommand{\textopeno}{PU}{\82\124}% U+0254
\textopeno -> \varopeno (phonetic)

51.2.6.6 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)
\DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255
\textctc -> \curlyc (wsuipa)

51.2.6.7 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)
\DeclareTextCommand{\textrtaild}{PU}{\82\126}% U+0256
\textrtaild -> \taild (wsuipa)
\textrtaild -> \hausad (phonetic)

51.2.6.8 LATIN SMALL LETTER REVERSED E; ereversed; \textreve (tipa), \reve (wsuipa)
\DeclareTextCommand{\textreve}{PU}{\82\127}% U+0258
\textreve -> \er (wsuipa)

51.2.6.9 LATIN SMALL LETTER SCHWA WITH HOOK; schwahook; \textrhookschwa (tipa)
\DeclareTextCommand{\textrhookschwa}{PU}{\82\130}% U+0259
\textrhookschwa -> \er (wsuipa)
\textrhookschwa -> \er (wasysym)

51.2.6.10 LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EPSILON; oopen; 
\DeclareTextCommand{\textniepsilon}{PU}{\82\131}% U+025A
\textniepsilon -> \epsi (phonetic)

51.2.6.11 LATIN SMALL LETTER REVERSED OPEN E; oopenreversed; 
\DeclareTextCommand{\textrevepsilon}{PU}{\82\132}% U+025B
\textrevepsilon -> \erepsilon (phonetic)
\textrevepsilon -> \erepsilon (wasysym)
\text{\textcloserevepsilon} \rightarrow \text{\closedrevepsilon} (wsuipa)

\text{\textbardotlessj} \rightarrow \text{\barj} (phonetic)

\text{\texthtg} \rightarrow \text{\hookg} (wsuipa)

\text{\textipagamma} \rightarrow \text{\vod} (phonetic)

\text{\textbeltl} \rightarrow \text{\latfric} (wsuipa)

\text{\texththeng} \rightarrow \text{\hookheng} (wsuipa)

\text{\textniiota} \rightarrow \text{\vari} (phonetic)

\text{\textsci} \rightarrow \text{\sci} (wsuipa)

\text{\texttilde} \rightarrow \text{\tildel} (wsuipa)

\text{\texttilde} \rightarrow \text{\tildel} (wsuipa)

\text{\textbeltl} \rightarrow \text{\latfric} (wsuipa)

\text{\hookh} \rightarrow \text{\hookh} (wsuipa)

\text{\text_exempt} \rightarrow \text{\text_exempt} (tipa)
\DeclareTextCommand{\textlonglegr}{PU}{\82\174} %* U+027C
%* \textlonglegr -> \legr (wsuipa)
\DeclareTextCommand{\textrtailr}{PU}{\82\175} % U+027D
%* \textrtailr -> \tailr (wsuipa)
%* \textfishhookr (tipa)
\DeclareTextCommand{\textrtailr}{PU}{\82\176} %* U+027E
%* \textfishhookr -> \flapr (wsuipa)
%* \textfishhookr -> \flap (phonetic)
%* U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;
\DeclareTextCommand{\textlhtlongi}{PU}{\82\177} % U+027F
% U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)
\DeclareTextCommand{\textinvscr}{PU}{\82\200} %* U+0281
% U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)
%* \textrtails -> \tails (wsuipa)
% U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)
\DeclareTextCommand{\textctesh}{PU}{\82\203} %* U+0284
% U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;
\DeclareTextCommand{\textvibyi}{PU}{\82\205} % U+0286
% U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)
%* \textturnt -> \invv (wsuipa)
%* \textturnt -> \pwedge (phonetic)
\DeclareTextCommand{\textbaru}{PU}{\82\209} %* U+0289
%* \textbaru -> \ubar (phonetic)
\DeclareTextCommand{\textniupsilon}{PU}{\82\2011} % U+028A
%* U+028B LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)
%* \textniupsilon -> \rotOmega (phonetic)
% U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)
%* \textturnv -> \invv (wsuipa)
%* \textturnv -> \pwedge (phonetic)
% U+028D LATIN SMALL LETTER T WITH RETROFLEX HOOK; tretroflexhook;
% U+028D LATIN SMALL LETTER TURNED W; \textturnw (tipa)
% \DeclareTextCommand{\textturnw}{PU}{\82\215} % U+028D
% \textturnw \rightarrow \invw (wsuipa)
% \textturnw \rightarrow \rotw (phonetic)
% U+028E LATIN SMALL LETTER TURNED Y; \textturny (tipa)
% \DeclareTextCommand{\textturny}{PU}{\82\216} % U+028E
% \textturny \rightarrow \invy (wsuipa)
% \textturny \rightarrow \roty (phonetic)
% U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)
% \DeclareTextCommand{\textscy}{PU}{\82\217} % U+028F
% U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflexhook;
% \textrtailz (tipa)
% \DeclareTextCommand{\textrtailz}{PU}{\82\220} % U+0290
% \textrtailz \rightarrow \tailz (wsuipa)
% U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)
% \DeclareTextCommand{\textctz}{PU}{\82\221} % U+0291
% U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;
% \textyogh (tipa), \yogh (wsuipa)
% \DeclareTextCommand{\textyogh}{PU}{\82\222} % U+0292
% \textyogh \rightarrow \curlyyogh (wsuipa)
% U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;
% \textctyogh (tipa)
% \DeclareTextCommand{\textctyogh}{PU}{\82\223} % U+0293
% U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;
% \textglotstop (tipa), \glotstop (wsuipa)
% \DeclareTextCommand{\textglotstop}{PU}{\82\224} % U+0294
% \textglotstop \rightarrow \ejective (wsuipa)
% \textglotstop \rightarrow \glottal (phonetic)
% U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/
% LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;
% \textrevglotstop (tipa), \revglotstop (wsuipa)
% \DeclareTextCommand{\textrevglotstop}{PU}{\82\225} % U+0295
% \textrevglotstop \rightarrow \reveject (wsuipa)
% \textrevglotstop \rightarrow \glottal (phonetic)
% U+0296 LATIN LETTER SMALL CAPITAL B; \textsmallb (tipa)
% \DeclareTextCommand{\textsmallb}{PU}{\82\226} % U+0296
% U+0297 LATIN LETTER STRETCHED C; \textstretchc (tipa)
% \DeclareTextCommand{\textstretchc}{PU}{\82\227} % U+0297
% \textstretchc \rightarrow \textstretchcvar (tipx)
% U+0298 LATIN LETTER BILABIAL CLICK; \textb (tipa)
% \DeclareTextCommand{\textb}{PU}{\82\228} % U+0298
\DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C
% U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossed-tail; \textcdj (tipa)
\DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D
%* \textctj -> \textctjvar (tipa)
\DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E
% U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)
\DeclareTextCommand{\textturnsck}{PU}{\82\237}% U+029F
% U+029F LATIN LETTER SMALL CAPITAL L; \textscl (tipa)
\DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0
% U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)
\DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1
% U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstopstroke;
\DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2
% U+02A2 LATIN SMALL LETTER REVERSED GLOTTAL STOP WITH STROKE/
\DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3
% U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)
\DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4
%* \textdyoghlig -> \dz (wsupipa)
\DeclareTextCommand{\textteshlig}{PU}{\82\245}% U+02A5
% U+02A5 LATIN SMALL LETTER TESH DIGRAPH; tesh; \textteshlig (tipa)
\DeclareTextCommand{\textteshlig}{PU}{\82\246}% U+02A6
% U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \textteshlig (tipa)
\DeclareTextCommand{\texttctclig}{PU}{\82\247}% U+02A7
% U+02A7 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;
\DeclareTextCommand{\textdztzlig}{PU}{\82\248}% U+02A8
% U+02A8 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;
\DeclareTextCommand{\textttxctlig}{PU}{\82\249}% U+02A9
% U+02A9 LATIN SMALL LETTER TS DIGRAPH WITH CURL; tcsurl;
\DeclareTextCommand{\texttshlig}{PU}{\82\250}% U+02AA
% U+02AA LATIN SMALL LETTER TESH DIGRAPH WITH CURL; tesh;
\DeclareTextCommand{\texttshlig}{PU}{\82\251}% U+02AB
%* \texttshlig -> \tesh (wsuipa)
\DeclareTextCommand{\texttccurlig}{PU}{\82\252}% U+02AC
% U+02AC LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;
\DeclareTextCommand{\texttctzlig}{PU}{\82\253}% U+02AD
% U+02AD LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;
\DeclareTextCommand{\texttshlig}{PU}{\82\254}% U+02AE
% U+02AE LATIN SMALL LETTER TESH DIGRAPH WITH CURL; tesh;
\DeclareTextCommand{\texttshlig}{PU}{\82\255}% U+02AF
% U+02AF LATIN SMALL LETTER TESH DIGRAPH WITH CURL; tesh;
51.2.7 Spacing Modifier Letters: U+02B0 to U+02FF
\DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD
% U+02BD MODIFIER LETTER REVERSED COMMA;
\DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD
% U+02BD MODIFIER LETTER REVERSED COMMA;
51.2.10 Cyrillic: U+0400 to U+04FF

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

17425 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
17426 \DeclareTextCompositeCommand{`}{PU}{\CYRE}{\84\000} U+0400
17427 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afi10023
17428 \DeclareTextCommand{\CYRO}{PU}{\84\001} U+0401
17429 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
17430 \DeclareTextCommand{\CYRDJE}{PU}{\84\002} U+0402
17431 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10054
17432 \DeclareTextCommand{\CYRG}{PU}{\84\003} U+0403
17433 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Eecyrillic, *afi10053
17434 \DeclareTextCommand{\CYRIE}{PU}{\84\004} U+0404
17435 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afi10054
17436 \DeclareTextCommand{\CYRDZE}{PU}{\84\005} U+0405
17437 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, *afi10055
17438 \DeclareTextCommand{\CYRII}{PU}{\84\006} U+0406
17439 % U+0407 CYRILLIC CAPITAL LETTER Y; Ycyrillic, *afi10056
17440 \DeclareTextCommand{\CYRYO}{PU}{\84\001} U+0407
17441 % U+0408 CYRILLIC CAPITAL LETTER YE; Jecyrillic, *afi10057
17442 \DeclareTextCommand{\CYRJE}{PU}{\84\010} U+0408
17443 % U+0409 CYRILLIC CAPITAL LETTER IJE; Ljecyrillic, *afi10058
17444 \DeclareTextCommand{\CYRLJE}{PU}{\84\011} U+0409
17445 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afi10059
17446 \DeclareTextCommand{\CYRNJE}{PU}{\84\012} U+040A
17447 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afi10060
17448 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013} U+040B
17449 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afi10061
17450 \DeclareTextCommand{\CYRK}{PU}{\84\023} U+040C
17451 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
17452 \DeclareTextCommand{\CYRI}{PU}{\84\015} U+040D
17453 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, *afi10062
17454 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016} U+040E
17455 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afi10145
17456 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017} U+040F
17457 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afi10017
17458 \DeclareTextCommand{\CYRA}{PU}{\84\020} U+0410
17459 % U+0411 CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afi10018
17460 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017} U+040F
17461 % U+0412 CYRILLIC CAPITAL LETTER VE; Vjecyrillic, *afi10019
17462 \DeclareTextCommand{\CYRZ}{PU}{\84\022} U+0412
17463 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afi10020
17464 \DeclareTextCommand{\CYRG}{PU}{\84\023} U+0413
17465 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afi10021
17466 \DeclareTextCommand{\CYRD}{PU}{\84\024} U+0414
17467 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afi10022
17468 \DeclareTextCommand{\CYRE}{PU}{\84\025} U+0415
17469 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, *afi10024
17470 \DeclareTextCommand{\CYRZH}{PU}{\84\026} U+0416
17471 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, *afi10025
17472 \DeclareTextCommand{\CYRZ}{PU}{\84\027} U+0417
17473 % U+0418 CYRILLIC CAPITAL LETTER I; Icyrillic, *afi10026

366
\DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E CYRILLIC SMALL LETTER YU; *afii10096, iucyrillic
\DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F CYRILLIC SMALL LETTER YA; *afii10097, iucyrillic
\DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE
\DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451 CYRILLIC SMALL LETTER IO; *afii10099, iocyrillic
\DeclareTextCompositeCommand{"}{PU}{\cyre}{\84\121}% U+0451 CYRILLIC SMALL LETTER DJE; *afii10099, djecyrillic
\DeclareTextCompositeCommand{"}{PU}{\cyre}{\84\122}% U+0452 CYRILLIC SMALL LETTER GJE; *afii10100, gjecyrillic
\DeclareTextCompositeCommand{"}{PU}{\cyre}{\84\123}% U+0453 CYRILLIC SMALL LETTER UKRAINIAN IE; *afii10101, ecyrillic
\DeclareTextCommand{\cyrdje}{PU}{\84\124}% U+0454 CYRILLIC SMALL LETTER DZE; *afii10102, dzecyrillic
\DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;
\DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;
\DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457 CYRILLIC SMALL LETTER YI; *afii10103, icyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\128}% U+0458 CYRILLIC SMALL LETTER YAT; *afii10103, icyrillic
\DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\129}% U+0458 CYRILLIC SMALL LETTER YAT; *afii10103, icyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\130}% U+0459 CYRILLIC SMALL LETTER LJE; *afii10104, ljecyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\131}% U+045A CYRILLIC SMALL LETTER NJE; *afii10105, njeccyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\132}% U+045B CYRILLIC SMALL LETTER TSHE; *afii10106, tshccyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\133}% U+045C CYRILLIC SMALL LETTER KJE; *afii10107, kjeccyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\134}% U+045D CYRILLIC SMALL LETTER I WITH GRAVE
\DeclareTextCommand{\cyrdzhe}{PU}{\84\135}% U+045E CYRILLIC SMALL LETTER SHORT U; *afii10108, ushortccyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\136}% U+045F CYRILLIC SMALL LETTER DZHE; *afii10109, dzhecyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\138}% U+0461 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\139}% U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, *afii10146
\DeclareTextCommand{\cyrdzhe}{PU}{\84\140}% U+0463 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, *afii10146
\DeclareTextCommand{\cyrdzhe}{PU}{\84\141}% U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\142}% U+0465 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\143}% U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic
\DeclareTextCommand{\cyrdzhe}{PU}{\84\144}% U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic
cyrillic
\DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499
\DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499
\% U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Ka
descendercyrillic
\DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A
\% U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kades
cendercyrillic
\DeclareTextCommand{\k}{PU}{\cyrs}{\84\233}% U+049B
\% U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROK
\% Kaverticalstrokecyrillic
\DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C
\% U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;
% kaverticalstrokecyrillic
\DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D
\% U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircy
\% Kabashkircyrillic
\DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0
\% U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic
\DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1
\% U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endes
cendercyrillic
\DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2
\% U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endes
cendercyrillic
\DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6
\% U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemid
dlehookcyrillic
\DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6
\% U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle
dlehookcyrillic
\% U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancy
\% Haabkhasiancyrillic
\% U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancy
\% Haabkhasiancyrillic
\% U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancy
\% Haabkhasiancyrillic
\% U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Edes
cendercyrillic
\% U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; edesender
cyrillic
\% U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedes
cendercyrillic
\% U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedesender
cyrillic
51.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from \texttt{he8enc.def}.

\begin{verbatim}
17931 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5
17932 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER
17933 \DeclareTextCommand\CYRGDS{PU}{\84\366}% U+04F6
17934 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER
17935 \DeclareTextCommand\cyrgds{PU}{\84\367}% U+04F7
17936 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic
17937 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8
17938 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic
17939 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% U+04F9
181% U+04FA CYRILLIC CAPITAL LETTER GHE WITH STROKE AND HOOK
182% U+04FB CYRILLIC SMALL LETTER GHE WITH STROKE AND HOOK
183\84\372: U+05C3 HEBREW PUNCTUATION SOF PASUQ
184\85\303: U+05C3
185% U+05D0 HEBREW LETTER ALEF
186\85\320: U+05D0
187% U+05D1 HEBREW LETTER BET
188\85\321: U+05D1
189\85\322: U+05D2
190\85\323: U+05D3
191% U+05D4 HEBREW LETTER HE
192\85\324: U+05D4
193% U+05D5 HEBREW LETTER VAV
194\85\325: U+05D5
195% U+05D6 HEBREW LETTER ZAYIN
196\85\326: U+05D6
197% U+05D7 HEBREW LETTER HET
198\85\327: U+05D7
199% U+05D8 HEBREW LETTER TET
200\85\330: U+05D8
201% U+05D9 HEBREW LETTER YOD
202\85\331: U+05D9
203% U+05DA HEBREW LETTER FINAL KAF
204\85\332: U+05DA
205% U+05DB HEBREW LETTER KAF
206\85\333: U+05DB
207% U+05DC HEBREW LETTER LAMED
208\85\334: U+05DC
209% U+05DD HEBREW LETTER FINAL MEM
210\85\335: U+05DD
\end{verbatim}

376
51.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

51.2.15 Latin Extended Additional: U+1E00 to U+1EFF
51.2.16 General Punctuation: U+2000 to U+206F

51.2.16 General Punctuation: U+2000 to U+206F

18346 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
18347 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow
18348 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8
18349 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow
18350 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
18351 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde
18352 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\312}% U+1EBC
18353 % U+1EBC LATIN SMALL LETTER E WITH TILDE; etilde
18354 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\313}% U+1EBC
18355 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow
18356 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\314}% U+1ECA
18357 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow
18358 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\315}% U+1ECB
18359 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow
18360 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\316}% U+1ECC
18361 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow
18362 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\317}% U+1ECD
18363 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow
18364 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
18365 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow
18366 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5
18367 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave
18368 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\362}% U+1EF2
18369 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave
18370 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\363}% U+1EF3
18371 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow
18372 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
18373 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow
18374 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5
18375 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde
18376 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\370}% U+1EF8
18377 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde
18378 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\371}% U+1EF9

51.2.16 General Punctuation: U+2000 to U+206F

18379 % U+200C ZERO WIDTH NON-JOINER; *afl61664, zerowidthnonJoiner
18380 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C
18381 % U+2013 EN DASH; endash
18382 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013
18383 % U+2014 EM DASH; emdash
18384 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014
18385 %* \textemdash \rightarrow \textdoublevertline (tipa)
18386 % U+2016 DOUBLET WIDE VERTICAL LINE; dblverticalbar
18387 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016
18388 %* \textbardbl \rightarrow \textdoublevertline (tipa)
18389 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft
18390 \DeclareTextCommand{\textleftquote}{PU}{\9040\030}% U+2018
18391 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright
18392 \DeclareTextCommand{\textrightquote}{PU}{\9040\031}% U+2019
18393 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglebase
18394 \DeclareTextCommand{\textquotesingle}{PU}{\9040\032}% U+201A
18395 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft
18396 \DeclareTextCommand{\textdoublequoteleft}{PU}{\9040\034}% U+201C
18397 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright
18398 \DeclareTextCommand{\textdoublequoteright}{PU}{\9040\035}% U+201D
18399 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase
18400 \DeclareTextCommand{\textdoublequote}{PU}{\9040\036}% U+201E
18401 % U+2020 DAGGER; dagger

384
51.2.18 Currency Symbols: \( U+20A0 \) to \( U+20CF \)

\( U+20A1 \) COLON SIGN; *colonmonetary, colonsign

\( U+20A4 \) LIRA SIGN; afii08941, *lira

\( U+20A6 \) NAIRA SIGN

\( U+20A7 \) PESETA SIGN; peseta

\( U+20A9 \) WON SIGN; won

\( U+20AB \) DONG SIGN; dong

\( U+20AC \) EURO SIGN; *Euro, euro

\( U+20B0 \) GERMAN PENNY SIGN; \( \text{Deleatur} \) (marvosym)

\( U+20B1 \) PESO SIGN

\( U+20B2 \) GUARANI SIGN

51.2.19 Letterlike Symbols: \( U+2100 \) to \( U+214F \)

\( U+2103 \) DEGREE CELSIUS; centigrade

\( U+2104 \) MINUS-PLUS SIGN

\( U+2105 \) TIMES MINUS SIGN

\( U+2106 \) TIMES PLUS SIGN

\( U+2107 \) PLUS-MINUS SIGN

\( U+2108 \) PLUS-MINUS OR DIVIDED BY SIGN

\( U+210F \) LEFT RIGHT ARROW

\( U+2110 \) LEFT RIGHT ARROW WITH BAR

\( U+2111 \) LEFT RIGHT ARROW WITH VERTICAL BAR

\( U+2112 \) LEFT RIGHT ARROW WITH TILDE

\( U+2113 \) LEFT RIGHT ARROW WITH SLASH

\( U+2114 \) LEFT RIGHT ARROW WITH SQUARE

\( U+2115 \) LEFT RIGHT ARROW WITH CIRCUMFLEX

\( U+2116 \) LEFT RIGHT ARROW WITH TILDE AND CIRCUMFLEX
51.2.20 Number Forms: U+2150 to U+218F

51.2.20.1 U+2150 to U+2159

51.2.20.2 U+215A to U+215E

51.2.20.3 U+215F to U+2163

51.2.20.4 U+2164 to U+2167

51.2.20.5 U+2168 to U+2169

51.2.20.6 U+216A to U+216F

51.2.20.7 U+2170 to U+2176

51.2.20.8 U+2177 to U+217E

51.2.20.9 U+217F to U+2183

51.2.20.10 U+2184 to U+2186

51.2.20.11 U+2187 to U+218F
18618 % U+2151 VULGAR FRACTION ONE NINTH
18619 \DeclareTextCommand{\textoneninth}{PU}{\9041\121} % U+2151
18620 % U+2152 VULGAR FRACTION ONE TENTH
18621 \DeclareTextCommand{\textonetenth}{PU}{\9041\122} % U+2152
18622 % U+2153 VULGAR FRACTION ONE THIRD; onethird
18623 \DeclareTextCommand{\textonethird}{PU}{\9041\123} % U+2153
18624 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds
18625 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124} % U+2154
18626 % U+2155 VULGAR FRACTION ONE FIFTH
18627 \DeclareTextCommand{\textonefifth}{PU}{\9041\125} % U+2155
18628 % U+2156 VULGAR FRACTION TWO FIFTHS
18629 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126} % U+2156
18630 % U+2157 VULGAR FRACTION THREE FIFTHS
18631 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127} % U+2157
18632 % U+2158 VULGAR FRACTION FOUR FIFTHS
18633 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130} % U+2158
18634 % U+2159 VULGAR FRACTION ONE SIXTH
18635 \DeclareTextCommand{\textonesixth}{PU}{\9041\131} % U+2159
18636 % U+215A VULGAR FRACTION FIVE SIXTHS
18637 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132} % U+215A
18638 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth
18639 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133} % U+215B
18640 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths
18641 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134} % U+215C
18642 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths
18643 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135} % U+215D
18644 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths
18645 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136} % U+215E
18646 % U+2184 LATIN SMALL LETTER REVERSED C
18647 \DeclareTextCommand{\textrevc}{PU}{\9041\204} % U+2184
18648 % U+2189 VULGAR FRACTION ZERO THIRDS
18649 \DeclareTextCommand{\textzerothirds}{PU}{\9041\211} % U+2189

51.2.21 Arrows: U+2190 to U+21FF

18650 % U+2190 LEFTWARDS ARROW; arrowleft
18651 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220} %* U+2190
18652 % U+2191 UPWARDS ARROW; arrowup
18653 \DeclareTextCommand{\textuparrow}{PU}{\9041\221} %* U+2191
18654 % U+2192 RIGHTWARDS ARROW; arrowright
18655 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222} %* U+2192
18656 %* \textrightarrow -> \MVRightArrow (marvosym)
18657 %* \textrightarrow -> \MVRightarrow (marvosym)
18658 % U+2193 DOWNWARDS ARROW; arrowdown
18659 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223} %* U+2193
18660 %* \textdownarrow -> \MVArrowDown (marvosym)
18661 %* \textdownarrow -> \Force (marvosym)
18662 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftarrow (LaTeX)
18663 \DeclareTextCommand{\textleftarrow}{PU}{\9041\224} %* U+2194
18664 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)
18665 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225} %* U+2195
18666 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)
18667 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226} %* U+2196
18668 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
18669 \DeclareTextCommand{\textnearrow}{PU}{\9041\227} %* U+2197
18670 %* \textnearrow -> \textglobrise (tipa)
18671 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
18672 \DeclareTextCommand{\textsearrow}{PU}{\9041\230} %* U+2198
\textsearrow \rightarrow \textglobfall (tipa)
\U+2199 SOUTH WEST ARROW; \arrowdownleft; \swarrow (LaTeX)
\DeclareTextCommand{\textswarrow}{PU}{\9041\231}\U+2199
\U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
\DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}\U+219A
\U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
\DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}\U+219B
\U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
\DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}\U+219E
\ntwoheadleftarrow (txfonts/pxfonts)
\DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}\U+219EU+0338
\U+219F UPWARDSTWOHEADEDARROW; \twoheaduparrow(MnSymbol)
\DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}\U+219F
\U+21A0 RIGHTWARDS TWO HEADED ARROW; \twoheadrightarrow (AmS)
\DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}\U+21A0
\ntwoheadrightarrow (txfonts/pxfonts)
\DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}\U+21A0U+0338
\U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (MnSymbol)
\DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}\U+21A1
\U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
\DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}\U+21A2
\U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
\DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}\U+21A3
\U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
\DeclareTextCommand{\textmapsto}{PU}{\9041\246}\U+21A6
\U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
\DeclareTextCommand{\texthookleftarrow}{PU}{\9041\249}\U+21A9
\U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
\DeclareTextCommand{\texthookrightarrow}{PU}{\9041\250}\U+21AA
\U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
\DeclareTextCommand{\textlooparrowright}{PU}{\9041\252}\U+21AC
\U+21AE LEFT RIGHT ARROW WITH STROKE; \nleftrightarrow (AmS)
\DeclareTextCommand{\textnleftrightarrow}{PU}{\9041\253}\U+21AE
\U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
\DeclareTextCommand{\textlightning}{PU}{\9041\254}\U+21AF
\U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
\downharpoonleft (LaTeX)
\DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\255}\U+21B5
\U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
\curvearrowright (AmS)
\DeclareTextCommand{\textcurvearrowright}{PU}{\9041\256}\U+21B6
\U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowleft (AmS)
\DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\257}\U+21B7
\U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; \upharpoonup (LaTeX)
\DeclareTextCommand{\textupharpoonup}{PU}{\9041\258}\U+21BC
\U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
\downharpoonup (LaTeX)
\DeclareTextCommand{\textdownharpoonup}{PU}{\9041\259}\U+21BD
\U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
\upharpoonright (AmS)
\DeclareTextCommand{\textupharpoonright}{PU}{\9041\260}\U+21BE
51.2.22 Mathematical Operators: U+2200 to U+22FF

\begin{verbatim}
18830 % U+2200 FOR ALL; forall; \forall (LaTeX)
\DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
\DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
\DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
\DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
\DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
\DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* \textemptyset -> \varnothing (AmS)
\DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
\DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
\DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
\DeclareTextCommand{\textni}{PU}{\9042\013}%* \textni -> \owns (mathabx)
\DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* \textnotowner -> \notni (txfonts/pxfonts)
\DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
\DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
\DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
\DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
\DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
\DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
\DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
\DeclareTextCommand{\textdivides}{PU}{\9042\025}%* U+2215
\DeclareTextCommand{\textdividesnot}{PU}{\9042\026}% U+2216
\DeclareTextCommand{\textsetminus}{PU}{\9042\027}%* U+2217
\DeclareTextCommand{\textast}{PU}{\9042\028}% U+2218
\DeclareTextCommand{\textcirc}{PU}{\9042\029}%* U+2219
\DeclareTextCommand{\textbulletoperator}{PU}{\9042\030}%* U+221A
\DeclareTextCommand{\textradical}{PU}{\9042\031}%* U+221B
\end{verbatim}

\textit{51.2.22} Mathematical Operators: U+2200 to U+22FF

18830 \% U+2200 FOR ALL; forall; \forall (LaTeX)
18831 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
18832 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
18833 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
18834 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
18835 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
18836 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* \textemptyset -> \varnothing (AmS)
18837 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
18838 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
18839 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
18840 \DeclareTextCommand{\textni}{PU}{\9042\013}%* \textni -> \owns (mathabx)
18841 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* \textnotowner -> \notni (txfonts/pxfonts)
18842 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
18843 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
18844 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
18845 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
18846 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
18847 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
18848 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
18849 \DeclareTextCommand{\textdivides}{PU}{\9042\025}%* U+2215
18850 \DeclareTextCommand{\textdividesnot}{PU}{\9042\026}% U+2216
18851 \DeclareTextCommand{\textsetminus}{PU}{\9042\027}%* U+2217
18852 \DeclareTextCommand{\textast}{PU}{\9042\028}% U+2218
18853 \DeclareTextCommand{\textcirc}{PU}{\9042\029}%* U+2219
18854 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\030}%* U+221A
18855
18856 \% U+2200C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
18857 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
18858 \%* \textnotowner -> \notni (txfonts/pxfonts)
18859 \% U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
18860 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
18861 \% U+220F N-ARY PRODUCT; \prod (LaTeX)
18862 \% U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
18863 \% U+2211 N-ARY SUMMATION; \sum (LaTeX)
18864 \% U+2212 MINUS SIGN; minus
18865 \% U+2213 MINUS-OR-PLUS SIGN; minusequal; \mp (LaTeX)
18866 \% U+2214 DOT PLUS; \dotplus (AmS)
18867 \% U+2215 DIVISION SLASH; \div (LaTeX)
18868 \% U+2216 SET MINUS; \setminus (LaTeX)
18869 \% U+2217ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
18870 \% U+2218 RING OPERATOR; \circ (LaTeX)
18871 \% U+2219 BULLET OPERATOR; \bullet (LaTeX)
18872 \% U+221A SQUARE ROOT; radical

393
\DeclareTextCommand{\textsurd}{PU}{\9042\032}\%* U+221A
\% U+221D proportion to; proportional; \propto (LaTeX)
\DeclareTextCommand{\textpropto}{PU}{\9042\035}\%* \textpropto \rightarrow \varpropto (wasysym)
\% U+221E infinity; infinity; \infty (LaTeX)
\DeclareTextCommand{\textinfty}{PU}{\9042\036}\%* \textinfty
\% U+2220 angle; angle; \angle (LaTeX)
\DeclareTextCommand{\textangle}{PU}{\9042\040}\%* \textangle
\% U+2221 measured angle; \measuredangle (mathabx, MnSymbol)
\DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}\%* \textmeasuredangle \rightarrow \varangle (wasysym)
\% U+2222 spherical angle; \sphericalangle (AmS)
\DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}\%* \textsphericalangle \rightarrow \varangle (wasysym)
\% U+2223 divides; divides; \mid (LaTeX)
\DeclareTextCommand{\textmid}{PU}{\9042\043}\%* \textmid
\% U+2224 not parallel to; notparallel; \nparallel (AmS)
\DeclareTextCommand{\textnmid}{PU}{\9042\044}\%* \textnmid \rightarrow \notdivides (mathabx)
\% U+2225 parallel to; parallel; \parallel (LaTeX)
\DeclareTextCommand{\textparallel}{PU}{\9042\045}\%* \textparallel
\% U+2226 integral; integral; \int (LaTeX)
\DeclareTextCommand{\textint}{PU}{\9042\053}\%* \textint \rightarrow \varint (wasysym)
\% U+2227 double integral; double integral (AmS)
\DeclareTextCommand{\textiint}{PU}{\9042\054}\%* \textiint
\% U+2228 triple integral; triple integral (AmS)
\DeclareTextCommand{\textiiint}{PU}{\9042\055}\%* \textiiint
\% U+2229 contour integral; contour integral (txfonts/pxfonts)
\DeclareTextCommand{\textoint}{PU}{\9042\056}\%* \textoint \rightarrow \varoint (wasysym)
\% U+222A union; union; \cup (LaTeX)
\DeclareTextCommand{\textcup}{PU}{\9042\052}\%* \textcup
\% U+222B integral; integral; \iint (LaTeX)
\DeclareTextCommand{\textiint}{PU}{\9042\054}\%* \textiint \rightarrow \varint (wasysym)
\% U+222C double integral; \dblintegral (txfonts/pxfonts)
\% U+222D triple integral; \tripleintegral (txfonts/pxfonts)
\% U+222E contour integral; \contourintegral (txfonts/pxfonts)
\% U+222F surface integral; \surfaceintegral (txfonts/pxfonts)
\% U+2230 \varoint (wasysym)
\% U+2232 clockwise contour integral; \clockwisecontourintegral (txfonts/pxfonts)
\% U+2233 anticlockwise contour integral; \anticlockwisecontourintegral (txfonts/pxfonts)
\% U+2234 \textoint (txfonts/pxfonts)
\% U+2235 \textiint (txfonts/pxfonts)
\% U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
\% U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
\% U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)
\% U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
\% U+2265 GREATER-THAN OR EQUAL TO; greaterequal; \ge (LaTeX), \geq (LaTeX)
\% U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)
\% U+2267 GREATER-THANOVEREQUALTO;greateroverequal;\geqq(AmS)
\% U+2268 MUCH LESS-THAN; muchless; \ll (LaTeX)
\% U+2269 MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
\% U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal; \nleq (AmS)
\% U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal; \ngeq (AmS)
\% U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lesssim (AmS)
\% U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)
\% U+2274 BETWEEN; \between (AmS)
\% U+2275 NOT LESS-THAN; notless; \nless (AmS)
\% U+2276 NOT GREATER-THAN; notgreater; \ngtr (AmS)
\% U+2277 NOT LESS-THAN OR EQUAL TO; notlesseq; \nleq (AmS)
\% U+2278 NOT GREATER-THAN OR EQUAL TO; notgreateq; \ngeq (AmS)
\% U+2279 LESS-THAN BUT NOT EQUAL TO; lessthanbutnotequal; \lneq (AmS)
\% U+227A GREATER-THAN BUT NOT EQUAL TO; greaterthanbutnotequal; \gneq (AmS)
\% U+227B LESS-THAN OR EQUIVALENT TO; lessthanorequivalent; \lesssim (AmS)
\% U+227C GREATER-THAN OR EQUIVALENT TO; greaterthanorequivalent; \gtrsim (AmS)
\% U+227D BETWEEN; \between (AmS)
\DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
%* \textgtrsim -> \apprge (wasysym)
\DeclareTextCommand{\textnlesssim}{PU}{\9042\164}%* U+2274
% U+2274 NEITHER LESS-TAN NOR EQUIVALENT TO; \nlessim (txfonta/pxfonts)
\DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275
% U+2275 NEITHER GREATER-TAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)
\DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276
% U+2276 LESS-TAN OR GREATER-TAN; lessorgreater; \lessgtr (AmS)
\DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277
% U+2277 GREATER-TAN OR LESS-TAN; greaterorless; \gtrless (AmS)
\DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278
% U+2278 NEITHER LESS-TAN NOR GREATER-TAN; \ngtrless (txfonts/pxfonts)
\DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279
% U+2279 NEITHER GREATER-TAN NOR LESS-TAN; \nlessgtr (txfonts/pxfonts)
\DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A
% U+227A PRECEDES; precedes; \prec (LaTeX)
\DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B
% U+227B SUCCEEDS; succeeds; \succ (LaTeX)
\DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C
% U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)
\DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%* U+227D
% U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)
\DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
% U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)
\DeclareTextCommand{\textnsuccsim}{PU}{\9042\177}%* U+227F
% U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
\DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
% U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
\DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
% U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)
\DeclareTextCommand{\textsubseteq}{PU}{\9042\202}%* U+2282
% U+2282 SUBSET OF; propersubset; \subset (LaTeX)
\DeclareTextCommand{\textsupseteq}{PU}{\9042\203}%* U+2283
% U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)
\DeclareTextCommand{\textnsubseteq}{PU}{\9042\204}%* U+2284
% U+2284 NOT A SUBSET OF; notsubset; \nsubseteq (AmS)
\DeclareTextCommand{\textnsupseteq}{PU}{\9042\205}%* U+2285
% U+2285 NOT A SUPERSET OF; notsuperset; \nsupseteq (AmS)
\DeclareTextCommand{\textsubneq}{PU}{\9042\206}%* U+2286
% U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subneq (LaTeX)
\DeclareTextCommand{\textsupsetneq}{PU}{\9042\207}%* U+2287
% U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supsetneq (LaTeX)
\DeclareTextCommand{\textneq}{PU}{\9042\208}%* U+2288
% U+2288 NOT A SUBSET OF NOR EQUAL TO; \nsubseteqq (AmS)
\DeclareTextCommand{\textneq}{PU}{\9042\209}%* U+2289
% U+2289 NOT A SUPERSET OF NOR EQUAL TO; \nsupseteqq (AmS)
\DeclareTextCommand{\textsubsetneq}{PU}{\9042\210}%* U+228A
% U+228A SUBSET OF WITH NOT EQUAL TO; \subsetneq (AmS)
\DeclareTextCommand{\textsubsetneq}{PU}{\9042\211}%* U+228B
% U+228B SUBSET OF WITH NOT EQUAL TO; \subsetneq (AmS)
\DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228C
% U+228C SUBSET OF WITH NOT EQUAL TO; \subsetneq (AmS)
19381 DeclareTextCommand{\textntriangleright}(PU){\9042\353}%* U+22EB
19382 %* \textntriangleright -> \ngtrclosed (MnSymbol)
19383 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
19384 % \ntrianglelefteq (AmS)
19385 DeclareTextCommand{\textntrianglelefteq}(PU){\9042\354}%* U+22EC
19386 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
19387 % \ntrianglerighteq (AmS)
19388 DeclareTextCommand{\textntrianglerighteq}(PU){\9042\355}%* U+22ED
19389 %* \textntrianglerighteq -> textngeqclosed
19390 % U+22EE VERTICAL ELLIPSIS; \vdots (LaTeX)
19391 DeclareTextCommand{\textvdots}(PU){\9042\356}%* U+22EE
19392 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
19393 DeclareTextCommand{\textcdots}(PU){\9042\357}%* U+22EF
19394 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
19395 DeclareTextCommand{\textudots}(PU){\9042\360}%* U+22F0
19396 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
19397 DeclareTextCommand{\textddots}(PU){\9042\361}%* U+22F1
19398 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
19399 DeclareTextCommand{\textbarin}(PU){\9042\366}%* U+22F6
19400 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
19401 DeclareTextCommand{\textdiameter}(PU){\9043\000}%* U+2300
19402 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
19403 DeclareTextCommand{\textbackneg}(PU){\9043\020}%* U+2310
19404 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
19405 DeclareTextCommand{\textwasylozenge}(PU){\9043\021}%* U+2311
19406 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
19407 DeclareTextCommand{\textinvbackneg}(PU){\9043\031}%* U+2319
19408 % U+231A WATCH; \clock (wasysym)
19409 DeclareTextCommand{\textclock}(PU){\9043\032}%* U+231A
19410 %* \textclock -> \Clocklogo (marvosym)
19411 %* \textclock -> \ClockLogo (marvosym)
19412 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
19413 DeclareTextCommand{\textulcorner}(PU){\9043\034}%* U+231C
19414 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
19415 DeclareTextCommand{\texturcorner}(PU){\9043\035}%* U+231D
19416 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
19417 DeclareTextCommand{\textllcorner}(PU){\9043\036}%* U+231E
19418 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
19419 DeclareTextCommand{\textlrcorner}(PU){\9043\037}%* U+231F
19420 % U+2322 FROWN; \frown (LaTeX)
19421 DeclareTextCommand{\textfrown}(PU){\9043\042}%* U+2322
19422 % U+2323 SMILE; \smile (LaTeX)
19423 DeclareTextCommand{\textsmile}(PU){\9043\043}%* U+2323
19424 % U+2328 KEYBOARD; \Keyboard (marvosym)
19425 DeclareTextCommand{\textKeyboard}(PU){\9043\050}%* U+2328
19426 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)
19427 DeclareTextCommand{\textangleleft}(PU){\9043\051}%* U+2329
19428 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
19429 DeclareTextCommand{\textangleright}(PU){\9043\052}%* U+232A
19430 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
19431 DeclareTextCommand{\textAPLinv}(PU){\9043\071}%* U+2339
19432 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
19433 DeclareTextCommand{\textTumbler}(PU){\9043\074}%* U+233C
19434 % U+233D APL FUNCTIONAL SYMBOL QUAD STILE; \baro (stmaryrd)

51.2.23 Miscellaneous Technical: U+2300 to U+23FF
19435 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
19436 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
19437 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
19438 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
19439 % U+231A WATCH; \clock (wasysym)
19440 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
19441 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
19442 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
19443 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
19444 % U+2322 FROWN; \frown (LaTeX)
19445 % U+2323 SMILE; \smile (LaTeX)
19446 % U+2328 KEYBOARD; \Keyboard (marvosym)
19447 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)
19448 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
19449 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
19450 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
19451 % U+233D APL FUNCTIONAL SYMBOL QUAD STILE; \baro (stmaryrd)
51.2.24 Control Pictures: $U+2400$ to $U+243F$

51.2.25 Optical Character Recognition: $U+2440$ to $U+245F$

51.2.26 Enclosed Alphanumerics: $U+2460$ to $U+24FF$
\DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}\% U+24BC
\DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}\% U+24BD
\DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}\% U+24BE
\DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}\% U+24BF
\DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}\% U+24C0
\DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}\% U+24C1
\DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}\% U+24C2
\DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}\% U+24C3
\DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}\% U+24C4
\DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}\% U+24C5
\DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\306}\% U+24D0
\DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\307}\% U+24D1
\DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\308}\% U+24D2
\DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\309}\% U+24D3
\DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\310}\% U+24D4
\DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\311}\% U+24D5
\DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\312}\% U+24D6
\DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\313}\% U+24D7
\DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\314}\% U+24D8
\DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\315}\% U+24D9
\DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\316}\% U+24DA
\DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\317}\% U+24DB
\DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\318}\% U+24DC
\DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\319}\% U+24DD
\DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\320}\% U+24DE
\DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\321}\% U+24DF
51.2.27 Box Drawing: U+2500 to 257F

51.2.28 Geometric Shapes: U+25A0 to U+25FF
51.2.29 Miscellaneous Symbols: U+2600 to U+26FF

51.2.29.1 Circle Symbols

%* \textbigtriangleup -> \Bleech (marvosym)
% U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
\DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
% U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restriction);
%* \textForward -> \triangleright (LaTeX)
\DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
% U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
\DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
% U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
\DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
%* \textDOWNarrow -> \MoveDown (marvosym)
% U+25BD WHITE DOWN-POINTING TRIANGLE; \bigtriangledown (LaTeX)
\DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
%* \textbigtriangledown -> \APLdown (wasysym)
% U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
\DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
% U+25C1 WHITE LEFT-POINTING TRIANGLE (= z notation domain restriction);
%* \textRewind -> \Box (wasysym)
% U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
\DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
% U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
\DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
%* \textdiamond -> \Diamond (wasysym)
% U+25CA LOZENGE; lozenge; \lozenge (AmS)
\DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
% U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
\DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
% U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
\DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
% U+25E6 WHITE BULLET; *openbullet, whitebullet
\DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
% U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE,
%* \boxbar (stmaryrd)
\DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
% U+25EF LARGE CIRCLE; largecircle
\DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
%* \textbigcircle -> \varbigcirc (stmaryrd)
% U+2601 CLOUD; \Cloud (ifsym)
\DeclareTextCommand{\textCloud}{PU}{\9045\001}%* U+2601
% U+2605 BLACK STAR; \FiveStar (bbding)
\DeclareTextCommand{\textFiveStar}{PU}{\9045\005}%* U+2605
% U+2606 WHITE STAR; \FiveStarOpen (bbding)
\DeclareTextCommand{\textFiveStarOpen}{PU}{\9045\006}%* U+2606
% U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)
\DeclareTextCommand{\textPhone}{PU}{\9046\016}%* U+260E
%* \textPhone -> \Telefon (marvosym)
% U+2610 BALLOT BOX; \boxempty (stmaryrd)
\DeclareTextCommand{\textboxempty}{PU}{\9046\020}%* U+2610
%* \textboxempty -> \Box (wasysym)
\textPUfemale -> \Female (marvosym)
\textearth -> \Earth (marvosym)
\textmale -> \mars (wasysym)
\textmale -> \Mars (marvosym)
\textmale -> \Male (marvosym)
\textjupiter -> \Jupiter (marvosym)
\textsaturn -> \Saturn (marvosym)
\texturanus -> \Uranus (marvosym)
\textneptune -> \Neptune (marvosym)
\textpluto -> \Pluto (marvosym)
\textaries -> \Aries (marvosym)
\texttaurus -> \Taurus (marvosym)
\textgemini -> \Gemini (marvosym)
\textcancer -> \Cancer (marvosym)
\textleo -> \Leo (marvosym)
\textvirgo -> \Virgo (marvosym)
\textlibra -> \Libra (marvosym)
\textsagittarius -> \Scorpio (marvosym)
\textcapricornus -> \Aquarius (marvosym)
51.2.30 Dingbats: \texttt{U+2700} to \texttt{U+27BF}

19870 % U+2697 ALEMBIC; \texttt{\textdschemical (dictsym)}
19871 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}\%* U+2697
19872 % U+2698 FLOWER; \texttt{\textdsbiological (dictsym)}
19873 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}\%* U+2698
19874 % U+269A STAFF OF HERMES; \texttt{\textdscommercial (dictsym)}
19875 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}\%* U+269A
19876 % U+269D OUTLINED WHITE STAR; \texttt{\textmanstar (manfnt)}
19877 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}\%* U+269D
19878 % U+26A0 WARNING SIGN; \texttt{\textdanger (fourier)}
19879 \DeclareTextCommand{\textdanger}{PU}{\9046\240}\%* U+26A0
19880 % U+26A2 DOUBLED FEMALE SIGN; \texttt{\FemaleFemale (marvosym)}
19881 \DeclareTextCommand{\FemaleFemale}{PU}{\9046\242}\%* U+26A2
19882 % U+26A3 DOUBLED MALE SIGN; \texttt{\MaleMale (marvosym)}
19883 \DeclareTextCommand{\MaleMale}{PU}{\9046\243}\%* U+26A3
19884 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \texttt{\FemaleMale (marvosym)}
19885 \DeclareTextCommand{\FemaleMale}{PU}{\9046\244}\%* U+26A4
19886 % U+26A5 MALE AND FEMALE SIGN; \texttt{\Hermaphrodite (marvosym)}
19887 \DeclareTextCommand{\Hermaphrodite}{PU}{\9046\245}\%* U+26A5
19888 % U+26AA MEDIUM WHITE CIRCLE; \texttt{\Neutral (marvosym)}
19889 \DeclareTextCommand{\Neutral}{PU}{\9046\252}\%* U+26AA
19890 % U+26AD MARRIAGE SYMBOL
19891 \DeclareTextCommand{\textmarried}{PU}{\9046\255}\%* U+26AD
19892 % U+26AE DIVORCE SYMBOL
19893 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}\%* U+26AE
19894 % U+26B2 NEUTER; \texttt{\textuncrfemale (tipx)}
19895 \DeclareTextCommand{\textuncrfemale}{PU}{\9046\262}\%* U+26B2
19896 %* \textuncrfemale \rightarrow \textmalefemale (tipx)
19897 % U+26B9 SEXTILE; \texttt{\hexstar (wasysym)}
19898 \DeclareTextCommand{\hexstar}{PU}{\9046\271}\%* U+26B9
19899 % U+26BD SOCCER BALL; \texttt{\Football (marvosym)}
19900 \DeclareTextCommand{\Football}{PU}{\9046\275}\%* U+26BD
19901 %* \Football \rightarrow \textsoccerball (marvosym)
19902 % U+26C5 SUN BEHIND CLOUD; \texttt{\SunCloud (ifsym)}
19903 \DeclareTextCommand{\SunCloud}{PU}{\9046\305}\%* U+26C5
19904 % U+26C6 RAIN; \texttt{\Rain (ifsym)}
19905 \DeclareTextCommand{\Rain}{PU}{\9046\306}\%* U+26C6
19906 % U+26D4 NO ENTRY; \texttt{\noway (fourier)}
19907 \DeclareTextCommand{\noway}{PU}{\9046\324}\%* U+26D4
19908 % U+26F0 MOUNTAIN; \texttt{\Mountain (ifsym)}
19909 % U+26F1 MOUNTAIN; \texttt{\Mountain (ifsym)}
19910 % U+26FA TENT; \texttt{\Tent (ifsym)}
19911 \DeclareTextCommand{\Tent}{PU}{\9046\372}\%* U+26FA

51.2.30 Dingbats: \texttt{U+2700} to \texttt{U+27BF}
\textFiveFlowerOpen \textEightFlowerPetal \textSunshineOpenCircled \textSixFlowerAltPetal \textSnowflakeChevron \textSnowflake \textSnowflakeChevronBold \textSparkle \textSparkleBold \textAsteriskRoundedEnds \textEightFlowerPetalRemoved \textEightAsterisk \textCircleShadow \textSquareShadowBottomRight \textSquareTopRight \textSquareCastShadowBottomRight \textSquareCastShadowTopRight \textDiamandSolid \textRectangleThin \textRectangle \textRectangleBold \textperp \textnotperp \textperpendicular

51.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

\textperpendicular \textnotperpendicular
51.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

51.2.33 Supplemental Arrows-B: U+2900 to U+297F
\DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
\DeclareTextCommand{\textrleadsto}{PU}{\9051\064}%* U+2934
\DeclareTextCommand{\textlleadsto}{PU}{\9051\065}%* U+2935
\DeclareTextCommand{\textrlleadsto}{PU}{\9051\066}%* U+2936
\DeclareTextCommand{\textlarrow}{PU}{\9051\070}%* \righttorque (marvosym)
\DeclareTextCommand{\textrarrow}{PU}{\9051\071}%* \lefttorque (marvosym)
\DeclareTextCommand{\textleftarrow}{PU}{\9051\072}%* \leftleftharpoons (mathabx)
\DeclareTextCommand{\textrightarrow}{PU}{\9051\073}%* \upupharpoons (mathabx)
\DeclareTextCommand{\textdownarrow}{PU}{\9051\112}%* \downdownharpoons (mathabx)
\DeclareTextCommand{\textuparrow}{PU}{\9051\113}%* \updownharpoonrightleft (MnSymbol)
\DeclareTextCommand{\textupdownarrow}{PU}{\9051\114}%* \updownharpoonrightleft (MnSymbol)
\DeclareTextCommand{\textdownuparrow}{PU}{\9051\115}%* \updownharpoonrightleft (MnSymbol)
\DeclareTextCommand{\textupdown}{PU}{\9051\142}%* \upupdowndown (mathabx)
\DeclareTextCommand{\textupdowndown}{PU}{\9051\143}%* \updownupdown (mathabx)
\DeclareTextCommand{\textupup}{PU}{\9051\144}%* \updownupup (mathabx)
\DeclareTextCommand{\textdownup}{PU}{\9051\145}%* \downupdowndown (mathabx)
\DeclareTextCommand{\textdownupdown}{PU}{\9051\146}%* \downdownupdown (mathabx)
\DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}% U+2965
\DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}% U+296A
\DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}% U+296B
\DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}% U+296C
\DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}% U+296E
\DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}% U+297FU+0336
\51.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF
\DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}% U+2987
\DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}% U+2988
\DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}% U+29B0
\DeclareTextCommand{\textobar}{PU}{\9051\266}% U+29B6
\DeclareTextCommand{\textobot}{PU}{\9051\272}% U+29BA
\DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}% U+29BB
\DeclareTextCommand{\textlessthan}{PU}{\9051\300}% U+29C0
\DeclareTextCommand{\textgreaterthan}{PU}{\9051\301}% U+29C1
\DeclareTextCommand{\textboxslash}{PU}{\9051\304}% U+29C4
\DeclareTextCommand{\textboxbslash}{PU}{\9051\305}% U+29C5
\DeclareTextCommand{\textboxast}{PU}{\9051\306}% U+29C6
51.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)

U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)

U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)

U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts, pxfonts, wasysym)

U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)

U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \cirm (mathabx)

U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)

U+2A2E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)

U+2A30 INTERSECTION WITH DOT; \capdot (MnSymbol)

U+2A35 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)

U+2A36 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)

U+2A3E DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
51.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

51.2.37 Latin Extended-C: U+2C60 to U+2C7F

51.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

51.2.39 Modifier Tone Letters: U+A700 to U+A71F

51.2.40 Latin Extended-D: U+A720 to U+A7FF

51.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

51.2.37 Latin Extended-C: U+2C60 to U+2C7F

51.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

51.2.39 Modifier Tone Letters: U+A700 to U+A71F

51.2.40 Latin Extended-D: U+A720 to U+A7FF
51.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

51.2.42 Musical Symbols: U+1D100 to U+1D1FF

51.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

51.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF
\DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%* U+1F6B2
\% U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)
\DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%*U+1F6B9
\% U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)
\DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%* U+1F6BA

51.2.45 Miscellaneous

\DeclareTextCommand{\SS}{PU}{SS}%
\% \textcopyleft (textcomp)
\DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}%U+2184U+20DD
\% \ccnc (cclicenses)
\DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%*U+0024U+20E0
\% \ccnd (cclicenses)
\DeclareTextCommand{\textccnd}{PU}{=\9040\335}%* U+003D U+20DD
\% \Info (marvosym, china2e)
\DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%*U+1D422U+20DE
\% \CESign (marvosym)
\DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%*U+01A1U+01B0
\% \textCESign -> \CEsign (marvosym)

51.2.46 Aliases

Aliases (german.sty)
\DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
\DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
\DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
\DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
\DeclareTextCommand{\textflqq}{PU}{\guillemotleft}%
\DeclareTextCommand{\textfrqq}{PU}{\guillemotright}%
\DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
\DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

Aliases (math names)
\DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%
\DeclareTextCommand{\texttimes}{PU}{\textmultiply}%
\DeclareTextCommand{\textdiv}{PU}{\textdivide}%
\DeclareTextCommand{\textpm}{PU}{\textplusminus}%
\DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%
\langle /puenc

51.3 PU encoding, additions for \LaTeX

This file is provided by Han The Thanh.

\langle /*puvnc

\DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
\DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
\DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
\DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
\DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
\DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
\DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
\DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
\DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
\DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
\DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
51.4 PU encoding, additions for Arabic

This file is provided and maintained by Youssef Jabri.
\newcommand*\psdmapshortnames{
\let\MVPlus\textMVPlus
\let\MVComma\textMVComma
\let\MVMinus\textMVMinus
\let\MVPeriod\textMVPeriod
\let\MVDivision\textMVDivision
\let\MVZero\textMVZero
\let\MVOne\textMVOne
\let\MVTwo\textMVTwo
\let\MVThree\textMVThree
\let\MVFour\textMVFour
\let\MVFive\textMVFive
\let\MVSix\textMVSix
\let\MSeven\textMSeven
\let\MVEight\textMVEight
\let\MNine\textMNine
\let\MVAt\textMVAt
\let\copyright\textcopyright
\let\twosuperior\texttwosuperior
\let\threesuperior\textthreesuperior
\let\onesuperior\textonesuperior
\let\Thorn\textThorn
\let\thorn\textthorn
\let\barl\textbarl
\let\inve\textinve
\let\slashc\textslashc
\let\scripta\textscripta
\let\openo\textopeno
\let\rtaild\textrtaild
\let\reve\textreve
\let\schwa\textschwa
\let\niepsilon\textniepsilon
\let\revepsilon\textrvepsilon
\let\rhookrevepsilon\textrhookrevepsilon
\let\scriptg\textscriptg
\let\scg\textscg
\let\ipagamma\textipagamma
\let\babygamma\textbabygamma
\let\bari\textbari
\let\niiota\textniiota
\let\sci\textsci
}
\let\nlessapprox\textlessapprox
\let\ngtrapprox\textngtrapprox
\let\gtrapprox\textgtrapprox
\let\leftslice\textleftslice
\let\rightslice\textrightslice
\let\lneq\textlneq
\let\lnapprox\textlnapprox
\let\gneq\textgneq
\let\lnapprox\textlnapprox
\let\lesseqqgtr\textlesseqqgtr
\let\gtreqqless\textgtreqqless
\let\eqslantless\texteqslantless
\let\eqslantgtr\texteqslantgtr
\let\preceq\textpreceq
\let\nsucceq\textnsucceq
\let\preceqq\textpreceqq
\let\succapprox\textsucceqq
\let\precapprox\textprecapprox
\let\precapprox\textprecapprox
\let\subseteqq\textsubseteqq
\let\nsucceq\textnsucceq
\let\preceqq\textpreceqq
\let\succapprox\textsuccapprox
\let\precapprox\textprecapprox
\let\precapprox\textprecapprox
\let\dashV\textdashV
\let\ndashV\textndashV
\let\Dashv\textDashv
\let\jnferior\textjnferior
\let\fivedots\textfivedots
\let\oo\textoo
\let\GaPa\textGaPa
\let\HaPa\textHaPa
\let\ViPa\textViPa
\text{Radiation} \text{Radioactivity}
\text{YinYang} \text{YinYang}
\text{YingYang} \text{YinYang}
\text{Frownie} \text{frownie}
\text{Smiley} \text{smiley}
\text{Sun} \text{sun}
\text{Mercury} \text{mercury}
\text{Female} \text{PUfemale}
\text{Venus} \text{venus}
\text{Venus} \text{venus}
\text{Female} \text{ PUfemale}
\text{Earth} \text{earth}
\text{Mars} \text{march}
\text{Mars} \text{male}
\text{Jupiter} \text{jupiter}
\text{Saturn} \text{saturn}
\text{Uranus} \text{texturanus}
\text{Neptune} \text{textneptune}
\text{Pluto} \text{textpluto}
\text{Aries} \text{textaries}
\text{Taurus} \text{texttaurus}
\text{Gemini} \text{textgemini}
\text{Cancer} \text{textcancer}
\text{Leo} \text{textleo}
\text{Virgo} \text{textvirgo}
\text{Libra} \text{textlibra}
\text{Scorpio} \text{textscorpio}
\text{Sagittarius} \text{textsagittarius}
\text{Capricorn} \text{textcapricornus}
\text{Aquarius} \text{textaquarius}
\text{Pisces} \text{textpisces}
\text{Clubsuit} \text{clubsuitblack}
\text{Heart} \text{textheartsuitwhite}
\text{Heartsuit} \text{textheartsuitwhite}
\text{Diamondsuit} \text{textdiamondsuitwhite}
\text{Clubsuit} \text{textclubsuitblack}
\text{Eighthnote} \text{textmusicalnote}
\text{Recycling} \text{textrecycle}
\text{Flag} \text{textFlag}
\text{xswup} \text{dsmilitary}
\text{Uncrfemale} \text{textPUuncrfemale}
\text{Football} \text{textSoccerBall}
\text{Cutleft} \text{textScissorRightBrokenBottom}
\text{Cutrighht} \text{textScissorRightBrokenBottom}
\text{Rightscissors} \text{textScissorRight}
\text{Letter} \text{textEnvelope}
\text{Writinghand} \text{textWritingHand}
\text{Checkmark} \text{textCheckmark}
\text{Davidstar} \text{textDavidStar}
\text{Bracket} \text{textBracketdbl}
\text{Righttorque} \text{textcurvearrowdown}
\text{Righttorque} \text{textcurvearrowdown}
52  End of file hycheck.tex

(*check)
\typeout{}
\begin{document}
\end{document}
(*check)
53

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
\! . . . . . . . . . . . . . 195, 220, 2178
\"
202, 227, 3449, 15239, 15599,
15611, 15623, 15749, 15835,
15849, 15857, 15872, 15884,
15901, 15915, 15926, 15927,
15941, 15953, 15960, 16011,
16053, 16080, 16109, 16282,
16296, 16304, 16318, 16332,
16349, 16363, 16374, 16375,
16390, 16402, 16410, 16668,
17330, 17332, 17343, 17395,
17397, 17429, 17443, 17599,
17613, 17857, 17859, 17874,
17877, 17879, 17881, 17883,
17885, 17895, 17897, 17899,
17901, 17908, 17911, 17913,
17915, 17921, 17923, 17929,
17931, 17937, 17939, 18146,
18148, 18298, 18300, 18314,
18316, 18336
\# . 563, 2263, 2264, 5120, 5131,
5133, 5149, 5181, 5241,
9445, 9447, 10291, 10300,
10335, 11185, 12831, 12842,
12878, 13119, 13128, 13168,
15159
\$ 184, 209, 333, 564, 5122, 5240
\% . 565, 2178, 2238, 2239, 5119,
5128, 5130, 5182, 9447
\& . . . 185, 210, 566, 5123, 5134,
5136, 12888
\' . . . . . . . . . . . . . . . . . . . . 203,
228, 3389, 3403, 3444, 3446,
3447, 3448, 3449, 3454,
3455, 3457, 3462, 3468,
3472, 3473, 3476, 3519,
3520, 3525, 3526, 3527,
3528, 3529, 3530, 3531,
3532, 3534, 3537, 3544,
3545, 3546, 3547, 3550,
3556, 3569, 15237, 15596,
15608, 15620, 15829, 15845,
15853, 15866, 15880, 15886,
15895, 15911, 15920, 15921,
15935, 15949, 15955, 15979,
15981, 15982, 15983, 15986,
15988, 15989, 15990, 15998,
16050, 16077, 16106, 16276,
16292, 16300, 16312, 16328,
16334, 16343, 16359, 16368,
16369, 16384, 16398, 16404,

16424, 16426, 16540, 16542,
16560, 16562, 16596, 16598,
16608, 16610, 16670, 16672,
16793, 16795, 16801, 16803,
16806, 16809, 17263, 17265,
17267, 17269, 17271, 17273,
17275, 17278, 17334, 17336,
17338, 17340, 17399, 17402,
17404, 17433, 17453, 17603,
17623, 18162, 18164, 18186,
18188, 18226, 18228, 18294,
18296, 20536, 20541, 20546,
20551, 20556, 20561, 20566,
20571, 20576, 20581, 20586,
20591, 20596, 20601, 20606,
20611, 20616, 20621, 20626,
20631, 20636, 20641, 20646,
20651
\( . 190, 215, 334, 787, 790, 792,
2180, 15305, 15669
\) . 191, 216, 335, 759, 765, 768,
2181, 15306, 15671
\* . . . . . . . . . . . . . . . . . . . . 337
\+ . . . . . . . . . . . . 200, 225, 338
\- . . . . . . . . . . . . . . . . 201, 226
\. 198, 223, 331, 1323, 3829, 4275,
15602, 15614, 15626, 15690,
15984, 15991, 16009, 16056,
16083, 16115, 16192, 16193,
16432, 16434, 16462, 16464,
16482, 16484, 16521, 16552,
16554, 16674, 16676, 16861,
16863, 16869, 16871, 18078,
18080, 18090, 18092, 18130,
18132, 18138, 18140, 18190,
18192, 18198, 18200, 18230,
18232, 18234, 18236, 18246,
18248, 18254, 18256, 18302,
18304, 18310, 18312, 18318,
18320, 18342
\/ . 194, 219, 700, 701, 702, 770,
1947, 8816
\: . . . . . . . . . . . . . . . . . 189, 214
\; . . . . . . . . . . . . . 199, 224, 9139
\< . . . . . . . . . . . . . . . . 196, 221
\= . . . 167, 173, 180, 183, 15604,
15616, 15628, 16004, 16060,
16087, 16114, 16412, 16414,
16454, 16456, 16506, 16508,
16509, 16580, 16582, 16640,
16642, 16873, 16875, 17891,
17893, 17917, 17919, 18134,

451

18136
\> . . . . . . . . . . . . . . . . 197, 222
\? . . . . . . . . . . . . . . . . . . . . 339
\@ . . . . . . . . . . . . . . . . . . . 3440
\@@@ . . . . . . . . . . . . . . . . . 2619
\@@BOOKMARK 15220, 15223,
15281, 15349, 15356
\@@Listbox 13522, 13553, 14124,
14158, 14479, 14520
\@@Menu . . . . . . . 13763, 13771
\@@PasswordField . 13712, 13718
\@@Radio . 13507, 13528, 13761,
13785, 14109, 14130, 14464,
14485
\@@TextField . . . . 13714, 13729
\@@commahyperpage 8950, 8951
\@@hyper@@readexternallink . . .
. . . . . . 5497, 5499
\@@hyperref . . . . . . 5343, 5344
\@@latextohtmlX . . . 3252, 5714
\@@wrindex . . . . . . . 8851, 8852
\@@writetorep . . . . 15080, 15086
\@Alph . . . . . . . . . . 7413, 7415
\@BIBLABEL . 8267, 8273, 8279
\@BOOKMARK . . 15220, 15222
\@CITE . . . . . . . . . . 8344, 8352
\@CITEX . . . . . . . . . . . . . 8346
\@CheckBox 6515, 11250, 13642,
13678, 13816, 14246, 14622
\@ChoiceMenu . . . . 6512, 11253,
13460, 13681, 13751, 14061,
14416
\@Form . . . . 6172, 11240, 13213,
13668, 13695, 13950, 14330
\@Gauge . . . 6521, 11244, 13397,
13672, 13700, 13837, 14327
\@Localurlfalse . . . . . . . . 11193
\@Localurltrue . . . . . . . . . 11190
\@M . . . 1229, 2676, 5227, 7873
\@MM . . . . . . . . . . . . . . . . 8029
\@PackageError . . . . . . . . . . 265
\@PackageInfo . . . . . . . . . . . 268
\@PackageInfoNoLine . . . . . 269
\@PackageWarning . . . . . . . 266
\@PackageWarningNoLine . . 267
\@PushButton . . . . 6518, 11256,
13564, 13684, 13797, 14168,
14536
\@Refstar . . . . . . . . 9254, 9261
\@Reset . . . . 6527, 11259, 13615,
13687, 13813, 14221, 14593
\@Roman . . . . . . . . . . . . . . 661

