Temporary output patches for tagging and better link support

Frank Mittelbach          Ulrike Fischer

August 24, 2022

1 Introduction

This package contains a few patches of internal \LaTeX needed to support paragraph tagging across page boundaries (in pdf\LaTeX) and improve the behaviour of links across page breaks.

Until this get properly integrated with the kernel code this has to be taken as a prototype and code, interfaces as well as behavior may change without notice and certainly without any backwards compatibility!

2 The Implementation

\begin{verbatim}
\ProvidesPackage{output-patches-tmp-ltx}
[2021-08-20 v0.95 Temporary patches of output commands]
\RequirePackage{etoolbox}

2.1 Patching the OR

This add hooks around header and footer, in \texttt{\@makecol} and in \texttt{multicol}. At first initialize some of the hooks. We use providecommand to avoid problems if the kernel changes here and provides them directly.
\begin{verbatim}
\providecommand\@kernel@before@head{}
\providecommand\@kernel@before@foot{}
\providecommand\@kernel@after@head{}
\providecommand\@kernel@after@foot{}
\providecommand\@mult@ptagging@hook{}% multicol
\end{verbatim}
\end{verbatim}

\begin{verbatim}
\patchcmd{\@outputpage}{\vfil\color@hbox\normalcolor\hb@xt\textwidth{\@thehead}\color@endbox}{\vfil\@kernel@before@head\color@hbox\normalcolor\hb@xt\textwidth{\@thehead}\color@endbox\@kernel@after@head}{\typeout{Patching header in \string\@outputpage}}{\PATCHerror }
\end{verbatim}

\begin{verbatim}
\patchcmd{\@outputpage}{\color@hbox\normalcolor\hb@xt\textwidth{\@thefoot}\color@endbox}{\@kernel@before@foot\color@hbox\normalcolor\hb@xt\textwidth{\@thefoot}\color@endbox\@kernel@after@foot}{\typeout{Patching footer in \string\@outputpage}}{\PATCHerror }
\end{verbatim}

\end{verbatim}
\makecol  We have to patch \makecol in two places:

- update 255 up front to add missing tmb/tme if necessary
- update the \footins stream if that one got split

If the new latex-lab file for the output routine is loaded it will do the right thing. In the other case we patch \makecol manually:

\begin{verbatim}
\ifspackageloaded{latex-lab-testphase-new-or}
 {\providecommand\@kernel@before@footins{}}
 {\providecommand\@kernel@before@cclv{}}
 \patchcmd\makecol
 {\vskip\skip\footins}
 {\vskip\skip\footins\@kernel@before@footins}
 {\typeout{Patching \string\makecol space for tagging}}\PatchError
 \\
% for some reason patching with etoolbox only works in this order ...
 \pretocmd\makecol{\@kernel@before@cclv}{\typeout{Patching \string\makecol space for tagging}}\PatchError
\end{verbatim}

(End definition for \makecol. This function is documented on page ??.)

2.2 multicol adjustments

The patches for pkgmulticol are fairly minimal:

- At the start of the environment anything already on the page is picked up and stored in \partial@page, we may need to add a TMB to that (it should have a proper TME). This has to happen in the “main” stream context.

\begin{verbatim}
\AddToHook{package/multicol/after}{% multicol needs later loading
 \patchcmd\pagesofar
 {\setbox\z@\hbox{p}\global\dimen\tw@\dp\z@}%
 {\setbox\z@\hbox{p}\global\dimen\tw@\dp\z@\@mult@ptagging@hook
 }%}
 {\typeout{Patching \string\pagesofar space for tagging}}\PatchError%
}
\end{verbatim}
2.3 Interrupt hooks

This requires the l3pdfannot module! We add the code here an not in hyperref, as it should also work with links created directly with the l3pdfannot commands. The file is only loaded by the pdfmanagement, so no need to test if the commands exist.

\ExplSyntaxOn
\def\@kernel@before@head\{\pdfannot_link_off:}
\def\@kernel@before@foot\{\pdfannot_link_off:}
\def\@kernel@after@head \{\pdfannot_link_on:}
\def\@kernel@after@foot \{\pdfannot_link_on:}
\ExplSyntaxOff
\endinput

Index

The italic numbers denote the pages where the corresponding entry is described, numbers underlined point to the definition, all others indicate the places where it is used.

A \AddToHook \ProvidesPackage \RequirePackage \ProvidesPackage

D \def \dimen \dp \endinput \ExplSyntaxOff \ExplSyntaxOn

E \endinput \ExplSyntaxOff \ExplSyntaxOn

F \footins \setbox \skip \space \string \TEXandLaTEX2\epsilon\commands

G \global \hbox \normalcolor \AddToHook \ProvidesPackage \RequirePackage

H \hbox \normalcolor \AddToHook \ProvidesPackage \RequirePackage

I \page \normalcolor \AddToHook \ProvidesPackage \RequirePackage

P \patchcmd \PatchError \pdfannot \PatchError \pdfannot

\pdfannot\commands:
\pdfannot_link_off: \pdfannot_link_on: \pretocmd \providecommand