The overpic package

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1 Introduction

The overpic environment is a combination between the \LaTeX picture environment and another \LaTeX object like an image used with the command \texttt{\includegraphics} of graphicx or a tabular. The resulting picture environment has the same dimensions as the included object. \LaTeX commands can be placed on the object at any position; setting a grid for the orientation is possible.

2 Usage

Put \texttt{\usepackage[\langle options\rangle]{overpic}} in the preamble of the document. The following package options are available:

- \texttt{abs}: Absolute positioning in multiples of \texttt{\unitlength}.
- \texttt{percent}: Relative positioning; the longer dimension has value 100. The \texttt{\unitlength} will be calculated accordingly. This is the default mode.
- \texttt{permil}: Relative positioning; the longer dimension has value 1000. The \texttt{\unitlength} will be calculated accordingly.

Other options will be transferred to package graphicx.

\texttt{overpic (env.) \begin{overpic}[\langle options\rangle]{\langle filename\rangle} \langle picture code\rangle \end{overpic}}

Sets the graphic \texttt{\langle filename\rangle} and puts the \texttt{\langle picture code\rangle} on the top of the graphic. The picture code can be any \TeX code inclusive other graphics.

The following options are possible:

- \texttt{abs, percent, permil}: The same as the package options (true or false).
- \texttt{rel}: Other value as base for relative positioning (e.g. 10000)
- \texttt{grid}: Drawing a grid for better orientation (true or false, default: false).
- \texttt{tics}: The distance of the grid tics (default: 10).
unit: Sets \unitlength (any \TeX dimension, only effective in abs mode).

\begin{Overpic}[⟨options⟩]{⟨TEX code⟩}⟨picture code⟩\end{Overpic}

Overpic (env.) \begin{Overpic}{⟨options⟩}{⟨TEX code⟩}⟨picture code⟩\end{Overpic}

Similar to environment overpic but instead of a graphic any \TeX code (e.g. a tabular) is set as basement of the following picture overlay.

\setOverpic \setOverpic{⟨options⟩}

Sets new default values.

3 Examples

The graphic (golfer.eps) in the following examples is part of the program ghostscript and must be accessible to \TeX. To use the command \color the package xcolor (or color) must be loaded.

3.1 Environment “overpic” (absolute positioning)

\begin{overpic}[abs,unit=1mm,scale=.25,grid]{golfer.eps}
\put(3,27){\color{blue}\huge\LaTeX}
\end{overpic}

3.2 Environment “overpic” (relative positioning)

The longer dimension is defined as 100%.

\begin{overpic}[scale=.25]{golfer.eps}
\put(3,27){\color{blue}\huge\LaTeX}
\put(55,10){\color{red}frame\includegraphics[scale=.07]{golfer.eps}}
\end{overpic}
3.3 Environment “Overpic” (absolute positioning)

To use the picture command \texttt{\polygon} the package \texttt{pict2e} must be loaded.

```
\begin{Overpic}[abs,unit=1mm,grid=true,tics=5]{% \\
\bfseries\sffamily \\
\begin{tabular}{*{8}{p{8mm}}} \\
H & & & & & & & He\\ 
Li & Be & B & C & N & O & F & Ne\\ 
Na & Mg & Al & Si & P & S & Cl & Ar\\ 
K & Ca & Ga & Ge & As & Se & Br & Kr\\ 
Rb & Sr & In & Sn & Sb & Te & I & Xe\\ 
Cs & Ba & Tl & Pb & Bi & Po & At & Rn\\ 
Fr & Ra & 112 & & 114 & & &\\ 
\end{tabular}}% \\
\put(0,0){\color{blue}\linethickness{0.5mm}\polygon(0,30)(10,30)(10,21.5)(45,21.5)(45,13)(22,13)\\
(22,4.5)(0,4.5)} \\
\end{Overpic}
```

4 Implementation

```
\requirepackage{keyval,graphicx,epic}
\OVP@scale Reference value for rel mode (percent: 100, permil: 1000)
```
\newcommand*{\OVP@scale}{\z@}

All the keys:

\define@key{OVP}{rel}{%  
  \def\OVP@scale{#1}  
  \ifnum\OVP@scale>\z@  
    \let\OVP@calc\OVP@calc@rel  
  \else  
    \PackageError{overpic}{Invalid number for option ‘rel’}{\@ehc  
  \fi  
}\}

\define@key{OVP}{percent}{[\{}{\setkeys{OVP}{rel=100}}\}
\define@key{OVP}{permil}{[\]}{\setkeys{OVP}{rel=\@m}}
\define@key{OVP}{abs}{[\]}'{\let\OVP@calc\OVP@calc@abs}
\define@key{OVP}{grid}{[true\]}{\lowercase{\OVP@boolkey{#1}{grid}}}
\define@key{OVP}{tics}{\count@=#1}
\define@key{OVP}{unit}{\unitlength=\dimexpr#1\relax}

\OVP@calc@abs Some calculations in abs mode. \@tempcnta is the normalized width and \@tempcntb is the normalized height. \count@ is the tics value.

\newcommand*{\OVP@calc@abs}{%  
  \divide\@tempcnta by \unitlength  
  \divide\@tempcntb by \unitlength  
  \ifnum\count@=\z@\count@=10\fi}

\OVP@calc@rel Some calculations in rel mode. The bigger value of width or height is the base.

\newcommand*{\OVP@calc@rel}{%  
  \ifnum\@tempcnta>\@tempcntb  
    \divide\@tempcnta by \OVP@scale  
    \unitlength=\@tempcnta sp \%  
    \@tempcnta=\OVP@scale  
    \divide\@tempcntb by \unitlength  
    \else  
    \divide\@tempcntb by \OVP@scale  
    \unitlength=\@tempcntb sp \%  
    \@tempcntb=\OVP@scale  
    \divide\@tempcnta by \unitlength  
  \fi  
  \ifnum\count@=\z@\count@=\z@}

\count@=\OVP@scale
The package options set the defaults:

\DeclareOption{percent}{\setkeys{OVP}{rel=100}}
\DeclareOption{permil}{\setkeys{OVP}{rel=\@m}}
\DeclareOption{abs}{\setkeys{OVP}{abs}}
\DeclareOption*{\PassOptionsToPackage{\CurrentOption}{graphicx}}
\ExecuteOptions{percent}
\ProcessOptions
\AtBeginDocument{%
  \ifpackageloaded{xkeyval}{%\def\OVP@setkeys@relaxed{%\let\OVP@setkeys\setkeys\def\setkeys{\OVP@setkeys*}%\def\OVP@setkeys@strict{%\let\setkeys\OVP@setkeys}%}{%\def\OVP@setkeys@relaxed{%\let\OVP@KV@errx\KV@errx\let\KV@errx\@gobble}%\def\OVP@setkeys@strict{%\let\KV@errx\OVP@KV@errx}%}{%\newsavebox\OVP@box

\newenvironment{overpic}[2][]{%Silently ignore unknown keys.
\OVP@setkeys@relaxed
\sbox\OVP@box{\includegraphics[#1]{#2}}\count@=\z@ \OVP@gridfalse
\setkeys{OVP}{#1}}%Stop ignoring unknown keys.
\OVP@setkeys@strict
\OVP@picture[#1]%}{\endpicture}%

\newenvironment{Overpic}[2][]{%Box \OVP@box gets any \TeX\ code.
\sbox\OVP@box{#2}%}{%Box \OVP@box gets a graphic.
\newenvironment{overpic}[2][]{%Silently ignore unknown keys.
\OVP@setkeys@relaxed
\sbox\OVP@box{\includegraphics[#1]{#2}}%Stop ignoring unknown keys.
\OVP@setkeys@strict
\OVP@picture[#1]%}{\endpicture}%
\OVP@picture Put box \OVP@box and a optionally grid at the lower left corner of a picture environment.

\newcommand*{\OVP@picture}[1]{%
\settodepth{\@tempcnta}{\usebox\OVP@box}%
\settoheight{\@tempcntb}{\usebox\OVP@box}%
\advance\@tempcntb\@tempcnta%
\settowidth{\@tempcnta}{\usebox\OVP@box}%
\OVP@calc%
\picture(\@tempcnta,\@tempcntb)%
\put(0,0){\usebox\OVP@box}%
\ifOVP@grid%
\grid(\@tempcnta,\@tempcntb)(\count@,\count@)[0,0]%
\fi%
}

\setOverpic Sets new defaults.

\newcommand*{\setOverpic}[1]{%
\setkeys{OVP}{#1}%
}
\endinput

Change History

0.60
General: Converted to .dtx ....... 1
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\OVP@calc@rel: Suggested by Herbert Voß ............... 5
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