

The **overpic** package

Rolf Niepraschk
(Rolf.Niepraschk@gmx.de)

Version 2.3 – 2026/07/28

1 Introduction

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

2 Usage

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

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

Other options will be tranfered to package **graphicx**.

overpic (*env.*) `\begin{overpic}[options]{filename} picture code \end{overpic}`

Sets the graphic *filename* and puts the *picture code* on the top of the graphic. The picture code can be any **T_EX** code inclusive other graphics.

The following options are possible:

- **abs**, **percent**, **permil**: The same as the package options (true or false).
- **rel**: Other value as base for relative positioning (e.g. 10000)
- **grid**: Drawing a grid for better orientation (true or false, default: false).
- **tics**: The distance of the grid tics (default: 10).

- **unit**: Sets `\unitlength` (any T_EX dimension, only effective in abs mode).

The macros `\width`, `\height`, `\depth`, and `\totalheight` are defined within the environment. They contain the dimensions of the graphic (parameter 2).

Overpic (*env.*) `\begin{Overpic}[\langle options \rangle]{\langle TEX code \rangle} \langle picture code \rangle \end{Overpic}`

Similar to environment `overpic` but instead of a graphic any T_EX code (e.g. a tabular) is set as basement of the following picture overlay. The macros `\width`, `\height`, `\depth`, and `\totalheight` are defined within the environment. They contain the dimensions of the box created by the T_EX code (parameter 2).

`\setOverpic` `\setOverpic{\langle options \rangle}`

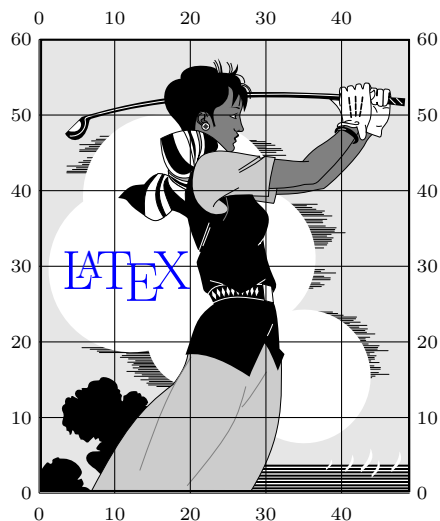
Sets new default values.

3 Examples

The graphic (`golfer.eps`) in the following examples is part of the program `ghostscript` and must be accessible to T_EX. 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}
```



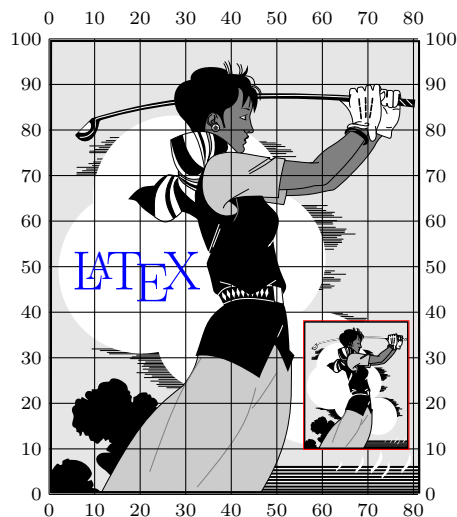
3.2 Environment “overpic” (relative positioning)

The longer dimension is defined as 100%.

```

\begin{overpic}[scale=.25,percent,grid]{golfer.eps}
  \put(5,45){\color{blue}\huge\LaTeX}
  \put(55,10){\color{red}%
    \frame{\includegraphics[scale=.07]{golfer.eps}}}
\end{overpic}

```



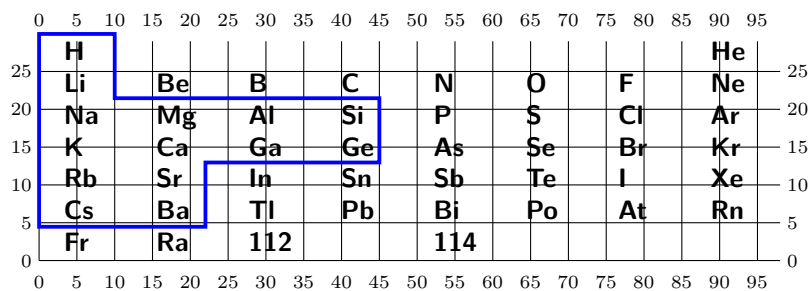
3.3 Environment “Overpic” (absolute positioning)

To use the picture command `\polygon` the package `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

```
1 \RequirePackage{keyval,graphicx,epic}
```

`\OVP@scale` Reference value for rel mode (percent: 100, permil: 1000)

```
2 \newcommand*\OVP@scale{\z@}
```

All the keys:

```
3 \define@key{OVP}{rel}{%
4   \def\OVP@scale{#1}%
5   \ifnum\OVP@scale>\z@
6     \let\OVP@calc\OVP@calc@rel
7   \else
8     \PackageError{overpic}{Invalid number for option 'rel'}{\@ehc
9   \fi
10 }
11 \define@key{OVP}{percent}[]{%
12   \setkeys{OVP}{rel=100}%
13 }
14 \define@key{OVP}{permil}[]{%
15   \setkeys{OVP}{rel=\@m}%
16 }
17 \define@key{OVP}{abs}[]{%
18   \let\OVP@calc\OVP@calc@abs
19 }
20 \def\OVP@boolkey#1#2{%
21   \csname OVP@#2\ifx\relax#1\relax true\else#1\fi\endcsname}
22 \newif\ifOVP@grid
23 \define@key{OVP}{grid}[true]{\lowercase{\OVP@boolkey{#1}}{grid}}
24 \define@key{OVP}{tics}{\count@=#1}
25 \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.

```
26 \newcommand*\OVP@calc@abs{%
27   \divide\@tempcnta by \unitlength
28   \divide\@tempcntb by \unitlength
29   \ifnum\count@=\z@\count@=10\fi
30 }
```

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

```
31 \newcommand*\OVP@calc@rel{%
32   \ifnum\@tempcnta>\@tempcntb
33     \divide\@tempcnta by \OVP@scale
34     \unitlength=\@tempcnta sp %
35     \@tempcnta=\OVP@scale
36   \divide\@tempcntb by \unitlength
37   \else
38     \divide\@tempcntb by \OVP@scale
```

```

39   \unitlength=\@tempcntb sp %
40   \@tempcntb=\OVP@scale
41   \divide\@tempcnta by \unitlength
42 \fi
43 \ifnum\count@=\z@
44   \count@=\OVP@scale
45   \divide\count@ by 10 %
46 \fi
47 }

```

The package options set the defaults:

```

48 \DeclareOption{percent}{\setkeys{OVP}{rel=100}}
49 \DeclareOption{permil}{\setkeys{OVP}{rel=\@m}}
50 \DeclareOption{abs}{\setkeys{OVP}{abs}}
51 \DeclareOption*{\PassOptionsToPackage{\CurrentOption}{graphicx}}
52 \ExecuteOptions{percent}
53 \ProcessOptions
54 \AtBeginDocument{%
55   \ifpackageloaded{xkeyval}{%
56     \def\OVP@setkeys@relaxed{%
57       \let\OVP@setkeys\setkeys
58       \def\setkeys{\OVP@setkeys*}%
59     }
60     \def\OVP@setkeys@strict{%
61       \let\setkeys\OVP@setkeys
62     }
63   }{%
64     \def\OVP@setkeys@relaxed{%
65       \let\OVP@KV@errx\KV@errx
66       \let\KV@errx\@gobble
67     }
68     \def\OVP@setkeys@strict{%
69       \let\KV@errx\OVP@KV@errx
70     }
71   }
72 }
73 \newsavebox\OVP@box
74 \newdimen\OVP@totalheight

```

`overpic` (*env.*) Box `\OVP@box` gets a graphic.

```

75 \newenvironment{overpic}[2] []{%

```

Silently ignore unknown keys.

```

76   \OVP@setkeys@relaxed
77   \sbox\OVP@box{\includegraphics[#1]{#2}}%
78   \count@=\z@ \OVP@gridfalse
79   \setkeys{OVP}{#1}%

```

Stop ignoring unknown keys.

```

80   \OVP@setkeys@strict

```

```

81 \OVP@picture
82 }\endpicture}

```

Overpic (*env.*) Box \OVP@box gets any T_EX code.

```

83 \newenvironment{Overpic}[2] [] {%
84   \sbox\OVP@box{#2}%
85   \count@=\z@ \OVP@gridfalse
86   \setkeys{OVP}{#1}%
87   \OVP@picture
88 }\endpicture}

```

\OVP@picture Put box \OVP@box and a optionally grid at the lower left corner of a picture environment.

```

89 \newcommand*\OVP@picture{%
90   \def\width{\wd\OVP@box}%
91   \def\height{\ht\OVP@box}%
92   \def\depth{\dp\OVP@box}%
93   \let\totalheight\OVP@totalheight
94   \totalheight=\height
95   \advance\totalheight\depth
96   \@tempcnta=\width
97   \@tempcntb=\totalheight
98   \OVP@calc
99   \picture(\@tempcnta,\@tempcntb)%
100   \put(0,0){\makebox(0,0)[bl]{\usebox\OVP@box}}%
101   \ifOVP@grid
102     \put(0,0){\normalfont\fontsize\@viipt\@viiipt\selectfont
103       \grid(\@tempcnta,\@tempcntb)(\count@,\count@)[0,0]}%
104   \fi
105 }

```

\setOverpic Sets new defaults.

```

106 \newcommand*\setOverpic[1]{%
107   \setkeys{OVP}{#1}%
108 }
109 \endinput

```

Change History

0.60		Heiko Oberdiek	4	
	General: Converted to .dtx	1	1.2	
1.0		overpic: Wrong place of		
	General: mostly rewritten	1	\setkeys(bug report from	
	Overpic: Suggested by		'aminophen')	5
	Herbert Voß	6	1.3	
	\OVP@calc@rel: Suggested by		Overpic: Added missing \setkeys	6

2.0	2.1
General: Use a separate namespace for the keys to avoid unfavorable influence on <code>\includegraphics</code> 4	<code>overpic</code> : Consideration of xkeyval's <code>\setkeys</code> 5
<code>overpic</code> : Better key handling 5	2.2 <code>\OVP@picture</code> : Added <code>\width</code> and similar macros 6

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	I	<code>\OVP@setkeys</code> . 57, 58, 61
<code>\@gobble</code> 66	<code>\ifOVP@grid</code> 22, 101	<code>\OVP@setkeys@relaxed</code>
<code>\@ifpackageloaded</code> . 55	<code>\ifx</code> 21	 56, 64, 76
	<code>\includegraphics</code> . . 77	<code>\OVP@setkeys@strict</code>
C	K	 60, 68, 80
<code>\CurrentOption</code> 51	<code>\KV@errx</code> 65, 66, 69	<code>\OVP@totalheight</code> 74, 93
D	M	P
<code>\define@key</code> . . 3, 11,	<code>\makebox</code> 100	<code>\picture</code> 99
14, 17, 23, 24, 25		<code>\put</code> 100, 102
<code>\depth</code> 92, 95	N	S
<code>\dp</code> 92	<code>\newdimen</code> 74	<code>\selectfont</code> 102
E	<code>\newsavebox</code> 73	<code>\setkeys</code> 12, 15,
<code>\endpicture</code> 82, 88	<code>\normalfont</code> 102	48, 49, 50, 57,
environments:	O	58, 61, 79, 86, 107
<code>Overpic</code> 2, 83	<code>Overpic</code> (env.) 2, 83	<code>\setOverpic</code> 2, 106
<code>overpic</code> 1, 75	<code>overpic</code> (env.) 1, 75	T
F	<code>\OVP@boolkey</code> 20, 23	<code>\totalheight</code>
<code>\fontsize</code> 102	<code>\OVP@box</code> 73, 77,	 93, 94, 95, 97
G	84, 90, 91, 92, 100	U
<code>\grid</code> 103	<code>\OVP@calc</code> 6, 18, 98	<code>\unitlength</code> . . 25, 27,
H	<code>\OVP@calc@abs</code> . . . 18, 26	28, 34, 36, 39, 41
<code>\height</code> 91, 94	<code>\OVP@calc@rel</code> . . . 6, 31	W
<code>\ht</code> 91	<code>\OVP@gridfalse</code> . . 78, 85	<code>\wd</code> 90
	<code>\OVP@KV@errx</code> 65, 69	<code>\width</code> 90, 96
	<code>\OVP@picture</code> . 81, 87, 89	
	<code>\OVP@scale</code> . . . 2, 4,	
	5, 33, 35, 38, 40, 44	