

The `eso-pic` package*

Rolf Niepraschk
Rolf.Niepraschk@gmx.de

1 Introduction

This package makes it easy to add some picture commands to every page at absolute positions.

2 Usage

See also the example \LaTeX documents (`eso-*.tex`).

2.1 Basic commands for adding \LaTeX stuff to the page background

<code>\AddToShipoutPictureBG</code>	All the picture commands which are parameters of an <code>\AddToShipoutPictureBG</code> command will be added to the internal macro <code>\ESO@HookIBG</code> . This macro is part of a zero-length <code>picture</code> environment with basepoint at the lower left corner of the page (default) or at the upper left corner (package option "texcoord"). The <code>picture</code> environment will be shipped out at every new page.
<code>\AddToShipoutPictureBG*</code>	<code>\AddToShipoutPictureBG*</code> works like <code>\AddToShipoutPictureBG</code> but only for the current page. It used the internal macro <code>\ESO@HookIIBG</code> which contents will be removed automatically. For compatibility the macros <code>\AddToShipoutPicture</code> and <code>\AddToShipoutPicture*</code> are aliases for <code>\AddToShipoutPictureBG</code> and <code>\AddToShipoutPictureBG*</code> .
<code>\AddToShipoutPictureFG</code> <code>\AddToShipoutPictureFG*</code>	Works like <code>\AddToShipoutPictureBG</code> but the picture commands are on the top of the normal document content.
<code>\ClearShipoutPictureBG</code>	A call of <code>\ClearShipoutPictureBG</code> clears the contents of <code>\ESO@HookIBG</code> . For compatibility the macro <code>\ClearShipoutPicture</code> is an alias for <code>\ClearShipoutPictureBG</code> .
<code>\ClearShipoutPictureFG</code> <code>\LenToUnit</code>	A call of <code>\ClearShipoutPictureFG</code> clears the contents of <code>\ESO@HookIFG</code> . [Allows a length as parameter to a picture command.] Note that this macro exist only for compatibility to older versions of this package. A recent \LaTeX version allows dimensions in picture commands.
<code>\gridSetup</code>	<code>\gridSetup[\langle gridunitname \rangle]{\langle gridunit \rangle}{\langle labelfactor \rangle}{\langle griddelta \rangle}{\langle gridDelta \rangle}{\langle gap \rangle}</code> . For details see the implementation section.

*This document corresponds to `eso-pic` v3.0a, dated 2020/10/14.

\AtPageUpperLeft Helper macros for easier positioning on the page.

\AtPageLowerLeft

\AtPageCenter

\AtTextUpperLeft

\AtTextLowerLeft

\AtTextCenter

\AtStockUpperLeft

\AtStockLowerLeft

\AtStockCenter

2.2 Package options

Option	Value	Comments
pscoord	empty or <i>true</i> , <i>false</i>	The zero point of the coordinate system is the lower left corner of the page (the default).
texcoord	empty or <i>true</i> , <i>false</i>	The zero point of the coordinate system is the upper left corner of the page.
grid	empty or <i>true</i> , <i>false</i>	A grid is drawing; default: false.
gridBG	empty or <i>true</i> , <i>false</i>	Put the grid in the background; default: false.
gridunit	<i>mm</i> , <i>in</i> , <i>bp</i> , <i>pt</i>	Distance between gridlines are multiples of gridunit . default: mm.
gridcolor	a valid color name	Color of the main gridlines; default: black
subgridcolor	a valid color name	Color of the subgridlines; default: black.
subgridstyle	<i>solid</i> or <i>dotted</i>	‘dotted’ is very slow! default: solid.
colorgrid	empty or <i>true</i> , <i>false</i>	Shortcut for ‘grid=true’, ‘gridcolor=red’ and ‘subgridcolor=green’; default: false.
dvips	empty or <i>true</i> , <i>false</i>	Is also true if the package option dvips is used by color or graphics . If true package eeepic is loaded for better performance of dotted lines.

3 Implementation

3.1 The main functionality

\LenToUnit Only for compatibility

```

1 \providecommand*\LenToUnit[1]{#1}

2 \newdimen\ESO@tempdima
3 \newdimen\ESO@tempdimb
```

\ESO@isMEMOIR Support for the memoir class.

```

4 \newcommand\ESO@isMEMOIR[2]{#2}
5 \@ifclassloaded{memoir}{\renewcommand\ESO@isMEMOIR[2]{#1}}{}
```

\AtPageUpperLeft

```

6 \newcommand\AtPageUpperLeft[1]{%
7   \put(0,-\ESO@yoffsetI){#1}%
8 }
```

\AtPageLowerLeft

```

9 \newcommand\AtPageLowerLeft[1]{\AtPageUpperLeft{%
10  \put(0,-\paperheight){#1}}}
```

\AtPageCenter

```
11 \newcommand\AtPageCenter[1]{\AtPageUpperLeft{%  
12   \put(.5\paperwidth,-.5\paperheight){#1}}%  
13 }
```

\AtStockLowerLeft

```
14 \newcommand\AtStockLowerLeft{}  
15 \ESO@isMEMOIR{%  
16   \renewcommand\AtStockLowerLeft[1]{%  
17     \begingroup  
18       \ESO@tempdima=-\stockwidth  
19       \advance\ESO@tempdima\trimedge  
20       \advance\ESO@tempdima\paperwidth  
21       \if@twoside\ifodd\c@page\else  
22         \ESO@tempdima=-\trimedge  
23       \fi\fi  
24       \ESO@tempdimb=-\stockheight  
25       \advance\ESO@tempdimb\paperheight  
26       \advance\ESO@tempdimb\trintop  
27       \AtPageLowerLeft{%  
28         \put(\ESO@tempdima,\ESO@tempdimb){#1}}%  
29     }%  
30   \endgroup  
31 }  
32 }{%  
33   \let\AtStockLowerLeft=\AtPageLowerLeft  
34 }
```

\AtStockUpperLeft

```
35 \newcommand\AtStockUpperLeft{}  
36 \ESO@isMEMOIR{%  
37   \renewcommand\AtStockUpperLeft[1]{%  
38     \AtStockLowerLeft{%  
39       \put(0,\stockheight){#1}}%  
40     }%  
41   }%  
42 }{%  
43   \let\AtStockUpperLeft=\AtPageUpperLeft  
44 }
```

\AtStockCenter

```
45 \newcommand\AtStockCenter{}  
46 \ESO@isMEMOIR{%  
47   \renewcommand\AtStockCenter[1]{%  
48     \AtStockLowerLeft{%  
49       \put(.5\stockwidth,.5\stockheight){#1}}%  
50     }%  
51   }%  
52 }{%  
53   \let\AtStockCenter=\AtPageCenter  
54 }
```

\AtTextUpperLeft

```

55 \ESO@isMEMOIR{%
56   \newcommand\AtTextUpperLeft[1]{%
57     \begingroup
58     \ifodd\c@page
59       \ESO@tempdima=\spinemargin
60     \else
61       \ESO@tempdima=\paperwidth
62       \advance\ESO@tempdima-\textwidth
63       \advance\ESO@tempdima-\spinemargin
64     \fi
65     \ESO@tempdimb=-\uppermargin
66     \AtPageUpperLeft{%
67       \put(\ESO@tempdima,\ESO@tempdimb){#1}%
68     }%
69   \endgroup
70 }
71 }{%
72   \newcommand\AtTextUpperLeft[1]{%
73     \begingroup
74     \ESO@tempdima=1in\relax
75     \if@twoside
76       \ifodd\c@page
77         \advance\ESO@tempdima\oddsidemargin
78       \else
79         \advance\ESO@tempdima\evensidemargin
80       \fi
81     \else
82       \advance\ESO@tempdima\oddsidemargin
83     \fi
84     \ESO@tempdimb=-1in\relax
85     \advance\ESO@tempdimb-\topmargin
86     \advance\ESO@tempdimb-\headheight
87     \advance\ESO@tempdimb-\headsep
88     \AtPageUpperLeft{%
89       \put(\ESO@tempdima,\ESO@tempdimb){#1}%
90     }%
91   \endgroup
92 }
93 }

\AtTextLowerLeft
94 \newcommand\AtTextLowerLeft[1]{\AtTextUpperLeft{%
95   \put(0,-\textheight){#1}}}

\AtTextCenter
96 \newcommand\AtTextCenter[1]{\AtTextUpperLeft{%
97   \put(.5\textwidth,-.5\textheight){#1}}}

\ESO@HookIBG
\ESO@HookIIBG 98 \newcommand{\ESO@HookIBG}{-}
\ESO@HookIIIBG 99 \newcommand{\ESO@HookIIBG}{-}
\ESO@HookIFG 100 \newcommand{\ESO@HookIIIBG}{-}
\ESO@HookIIFG 101 \newcommand{\ESO@HookIFG}{-}
\ESO@HookIIIFG 102 \newcommand{\ESO@HookIIFG}{-}

```

```

103 \newcommand{\ESO@HookIIIFG}{%
104 \newcommand{\ESO@HookI}{%
105 \newcommand{\ESO@HookII}{%
106 \newcommand{\ESO@HookIII}{%
107 \let\ESO@HookI=\ESO@HookIBG
108 \let\ESO@HookII=\ESO@HookIIBG
109 \let\ESO@HookIII=\ESO@HookIIIBG

\AddToShipoutPictureBG
\AddToShipoutPictureFG 110 \newcommand{\AddToShipoutPictureBG}{%
111 \ifstar{\g@addto@macro\ESO@HookIIBG}{\g@addto@macro\ESO@HookIBG}}
112 \newcommand{\AddToShipoutPicture}{%
113 \let\AddToShipoutPicture=\AddToShipoutPictureBG

\AddToShipoutPictureFG
114 \newcommand{\AddToShipoutPictureFG}{%
115 \ifstar{\g@addto@macro\ESO@HookIIIFG}{\g@addto@macro\ESO@HookIFG}}

\ClearShipoutPictureBG
\ClearShipoutPicture 116 \newcommand{\ClearShipoutPictureBG}{\global\let\ESO@HookIBG\@empty}
\ClearShipoutPictureFG 117 \newcommand{\ClearShipoutPicture}{%
118 \let\ClearShipoutPicture=\ClearShipoutPictureBG
119 \newcommand{\ClearShipoutPictureFG}{\global\let\ESO@HookIFG\@empty}

120 \ESO@isMEMOIR{%
121 \newcommand*\ESO@MEMOIR@corr{%
122 \ESO@tempdima=-\trimedge
123 \advance\ESO@tempdima-\paperwidth
124 \advance\ESO@tempdima\stockwidth
125 \if@twoside\ifodd\c@page\else
126 \advance\ESO@tempdima2\trimedge
127 \advance\ESO@tempdima\paperwidth
128 \advance\ESO@tempdima-\stockwidth
129 \fi\fi
130 \ESO@tempdimb=\ESO@yoffsetI
131 \advance\ESO@tempdimb-\trintop
132 }
133 \nointerlineskip
134 \AddToHook{shipout/background}{%
135 \ESO@MEMOIR@corr
136 \put(\ESO@tempdima,\ESO@tempdimb){%
137 \ESO@HookIIIBG\ESO@HookIBG\ESO@HookIIBG
138 \global\let\ESO@HookIIBG\@empty
139 }%
140 }%
141 \AddToHook{shipout/foreground}{%
142 \ESO@MEMOIR@corr
143 \put(\ESO@tempdima,\ESO@tempdimb){%
144 \ESO@HookIFG\ESO@HookIIIFG\ESO@HookIIIFG
145 \global\let\ESO@HookIIIFG\@empty
146 }%
147 }%
148 }%

```

```

149 \nointerlineskip
150 \AddToHook{shipout/background}{%
151   \put(0,\ESO@yoffsetI){%
152     \ESO@HookIIIBG\ESO@HookIBG\ESO@HookIIBG
153     \global\let\ESO@HookIIBG\@empty
154   }%
155 }%
156 \AddToHook{shipout/foreground}{%
157   \put(0,\ESO@yoffsetI){%
158     \ESO@HookIFG\ESO@HookIIFG\ESO@HookIIIFG
159     \global\let\ESO@HookIIFG\@empty
160   }%
161 }%
162 }

```

3.2 The background grid

```

163 \RequirePackage{keyval}

Initialising some macros
164 \newif\ifESO@dvips\ESO@dvipsfalse \newif\ifESO@grid\ESO@gridfalse
165 \newif\ifESO@texcoord\ESO@texcoordfalse \newif\ifESO@gridBG\ESO@gridBGfalse
166 \newcommand*\ESO@gridunitname{}
167 \newcommand*\ESO@gridunit{}
168 \newcommand*\ESO@labelfactor{}
169 \newcommand*\ESO@griddelta{}\newcommand*\ESO@griddeltaY{}
170 \newcommand*\ESO@gridDelta{}\newcommand*\ESO@gridDeltaY{}
171 \newcommand*\ESO@gridcolor{}
172 \newcommand*\ESO@subgridcolor{}
173 \newcommand*\ESO@subgridstyle{dotted}% ???
174 \newcommand*\ESO@gap{}
175 \newcommand*\ESO@yoffsetI{}\newcommand*\ESO@yoffsetII{}
176 \newcommand*\ESO@gridlines{\thinlines}
177 \newcommand*\ESO@subgridlines{\thinlines}
178 \newcommand*\ESO@hline[1]{\ESO@subgridlines\line(1,0){#1}}
179 \newcommand*\ESO@vline[1]{\ESO@subgridlines\line(0,1){#1}}
180 \newcommand*\ESO@Hline[1]{\ESO@gridlines\line(1,0){#1}}
181 \newcommand*\ESO@Vline[1]{\ESO@gridlines\line(0,1){#1}}
182 \newcommand\ESO@fcolorbox[3]{\fbox{#3}}
183 \newcommand\ESO@color[1]{}
184 \newcommand\ESO@colorbox[2]{}
185 \begingroup
186   \fboxrule=\z@\fbox{#2}%
187 \endgroup
188 }

\gridSetup

189 \newcommand\gridSetup[6]{}
190 \edef\ESO@gridunitname{#1}\edef\ESO@gridunit{#2}
191 \edef\ESO@labelfactor{#3}\edef\ESO@griddelta{#4}
192 \edef\ESO@gridDelta{#5}\edef\ESO@gap{#6}

```

All the key-value options

```

193 \define@key{ESO}{texcoord}[true]{\csname ESO@texcoord#1\endcsname}
194 \define@key{ESO}{pscoord}[true]{\csname @tempwa#1\endcsname}

```

```

195 \if@tempswa\ESO@texcoordfalse\else\ESO@texcoordtrue\fi
196 \define@key{ESO}{dvips}[true]{\csname ESO@dvips#1\endcsname}
197 \define@key{ESO}{grid}[true]{\csname ESO@grid#1\endcsname}
198 \setkeys{ESO}{gridcolor=black,subgridcolor=black}}
199 \define@key{ESO}{gridBG}[true]{\csname ESO@gridBG#1\endcsname}
200 \define@key{ESO}{colorgrid}[true]{\csname ESO@grid#1\endcsname}
201 \setkeys{ESO}{gridcolor=red,subgridcolor=green}}
202 \define@key{ESO}{gridcolor}{\def\ESO@gridcolor{#1}}
203 \define@key{ESO}{subgridcolor}{\def\ESO@subgridcolor{#1}}
204 \define@key{ESO}{subgridstyle}{\def\ESO@subgridstyle{#1}}%
205 \define@key{ESO}{gridunit}{%
206 \def\@tempa{#1}
207 \def\@tempb{bp}
208 \ifx\@tempa\@tempb
209 \gridSetup[\@tempa]{1bp}{1}{10}{50}{2}
210 \else
211 \def\@tempb{pt}
212 \ifx\@tempa\@tempb
213 \gridSetup[\@tempa]{\p@}{1}{10}{50}{2}
214 \else
215 \def\@tempb{in}
216 \ifx\@tempa\@tempb
217 \gridSetup[\@tempa]{.1in}{.1}{2}{10}{.5}
218 \else
219 \gridSetup[mm]{1mm}{1}{5}{20}{1}
220 \fi
221 \fi
222 \fi
223 }
224 \setkeys{ESO}{subgridstyle=solid,pscoord=true,gridunit=mm}

225 \providecommand*\@classoptionslist{}

```

`\ProcessOptionsWithKV` This macro can process package options using ‘key=value’ syntax.

```

226 \def\ProcessOptionsWithKV#1{%
227 \let\@tempc\@empty
228 \@for\CurrentOption:=\@classoptionslist\do{%
229 \ifundefined{KV#1@\CurrentOption}%
230 {}{\edef\@tempc{\@tempc,\CurrentOption,}}}%
231 \edef\@tempc{%
232 \noexpand\setkeys{#1}{\@tempc\@optionlist{\@currname.\@current}}}%
233 \@tempc
234 \AtEndOfPackage{\let\unprocessedoptions\relax}}%

235 \ProcessOptionsWithKV{ESO}%

```

`\ESO@div` Divides length #1 by #2 $\times \text{\ESO@gridunit}$ and adds one. Result is in `\@tempcnta`.

```

236 \newcommand\ESO@div[2]{%
237 \ESO@tempdima=#1\relax\ESO@tempdimb=\ESO@gridunit\relax
238 \ESO@tempdimb=#2\ESO@tempdimb\divide\ESO@tempdima by \ESO@tempdimb
239 \@tempcnta\ESO@tempdima\advance\@tempcnta\@ne}

240 \ifundefined{colorbox}{%
241 \IfFileExists{xcolor.sty}{\RequirePackage{xcolor}}%

```

```

242     {\RequirePackage{color}}}%
243 }{}%
244 \let\ESO@color=\color
245 \renewcommand\ESO@colorbox[2]{%
246   \begingroup
247     \fboxsep=.4ex %
248     \colorbox{#1}{#2}%
249   \endgroup
250 }
251 \renewcommand\ESO@fcolorbox[3]{%
252   \begingroup
253     \fboxsep=.5ex %
254     \fcolorbox{#1}{#2}{#3}%
255   \endgroup
256 }
257 \AtBeginDocument{%
258   \ESO@dvijsfalse
259   \@ifundefined{Gin@driver}{}%
260   {%
261     \ifx\Gin@driver\@empty\else%
262       \filename@parse{\Gin@driver}\def\reserved@a{dvips}%
263       \ifx\filename@base\reserved@a\ESO@dvijstrue\fi
264     \fi
265   }%
266   \ifESO@dvijs\def\@tempb{eepic}\else\def\@tempb{epic}\fi
267   \def\@tempa{dotted}%\def\ESO@gap{6\@wholewidth}%
268   \ifx\@tempa\ESO@subgridstyle
269     \IfFileExists{\@tempb.sty}%
270     {%
271       \RequirePackage{\@tempb}
272       \renewcommand*\ESO@hline[1]{\ESO@subgridlines\dottedline{\ESO@gap}%
273         (0,0)(##1,0)}
274       \renewcommand*\ESO@vline[1]{\ESO@subgridlines\dottedline{\ESO@gap}%
275         (0,0)(0,##1)}
276     }{}
277   \else
278     \ifx\ESO@gridcolor\ESO@subgridcolor
279       \renewcommand*\ESO@gridlines{\thicklines}
280     \fi
281   \fi
282 }
283 \ifESO@texcoord
284   \def\ESO@yoffsetI{\z@}\def\ESO@yoffsetII{-\paperheight}
285   \edef\ESO@griddeltaY{-\ESO@griddelta}\edef\ESO@gridDeltaY{-\ESO@gridDelta}
286 \else
287   \def\ESO@yoffsetI{-\paperheight}\def\ESO@yoffsetII{\z@}
288   \edef\ESO@griddeltaY{\ESO@griddelta}\edef\ESO@gridDeltaY{\ESO@gridDelta}
289 \fi

```

\ESO@gridpicture

```

290 \newcommand\ESO@gridpicture{%
291   \begingroup
292     \setlength\unitlength{\ESO@gridunit}%
293     \ESO@color{\ESO@subgridcolor}%

```



```

— horizontal subgrid lines —
294 \ESO@div{\paperheight}{\ESO@griddelta}%
295 \multiput(0,0)(0,\ESO@griddeltaY){\@tempcnta}%
296 {\ESO@hline{\paperwidth}}}%

— vertical subgrid lines —
297 \ESO@div{\paperwidth}{\ESO@griddelta}%
298 \multiput(0,\ESO@yoffsetII)(\ESO@griddelta,0){\@tempcnta}%
299 {\ESO@vline{\paperheight}}}%
300 \ESO@color{\ESO@gridcolor}%

— horizontal grid lines —
301 \ESO@div{\paperheight}{\ESO@gridDelta}%
302 \multiput(0,0)(0,\ESO@gridDeltaY){\@tempcnta}%
303 {\ESO@Hline{\paperwidth}}}%

— vertical grid lines —
304 \ESO@div{\paperwidth}{\ESO@gridDelta}%
305 \multiput(0,\ESO@yoffsetII)(\ESO@gridDelta,0){\@tempcnta}%
306 {\ESO@Vline{\paperheight}}}%

— horizontal numbers —
307 \fontsize{10}{12}\normalfont%
308 \ESO@div{\paperwidth}{\ESO@gridDelta}%
309 \multiput(0,\ESO@gridDeltaY)(\ESO@gridDelta,0){\@tempcnta}{%
310 \@tempcntb=\@tempcnta\advance\@tempcntb-\@multicnt
311 \ifnum\@tempcntb>1\relax
312 \multiply\@tempcntb by \ESO@gridDelta\relax
313 \ESO@tempdima=\@tempcntb sp\ESO@tempdima=\ESO@labelfactor\ESO@tempdima
314 \@tempcntb=\ESO@tempdima%
315 \makebox(0,0)[c]{\ESO@colorbox{white}{\the\@tempcntb}}}%
316 \fi}%

— vertical numbers —
317 \ifx\ESO@gridunitname\@empty\def\@tempa{0}\else\def\@tempa{1}\fi
318 \ESO@div{\paperheight}{\ESO@gridDelta}%
319 \multiput(\ESO@gridDelta,0)(0,\ESO@gridDeltaY){\@tempcnta}{%
320 \@tempcntb=\@tempcnta\advance\@tempcntb-\@multicnt%
321 \ifnum\@tempcntb>\@tempa\relax
322 \multiply\@tempcntb by \ESO@gridDelta\relax%
323 \ESO@tempdima=\@tempcntb sp\ESO@tempdima=\ESO@labelfactor\ESO@tempdima
324 \@tempcntb=\ESO@tempdima
325 \makebox(0,0)[c]{\ESO@colorbox{white}{\the\@tempcntb}}}%
326 \fi
327 }%

— the unit label —
328 \ifx\ESO@gridunitname\@empty\else
329 \thicklines\fbboxrule=\@wholewidth
330 \put(\ESO@gridDelta,\ESO@gridDeltaY){\makebox(0,0)[c]{%
331 \ESO@fcolorbox{\ESO@gridcolor}{white}{%
332 \textbf{\ESO@gridunitname}}}}}%
333 \fi
334 \normalcolor%
335 \endgroup
336 }

```

Add the grid to the shipout picture (`\ESO@HookIIIFG` or `\ESO@HookIIIBG`) is independed from the user commands `\AddToShipoutPictureBG` and `\AddToShipoutPictureBG*`).

```

337 \ifESO@grid
338   \ifESO@gridBG
339     \g@addto@macro\ESO@HookIIIBG{\ESO@gridpicture}%
340   \else
341     \g@addto@macro\ESO@HookIIIFG{\ESO@gridpicture}%
342   \fi
343 \fi

```

Change History

v0.4	added.	9
General: Initial version	1	v1.1b
v0.5	General: New command	
General: Some bug corrections . . .	1	<code>\AtPageLowerLeft</code>
v0.6	New package options "texcoord" and "pscoord"	1
General: Some corrections for compatibility with the <code>html</code> package suggested by Ross Moore and a licence note	1	v1.1c
v0.7	General: New command	
<code>\AddToShipoutPicture*</code>	1	v2.0a
v1.0	General: New commands	
<code>\LenToUnit</code> , <code>\AtPageUpperLeft</code> , <code>\AtPageCenter</code> , <code>\AtTextUpperLeft</code> , and <code>\AtTextCenter</code>	1	<code>\AtStockCenter</code> : New
		<code>\AtStockLowerLeft</code> : New
		<code>\AtStockUpperLeft</code> : New
		<code>\AtTextUpperLeft</code> : Works now for class <code>memoir</code>
		General: Better test of <code>color/xcolor</code>
v1.0a	<code>\AddToShipoutPictureFG</code> : New command	
<code>\ClearShipoutPictureFG</code> : Changed <code>\let</code> to <code>\global\let</code> (suggested by Alberto Lusiani).	5	<code>\AddToShipoutPictureFG</code>
v1.0c	General: New command	
<code>\AtTextLowerLeft</code> and corrections to <code>\AtTextUpperLeft</code>	1	v2.0c
		General: bugfix for <code>memoir</code> class (reported by YI Hoze)
v1.0d	<code>\LenToUnit</code> : Using <code>\providecommand</code> instead of <code>\newcommand</code> for <code>\LenToUnit</code>	2
v1.1	General: New commands and package options for background grids.	1
v1.1a	<code>\ESO@gridpicture</code> : Font setting	
		v2.0d
		General: grid should be in foreground
		Improved color commands
		v2.0e
		<code>\AtTextUpperLeft</code> : Wrong horizontal position in one-column mode
		v2.0f
		<code>\LenToUnit</code> : Changed definition for better compatibility with package <code>curve2e</code> suggested by Claudio Beccari.

v2.0g		v2.0h	
General: Foreground/background		General: \@classoptionslist must	
grid. 10		not be \relax 7	
New \ifES0@gridBG for		v3.0a	
foreground/background grid. . . 6		\LenToUnit: No more used. (RN). 2	
New macro \ES0@HookIIIFG for		General: LaTeX's shipout hooks	
foreground grid. 4		instead of 'atbegshi' (RN). 5	
New option 'gridBG'. 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	\AddToShipoutPictureBG	\ClearShipoutPictureBG
\@classoptionslist .	..... <i>1</i> , <u>110</u>	..... <i>1</i> , <u>116</u>
..... 225, 228	\AddToShipoutPictureBG* <i>1</i> , <u>116</u>
\@currentx 232	..... <i>1</i>	\ClearShipoutPictureFG
\@currname 232	\AddToShipoutPictureFG	..... <i>1</i> , <u>116</u>
\@empty 116, 119, 138,	..... <i>1</i> , <u>110</u> , <u>114</u>	\color 244
145, 153, 159,	\AddToShipoutPictureFG*	\colorbox 248
227, 261, 317, 328	..... <i>1</i>	\csname ... 193, 194,
\@for 228	\advance 19, 20, 25, 26,	196, 197, 199, 200
\@ifclassloaded 5	62, 63, 77, 79,	\CurrentOption 228–230
\@ifstar 111, 115	82, 85–87, 123,	
\@ifundefined	124, 126–128,	D
.... 229, 240, 259	131, 239, 310, 320	\def ... 202–204, 206,
\@multicnt ... 310, 320	\AtBeginDocument .. 257	207, 211, 215,
\@one 239	\AtEndOfPackage ... 234	226, 262, 266,
\@optionlist 232	\AtPageCenter . <i>2</i> , <u>11</u> , 53	267, 284, 287, 317
\@tempa 206,	\AtPageLowerLeft ..	\define@key ... 193,
208, 209, 212,	..... <i>2</i> , <u>9</u> , 27, 33	194, 196, 197,
213, 216, 217,	\AtPageUpperLeft <i>2</i> ,	199, 200, 202–205
267, 268, 317, 321	<u>6</u> , 9, 11, 43, 66, 88	\divide 238
\@tempb ... 207, 208,	\AtStockCenter ... <i>2</i> , <u>45</u>	\do 228
211, 212, 215,	\AtStockLowerLeft .	\dottedline ... 272, 274
216, 266, 269, 271	..... <i>2</i> , <u>14</u> , 38, 48	
\@tempc ... 227, 230–233	\AtStockUpperLeft <i>2</i> , <u>35</u>	E
\@tempcnta 239, 295,	\AtTextCenter <i>2</i> , <u>96</u>	\edef 190–192,
298, 302, 305,	\AtTextLowerLeft . <i>2</i> , <u>94</u>	230, 231, 285, 288
309, 310, 319, 320	\AtTextUpperLeft ..	\else 21, 60,
\@tempcntb .....	..... <i>2</i> , <u>55</u> , 94, 96	78, 81, 125, 195,
. 310–315, 320–325		210, 214, 218,
\@unprocessedoptions	B	261, 266, 277,
..... 234	\begingroup 17, 57, 73,	286, 317, 328, 340
\@wholewidth .. 267, 329	185, 246, 252, 291	\endcsname 193, 194,
A		196, 197, 199, 200
\AddToHook 134, 141, 150, 156	C	\endgroup 30, 69, 91,
\AddToShipoutPicture	\c@page .. 21, 58, 76, 125	187, 249, 255, 335
..... 112, 113	\ClearShipoutPicture	\ES0@color 183, 244, 293, 300
	..... <u>116</u>	\ES0@colorbox 184, 245, 315, 325

<code>\ESO@div</code> 236, 294, 297, 301, 304, 308, 318	<code>\ESO@isMEMOIR</code> ... 4, 15, 36, 46, 55, 120	<code>\Gin@driver</code> ... 261, 262
<code>\ESO@dvipsfalse</code> 164, 258	<code>\ESO@labelfactor</code> .. . 168, 191, 313, 323	<code>\global</code> ... 116, 119, 138, 145, 153, 159
<code>\ESO@dvipstrue</code> 263	<code>\ESO@MEMOIR@corr</code> 121, 135, 142	<code>\gridSetup</code> ... 1, 189, 209, 213, 217, 219
<code>\ESO@fcolorbox</code> 182, 251, 331	<code>\ESO@subgridcolor</code> .. . 172, 203, 278, 293	H
<code>\ESO@gap</code> 174, 192, 267, 272, 274	<code>\ESO@subgridlines</code> .. . 177–179, 272, 274	<code>\headheight</code> 86
<code>\ESO@gridBGfalse</code> .. 165	<code>\ESO@subgridstyle</code> 173, 204, 268	<code>\headsep</code> 87
<code>\ESO@gridcolor</code> 171, 202, 278, 300, 331	<code>\ESO@tempdima</code> ... 2, 18–20, 22, 28, 59, 61–63, 67, 74, 77, 79, 82, 89, 122–124, 126–128, 136, 143, 237–239, 313, 314, 323, 324	I
<code>\ESO@gridDelta</code> 170, 192, 285, 288, 301, 304, 305, 308, 309, 312, 318, 319, 322, 330	<code>\ESO@tempdimb</code> 3, 24–26, 28, 65, 67, 84– 87, 89, 130, 131, 136, 143, 237, 238	<code>\if@tempswa</code> 195
<code>\ESO@griddelta</code> 169, 191, 285, 288, 294, 297, 298	<code>\ESO@texcoordfalse</code> 165, 195	<code>\if@twoside</code> .. 21, 75, 125
<code>\ESO@gridDeltaY</code> 170, 285, 288, 302, 309, 319, 330	<code>\ESO@texcoordtrue</code> . 195	<code>\ifESO@dvips</code> .. 164, 266
<code>\ESO@griddeltaY</code> 169, 285, 288, 295	<code>\ESO@Vline</code> ... 181, 306	<code>\ifESO@grid</code> ... 164, 337
<code>\ESO@gridfalse</code> 164	<code>\ESO@vline</code> 179, 274, 299	<code>\ifESO@gridBG</code> . 165, 338
<code>\ESO@gridlines</code> 176, 180, 181, 279	<code>\ESO@yoffsetI</code> 7, 130, 151, 157, 175, 284, 287	<code>\ifESO@texcoord</code> 165, 283
<code>\ESO@gridpicture</code> 290, 339, 341	<code>\ESO@yoffsetII</code> 175, 284, 287, 298, 305	<code>\IfFileExists</code> . 241, 269
<code>\ESO@gridunit</code> 167, 190, 237, 292	<code>\evensidemargin</code> ... 79	<code>\ifnum</code> 311, 321
<code>\ESO@gridunitname</code> 166, 190, 317, 328, 332	F	<code>\ifodd</code> ... 21, 58, 76, 125
<code>\ESO@Hline</code> ... 180, 303	<code>\fbox</code> 182, 186	<code>\ifx</code> 208, 212, 216, 261, 263, 268, 278, 317, 328
<code>\ESO@hline</code> 178, 272, 296	<code>\fboxrule</code> 186, 329	L
<code>\ESO@HookI</code> ... 104, 107	<code>\fboxsep</code> 247, 253	<code>\LenToUnit</code> 1, 1
<code>\ESO@HookIBG</code> 4, 98, 107, 111, 116, 137, 152	<code>\fcolorbox</code> 254	<code>\let</code> 33, 43, 53, 107–109, 113, 116, 118, 119, 138, 145, 153, 159, 227, 234, 244
<code>\ESO@HookIFG</code> . 4, 101, 115, 119, 144, 158	<code>\fi</code> .. 23, 64, 80, 83, 129, 195, 220– 222, 263, 264, 266, 280, 281, 289, 316, 317, 326, 333, 342, 343	<code>\line</code> 178–181
<code>\ESO@HookII</code> ... 105, 108	<code>\filename@base</code> 263	M
<code>\ESO@HookIIIBG</code> 4, 99, 108, 111, 137, 138, 152, 153	<code>\filename@parse</code> ... 262	<code>\makebox</code> .. 315, 325, 330
<code>\ESO@HookIIIFG</code> 4, 102, 115, 144, 145, 158, 159	<code>\fontsize</code> 307	<code>\multiply</code> 312, 322
<code>\ESO@HookIIII</code> .. 106, 109	G	<code>\multiput</code> . 295, 298, 302, 305, 309, 319
<code>\ESO@HookIIIBG</code> 4, 100, 109, 137, 152, 339	<code>\g@addto@macro</code> 111, 115, 339, 341	N
<code>\ESO@HookIIIFG</code> .. 4, 103, 144, 158, 341		<code>\newdimen</code> 2, 3
		<code>\newif</code> 164, 165
		<code>\noexpand</code> 232
		<code>\nointerlineskip</code> 133, 149
		<code>\normalcolor</code> 334
		<code>\normalfont</code> 307
		O
		<code>\oddsidemargin</code> .. 77, 82
		P
		<code>\p@</code> 213
		<code>\paperheight</code> 10, 12, 25, 284, 287, 294, 299, 301, 306, 318

<code>\paperwidth</code> 12, 20, 61, 123, 127, 296, 297, 303, 304, 308	251, 272, 274, 279	<code>\textheight</code> 95, 97
<code>\ProcessOptionsWithKV</code> <u>226</u> , 235	<code>\RequirePackage</code> 163, 241, 242, 271	<code>\textwidth</code> 62, 97
<code>\providecommand</code> . 1, 225	<code>\reserved@a</code> ... 262, 263	<code>\the</code> 315, 325
<code>\put</code> 7, 10, 12, 28, 39, 49, 67, 89, 95, 97, 136, 143, 151, 157, 330	S	<code>\thicklines</code> ... 279, 329
R	<code>\setkeys</code> 198, 201, 224, 232	<code>\thinlines</code> ... 176, 177
<code>\relax</code> 74, 84, 234, 237, 311, 312, 321, 322	<code>\setlength</code> 292	<code>\topmargin</code> 85
<code>\renewcommand</code> ... 5, 16, 37, 47, 245,	<code>\spinemargin</code> 59, 63	<code>\trimedge</code> 19, 22, 122, 126
	<code>\stockheight</code> . 24, 39, 49	<code>\trimtop</code> 26, 131
	<code>\stockwidth</code> 18, 49, 124, 128	U
	T	<code>\unitlength</code> 292
	<code>\textbf</code> 332	<code>\uppermargin</code> 65
	Z	
		<code>\z@</code> 186, 284, 287