

stmtext class description

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`stmtext` is a wrapper documentclass around a selection of existing class layouts for L^AT_EX. Additionally, it allows quick access to the modules of `stmlatex`.

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1. About

`stmttext` is supposed to be an easy-to-use interface to several other document classes with the additional use of the modules of `stmlatex`. The class addresses users who want to use certain features without initially worrying about their implementation. However, there will most certainly come a point in the learning curve of a \LaTeX user where this documentclass becomes insufficient. That's what's wanted. Maybe, until this point, the class has helped to bring some possibilities of \LaTeX closer.

The goal is to make \LaTeX functionalities available to the user. It is not intended to make any changes to the document layout, despite loading the underlying document classes. The rest of the layout can be freely changed by the user.

The complete class and module system can be found at

<https://github.com/raedma/stmlatex>

2. Options

This section describes the class options. All options are key-value-options, meaning they are set using the definition `KEY=VALUE`. It must be noted that these options can not represent the full features of the module packages. In case more advanced options are required make sure to have a look at the individual package descriptions and consider loading them individually. Maybe you find what you need.

2.1. Overview

This overview contains the most important informations about package options. If there are additional comments about individual options an additional section is created for their description.

Boolean options These options can only have the values `true` or `false`.

Table 1: Boolean class options

Key	Default value	Description
<code>attachfile</code>	<code>false</code>	Load the <code>attachfile</code> package at the correct position relative to <code>stmhyperref</code>
<code>calc</code>	<code>false</code>	Load the <code>calc</code> package at the correct position relative to <code>stmtikz</code>
<code>cleverref</code>	<code>false</code>	Load the <code>cleveref</code> package at the correct position relative to <code>stmhyperref</code>
<code>color</code>	<code>true</code>	Load the <code>stmcolors</code> package
<code>conditionallox</code>	<code>true</code>	Load the <code>stmconditionallox</code> package

continued ...

...continued

Key	Default value	Description
<code>conditionalloxnewpage</code>	<code>true</code>	Set the value of the <code>newpage</code> option in the <code>stmconditionallox</code> package
<code>date</code>	<code>false</code>	Load the <code>stmdate</code> package
<code>glossaries</code>	<code>false</code>	Load the <code>stmglossaries</code> package
<code>index</code>	<code>false</code>	Load the <code>stmindex</code> package
<code>hyperref</code>	<code>true</code>	Load the <code>stmhyperref</code> package
<code>listings</code>	<code>false</code>	Load the <code>stmlistings</code> package
<code>math</code>	<code>false</code>	Load the <code>stmmath</code> package
<code>plots</code>	<code>false</code>	Load the <code>stmplots</code> package
<code>tikz</code>	<code>false</code>	Load the <code>stmtikz</code> package
<code>units</code>	<code>false</code>	Load the <code>stmunits</code> package

String options These options have strings as values. Possible arguments are listed. The default is underlined.

Table 2: String class options

Key	Values	Description
<code>language</code>	<code>german <u>english</u></code>	Document language, Load the <code>stmlanguage</code> package with this option
<code>layout</code>	<code>standard dlr <u>koma</u></code>	Document layout
<code>type</code>	<code>article <u>report</u> book</code>	Base document type

The following options are only available for `layout=dlr` which uses the RM-LaTeX based document classes.

Table 4: Additional string class options for `layout=dlr`

Key	Values	Description
<code>institute</code>	<u>FA-STM</u>	See the RM-LaTeX documentation for alternatives
<code>site</code>	<u>BS</u>	See the RM-LaTeX documentation for alternatives

2.2. Option `attachfile`

The package `attachfile` is one of the packages that has to be loaded at a specific relative position to `hyperref`. Thus, this option is only relevant in case the Option `hyperref` from section 2.7 is used.

2.3. Option `cleveref`

The package `cleveref` is one of the packages that has to be loaded at a specific relative position to `hyperref`. Thus, this option is only relevant in case the Option `hyperref` from section 2.7 is used.

2.4. Option `conditionallox`

In case the option `conditionallox` is used, the document has to be compiled at least three times.

2.5. Option `glossaries`

Setting `glossaries=true` loads the `stmglossaries`. Thus, the user is able to use the glossary entries from the package as described in the package documentation.

In case the `arara` package is used for the build automation of the \LaTeX document, add

```
arara: makeglossaries
```

in the build automation part of your preamble. That way, the glossaries are automatically compiled during your document creation.

For the glossaries to show up in your document, simply place the commands to print the glossary entries of your choice at the location in your document where you want them to show up, e.g.

```
\printstmacronyms  
  
\printstmscalarglossary  
\printstmvectorglossary  
\printstmmatrixglossary  
\printstmstateglossary  
\printstmindexglossary  
\printstmexponentglossary  
\printstmoperatorglossary
```

or

```
\printstmacronyms  
\printallstmsymbols
```

In case no entries are defined, the lists are simply omitted in your document.

2.6. Option `index`

In case it is desired to use other than the default index settings, e.g. create a new index next or replacing the standard, it is recommended to load `stmttext` with the option `index=false` and loading the index individually. Otherwise, there might be conflicts in case `tikz=true` is used in combination.

```

\documentclass[%
  ...
  index=false,%
  ...
]{stmtext}

...

% replace standard index
\usepackage[
  standard=false
]{stminindex}

...

% Must come after \makeindex, e.g. from stminindex
\usepackage{stmtikzexternalization}

```

2.7. Option hyperref

<https://tex.stackexchange.com/a/26592>

2.8. Option layout

This class is supposed to be an interface between different class bundles. Currently, this class offers an interface to the standard L^AT_EX class bundle (`article`, `report`, `book`), the KOMA-script bundle (`scrartcl`, `scrreprt`, `scrbook`) and the RM-L^AT_EX bundle.

It is not the goal to implement all options of all classes rather than to allow an easy switch for standard documents. In case you miss an option for a specific bundle, feel free to implement it.

2.9. Other options

All other options are passed to the underlying document class. Thus, it has to be made sure that the underlying document class understands these options. At this point, switching the argument in the Option layout may lead to problems in case the options is specific to a document class.

3. Usage

3.1. type-independent document structure

[coseoul](#) package

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A. The code

A.1. stmtext.cls

```
1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header %
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This is a document class for structural mechanics
6 % documentation
7 %
8 % Usage
9 % - Preamble:
10 % - \documentclass{stmtext}
11 %
12 % Revisions: 2019-11-25 Martin Raedel <martin.raedel@dlr.de>
13 % Initial draft
14 %
15 % Contact: Martin Raedel, martin.raedel@dlr.de
16 % DLR Composite Structures and Adaptive Systems
17 %
18 % --/|--
19 % /_/_/_/
20 % www.dlr.de/fa/en |/ DLR
21 %
22 % Copyright (C) 2019-... DLR Composite Structures and
23 % Adaptive Systems
24 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
25 % Content %
26 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
27
28 % Declare that this style file requires at least LaTeX
29 % version 2e.
30 \NeedsTeXFormat{LaTeX2e}
31
32 % Provide the name of your page, the date it was last
33 % updated, and a comment about what it's used for
34 \ProvidesClass{stmtext}[2019/11/25 STM documentation class]
35
36 % -----
37 % Package
38 % -----
```



```

38 \@ifpackageloaded{kvoptions}{\RequirePackage{kvoptions}}%
39 \@ifpackageloaded{ifthen}{\RequirePackage{ifthen}}%
40
41 % -----
42 % Options base
43 % -----
44
45 \SetupKeyvalOptions{%
46   family=stmtextbase,%
47   prefix=stmtextbase@,%
48   setkeys=\kvsetkeys,%
49 }
50
51 % String options
52 \DeclareStringOption[report]{type}
53 \DeclareStringOption[koma]{layout}
54
55 % Process options
56 \ProcessKeyvalOptions{stmtextbase}
57
58 % -----
59 % Options
60 % -----
61
62 \SetupKeyvalOptions{%
63   family=stmtext,%
64   prefix=stmtext@,%
65   setkeys=\kvsetkeys,%
66 }
67
68 % Bool option
69 \DeclareBoolOption[true] {color}
70 \DeclareBoolOption[true] {conditionallox}
71 \DeclareBoolOption[true] {conditionalloxnewpage}
72 \DeclareBoolOption[false]{date}
73 \DeclareBoolOption[false]{glossaries}
74 \DeclareBoolOption[false]{index}
75 \DeclareBoolOption[true] {indexstandard}
76 \DeclareBoolOption[true] {hyperref}
77 \DeclareBoolOption[false]{listings}
78 \DeclareBoolOption[false]{math}
79 \DeclareBoolOption[false]{plots}
80 \DeclareBoolOption[false]{tikz}
81 \DeclareBoolOption[true] {tikzexternalization}

```

```

82 \DeclareBoolOption[false]{units}
83
84 %
85 \DeclareStringOption[english]{language}
86
87 % DLR options
88 \DeclareStringOption[FA-STM]{institute}
89 \DeclareStringOption[BS]{site}
90
91 % Options that are dependent of the position of hyperref
92 \DeclareBoolOption[false]{attachfile}
93 \DeclareBoolOption[false]{cleveref}
94
95 % Options that are dependent of the position of tikz
96 \DeclareBoolOption[false]{calc}
97
98 % any other options are passed to the base class
99 \DeclareDefaultOption{%
100   \ifthenelse{\equal{\stmtextbase@type}{article}}{%
101     \ifthenelse{\equal{\stmtextbase@layout}{standard}}{%
102       \PassOptionsToClass{\CurrentOption}{article}%
103     }{}%
104     \ifthenelse{\equal{\stmtextbase@layout}{dlr}}{%
105       \PassOptionsToClass{\CurrentOption}{dlrartcl}%
106     }{}%
107     \ifthenelse{\equal{\stmtextbase@layout}{koma}}{%
108       \PassOptionsToClass{\CurrentOption}{scrartcl}%
109     }{}%
110   }{}%
111 }
112 \DeclareDefaultOption{%
113   \ifthenelse{\equal{\stmtextbase@type}{report}}{%
114     \ifthenelse{\equal{\stmtextbase@layout}{standard}}{%
115       \PassOptionsToClass{\CurrentOption}{report}%
116     }{}%
117     \ifthenelse{\equal{\stmtextbase@layout}{dlr}}{%
118       \PassOptionsToClass{\CurrentOption}{dlrreprt}%
119     }{}%
120     \ifthenelse{\equal{\stmtextbase@layout}{koma}}{%
121       \PassOptionsToClass{\CurrentOption}{scrreprt}%
122     }{}%
123   }{}%
124 }
125 \DeclareDefaultOption{%

```

```

126 \ifthenelse{\equal{\stmttextbase@type}{book}}{%
127   \ifthenelse{\equal{\stmttextbase@layout}{standard}}{%
128     \PassOptionsToClass{\CurrentOption}{book}%
129   }{}%
130   \ifthenelse{\equal{\stmttextbase@layout}{d1r}}{%
131     \PassOptionsToClass{\CurrentOption}{d1rbook}%
132   }{}%
133   \ifthenelse{\equal{\stmttextbase@layout}{koma}}{%
134     \PassOptionsToClass{\CurrentOption}{scrbook}%
135   }{}%
136 }{}%
137 }
138
139 % Process options
140 \ProcessKeyvalOptions{stmttext}
141
142 % -----
143 % Base class
144 % -----
145
146 % Load scrreprt class
147
148 \ifthenelse{\equal{\stmttextbase@type}{article}}{%
149   \ifthenelse{\equal{\stmttextbase@layout}{standard}}{%
150     \LoadClass{article}
151   }{}%
152   \ifthenelse{\equal{\stmttextbase@layout}{d1r}}{%
153     \LoadClass{d1rartcl}
154     \RequirePackage{auxhook}
155   }{}%
156   \ifthenelse{\equal{\stmttextbase@layout}{koma}}{%
157     \LoadClass{scrartcl}
158     \RequirePackage{auxhook}
159   }{}%
160 }{}%
161 \ifthenelse{\equal{\stmttextbase@type}{report}}{%
162   \ifthenelse{\equal{\stmttextbase@layout}{standard}}{%
163     \LoadClass{report}
164   }{}%
165   \ifthenelse{\equal{\stmttextbase@layout}{d1r}}{%
166     \LoadClass{d1rreprt}
167     \RequirePackage{auxhook}
168   }{}%
169   \ifthenelse{\equal{\stmttextbase@layout}{koma}}{%

```

```

170     \LoadClass{scrreprt}
171     \RequirePackage{auxhook}
172   }{}%
173 }{}%
174 \ifthenelse{\equal{\stmttextbase@type}{book}}{%
175   \ifthenelse{\equal{\stmttextbase@layout}{standard}}{%
176     \LoadClass{book}
177   }{}%
178   \ifthenelse{\equal{\stmttextbase@layout}{dlr}}{%
179     \LoadClass{dlrbook}
180     \RequirePackage{auxhook}
181   }{}%
182   \ifthenelse{\equal{\stmttextbase@layout}{koma}}{%
183     \LoadClass{scrbook}
184     \RequirePackage{auxhook}
185   }{}%
186 }{}%
187
188 % -----
189 % Commands for communality between document classes
190 % -----
191
192 % Commands for the standard document classes
193 \ifthenelse{\equal{\stmttextbase@layout}{standard}}{%
194
195   \@ifundefined{subtitle}{\def\subtitle#1{\gdef\
196     @subtitle{#1} }%
197
198   \def\@subtitle{}}{}%
199 }{}%
200
201 % Commands for DLR document classes
202 \ifthenelse{\equal{\stmttextbase@layout}{dlr}}{%
203
204   \dlrinstitute{\stmttext@institute}%
205   \dlrsite      {\stmttext@site}%
206 }{}%
207
208 % Commands from RM-LaTeX that other classes need to
209 % understand
210 \ifthenelse{%
211   \equal{\stmttextbase@layout}{standard} \OR%
212   \equal{\stmttextbase@layout}{koma}%

```

```

212 }{%
213
214 % These commands are created to allow for an easy switch
      between
215 % dlrreprt and bootstrap_dlrreprt.
216
217 \@ifundefined{subject}{      \def\subject#1{\gdef\
      @subject{#1} }%
218                               \def\@subject{}}{}%
219 \@ifundefined{keywords}{    \def\keywords#1{\gdef\
      @keywords{#1} }%
220                               \def\@keywords{}}{}
221 \@ifundefined{restrictions}{\def\restrictions#1{\gdef\
      @restrictions{#1} }%
222                               \def\@restrictions{}}{}
223 \@ifundefined{author}{      \def\author#1{\gdef\@author
      {#1} }%
224                               \def\@author{}}{}
225 \@ifundefined{coauthor}{    \def\coauthor#1{\gdef\
      @coauthor{#1} }%
226                               \def\@coauthor{}}{}
227 \@ifundefined{savedby}{     \def\savedby#1{\gdef\
      @savedby{#1} }%
228                               \def\@savedby{}}{}
229 \@ifundefined{approvedby}{  \def\approvedby#1{\gdef\
      @approvedby{#1} }%
230                               \def\@approvedby{}}{}
231 \@ifundefined{releasedby}{  \def\releasedby#1{\gdef\
      @releasedby{#1} }%
232                               \def\@releasedby{}}{}
233 \@ifundefined{contactname}{ \def\contactname#1{\gdef\
      @contactname{#1} }%
234                               \def\@contactname{}}{}
235 \@ifundefined{telnumber}{   \def\telnumber#1{\gdef\
      @telnumber{#1} }%
236                               \def\@telnumber{}}{}
237 \@ifundefined{faxnumber}{   \def\faxnumber#1{\gdef\
      @faxnumber{#1} }%
238                               \def\@faxnumber{}}{}
239 \@ifundefined{email}{       \def\email#1{\gdef\@email
      {#1} }%
240                               \def\@email{}}{}
241 \@ifundefined{reportno}{    \def\reportno#1{\gdef\
      @reportno{#1} }%

```

```

242 \def\@reportno{}}{}
243
244 % From dlrinstitutes.sty
245 \@ifundefined{institute}{ \def\institute#1{\gdef\
    @institute{#1} }%
246 \def\@institute{}}{}
247 \@ifundefined{site}{ \def\site#1{\gdef\@site{#1}
    }%
248 \def\@site{}}{}
249
250 % The command for the second titlepage
251 \newcommand{\secondpage}{}%
252 }{
253
254 \RequirePackage{dlrsecondpage}
255
256 }
257
258 % -----
259 % Base packages
260 % -----
261
262 \ifstmttext@color
263 \RequirePackage{stmcolors}
264 \fi
265
266 \ifstmttext@conditionallox
267 \RequirePackage[%
268     newpage={\ifstmttext@conditionalloxnewpage true\else
269         false\fi},%
270 ]{stmconditionallox}
271 \fi
272
273 \ifstmttext@date
274 \RequirePackage{stmdate}
275 \fi
276
277 % This must be loaded ahead of tikz externalization
278 \ifstmttext@index
279 \PassOptionsToPackage{%
280     standard={\ifstmttext@indexstandard true\else false\fi},%
281 }{stmindex}%
282 \RequirePackage{stmindex}
283 \fi

```

```

283
284 %\ifstmttext@language
285   \PassOptionsToPackage{%
286     language=\stmttext@language,%
287   }{stmlanguage}%
288   \RequirePackage{stmlanguage}
289 %\fi
290
291 \ifstmttext@listings
292   \RequirePackage{stmlistings}
293 \fi
294
295 \ifstmttext@math
296   \RequirePackage{stmmath}
297 \fi
298
299 \ifstmttext@plots
300   \RequirePackage{stmplots}
301 \fi
302
303 % Must be loaded before tikz
304 \ifstmttext@calc
305   \RequirePackage{calc}
306 \fi
307
308 \ifstmttext@tikz
309   \PassOptionsToPackage{%
310     externalization={\ifstmttext@tikzexternalization true\
311       else false\fi},%
312   }{stmttikz}%
313   \RequirePackage{stmttikz}
314 \fi
315
316 \ifstmttext@units
317   \RequirePackage{stmunits}
318 \fi
319 % -----
320 % Packages with dependencies
321 % -----
322
323 % -----
324 % Coseoul to get a level-independent document structure
325 % -----

```

```

326
327 \RequirePackage{coseoul}
328
329 \newcommand{\basetoclevelnr}[1]{#1}
330 \ifthenelse{\equal{\stmttextbase@type}{article}}{%
331   \renewcommand{\basetoclevelnr}{5}%
332 }{%
333 \ifthenelse{\equal{\stmttextbase@type}{report}}{%
334   \renewcommand{\basetoclevelnr}{6}%
335 }{%
336 \ifthenelse{\equal{\stmttextbase@type}{book}}{%
337   \renewcommand{\basetoclevelnr}{7}%
338 }{%
339
340 \setcounter{currentlevel}{\basetoclevelnr}
341
342 % -----
343 % Hyperref - make sure it is loaded as the last package
344 % -----
345
346 \ifstmttext@hyperref
347   %\makeatletter
348
349   \@ifpackageloaded{etoolbox}{}{%
350     \RequirePackage{etoolbox}
351   }
352
353   %\AtBeginDocument{
354   \AtEndPreamble{
355
356     %
357     \RequirePackage{stmhyperref}
358
359     % After hyperref for links to work
360     % dependency on babel language
361     \ifstmttext@glossaries
362       \RequirePackage{stmglossaries}
363     \fi
364
365
366     \ifstmttext@attachfile
367       \RequirePackage{attachfile}
368     \fi
369

```



```

370     \ifstmttext@cleveref
371         \RequirePackage{cleveref}
372     \fi
373 }
374 %\makeatother
375 \else
376     \ifstmttext@attachfile
377         \RequirePackage{attachfile}
378     \fi
379
380     \ifstmttext@cleveref
381         \RequirePackage{cleveref}
382     \fi
383 \fi
384
385 %%%%%%%%%%%%%%%
386 % That's it %
387 %%%%%%%%%%%%%%%
388
389 % Finally, we'll use \endinput to indicate that LaTeX can
    stop reading this file. LaTeX will ignore anything after
    this line.
390 \endinput

```