

# stmtext class description

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`stmtext` is a wrapper documentclass around a selection of existing class layouts for L<sup>A</sup>T<sub>E</sub>X. Additionally, it allows quick access to the modules of `stmlatex`.

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## 1. About

`stmtext` is supposed to be an easy-to-use interface to several other document classes with the additional use of the modules of `stm-latex`. 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  $\text{\LaTeX}$  user where this documentclass becomes insufficient. That's what's wanted. Maybe, until this point, the class has helped to bring some possibilities of  $\text{\LaTeX}$  closer.

The goal is to make  $\text{\LaTeX}$  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/stm-latex>

## 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>cleverref</code>	<code>false</code>	Load the <code>cleverref</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
<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

continued ...

...continued

Key	Default value	Description
<code>glossaries</code>	<code>false</code>	Load the <a href="#">stmglossaries</a> package
<code>index</code>	<code>false</code>	Load the <a href="#">stmindex</a> package
<code>hyperref</code>	<code>true</code>	Load the <code>stmhyperrefsetup</code> package
<code>listings</code>	<code>false</code>	Load the <a href="#">stmlistings</a> package
<code>math</code>	<code>false</code>	Load the <a href="#">stmmath</a> package
<code>plots</code>	<code>false</code>	Load the <a href="#">stmplots</a> package
<code>tikz</code>	<code>false</code>	Load the <a href="#">stmtikz</a> 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><code>FA-STM</code></u>	See the <a href="#">RM-LaTeX</a> documentation for alternatives
<code>site</code>	<u><code>BS</code></u>	See the <a href="#">RM-LaTeX</a> 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 2.6 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 2.6 is used.

### 2.4. Option `conditionallo`

In case the option `conditionallo` 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  $\text{\LaTeX}$  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  
\printstmatrixglossary  
\printstmstateglossary  
\printstmindexglossary  
\printstmexponentglossary  
\printstmoperatorglossary
```

or

```
\printstmacronyms  
\printallstmsymbols
```

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

### 2.6. Option `hyperref`

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

## 2.7. Option layout

This class is supposed to be an interface between different class bundles. Currently, this class offers an interface to the standard L<sup>A</sup>T<sub>E</sub>X class bundle (`article`, `report`, `book`), the KOMA-script bundle (`scrartcl`, `scrreprt`, `scrbook`) and the RM-L<sup>A</sup>T<sub>E</sub>X 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.

## 2.8. 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

## Keywords

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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=stmttextbase,%
47   prefix=stmttextbase@,%
48   setkeys=\kvsetkeys,%
49 }
50
51 % String options
52 \DeclareStringOption[report]{type}
53 \DeclareStringOption[koma]{layout}
54
55 % Process options
56 \ProcessKeyvalOptions{stmttextbase}
57
58 % -----
59 % Options
60 % -----
61
62 \SetupKeyvalOptions{%
63   family=stmttext,%
64   prefix=stmttext@,%
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] {hyperref}
76 \DeclareBoolOption[false]{listings}
77 \DeclareBoolOption[false]{math}
78 \DeclareBoolOption[false]{plots}
79 \DeclareBoolOption[false]{tikz}
80 \DeclareBoolOption[false]{units}
81

```

```

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

```

```

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

```

```

170     \LoadClass{dlrbook}
171   }{}%
172   \ifthenelse{\equal{\stmtextbase@layout}{koma}}{%
173     \LoadClass{scrbook}
174   }{}%
175 }{}%
176
177 % -----
178 % Commands for communality between document classes
179 % -----
180
181 % Commands for the standard document classes
182 \ifthenelse{\equal{\stmtextbase@layout}{standard}}{%
183
184   \@ifundefined{subtitle}{      \def\subtitle#1{\gdef\
185     @subtitle{#1} }%
186                                   \def\@subtitle{}}{}%
187 }{}%
188
189 % Commands for DLR document classes
190 \ifthenelse{\equal{\stmtextbase@layout}{dlr}}{%
191
192   \dlrinstitute{\stmtext@institute}%
193   \dlrsite      {\stmtext@site}%
194
195 }{}%
196
197 % Commands from RM-LaTeX that other classes need to
198 % understand
199 \ifthenelse{%
200   \equal{\stmtextbase@layout}{standard} \OR%
201   \equal{\stmtextbase@layout}{koma}%
202 }{%
203   % These commands are created to allow for an easy switch
204   % between
205   % dlrreprt and bootstrap_dlrreprt.
206   \@ifundefined{subject}{      \def\subject#1{\gdef\
207     @subject{#1} }%
208                                   \def\@subject{}}{}%
209   \@ifundefined{keywords}{     \def\keywords#1{\gdef\
210     @keywords{#1} }%

```

```

209                                     \def\@keywords{}}{}
210 \@ifundefined{restrictions}{\def\restrictions#1{\gdef\
    @restrictions{#1} }%
211                                     \def\@restrictions{}}{}
212 \@ifundefined{author}{\def\author#1{\gdef\@author
    {#1} }%
213                                     \def\@author{}}{}
214 \@ifundefined{coauthor}{\def\coauthor#1{\gdef\
    @coauthor{#1} }%
215                                     \def\@coauthor{}}{}
216 \@ifundefined{savedby}{\def\savedby#1{\gdef\
    @savedby{#1} }%
217                                     \def\@savedby{}}{}
218 \@ifundefined{approvedby}{\def\approvedby#1{\gdef\
    @approvedby{#1} }%
219                                     \def\@approvedby{}}{}
220 \@ifundefined{releasedby}{\def\releasedby#1{\gdef\
    @releasedby{#1} }%
221                                     \def\@releasedby{}}{}
222 \@ifundefined{contactname}{\def\contactname#1{\gdef\
    @contactname{#1} }%
223                                     \def\@contactname{}}{}
224 \@ifundefined{telnumber}{\def\telnumber#1{\gdef\
    @telnumber{#1} }%
225                                     \def\@telnumber{}}{}
226 \@ifundefined{faxnumber}{\def\faxnumber#1{\gdef\
    @faxnumber{#1} }%
227                                     \def\@faxnumber{}}{}
228 \@ifundefined{email}{\def\email#1{\gdef\@email
    {#1} }%
229                                     \def\@email{}}{}
230 \@ifundefined{reportno}{\def\reportno#1{\gdef\
    @reportno{#1} }%
231                                     \def\@reportno{}}{}
232
233 % From dlrinstitutes.sty
234 \@ifundefined{institute}{\def\institute#1{\gdef\
    @institute{#1} }%
235                                     \def\@institute{}}{}
236 \@ifundefined{site}{\def\site#1{\gdef\@site{#1}
    }%
237                                     \def\@site{}}{}
238
239 % The command for the second titlepage

```

```

240     \newcommand{\secondpage}{}%
241 }{
242
243     \RequirePackage{d1rsecondpage}
244
245 }
246
247 % -----
248 % Base packages
249 % -----
250
251 \ifsttext@color
252     \RequirePackage{stmcolors}
253 \fi
254
255 \ifsttext@conditionallox
256     \RequirePackage[%
257         newpage={\ifsttext@conditionalloxnewpage true\else
258             false\fi},%
259     ]{stmconditionallox}
260 \fi
261
262 \ifsttext@date
263     \RequirePackage{stmdate}
264 \fi
265
266 % This must be loaded ahead of tikz externalization
267 \ifsttext@index
268     \RequirePackage{stmindex}
269 \fi
270
271 %\ifsttext@language
272     \PassOptionsToPackage{%
273         language=\sttext@language,%
274     }{stmlanguage}%
275 \fi
276
277 \ifsttext@listings
278     \RequirePackage{stmlistings}
279 \fi
280
281 \ifsttext@math
282     \RequirePackage{stmmath}

```

```

283 \fi
284
285 \ifstmttext@plots
286   \RequirePackage{stmplots}
287 \fi
288
289 \ifstmttext@tikz
290   \RequirePackage{stmtikz}
291 \fi
292
293 \ifstmttext@units
294   \RequirePackage{stmunits}
295 \fi
296
297 % -----
298 % Packages with dependencies
299 % -----
300
301 % -----
302 % Coseoul to get a level-independent document structure
303 % -----
304
305 \RequirePackage{coseoul}
306
307 \newcommand{\basetoclevelnr}[1]{#1}
308 \ifthenelse{\equal{\stmttextbase@type}{article}}{%
309   \renewcommand{\basetoclevelnr}{5}%
310 }{%
311 \ifthenelse{\equal{\stmttextbase@type}{report}}{%
312   \renewcommand{\basetoclevelnr}{6}%
313 }{%
314 \ifthenelse{\equal{\stmttextbase@type}{book}}{%
315   \renewcommand{\basetoclevelnr}{7}%
316 }{%
317
318 \setcounter{currentlevel}{\basetoclevelnr}
319
320 % -----
321 % Hyperref - make sure it is loaded as the last package
322 % -----
323
324 \ifstmttext@hyperref
325   %\makeatletter
326

```

```

327 \@ifpackageloaded{etoolbox}{%
328   \RequirePackage{etoolbox}
329 }
330
331 %\AtBeginDocument{
332 \AtEndPreamble{
333
334   %
335   \RequirePackage{stmhyperref}
336
337   % After hyperref for links to work
338   % dependency on babel language
339   \ifsttext@glossaries
340     \RequirePackage{stmglossaries}
341   \fi
342
343
344   \ifsttext@attachfile
345     \RequirePackage{attachfile}
346   \fi
347
348   \ifsttext@cleveref
349     \RequirePackage{cleveref}
350   \fi
351 }
352 %\makeatother
353 \else
354   \ifsttext@attachfile
355     \RequirePackage{attachfile}
356   \fi
357
358   \ifsttext@cleveref
359     \RequirePackage{cleveref}
360   \fi
361 \fi
362
363 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
364 % That's it %
365 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
366
367 % Finally, we'll use \endinput to indicate that LaTeX can
368 % stop reading this file. LaTeX will ignore anything after
369 % this line.
370 \endinput

```