

# stmindex package description

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v20230212

Martin Rädcl

2023-02-12

This is an interface to facilitate the creation of a single index for `stm-latex`-based documents. It is build upon the [imakeidx](#) package.

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## List of Listings

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## 1. About

Using `stindex` it is possible to create a single index for a document very conveniently. When you want to add items to the default index, it is not necessary to specify the index name each time. This is also possible with the basic version of `\index`, however, this makes it easier in case you at some point need another index.

It is assumed that for a large part of documents a single index is sufficient. However, `stlatex` can also be used as a blueprint to create other indices.

## 2. Usage

### 2.1. Preamble

#### 2.1.1. Load the package

Load the package by adding

```
\usepackage[<options>]{stindex}
```

to your document preamble. For a list of options, see subsection 2.1.2.

#### 2.1.2. Options

**Option *standard*** This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the standard index.

```
\usepackage[standard=true|false]{stindex}
```

`standard=true` is the default. It is used in case `standard=false` is not set explicitly.

**Option *name*** This is a string option. It controls the name of the standard index files. It only has an affect in case option `standard=true`.

```
\usepackage[standardname=Testindex]{stindex}
```

The default is *Index*.

**Option *title*** This is a string option. It controls the title of the standard index in the document. It only has an affect in case option `standard=true`.

```
\usepackage[standardtitle={Test\ index}]{stindex}
```

The default is *Index*. Spaces have to be put by spacing commands explicitly.

**Option *intoc*** This is a boolean option. Expected values are either `true` or `false`. It controls whether to add the standard index to the table of contents. It only has an affect in case option `standard=true`.

```
\usepackage[intoc=true|false]{stindex}
```

`intoc=true` is the default. It is used in case `intoc=false` is not set explicitly.

**Option *columns*** This is a integer option. It controls the number of columns used in the index. It only has an affect in case option `standard=true`.

```
\usepackage[columns=3]{stindex}
```

The default is 3.

### 2.1.3. Indexsetup

Use the `\indexsetup` command from `imakeidx` in the preamble to tune the behavior of your index, e.g. the level, e.g.

```
\indexsetup{%  
  level=\section*,%  
  toplevel=section,%  
}
```

in a class with where `\chapter` is the highest level, but you want the index as part of an appendix chapter as a section.

## 2.2. In the document

`stindex` introduces a convenient shortcut command to print the standard index in case the option `standard=true`. Use `\printstindex` at the location of your choosing inside the document to print the standard index.

In case multiple indices are used, the standard `imakeidx` commands apply for printing an index.

## 3. Create an individual index independent of the standard index

It is possible to create new indices next to or in replacement of the standard index. It is required to load `stmtikzexternalization` after the `\makeindex` call.

Listing 1: Setup individual index

```

1 % Disable the standard index
2 \usepackage[
3   standard=false
4 ]{stmindex}
5
6 % Setup identifiers
7 \newcommand{\pdKeywordIdxName}{pdkeywordindex}
8 \newcommand{\pdKeywordIdxTitle}{Peridigm keyword index}
9
10 % Macro expansion
11 \DeclareDocumentCommand{\pdkeywordindex}{%
12   0{\pdKeywordIdxName}%style - optional, default in brackets
13   m%
14 }{%
15   \index[#1]{#2}%
16 }
17
18 % Make index
19 \makeindex[%pdkeywords
20   name={\pdKeywordIdxName},%
21   title={\pdKeywordIdxTitle},%
22   intoc,%
23   columns=2,%
24 ]
25
26 % Print command
27 \newcommand{\printpdkeywordindex}{\printindex[\pdKeywordIdxName]}
28
29 % Must come after \makeindex from imakeidx package, e.g. in stmindex
30 \usepackage{stmtikzexternalization}

```

## 4. Known issues

There seems to be a problem with the combination of `imakeidx` and the externalization of `tikz` pictures as from `stmtikz`. Externalization must be activated after the call to `imakeidx` to make it work. See <https://tex.stackexchange.com/q/393697>.

## Test index

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## A. The code

### A.1. stmindex.sty

```
1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header %
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes an interface to
6 % indices for a LaTeX document
7 % Based upon the imakeidx package:
8 %   https://ctan.org/pkg/imakeidx
9 %
10 % Usage
11 %   - Preamble:
12 %     - \usepackage{imakeidx}
13 %     - \makeglossaries
14 %   - Document: e.g. (Adapt to your type of glossary item)
15 %     - \printindex[type=\acronymtype] or
16 %     - \printglossary[type=\acronymtype,nonumberlist]
17 %   - Compilation: e.g. (Adapt to your type of glossary item)
18 %     - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [
19 %       MYTEXFILENAME].acn
20 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
21 %           Initial draft
22 %
23 % Contact:   Martin Raedel, martin.raedel@dlr.de
24 %           DLR Lightweight Systems
25 %
26 %           _ _/_/_
27 %           /_/_/_/_
28 %           www.dlr.de/sy/en   |/_ DLR
29 %
30 % Copyright (C) 2019-... DLR Lightweight Systems
31 %
32 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
33 % Content %
34 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
35
36 % Declare that this style file requires at least LaTeX version 2e.
37 \NeedsTeXFormat{LaTeX2e}
38
```

```

39 % Provide the name of your page, the date it was last updated, and a
    comment about what it's used for
40 \ProvidesPackage{stmindex}[2023/02/12 STMs custom LaTeX index definitions
    ]
41
42 % -----
43 % Options
44 % -----
45
46 % For options
47 \@ifpackageloaded{kvoptions}{\RequirePackage{kvoptions}}%
48
49 % Option group
50 \SetupKeyvalOptions{%
51   family=stmindex,%
52   prefix=stmindex@,%
53   setkeys=\kvsetkeys,%
54 }
55
56 % Standard index
57 \DeclareBoolOption[true]{standard}
58
59 % Acronyms
60 \DeclareStringOption[Index]{standardname}
61
62 % Acronyms
63 \DeclareStringOption[Index]{standardtitle}
64
65 % Load styles
66 \DeclareBoolOption[true]{styles}
67
68 % Apply style name
69 \DeclareStringOption[stmdefault]{style}
70
71 % Put index in toc
72 \DeclareBoolOption[true]{intoc}
73
74 % No new page
75 %\DeclareBoolOption[false]{nonewpage}
76
77 % Number of columns
78 \DeclareStringOption[2]{columns}
79
80 % Process options

```

```

81 \ProcessKeyvalOptions{stminindex}
82
83 % -----
84 % Modules
85 % -----
86
87 % Load the base package
88 \@ifpackageloaded{stminindexbase}{}{%
89   \RequirePackage{stminindexbase}%
90 }%
91
92 % Load the styles
93 \ifstminindex@styles
94   \@ifpackageloaded{stminindexstyles}{}{%
95     \RequirePackage[
96       style=\stminindex@style
97     ]{stminindexstyles}%
98   }%
99 \fi
100
101 % Load the standard index
102 \ifstminindex@standard
103   \@ifpackageloaded{stminindexstandard}{}{%
104     \RequirePackage[%
105       name=\stminindex@standardname,%
106       title=\stminindex@standardtitle,%
107       intoc\ifstminindex@intoc\else{=false}\fi,%
108       columns=\stminindex@columns,%
109     ]{stminindexstandard}%
110   }%
111 \fi
112
113 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
114 % That's it %
115 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
116
117 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
118 % this file. LaTeX will ignore anything after this line.
119 \endinput

```

## A.2. stminindexbase.sty

```

1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header %

```



```

3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes an interface to
6 % indices for a LaTeX document
7 % Based upon the imakeidx package:
8 %   https://ctan.org/pkg/imakeidx
9 %
10 % Usage
11 %   - Preamble:
12 %     - \usepackage{imakeidx}
13 %     - \makeglossaries
14 %   - Document: e.g. (Adapt to your type of glossary item)
15 %     - \printindex[type=\acronymtype] or
16 %     - \printglossary[type=\acronymtype,nonumberlist]
17 %   - Compilation: e.g. (Adapt to your type of glossary item)
18 %     - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [
19 %       MYTEXFILENAME].acn
20 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
21 %               Initial draft
22 %
23 % Contact:   Martin Raedel, martin.raedel@dlr.de
24 %             DLR Lightweight Systems
25 %
26 %                               _ _/_ _
27 %                               / _/_/_/
28 %       www.dlr.de/sy/en        |/_ DLR
29 %
30 % Copyright (C) 2019-... DLR Lightweight Systems
31 %
32 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
33 % Content                                     %
34 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
35
36 % Declare that this style file requires at least LaTeX version 2e.
37 \NeedsTeXFormat{LaTeX2e}
38
39 % Provide the name of your page, the date it was last updated, and a
40 %   comment about what it's used for
41
42 \ProvidesPackage{stmindexbase}[2023/02/12 STMs custom LaTeX index basics]
43
44 % For options
45 %\@ifpackageloaded{kvoptions}{-}{\RequirePackage{kvoptions}}%

```

```

45 % -----
46 % Options
47 % -----
48
49 \SetupKeyvalOptions{%
50   family=stmindexbase,%
51   prefix=stmindexbase@,%
52   setkeys=\kvsetkeys,%
53 }
54
55 % Put index in toc
56 %\DeclareBoolOption[false]{nonewpage}
57
58 % Process options
59 %\ProcessKeyvalOptions{stmindexbase}
60
61 % -----
62 % Base
63 % -----
64
65 % If not loaded in advance, load the glossaries package with some default
    options
66 \@ifpackageloaded{imakeidx}{\fi}{%
67   \RequirePackage[%
68     %\ifstmindexbase@nonewpage nonewpage\fi
69     %]
70   {imakeidx}%
71 }%
72
73 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
74 % That's it
75 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
76
77 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
    this file. LaTeX will ignore anything after this line.
78 \endinput

```

### A.3. stmindexstandard.sty

```

1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes an interface to

```

```

6 % indices for a LaTeX document
7 % Based upon the imakeidx package:
8 %   https://ctan.org/pkg/imakeidx
9 %
10 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
11 %               Initial draft
12 %
13 % Contact:   Martin Raedel, martin.raedel@dlr.de
14 %           DLR Lightweight Systems
15 %
16 %               __/|__
17 %             /_/_/_/_/
18 %           www.dlr.de/sy/en   | / DLR
19 %
20 % Copyright (C) 2019-... DLR Lightweight Systems
21 %
22 %%%%%%%%%%%
23 % Content %
24 %%%%%%%%%%%
25
26 % Declare that this style file requires at least LaTeX version 2e.
27 \NeedsTeXFormat{LaTeX2e}
28
29 % Provide the name of your page, the date it was last updated, and a
30 %   comment about what it's used for
31 \ProvidesPackage{stminindexstandard}[2023/02/12 STMs custom LaTeX standard
32 %   index definitions]
33
34 % For new commands
35 \@ifpackageloaded{xparse}{\RequirePackage{xparse}}%
36 \@ifpackageloaded{ifmtarg}{\RequirePackage{ifmtarg}}%
37
38 % -----
39 % Options
40 % -----
41
42 % For options
43 \@ifpackageloaded{kvoptions}{\RequirePackage{kvoptions}}%
44
45 % Option group
46 \SetupKeyvalOptions{%
47   family=stminindexstandard,%
48   prefix=stminindexstandard@,%
49   setkeys=\kvsetkeys,%

```

```

48 }
49
50 % Name
51 \DeclareStringOption[Keywords]{name}
52
53 % Title
54 \DeclareStringOption[Keywords]{title}
55
56 % Put index in toc
57 \DeclareBoolOption[true]{intoc}
58
59 % No new page for index
60 %\DeclareBoolOption[false]{nonewpage}
61
62 % Number of columns
63 \DeclareStringOption[2]{columns}
64
65 % Put index in toc
66 %\DeclareBoolOption[true]{columnseprule}
67
68 % Process options
69 \ProcessKeyvalOptions{stmindexstandard}
70
71 % -----
72 % Base
73 % -----
74
75 % If not loaded in advance, load the base package with some default
    options
76 \@ifpackageloaded{stmindexbase}{%}{%
77   \RequirePackage{stmindexbase}%
78 }%
79
80 % -----
81 % Index name keywords
82 % -----
83
84 % Keyword index name
85 \newcommand{\stmStandardIdxName}{\stmindexstandard@name}
86
87 % -----
88 % Commands
89 % -----
90

```

```

91 % Expansion of macros by identity function
92 % https://tex.stackexchange.com/a/399451/44634
93 % https://tex.stackexchange.com/a/33753
94 \DeclareDocumentCommand{\stmindex}{%
95   0{\stmStandardIdxName}%style - optional, default in brackets
96   m% date/year
97 }{%
98   \index[#1]{#2}
99 }
100
101 \makeindex[%
102   name={\stmindexstandard@name},%
103   title={\stmindexstandard@title},%
104   intoc\ifstmindexstandard@intoc\else{=false}\fi,
105   columns=\stmindexstandard@columns,%
106 ]
107
108 \newcommand{\printstmindex}{\printindex[\stmStandardIdxName]}
109
110 %%%%%%%%%%%
111 % That's it %
112 %%%%%%%%%%%
113
114 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
115 % this file. LaTeX will ignore anything after this line.
116 \endinput

```

#### A.4. stmindexstyles.sty

```

1 %%%%%%%%%%%
2 % Header %
3 %%%%%%%%%%%
4 %
5 % This file includes index setup
6 % Based upon the index package:
7 %   https://ctan.org/pkg/index
8 %
9 % Usage
10 % - Preamble:
11 %   - \usepackage{stmindexstyles}
12 %
13 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
14 %               Initial draft
15 %

```

```

16 % Contact:   Martin Raedel, martin.raedel@dlr.de
17 %           DLR Lightweight Systems
18 %
19 %           _ _/|_ _
20 %           / _/_/_/
21 %           www.dlr.de/sy/en      | / DLR
22 %
23 % Copyright (C) 2019-... DLR Lightweight Systems
24 %
25 %%%%%%%%%%%
26 % Content                                     %
27 %%%%%%%%%%%
28
29 % Declare that this style file requires at least LaTeX version 2e.
30 \NeedsTeXFormat{LaTeX2e}
31
32 % Provide the name of your page, the date it was last updated, and a
33 %   comment about what it's used for
34 \ProvidesPackage{stmindexstyles}[2023/02/12 STMs index style definitions]
35 % -----
36 % Options
37 % -----
38
39 % For options
40 \@ifpackageloaded{kvoptions}{\RequirePackage{kvoptions}}%
41
42 \SetupKeyvalOptions{%
43   family=stmindexstyles,%
44   prefix=stmindexstyles@,%
45   setkeys=\kvsetkeys,%
46 }
47
48 % Style name
49 \DeclareStringOption[stmdefault]{style}
50
51 % Process options
52 \ProcessKeyvalOptions{stmindexstyles}
53
54 % -----
55 % Style
56 % -----
57
58 \@namedef{stmindexstyles@style@default}{%

```

```

59 % This here is empty to load the standard index setup
60 }
61
62 \@namedef{stmindexstyles@style@stmdefault}{%
63   \indexsetup{%
64     firstpagestyle=plain%
65   }%
66 }
67
68 % Evaluate option settings
69 % https://tex.stackexchange.com/a/249102
70 \newcommand*{\stmindexstyles@evaluate}[1]{%
71   % Check, if option value in \<prefix>@<option> exists
72   \@ifundefined{stmindexstyles@#1}{%
73     % Should not happen
74     \PackageError{stmindexstyles}{Evaluating unknown option '#1'}{\@ehc
75   }{%
76     % Check, if there is an implementation for the value of the option
77     % in macro \<prefix>@<option>@<value>
78     \@ifundefined{stmindexstyles@#1\csname stmindexstyles@#1\endcsname}{%
79       \PackageError{stmindexstyles}{%
80         Unknown option setting: #1=%
81         \csname stmindexstyles@#1\endcsname
82       }\@ehc
83     }{%
84       % Call the implementation for the value
85       \csname stmindexstyles@#1@%
86         \csname stmindexstyles@#1\endcsname
87       \endcsname
88       \relax
89     }%
90   }%
91 }
92
93 \stmindexstyles@evaluate{style}
94
95 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
96 % That's it %
97 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
98
99 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
   this file. LaTeX will ignore anything after this line.
100 \endinput

```