The bicaption package*

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Abstract

This package supports the typesetting of bilangual captions.

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*This package has version number v1.6.

1 Loading the package

This package will be loaded by

```
\usepackage[⟨options⟩]{bicaption}  .
```

The options for the bicaption package are the same ones as for the caption package and specify settings which are used for the second language *additionally*. In fact

```
\usepackage[⟨options⟩]{bicaption}
```

is identical to

```
\usepackage{bicaption}
\bicaptionsetup{}{⟨options⟩}  .
```

When used with the babel or polyglossia package, the bicaption package should be loaded *after* it, so the main language will be set automatically. See section 6 for details.

2 Setting options

`\bicaptionsetup` The `\bicaptionsetup` command sets options specifically for bilingual captions.

New feature v1.6

```
\bicaptionsetup{⟨options for 1st language⟩}{⟨options for 2nd language⟩}
```

sets options which will be used for the first or second heading of the bilingual captions *additionally* to the ones which are setup for the specific floating environment.

To limit bilingual options to specific environments one can use an optional argument for `\bicaptionsetup`, e.g.:

```
\bicaptionsetup[figure]{...}{...}
```

will limit the settings to the bilingual headings of `figure` environments only.

Options specified with `\usepackage[...]{bicaption}` and `\bicaptionsetup{...}{...}` will override the ones specified by `\captionsetup{...}` and `\captionsetup[figure]{...}` (same for 'table'). So finally we have the following order how settings for bilingual captions are applied:

1. Global settings (`\usepackage[...]{caption}` and `\captionsetup{...}`)
2. Environmental settings (`\captionsetup[figure` *-or-* `table]{...}`)
3. Local settings (`\captionsetup{...}` inside `figure` or `table` environment)
4. Custom bilingual settings (`\usepackage[...]{bicaption}` and `\bicaptionsetup{...}{...}`)
5. Environmental bilingual settings (`\bicaptionsetup[figure` *-or-* `table]{...}{...}`)

An example:

```
\usepackage[labelsep=quad,indention=10pt]{caption}
\usepackage[labelfont=bf]{bicaption}
\captionsetup[table]{labelfont=it,position=top}
```

causes the second heading of the bilingual caption inside `table` environments to be typeset with the settings

```
labelsep=quad,indention=10pt,position=top,labelfont=bf.
```

Internally the `\bicaptionsetup` uses the `\captionsetup` command, i.e.

`\bicaptionsetup{`⟨*options for 1st language*⟩`}{`⟨*options for 2nd language*⟩`}`

is identical to

`\captionsetup[bi-first]{`⟨*options for 1st language*⟩`}`
`\captionsetup[bi-second]{`⟨*options for 2nd language*⟩`}`

and

```
\bicaptionsetup[figure]{...}{...}
```

is identical to

```
\captionsetup[figure][bi-first]{...}
\captionsetup[figure][bi-second]{...}   .
```

Prior to v1.6 of this package this was the way options had to be specified. This still works (and will continue to work in the future), but is not recommended, `\bicaptionsetup` should be used instead.

3 Additional options

These options are available additional to the ones offered by the caption package:

`lang=` Sets the language of the caption, e.g.

```
\usepackage[lang=english]{bicaption}
```

will typeset the second caption of bilingual captions in English. (The language will be set with `\selectcaptionlanguage` internally, see section 6 for details.)

`bi-lang=` Causes a selection of the headings of bilingual captions.

```
\captionsetup{bi-lang=both}
```

will cause that both caption headings are being typeset.
(This is the default.)

```
\captionsetup{bi-lang=first}
```

will cause that only the *first* heading is being typeset, and

```
\captionsetup{bi-lang=second}
```

will cause that only the *second* heading is being typeset.

`bi-slc=` `\captionsetup{bi-slc=⟨bool⟩}`

switches the common single-line-check `on` or `off`, i.e. when switched on only a single check will be done for both captions, and the result will affect both captions afterwards. So if only one caption is longer than a single line, both captions will be treated as if they are longer than a single line, even if the second one isn't. (The default is `on`.)

`bi-swap=` `\captionsetup{bi-swap}`

will swap the primary and secondary language, making the first language the second one and vice versa. (The default is `false`.)

New feature v1.3

`bi-separator=` The vertical distance between the first and second bilingual caption is usually determined by the TEX skips set by `\normalsize` which is applied right before both captions get typesetted. (This behaviour is inherited from the original LATEX code for `\caption` which applies `\normalsize` right before `\@makecaption`, too.)

```
\captionsetup{bi-separator=⟨name⟩}
```

will select an additional separator between first and second bilingual caption. You could choose one of the following: 'none' (which is the default one and could also be addressed as 'default'), 'smallskip', 'medskip', 'largeskip', or a self-defined one using

`\DeclareBiCaption-Separator`

```
\DeclareBiCaptionSeparator{⟨name⟩}{⟨code⟩}
```

Examples:

```
\captionsetup{bi-separator=smallskip}
```

will put a `\smallskip` between the two bilingual captions.

```
\DeclareBiCaptionSeparator{hrule}{\hrule}
\captionsetup{bi-separator=hrule}
```

will draw a horizontal line between the two bilingual captions.

```
\DeclareBiCaptionSeparator{3pt}{\vspace{3pt}}
\captionsetup{bi-separator=3pt}
```

will place `3pt` extra vertical space between the two bilingual captions.

Note: In contrast to the original LATEX code for `\caption` the caption package does not apply `\normalsize` directly but will apply the caption font definition `normalsize` instead (which is usually defined as `\normalsize`). Therefore the vertical space between both captions could also be influenced by redefining it, e.g.: `\DeclareCaptionFont{normalsize}{...}`

Important: All options starting with 'bi-' must be applied using `\captionsetup` and *NOT* using `\bicaptionsetup`. This is because they do not alter the setting of the caption for the 1st or 2nd language specifically, but instead alter the behaviour how bilingual captions are set in general.

4 The \bicaption commands

\bicaption Bilingual captions will be typeset by

```
\bicaption[⟨list entry #1⟩]{⟨heading #1⟩}
          [⟨list entry #2⟩]{⟨heading #2⟩}
\bicaption*{⟨heading #1⟩}{⟨heading #2⟩}
```

The \label should be placed either after this command, or inside the first heading.

Just like in \caption an empty ⟨*list entry*⟩ will suppress the entry in the list of figures or tables, for example

```
\bicaption[]{⟨heading #1⟩}[]{⟨heading #2⟩}
```

suppresses both entries.

\bicaptionbox Bilingual caption boxes will be typeset by

```
\bicaptionbox[⟨list entry #1⟩]{⟨heading #1⟩}
             [⟨list entry #2⟩]{⟨heading #2⟩}
             [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
\bicaptionbox*{⟨heading #1⟩}{⟨heading #2⟩}
              [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
```

The \label should be placed inside the first heading.

(For a description of the optional parameters ⟨*width*⟩ and ⟨*inner-pos*⟩ please take a look at the caption package documentation, \captionbox.)

5 Customising lists

list= As default both caption texts will be insert into the List of Figures or List of Tables. To suppress the second entry just pass the option list=off to the bicaption package, e.g.:

```
\usepackage[lang=english,...,list=off]{bicaption}
```

or

```
\usepackage[...]{bicaption}
...
\bicaptionsetup{}{list=off}
```

listtype+= Another option is separating the lists. For that purpose the option

```
listtype+=⟨list type extension⟩
```

can be used to tell the bicaption package to use a different list for the second caption text. The given value will be appended to the current environment type; for example with listtype+=X the list entries will be put into the list responsible for the types figureX (= figure + X), tableX (= table + X) etc.

Such a ⟨*list type*⟩ can be defined using \DeclareFloatingEnvironment offered by the newfloat package, but some document classes or other packages offer macros for defining new floating environment types (and their corresponding lists) as well.

A sample document:

```
\documentclass[a4paper]{article}

% Use "ngerman" as 1st language, "english" as 2nd one
\usepackage[english,ngerman]{babel}

% Load the bicaption package with 2nd language set to
% "english", and list type "figureEnglish" or "tableEnglish"
\usepackage[lang=english,listtype+=English]{bicaption}

\usepackage{newfloat}
% Define type "figureEnglish" and \listoffigureEnglish
\DeclareFloatingEnvironment[fileext=lof2]{figureEnglish}
                  [Figure][List of Figures]
% Define type "tableEnglish" and \listoftableEnglish
\DeclareFloatingEnvironment[fileext=lot2]{tableEnglish}
                  [Table][List of Tables]

\begin{document}

\listoffigures        % typeset "Abbildungsverzeichnis"
\listoffigureEnglish  % typeset "List of Figures"

\begin{figure}
  \centering
  A placeholder for an image or whatever
  \bicaption{Deutscher Text}{English text}
\end{figure}

\end{document}
```

A different approach is using one list for both languages, but with different formatting. Since the caption package does not offer options and commands for customising the format of the lists, one need an additional package for this purpose, for example the titletoc package:

```
\documentclass[a4paper]{article}

% Use "ngerman" as 1st language, "english" as 2nd one
\usepackage[english,ngerman]{babel}

% Load the bicaption package with 2nd language set to
% "english", and list type "figure2" or "table2"
\usepackage[lang=english,listtype+=2]{bicaption}

% We load the titletoc package for customising lists
% Note: Loading titletoc should be done prior
% defining additional floating environments with
% \DeclareFloatingEnvironment
```

```
\usepackage{titletoc}

\usepackage{newfloat}
% Define the new floating environment type "figure2"
% Use the same file extension as for "figure" (.lof) here
\DeclareFloatingEnvironment[fileext=lof]{figure2}
% Define the new floating environment type "table2"
% Use the same file extension as for "table" (.lot) here
\DeclareFloatingEnvironment[fileext=lot]{table2}

% We use the titletoc package for customising "figure2"
% which is appropriate for the second language captions
\titlecontents{figure2}[3.8em]
  {} % no above code
  {} % empty numbered entry format
  {} % empty numberless entry format
  {} % empty filler page format

\begin{document}

\renewcommand\listfigurename
  {Abbildungsverzeichnis / List of Figures}
\listoffigures

\begin{figure}
  \centering
  A placeholder for an image or whatever
  \bicaption{Deutscher Text}{English text}
\end{figure}

\end{document}
```

6 Language Selection

For language selection the bicaption package uses two macros internally:

`\captionmainlanguage` `\captionmainlanguage` contains the main language, for example 'french' or 'german'. If not set manually, the bicaption package will try to obtain this setting from the babel or polyglossia package after the preamble of the document, i.e. at `\begin{document}`.

So if you are using either babel or polyglossia, and want to inherit the main language setting from it, then simply forget about the `\captionmainlanguage` stuff and skip the rest of the section.

Otherwise one can define `\captionmainlanguage` manually, e.g.:

```
\newcommand\captionmainlanguage{french}
\usepackage[lang=english]{bicaption}
```

Note: Prior to v1.5 `\captionmainlanguage` needed to be defined *before* loading the bicaption package. Since v1.5 is could be defined either before or after loading the bicaption package.

`\selectcaptionlanguage` `\selectcaptionlanguage` will be used internally to select the language:

New feature v1.1

`\selectcaptionlanguage{`⟨*font-or-list-entry*⟩`}{`⟨*language*⟩`}`

For setting the language of the caption ⟨*font-or-list-entry*⟩ will be `\@firstoftwo`, for setting the language of the list entry ⟨*font-or-list-entry*⟩ will be `\@secondoftwo`. [1] It defaults to `\select@language` (caption) or `\selectlanguage` (list entry) offered by the babel and polyglossia package:

```
\providecommand*\selectcaptionlanguage[2]{%
  #1{\select@language}{\selectlanguage}{#2}}
```

If you need to alter this, just either define `\selectcaptionlanguage` prior loading the bicaption package, or redefine it afterwards.

Example document using babel:

```
\documentclass[a4paper]{article}

% Use "ngerman" as 1st language, "english" as 2nd one
\usepackage[english,ngerman]{babel}

% Add custom translations to babel
\addto\captionsgerman{%
% \renewcommand\whatevername{Wasauchimmer}%
% ...
}
\addto\captionsenglish{%
% \renewcommand\whatevername{Whatever}%
% ...
}

% Load the bicaption package with 2nd language set to
% "english"
\usepackage[lang=english]{bicaption}

\begin{document}

\begin{figure}
  \centering
  A placeholder for an image or whatever
  \bicaption{Deutscher Text}{English text}
\end{figure}

\end{document}
```

[1] `\@firstoftwo` and `\@secondoftwo` are defined in the LaTeX kernel and simply pick either the 1st or 2nd argument.

The same example document but using a custom implementation of `\captionmainlanguage` and `\selectcaptionlanguage` instead of babel:

```
\documentclass[a4paper]{article}

% Load the bicaption package with 2nd language set to
% "english"
\usepackage[lang=english]{bicaption}

% Set "german" as main bi-caption language
\newcommand\captionmainlanguage{german}

% Declare an own language switching mechanism
% for bi-captions (instead of using babel)
\renewcommand\selectcaptionlanguage[2]{%
  \csname captions#2\endcsname}
\newcommand\captionsgerman{%
  \renewcommand\figurename{Abbildung}%
  \renewcommand\tablename{Tabelle}%
% \renewcommand\whatevername{Wasauchimmer}%
% ...
}
\newcommand\captionsenglish{%
  \renewcommand\figurename{Figure}%
  \renewcommand\tablename{Table}%
% \renewcommand\whatevername{Whatever}%
% ...
}

\begin{document}

\begin{figure}
  \centering
  A placeholder for an image or whatever
  \bicaption{Deutscher Text}{English text}
\end{figure}

\end{document}
```

New feature v1.5

Since v1.5 a warning is issued if the main language could neither be detected automatically nor was it set explicitly by the user. If you really don't want to set languages for bi-captions but are annoyed by the warning you could trick the bicaption by defining a custom dummy language-selection mechanism, e.g.:

```
\newcommand\captionmainlanguage{dummy}
\renewcommand\selectcaptionlanguage[2]{}
```

`\DeclareCaption-LangOption`

New feature v1.2

For internal implementation reasons the selection of language will be done delayed, i.e. not done immediately at `lang=`⟨*language*⟩. So if you do

```
\bicaptionsetup{}{lang=ngerman,labelsep=quad}
```

the language `ngerman` will only be stored internally, and the label separator will be set to `quad` afterwards. Some time later, right before the caption is actually typeset, the language will be set to `ngerman`.

Usually this is no problem, but think of options which will be overwritten by the language selection, or options which act on the language currently set, for example

```
\bicaptionsetup{}{lang=ngerman,name=Bild}  .
```

`lang=ngerman` changes the environment name to “Abbildung”, and `name=Bild` changes the environment name to “Bild”. One would expect that the name is finally “Bild”, but because of the delayed nature of `lang=ngerman` it will be “Abbildung” instead, at least if we don’t take action about this.

For that reason the command

```
\DeclareCaptionLangOption{⟨caption option name⟩}
```

is offered. Options handled this way will be applied twice if used after the `lang=` option, when the option is actually used, and right after the language is selected.

```
\DeclareCaptionLangOption{name}
```

will be done by the bicaption package automatically, since the environment name will usually be overwritten by a language selection. So actually

```
\bicaptionsetup{}{lang=ngerman,name=Bild}
```

will give the expected result, i.e. the environment name is typeset as “Bild”.

7 Required packages

New feature v1.4

Starting with version 1.4 the bicaption package requires at least version 3.2 of the caption package and loads it automatically. (Older versions of the bicaption package have required exactly the version of the caption package which was released with it.)

If you need to use a specific version of the caption package you need to load it *before* the bicaption package, e.g.:

```
\usepackage[...]{caption}[=v3.5]
\usepackage[...]{bicaption}
```

Note that there are limitations if an older version of the caption package is used:

- Full support of list entries of the `lstlisting` environment (offered by the listings package) needs at least caption v3.6.

8 Supported packages

The bicaption package was adapted to the following packages which deals with captions, too: listings [2], longtable [3], and subcaption [4].

8.1 Support of the listings package

New feature v1.5

If the listings package [2] is loaded, the listings options `caption1` and `caption2` are available additionally, where option `caption1` specifies the caption of the first language and `caption2` of the second one.

Example document, using distinctive lists for each language:

```
\documentclass[a4paper]{article}
\usepackage{graphicx}

% Use "ngerman" as 1st language, "english" as 2nd one
\usepackage[english,ngerman]{babel}

% Load the bicaption package with 2nd language set to
% "english", and list type "figureEnglish" or "tableEnglish"
\usepackage[lang=english,listtype+=English,font=it]{bicaption}
\captionsetup{slc=off} % do not center short captions

\usepackage{listings}

% Set German names
\addto\captionsgerman{%
  \renewcommand\lstlistingname{Quelltext}%
  \renewcommand\lstlistlistingname{Quelltextverzeichnis}%
}
\AtBeginDocument{\captionsgerman}% or load listings before babel

% Set English names
\addto\captionsenglish{%
  \renewcommand\lstlistingname{Listing}%
  \renewcommand\lstlistlistingname{List of Listings}%
}

\usepackage{newfloat}
% Define the new floating environment type "lstlistingEnglish"
% (just to get an extra list for English listing captions)
\DeclareFloatingEnvironment[fileext=lol2]{lstlistingEnglish}
                           [Listing][List of Listings]

\begin{document}

\lstlistoflistings        % German
\listoflstlistingEnglish  % English

\clearpage

\begin{lstlisting}
      [language=C,
       caption1=Deutscher Titel,
       caption2=English Title]
```

```
  int main()
  {
      printf( "Hello world!\n" );
      return 0;
  }
\end{lstlisting}

\end{document}
```

8.2 Support of the longtable package

If the longtable package [3] is loaded, `\bicaption` is available in the `longtable` environment as well, e.g.:

```
\documentclass[a4paper]{article}

% Use "ngerman" as 1st language, "english" as 2nd one
\usepackage[english,ngerman]{babel}

% Load the bicaption package with 2nd language set to
% "english"
\usepackage[lang=english]{bicaption}

\usepackage{longtable}

\begin{document}

\begin{longtable}{ll}
  \bicaption{Deutscher Titel}{English Title}\\
  A & B \\
  C & D \\
  ...
\end{longtable}

\end{document}
```

8.3 Support of the subcaption package

If the subcaption package [4] is loaded, these commands are available additionally:

`\bisubcaption` Bilingual sub-captions will be typeset by

```
\bisubcaption[⟨list entry #1⟩]{⟨heading #1⟩}
             [⟨list entry #2⟩]{⟨heading #2⟩}
\bisubcaption*{⟨heading #1⟩}{⟨heading #2⟩}
```

The `\label` should be placed either after this command, or inside the first heading.

\bisubcaptionbox Bilingual sub-caption boxes will be typeset by

```
\bisubcaptionbox[⟨list entry #1⟩]{⟨heading #1⟩}
                [⟨list entry #2⟩]{⟨heading #2⟩}
                [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
\bisubcaptionbox*{⟨heading #1⟩}{⟨heading #2⟩}
                 [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
```

The \label should be placed inside the first heading.

(For a description of the optional parameters ⟨*width*⟩ and ⟨*inner-pos*⟩ please take a look at the subcaption package documentation, \subcaptionbox.)

8.3.1 A sample document

```
\documentclass[english,ngerman]{article}
\usepackage{selinput}
\SelectInputMappings{adieresis={ä},germandbls={ß}}

\usepackage{babel}
\usepackage[lang=english,font=it]{bicaption}
\usepackage[format=hang]{subcaption}

\begin{document}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox
    {Teilabbildung A\label{fig:test:A}}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \qquad
  \bisubcaptionbox
    {Teilabbildung langer Titel B\label{fig:test:B}}
    {Subfigure long title B}[0.4\textwidth]{IMAGE}%
  \bicaption{Deutscher Titel}{English Title}
  \label{fig:test}
\end{figure}

\captionsetup{bi-lang=both}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox[A]
    {Und eine gaaaanz lange Caption: Teilabbildung A}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \qquad
  \bisubcaptionbox[B]
    {Teilabbildung B}
    {Subfigure B}[0.4\textwidth]{IMAGE}%
  \bicaption[Abbildungsverzeichnistitel]
    {Und eine noch viel viel viel
```

```
     längere deutsche Beschriftung: Deutscher Titel}
    {Short English heading}
\end{figure}

\captionsetup{bi-slc=off}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox[A]
    {Und eine gaaaanz lange Caption: Teilabbildung A}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \qquad
  \bisubcaptionbox[B]
    {Teilabbildung B}
    {Subfigure B}[0.4\textwidth]{IMAGE}%
  \bicaption[Abbildungsverzeichnistitel]
    {Und eine noch viel viel viel
     längere deutsche Beschriftung: Deutscher Titel}
    {Short English heading}
\end{figure}

\captionsetup{slc=off}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox[A]
    {Und eine gaaaanz lange Caption: Teilabbildung A}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \qquad
  \bisubcaptionbox[B]
    {Teilabbildung B}
    {Subfigure B}[0.4\textwidth]{IMAGE}%
  \bicaption[Abbildungsverzeichnistitel]
    {Und eine noch viel viel viel
     längere deutsche Beschriftung: Deutscher Titel}
    {Short English heading}
\end{figure}

\end{document}
```

IMAGE

(a) Teilabbildung A

(a) Subfigure A

IMAGE

(b) Teilabbildung langer Titel B

(b) Subfigure long title B

Abbildung 1: Deutscher Titel

Figure 1: English Title

IMAGE

(a) Und eine gaaaanz lange Caption: Teilabbildung A
(a) Subfigure A

IMAGE

(b) Teilabbildung B
(b) Subfigure B

Abbildung 2: Und eine noch viel viel viel längere deutsche Beschriftung: Deutscher Titel
Figure 2: Short English heading

IMAGE

(a) Und eine gaaaanz lange Caption: Teilabbildung A
(a) Subfigure A

IMAGE

(b) Teilabbildung B
(b) Subfigure B

Abbildung 3: Und eine noch viel viel viel längere deutsche Beschriftung: Deutscher Titel
Figure 3: Short English heading

IMAGE

(a) Und eine gaaaanz lange Caption: Teilabbildung A
(a) Subfigure A

IMAGE

(b) Teilabbildung B
(b) Subfigure B

Abbildung 4: Und eine noch viel viel viel längere deutsche Beschriftung: Deutscher Titel
Figure 4: Short English heading

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