The bicaption package

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Abstract
This package supports the typesetting of bilngual captions.

Contents
1 Loading the package 2
2 Setting options 2
3 Additional options 3
4 The \bicaption commands 4
5 A sample document 5
6 Customising lists 7
7 Language Selection 9

*This package has version number v1.3.
1 Loading the package

\usepackage 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}
\captionsetup[bi-second]{⟨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 7 for details.

2 Setting options

\captionsetup The command

\captionsetup[bi]{⟨options⟩}

does setup options which will be used for bilanguage captions additionally to the ones which are setup for the specific floating environment.

\captionsetup[bi-first]{⟨options⟩}

does setup options which will be used for the first heading of the bilanguage captions additionally to the ones which are setup for the specific floating environment and the ones which are setup by \captionsetup[bi]{⟨options⟩}.

\captionsetup[bi-second]{⟨options⟩}

does setup options which will be used for the second heading of the bilanguage captions additionally to the ones which are setup for the specific floating environment and the ones which are setup by \captionsetup[bi]{⟨options⟩}.

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

1. Global settings (\usepackage[⟨options⟩] and \captionsetup[⟨options⟩])
2. Environmental settings (\captionsetup[figure-or-table]{⟨options⟩})
3. Local settings (\captionsetup[⟨options⟩] inside figure or table environment)
4. Custom ‘bi’ settings (\captionsetup[bi]{}...)

5. Custom ‘bi-first’ resp. ‘bi-second’ settings (\usepackage[...]{bicaption} and \captionsetup[bi-first]{}... resp. \captionsetup[bi-second]{}...)

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.

To limit bi, bi-first, or bi-second options to specific environments one can use multiple optional arguments for \captionsetup, e.g.:

\captionsetup[figure][bi-first][⟨options⟩]

will limit the settings to the first heading of figure environments only. Please note that the environment name (figure, table, ...) has to be specified as first optional argument while the bilingual selection (bi, bi-first, or bi-second) as second one.

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 7 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={\texttt{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 \texttt{false}.)

\[\textbf{New feature v1.3}\]

bi-separator= \captionsetup{bi-separator={\texttt{name}}}
will select a 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
\[
\texttt{\textbackslash DeclareBiCaptionSeparator}\{\texttt{name}\}\{\texttt{code}\}
\]
Examples:
\[\texttt{\captionsetup{bi-separator=smallskip}}\]
will put a \texttt{smallskip} between the two bilingual captions.
\[\texttt{\captionsetup{bi-separator=\textbackslash hrule}}\{\texttt{\textbackslash hrule}\}
\texttt{\captionsetup{bi-separator=\textbackslash hrule}}\]
will draw a horizontal line between the two bilingual captions.
\[\texttt{\captionsetup{bi-separator=3pt}\{\texttt{\textbackslash vspace\{3pt\}}\}}\]
\[\texttt{\captionsetup{bi-separator=3pt}}\]
will put \texttt{3pt} vertical space between the two bilingual captions.

4 \textbf{The \texttt{\bicaption} commands}

\texttt{\bicaption} Bilingual captions will be typeset by

\[\texttt{\bicaption}\{\texttt{\{list entry #1\}}\{\texttt{\{heading #1\}}\}
\{\texttt{\{list entry #2\}}\{\texttt{\{heading #2\}}\}\}
\texttt{\bicaption}\{\texttt{\{heading #1\}}\{\texttt{\{heading #2\}}\}\}
\]
The \texttt{\label} should be placed either after this command, or inside the first heading.

\texttt{\bicaptionbox} Bilingual caption boxes will be typeset by

\[\texttt{\bicaptionbox}\{\texttt{\{list entry #1\}}\{\texttt{\{heading #1\}}\}
\{\texttt{\{list entry #2\}}\{\texttt{\{heading #2\}}\}
\{\texttt{\width}}\{\texttt{\inner-pos}}\{\texttt{\contents}}\}
\texttt{\bicaptionbox}\{\texttt{\{heading #1\}}\{\texttt{\{heading #2\}}\}
\{\texttt{\width}}\{\texttt{\inner-pos}}\{\texttt{\contents}}\}
\]
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.)

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

\bisubcaption Bilingual sub-captions will be typeset by
\bisubcaption[list entry #1]{heading #1}
\bisubcaption[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}
\bisubcaptionbox[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.)

5 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
{Tilabbildung A\label{fig:test:A}}
{Subfigure A}[0.4\textwidth]{IMAGE}\%
\quad
\bisubcaptionbox
{Tilabbildung 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}
\end{document}
\end{figure}
\end{document}

Image
(a) Teilabbildung A
   (a) Subfigure A
(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
(b) Teilabbildung B
   (b) Subfigure B

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

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

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

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

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

6 Customising lists

list= As default both caption texts will be insert into the List of Figures resp. 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}

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 \langle 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 "figureEng" resp. "tableEng"
\usepackage[lang=english,listtype+=Eng]{bicaption}
\usepackage{newfloat}
% Define the new floating environment type "figureEng"
\DeclareFloatingEnvironment[filename=lof2]{figureEng}
\figure\List of Figures
% Define the new floating environment type "tableEng"
\DeclareFloatingEnvironment[filename=lot2]{tableEng}
\table\List of Tables

\begin{document}
\listoffigures % typeset "Abbildungsverzeichnis"
\listoffigureEnges % 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" resp. "table2"
\usepackage[lang=english, listtype+={2}]{bicaption}

% We load the titletoc package for customizing 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 customizing "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}

7 Language Selection

For language selection the bicaption package uses two macros internally:
\captionmainlanguage \captionmainlanguage contains the main language, e.g. english or german.
If not set prior to loading the bicaption package, the bicaption package will try to obtain
this setting from the babel or polyglossia package.
So if you are using either babel or polyglossia, and want to adopt the main language
setting from it, then just load the bicaption package after it, and simply forget about the
\captionmainlanguage stuff.
Otherwise one can either define \captionmainlanguage prior to loading the bicaption package, e.g.:
Or one can specify the main language via `\captionsetup` after loading the `bicaption` package, e.g.:

```latex
\usepackage[⟨options⟩]{bicaption}
\captionsetup[bi-first]{lang=french}
```

When not using the `babel` or `polyglossia` package both approaches will have exactly the same effect. But when using the `babel` or `polyglossia` package, and one want to specify the main caption language manually, the first approach is preferable since defining `\captionmainlanguage` will suppress the automatic detection mechanism.

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.`. It defaults to `\select@language (caption)` resp. `\selectlanguage (list entry)` offered by the `babel` and `polyglossia` package:

```latex
\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.

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

```latex
\captionsetup[bi-second]{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

```latex
\captionsetup[bi-second]{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

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

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

\captionsetup[bi-second]{lang=ngerman,name=Bild}

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