

# The bicaption package\*

Axel Sommerfeldt  
`axel.sommerfeldt@f-m.fm`

2010/09/19

## Abstract

This package supports the typesetting of bilingual captions.

## Contents

<b>1</b>	<b>The user interface</b>	<b>2</b>
1.1	Loading the package . . . . .	2
1.2	Setting options . . . . .	2
1.3	Additional options . . . . .	3
1.4	The <code>\bicaption</code> commands . . . . .	4
1.5	An example code . . . . .	4
<b>2</b>	<b>The implementation</b>	<b>7</b>
2.1	Identification . . . . .	7
2.2	Initial code . . . . .	7
2.3	Declaration of options . . . . .	7
2.4	Execution of options . . . . .	8
2.5	Main code . . . . .	8

---

\*This package has version number v0.9a, last revised 2011/07/13.

# 1 The user interface

## 1.1 Loading the package

`\usepackage` This package will be loaded by

```
\usepackage[\langle options \rangle]{bication} .
```

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

```
\usepackage[\langle options \rangle]{bication}
```

is identical to

```
\usepackage{bication}  
\captionsetup[bi-second]{\langle options \rangle} .
```

## 1.2 Setting options

`\captionsetup`

```
\captionsetup[bi]{\langle options \rangle}
```

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

```
\captionsetup[bi-first]{\langle options \rangle}
```

do 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]{...}`.

```
\captionsetup[bi-second]{\langle options \rangle}
```

do 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 specified with `\usepackage[...]{bication}` and `\captionsetup[bi...]{...}` 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 'bi' settings (`\captionsetup[bi]{...}`)

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

An example:

```
\usepackage[labelsep=quad,indentation=10pt]{caption}
\usepackage[labelfont=bf]{bication}
\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,indentation=10pt,position=top,labelfont=bf.
```

### 1.3 Additional options

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

<code>language=</code>	<code>language=</code>	Sets the language of the caption, e.g.  <code>\usepackage[english]{bication}</code>  will typeset the second caption of bilingual captions in English. (The language will be set with <code>\selectlanguage</code> internally, so the <code>babel</code> package must be loaded for using this option.)
<code>bi-lang=</code>	<code>bi-lang=</code>	Causes a selection of the headings of bilingual captions.  <code>\captionsetup{bi-lang=both}</code>  will cause that both caption headings are being typeset. (This is the default.)  <code>\captionsetup{bi-lang=first}</code>  will cause that only the <i>first</i> heading is being typeset, and  <code>\captionsetup{bi-lang=second}</code>  will cause that only the <i>second</i> heading is being typeset.
<code>bi-singlelinecheck=</code>	<code>bi-slc=</code>	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.)
<code>bi-swap=</code>	<code>bi-swap=</code>	<code>\captionsetup{bi-swap}</code>  will swap the primary and secondary language, making the first language the second one and vice versa. (The default is <code>false</code> .)

## 1.4 The `\bicaption` commands

`\bicaption` Bilingual captions will be typeset by

```
\bicaption[<list entry>]{<heading #1>}{<heading #2>}  
\bicaption*{<heading #1>}{<heading #2>}
```

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

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

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

```
\bisubcaption[<list entry>]{<heading #1>}{<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

```
\subcaptionbox[<list entry>]{<heading #1>}{<heading #2>}  
[<width>][<inner-pos>]{<contents>}  
\subcaptionbox*{<heading #1>}{<heading #2>}  
[<width>][<inner-pos>]{<contents>}
```

The `\label` should be placed inside the first heading.

## 1.5 An example code

```
\documentclass[english,ngerman]{article}  
\usepackage{selinput}  
\SelectInputMappings{adieresis={ä},germandbls={ß}}  
  
\usepackage{babel}  
\usepackage[lang=english,font=it]{bicaption}  
\usepackage[format=hang,list=on]{subcaption}  
  
\begin{document}  
  
\begin{figure}[!htb]  
  \centering  
  \bisubcaptionbox  
    {Teilabbildung A\label{fig:test:A}}  
    {Subfigure A}[0.4\textwidth]{IMAGE}%  
  \quad  
  \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=0}

\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=0}

\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	IMAGE
(a) Teilabbildung A	(b) Teilabbildung langer Titel B
(a) <i>Subfigure A</i>	(b) <i>Subfigure long title B</i>

Abbildung 1: Deutscher Titel  
*Figure 1: English Title*

IMAGE	IMAGE
(a) Und eine gaaaanz lange Caption: Teilabbildung A	(b) Teilabbildung B
(a) <i>Subfigure A</i>	(b) <i>Subfigure B</i>

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

IMAGE	IMAGE
(a) Und eine gaaaanz lange Caption: Teilabbildung A	(b) Teilabbildung B
(a) <i>Subfigure A</i>	(b) <i>Subfigure B</i>

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

IMAGE	IMAGE
(a) Und eine gaaaanz lange Caption: Teilabbildung A	(b) Teilabbildung B
(a) <i>Subfigure A</i>	(b) <i>Subfigure B</i>

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

## 2 The implementation

### 2.1 Identification

```
1 \NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 \ProvidesPackage{bication}[2011/07/13 v0.9a Bilingual Captions (AR)]
3 \RequirePackage{caption}[2011/01/01] % needs v3.2 or newer
```

### 2.2 Initial code

```
\bication@Warning \bication@Warning{\message}
4 \newcommand*\bication@Warning[1]{%
5   \bication@WarningNoLine{#1\on@line}}

\bication@WarningNoLine \bication@WarningNoLine{\message}
6 \newcommand*\bication@WarningNoLine[1]{%
7   \PackageWarning{bication}{#1.^J\bication@wh@gobbletwo}}

8 \newcommand*\bication@wh{%
9   See the bication package documentation for explanation.}

\bication@Error \bication@Error{\message}
10 \newcommand*\bication@Error[1]{%
11   \PackageError{bication}{#1}\bication@eh}
12 %\let\bication@KV@err\bication@Error

13 \newcommand*\bication@eh{%
14   If you do not understand this error, please take a closer look\MessageBreak
15   at the documentation of the 'bication' package.\MessageBreak\@ehc}
```

### 2.3 Declaration of options

The option `bi-lang` will setup which language(s) will actually be typeset, the first one, the second one, or both of them.

```
16 \newcount\bication@lang
17 \DeclareCaptionOption{bi-lang}{%
18   \caption@ifinlist{#1}{0,all,both}{%
19     \bication@lang=0\relax
20   }{\caption@ifinlist{#1}{1,1st,first}{%
21     \bication@lang=1\relax
22   }{\caption@ifinlist{#1}{2,2nd,second}{%
23     \bication@lang=2\relax
24   }}%
25   \bication@Error{Undefined bi-lang value '#1'}%
26   }}}}
```

The option `bi-singlelinecheck` will setup if a single check will be used for both languages (`=on`), or if both languages will be checked individually (`=off`).

```
27 \DeclareCaptionOption{bi-singlelinecheck}[1]{%
28   \caption@set@bool\bication@ifslc{#1}}
29 \DeclareCaptionOption{bi-slc}[1]{%
30   \caption@set@bool\bication@ifslc{#1}}
```

The option `bi-swap` will swap the primary and secondary language, making the first language the second one and vice versa.

```
31 \DeclareCaptionOption{bi-swap}[1]{%
32   \caption@set@bool\bicaption@ifswap{#1}}
```

The option `lang=⟨language⟩` will setup the language of the caption.

```
33 \DeclareCaptionOption{lang}{\def\bicaption@language{#1}}
34 \let\KV@caption@language\KV@caption@lang
```

`\bicaption@selectlanguage`

Set the language via `\selectlanguage`.

```
35 \newcommand*\bicaption@selectlanguage{%
36   \@ifundefined{bicaption@language}{}{%
37     \expandafter\selectlanguage\expandafter{\bicaption@language}}}
```

`\caption@applyfont` (of the caption package kernel) will be extended here so the language setting will actually take effect.

```
38 \g@addto@macro\caption@applyfont{%
39   \bicaption@selectlanguage}

40 \g@addto@macro\caption@prepareslc{%
41   \let\bicaption@language\@undefined}
```

## 2.4 Execution of options

Setup default values for `bi-lang` and `bi-singlelinecheck`.

```
42 \caption@ExecuteOptions{caption}{bi-lang=0,bi-slc=1,bi-swap=0}
```

Set the language for the first caption.

```
43 \ifx\bbl@main@language\@undefined
44   \bicaption@WarningNoLine{Please load this package after the babel package}
45 \else
46   \edef\@tempa{\noexpand\captionsetup[bi-first]{lang=\bbl@main@language}}
47   \@tempa
48 \fi
```

We use `\caption@ProcessOptions` here to add the options to the ‘`bi-second`’ option list instead of executing them immediately.

```
49 \caption@SetupOptions{bicaption}{\captionsetup[bi-second]{#2}}%
50 \caption@ProcessOptions*{bicaption}
```

## 2.5 Main code

`\caption@@make`

We patch `\caption@@make` (of the caption package kernel) so `\bicaption@@make` will be used for bilingual captions instead.

```
51 \let\caption@@make@ORI\caption@@make
52 \renewcommand\caption@@make[2]{%
53   \@ifundefined{bicaption@text}%
54     {\caption@@make@ORI{#1}{#2}}%
55     {\bicaption@@make{#1}{#2}{\bicaption@text}}%
56   \global\let\bicaption@label\@undefined
57   \global\let\bicaption@text\@undefined}}
```



```

\bicaption@@make \bicaption@@make{<label>}{<text #1>}{<text #2>}
Typeset both captions using the original version of \caption@@make.
58 \newcommand\bicaption@@make[3]{%
Execute the options setup with \captionsetup[bi]{...}.
59 \caption@setoptions{bi}%
Perform the common single-line-check for both captions, if requested.
60 \ifnum\bicaption@lang=0\relax
61 \bicaption@ifslc
62 {\caption@@slc{#1}{#2}{\captionwidth}{}}%
63 {\caption@set@bool\caption@ifslc0}%
64 \caption@@slc{#1}{#3}{\captionwidth}{}%
65 {\caption@set@bool\caption@ifslc0}}%
66 {}%
67 \fi
Typeset the first caption, if requested. (Otherwise we only apply the label of it.)
68 \ifnum\bicaption@lang=2\relax
69 \ifx\bicaption@label\@empty\else
70 \expandafter\label\expandafter{\bicaption@label}%
71 \fi
72 \else
73 \begingroup
74 \caption@setoptions{bi-first}%
75 \caption@@make@ORI{#1}{#2}%
76 \endgroup
77 \fi
Typeset the second caption, if requested.
78 \ifnum\bicaption@lang=1\relax
79 \else
80 \begingroup
81 \caption@setoptions{bi-second}%
82 \caption@@make@ORI{#1}{#3}%
83 \endgroup
84 \fi}

```

```

\bicaption@setup \bicaption@setup{<text #1>}{<text #2>}
Initiates the bilingual caption typesetting by extracting the \label of the first text and
storing the second text into \bicaption@text.
85 \newcommand\bicaption@setup[2]{%
86 \bicaption@getlabel#1\label{}\@nil
87 \global\long\def\bicaption@text{\ignorespaces#2}}
88 \long\def\bicaption@getlabel#1\label#2#3\@nil{%
89 \global\def\bicaption@label{#2}}

```

## 2.5.1 The \bicaption commands

```

\@bicaption
90 \newcommand*\@bicaption[1]{%
91 \let\bicaption@cmd#1%
92 \caption@withoptargs\@@bicaption}
93 \newcommand\@@bicaption[3]{%

```

```

94 \bication@ifswap
95   {\bication@setup{#2}{#2}%
96     \bication@cmd#1{#3}}%
97   {\bication@setup{#2}{#3}%
98     \bication@cmd#1{#2}}

\bication \bication*[\langle list entry \rangle]{\langle text #1 \rangle}{\langle text #2 \rangle}
99 \newcommand\bication{\@bication\caption}

\bisubcaption \bisubcaption*[\langle list entry \rangle]{\langle text #1 \rangle}{\langle text #2 \rangle}
100 \newcommand\bisubcaption{\@bication\subcaption}

\bisubcaptionbox \bisubcaptionbox*[\langle list entry \rangle]{\langle text #1 \rangle}{\langle text #2 \rangle} [\langle ... \rangle]{\langle ... \rangle}
101 \newcommand\bisubcaptionbox{\@bication\subcaptionbox}

```