The bicaption package[*]

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Abstract

This package supports the typesetting of bilangual captions.

Contents

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1 The user interface

1.1 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*⟩} .

1.2 Setting options

\captionsetup

> \captionsetup[bi]{⟨*options*⟩}

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]{⟨*options*⟩}

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]{⟨*options*⟩}

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[...]{bicaption} 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[...]{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.
```

1.3 Additional options

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

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

$$\texttt{\textbackslash usepackage[lang=english]\{bicaption\}}$$

will typeset the second caption of bilingual captions in English. (The
language will be set with `\selectlanguage` internally, so the ba-
bel package must be loaded for using this option.)

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

$$\texttt{\textbackslash captionsetup\{bi-lang=both\}}$$

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

$$\texttt{\textbackslash captionsetup\{bi-lang=first\}}$$

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

$$\texttt{\textbackslash captionsetup\{bi-lang=second\}}$$

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

`bi-singlelinecheck=`	`bi-slc=`	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=`	`bi-swap=`	

$$\texttt{\textbackslash captionsetup\{bi-swap\}}$$

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

1.4 The **\bicaption** commands

\bicaption   Bilingual captions will be typeset by

$$\texttt{\textbackslash bicaption[}\langle \textit{list entry \#1}\rangle\texttt{]\{}\langle \textit{heading \#1}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{list entry \#2}\rangle\texttt{]\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$
$$\texttt{\textbackslash bicaption*\{}\langle \textit{heading \#1}\rangle\texttt{\}\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$

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

\bicaptionbox   Bilingual caption boxes will be typeset by

$$\texttt{\textbackslash bicaptionbox[}\langle \textit{list entry \#1}\rangle\texttt{]\{}\langle \textit{heading \#1}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{list entry \#2}\rangle\texttt{]\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{width}\rangle\texttt{][}\langle \textit{inner-pos}\rangle\texttt{]\{}\langle \textit{contents}\rangle\texttt{\}}$$
$$\texttt{\textbackslash bicaptionbox*\{}\langle \textit{heading \#1}\rangle\texttt{\}\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{width}\rangle\texttt{][}\langle \textit{inner-pos}\rangle\texttt{]\{}\langle \textit{contents}\rangle\texttt{\}}$$

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

$$\texttt{\textbackslash bisubcaption[}\langle \textit{list entry \#1}\rangle\texttt{]\{}\langle \textit{heading \#1}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{list entry \#2}\rangle\texttt{]\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$
$$\texttt{\textbackslash bisubcaption*\{}\langle \textit{heading \#1}\rangle\texttt{\}\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$

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

\bisubcaptionbox   Bilingual sub-caption boxes will be typeset by

$$\texttt{\textbackslash bisubcaptionbox[}\langle \textit{list entry \#1}\rangle\texttt{]\{}\langle \textit{heading \#1}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{list entry \#2}\rangle\texttt{]\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{width}\rangle\texttt{][}\langle \textit{inner-pos}\rangle\texttt{]\{}\langle \textit{contents}\rangle\texttt{\}}$$
$$\texttt{\textbackslash bisubcaptionbox*\{}\langle \textit{heading \#1}\rangle\texttt{\}\{}\langle \textit{heading \#2}\rangle\texttt{\}}$$
$$\texttt{[}\langle \textit{width}\rangle\texttt{][}\langle \textit{inner-pos}\rangle\texttt{]\{}\langle \textit{contents}\rangle\texttt{\}}$$

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.)

1.5 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
    {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=0}

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

```latex
  \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) Subfigure A *(b) Subfigure long title B*

Abbildung 1: Deutscher Titel
Figure 1: English Title

IMAGE IMAGE

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

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: (b) Teilabbildung B
Teilabbildung A *(b) Subfigure B*
(a) Subfigure A

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: (b) Teilabbildung B
Teilabbildung A *(b) Subfigure B*
(a) Subfigure A

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

1.6   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 ⟨*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[fileext=lof2]{figureEng}
                    [Figure][List of Figures]
% Define the new floating environment type "tableEng"
\DeclareFloatingEnvironment[fileext=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}
```

2 The implementation

2.1 Identification

```
1 \NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 \ProvidesPackage{bicaption}[2011/10/30 v1.0a Bilingual Captions (AR)]

3 \RequirePackage{caption}[2011/08/28] % needs v3.2c or newer

4 \caption@AtBeginDocument{\caption@ifcompatibility{%
5   \caption@Error{%
6     The 'bicaption' package does not work correctly\MessageBreak
7     in compatibility mode}}{}}
```

2.2 Initial code

\bicaption@Warning   \bicaption@Warning{⟨*message*⟩}

```
8 \newcommand*\bicaption@Warning[1]{%
9   \bicaption@WarningNoLine{#1\on@line}}
```

\bicaption@WarningNoLine   \bicaption@WarningNoLine{⟨*message*⟩}

```
10 \newcommand*\bicaption@WarningNoLine[1]{%
11   \PackageWarning{bicaption}{#1.^^J\bicaption@wh\@gobbletwo}}

12 \newcommand*\bicaption@wh{%
13   See the bicaption package documentation for explanation.}
```

\bicaption@Error   \bicaption@Error{⟨*message*⟩}

```
14 \newcommand*\bicaption@Error[1]{%
15   \PackageError{bicaption}{#1}\bicaption@eh}
16 %\let\bicaption@KV@err\bicaption@Error

17 \newcommand*\bicaption@eh{%
18   If you do not understand this error, please take a closer look\MessageBreak
19   at the documentation of the 'bicaption' 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.

```
20 \newcount\bicaption@lang
21 \DeclareCaptionOption{bi-lang}{%
22   \caption@ifinlist{#1}{0,all,both}{%
23     \bicaption@lang=0\relax
24   }{\caption@ifinlist{#1}{1,1st,first}{%
25     \bicaption@lang=1\relax
26   }{\caption@ifinlist{#1}{2,2nd,second}{%
27     \bicaption@lang=2\relax
28   }{%
29     \bicaption@Error{Undefined bi-lang value '#1'}%
30   }}}}
```

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`).

```
31 \DeclareCaptionOption{bi-singlelinecheck}[1]{%
32   \caption@set@bool\bicaption@ifslc{#1}}
33 \DeclareCaptionOption{bi-slc}[1]{%
34   \caption@set@bool\bicaption@ifslc{#1}}
```

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

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

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

```
37 \DeclareCaptionOption{lang}{\def\bicaption@language{#1}}
38 \let\KV@caption@language\KV@caption@lang
```

`\bicaption@selectlanguage` Set the language via `\selectlanguage`.

```
39 \newcommand*\bicaption@selectlanguage{%
40   \@ifstar
41     {\bicaption@select@language\select@language}
42     {\bicaption@select@language\selectlanguage}}

43 \newcommand*\bicaption@select@language[1]{%
44   \caption@ifundefined\bicaption@language{}{%
45     \expandafter#1\expandafter{\bicaption@language}}}
```

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

```
46 \g@addto@macro\caption@applyfont{%
47   \bicaption@selectlanguage*}

48 \g@addto@macro\caption@prepareslc{%
49   \let\bicaption@language\@undefined}
```

2.4   Execution of options

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

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

Set the language for the first caption.

```
51 \ifcsname bbl@main@language\endcsname
52   \edef\@tempa{\noexpand\captionsetup[bi-first]{lang=\bbl@main@language}}
53   \@tempa
54 \else\ifcsname xpg@main@language\endcsname
55   \edef\@tempa{\noexpand\captionsetup[bi-first]{lang=\xpg@main@language}}
56   \@tempa
57 \else
58   \bicaption@WarningNoLine{Please load this package after the babel package}
59 \fi\fi
```

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

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

2.5 Main code

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

```
62 \let\caption@kernel@addcontentsline@ORI\caption@kernel@addcontentsline
63 \renewcommand*\caption@kernel@addcontentsline[2]{%
64   \caption@ifundefined\bicaption@lentry
65     {\caption@kernel@addcontentsline@ORI{#1}{#2}}%
66     {\expandafter\bicaption@addcontentsline\expandafter{\bicaption@lentry}{#1}{#2}
67      \global\let\bicaption@lentry\@undefined}}
```

bicaption@addcontentsline `\bicaption@addcontentsline{⟨list entry #2⟩}{⟨type⟩}{⟨list entry #1⟩}`
Typeset both captions using the original version of `\caption@addcontentsline`.

```
68 \newcommand\bicaption@addcontentsline[3]{%
69   \begingroup
```

Execute the options setup with `\captionsetup[bi]{...}`.

```
70     \caption@setoptions{bi}%
```

Do the first list entry, if requested.

```
71   \ifnum\bicaption@lang=2\relax \else
72     \begingroup
73       \caption@setoptions{bi-first}%
74       \bicaption@@addcontentsline{#2}{#3}%
75     \endgroup
76   \fi
```

Do the second list entry, if requested.

```
77   \ifnum\bicaption@lang=1\relax \else
78     \begingroup
79       \caption@setoptions{bi-second}%
80       \bicaption@@addcontentsline{#2}{#1}%
81     \endgroup
82   \fi
83   \endgroup}
84 \newcommand*\bicaption@@addcontentsline[2]{%
85   \caption@ifcontentsline{#2}{%
86     \bicaption@selectlanguage\relax
87     \caption@kernel@addcontentsline@ORI{#1}{#2}}}
```

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

```
88 \let\caption@@make@ORI\caption@@make
89 \renewcommand\caption@@make[2]{%
90   \caption@ifundefined\bicaption@text
91     {\caption@@make@ORI{#1}{#2}}%
92     {\expandafter\bicaption@@make\expandafter{\bicaption@text}{#1}{#2}%
93      \global\let\bicaption@text\@undefined}}
```

`\bicaption@@make` `\bicaption@@make{⟨text #2⟩}{⟨label⟩}{⟨text #1⟩}`
Typeset both captions using the original version of `\caption@@make`.

```
94 \newcommand\bicaption@@make[3]{%
```

Execute the options setup with `\captionsetup[bi]{...}`.

```
95   \caption@setoptions{bi}%
```

Perform the common single-line-check for both captions, if requested.

```
96    \ifnum\bicaption@lang=0\relax
97      \bicaption@ifslc
98        {\caption@@slc{#2}{#3}{\captionwidth}{}%
99                    {\caption@set@bool\caption@ifslc0}%
100       \caption@@slc{#2}{#1}{\captionwidth}{}%
101                   {\caption@set@bool\caption@ifslc0}}%
102       {}%
103   \fi
```

Typeset the first caption, if requested. (Otherwise we only apply the label of it.)

```
104   \ifnum\bicaption@lang=2\relax
105     \bicaption@label
106     \global\let\bicaption@label\relax
107   \else
108     \begingroup
109       \caption@setoptions{bi-first}%
110       \caption@@make@ORI{#2}{#3}%
111     \endgroup
112   \fi
```

Typeset the second caption, if requested.

```
113   \ifnum\bicaption@lang=1\relax
114   \else
115     \begingroup
116       \caption@setoptions{bi-second}%
117       \caption@@make@ORI{#2}{#1}%
118     \endgroup
119   \fi}
```

2.5.1 The `\bicaption` commands

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

```
120 \newcommand\bicaption{\@bicaption\caption}
```

`\bicaptionbox`   `\bicaptionbox*[`⟨*entry #1*⟩`]{`⟨*text #1*⟩`}[`⟨*entry #2*⟩`]{`⟨*text #2*⟩`} [`⟨...⟩`]{`⟨...⟩`}`

```
121 \newcommand\bicaptionbox{\@bicaption\captionbox}
```

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

```
122 \newcommand\bisubcaption{\@bicaption\subcaption}
123 \let\subbicaption\bisubcaption
```

`\bisubcaptionbox`   `\bisubcaptionbox*[`⟨*entry #1*⟩`]{`⟨*text #1*⟩`}[`⟨*entry #2*⟩`]{`⟨*text #2*⟩`} [`⟨...⟩`]{`⟨...⟩`}`

```
124 \newcommand\bisubcaptionbox{\@bicaption\subcaptionbox}
125 \let\subbicaptionbox\bisubcaptionbox
```

`\@bicaption`   `\@bicaption{`⟨*cmd*⟩`}*[`⟨*entry #1*⟩`]{`⟨*text #1*⟩`}[`⟨*entry #2*⟩`]{`⟨*text #2*⟩`}`...

```
126 \newcommand*\@bicaption[1]{%
127   \def\bicaption@cmd{#1}%
128   \@ifstar
129     {\l@addto@macro\bicaption@cmd*%
130      \@@bicaption}%
131     {\caption@dblarg\@@@bicaption}}
```

```
132 \newcommand\@@bicaption[1]{%
133   \@@@@bicaption{}{#1}[]}
```

```
134 \long\def\@@@bicaption[#1]#2{%
135   \caption@dblarg{\@@@@bicaption{#1}{#2}}}
```

```
136 \long\def\@@@@bicaption#1#2[#3]#4{%
137   \bicaption@getlabel#2\label{}\@nil
138   \bicaption@ifswap
139     {\bicaption@setup{#1}{#2}%
140      \bicaption@cmd[{#3}]{#4}}%
141     {\bicaption@setup{#3}{#4}%
142      \bicaption@cmd[{#1}]{#2}}}
```

`\bicaption@getlabel` Gets the label command out of the (first) caption text and stores it to `\bicaption@label`.

```
143 \long\def\bicaption@getlabel#1\label#2#3\@nil{%
144   \def\@tempa{#2}%
145   \ifx\@tempa\@empty
146     \let\bicaption@label\relax
147   \else
148     \def\@tempb{*}%
149     \ifx\@tempa\@tempb
150       \def\bicaption@label{\label*}%
151       \bicaption@@getlabel#3\@nil
152     \else
153       \def\bicaption@label{\label}%
154       \bicaption@@getlabel{#2}#3\@nil
155     \fi
156   \fi}
```

```
157 \long\def\bicaption@@getlabel#1#2\@nil{%
158   \def\@tempa{#1}%
159   \def\@tempb{[}%
160   \ifx\@tempa\@tempb
161     \bicaption@@@getlabel#1#2\@nil
162   \else
163     \l@addto@macro\bicaption@label{{#1}}%
164   \fi}
```

```
165 \long\def\bicaption@@@getlabel[#1]#2\@nil{%
166   \l@addto@macro\bicaption@label{[{#1}]}%
167   \bicaption@@getlabel#2\@nil}
```

`\bicaption@setup` `\bicaption@setup{⟨list-entry⟩}{⟨text⟩}`
Initiates the bilingual caption typesetting by storing the extra texts into `\bicaption@l-entry` and `\bicaption@text`.

```
168 \newcommand\bicaption@setup[2]{%
169   \def\bicaption@lentry{#1}%
170   \def\bicaption@text{\ignorespaces#2}}
```

`\caption@freeze` To make `\bicaption` work inside SCfigure and FPfigure environments we need to add `\bicaption` to `\caption@freeze`.

```
171 \AtBeginDocument{%
172   \ifx\caption@freeze\@undefined \else
173     \g@addto@macro\caption@freeze{%
174       \let\caption@frozen@bicaption\bicaption
```

14

```
175        \def\bicaption{%
176          \caption@withoptargs\caption@SC@bicaption}%
177        \long\def\caption@SC@bicaption#1#2{%
178          \@ifnextchar[%]
179            {\caption@SC@bi@caption{#1}{#2}}%
180            {\caption@SC@bi@caption@{#1}{#2}}}%
181        \long\def\caption@SC@bi@caption#1#2[#3]#4{%
182          \caption@@freeze{\bicaption#1{#2}[{#3}]{#4}}%
183          \ignorespaces}%
184        \long\def\caption@SC@bi@caption@#1#2#3{%
185          \caption@@freeze{\bicaption#1{#2}{#3}}%
186          \ignorespaces}%
187        \l@addto@macro\caption@warmup{%
188          \let\bicaption\caption@frozen@bicaption}}%
189   \fi}
```

\bicaption@listof   Make commands like \listoffigure2s work. (Is this a good idea or not!?)

```
190 \newcommand*\bicaption@declarelist[1]{%
191   \@namedef{listof#1}{\bicaption@listof#1}}
192 \@onlypreamble\bicaption@declarelist

193 \def\bicaption@listof#1 {\@nameuse{listof#1}}

194 \caption@ForEachType{\bicaption@declarelist{#1}}
```