

# A L<sup>A</sup>T<sub>E</sub>X package for preparing manuscripts for submissions to the OA journal ‘Enterprise Modelling and Information Systems Architectures – An International Journal’ (EMISA)

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## 1 Introduction

Enterprise Modelling and Information Systems Architectures – An International Journal (EMISA) is a publisher-independent, peer-reviewed open access journal (<https://emisa-journal.org>). EMISA is published by the German Informatics Society (GI) and is a publication of its Special Interest Group (SIG) on Modelling Business Information Systems (SIG MoBIS) and its SIG on Design Methods for Information Systems (SIG EMISA). SIG MoBIS has sponsored the development of the EMISA L<sup>A</sup>T<sub>E</sub>X package currently maintained by Stefan Strecker ([stefan.strecker@fernuni-hagen.de](mailto:stefan.strecker@fernuni-hagen.de)) and Martin Sievers ([martin.sievers@schoenerpublizieren.de](mailto:martin.sievers@schoenerpublizieren.de)). It is based on an earlier funded work by Martin Leidig.

The EMISA L<sup>A</sup>T<sub>E</sub>X package is provided for preparing manuscripts for submission to EMISA, and for preparing accepted submissions for publication as well as for typesetting the final document by the editorial office. Articles in EMISA are published online at <https://emisa-journal.org> (in the Portable Document Format or PDF format). The EMISA editorial office is run (alongside many other tasks and projects) by the two Editors-in-Chief assisted by doctoral students. Editorial work at EMISA is best described as a volunteer effort for the scientific community. You can assist us by preparing your manuscript following the instructions and style guidelines described in this document: Your work will be published quicker with less (typographical) glitches and will have a professional appearance.

## 2 Installation

The EMISA L<sup>A</sup>T<sub>E</sub>X package consists of the document class `emisa.cls`, the biblatex bibliography style `emisa.bbx` and the biblatex citation style `emisa.cbx`.

The package also includes a quick-start template for authors (`emisa-author-template.tex`) and the present author instructions and style guidelines (`emisa.pdf`).

Automatic installation	The preferred installation method of the canonical <i>release</i> version is through your T <sub>E</sub> X distribution’s package installer (e. g. T <sub>E</sub> X Live’s tlmgr or the MiK <sub>T</sub> E <sub>X</sub> Package Manager). You may need to first update (or synchronise) the package database from one of the T <sub>E</sub> X distribution’s repositories. This type of installation is recommended in order to always get the latest <i>release</i> version automatically. The canonical release version of the package is also available from CTAN at <a href="http://www.ctan.org/pkg/emisa">http://www.ctan.org/pkg/emisa</a> , while the <i>current development</i> (i. e. most recent) version of the package with bug fixes and new features (relative to the release version) is available from GitHub ( <a href="https://github.com/sstrecker/emisa-latex-package">https://github.com/sstrecker/emisa-latex-package</a> ).
Manual installation	If you prefer a manual installation (or want to install the latest development version), download the corresponding Zip archive from Github (the latest development version is always available as Zip archive at <a href="https://github.com/sstrecker/emisa-latex-package/archive/master.zip">https://github.com/sstrecker/emisa-latex-package/archive/master.zip</a> ), uncompress it in the same directory (folder) in which the source files for the manuscript will be maintained, and then run <code>pdflatex emisa.dtx</code> twice, and start from <code>emisa-author-template.tex</code> .

### 3 Instructions and guidelines

This document provides instructions and style guidelines for authors. Follow the instructions and guidelines in the present document to set up your files, to type in your text, to format figures, tables, source code listings and algorithms, and to obtain a consistent visual appearance in accordance with the journal’s style specifications. Before submitting your manuscript online to the journal’s online submission system at <https://emisa-journal.org>, use these instructions and guidelines as a checklist. Note that these instructions are *not* intended as a general introduction to L<sup>A</sup>T<sub>E</sub>X2e and corresponding tools (see, for example, <http://mirror.ctan.org/info/lshort/english/> for ‘The Not So Short Introduction to L<sup>A</sup>T<sub>E</sub>X2e—Or L<sup>A</sup>T<sub>E</sub>X2e in 157 minutes’).

### 4 Preliminary remarks

The EMISA document class is derived from the standard L<sup>A</sup>T<sub>E</sub>X article class, and produces a customised two-column layout with bibliographic information about the manuscript in a multi-line page headline (including the name of the journal, volume and issue number, date of publication, short title as well as author names) on A4-sized paper. The EMISA class builds on a number of standard L<sup>A</sup>T<sub>E</sub>X packages. It is highly recommended to install the *full* set of L<sup>A</sup>T<sub>E</sub>X packages that come with your L<sup>A</sup>T<sub>E</sub>X distribution to make the required packages available to the EMISA package. Alternatively, missing packages may be installed via your TeX distribution’s package manager or on-the-fly (if supported by your distribution).

UTF-8	The production process at the EMISA editorial office is based entirely on L <sup>A</sup> T <sub>E</sub> X, and runs pdfL <sup>A</sup> T <sub>E</sub> X and biber to produce the final proof and publication-ready PDF of an article. The biblatex package is used to typeset citations and references in conjunction with the biber tool. Make sure to use biber rather than bibtex to process your bibliography data base file(s). Most T <sub>E</sub> X editors have an option to easily switch to biber. The production tool chain at the editorial office requires that all text files of an article are provided in <i>UTF-8 file encoding</i> , and that all submitted files are provided with <i>lower case filenames only</i> . Do <i>not</i> use upper case characters in filenames at all and avoid non-ASCII characters in filenames.
File naming convention	

**Author template** The file `emisa-author-template.tex` provides a good starting point for manuscript preparation (if the EMISA package is available through your  $\text{\TeX}$  distribution, the file is stored at `/doc/latex/emisa/` inside your  $\text{\TeX}$  installation folder/directory. Just copy it to your working directory). It is also recommended to review the example of an article typeset with `emisa.cls` provided in Sec. 18.

## 5 Class Options

- british, UKenglish** British English is the language of choice for publishing in EMISA. The class option `british` is loaded by default to obtain the correct hyphenation for British English (as provided by the `babel` package). The option *may be* explicitly used with the EMISA class to exemplify the use of British English. Example: `\documentclass[british]{emisa}`. This is the standard option. Note that the `csquotes` package is loaded with settings to produce proper quotation marks in British English (see below).
- american, USenglish** If you want to use American English instead, you can use the option `american` or `USenglish`. The hyphenation patterns and quotation marks will be set accordingly.
- referee, review** By default, a final version of the manuscript is typeset for online publication including the names and affiliations of authors. For reviewing purposes, the names and affiliations of the authors are omitted using the document option `referee` or `review` to allow for the anonymous (i. e. double blind) peer-review process of EMISA. Example: `\documentclass[referee]{emisa}`. Make sure to use the document option `referee` or `review` before typesetting the final PDF intended for submission to the journal.

## 6 Author information

- \author** Each author is added using the macro `\author{\langle author name \rangle}` followed by the corresponding address
- \address** `\address{\langle author's address (line 1) \rangle \dots \langle line 2 \rangle \dots}`. If you have multiple authors with the same address, please use `\address{\langle author's address \rangle}` only for the first one and `\address[\langle letter of address \rangle]{}` for all others. See `emisa-author-template.tex` for details.
- \author\*** There always has to be declared exactly one author as the corresponding author. This is indicated by using the starred version of the `\author` command: `\author*{\langle author's name \rangle}{\langle email address \rangle}`.

## 7 Title, subtitle, abstract, and keywords

- \title** The mandatory title and optional subtitle of a manuscript are typeset using `\title{\langle title \rangle}` and
- \subtitle** `\subtitle{\langle subtitle \rangle}`. Note that the subtitle is indented. The abstract of the manuscript is typeset
- \abstract** using `\abstract{\langle abstract \rangle}`. Each manuscript should provide an abstract of about 200–400 words.
- \keywords** Keywords describing the manuscript are typeset using `\keywords{\langle keywords \rangle}` and are concatenated using the `\and` command. At least three keywords should be provided.

## 8 Additional information on the first (title) page

- `\acknowledgements` Acknowledgements, for example, of collaborators, funding agencies etc. may be added using `\acknowledgements{<acknowledgements>}`. The acknowledgements are typeset in a footnote on the first page below the corresponding author's email address.
- `\authornote` Additional information for reviewers and readers may be added in a footnote on the titlepage using `\authornote{<author note>}`. This is typically used for stating earlier publications (e. g. in conference proceedings) on which the present manuscript is based.

## 9 Style guidelines for regular text

- ▷ Manuscripts should *not* make use of outdated L<sup>A</sup>T<sub>E</sub>X commands such as `\em`, but rather use the L<sup>A</sup>T<sub>E</sub>X2<sub>ε</sub> commands (e. g. `\emph`, `\texttt`).
  - ▷ Do *not* make use of bold face (`\textbf`). Use `\emph` instead to typeset an important word in italics!
  - ▷ Always use the tilde `~` to connect before `\ref{<label>}`, e. g., `Sec.~\ref{label}` rather than the problematic: `Sec. \ref{label}`.
  - ▷ Always use the en-dash (`--`) for ranges – without spaces – e. g., `17--34`. The hyphen (`-`) should only be used for compound words or hyphenation.
  - ▷ Do *not* write abbreviations such as `e.g.` but use the macros provided by the EMISA class (see below). Add punctuation when necessary, for example, write `, \ie`, to achieve the correct punctuation for ‘i.e.’ (i. e.) rather than `, i.e.`, which introduces two problems: A missing spacing after the first full stop and a wrong spacing after the second full stop.
  - ▷ Follow the journal's style specification with respect to predefined text styles:
    - Use `SMALLCAPS` for names of open-source projects, products and companies etc., e. g., `\textsc{eclipse}` to produce `ECLIPSE`. *Pay attention to lower case spelling.*
- `\meta` ○ Use non-proportional font for language concepts, meta types, meta classes etc., i. e., `\texttt{AbstractGoalType}` to produce `AbstractGoalType`, or use the predefined macro `\meta{<metatype>}`, e. g., `\meta{AbstractGoalType}`.
- `\type` ○ Use the sans-serif font face for type-level concepts etc., e. g., `\textsf{Goal}` to produce `Goal` when referring to a Goal type, or use the predefined macro `\type{<type>}`, e. g., `\type{Goal}`.

## 10 Abbreviations and initialisms

- `\eg, \ie, \cf, \etal` To achieve consistent typesetting of common abbreviations, macros are predefined by the EMISA class. These macros should *consistently* being used instead of writing the plain version. For example use `\eg` rather than `e. g. , .`. The macros take care of spacing within and after the abbreviations.
- ▷ `\eg` for e. g.
  - ▷ `\ie` for i. e.
  - ▷ `\cf` for cf.
  - ▷ `\etal` for et al.

<code>\emisaabbrev</code>	If you miss any frequently used abbreviation for your article, you can easily add it using <code>\emisaabbrev{\abbreviation_macro}{\text}</code> in the preamble of your article.
<code>\OMG</code> , <code>\BPM</code> , <code>\BPMN</code> , <code>\UML</code>	In addition to common abbreviations, further initialisms are provided by the class for convenience and for a consistent visual appearance. Note that the class uses <code>SMALLCAPS</code> for typesetting initialisms. The list of predefined initialisms comprises: <ul style="list-style-type: none"> <li>▷ <code>\OMG</code> for <code>OMG</code> (Object Management Group).</li> <li>▷ <code>\BPM</code> for <code>BPM</code> (Business Process Management).</li> <li>▷ <code>\BPMN</code> for <code>BPMN</code> (Business Process Model and Notation).</li> <li>▷ <code>\UML</code> for <code>UML</code> (Unified Modelling Language).</li> </ul>
<code>\emisainitialism</code>	You can add your own initialisms by stating <code>\emisainitialism{\initialism_macro}{\text}</code> in the preamble.

## 11 Quotation marks

`\enquote` It is *highly recommended* to use the `\enquote{\quotation}` command to produce correct quotation marks. Note that the command can be nested and will produce correct primary and secondary quotation marks in British English (or American English – depending on the chosen class option), for example `\enquote{A quote \enquote{within a quote}}`. For other quotation macros and environment please consult the `csquotes` documentation [8].

Alternatively (but not recommended), the correct Unicode characters for the quotation marks in British (American) English can be used. See Wikipedia’s entry for ‘quotation mark’ for further information.

## 12 Citations and references

<code>\parencite</code>	The EMISA journal uses its own author-year citation style predefined for the biblatex package ( <code>emisa.cbx</code> ), and its own style for formatting entries in the list of references ( <code>emisa.bbx</code> ). Consult the biblatex package documentation [4] for an introduction to the citation commands. It is important to use the citation commands properly to follow the journal’s style specifications.
<code>\textcite</code>	
<code>\cite</code>	
<ul style="list-style-type: none"><li>▷ <code>\parencite</code> is used for citing in parentheses (usually at the end of a sentence). In most cases, page numbers should be provided. Example: <code>\ldots{} is known \parencite[5]{Knuth1986}</code> produces ‘... is known (Knuth 1986, p. 5)’. Also use <code>\parencite</code> to produce a prefix within parentheses, e.g. <code>\ldots{} is known \parencite[for a justification, see][5]{Knuth1986}</code> produces ‘... is known (for a justification, see Knuth 1986, p. 5)’.</li><li>▷ <code>\textcite</code> allows for using the cited work as a subject in the grammatical structure of a sentence. Example: <code>\textcite{Knuth1986} states that ...</code> produces ‘Knuth (1986) states that ...’. Additionally, page numbers and further information can be provided, see the biblatex package documentation.</li><li>▷ <code>\cite</code> is used for typesetting the citation without parentheses, and is typically used within parentheses. Example: <code>(see \cite{Knuth1986})</code> produces ‘(see Knuth 1986)’. This variant is the least used and should be used with care.</li></ul>	

*Make sure to format the bibliographic entries consistently!* Do not mix abbreviated first names with unabbreviated first names, as for example

```
@ARTICLE{key1, author = {{van der Weiden}, J. W. P.} ...
```

```
@ARTICLE{key2, author = {{van der Weiden}, Jan W. P.} ...
```

if both entries refer to the same author. This will lead to unexpected results with respect to the label generation of the citation. Make sure to always abbreviate author first names and to always use curly brackets around multi-word last names, e.g. {van der Weiden}, J. W. P. in the bibentries.

## 13 Figures

All line-drawings must be provided as vector graphics (*not* bitmap graphics) in PDF format and all other (non-schematic) figures (e.g. screenshots) must be provided in PDF, JPEG or PNG format in a proper (high) resolution for the intended size of the rendered image to avoid pixelation due to low resolution; bitmap graphics shown in full page width in the submission should at least be of a resolution of two (2) megapixels or at least 1920 pixels wide.

## 14 Tables

`tabular` Tables can be added using the standard notation, i.e. using `tabular` inside the floating environment `table` (see Listing 1). However, the standard column parameters `p`, `l`, `c` and `r` are often not sufficient to provide a table with an exact width, e.g. the text width.

Listing 1: An example for a standard table using `tabular`

```
\begin{table}
\small % or \footnotesize if needed at all
\centering % if needed
\caption{Add the caption here}
%\label{tab:unique-label} % alternatively after \end{tabular}
\begin{tabular}{p{3cm}lcr}
\toprule
A column 3cm wide and with possible line breaks &
\midrule
A column set flush-left with no line breaks &
A column set centred with no line breaks &
A column set flush right with no line breaks \\
\bottomrule
\end{tabular}
\label{tab:unique-label}
\end{table}
```

`tabularx` Therefore the EMISA class loads the package `tabularx` by default. It defines an additional column parameter `X`, which has to be used for at least one column. In addition the standard `tabular` environment is substituted by `tabularx` which has two mandatory arguments, namely the total width of the table and the definition for the columns.

Listing 2 shows two typical examples for the application of `tabularx`. If you just mark one column with the parameter `X`, all other columns (i. e. columns with parameters `p`, `l`, `c` or `r`) are set the usual way. The remaining width (width given as first argument to `tabularx` minus used width of all ‘non-`X`-columns’) is then assigned to the `X` column. To get a table two columns wide, please use `\textwidth` as the table’s width.

Listing 2: An example for a table using the package `tabularx` for exactly one `X` column

```
...
\begin{tabularx}{\textwidth}{Xll}
This a column with possibly long text passages,
so that line breaking is necessary and automatically
applied by the X column & This column is set ragged right and gets as
    wide as its contents &
Another column \\\
...
\end{tabularx}
...
```

A second frequently used scenario is the need for columns with equal width, but without having to calculate the value manually. For a much more comfortable solution one can assign the `X` parameter to all such columns.

Listing 3: An example for a table using the package `tabularx` and more than one `X` column

```
...
\begin{tabularx}{\textwidth}{p{3cm}XXX}
This a column with possibly long text passages,
so that line breaking is necessary and automatically
applied to get a box 3cm wide &
This column and the remaining two all have the same width, namely
(\textwidth-3cm)/3. &
...
\end{tabularx}
...
```

Additional information can be obtained from the package’s documentation [19].

For nicer tables you should get rid of any vertical lines between the columns. Instead you can use the macros provided by `booktabs` (preloaded by EMISA) for horizontal lines of different width. Just replace the first standard `\hline` by `\toprule`, the last one by `\bottomrule` and all other by `\midrule`. There is even an alternative for `\cline` called `\cmidrule`. The example from Listing 3 then looks like:

Listing 4: An example for a table using the packages `tabularx` and `booktabs`

```
...
\begin{tabularx}{\textwidth}{p{3cm}XXX}
\toprule
Table header 1 & table header 2 & table header 3\\
\midrule
This a column with possibly long text passages,
so that line breaking is necessary and automatically
applied to get a box 3cm wide &
This column and the remaining two all have the same width, namely
(\textwidth-3cm)/3. &
...
\bottomrule
\end{tabularx}
...
```

Have a look at the package's documentation [5] for more details.

## 15 Source code listings

`sourcecode` For marking up source code listings, the EMISA class uses the `listings` package (see the package docu-  
`java` mentation [15] for further information), and provides two customised  $\text{\LaTeX}$  environments: `sourcecode` and `java`. The `java` environment should be used to format source code listings in the Java programming language, and the `sourcecode` environment should be used to format source code in any other programming language. You can add the name of the programming language and other parameters known to `listings` like `caption` or `label` as an optional argument.

Note that the source code in either case is typeset verbatim, i. e., the author must arrange the input  $\text{\LaTeX}$  source code according to the intended output. Also note that the two environments have been predefined to always produce a two-column listing positioned at the top of the page. Listing 5 illustrates the use of both environments.

Listing 5: Example for the `java` and `sourcecode` environments

```
\begin{java}[caption={A hello world example},label={hw-java}]
public class HelloWorld
{
    public static void main (String[] args)
    {
        // Output Hello World!
        System.out.println("Hello World!");
    }
}
\end{java}

\begin{sourcecode}[language=R]
hello <- function( name ) {
```



```

        sprintf( "Hello, %s", name );
    }
\end{sourcecode}

```

## 16 Pseudo-code and algorithms

**algorithm** Apart from source code you might want to add pseudo code examples or algorithms. In contrast to the  
**algorithmic** source code examples above EMISA does not define its own environments for that. Instead we recommend using the bundle `algorithms` consisting of the two packages `algorithm` and `algorithmic`. Typical parts like loops, if-clauses or statements all have their own macro. See Listing 6 for an example.

Listing 6: Example for a pseudocode presented within the `algorithmic` environment

```

\begin{algorithmic}[1]
\REQUIRE $n \geq 0$
\ENSURE $y = x^n$
\STATE $y \leftarrow 1$
\STATE $X \leftarrow x$
\STATE $N \leftarrow n$
\WHILE{$N \neq 0$}
\IF{$N$ is even}
\STATE $X \leftarrow X \times X$
\STATE $N \leftarrow N / 2$
\ELSE[$N$ is odd]
\STATE $y \leftarrow y \times X$
\STATE $N \leftarrow N - 1$
\ENDIF
\ENDWHILE
\end{algorithmic}

```

results in

**Require:**  $n \geq 0$

**Ensure:**  $y = x^n$

```

1:  $y \leftarrow 1$ 
2:  $X \leftarrow x$ 
3:  $N \leftarrow n$ 
4: while  $N \neq 0$  do
5:   if  $N$  is even then
6:      $X \leftarrow X \times X$ 
7:      $N \leftarrow N/2$ 
8:   else  $\{N \text{ is odd}\}$ 
9:      $y \leftarrow y \times X$ 
10:     $N \leftarrow N - 1$ 
11:   end if
12: end while

```

If you want your algorithm to be a floating object, you can surround it with `algorithm`:

```
\begin{algorithm}
\caption{Calculate  $y = x^n$ }
\label{alg1}
\begin{algorithmic}
...
\end{algorithmic}
\end{algorithm}
```

For more details, please have a look at the documentation [2].

## 17 Commands for use by the editorial office staff only

`\editor` Enter the corresponding editor (or editorial board member) for the article, in the format ‘first letter of the first name fullstop tilde last name’. Example: `\editor{A.~Smith}`, `\editor{A.~Smith and B.~Meyer}`

`\received` Enter the date of initial reception of the manuscript by the editorial office in the following format. Example: `\received{31~March 2014}`

`\accepted` Enter the date of the acceptance decision of the manuscript and the number of review rounds in the following format. Example: `\accepted[3]{10~January 2016}`

`\volume` Enter the number of the volume in which the article is published. Example: `\volume{11}`

`\issue` Enter the issue number and issue year of the article. Format example: `\issue{1}{2016}`

`\specialissuetitle` Enter the title of the Special Issue to which the article belongs if any. Note that the prefix ‘Special Issue on’ is added automatically. Example: `\specialissuetitle{Multilevel Modelling}`

Note that volume, issue number and issue date and, optionally, the title of the special issue appear in the multiline page headline of the article.

`\CCBYNCSAFour` If an article is licensed under a Creative Commons BY-NC-SA 4.0 or 3.0 licence, the reference to the licence can be automatically displayed at the end of the article by adding `\CCBYNCSAFour` and `\CCBYNCSAThree`, respectively.

`\license`, `\licence` Alternatively, enter a license text using the `\license` (or `\licence`) commands. Example: `\license{This work is licensed under LPPL 1.3c.}`

## 18 Example file for both, authors and editorial office

```
% Use the option [draft] to mark overfull lines.
\documentclass[british]{emisa}
% The following package imports are recommended, but not obligatory;
% you might want take a look into their respective manuals if you want
% to how they can be used:
\usepackage{amsmath,amssymb,mathtools}
```

```

\usepackage{algorithmic,algorithm}
% Additional package imports go here:
% The document begins here:
\begin{document}
% Optionally, set the style for typesetting source code listings (see
  listings package).
% \lstset{language=Java}
% Take note of the following article environment!
\begin{article}{%
% Enter your bibliography database file here.
% Make sure to use UTF-8 character encoding in the bibliography data
  bases,
% and add the .bib extension for the biblatex package!
\bibliography{emisa.bib}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% For editorial office only: Start
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Add editorial meta data to appear in the multiline page headline.
\editor{Enter corresponding editor here}
\received{Enter date of manuscript reception here}
\accepted[1]{Enter number of review rounds and date of acceptance here.}
\volume{11} % volume number
\issue{1}{31~Jan~2016} % issue number and issue date
\specialissuetitle{Title of special issue if publication belongs to a
  special issue}
% Add license information at end of article, either
\CCBYNCSAFour % or \CCBYNCSAThree or \license
\license{Enter your license text here}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% For editorial office only: End
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Enter bibliographic meta data about publication
\title[Insert shorttitle for page headline]{Enter full title here}
\subtitle{Enter subtitle here, or leave empty}
\author*{FirstName LastName of corresponding author}{email@address.org}
\address{Enter affiliation of first (corresponding) author here. Note
  that only the starred version of author* accepts a second argument
  requiring an email address for the corresponding author.}
\author{FirstName LastName}
\address{Enter affiliation of second and further authors here. Add
  further authors following this scheme.}
% Enter abstract, keywords, acknowledgements, author note
\abstract{Enter abstract here}
\keywords{Enter at a minimum three keywords here. Keyword1 \and Keyword2
  \and Keyword3}
\acknowledgements{Enter acknowledgements here.}
\authornote{If your submission is based on a prior publication and
  revises / extends this work, enter a corresponding note here (This
  work is based on ...) but DO NOT cite the prior work during the

```

```

    reviewing process. INSTEAD provide full citations of all prior
    publications to the editors during the submission process (use the
    text field in the online submission system).}
% Take note of the following closing bracket!
}

\section{Introduction}\label{sec:introduction}
Enter your text here.

\subsection{Subsection title}\label{sec:somelabel}
% Example of a single-column figure (spanning only a single column).
% You can add an optional argument to influence the float placement,
% which is htbp by default.
\begin{figure}
\centering
\includegraphics[width=\columnwidth]{<filename>}
\caption{Enter your single-column figure caption here.}
\label{fig:unique-label}
\end{figure}

% Example of a double-column figure (spanning both columns)
\begin{figure*}[htb]
\centering
\includegraphics[width=\textwidth]{<filename>}
\caption{Enter your double-column figure caption here.}
\label{fig:unique-label}
\end{figure*}

% Example of a double-column table. Tables should NOT be typeset in a
% single column!
% Note the use of \toprule, \midrule, and \bottomrule!
% DO NOT use vertical rules in tables!
\begin{table*}[tb]
\centering
\caption{Enter your table caption above the table here.}
\begin{tabular}{llllll}
\toprule
column head1 & column head2 & column head3 & column head4 & column head5 \\
& & & & & column head6\\
\midrule
cell1 & cell2 & cell3 & cell4 & cell5 & cell6\\
cell1 & cell2 & cell3 & cell4 & cell5 & cell6\\
cell1 & cell2 & cell3 & cell4 & cell5 & cell6\\
cell1 & cell2 & cell3 & cell4 & cell5 & cell6\\
cell1 & cell2 & cell3 & cell4 & cell5 & cell6\\
\bottomrule
\end{tabular}
\label{tab:unique-label}
\end{table*}

```

```

% Example of a double-column source code listing.
\begin{java}[caption={Enter your double-column listing caption here.},%
              label={lst:helloworld}]
/**
 * The HelloWorldApp class implements an application that
 * simply prints "Hello World!" to standard output.
 */
class HelloWorldApp {
    public static void main(String[] args) {
        System.out.println("Hello World!"); // Display the string.
    }
}
\end{java}

% Example of a pseudo-code with algorithmic.
\begin{algorithmic}
\WHILE{$r > kRadius/2$}
\STATE $r \leftarrow r-1$
\STATE $a \leftarrow \sqrt{\text{kernel}[0][r]/(kRadius-r)}$;
\IF{$a < \text{sqrtSlope}$}
\STATE $\text{sqrtSlope} \leftarrow a$
\ELSE
\STATE break
\ENDIF
\ENDWHILE
\end{algorithmic}

% Formatting the bibliographic data base:
% Please make sure to properly enter all data for each entry
% in the bibliographic database (.bib).
% Pay special attention to formatting names and page numbers,
% see the following example:
%@ARTICLE{key1,
%   author = {{van der Aalst}, W. M. P.
%   and {van Hee}, K. M.
%   and {van Werf}, J. M.
%   and Verdonk, M.},
%   title = {{Auditing 2.0: Using
%   Process Mining to Support
%   Tomorrow's Auditor}},
%   journal = {Computer},
%   year = {2010},
%   volume = {43},
%   pages = {90--93},
%   number = {3}
%}
\printbibliography
\end{article}

```

```
\end{document}
```

## References

- [1] Package `afterpage`: Execute command after the next page break. 19.2.2
- [2] Package `algorithms`: A suite of tools for typesetting algorithms in pseudo-code. 16
- [3] Package `babel`: Multilingual support for Plain  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$  or  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ . 19.2
- [4] Package `biblatex`: Bibliographies in  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  using  $\mathrm{BibT}_{\mathrm{E}}\mathrm{X}$  for sorting only. 12, 19.2.1
- [5] Package `booktabs`: Publication quality tables in  $\mathrm{LaTeX}$ . 14
- [6] Package `calc`: Simple arithmetic in  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  commands. 19.2.2
- [7] Package `caption`: Customising captions in floating environments. 19.2
- [8] Package `csquotes`: Context sensitive quotation facilities. 11, 19.2.1
- [9] Package `environ`: A new interface for environments in  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ . 19.2.2
- [10] Package `eso-pic`: Add picture commands (or backgrounds) to every page. 19.2.2, 19.9.3
- [11] Package `float`: Improved interface for floating objects. 19.2
- [12] Package `geometry`: Flexible and complete interface to document dimensions. 19.2.2
- [13] Package `graphicx`: Enhanced support for graphics. 19.2.1
- [14] Package `hyperref`: Extensive support for hypertext in  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ . 19.3
- [15] Typeset source code listings using  $\mathrm{LaTeX}$ . 15
- [16] Package `microtype`: An interface to the micro-typographic features of  $\mathrm{pdfT}_{\mathrm{E}}\mathrm{X}$ . 19.2
- [17] Package `paralist`: Enumerate and itemize within paragraphs. 19.2.2
- [18] The  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X} 2_{\epsilon}$  Sources. 19.10
- [19] Package `tabularx`: Tabulars with adjustable-width columns. 14
- [20] Package `textcomp`:  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  support for the Text Companion fonts. 19.2
- [21] Package `twoopt`: Definitions with two optional arguments. 19.2.2
- [22] Package `xcolor`: Driver-independent color extensions for  $\mathrm{L}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  and  $\mathrm{pdfL}_{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$ . 19.2.1
- [23] Package `xspace`: Define commands that appear not to eat spaces. 19.2.2

## 19 Implementation

Here, the code of the  $\text{\LaTeX}$  class `emisa` begins.

```
1 <{*class}
```

### 19.1 Options

`\@clearglobaloption` We need a macro to remove options from the global to avoid side-effects

```
2 \def\@clearglobaloption#1{%
3   \def\@tempa{#1}%
4   \def\@tempb{\@gobble}%
5   \@for\next:=\@classoptionslist\do
6     {\ifx\next\@tempa
7       \message{Cleared option \next\space from global list}%
8       \else
9         \edef\@tempb{\@tempb,\next}%
10      \fi}%
11   \let\@classoptionslist\@tempb
12   \expandafter\ifx\@tempb\@gobble
13     \let\@classoptionslist\empty
14   \fi}
```

british option

UKenglish option

```
15 \DeclareOption{british}{%
16   \PassOptionsToPackage{british}{babel}
17   \PassOptionsToPackage{english=british}{csquotes}
18   \@clearglobaloption{british}}
19 \DeclareOption{UKenglish}{%
20   \PassOptionsToPackage{british}{babel}
21   \PassOptionsToPackage{english=british}{csquotes}
22   \@clearglobaloption{british}}
```

american option

USenglish option

```
23 \DeclareOption{american}{%
24   \PassOptionsToPackage{american}{babel}
25   \PassOptionsToPackage{english=american}{csquotes}
26   \@clearglobaloption{american}}
27 \DeclareOption{USenglish}{%
28   \PassOptionsToPackage{american}{babel}
29   \PassOptionsToPackage{english=american}{csquotes}
30   \@clearglobaloption{american}}
```

draft option

final option

@draft switch

If the user requests `draft` we mark any overfull boxes. There is more interesting stuff to be added to this option; one could think of altered running titles or watermarks, for example.

As this option is handed along the package chain it might have other effects, too.

```
31 \newif\if@draft
```



```

32 \DeclareOption{draft}{%
33   \@drafttrue
34   \overfullrule 10pt
35 }%
36 \DeclareOption{final}{%
37   \@draftfalse
38   \overfullrule\z@
39 }%

```

referee option    The options referee and review switch to *referee mode*. In referee mode some information at the  
noreferee option titlepage are removed in order to allow an anonymous submission.

```

review option      40 \newif\if@referee
noreview option    41 \DeclareOption{referee}{\@refereetrue}
@referee switch    42 \DeclareOption{noreferee}{\@refereefalse}
                   43 \DeclareOption{review}{\@refereetrue}
                   44 \DeclareOption{noreview}{\@refereefalse}

```

cover option      Switches cover production on or off. If cover is given then the four cover pages (outer and inner pages of  
nocover option front and back, respectively) are produced and added to the document.

```

\coveron           45 \newif\if@cover
\coveroff          46 \def\coveron{\@covertrue}
@cover switch      47 \def\coveroff{\@coverfalse}
                   48 \DeclareOption{cover}{\coveron}
                   49 \DeclareOption{nocover}{\coveroff}

                   50 \newif\if@microtype
                   51 \@microtypetrue
                   52 \DeclareOption{nomicrotype}{\@microtypefalse}

```

Completing option handling, by now unprocessed option are handed over to the base class article and the class options list is processed from the left to the right.

```

53 \PassOptionsToClass{a4paper,twoside,11pt}{article}%
54 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{article}}%
55 \ExecuteOptions{british,final,noreferee,nocover,oneside,openany}%
56 \ProcessOptions*\relax%

57 \IfFileExists{latexrelease.sty}%
58   {\RequirePackage[latest]{latexrelease}}%
59   {\RequirePackage{fixltx2e}}%

```

## 19.2 Loading the base class and packages

This class is build upon the L<sup>A</sup>T<sub>E</sub>X standard class article.

```

60 \LoadClass{article}[2001/06/01]%
61 \RequirePackage[utf8]{inputenc}%

```

This loads font definitions for text and mathematics. The package allows the user to select font encodings, and for each encoding provides an interface to ‘font-encoding-specific’ commands for each font. Its most powerful effect is to enable hyphenation to operate on texts containing any character in the font. It is distributed as part of the L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> distribution.

```
62 \RequirePackage[T1]{fontenc}%
```

Since many PostScript fonts only implement a subset of the TS1 encoding which contains text symbols for use with the T1-encoded text fonts, many commands only produce black blobs of ink. The textcomp package is supplied as a part of the L<sup>A</sup>T<sub>E</sub>X base distribution to resolve the resulting problems [20].

```
63 \RequirePackage[full]{textcomp}%
```

The microtype package provides a L<sup>A</sup>T<sub>E</sub>X interface to the micro-typographic extensions of pdfL<sup>A</sup>T<sub>E</sub>X: most prominently, character protrusion and font expansion, furthermore the adjustment of interword spacing and additional kerning, as well as hyphenatable letterspacing (tracking) and the possibility to disable all or selected ligatures [16]. It allows to apply these features to customisable sets of fonts, and to configure all micro-typographic aspects of the fonts in a straight-forward and flexible way. Settings for various fonts are provided.

```
64 \if@microtype
65   \RequirePackage{microtype}%
66 \else
67   \ClassWarning{emisa}{Package `microtype' not loaded!%
68     \MessageBreak Output will differ from final result in the journal!%
69     \MessageBreak Please consult the documentation, if you%
70     \MessageBreak get an error when loading microtype}
71 \fi%
```

babel is a package providing an environment in which documents can be typeset in a language other than US English, or in more than one language [3].

```
72 \RequirePackage{babel}%
```

This style option improves the interface for defining floating objects such as figures and tables in L<sup>A</sup>T<sub>E</sub>X [11]. It adds the notion of a ‘float style’ that governs appearance of floats. New kinds of floats may be defined using a \newfloat command analogous to \newtheorem. This style option also incorporates the functionality of David Carlisle’s style option here, giving floating environments a [H] option which means *Put it here!* (as opposed to the standard [h] option which means *Put it here if possible, or otherwise at the next page if no alternative position is specified.*).

```
73 \RequirePackage{float}
```

The caption package gives the user the possibility to control the look & feel of the captions from floating environments like figure and table. Furthermore it does similar to the caption stuff coming from other packages (like the longtable or supertabular package) [7].

For more information on that see the [english](#), [russian](#), or [german](#) user documentation.

```
74 \RequirePackage[font={small}]{caption}
```

### 19.2.1 Colour and graphics

graphicx as part of the graphics package provides a key-value interface for optional arguments to the `\includegraphics` command [13].

```
75 \RequirePackage{graphicx}%
```

The package xcolor is a color extension for  $\text{\LaTeX}$  and  $\text{pdf\LaTeX}$  that provides easy driver-independent access to several kinds of colors, tints, shades, tones, and mixes of arbitrary colors by means of color expressions [22].

```
76 \RequirePackage[fixinclude,table]{xcolor}%
```

The biblatex package [4] is a complete reimplement of the bibliographic facilities provided by  $\text{\LaTeX}$  in conjunction with  $\text{Bib\TeX}$ . It redesigns the way in which  $\text{\LaTeX}$  interacts with  $\text{Bib\TeX}$  at a fairly fundamental level. With biblatex,  $\text{Bib\TeX}$  is only used to sort the bibliography and to generate labels. Instead of being implemented in  $\text{Bib\TeX}$ 's style files, the formatting of the bibliography is entirely controlled by  $\text{\TeX}$  macros. Good working knowledge in  $\text{\LaTeX}$  should be sufficient to design new bibliography and citation styles. There is no need to learn  $\text{Bib\TeX}$ 's postfix stack language. Just like the bibliography styles, all citation commands may be freely (re)defined.

Apart from the features unique to biblatex, the package also incorporates core features of the following packages: babelbib, backref, bibtopic, bibunits, chapterbib, cite, citeref, inlinebib, mlbib, multibib, natbib, splitbib. There are also some conceptual parallels to the amsrefs package. The biblatex package supports split bibliographies, multiple bibliographies within one document, and separate lists of bibliographic shorthands. Bibliographies may be subdivided into parts (by chapter, by section, etc.) and/or segmented by topics (by type, by keyword, etc.). The package is fully localized and can interface with the babel package.

This package requires  $\text{e-TeX}$  and the etoolbox package. Installing the csquotes package is recommended.

```
77 \RequirePackage{etoolbox}%
```

We use it with these options:

`style=emisa` sets the base name of the bibliography and citation format files; thus we use `emisa.bbx` and `emisa.cbx` that are defined below.

`natbib=true` enables the use of natbib citation commands with biblatex.

`maxcitenames=3` Author lists with more than two entries are abbreviated with 'et al.'. Note that in the bibliography listing author lists won't be shortened at all.<sup>1</sup>

`terseinits` If Initials are given with (false) or without (true) punctuation and whitespace.

`isbn=false` In bibliographies, no ISBNs, ...

`url=false` ... no URLs, ...

`doi=false` ... no DOIs, ...

`eprint=false` ... and no ePrint marks are displayed.

`dashed=false` Identical author entries of consecutive bibliography entries don't get replaced by a dash (beginning with the second one).

---

<sup>1</sup>That is, they *will* be shortened if there are more than 999 authors. That should occur not that often, though.

```

78 \RequirePackage[%
79     style=emisa,%
80     natbib=true,%
81     backend=biber,%
82 ]{biblatex}

83 \ExecuteBibliographyOptions{%
84     maxcitenames=3,%
85     maxbibnames=999,%
86     terseinits=false,%
87     isbn=false,%
88     url=true,%
89     doi=false,%
90     eprint=false,%
91     dashed=false,%
92     bibencoding=inputenc,%
93     sorting=anyt,%
94     hyperref=true,%
95     uniquename=minfull,%
96     uniquelist=false%
97 }%

```

This package provides advanced facilities for inline and display quotations [8]. Quotation marks are switched automatically if quotations are nested and can adjust to the current language. There are additional facilities designed to cope with the more specific demands of academic writing, especially in the humanities and the social sciences. All quote styles as well as the optional active quotes are freely configurable.

```

98 \RequirePackage[autostyle=once]{csquotes}

```

### 19.2.2 Helpers

`twoopt` provides commands to define macros with *two* optional parameters. This package is part of the *Oberdiek* bundle [21].

```

99 \RequirePackage{twoopt}%

```

`environ` provides a new method of defining environments [9].

```

100 \RequirePackage{environ}%

```

`paralist` provides a few new list environments. Itemized and enumerated lists can be typeset within paragraphs, as paragraphs and in a compact version. Most environments have optional arguments to format the labels. Additionally, the L<sup>A</sup>T<sub>E</sub>X environments `itemize` and `enumerate` can be extended to use a similar optional argument [17].

The options' meanings are as follows:

- `neveradjust` The width of the labels is never adjusted, not even for environments where you defined the labels manually using the optional argument.
- `defblank` The two environments `inparablank` and `asparablank` will be defined.
- `flushright` The labels in the four lists mentioned above are set flush right.

```
101 \RequirePackage[neveradjust,defblank,flushright]{paralist}%
```

We make the traditional list environments equal the compact ones so there is no visual difference and they are both modifiable easily.

```
102 \let\itemize\compactitem
103 \let\enditemize\endcompactitem
104 \let\enumerate\compactenum
105 \let\endenumerate\endcompactenum
106 \let\description\compactdesc
107 \let\enddescription\endcompactdesc
```

These macros are imported from `paralist`, setting standard enumeration marks and list indentations.

```
108 \setdefaultenum{1.}{a}{i.}{A}%
109 \setdefaultleftmargin{1em}{0.9em}{0.7em}{0.5em}{0.4em}{0.3em}%
110 \setlength{\plitemsep}{3\p@}%
111 \setlength{\pltopsep}{6\p@}
```

`afterpage` implements a command that causes the commands specified in its argument to be expanded after the current page is output [1].

The `xspace` package provides a single command that looks at what comes after it in the command stream, and decides whether to insert a space to replace one “eaten” by the  $\TeX$  command decoder. The decision is based on what came after any space, not on whether there was a space (which is unknowable): so if the next thing proves to be punctuation, the chances are there was no space, but if it’s a letter, there’s probably a need for space [23].

`calc` adds infix expressions to perform arithmetic on the arguments of the  $\LaTeX$  commands `\setcounter`, `\addtocounter`, `\setlength`, and `\addtolength` [6].

All three packages are part of the tools bundle in the  $\LaTeX$  required distribution.

```
112 \RequirePackage{afterpage,xspace,calc}%
```

`geometry` provides an easy and flexible user interface to customize page layout, implementing auto-centering and auto-balancing mechanisms so that the users have only to give the least description for the page layout [12].

An important feature is the package’s ability to communicate the paper size it’s set up to the output (whether via DVI `\specials` or via direct interaction with `pdf $\LaTeX$` ).

```
113 \RequirePackage{geometry}%
```

`eso-pic` adds one or more user commands to  $\LaTeX$ ’s shipout actions, making it easy to add some picture commands to any and every page at absolute positions [10].

```
114 \RequirePackage{eso-pic}%
```

### 19.2.3 Scripts, fonts, and maps

```
115 \RequirePackage{newtxtext}
116 \RequirePackage{newtxmath}
117 \RequirePackage[zerostyle=b, straightquotes]{newtxtt}
118 \if@microtype
119     \UseMicrotypeSet[protrusion]{basicmath} % disable protrusion for tt fonts
120 \fi%
```

To make figures and ligatures searchable when using pdf $\TeX$   $\geq 1.40$ , glyph-to-unicode translation must be enabled. The default table `glyphtounicode.tex` contains mappings from glyph names to corresponding unicode for embedded fonts. It covers the AGL (Adobe Glyph List), names from `texglyphlist.txt` (part of `lcdf-typetools`) and `zapfdingbats.txt`, plus a few exceptions.

```
121 \InputIfFileExists{glyphtounicode}%
122     {\ClassInfo{emisa}{Reading file `glyphtounicode.tex`}
123     \pdfgentounicode=1}%
124     {\ClassWarning{emisa}{Couldn't find file `glyphtounicode.tex`}}%

125 \RequirePackage{booktabs}
126 \RequirePackage{listings}
127 \lstset{basicstyle=\ttfamily\small}
128 \lstnewenvironment{java}[1]{}
129     {\lstset{language=Java,float=*htbp,#1}}
130     {}
131 \lstnewenvironment{java*}[1]{}
132     {\lstset{language=Java,float=htbp,#1}}
133     {}
134 \lstnewenvironment{sourcecode}[1]{}
135     {\lstset{float=*htbp,#1}}
136     {}
137 \lstnewenvironment{sourcecode*}[1]{}
138     {\lstset{float=htbp,#1}}
139     {}
140 \RequirePackage{amsmath}
141 \RequirePackage[amsmath, standard, hyperref]{ntheorem}
```

## 19.3 Hypertext

The `hyperref` package [14] has to be loaded as late as feasible so it can intercept changes to standard macros by other packages.

```
142 \RequirePackage{url}
143 \urlstyle{same}
144 \RequirePackage[%
145     colorlinks,
146     breaklinks,
147     pdfview=Fit,
148     bookmarksopen,
149     bookmarksnumbered,
150     linkcolor=black,
```

```

151 anchorcolor=black,
152 citecolor=black,
153 filecolor=black,
154 urlcolor=black,
155 hyperfootnotes=false
156 ]{hyperref}%
157 \RequirePackage{doclicense}

```

## 19.4 Tools

`\@ifempty` These determinate if an argument ist empty (or not) and to act consequently. An argument is ,empty',  
`\@ifarg` iff it contains nothing or just whitespace. All three macros first test their first argument. If it is empty  
`\@ifnoarg` `\@ifempty` then executes the second one, otherwise the third one. `\@ifnoarg` und `\@ifarg` execute  
their respective second argument iff the the first one is (not) empty.

### Syntax:

```

\@ifempty{⟨arg⟩}{⟨Action_if_empty⟩}{⟨Action_if_not_empty⟩}
\@ifnoarg{⟨arg⟩}{⟨Action_if_empty⟩}
\@ifarg{⟨arg⟩}{⟨Action_if_not_empty⟩}
158 \begingroup
159 \catcode`\Z=3
160 \long\gdef\@M@T@#1#2Z#3#4#5\@nil{#4}
161 \long\gdef\@ifempty#1{\@M@T@#1ZZ\@secondoftwo\@firstoftwo\@nil}
162 \long\gdef\@ifarg#1{\@M@T@#1ZZ\@firstofone\@gobble\@nil}
163 \long\gdef\@ifnoarg#1{\@M@T@#1ZZ\@gobble\@firstofone\@nil}
164 \endgroup

```

## 19.5 Basic page layout

The geometry options using the keyval (`⟨key⟩ = ⟨value⟩`) interface can be set either in the optional argument to the `\usepackage` command, or in the argument of the `\geometry` macro. In either case, the argument consists of a list of comma-separated keyval options. `\geometry` acts cumulative; so multiple use just appends options to the list.

```

165 \geometry{%
166 a4paper,%
167 portrait,%
168 twoside,%
169 ignoreall,%
170 hcentering,%
171 textwidth = 162.5mm,%
172 textheight = 220mm,%
173 heightrounded,%
174 columnsep = 12.5mm,%
175 top = 47mm,%
176 headheight = 16mm,%

```

```

177 headsep          = 13mm,%
178 marginparwidth = 15mm,%
179 marginparsep    = 5mm,%
180 footskip        = 16mm%
181 }%
182 \marginparpush 5mm%

183 \AtBeginDocument{\baselineskip=13.6pt plus 0.5pt}%

184 \parindent=4mm%

185 \smallskipamount=.5\baselineskip
186 \medskipamount=2\smallskipamount
187 \bigskipamount=2\medskipamount

188 \flushbottom

189 \abovedisplayskip=.5\baselineskip plus .33\baselineskip
190                               minus .33\baselineskip
191 \belowdisplayskip=\abovedisplayskip
192 \abovedisplayshortskip= 0pt plus .33\baselineskip
193 \belowdisplayshortskip=.5\baselineskip plus .33\baselineskip
194                               minus .33\baselineskip

```

## 19.6 Scripts

`\pageheadfont` Assigning scripts to text elements.

`\pagenumfont` Page head and foot:

```

\pagefootfont 195 \def\pageheadfont{\normalfont}%
               196 \def\pagenumfont{\pageheadfont\bfseries}%
               197 \def\pagefootfont{\pageheadfont}%

```

`\authorfont` The elements of the article titles:

```

\titlefont 198 \def\authorfont{\normalfont\Large}%
\subtitlefont 199 \def\titlefont{\normalfont\bfseries\LARGE\boldmath}%
\abstractfont 200 \def\subtitlefont{\normalfont\bfseries\Large\boldmath}%
               201 \def\abstractfont{\normalfont\itshape}%

```

`\affiliationfont` The elements of the affiliation box:

```

\affiliationauthorfont 202 \def\affiliationfont{\normalfont}
\affiliationaddressfont 203 \def\affiliationauthorfont{\bfseries}
\affiliationemailfont 204 \def\affiliationaddressfont{\mdseries}
                     205 \def\affiliationemailfont{\mdseries}%

```

`\sectionfont` Section headlines:

```

\sec@font 206 \def\sectionfont{%
\para@font 207 \normalfont
            208 \bfseries
            209 \boldmath}%
210 \def\sec@font{\sectionfont\large}%

```



```
211 \def\para@font{\sectionfont}%
```

\captionfont Captions:

```
212 \def\captionfont{\normalfont\small\itshape}
```

## 19.7 Colours

These are the colour definitions for a couple of elements.

coverbgcolor color The colours of the cover background (near 25% grey) and cover text (such as headlines, near 75% grey):

covertextrcolor color

```
213 \definecolor{coverbgcolor}{cmyk}{0.15,0.1,0.09,0}%
```

```
214 \definecolor{covertextrcolor}{cmyk}{0.77,0.76,0.70,0.61}%
```

headtextcolor color These are the colours of the grey elements in column titles (50% grey) and of the frame and the background

boxframecolor color of text boxes like that one used in \editorialboard (100% grey = black and 20% grey, respectively).

boxbgcolor color

```
215 \definecolor{headtextcolor}{gray}{0.5}%
```

```
216 \definecolor{boxframecolor}{gray}{1}%
```

```
217 \definecolor{boxbgcolor}{gray}{0.8}%
```

## 19.8 Double line spacing

\displayskipstretch

\setdisplayskipstretch

```
218 \newcommand{\displayskipstretch}{\baselinestretch}
```

```
219 \newcommand{\setdisplayskipstretch}[1]{\def\displayskipstretch{#1}}
```

\setstretch Line space commands.

```
220 \newcommand{\setstretch}[1]{%
```

```
221 \def\baselinestretch{#1}%
```

```
222 \@currsize
```

```
223 }
```

\@setsize Modification of the LaTeX command \@setsize. Stretch the baseline *before* calculating the strut size. This improves spacing below tabular environments etc., probably.

The meanings of the arguments to \@setsize appear to be (whatever these may signify):

### Syntax:

```
\@setsize{<current size>}{<font baselineskip>}{<ignored (!)>}{<font size>}
```

Note that \@setsize (in modern L<sup>A</sup>T<sub>E</sub>X, \@setfontsize, which is called by \@setsize) seems to be the only place in purely modern LaTeX where \@currsize is set, and ltxguide.cls seems to be the only file in the LaTeX base distribution that uses it.

```
224 \def\@setsize#1#2#3#4{%
```

```
225 \@nomath#1%
```

```
226 \let\@currsize#1%
```

```
227 \baselineskip #2%
```

```
228 \baselineskip=\baselinestretch\baselineskip
```

```

229 \parskip=\baselinestretch\parskip
230 \setbox\strutbox \hbox{%
231   \vrule height.7\baselineskip
232         depth.3\baselineskip
233         width\z@}%
234 \skip\footins=\baselinestretch\skip\footins
235 \normalbaselineskip\baselineskip#3#4}

```

Fix up spacing before and after displayed math (arraystretch seems to do a fine job for inside LaTeX displayed math, since array and eqnarray seem to be affected as expected).

```

236 \everydisplay\expandafter{%
237   \the\everydisplay
238   \abovedisplayskip \displayskipstretch\abovedisplayskip
239   \belowdisplayskip \displayskipstretch\belowdisplayskip
240   \abovedisplayshortskip \displayskipstretch\abovedisplayshortskip
241   \belowdisplayshortskip \displayskipstretch\belowdisplayshortskip
242 }

```

## 19.9 Document markup

### 19.9.1 Declaring issue data

The following macros save their argument(s) to internal variables for later usage:

`\journalname` The journal name.

```

243 \def\journalname#1{\@bsphack\def\@journalname{#1}\@esphack}%
244 \journalname{Enterprise Modelling and Information Systems Architectures}%

```

`\issn` The International Standard Serial Number (ISSN) is the standardized international code which allows the identification of any serial publication, including electronic serials, independently of its country of publication, of its language or alphabet, of its frequency, medium, etc.; see the [ISSN web site](#).

Here we have two of them, one for print and one for online issues.

```

245 \long\def\issn#1{\@bsphack\long\def\@issn{#1}\@esphack}%
246 \issn{%ISSN 1860-6059 (Print)\par
247       ISSN 1866-3621 (Online)}%

```

`\volume` Volume number.

```

248 \def\volume#1{\@bsphack\def\@volume{#1}\@esphack}%
249 \volume{\textcolor{red}{0}}%

```

`\issue` Issue number and date.

```

250 \def\issue#1#2{\@bsphack
251   \def\@issue{#1}%
252   \def\@issuedate{#2}%
253   \@esphack}%
254 \issue{\textcolor{red}{0}}{\textcolor{red}{month 0000}}%

```

<code>\specialissuetitle</code>	If the current issue is a <i>special issue</i> , the respective title goes here.
<code>\specialissuetitle*</code>	255 <code>\def\specialissuetitle{\@ifstar\@sspit\@spit}%</code>
<code>\specialissuetitleprefix</code>	256 <code>\newcommand{\@spit}[2][]{%</code>
	257 <code>\@bsphack</code>
	258 <code>\@ifempty{#2}%</code>
	259 <code>{\let\@specialissuetitle\relax}%</code>
	260 <code>{\@ifempty{#1}%</code>
	261 <code>{\def\@specialissuetitle{\@specialissuetitleprefix#2}}%</code>
	262 <code>{\def\@specialissuetitle{#1\space#2}}}%</code>
	263 <code>\@esphack}%</code>
	264 <code>\newcommand{\@sspit}[2][]{%</code>
	265 <code>\@bsphack</code>
	266 <code>\@ifempty{#2}%</code>
	267 <code>{\let\@specialissuetitle\relax}%</code>
	268 <code>{\def\@specialissuetitle{#2}}%</code>
	269 <code>\@esphack}%</code>
	270 <code>\newcommand{\specialissuetitleprefix}[1]{%</code>
	271 <code>\@bsphack</code>
	272 <code>\@ifempty{#1}%</code>
	273 <code>{\let\@specialissuetitleprefix\relax}%</code>
	274 <code>{\def\@specialissuetitleprefix{#1\space}}%</code>
	275 <code>\@esphack}%</code>
	276 <code>\specialissuetitle{}}%</code>
	277 <code>\specialissuetitleprefix{Special Issue on}%</code>
<code>\copyrightyear</code>	Copyright owner and year.
<code>\copyrightholder</code>	278 <code>\def\copyrightyear#1{\@bsphack\def\@copyrightyear{#1}\@esphack}%</code>
	279 <code>\copyrightyear{\the\year}%</code>
	280 <code>\def\copyrightholder#1{\@bsphack\def\@copyrightholder{#1}\@esphack}%</code>
	281 <code>\copyrightholder{\textcolor{red}{\copyright{}}holder}}%</code>
<code>\title</code>	Title, subtitle, and author information for the current article.
<code>\subtitle</code>	These macros are a bit special as they accept up to <i>two</i> optional arguments together with the obligatory one. The optional arguments are for the running-title ( <i>short</i> ) and the table-of-contents ( <i>ToC</i> ) versions, respectively, of the main entry, if there is any:
<code>\author</code>	

### Syntax:

```

\title[<short_title>][<ToC_title>]{<title>}
\subtitle[<short_subtitle>][<ToC_subtitle>]{<subtitle>}
\author[<short_author>][<ToC_author>]{<author>}

```

If *no* optional argument is given the obligatory argument will appear in all the respective places.

If *one* optional argument is given then its' value replaces both the *short* and the *ToC* entries.

If *two* optional arguments are given then the value of the first one becomes the *short* headline (et al.) entry, and the second one is reproduced in the table of contents.

If *both* optional arguments are given but the first one is left empty then the *short* entry defaults also to the main value, and only the *ToC* entry is changed.

```

282 \renewcommandtwoopt*{\title}[3][[]]{%
283   \@bsphack
284   \def\@title{#3}%
285   \@ifempty{#1}{\def\@shorttitle{\@title}}{\def\@shorttitle{#1}}%
286   \@ifempty{#2}{\def\@toctitle{\@shorttitle}}{\def\@toctitle{#2}}%
287   \@esphack}%
288 \newcommandtwoopt*{\subtitle}[3][[]]{%
289   \@bsphack
290   \def\@subtitle{#3}%
291   \@ifempty{#1}{\def\@shortsubtitle{\@subtitle}}{\def\@shortsubtitle{#1}}%
292   \@ifempty{#2}{\def\@tocsubtitle{\@shortsubtitle}}{\def\@tocsubtitle{#2}}%
293   \@esphack}%
294 \def\email#1{%
295   \ifx\@email\@empty
296     \def\@email{#1}
297   \else
298     \ClassError{emisa}{There can only be one corresponding author!}{}
299   \fi}%
300 \renewcommand{\author}{\@ifstar{\@authorstar}{\@authornostar}}
301 \newcommand*{\@authornostar}[1]{%
302   \@bsphack
303   \if@referee
304     \def\@authors{}%
305     \def\@shortauthors{}
306   \else
307     \gdef\@address@sep{}%
308     \ifx\@authors\@empty
309       \protected@xdef\@authors{#1}
310       \protected@xappto\@shortauthors{#1}
311     \else
312       \protected@xappto\@authors{,\space #1}
313       \protected@xappto\@shortauthors{,\space #1}
314     \fi
315   \fi
316   \@esphack}%
317 \newcommandtwoopt*{\@authorstar}[3][[]]{%
318   \@bsphack
319   \if@referee
320     \def\@authors{}%
321     \def\@shortauthors{}%
322     \def\@tocauthors{}%
323     \def\@email{}%
324   \else
325     \gdef\@address@sep{}%
326     \ifx\@authors\@empty
327       \protected@xdef\@authors{#3\textsuperscript{*,}}

```

```

328     \protected@xappto\@shortauthors{#3}
329     \else
330     \protected@xappto\@authors{,\space #3\textsuperscript{*,}}
331     \protected@xappto\@shortauthors{,\space #3}
332     \fi%
333     \@ifempty{#1}{\def\@shortauthor{\@shortauthors}}{\def\@shortauthor{#1}}%
334     \@ifempty{#2}{\def\@tocauthor{\@shortauthors}}{\def\@tocauthor{#2}}%
335     \fi
336     \@esphack
337     \@ifnextchar\bgroup\email{\ClassError{emisa}{Please provide an email address for the corres
338 \newcommand{\keywords}[1]{
339     \@bsphack
340     \def\and{\unskip\ \textbullet\ }%
341     \def\@keywords{#1}%
342     \@esphack}%
343 \newcommand{\authornote}[1]{
344     \@bsphack
345     \if@referee
346         \def\@authornote{}%
347     \else
348         \def\@authornote{#1}%
349     \fi%
350     \@esphack}%
351 \newcommand{\editor}[1]{
352     \@bsphack
353     \def\@articleinfo@name{#1}%
354     \@esphack}%
355 \newcommand{\received}[1]{
356     \@bsphack
357     \def\@articleinfo@rdate{#1}%
358     \@esphack}%
359 \newcommand{\accepted}[2][]{
360     \@bsphack
361     \def\@articleinfo@rounds{#1}
362     \def\@articleinfo@adate{#2}%
363     \@esphack}%
364 \newcommand{\doitext}{DOI:}
365 \newcommand*{\outdoi}{%
366     \begingroup
367     \lccode\~=\#\relax
368     \lowercase{\def~{\#}}%
369     \lccode\~=\_\relax
370     \lowercase{\def~{\_}}%
371     \lccode\~=\<\relax
372     \lowercase{\def~{\textless}}%
373     \lccode\~=\>\relax
374     \lowercase{\def~{\textgreater}}%
375     \lccode\~=\0\relax
376     \catcode\~=\active

```

```

377 \catcode`\_=\active
378 \catcode`\<=\active
379 \catcode`\>=\active
380 \@outdoi
381 }
382 \def\@outdoi#1{%
383 \let#\relax
384 \let_\relax
385 \let\textless\relax
386 \let\textgreater\relax
387 \edef\x{\toks0={{#1}}}%
388 \x
389 \edef\#{\@percentchar23}%
390 \edef\_{\_}%
391 \edef\textless{\@percentchar3C}% instead of {\string<} for Apple
392 \edef\textgreater{\@percentchar3E}% instead of {\string>} for Apple
393 \edef\x{\toks1={\noexpand\href{http://dx.doi.org/#1}}}%
394 \x
395 \edef\x{\endgroup\doitext\the\toks1 \the\toks0}%
396 \x
397 }
398 \newcommand*{\doi}[1]{
399 \bsphack
400 \def\@doi{#1}
401 \esphack}%
402 \newcommand{\acknowledgements}[1]{
403 \bsphack
404 \def\@acknowledgements{#1}
405 \esphack}%
406 \newif\if@licenseset
407 \newcommand{\licence}[1]{%
408 \bsphack
409 \def\@licence{#1}
410 \esphack}%
411 \let\license\licence
412 \newcommand{\CCBYNCSAThree}{%
413 \@licensesettrue%
414 \def\doclicense@type{CC}%
415 \def\doclicense@modifier@uppercase{BY-NC-SA}%
416 \def\doclicense@versionUsed{3.0}%
417 }%
418 \newcommand{\CCBYNCSAFour}{%
419 \@licensesettrue%
420 \def\doclicense@type{CC}%
421 \def\doclicense@modifier@uppercase{BY-NC-SA}%
422 \def\doclicense@versionUsed{4.0}%
423 }%
424 \newcounter{addresses}
425 \renewcommand{\theaddresses}{\alph{addresses}}

```

```

426 \newcommand{\address}[2][\%
427 \@bsphack
428 \if@referee
429 \def\@addresses@list{
430 \else
431 \ifempty{#2}{\%
432 \ifempty{#1}{\%
433 \protected@xappto\@authors{\textsuperscript{\@address@sep #1}}
434 \gdef\address@sep{,}%
435 }}{\%
436 \stepcounter{addresses}
437 \protected@xappto\@authors{\textsuperscript{\@address@sep\theaddresses}}
438 \gdef\@address@sep{,}%
439 \ifx\@addresses@list\@empty
440 \protected@xdef\@addresses@list{\textsuperscript{\theaddresses}\ #2}
441 \else
442 \protected@xappto\@addresses@list{\newline\textsuperscript{\theaddresses}\ #2}
443 \fi}
444 \fi
445 \@esphack}%
446 \title{}}%
447 \subtitle{}}%
448 \author{}}%
449 \address{}
450 \keywords{}}%
451 \authornote{}}%
452 \editor{}}%
453 \received{}}%
454 \accepted{}}%
455 \doi{}}%
456 \licence{}
457 \acknowledgements{}}%
458 \def\abstract#1{\@bsphack\def\@abstract{#1}\@esphack}%
459 \abstract{}}%
460 \def\@authors{}
461 \def\@shortauthor{}
462 \def\@shortauthors{}
463 \def\@tocauthor{}
464 \def\@tocauthors{}
465 \def\@email{}
466 \def\@addresses@list{}

```

\abstract This accepts the abstract text.

```

467 \def\abstract#1{\@bsphack\def\@abstract{#1}\@esphack}%
468 \abstract{}}%

```

\outputarticleappendix The articleappendix and articleappendix\* environments collect the material given within them  
\@articleappendix inside an article environment. The collected material is accumulated and output at the article's  
\@wrap@articleappendix  
articleappendix  
articleappendix\*

very end. The basic form `articleappendix` begins a new page per instance while the starred form `articleappendix*` does not. Each appendix is wrapped into its own group so things remain local.

```

469 \DeclareRobustCommand{\outputarticleappendix}{%
470   {%
471     \appendix
472   \@articleappendix
473   \global\let\@articleappendix\relax
474   }%
475 }%
476 \long\def\@wrap@articleappendix#1{\gappto{\@articleappendix}{\#1}}
477 \newenvironment{articleappendix}{%
478   \gappto{\@articleappendix}{\clearpage}%
479   \Collect@Body\@wrap@articleappendix}{%
480 \newenvironment{articleappendix*}{%
481   \Collect@Body\@wrap@articleappendix}{%
482 \let\@articleappendix\relax
483 \def\@makefnmark{\textsuperscript{\@thefnmark}}}%
484 \renewcommand\@makefnmark[1]{%
485   \parindent 1em%
486   \noindent%
487   \@makefnmark#1}%

```

## 19.9.2 Page styles

This is the standard page style:

**Page Head:** three lines of text, `\textwidth` wide and aligned to the inner and outer text body borders, respectively, each above a black horizontal line at full sheet width. The text entries comprise:

Line 1, inner side: journal name;

outer side: no text.

Line 2, inner side: volume/number/issue date, text colour is 50% grey;

outer side: no text.

Line 3, inner side:

▷ left pages: section name;

▷ common right pages: author's name(s);

▷ editorial content, both sides: section or category name;

text colour is 50% grey;

outer side: page number in bold type, coloured black, shifted by an amount of `\headpageoffset` to the outer edge of the page.

**Page foot:** Mostly empty; sometimes in editorial content sections it shows a black horizontal line from the outer text edge to the inner sheet edge (spine).

`\headwidth` Basic lengths for head and foot elements. `\headwidth` is the overall width of the headbox equalling the page width plus a bleed of three millimeters. It is logically restricted to `\textwidth` by subtracting `\headmargin` at both sides.



`\bleed` *Bleed* is a printing term that refers to printing beyond the edge of the sheet after trimming. The `\bleed` is a measure describing the (small) amount of space by which objects on the border of your document will extend. Please note that this length is not added automatically, but has to be added manually.

`\footrulewidth` The width of the foot rule. As it is drawn asymmetrically (running from the outer text edge to the spine) it has to be a bit smaller than the head box.

`\headfootruleheight` This is the width of all lines in head and foot.

```

488 \newlength{\headwidth}%
489 \newlength{\bleed}%
490 \newlength{\headmargin}%
491 \newlength{\footrulewidth}%
492 \newlength{\headfootruleheight}%
493 \setlength{\bleed}{3mm}%
494 \setlength{\headfootruleheight}{0.4mm}%

```

We want to be able to change `\bleed` in the preamble so we delay the calculations until `\begin{document}`.

```

495 \AtBeginDocument{%
496   \setlength{\headwidth}{\paperwidth+2\bleed}%
497   \setlength{\headmargin}{0.5\headwidth-0.5\textwidth}%
498   \setlength{\footrulewidth}{0.5\headwidth+0.5\textwidth}%

```

`\headbox` The main formatting routine for the running head is a `tabular*` environment.

```

499 \newcommand{\headbox}[6]{\bgroup%
500   \setstretch{1}%
501   \reset@font\pageheadfont
502   \tabcolsep\z@
503   \arrayrulewidth\headfootruleheight
504   \hskip-\headmargin
505   \begin{tabular*}{\headwidth}[b]%
506     {@{\rule{\headmargin}{\z@}}%
507     >{\rule[-1.25mm]{\z@}{5mm-\arrayrulewidth}}%
508     l@{\extracolsep{\textwidth minus 1fill}}r%
509     @{\rule{\headmargin}{\z@}}}
510     #1 & #2\\
511     \hline
512     #3 & #4\\
513     \hline
514     #5 & #6\\
515     \hline
516   \end{tabular*}%
517   \hskip-\headmargin
518   \egroup
519 }%

```

`\theheadvolume` These macros are used to assemble the page head, ...

`\headpageoffset`

```
520 \newcommand{\theheadvolume}{%
```

`\theoddheadpage`

```
521   \beginngroup\hypersetup{urlcolor=headtextcolor}\textcolor{headtextcolor}{Vol.\, \@volume, No.\,
```

`\theevenheadpage`

```

522 \newlength{\headpageoffset}%
523 \setlength{\headpageoffset}{10mm}%
524 \def\theoddheadpage{%
525   \rlap{\makebox[\headpageoffset][r]{\pagenumfont\thepage}}}%
526 \def\theevenheadpage{%
527   \llap{\makebox[\headpageoffset][l]{\pagenumfont\thepage}}}%

@footrule switch ... and these are for the page foot.
\footruleoff 528 \newif\if@footrule%
\footruleon 529 \def\footruleoff{\global\@footrulefalse}%
\footrule 530 \def\footruleon{\global\@footruletrue}%
531 \def\footrule#1{%
532   \if@footrule
533     \makebox[\textwidth][#1]{%
534       \reset@font
535       \rule[\headfootruleheight]{\footrulewidth}{\headfootruleheight}%
536     } \fi}%

\headmarkstyle Sets the content marks in the running titles.
\markhead 537 \def\headmarkstyle#1{\@bsphack
\markarticle 538 \def\@headmarkstyle{#1}%
\markeditorial 539 \@esphack}%
540 \headmarkstyle{\color{headtextcolor}}%
541 \def\markhead#1#2{\@bsphack
542   \gdef\@evenmark{#1}%
543   \gdef\@oddmark{#2}%
544   \@esphack}%
545 \def\markarticle{\markhead{\@shortauthor}{\@shorttitle}}%
546 \def\markeditorial{\markhead{\@shorttitle}{\@shorttitle}}%

\ps@emisa Finally that all being thrown together gives the basic page style.
547 \def\ps@emisa{%
548   \def\@oddhead{%
549     \headbox{\@journalname}{}%
550     {\theheadvolume}{}%
551     {\@headmarkstyle\@oddmark}{\theoddheadpage}%
552   }%
553   \def\@evenhead{%
554     \headbox{\@journalname}%
555     {\theheadvolume}%
556     {\theevenheadpage}{\@headmarkstyle\@evenmark}}%
557  }%
558   \let\@oddmark\relax
559   \let\@evenmark\relax
560   \def\@oddfoot{\footrule{r}}%
561   \def\@evenfoot{\footrule{l}}%
562 }%

\ps@emisaarticle We have two minimally different page styles:
\ps@emisaeditorial

```

- ▷ `\ps@emisaarticle` for author-named articles, showing the author's names on the left and the article title on the right side;
- ▷ `\ps@emisaeditorial` for editorial material, showing the the article title on both sides.

```

563 \def\ps@emisaarticle{%
564   \ps@emisa
565   \markarticle
566   \footruleoff
567 }%

568 \def\ps@emisaeditorial{%
569   \ps@emisa
570   \markeditorial
571   \footruleon
572 }%

573 \AtEndOfClass{\pagestyle{emisa}}%

```

### 19.9.3 Cover and advertisement pages

<code>\basecoverfont</code>	These are the font and size definitions for cover pages. We are using the sansserif script from the Libertine package, called <i>Linux Biolinum</i> , in two different sizes with the title font being bold.
<code>\covervolumefont</code>	
<code>\covertitlefont</code>	<pre> 574 \def\basecoverfont{\normalfont\sffamily}% 575 \def\covervolumefont{% 576   \basecoverfont\fontsize{6mm}{6mm}\selectfont}% 577 \def\covertitlefont{% 578   \basecoverfont\bfseries\fontsize{11mm}{16.5mm}\selectfont}% </pre>
<code>\coverIbgbname</code>	These are names for background graphics and logos. As these are subject to be changed from time to
<code>\coverIVbgbname</code>	time these adjustments are put into the base config file, too.
<code>\sigmobislogoname</code>	<pre> 579 \def\coverIbgbname{U1_bg}% </pre>
<code>\gislogoname</code>	<pre> 580 \def\coverIVbgbname{U4_bg}% 581 \def\sigmobislogoname{SIG-MOBIS-logo-300}% 582 \def\sigEMISAlagoname{EMISA-Logo-svg}% 583 \def\gislogoname{GIS-logo_with_text-300}% </pre>
<code>\AtPageDeadCenter</code>	<code>\AtPageDeadCenter</code> centers its argument horizontally and vertically around the geometric page center.
<code>\page@empty</code>	This macro is to be used inside some <code>eso-pic</code> <code>ShipoutPicture</code> . <pre> 584 \newcommand{\AtPageDeadCenter}[1]{% 585   \AtPageCenter{\makebox[\z@][c]{% 586     \raisebox{-0.5\totalheight}{\z@}[\z@]{#1}}}% 587 }% 588 \def\page@empty{\relax}% </pre>
<code>\pagebg</code>	Background color for one whole page plus bleed. <pre> 589 \newcommand{\pagebg}[1]{% 590   \AtPageDeadCenter{% 591     \textcolor{#1}{\rule{\paperwidth+2\bleed}{\paperheight+2\bleed}}}% </pre>

`\thispagebackground` `\thispagebackground` put its obligatory argument into the background of the running page. If there is a non-empty optional argument it will be interpreted as the style of this page (using `\thispagestyle`).

```
592 \newcommand{\thispagebackground}[2][]{%
593   \ifarg{#1}{\thispagestyle{#1}}%
594   \AddToShipoutPicture*{%
595     \unitlength 1mm\relax%
596     {#2}%
597   }%}
```

`\picturepage` `\picturepage` additionally empties and flushes the running page, thus producing a picture-only page.

```
598 \newcommand{\picturepage}[2][empty]{%
599   \thispagebackground[#1]{#2}%
600   \null\clearpage
601 }%
```

`\inputpagegraphic` This loads a picture file to generate a picture-only page from.

```
602 \newcommandtwopt*{\inputpagegraphic}[3][empty][]{%
603   \thispagebackground[#1]{\includegraphics[width=\paperwidth,#2]{#3}}%
604   \null\clearpage
605 }%
```

`\coverpage` `\coverpage` is a special form of the `\picturepage`:

```
606 \newcommand{\coverpage}[2][]{%
607   \ifarg{#1}{\setcounter{page}{#1}}%
608   \picturepage{#2}%
609 }%
```

`\thecovervolumeline` These represent the

```
\thecovertitle
610 \newcommand{\thecovervolumeline}{%
611   \parbox[t]{130mm}{%
612     \raggedright
613     \color{covertextcolor}\covervolumefont%
614     Volume\space\@volume
615     \enspace\rule[-1mm]{0.5mm}{6mm}\enspace
616     No.\,\@issue\space\textbf{\@issuedate}\,[3mm]%
617     \@specialissuetitle
618   }%
619 }%
620 \def\thecovertitle{%
621   \parbox[t][30mm][s]{174mm}{%
622     \color{covertextcolor}%
623     \covertitlefont
624     \raggedright\@journalname\par
625     \vskip8mm
626     \covervolumefont
627     \raggedleft
628     \textbf{An International Electronic Journal\,}}}
```

`\sigmobispage` This macro holds the complete announcement page on the *GI-SIG-MoBIS portal* to be published on the third cover page (backcover, inside).

`\sigmobispage` holds just the contents of the SIG-Mobis ad. It produces a box with an outer width of *zero points* and a height as specified by the inner `minipage` environment. When used as an advertising page it has to be *centered horizontally and vertically* in the page area. This is achieved most easily by using the `\AtPageDeadCenter` utility macro (see section 19.9.3) from `eso-pic` [10].

```
629 \def\sigmatobispage{%
630   \makebox[\z@][c]{%
631     \begin{minipage}[c][260mm][s]{\textwidth}
632       \sigmobispagehead
633       \medskip
634
635       The GI-SIG-MoBIS portal provides numerous resources on enterprise
636       modelling research, such as a full-text digital library, a
637       bibliography, conference announcements, a glossary and evaluation
638       reports. It is intended to establish the premier forum for an
639       international community in enterprise modelling. The new version
640       is based on a Content Management System allowing authorized users
641       to conveniently upload content. A \BibTeX{} interface allows for
642       conveniently integrating bibliographic data. Information about
643       this journal, such as guidelines for authors, tables of content
644       and full-text access to articles (for GI-SIG-MobIS members only)
645       are also available on the~portal.
646       \par
647       \medskip
648
649       \begin{center}
650         \includegraphics{GI-SIG-MOBIS_portal}
651       \end{center}
652
653       \medskip
654
655       GI encourages everybody who wants to participate in the
656       evolution of this community knowledge base to contribute to any of
657       the categories covered by the portal. Please contact Michael He\ss{}
658       (\href{mailto:m.hess@uni-duisburg-essen.de}{m.hess@uni-duisburg-essen.de})
659       for further~information.
660
661       \vfill
662
663       \sigmobispagefoot
664     \end{minipage}%
665   }%
666 }
```

`\sigmobispagehead` Elements of `\sigmobispage`.

`\sigmobispagefoot` 667 \def\sigmatobispagerule#1{%  
`\sigmobispagerule`

```

668 \parbox[c][23mm][s]{\linewidth}{%
669   \centering
670   \textcolor{gray}{\rule{.92\linewidth}{1mm}}%
671   \par\vfill
672   \raisebox{-.4\height} [.5\totalheight] [.5\totalheight]{\huge#1}%
673   \par\vfill
674   \textcolor{gray}{\rule{.92\linewidth}{1mm}}}\par}%
675 \def\sigmobispagehead{\sigmobispagerule{SIG-MoBIS Portal}}
676 \def\sigmobispagefoot{\sigmobispagerule{http://wi-mobis.gi-ev.de/}}

```

\coverI Each of these prepares one of the cover pages.

```

\coverII 677 \def\coverI#1{\@ifempty{#1}%
\coverIII 678   {\let\@coverI\relax}%
\coverIV 679   {\def\@coverI{\coverpage[-2]{#1}}}%
680 \def\coverII#1{\@ifempty{#1}%
681   {\let\@coverII\relax}%
682   {\def\@coverII{\coverpage[-1]{#1}}}%
683 \def\coverIII#1{\@ifempty{#1}%
684   {\let\@coverIII\relax}%
685   {\def\@coverIII{\coverpage{#1}}}%
686 \def\coverIV#1{\@ifempty{#1}%
687   {\let\@coverIV\relax}%
688   {\def\@coverIV{\coverpage{#1}}}%

```

So we prepare the four cover pages.

```

689 \coverI{%
690   \pagebg{coverbgcolor}%
691   \AtPageUpperLeft{%
692     \raisebox{-\totalheight}{\includegraphics{\coverIbgname}}}%
693   \AtPageUpperLeft{\put(17,-28){\mbox{%
694     \includegraphics[height=19mm]{\sigmobislogoname}%
695     \hspace{5mm}%
696     \includegraphics[height=14.75mm]{\sigEMISAlgoname}%
697     }}%
698   }%
699   \AtPageLowerLeft{\put(166,9){\includegraphics{\gislogoname}}}%
700   \AtPageLowerLeft{\put(17,44){\thecovervolumeline}}%
701   \AtTextLowerLeft{\put(-28,36){\framebox(200,62)[c]{}%
702   \AtPageLowerLeft{\put(17,112){\thecovertitle}}}%
703 }%
704 \coverII{\page@empty}%
705 \coverIII{\AtPageCenter{\sigmobispage}}%
706 \coverIV{%
707   \pagebg{coverbgcolor}%
708   \AtPageLowerLeft{%
709     \raisebox{167mm}{\includegraphics{\coverIVbgname}}}%
710   \AtPageLowerLeft{%
711     \put(6,9){\parbox[b]{10cm}{\raggedright\large\sffamily\@issn}}}%
712   \AtPageLowerLeft{%

```

```

713     \put(166,9){\includegraphics{GIS-logo_with_text-300}}}%
714 }%

715 \if@cover
716   \AtBeginDocument{%
717     \@coverI\@coverII
718     \setcounter{page}{1}%
719   }%
720   \AtEndDocument{%
721     \@coverIII\@coverIV
722   }%
723 \fi

```

`\graphicspath` The picture files used above have to be found. Normally they should be somewhere on the  $\text{\TeX}$   $\$PATH$ , probably in the same directory where EMISA is situated. As least as we are in Beta state one might put them into the local subdirectory `figs_base/`; we provide for that by including the following line in the config file.

```

724 \graphicspath{{/figs_base/},{./figs_base/}}

```

#### 19.9.4 Formatting common articles

`\c@article` The `article` and `editorialcontent` environments maintain their own (common) counter. Although it is not referenced anywhere at the moment of writing it is used to reset a couple of other counters with every new one of those environments.

```

725 \newcounter{article}%
726 \@addtoreset{section}{article}%
727 \@addtoreset{footnote}{article}%
728 \@addtoreset{figure}{article}%
729 \@addtoreset{table}{article}%

```

`article` This encapsulates each article.

```

730 \newenvironment{article}[1]{%
731   \clearpage
732   \refstepcounter{article}%
733   \pagestyle{emisaarticle}%
734   \col@number=\tw@\relax
735   #1\relax
736   \l@article

```

Every article is its own bibliographical unit.

```

737   \begin{refsection}%
738   \maketitle
739   \ignorespaces
740 }{%
741 \end{refsection}%
742 \outputarticleappendix\par%
743 \vspace{\baselineskip}%
744 \noindent\ignorespaces

```

```

745 \if@licenseset
746 \begin{minipage}{\columnwidth}
747 \parbox[t]{\dimexpr 0.975\columnwidth-\doclicense@imagewidth\relax}{\vskip 0pt\raggedright
748 \hfill%
749 \parbox[t]{\doclicense@imagewidth}{\vskip 0pt\doclicenseImage}%
750 \end{minipage}%
751 \else
752 \ifx\@licence\@empty\relax\else\par\noindent\@licence\fi%
753 \fi%
754 \onecolumn
755 \ignorespacesafterend}%

```

### 19.9.5 Formatting editorial content

`\edit@setup` This adjusts the basic page makeup for editorial material.

```

756 \newcommandtwopt{\edit@setup}[3][[]]{%
757 \title[#1][#2]{#3}
758 \pagestyle{emisaeditorial}

```

Here, section titles are a bit larger than otherwise.

```

759 \def\sec@font{\sectionfont\Large}%
760 \def\para@font{\sectionfont}%
761 \setcounter{section}{0}%
762 }%

```

`editorialcontent` This encapsulates editorial content entries.

```

763 \newenvironment{editorialcontent}[1]{%
764 \onecolumn
765 \refstepcounter{article}%
766 \edit@setup{#1}%
767 \l@editorialcontent
768 \raisebox{5.5mm}[10mm][0pt]{\sec@font\@title}\

```

Every `editorialcontent` is its own bibliographical unit.

```

769 \begin{refsection}%
770 \ignorespaces
771 }{%
772 \end{refsection}%
773 \onecolumn
774 \ignorespacesafterend}%

```

### 19.9.6 Standard editorial content environments

Several types of standardized editorial contents.

`editorial` This encapsulates editorials.

```

\editorialname 775 \def\editorialname{Editorial Preface}%

```



```

776 \newenvironment{editorial}[1][\editorialname]{%
777   \clearpage
778   \edit@setup{#1}%
779   \twocolumn[\raisebox{5.5mm}[10mm][0pt]{\sec@font\@title}}}%
780   \l@editorialcontent

```

Every editorial is its own bibliographical unit.

```

781 \begin{refsection}%
782 \ignorespaces
783 }{%
784 \end{refsection}%
785 \onecolumn
786 \ignorespacesafterend}%

```

cfp Call for papers.

```

\cfpname 787 \def\cfpname{Call for Papers}%
788 \newenvironment{cfp}[1][\cfpname]%
789 {\editorialcontent{#1}}%
790 {\endeditorialcontent}%

```

\imprint Imprint.

```

\imprintname 791 \newcommandtwoopt{\imprint}[2][\@imprintname][\@imprintbody]{%
\imprintbody 792   \onecolumn
793   \edit@setup{#1}{\@journalname}%
794   \l@editorialcontent
795   \raisebox{5.5mm}[10mm][0pt]{\sec@font\@title}\\
796   \ignorespaces
797   #2
798   \onecolumn\ignorespacesafterend}%
799 \def\imprintname#1{\@bsphack\def\@imprintname{#1}\@esphack}%
800 \long\def\imprintbody#1{\@bsphack\def\@imprintbody{#1}\@esphack}%

801 \imprintname{Imprint}%
802 \imprintbody{%
803   The journal \emph{\@journalname} is the official journal of the
804   Special Interest Group on Modelling Business Information Systems
805   within the German Informatics Society (GI-SIG MoBIS).
806
807   The journal Enterprise Modelling and Information Systems
808   Architectures is intended to provide a forum for those who prefer a
809   design-oriented approach. As the official journal of the German
810   Informatics Society (GI-SIG-MoBIS), it is dedicated to promote the
811   study and application of languages and methods for enterprise
812   modelling -- bridging the gap between theoretical foundations and
813   real world requirements. The journal is not only aimed at
814   researchers and students in Information Systems and Computer
815   Science, but also at information systems professionals in industry,
816   commerce and public administration who are interested in innovative
817   and inspiring concepts.

```

```

818
819 The journal's editorial board consists of scholars and practitioners
820 who are renowned experts on various aspects of developing, analysing
821 and deploying enterprise models. Besides Information Systems, they
822 cover various fields of Computer Science.
823
824 \section*{Subscription Information}
825
826 The journal is distributed free of charge for members of the
827 GI-SIG-MoBIS. Membership can be acquired through the German
828 Informatics Society (http://www.gi-ev.de/verein/mitgliedschaft/).
829 Single issues, priced at EUR\,25 each (plus shipment), can be ordered
830 online (http://www.fg-mobis.gi-ev.de/).}

```

`\editorialboard` Outputs the Editorial Board page.

`\editorialboardname` Sets the name of the Editorial Board for use in the table of contents and in `\editorialboard`.

`\editorialboardbody` Sets the contents of the Editorial Board for use in `\editorialboard`.

The vertical size of the Editorial Board will exceed page height if there are more than about 48 name entries and/or other material. To prevent that the grey box is scaled down to a height of `\editorialboxmaxheight` if its natural size is bigger than that.

```

831 \newsavebox{\@editorial@box}%
832 \newlength{\editorialboxmaxheight}%
833 \setlength{\editorialboxmaxheight}{\textheight+10mm}%
834 \newcommandtwoopt{\editorialboard}[2]%
835 [\@editorialboardname][\@editorialboardbody]{%
836   \clearpage
837   \edit@setup[#1]{#1}%
838   \l@editorialcontent
839   \savebox{\@editorial@box}{%
840     \vbox{\centering%
841       \fbboxsep=5mm
842       \fcolorbox{boxframecolor}{boxbgcolor}{%
843         \begin{minipage}[t]{110mm}
844           \raggedright
845           #2
846         \end{minipage}}\*\*
847   }%
848   }%
849   \raisebox{15mm-\totalheight}[5mm][0mm]{\makebox[\textwidth][c]{%
850     \ifdim\ht\@editorial@box>\editorialboxmaxheight
851       \resizebox{!}{\editorialboxmaxheight}{\usebox{\@editorial@box}}%
852     \else
853       \usebox{\@editorial@box}%
854     \fi
855   }}\*\*
856   \raisebox{-\textheight}[0mm][0mm]{\makebox[\textwidth][l]{%
857     \parbox[t]{\textwidth}{\raggedleft\bfseries\@issn}%

```

```

858 }}%
859 \onecolumn\ignorespacesafterend
860 }%
861 \def\editorialboardname#1{%
862 \@bsphack\def\@editorialboardname{#1}\@esphack}%
863 \long\def\editorialboardbody#1{%
864 \@bsphack\def\@editorialboardbody{#1}\@esphack}%

865 \editorialboardname{Editorial Board}%
866 \editorialboardbody{%
867 \section*{\@title}\vskip1mm
868 {\Large Editors in Chief\[\[1mm]}
869 Ulrich Frank, University of Duisburg-Essen\\
870 Manfred Reichert, Ulm University\[\[1mm]
871 {\Large Associate Editors\[\[1mm]}
872 Wil van der Aalst, Eindhoven University of Technology\\
873 Witold Abramowicz, Poznan University of Economics\\
874 Colin Atkinson, University of Mannheim\\
875 J\"org Becker, University of M\"unster\\
876 J\"org Desel, University of Hagen\\
877 Werner Esswein, Dresden University of Technology\\
878 Fernand Feltz, Centre de Recherche Public Gabriel Lippmann\\
879 Andreas Gadatsch, Bonn-Rhine-Sieg University of Applied Sciences\\
880 Martin Glinz, University of Zurich\\
881 Norbert Gronau, University of Potsdam\\
882 Wilhelm Hasselbring, University of Kiel\\
883 Brian Henderson-Sellers, University of Technology, Sydney\\
884 Stefan Jablonski, University of Bayreuth\\
885 Manfred Jeusfeld, Tilburg University\\
886 Reinhard Jung, University of St.\,Gallen\\
887 Dimitris Karagiannis, University of Vienna\\
888 John Krogstie, University of Trondheim\\
889 Thomas K\"uhne, Victoria University of Wellington\\
890 Frank Leymann, University of Stuttgart\\
891 Stephen W. Liddle, Brigham Young University\\
892 Peter Loos, Johannes Gutenberg-University of Mainz\\
893 Oscar Pastor L\'opez, Universidad Polit\'ecnica de Val\'encia\\
894 Heinrich C. Mayr, University of Klagenfurt\\
895 Jan Mendling, Vienna University of Economics and Business\\
896 Markus N\"uttgens, University of Hamburg\\
897 Andreas Oberweis, University of Karlsruhe\\
898 Erich Ortner, Darmstadt University of Technology\\
899 Erik Proper, Radboud University Nijmegen\\
900 Michael Rebstock, University of Applied Sciences Darmstadt\\
901 Stefanie Rinderle-Ma, University of Vienna\\
902 Michael Rosemann, Queensland University of Technology\\
903 Matti Rossi, Aalto University\\
904 Elmar J. Sinz, University of Bamberg\\
905 Friedrich Steimann, University of Hagen\\
906 Stefan Strecker, University of Hagen\\

```

907 Bernhard Thalheim, University of Kiel\\  
 908 Oliver Thomas, University of Osnabr\\uck\\  
 909 Juha-Pekka Tolvanen, University of Jyv\\askyl\\a\\  
 910 Klaus Turowski, University of Augsburg\\  
 911 Gottfried Vossen, University of M\\unster\\  
 912 Mathias Weske, University of Potsdam\\  
 913 Robert Winter, University of St.\\,Gallen\\  
 914 Heinz Z\\ullighoven, University of Hamburg}%

\\guidelines Guidelines for Authors.

\\guidelinesname 915 \\newcommandtwoopt{\\guidelines}[2]%  
 \\guidelinesbody 916 [\\@guidelinesname][\\@guidelinesbody]{%  
 917 \\onecolumn  
 918 \\edit@setup{#1}%  
 919 \\l@editorialcontent  
 920 \\raisebox{5.5mm}[10mm][0pt]{\\sec@font\\@title}\\  
 921 \\ignorespaces  
 922 #2  
 923 \\onecolumn\\ignorespacesafterend}%  
 924 \\def\\guidelinesname#1{%  
 925 \\@bsphack\\def\\@guidelinesname{#1}\\@esphack}%  
 926 \\long\\def\\guidelinesbody#1{%  
 927 \\@bsphack\\def\\@guidelinesbody{#1}\\@esphack}%  
 928 \\guidelinesname{Guidelines for Authors}%  
 929 \\guidelinesbody{%  
 930 The journal serves to publish results of innovative research on all  
 931 facets of creating and analysing enterprise models and information  
 932 systems architectures. For research papers, it is required to  
 933 satisfy academic standards in terms of originality, level of  
 934 abstraction and justification of results. Experience reports serve  
 935 to describe and analyse success stories as well as practical  
 936 obstacles and resulting research challenges. Topics covered by the  
 937 journal include, but are not restricted to the following subjects:  
 938 \\begin{itemize}  
 939 \\item Languages and Methods for Enterprise Modelling  
 940 \\item Reusable Domain Models (Reference Models)  
 941 \\item Analysis and Design Patterns  
 942 \\item Modelling of Business Processes and Workflows  
 943 \\item Process-Oriented System Architectures  
 944 \\item Component-Oriented System Architectures  
 945 \\item Conceptual Modelling for Component-Oriented Design  
 946 \\item Ontologies for Enterprise Modelling  
 947 \\item Modelling for Enterprise Application Integration  
 948 \\item Modelling for Data Warehouses  
 949 \\item Modelling to support Knowledge Management  
 950 \\item Model-Driven Development  
 951 \\item Aspect-Oriented Design  
 952 \\item Agile Methods for Enterprise Modelling

```

953 \end{itemize}
954 Authors are asked for electronic submissions, which have to be sent
955 to the editor in chief as e-mail attachment. In case of multiple
956 authors, it is required to name one author who acts as contact
957 person. The submission should include a cover page with the paper's
958 title and the names, affiliations and e-mail addresses of all
959 authors. The first page of the paper starts with the title and does
960 not carry the authors' names. A manuscript must be either in MS
961 Word or PDF format. It should not exceed 5.000 words -- this
962 includes an abstract of around 150 words.
963
964 Submitted papers will be reviewed within no more than two months.
965 The review process is double blind. Authors who submit a manuscript
966 guarantee that it has not been published elsewhere, nor is intended
967 to be published elsewhere. Papers that were accepted for
968 publication must be written according to the style defined for the
969 journal. A comprehensive description as well as a corresponding
970 Word template is provided on the web portal of the GI-SIG-MobIS
971 (http://www.fg-mobis.gi-ev.de/).}

```

### 19.9.7 Making the title

`\maketitle` This takes a couple of prerequisites, then looks if we are in one- or twocolumn mode and finally outputs the information accordingly.

```

972 \def\maketitle{%
973   \begingroup
974   \let\footnoterule\relax
975   \let\footnote\thanks
976   \let\thefootnote\relax
977   \def\@makefnmark{\textsuperscript{\@thefnmark}}%
978   \ifnum\col@number=\@ne
979     \@maketitle
980   \else
981     \twocolumn[\@maketitle]%
982   \fi
983   \global\@topnum\z@
984   \@thanks
985 \endgroup
986 \setcounter{footnote}{0}%
987 }%

```

`\@maketitle` This assembles and outputs the article title.

```

988 \def\@maketitle{%
989   \bgroup
990   \normalfont
991   \pretolerance=9999
992   \parskip\z@
993   \parindent\z@

```

```

994 \if!\@title!
995 \else
996 {\raggedright
997 \titlefont\ignorespaces
998 \strut\@title\strut\par}%
999 \vskip2mm\relax
1000 \fi
1001 \if!\@subtitle!
1002 \vskip5mm\relax
1003 \else
1004 {\makebox[\textwidth][r]{%
1005 \begin{minipage}{\textwidth-15mm}
1006 \raggedright
1007 \subtitlefont\ignorespaces
1008 \strut\@subtitle\strut
1009 \end{minipage}}}%
1010 \par}%
1011 \vskip5mm\relax
1012 \fi
1013 \if!\@authors!
1014 \else
1015 {\raggedright
1016 \authorfont\ignorespaces
1017 \strut\@authors
1018 \ifx\@email\@empty
1019 \ClassError{emisa}{There has to be one corresponding author!}{Please use \string\author*}
1020 \else
1021 \ignorespaces\makebox[0pt][l]{\footnote{*~Corresponding author.\newline E-mail.\ \url{\@email}}}%
1022 \fi%
1023 \ifx\@acknowledgements\@empty
1024 \else
1025 \ignorespaces\makebox[0pt][l]{\footnote{\@acknowledgements}}}%
1026 \fi%
1027 \strut\par}%
1028 \vskip2mm\relax
1029 \fi
1030 \if!\@addresses@list!
1031 \else
1032 {\raggedright
1033 \footnotesize\ignorespaces
1034 \strut\@addresses@list\strut\par}%
1035 \vskip8mm\relax
1036 \fi
1037 \if!\@authornote!
1038 \else
1039 \let\thefootnote\relax
1040 \ignorespaces\makebox[0pt][l]{\footnote{Note: \@authornote}}}%
1041 \fi
1042 \if!\@abstract!

```

```

1043 \else
1044   {\abstractfont\ignorespaces
1045     \strut\textup{Abstract.\ } \@abstract\strut\par}%
1046     \vskip5mm\relax
1047 \fi
1048 \if!\@keywords!
1049   \vskip3mm\relax
1050 \else
1051   {\raggedright
1052     \ignorespaces
1053     \strut Keywords.\ \@keywords\strut\par}
1054     \vskip3mm\relax
1055 \fi
1056 \if!\@articleinfo@name!
1057   \if!\@articleinfo@rdate!
1058     \if!\@articleinfo@adate!
1059       \vskip\baselineskip\relax
1060     \fi
1061   \fi
1062 \else
1063   {\raggedright
1064     \small
1065     \ignorespaces
1066     \strut Communicated by\ \@articleinfo@name.%
1067     \if!\@articleinfo@rdate!%
1068     \else
1069       \space Received\ \@articleinfo@rdate.%
1070     \fi%
1071     \if!\@articleinfo@adate!%
1072     \else
1073       \space Accepted\ %
1074       \if!\@articleinfo@rounds!%
1075       \else%
1076         \ifnum\@articleinfo@rounds=1
1077           after \@articleinfo@rounds{} revision\space%
1078         \else
1079           after \@articleinfo@rounds{} revisions\space%
1080         \fi%
1081       \fi%
1082       on \@articleinfo@adate.
1083     \fi%
1084     \strut\par}
1085     \vskip5mm\relax
1086 \fi
1087 \egroup
1088 }

```

## 19.9.8 Sectioning

`\@sect` This internal macro facilitates the representation of unstarred sectioning commands using `\@startsection`.

### Syntax:

```
\@sect{<#1: name>}{<#2: level>}{<#3: indent>}{<#4: before skip>}{<#5: after skip>}{<#6: style>}[<#7: toc-heading>]{<#8: heading>}
```

Here is the meaning of all these parameters:

- `<name>` The name of the current sectioning level, e.g., «subsection».
- `<level>` The level number, describing the hierarchical depth of the current sectioning level named in – e.g., chapter = 1, section = 2, etc. This is used namely in the table of contents.
- `<indent>` The indentation of the heading, relative to the left margin. Positive values shift the heading to the right («inward»), negative values to the left («outward»).
- `<before skip>` The absolute value represents the space to leave above the heading. If the value is negative, the first paragraph indent following the heading is suppressed.
- `<after skip>` If positive, then the section heading is typeset on its own line and the value determines the amount of vertical space to leave below the heading. If negative, then the section heading is typeset run-in and the absolute value determines the amount of horizontal space to leave between the heading and the following text.
- `<style>` Commands to set the output style. Since the June 1996 release of L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> the *last* command in this argument may be a command such as `\MakeUppercase` or `\fbox` that takes an argument. The section heading will be supplied as the argument to this command. So setting this to, say, «`\bfseries\MakeUppercase`» would produce bold, uppercase headings.
- `<toc-heading>` The optional string to be output in the table of contents (toc). If not given, the value from `<heading>` is used.
- `<heading>` The heading text to be output in the text body.

These parameters are used also in more high-level sectioning macros up to the familiar user level commands defined below.

```
1089 \def\@sect#1#2#3#4#5#6[#7]#8{%
1090   \ifnum #2>\c@secnumdepth
1091     \let\@svsec\@empty
1092   \else
1093     \refstepcounter{#1}%
```

Since `\@secntformat` might end with an improper `\hskip` which is scanning forward for plus or minus we end the definition of `\@svsec` with `\relax` as a precaution.

```
1094   \protected@edef\@svsec{\@secntformat{#1}}%
1095   \fi
1096   \@tempskipa #5\relax
1097   \ifdim \@tempskipa>\z@
```

If `after skip` is positive, then its value denotes the amount of vertical skip to leave below the heading:

```
1098   \begingroup
1099     #6{\noindent%
```



```

1100      \@hangfrom{\hskip #3\relax\@svsec}%
1101      \raggedright
1102      \interlinepenalty\@M
1103      \strut#8\strut
1104      \@@par}%
1105  \endgroup
1106  \csname #1mark\endcsname{#7}%
1107  \addcontentsline{toc}{#1}{%
1108    \ifnum #2>\c@secnumdepth \else
1109      \protect\numberline{\csname the#1\endcsname}%
1110    \fi
1111    #7}%
1112  \else

```

If `afterskip` is negative, the its absolute value indicates the amount of horizontal skip to leave to the right of the run-in heading.

```

1113  \def\@svsechd{%
1114    #6{\hskip #3\relax
1115    \@svsec #8}%
1116    \csname #1mark\endcsname{#7}%
1117    \addcontentsline{toc}{#1}{%
1118      \ifnum #2>\c@secnumdepth \else
1119        \protect\numberline{\csname the#1\endcsname}%
1120      \fi
1121      #7}}%
1122  \fi
1123  \@xsect{#5}}

```

`\@ssect` The mechanism is very similar for *starred* sectioning commands, but there are few parameters.

#### Syntax:

```

\@ssect{<#1: indent>}{<#2: beforeskip>}{<#3: afterskip>}
      {<#4: style>}{<#5: heading>}

```

See also the list on p. 48.

```

1124 \def\@ssect#1#2#3#4#5{%
1125   \@tempskipa #3\relax
1126   \ifdim \@tempskipa>\z@
1127     \begingroup
1128       #4{\noindent%
1129         \hskip #1\relax
1130         \noindent%
1131         \parbox[t]{\linewidth}{%
1132           \raggedright\interlinepenalty\@M#5\strut}\@@par}%
1133     \endgroup
1134   \else
1135     \def\@svsechd{#4{\hskip #1\relax #5}}%
1136   \fi
1137   \@xsect{#3}}

```

`\@secntformat` This formats the counters (including any whitespace) of sectioning headers.

```
1138 \def\@secntformat#1{%  
1139   \csname the#1\endcsname%  
1140   \relax\ \ }%
```

`\section` These are the sectioning commands, all being built on top of `\@startsection`.

**Syntax:**

```
\@startsection{<#1: name>}{<#2: level>}  
  {<#3: indent>}{<#4: beforekip>}{<#5: afterskip>}  
  {<#6: style>}
```

See also the list on p. 48.

All the user level sectioning commands are defined using `\@startsection`.

Normally the corresponding section level counter is incremented and printed out; the exact output is determined by the definition of the corresponding `\the...` macro. Additionally, the command uses the counter `secnumdepth` to determine the highest section level to be numbered at all. If an asterisk (\*) follows the command, then the corresponding section level counter is *not* used and *no* [*altheading*] argument is allowed.

```
1141 \def\section{\@startsection{section}%  
1142   {1}{\z@}%  
1143   {-1\baselineskip plus -2mm minus -2mm}%  
1144   {.5\baselineskip plus .25\baselineskip minus .125\baselineskip}%  
1145   {\sec@font}}%
```

`\subsection`

```
1146 \def\subsection{\@startsection{subsection}%  
1147   {2}{\z@}%  
1148   {-3mm plus -2mm minus -1.5mm}%  
1149   {.25\baselineskip plus .125\baselineskip minus .125\baselineskip}%  
1150   {\sec@font}}%
```

`\subsubsection`

```
1151 \def\subsubsection{\@startsection{subsubsection}%  
1152   {3}{\z@}%  
1153   {-3mm plus -2mm minus -1mm}%  
1154   {1sp}%  
1155   {\sec@font}}%
```

`\paragraph`

```
1156 \def\paragraph{\@startsection{paragraph}%  
1157   {4}{\z@}%  
1158   {-1.5mm plus -1mm minus -0.75mm}%  
1159   {1sp}%  
1160   {\para@font}}%
```

`\subparagraph`

```
1161 \def\subparagraph{\@startsection{subparagraph}%  
1162   {5}{\z@}%  
1163   {-1.5mm}%  
1164   {-1em}%  
1165   {\para@font}}%
```

### 19.9.9 The table of contents

`\tableofcontents` This typesets the table of contents (ToC). First the page style is set and the title line is typeset, . . .

```
1166 \def\tableofcontents{%  
1167   \onecolumn  
1168   \pagestyle{emisaeditorial}%  
1169   \footruleon  
1170   \title{Table of Contents}%  
1171   \null  
1172   \vskip10mm  
1173   \maketitle  
1174   \vskip15mm  
1175   \bgroup
```

. . . then, after some more adjustments, the entries are read from `\jobname.toc` using `\@starttoc{toc}` and output.

```
1176   \parindent\z@  
1177   \parskip\z@  
1178   \@starttoc{toc}%  
1179   \egroup  
1180   \onecolumn  
1181 }
```

`\l@article` These two routines output content lines to the ToC.

```
\l@editorialcontent 1182 \newcommand*\l@article{%  
1183   \if!\@subtitle!  
1184     \addtocentry{\@tocauthor}{\thepage}{\@toctitle}%  
1185   \else  
1186     \addtocentry{\@tocauthor}{\thepage}{\@toctitle\ --\ \@tocsubtitle}%  
1187   \fi}%  
1188 \newcommand*\l@editorialcontent{%  
1189   \addtocentry{\@toctitle}{\thepage}{}}%
```

`\addtocentry` `\addtocentry` adds an entry using the typical EMISA layout to the contents listing of choice (default: ToC).

```
1190 \newcommand*\addtocentry[4][toc]{%  
1191   \addtocontents{#1}{\string\emisa@tocentry{#2}{#3}{#4}}}%
```

`\emisa@tocentry` `\emisa@tocentry` typesets that entry.

```
1192 \newcommand{\emisa@tocentry}[3]{%
1193   \makebox[\textwidth][l]{%
1194     \parbox[t]{72.5mm-\@pnumwidth}{\raggedright\textbf{#1}}%
1195     \makebox[\@pnumwidth][r]{\textbf{#2}}%
1196     \hfill
1197     \parbox[t]{85mm}{\raggedright#3}}%
1198   \vspace{3mm}}%
```

The output of ToC entries of level -1 (`\part`) and above is suppressed.

```
1199 \setcounter{tocdepth}{-2}
```

### 19.9.10 A few abbreviations

`\ie` Macros for a couple of abbreviations used quite frequently.

```
\eg 1200 \newcommand*{\emisa@abbrv}[1]{#1\@xspace}
\cf 1201 \newcommand*{\emisa@abbrv}[2]{\gdef#1{\emisa@abbrv{#2}}}
\etal 1202 \newcommand*{\emisa@initialism}[1]{\textsc{#1}\xspace}
\emisa@abbrv 1203 \newcommand*{\emisa@initialism}[2]{\gdef#1{\emisa@initialism{#2}}}
\emisa@abbrv 1204 \newcommand*{\ie}{\emisa@abbrv{i.\,e.}}
\emisa@initialism 1205 \newcommand*{\eg}{\emisa@abbrv{e.\,g.}}
\emisa@initialism 1206 \newcommand*{\cf}{\emisa@abbrv{cf.}}
\OMG 1207 \newcommand*{\etal}{\emisa@abbrv{et~al.}}
\BPM 1208 \newcommand*{\OMG}{\emisa@initialism{omg}}
\BPMN 1209 \newcommand*{\BPM}{\emisa@initialism{bpm}}
\UML 1210 \newcommand*{\BPMN}{\emisa@initialism{bpmn}}
1211 \newcommand*{\UML}{\emisa@initialism{uml}}
```

### 19.9.11 Other macros defined by EMISA

`\meta` Macros for convenience

```
\type 1212 \newcommand{\meta}[1]{\ttfamily\small #1} % designate a meta type (meta class)
1213 \newcommand{\type}[1]{\textsf{#1}} % designate a type (class)
```

## 19.10 Bibliographies

The infrastructure for that is already present in L<sup>A</sup>T<sub>E</sub>X [18, ltbib1.dtx] so we have to tinker with just a couple of things.

`\bibliography` bibl<sub>at</sub>ex defines this macro in a way that it prescribes the bibliography data base(s) globally for the whole of the document. As we need a means to use different bibliography data bases with different articles, we redefine `\bibliography` such that it (1) works globally (bibl<sub>at</sub>ex style), when used in the preamble; (2) works locally in the document body (as defined here); and (3) appends locally to any globally given bibliography data base(s).

Point 1 is met simply by postponing the redefinition until `\begin{document}`. That way we have the unchanged behaviour in the preamble and the new one after that.

Points 2 and 3 lead to redefining this macro the same way as it was (in principle; see the original definition in `biblatex.sty`) but limited to a local scope.

```

1214 \def\@tempa#1\do\addbibresource#2\nil{%
1215     \ifx\relax#2\relax
1216     \else
1217     \def\@tempa##1\do\addbibresource##2\nil{\def\@preamblecmds{##1##2}}%
1218     \expandafter\@tempa\@preamblecmds\nil
1219     \fi
1220 }
1221 \expandafter\@tempa\@preamblecmds\do\addbibresource\nil
1222 \AfterEndPreamble{%
1223     \DeclareRobustCommand{\bibliography}[1]{%
1224         \addbibresource{#1}}%
1225 }%

1226 \renewcommand{\fps@figure}{htbp}
1227 \renewcommand{\fps@table}{htbp}
1228 \tolerance 1414
1229 \hbadness 1414
1230 \emergencystretch 1.5em
1231 \hfuzz 0.3pt
1232 \widowpenalty=10000
1233 \displaywidowpenalty=10000
1234 \clubpenalty=5000
1235 \interfootnotelinepenalty=9999
1236 \brokenpenalty=2000
1237 \vfuzz \hfuzz

```

Here, the generation of the main class module is paused by the first tag (there are more pieces below); instead, generating a few biblatex-related code files starts with the second tag.

```

1238 </class>
1239 <*biblatex>

```

### 19.10.1 The EMISA bibliography style

A biblatex *bibliography style* is a set of macros used to output the entries in the bibliography. Bibliography styles are defined in files with the suffix `bbx`. The selected one is loaded at the end of the biblatex package.

Here we produce the EMISA bibliography style by the not so very surprising name `emisa.bbx`. This file will be generated on installation from the following code lines between the `<*bbx>` and `</bbx>` meta-tags.

```

1240 <*bbx>

```

We start by declaring the file name and date.

```

1241 \ProvidesFile{emisa.bbx}[2016/02/06 2.0 EMISA bibliography style]

```

The EMISA bibliography style is built on top of the standard style `authoryear.bbx` being loaded here

...

```
1242 \RequireBibliographyStyle{authoryear}
```

... to be expanded and modified in the following.

`\bibitemlabel` The macro `\bibitemlabel` represents the formatting of the `\bibitem` labels.

```
1243 \newcommand*{\bibitemlabel}[1]{%
```

```
1244 \normalfont #1}
```

`thebibliography` The implementation of the `thebibliography` environment typically makes use of the generic list environment. First a few length registers needed internally are adjusted. Note the infix notation used in some declarations facilitated by the `calc` package.

```
1245 \defbibenvironment{bibliography}
```

```
1246 {\list{}}%
```

```
1247 {\setlength{\labelwidth}{\z@}%
```

```
1248 \setlength{\leftmargin}{\z@}%
```

```
1249 \setlength{\itemindent}{-\leftmargin}%
```

```
1250 \setlength{\itemsep}{.5\baselineskip\@plus.2\baselineskip\@minus.2\baselineskip}%
```

```
1251 \setlength{\parsep}{\bibparsep}%
```

In the bibliography listings we want the name lists not to be abbreviated. Well, a name list containing more than 999 names *will* be abbreviated nevertheless; but then, having a name list *this* long might be a problem in itself.

```
1252 }%
```

```
1253 \let\makelabel\bibitemlabel
```

Adjusting short lines in small paragraphs can be rather hard, so some tolerance is added here.

```
1254 \tolerance 9999
```

```
1255 \emergencystretch 3em
```

```
1256 \hfuzz .5\p@
```

```
1257 \vfuzz\hfuzz
```

This is setting the normal (non-infinite) value of `\clubpenalty` for the whole of this environment, so we must reset its stored value also.

```
1258 \clubpenalty 4000
```

```
1259 \@clubpenalty\clubpenalty
```

```
1260 \widowpenalty 4000
```

This causes a «.» (period) not to produce an end-of-sentence space.

```
1261 \sfcode`\.\@m
```

Inside the bibliography we want no «and» in author lists.

```
1262 \renewcommand*{\finalnamedelim}{\addcomma\space}%
```

```
1263 }%
```

```
1264 {%
```

An empty `thebibliography` environment will cause a warning.

```
1265 \def\@noitemerr{\@latex@warning{Empty `thebibliography' environment}}%
```

```
1266 \endlist}
```

**Formatting commands: punctuation and spacing, blocks and units** The following code is taken from `biblatex.def` and modified at several places (see comments). These are some basic and/or generic macros and might be superseded afterwards by definitions taken from `standard.cbx` or `authoryear.cbx`.

The major segments of a bibliography entry are ‚Äòblocks’ and ‚Äòunits’. A block is the larger segment of the two, a unit is shorter or at most equal in length. For example, the values of fields such as title or note usually form a unit which is separated from subsequent data by a period or a comma. A block may comprise several fields which are treated as separate units, for example publisher, location, and year. An entry is segmented by inserting `\newblock` and `\newunit` commands at suitable places and `\finentry` at the very end. The actual printed output of these is defined in the corresponding `\. . .punct` macros.

The following commands add punctuation marks but automatically prevent doubling and remove preceding whitespace. Note that the behavior described below is the package default which is adjustable using `\DeclarePunctuationPairs`. Just the commands used in EMISA are discussed here.

**\addperiod** adds a period unless it is preceded by an abbreviation dot or any other punctuation mark.

This command may also be used to turn a previously inserted abbreviation dot into a period, for example at the end of a sentence.

**\addcomma** adds a comma unless it is preceded by another comma, a semicolon, a colon, or a period.

**\addcolon** adds a colon unless it is preceded by a comma, a semicolon, another colon, or a period.

**\isdot** turns a previously inserted literal period into an abbreviation dot. In contrast to `\adddot`, nothing is inserted if this command is not preceded by a period.

The following macros insert space.

**\addspace** adds a breakable interword space.

**\addhighpenspace** adds a space penalized by the value of the `highnamepenalty` counter which holds a penalty affecting line-breaking in names; please refer to the `biblatex` manual for explanation. The counter is initialized to `\hyphenpenalty` at load-time. Higher values lower the number of linebreaks and vice versa. The traditional `BTEX` behavior (no linebreaks at `highnamepenalty` breakpoints) is reached by setting it to ‚Äòinfinite’ ( $\geq 10\,000$ ).

**\addlowpenspace** adds a space penalized by the value of the `lownamepenalty` counter, similar to `highnamepenalty`. The counter is initialized to `0.5\hyphenpenalty` at load-time.

`\newunitpunct` The separator inserted between “units” in the sense explained above. Here, the definition is just a space.

```
1268 \renewcommand*{\newunitpunct}{\space}
```

`\finentrypunct` This inserts the punctuation printed at the very end of every bibliography entry. Here it is simply nothing.

```
1269 \renewcommand*{\finentrypunct}{\relax}
```

`\bibsetup` is a generic hook controlling the (low-level) layout of the bibliography and the list of shorthands. The default definition should work fine in most cases.

```
1270 \renewcommand*{\bibsetup}{%
```

```
1271 \interlinepenalty=5000\relax}
```

```

1272 \widowpenalty=10000\relax
1273 \clubpenalty=10000\relax
1274 \biburlsetup
1275 \flushbottom
1276 \frenchspacing
1277 \sloppy}

```

The penalties above are not specific to biblatex but low-level TeX features.

- ▷ `\interlinepenalty` is the penalty assigned to page breaks within a paragraph (i. e., in this case, a bibliography entry);
- ▷ `\clubpenalty` is an additional penalty assigned to page breaks after the first line of a paragraph;
- ▷ `\widowpenalty` is an additional penalty assigned to page breaks before the last line of a paragraph.

Note that the value 10000 means «infinite» as far as TeX is concerned. Setting some penalty to 10000 will unconditionally suppress the respective breakpoint.

The net effect of the above settings is as follows. Breaking a bibliography entry across pages is discouraged, but not suppressed altogether. If a bibliography entry spans less than four lines, TeX will always keep it on one page. If it spans four or more lines, it may be broken across pages, provided that there are at least two lines on the page before and after the break.

These penalties should normally be used in conjunction with `\raggedbottom`. If you don't like that and remove `\raggedbottom` from the definition of `\bibsetup`, make sure to provide some stretchability between bibliography entries by setting `\bibitemsep` to a suitable value, e.g.:

```
\setlength{\bibitemsep}{0.5\baselineskip plus 0.5\baselineskip}
```

`\biburlsetup` This is some local setup in order to use `\url` properly.

To ease the job of folding long URLs into narrow columns the following code allows linebreaks after numbers as a last resort. The macro also allows breaks after hyphens and adjusts `\Urlmuskip` to add some stretchability to URL strings.

```

1278 \renewcommand*{\biburlsetup}{%
1279   \Urlmuskip=0mu plus 2mu\relax
1280   \mathchardef\UrlBreakPenalty=200\relax
1281   \mathchardef\UrlBigBreakPenalty=100\relax
1282   \mathchardef\UrlEmergencyPenalty=9000\relax
1283   \appto\UrlSpecials{%
1284     \do\0{\mathchar`\0\penalty\UrlEmergencyPenalty}%
1285     \do\1{\mathchar`\1\penalty\UrlEmergencyPenalty}%
1286     \do\2{\mathchar`\2\penalty\UrlEmergencyPenalty}%
1287     \do\3{\mathchar`\3\penalty\UrlEmergencyPenalty}%
1288     \do\4{\mathchar`\4\penalty\UrlEmergencyPenalty}%
1289     \do\5{\mathchar`\5\penalty\UrlEmergencyPenalty}%
1290     \do\6{\mathchar`\6\penalty\UrlEmergencyPenalty}%
1291     \do\7{\mathchar`\7\penalty\UrlEmergencyPenalty}%
1292     \do\8{\mathchar`\8\penalty\UrlEmergencyPenalty}%
1293     \do\9{\mathchar`\9\penalty\UrlEmergencyPenalty}}%
1294   \def\UrlBreaks{%

```



```

1295 \do\.\do\@\do\/\do\\do\!\do\_do\|\do\;\do>\do\]\do\)\do\}%
1296 \do\,\do\?\do\'do\+do\=do\#do\$do&do*do^do\"}%
1297 \def\UrlBigBreaks{\do\:\do\-%}

```

URLs are typeset in sans-serif script.

```

1298 \def\UrlFont{\sffamily}%
1299 }

```

For further details please see the documentation of the url package as well as the comments inside `url.sty`.

**Miscellaneous field formatting directives** This subsection introduces biblatex commands and utility macros used to define the formatting directives required by the data commands.

The following list shows a few frequently used ones; those more rarely used are described below.

**\DeclareFieldFormat[*<entry type>*]{*<format>*}{*<code>*}** defines the formatting code given in *<code>* to be executed by `\printfield` on processing the field *<format>*. The value of the field will be passed to *<code>* as its first and only argument. If an *<entry type>* is specified, the format is specific to that type; otherwise it applies to all entry types defined. The name of the field currently being processed is available in `\currentfield`.

**\DeclareFieldAlias[*<entry type>*]{*<alias>*}[*<format entry type>*]{*<format>*}** declares *<alias>* to be an alias of the field format *<format>*. If an *<entry type>* is specified, the alias is specific to that type. The *<format entry type>* is the entry type of the backend format. This is only required when declaring an alias of a type specific formatting directive.

**\bibstring[*<wrapper>*]{*<key>*}** prints the bibliography string identified by *<key>*. The string will be capitalized as required. Depending on the `abbreviate` package option, `\bibstring` prints the short or the long version of the string. If bibliography strings are nested, i. e., if `\bibstring` is used in another string, it will behave like `\bibxstring`. If the *<wrapper>* argument is given, the string is passed to the *<wrapper>* for formatting. This is intended for font commands such as `\emph`.

**\bibcpstring[*<wrapper>*]{*<key>*}** Similar to `\bibstring` but the string is always capitalized.

**\bibxstring{*<key>*}** is a simplified but expandable version of `\bibstring`. Note that this variant does not capitalize automatically, nor does it hook into the punctuation tracker. It is intended for special cases in which strings are nested or an expanded bibliography string is required in a test.

The `citetitle` format is used to output the title field in citations.

```

1300 \DeclareFieldFormat{citetitle}{#1}
1301 \DeclareFieldFormat[article]{citetitle}{#1\isdot}
1302 \DeclareFieldFormat[inbook]{citetitle}{#1\isdot}
1303 \DeclareFieldFormat[incollection]{citetitle}{#1\isdot}
1304 \DeclareFieldFormat[inproceedings]{citetitle}{#1\isdot}
1305 \DeclareFieldFormat[patent]{citetitle}{#1\isdot}
1306 \DeclareFieldFormat[thesis]{citetitle}{#1\isdot}
1307 \DeclareFieldFormat[unpublished]{citetitle}{#1\isdot}

```

The following field formats are used for output in bibliographies.

```

1308 \DeclareFieldFormat{booktitle}{#1\isdot}
1309 \DeclareFieldFormat{journaltitle}{#1}
1310 \DeclareFieldFormat{issuetitle}{#1}

```

```

1311 \DeclareFieldFormat{maintitle}{#1}
1312 \DeclareFieldFormat{title}{#1}
1313 \DeclareFieldFormat[article]{title}{#1\isdot}
1314 \DeclareFieldFormat[inbook]{title}{#1\isdot}
1315 \DeclareFieldFormat[incollection]{title}{#1\isdot}
1316 \DeclareFieldFormat[inproceedings]{title}{#1\isdot}
1317 \DeclareFieldFormat[patent]{title}{#1\isdot}
1318 \DeclareFieldFormat[thesis]{title}{#1\isdot}
1319 \DeclareFieldFormat[unpublished]{title}{#1\isdot}
1320 \DeclareFieldFormat{url}{\url{#1}}
1321 \DeclareFieldFormat{urldate}{\bibstring{urlseen}\addcolon\space#1}
1322 \DeclareFieldAlias[misc]{note}{urldate}
1323 \DeclareFieldAlias[report]{note}{urldate}
1324 \DeclareFieldAlias[thesis]{note}{urldate}
1325 \DeclareFieldFormat{version}{\bibcpstring{version}~#1}
1326 \DeclareFieldFormat{volume}{\bibcpstring{volume}~#1}
1327 \DeclareFieldFormat{volumes}{#1~\bibcpstring{volumes}}

```

**Formatting names and name lists** The following code morsels are taken from `biblatex.def` and modified.

The section employs special `biblatex` commands to (re)define or use macros in bibliography and citation styles.

**`\newbibmacro{<name>}[<arguments>][<optional>]{<definition>}`** defines a macro to be executed via `\usebibmacro` later. The syntax and argument handling of this command is very similar to `\newcommand` except that

- ▷ `<name>` may contain characters such as numbers and punctuation marks but no backslash, and
- ▷ `\newbibmacro` issues just a warning message if the macro is already defined, then falls back to `\renewbibmacro`.

**`\renewbibmacro{<name>}[<arguments>][<optional>]{<definition>}`** is similar to `\newbibmacro` but redefines `<name>`. If the macro is undefined, `\renewbibmacro` issues a warning message and falls back to `\newbibmacro`.

**`\usebibmacro{<name>}`** executes the `biblatex` macro `<name>`, as defined with `\newbibmacro`. If the macro takes any arguments, they are simply appended after `<name>`. `\usebibmacro` is robust.

All the formatting directives for name lists get the following «arguments»:

- #1 = last name
- #2 = last name (initials)
- #3 = first name
- #4 = first name (initials)
- #5 = name prefix, a.k.a. ‘von part’
- #6 = name prefix (initials)
- #7 = name affix, a.k.a. ‘junior part’
- #8 = name affix (initials)

This declares the output format of name lists to be used by `\printnames`.

```
1328 \DeclareNameFormat{emisa:names}{%  
1329   \usebibmacro{name:last-firstinit}{#1}{#4}{#5}{#7}%  
1330   \usebibmacro{name:andothers}}
```

This bibmacro formats the names of authors, editors or translators.

me:last-firstinit

```
bibmacro 1331 \newbibmacro*{name:last-firstinit}[4]{%  
1332   \usebibmacro{name:delim}{#2#3#1}%  
1333   \usebibmacro{name:hook}{#2#3#1}%
```

Formatting: name prefix ('von part'), ...

```
1334   \ifblank{#3}{}{%  
1335     \mkbibnameprefix{#3}%\isdot  
1336     \ifpunctmark{'}  
1337     {}  
1338     {\ifuseprefix{\addhighpenspace}{\addlowpenspace}}}%
```

... last name ...

```
1339   \mkbibnamelast{#1}\addhighpenspace
```

... name affix ('junior part'), ...

```
1340   \ifblank{#4}{}{\addlowpenspace\mkbibnameaffix{#4}\addlowpenspace}%
```

... and first name (initials).

```
1341   \ifblank{#2}{}{\mkbibnamefirst{#2}\isdot}%  
1342 }%
```

in: bibmacro This outputs the «in:» tag, as in bibliography entries for proceedings, collections, edited books and so on.

```
1343 \renewbibmacro*{in:}{%  
1344   \printtext{%  
1345     \bibcpstring{in}%  
1346     \intitlepunct}}
```

**Generic bibliography macros** In this subsection the generic bibmacros outputting the typical name fields in bibliographies are customised.

author bibmacro

```
1347 \renewbibmacro*{author}{%  
1348   \ifthenelse{\ifuseauthor\AND\NOT\ifnameundef{author}}  
1349     {\printnames{author}%  
1350     \iffieldundef{authortype}  
1351     {}  
1352     {\setunit{\addspace}%  
1353     \usebibmacro{authorstrg}}}  
1354   {}}}
```

editor bibmacro

```

1355 \renewbibmacro*{editor}{%
1356   \ifthenelse{\ifuseeditor\AND\NOT\ifnameundef{editor}}
1357     {\printnames{editor}%
1358      \setunit{\addspace}%
1359      \usebibmacro{editorstrg}%
1360      \clearname{editor}}
1361     {}

```

editor+others bibmacro

```

1362 \renewbibmacro*{editor+others}{%
1363   \ifthenelse{\ifuseeditor\AND\NOT\ifnameundef{editor}}
1364     {\printnames[emisa:names]{editor}%
1365      \setunit{\addspace}%
1366      \usebibmacro{editor+othersstrg}%
1367      \clearname{editor}}
1368   {}

```

translator bibmacro

```

1369 \renewbibmacro*{translator}{%
1370   \ifthenelse{\ifusetranslator\AND\NOT\ifnameundef{translator}}
1371     {\printnames{translator}%
1372      \setunit{\addspace}%
1373      \usebibmacro{translatorstr}%
1374      \clearname{translator}}
1375   {}

```

translator+others bibmacro

```

1376 \renewbibmacro*{translator+others}{%
1377   \ifthenelse{\ifusetranslator\AND\NOT\ifnameundef{translator}}
1378     {\printnames{translator}%
1379      \setunit{\addspace}%
1380      \usebibmacro{translator+othersstrg}%
1381      \clearname{translator}}
1382   {}

```

editor+othersstrg bibmacro

```

1383 \renewbibmacro*{editor+othersstrg}{%
1384   \iffieldundef{editortype}
1385     {\ifthenelse{\value{editor}>1\OR\ifandothers{editor}}
1386       {\def\abx@tempa{editors}}
1387       {\def\abx@tempa{editor}}}
1388     {\ifthenelse{\value{editor}>1\OR\ifandothers{editor}}
1389       {\edef\abx@tempa{\thefield{editortype}s}}
1390       {\edef\abx@tempa{\thefield{editortype}}}}}%
1391 \let\abx@tempb=\empty
1392 \ifnameequal{editor}{translator}
1393   {\appto\abx@tempa{tr}}%

```

```

1394 \appto\abx@tempb{\clearname{translator}}
1395 {}%
1396 \ifnamesequal{editor}{commentator}
1397 {\appto\abx@tempa{co}%
1398 \appto\abx@tempb{\clearname{commentator}}}
1399 {\ifnamesequal{editor}{annotator}
1400 {\appto\abx@tempa{an}%
1401 \appto\abx@tempb{\clearname{annotator}}}
1402 {}}%
1403 \ifnamesequal{editor}{introduction}
1404 {\appto\abx@tempa{in}%
1405 \appto\abx@tempb{\clearname{introduction}}}
1406 {\ifnamesequal{editor}{foreword}
1407 {\appto\abx@tempa{fo}%
1408 \appto\abx@tempb{\clearname{foreword}}}
1409 {\ifnamesequal{editor}{afterword}
1410 {\appto\abx@tempa{af}%
1411 \appto\abx@tempb{\clearname{afterword}}}
1412 {}}%
1413 \ifbibxstring{\abx@tempa}
1414 {\bibstring[\mkbibparens]{\abx@tempa}%
1415 \abx@tempb}
1416 {\usebibmacro{editorstrg}}}%

```

emisa:url+urldate bibmacro

```

1417 \newbibmacro*{emisa:url+urldate}{%
1418 \iffieldundef{url}
1419 {\printfield{howpublished}}
1420 {\printfield{url}}
1421 \setunit*{\addperiod\space}\newblock
1422 \iffieldundef{urlyear}
1423 {\printfield{note}}
1424 {\printtext[urldate]{\printurldate}}}

```

emisa:url+type+version+urldate

bibmacro

```

1425 \newbibmacro*{emisa:url+type+version+urldate}{%
1426 \iffieldundef{url}%
1427 {\printfield{url}}
1428 {\printfield{howpublished}}%
1429 \setunit*{\addcomma\space}\newblock
1430 \printfield{type}%
1431 \setunit*{\addcomma\space}\newblock
1432 \printfield{version}%
1433 \setunit*{\addcomma\space}\newblock
1434 \iffieldundef{urlyear}
1435 {\printfield{note}}
1436 {\printtext[urldate]{\printurldate}}}

```

This is the end of the code taken (and modified) from biblatex.def.

**Code from standard.bbx** The following code is taken from `standard.bbx` and modified at several places (see comments). This sections's definitions supersede those taken from `standard.cbx` and might in turn be superseded by the following code from `authoryear.bbx`.

`finentry bibmacro`

```
1437 \renewbibmacro*{finentry}{}%
```

`article bibdriver`

```
1438 \DeclareBibliographyDriver{article}{%
1439   \usebibmacro{bibindex}%
1440   \usebibmacro{begentry}%
1441   \usebibmacro{author/translator+others}%
1442   \setunit{\labelnamepunct}\newblock
1443   \usebibmacro{title}%
1444   \newunit
1445   \printlist{language}%
1446   \newunit\newblock
1447   \usebibmacro{bytranslator+others}%
1448   \newunit\newblock
1449   \printfield{version}%
1450   \setunit{\addperiod\space}%
1451   \usebibmacro{in:}%
1452   \usebibmacro{journal+issuetitle}%
1453   \newunit\newblock
1454   \usebibmacro{editor+others}%
1455   \newunit\newblock
1456   \usebibmacro{note+pages}%
1457   \newunit\newblock
1458   \iftoggle{bbx:isbn}
1459     {\printfield{issn}}
1460     {}%
1461   \newunit\newblock
1462   \usebibmacro{doi+eprint+url}%
1463   \newunit\newblock
1464   \usebibmacro{addendum+pubstate}%
1465   \newunit\newblock
1466   \usebibmacro{pageref}%
1467   \usebibmacro{finentry}}
```

`book bibdriver`

```
1468 \DeclareBibliographyDriver{book}{%
1469   \usebibmacro{bibindex}%
1470   \usebibmacro{begentry}%
1471   \usebibmacro{author/editor+others/translator+others}%
1472   \setunit{\labelnamepunct}\newblock
1473   \usebibmacro{maintitle+title}%
1474   \newunit
1475   \printlist{language}%
```

```

1476 \newunit\newblock
1477 \usebibmacro{editor+others}%
1478 \setunit{\addcomma\space}%
1479 \newblock
1480 \printfield{edition}%
1481 \setunit{\addperiod\space}%
1482 \newblock
1483 \usebibmacro{series+number}%
1484 \newunit
1485 \newblock
1486 \iffieldundef{maintitle}
1487   {\printfield{volume}%
1488    \printfield{part}}
1489   {}%
1490 \newunit
1491 \printfield{volumes}%
1492 \setunit{\addperiod\space}%
1493 \newblock
1494 \printfield{note}%
1495 \setunit{\addperiod\space}%
1496 \newblock
1497 \usebibmacro{publisher+location+date}%
1498 \newunit\newblock
1499 \usebibmacro{chapter+pages}%
1500 \newunit
1501 \printfield{pagetotal}%
1502 \newunit\newblock
1503 \iftoggle{bbx:isbn}
1504   {\printfield{isbn}}
1505   {}%
1506 \newunit\newblock
1507 \usebibmacro{doi+eprint+url}%
1508 \newunit\newblock
1509 \usebibmacro{addendum+pubstate}%
1510 \newunit\newblock
1511 \usebibmacro{pageref}%
1512 \usebibmacro{finentry}}

```

#### booklet bibdriver

```

1513 \DeclareBibliographyDriver{booklet}{%
1514   \usebibmacro{bibindex}%
1515   \usebibmacro{begentry}%
1516   \usebibmacro{author/editor+others/translator+others}%
1517   \setunit{\labelnamepunct}\newblock
1518   \usebibmacro{title}%
1519   \newunit
1520   \printlist{language}%
1521   \newunit\newblock
1522   \usebibmacro{editor+others}%

```

```

1523 \newunit\newblock
1524 \printfield{howpublished}%
1525 \newunit\newblock
1526 \printfield{type}%
1527 \newunit\newblock
1528 \printfield{note}%
1529 \newunit\newblock
1530 \usebibmacro{location+date}%
1531 \newunit\newblock
1532 \usebibmacro{chapter+pages}%
1533 \newunit
1534 \printfield{pagetotal}%
1535 \newunit\newblock
1536 \usebibmacro{doi+eprint+url}%
1537 \newunit\newblock
1538 \usebibmacro{addendum+pubstate}%
1539 \newunit\newblock
1540 \usebibmacro{pageref}%
1541 \usebibmacro{finentry}}

```

#### collection bibdriver

```

1542 \DeclareBibliographyDriver{collection}{%
1543 \usebibmacro{bibindex}%
1544 \usebibmacro{begentry}%
1545 \usebibmacro{editor+others}%
1546 \setunit{\labelnamepunct}\newblock
1547 \usebibmacro{maintitle+title}%
1548 \newunit
1549 \printlist{language}%
1550 \newunit\newblock
1551 \usebibmacro{editor+others}%
1552 \setunit{\addcomma\space}%
1553 \newblock
1554 \printfield{edition}%
1555 \setunit{\addperiod\space}%
1556 \newblock
1557 \usebibmacro{series+number}%
1558 \newunit
1559 \newblock
1560 \iffieldundef{maintitle}
1561 {\printfield{volume}%
1562 \printfield{part}}
1563 {}%
1564 \newunit
1565 \printfield{volumes}%
1566 \setunit{\addperiod\space}%
1567 \newblock
1568 \printfield{note}%
1569 \setunit{\addperiod\space}%

```



```

1570 \newblock
1571 \usebibmacro{publisher+location+date}%
1572 \newunit\newblock
1573 \usebibmacro{chapter+pages}%
1574 \newunit
1575 \printfield{pagetotal}%
1576 \newunit\newblock
1577 \iftoggle{bbx:isbn}
1578   {\printfield{isbn}}
1579   {}%
1580 \newunit\newblock
1581 \usebibmacro{doi+eprint+url}%
1582 \newunit\newblock
1583 \usebibmacro{addendum+pubstate}%
1584 \newunit\newblock
1585 \usebibmacro{pageref}%
1586 \usebibmacro{finentry}}

```

#### inbook bibdriver

```

1587 \DeclareBibliographyDriver{inbook}{%
1588   \usebibmacro{bibindex}%
1589   \usebibmacro{begentry}%
1590   \usebibmacro{author/translator+others}%
1591   \setunit{\labelnamepunct}\newblock
1592   \usebibmacro{title}%
1593   \newunit
1594   \printlist{language}%
1595   \newunit\newblock
1596   \usebibmacro{in:}%
1597   \usebibmacro{bybookauthor}%
1598   \newunit\newblock
1599   \usebibmacro{maintitle+booktitle}%
1600   \newunit\newblock
1601   \usebibmacro{editor+others}%
1602   \setunit{\addcomma\space}%
1603   \newblock
1604   \printfield{edition}%
1605   \newunit
1606   \iffieldundef{maintitle}
1607     {\printfield{volume}%
1608       \printfield{part}}
1609     {}%
1610   \newunit
1611   \printfield{volumes}%
1612   \newunit\newblock
1613   \usebibmacro{series+number}%
1614   \newunit\newblock
1615   \printfield{note}%
1616   \newunit\newblock

```

```

1617 \usebibmacro{publisher+location+date}%
1618 \newunit\newblock
1619 \usebibmacro{chapter+pages}%
1620 \newunit\newblock
1621 \iftoggle{bbx:isbn}
1622   {\printfield{isbn}}
1623   {}%
1624 \newunit\newblock
1625 \usebibmacro{doi+eprint+url}%
1626 \newunit\newblock
1627 \usebibmacro{addendum+pubstate}%
1628 \newunit\newblock
1629 \usebibmacro{pageref}%
1630 \usebibmacro{finentry}}

```

#### incollection bibdriver

```

1631 \DeclareBibliographyDriver{incollection}{%
1632   \usebibmacro{bibindex}%
1633   \usebibmacro{begentry}%
1634   \usebibmacro{author/translator+others}%
1635   \setunit{\labelnamepunct}\newblock
1636   \usebibmacro{title}%
1637   \setunit{\addcomma\space}%
1638   \printlist{language}%

```

Period after title, if any

```

1639   \setunit{\addperiod\space}%
1640   \usebibmacro{in:}%
1641   \usebibmacro{editor+others}%
1642   \setunit{\addspace}%
1643   \newblock
1644   \usebibmacro{byauthor}%
1645   \newblock
1646   \usebibmacro{maintitle+booktitle}%

```

Colon after maintitle, if any

```

1647   \newblock
1648   \printfield{edition}%
1649   \setunit{\addperiod\space}%
1650   \newblock
1651   \usebibmacro{series+number}%
1652   \newunit
1653   \newblock
1654   \iffieldundef{maintitle}
1655     {\printfield{volume}%
1656       \printfield{part}}
1657     {}%
1658   \newunit
1659   \printfield{volumes}%

```

```

1660 \setunit{\addperiod\space}%
1661 \newblock
1662 \printfield{note}%
1663 \setunit{\addperiod\space}%
1664 \newblock
1665 \usebibmacro{publisher+location+date}%
1666 \setunit*{\addcomma\space}%
1667 \newblock
1668 \usebibmacro{chapter+pages}%
1669 \newunit\newblock
1670 \iftoggle{bbx:isbn}
1671   {\printfield{isbn}}
1672   {}%
1673 \newunit\newblock
1674 \usebibmacro{doi+eprint+url}%
1675 \newunit\newblock
1676 \usebibmacro{addendum+pubstate}%
1677 \newunit\newblock
1678 \usebibmacro{pageref}%
1679 \usebibmacro{finentry}}

```

#### inproceedings bibdriver

```

1680 \DeclareBibliographyDriver{inproceedings}{%
1681   \usebibmacro{bibindex}%
1682   \usebibmacro{begentry}%
1683   \usebibmacro{author/translator+others}%
1684   \setunit{\labelnamepunct}%
1685   \newblock
1686   \usebibmacro{title}%
1687   \setunit{\addcomma\space}%
1688   \printlist{language}%
1689   \newblock
1690   \usebibmacro{byauthor}%

```

Period after title, if any

```

1691   \setunit{\addperiod\space}%
1692   \usebibmacro{in:}%
1693   \usebibmacro{editor+others}%
1694   \setunit{\addspace}%
1695   \newblock
1696   \usebibmacro{byauthor}%
1697   \newblock
1698   \usebibmacro{maintitle+booktitle}%

```

Colon after maintitle, if any

```

1699   \newblock
1700   \usebibmacro{event+venue+date}%
1701   \setunit{\addperiod\space}%
1702   \newblock

```

```

1703 \usebibmacro{series+number}%
1704 \newunit
1705 \newblock
1706 \iffieldundef{maintitle}
1707   {\printfield{volume}%
1708    \printfield{part}}
1709   {}%
1710 \newunit
1711 \printfield{volumes}%
1712 \setunit{\addperiod\space}%
1713 \newblock
1714 \printfield{note}%
1715 \setunit{\addperiod\space}%
1716 \newblock
1717 \printlist{organization}%
1718 \setunit{\addperiod\space}%
1719 \newblock
1720 \usebibmacro{publisher+location+date}%
1721 \setunit{\addcomma\space}%
1722 \newblock
1723 \usebibmacro{chapter+pages}%
1724 \newunit\newblock
1725 \iftoggle{bbx:isbn}
1726   {\printfield{isbn}}
1727   {}%
1728 \newunit\newblock
1729 \usebibmacro{doi+eprint+url}%
1730 \newunit\newblock
1731 \usebibmacro{addendum+pubstate}%
1732 \newunit\newblock
1733 \usebibmacro{pageref}%
1734 \usebibmacro{finentry}}

```

#### manual bibdriver

```

1735 \DeclareBibliographyDriver{manual}{%
1736   \usebibmacro{bibindex}%
1737   \usebibmacro{begentry}%
1738   \usebibmacro{author/editor}%
1739   \setunit{\labelnamepunct}\newblock
1740   \usebibmacro{title}%
1741   \newunit
1742   \printlist{language}%
1743   \newunit\newblock
1744   \usebibmacro{byeditor}%
1745   \setunit{\addcomma\space}%
1746   \newblock
1747   \printfield{edition}%
1748   \newunit\newblock
1749   \usebibmacro{series+number}%

```

```

1750 \newunit\newblock
1751 \printfield{type}%
1752 \newunit
1753 \printfield{version}%
1754 \newunit
1755 \printfield{note}%
1756 \newunit\newblock
1757 \printlist{organization}%
1758 \newunit
1759 \usebibmacro{publisher+location+date}%
1760 \newunit\newblock
1761 \usebibmacro{chapter+pages}%
1762 \newunit
1763 \printfield{pagetotal}%
1764 \newunit\newblock
1765 \iftoggle{bbx:isbn}
1766   {\printfield{isbn}}
1767   {}%
1768 \newunit\newblock
1769 \usebibmacro{doi+eprint+url}%
1770 \newunit\newblock
1771 \usebibmacro{addendum+pubstate}%
1772 \newunit\newblock
1773 \usebibmacro{pageref}%
1774 \usebibmacro{finentry}}

```

#### misc bibdriver

```

1775 \DeclareBibliographyDriver{misc}{%
1776   \usebibmacro{bibindex}%
1777   \usebibmacro{begentry}%
1778   \usebibmacro{author/editor+others/translator+others}%
1779   \setunit{\labelnamepunct}\newblock
1780   \usebibmacro{title}%
1781   \newunit
1782   \printlist{language}%

```

Period after title, if any

```

1783   \setunit{\addperiod\space}%
1784   \usebibmacro{emisa:url+urldate}%
1785   \usebibmacro{finentry}}

```

#### online bibdriver

```

1786 \DeclareBibliographyDriver{online}{%
1787   \usebibmacro{bibindex}%
1788   \usebibmacro{begentry}%
1789   \usebibmacro{author/editor+others/translator+others}%
1790   \setunit{\labelnamepunct}\newblock
1791   \usebibmacro{title}%
1792   \newunit

```

```

1793 \printlist{language}%
1794 \newunit\newblock
1795 \usebibmacro{editor+others}%
1796 \newunit\newblock
1797 \printfield{version}%
1798 \newunit
1799 \printfield{note}%
1800 \newunit\newblock
1801 \printlist{organization}%
1802 \newunit\newblock
1803 \usebibmacro{date}%
1804 \newunit\newblock
1805 \iftoggle{bbx:eprint}
1806   {\usebibmacro{eprint}}
1807   {}%
1808 \newunit\newblock
1809 \usebibmacro{url+urldate}%
1810 \newunit\newblock
1811 \usebibmacro{addendum+pubstate}%
1812 \newunit\newblock
1813 \usebibmacro{pageref}%
1814 \usebibmacro{finentry}}

```

#### patent bibdriver

```

1815 \DeclareBibliographyDriver{patent}{%
1816   \usebibmacro{bibindex}%
1817   \usebibmacro{begentry}%
1818   \usebibmacro{author}%
1819   \setunit{\labelnamepunct}\newblock
1820   \usebibmacro{title}%
1821   \newunit
1822   \printlist{language}%
1823   \newunit\newblock
1824   \printfield{type}%
1825   \setunit*{\addspace}%
1826   \printfield{number}%
1827   \iflistundef{location}
1828     {}
1829     {\setunit*{\addspace}%
1830      \printtext[parens]{%
1831        \printlist[][-\value{listtotal}]{location}}}%
1832   \newunit\newblock
1833   \usebibmacro{byholder}%
1834   \newunit\newblock
1835   \printfield{note}%
1836   \newunit\newblock
1837   \usebibmacro{date}%
1838   \newunit\newblock
1839   \iftoggle{bbx:url}

```

```

1840     {\usebibmacro{url+urldate}}
1841     {}%
1842 \newunit\newblock
1843 \usebibmacro{addendum+pubstate}%
1844 \newunit\newblock
1845 \usebibmacro{pageref}%
1846 \usebibmacro{finentry}}

```

#### periodical bibdriver

```

1847 \DeclareBibliographyDriver{periodical}{%
1848   \usebibmacro{bibindex}%
1849   \usebibmacro{begentry}%
1850   \usebibmacro{editor}%
1851   \setunit{\labelnamepunct}\newblock
1852   \usebibmacro{title+issuetitle}%
1853   \newunit
1854   \printlist{language}%
1855   \newunit\newblock
1856   \usebibmacro{byeditor}%
1857   \newunit\newblock
1858   \printfield{note}%
1859   \newunit\newblock
1860   \iftoggle{bbx:isbn}
1861     {\printfield{issn}}
1862     {}%
1863   \newunit\newblock
1864   \usebibmacro{doi+eprint+url}%
1865   \newunit\newblock
1866   \usebibmacro{addendum+pubstate}%
1867   \newunit\newblock
1868   \usebibmacro{pageref}%
1869   \usebibmacro{finentry}}

```

#### proceedings bibdriver

```

1870 \DeclareBibliographyDriver{proceedings}{%
1871   \usebibmacro{bibindex}%
1872   \usebibmacro{begentry}%
1873   \usebibmacro{editor+others}%
1874   \setunit{\labelnamepunct}\newblock
1875   \usebibmacro{maintitle+title}%
1876   \newunit
1877   \printlist{language}%
1878   \newunit\newblock
1879   \usebibmacro{event+venue+date}%
1880   \newunit\newblock
1881   \usebibmacro{editor+others}%
1882   \setunit{\addperiod\space}%
1883   \newblock

```

```

1884 \usebibmacro{series+number}%
1885 \newunit
1886 \newblock
1887 \iffieldundef{maintitle}
1888   {\printfield{volume}%
1889    \printfield{part}}
1890   {}%
1891 \newunit
1892 \printfield{volumes}%
1893 \setunit{\addperiod\space}%
1894 \newblock
1895 \printfield{note}%
1896 \setunit{\addperiod\space}%
1897 \newblock
1898 \printlist{organization}%
1899 \setunit{\addperiod\space}%
1900 \newblock
1901 \usebibmacro{publisher+location+date}%
1902 \newblock
1903 \usebibmacro{chapter+pages}%
1904 \newunit
1905 \printfield{pagetotal}%
1906 \newunit\newblock
1907 \iftoggle{bbx:isbn}
1908   {\printfield{isbn}}
1909   {}%
1910 \newunit\newblock
1911 \usebibmacro{doi+eprint+url}%
1912 \newunit\newblock
1913 \usebibmacro{addendum+pubstate}%
1914 \newunit\newblock
1915 \usebibmacro{pageref}%
1916 \usebibmacro{finentry}}

```

#### Technical reports

author  
title  
year  
type  
number  
institution  
address  
url  
note

report bibdriver

```

1917 \DeclareBibliographyDriver{report}{%
1918   \usebibmacro{bibindex}%

```



```

1919 \usebibmacro{begentry}%
1920 \usebibmacro{author}%
1921 \setunit{\labelnamepunct}\newblock
1922 \usebibmacro{title}%
1923 \setunit{\addperiod\space}%
1924 \printfield{type}%
1925 \newunit
1926 \printfield{number}%
1927 \setunit{\addperiod\space}%
1928 \printlist{institution}%
1929 \setunit*{\addperiod\space}\newblock
1930 \printlist{location}%
1931 \setunit*{\addperiod\space}\newblock
1932 \printfield{url}%
1933 \setunit*{\addperiod\space}\newblock
1934 \printfield{note}%
1935 \newunit\newblock
1936 \usebibmacro{finentry}}%
1937 \DeclareBibliographyAlias{techreport}{report}%

```

#### thesis bibdriver

```

1938 \DeclareBibliographyDriver{thesis}{%
1939 \usebibmacro{bibindex}%
1940 \usebibmacro{begentry}%
1941 \usebibmacro{author}%
1942 \setunit{\labelnamepunct}\newblock
1943 \usebibmacro{title}%
1944 \newunit
1945 \printlist{language}%

```

Period after title, if any

```

1946 \setunit{\addperiod\space}%
1947 \printfield{type}%
1948 \setunit*{\addcomma\space}%
1949 \usebibmacro{institution+location+date}%
1950 \setunit{\addperiod\space}%
1951 \usebibmacro{chapter+pages}%
1952 \newunit
1953 \printfield{pagetotal}%
1954 \newunit\newblock
1955 \printfield{url}%
1956 \setunit*{\addperiod\space}\newblock
1957 \printfield{note}%
1958 \newunit\newblock
1959 \usebibmacro{addendum+pubstate}%
1960 \newunit\newblock
1961 \usebibmacro{pageref}%
1962 \usebibmacro{finentry}}

```

unpublished bibdriver

```
1963 \DeclareBibliographyDriver{unpublished}{%
1964   \usebibmacro{bibindex}%
1965   \usebibmacro{begentry}%
1966   \usebibmacro{author}%
1967   \setunit{\labelnamepunct}\newblock
1968   \usebibmacro{title}%
1969   \newunit
1970   \printlist{language}%
1971   \newunit\newblock
1972   \printfield{howpublished}%
1973   \newunit\newblock
1974   \printfield{note}%
1975   \newunit\newblock
1976   \usebibmacro{date}%
1977   \newunit\newblock
1978   \iftoggle{bbx:url}
1979     {\usebibmacro{url+urldate}}
1980     {}%
1981   \newunit\newblock
1982   \usebibmacro{addendum+pubstate}%
1983   \newunit\newblock
1984   \usebibmacro{pageref}%
1985   \usebibmacro{finentry}}
```

intitle+booktitle

```
      bibmacro 1986 \renewbibmacro*{maintitle+booktitle}{%
1987   \iffieldundef{maintitle}
1988     {}
1989     {\usebibmacro{maintitle}%
1990   \addspace
1991   \newblock
1992   \iffieldundef{volume}
1993     {}
1994     {\printfield{volume}%
1995   \printfield{part}%
1996   \addspace
1997   }}%
1998   \usebibmacro{booktitle}%
1999   \newunit}
```

journal+issuetitle bibmacro

```
2000 \renewbibmacro*{journal+issuetitle}{%
2001   \usebibmacro{journal}%
2002   \setunit*{\addspace}%
2003   \iffieldundef{series}
2004     {}
2005     {\newunit}
```

```

2006      \printfield{series}%
2007      \setunit{\addspace}}%
2008  \printfield{volume}%
2009  \printfield[parens]{number}%
2010  \setunit{\addcomma\space}%
2011  \printfield{eid}%
2012  \setunit{\addspace}%
2013  \usebibmacro{issue+date}%
2014  \setunit{\addcolon\space}%
2015  \usebibmacro{issue}%
2016  \newunit}

```

isa:doi+eprint+url

```

bibmacro 2017 \newbibmacro*{emisa:doi+eprint+url}{%
2018   \iftoggle{bbx:doi}
2019     {\printfield{doi}}
2020     {}%
2021   \newunit\newblock
2022   \iftoggle{bbx:eprint}
2023     {\usebibmacro{eprint}}
2024     {}%
2025   \newunit\newblock
2026   \iftoggle{bbx:url}
2027     {\usebibmacro{emisa:url+urldate}}
2028     {}%

```

This is the end of the code taken (and modified) from `standard.bbx`.

**Code from `authoryear.bbx`** The following code is taken from `authoryear.bbx` and modified at several places (see comments). The macros in this subsection will supersede any previous definition by the same name(s).

author bibmacro

```

2029 \renewbibmacro*{author}{%
2030   \ifthenelse{\ifuseauthor\AND\NOT\ifnameundef{author}}
2031     {\ifthenelse{\iffieldequals{fullhash}{\bbx@lasthash}\AND
2032       \NOT\iffirstonpage\AND
2033       \(\NOT\boolean{bbx@inset}\OR
2034       \iffieldequalstr{entrysetcount}{1}\)}}
2035     {\bibnamedash}
2036     {\usebibmacro{bbx:savehash}%
2037       \printnames[emisa:names]{author}%
2038       \iffieldundef{authortype}
2039       {\setunit{\addspace}}
2040       {\setunit{\addcomma\space}%
2041         \usebibmacro{authorstrg}%
2042         \setunit{\addspace}}}%
2043   }{%

```

```

2044 \global\undef\bbx@lasthash
2045 \usebibmacro{labeltitle}%
2046 \setunit*{\addspace}}%
2047 \usebibmacro{date+extrayear}}

```

bbx:editor bibmacro

```

2048 \renewbibmacro*{bbx:editor}[1]{%
2049 \ifthenelse{\ifuseeditor\AND\NOT\ifnameundef{editor}}
2050 {\ifthenelse{\iffieldequals{fullhash}{\bbx@lasthash}\AND
2051 \NOT\iffirstonpage\AND
2052 \(\NOT\boolean{bbx@inset}\OR
2053 \iffieldequalstr{entrysetcount}{1}\)}}
2054 {\bibnamedash}
2055 {\printnames[emisa:names]{editor}%
2056 \setunit{\addcomma\space}%
2057 \usebibmacro{bbx:savehash}}%
2058 \usebibmacro{#1}%
2059 \clearname{editor}%
2060 \setunit{\addspace}%
2061 }{\global\undef\bbx@lasthash
2062 \usebibmacro{labeltitle}%
2063 \setunit*{\addspace}%
2064 }%
2065 % \usebibmacro{date+extrayear}%
2066 }

```

bbx:translator bibmacro

```

2067 \renewbibmacro*{bbx:translator}[1]{%
2068 \ifthenelse{\ifusetranslator\AND\NOT\ifnameundef{translator}}
2069 {\ifthenelse{\iffieldequals{fullhash}{\bbx@lasthash}\AND
2070 \NOT\iffirstonpage\AND
2071 \(\NOT\boolean{bbx@inset}\OR
2072 \iffieldequalstr{entrysetcount}{1}\)}}
2073 {\bibnamedash}
2074 {\printnames[emisa:names]{translator}%
2075 \setunit{\addcomma\space}%
2076 \usebibmacro{bbx:savehash}}%
2077 \usebibmacro{translator+othersstrg}%
2078 \clearname{translator}%
2079 \setunit{\addspace}}%
2080 {\global\undef\bbx@lasthash
2081 \usebibmacro{labeltitle}%
2082 \setunit*{\addspace}}%
2083 \usebibmacro{date+extrayear}}

```

blisher+location+date

bibmacro

```

2084 \renewbibmacro*{publisher+location+date}{%
2085 \printlist{publisher}%

```

```

2086 \setunit*{\addcomma\space}%
2087 \printlist{location}%
2088 \newunit}

```

stitution+location+date

```

bibmacro 2089 \renewbibmacro*{institution+location+date}{%
2090 \printlist{institution}%
2091 \setunit*{\addcomma\space}%
2092 \printlist{location}%
2093 \newunit}

```

This is the end of the code taken (and modified) from `authoryear.bbx`.

## Localization

```

2094 \DefineBibliographyStrings{english}{%
2095 urlseen = {Last Access},
2096 techreport = {},%
2097 }%

2098 \DefineBibliographyStrings{german}{%
2099 urlseen = {Letzter Zugriff},%
2100 techreport = {},%
2101 }%

2102 \DefineBibliographyStrings{ngerman}{%
2103 urlseen = {Letzter Zugriff},%
2104 techreport = {},%
2105 }%

```

## Unlocalization

```

2106 % year/month/day
2107 \protected\def\mkbibdateiso#1#2#3{%
2108 \iffieldundef{#1}{}{%
2109 \thefield{#1}%
2110 \iffieldundef{#2}{}{-}%
2111 \iffieldundef{#2}{}{%
2112 \mkdatezeros{\thefield{#2}}%
2113 \iffieldundef{#3}{}{-}%
2114 \mkdatezeros{\thefield{#3}}%
2115 }%

2116 \DefineBibliographyExtras{english}{\let\mkbibdateshort\mkbibdateiso}%
2117 \DefineBibliographyExtras{german}{\let\mkbibdateshort\mkbibdateiso}%
2118 \DefineBibliographyExtras{ngerman}{\let\mkbibdateshort\mkbibdateiso}%

```

Here, the EMISA bibliography style file `emisa.bbx` ends.

```

2119 \</bbx>

```

### 19.10.2 The EMISA citation style

A citation style is a set of commands such as `\cite` which print different types of citations. Such styles are defined in files with the suffix `cbx`. The `biblatex` package loads the selected citation style file at the end of the package. Note that a small repertory of frequently used macros shared by several of the standard citation styles is also included in `biblatex.def`. This file is loaded at the end of the package as well, prior to the selected citation style.

The EMISA citation style is defined in the file `emisa.cbx` which is generated from the following code lines between the `<*cbx>` and `</cbx>` meta-tags.

```
2120 <*cbx>

2121 \ProvidesFile{emisa.cbx}[2016/02/06 2.0 EMISA citation style]
2122 \RequireCitationStyle{authoryear-comp}
2123 \renewcommand*{\nameyear delim}{\addspace}
```

`\DeclareRangeChars` configures the `\ifnumerals` and `\ifpages` tests. The setup will also affect `\iffieldnums` and `\iffieldpages` as well as `\mkpageprefix` and `\mkpagetotal`. The argument is an undelimited list of characters which are to be considered as range indicators. The regular version of this command replaces the current setting, the starred version appends its argument to the current list. The default setting is `{~,; -+ /}`, so strings like “3–5”, “35+”, “8/9” and so on will be considered as a range.

Here we add the character `f` to enable ranges like “123f” and “456ff”.

```
2124 \DeclareRangeChars*{f}
```

Here, the EMISA citation style file `emisa.cbx` ends.

```
2125 </cbx>
2126 </biblatex>
2127 <*class>
```

Here, the  $\text{\LaTeX}$  class EMISA ends.

```
2128 </class>
```

## 19.11 Examples and templates

### 19.11.1 Document templates

Here we add a couple of small document templates to ease the creation of documents: `emisa-article-template.tex` for article authors and `emisa-issue-template.tex` for copy editors. Both are generated from the following piece.

```
2129 <*template>
2130 <*article>
2131 \documentclass[british]{emisa}
2132 %% You can use the following additional class options:
2133 %% referee, review -- Use for submission to peer-review process.
2134 %% draft -- mark overfull lines
2135 %% british, UKenglish -- British English hyphenation and quotation marks
2136 %% american, USenglish -- American English hyphenation and quotation marks
```

```

2137 </article>
2138 <issue>\documentclass[final,cover]{emisa}
2139 <*article | issue>
2140 %% The following package imports are recommended, but not obligatory;
2141 %% you might want take a look into their respective manuals if you
2142 %% don't know what they do.
2143 \usepackage{amsmath,amssymb,mathtools}
2144 \usepackage{algorithmic,algorithm}
2145 %% Additional package imports go here:
2146 %% \usepackage{}
2147 </article | issue>
2148 <*issue>
2149 %% Insert here issue data:
2150 \volume{}% Volume No.
2151 \issue{}{}% Issue No. and Issue Date
2152 %% If there are any bibliography data bases to be used globally
2153 %% please indicate here:
2154 \bibliography{}
2155 %% Insert here any (relative or absolute) path to be searched for
2156 %% graphics files:
2157 \graphicspath{{./figs_base/},{}}
2158 %% Here you can alter the cover pages; e.g. this:
2159 %% \coverII{\AtPageDeadCenter{Something}}
2160 %% typesets the word "Something" centered on the inner side of the
2161 %% front sheet.
2162 %% You can also delete any cover pages at all by defining them empty,
2163 %% see below:
2164 \coverII{}
2165 %% This outputs the SIG-MOBIS page on the inner side of the back
2166 %% sheet:
2167 \coverIII{\AtPageCenter{\sigmobispage}}
2168 </issue>
2169 <*article | issue>
2170 %% Here, the normal text begins.
2171 \begin{document}
2172 </article | issue>
2173 <*issue>
2174 \tableofcontents
2175
2176 \begin{editorial}
2177 %% Please insert editorial text here.
2178
2179 \end{editorial}
2180 </issue>
2181 <*article | issue>
2182 \begin{article}{}%
2183 %% Please declare the title elements of your article here. Unused
2184 %% elements can either be deleted or commented out, or else just let
2185 %% empty. In either case they are not typeset.

```

```

2186 %% If the option referee or review is given, all author tags, address,
2187 %% e-mail and acknowledgements will be likewise omitted.
2188 \title[Insert shorttitle for page headline]{Enter full title here}
2189 \subtitle{Enter subtitle here, or leave empty}
2190 \author*{FirstName LastName of corresponding author}{email@address.org}
2191 \address{Enter affiliation of first (corresponding) author here. Note that only the starred
2192 %% Author with a different address
2193 \author{FirstName LastName}
2194 \address{Enter affiliation of second and further authors here. Add further authors following
2195 %% Author with an already used address
2196 \author{FirstName LastName}
2197 \address[Letter of already used address]{}
2198 %% Enter abstract, keywords, acknowledgements, authornotes
2199 \abstract{Enter abstract here}
2200 \keywords{Enter at a minimum three keywords here. Keyword1 \and Keyword2 \and Keyword3}
2201 \acknowledgements{Enter acknowledgements here.}
2202 \authornote{If your submission is based on a prior publication and revises / extends this wor
2203 %% Please declare here the bibliography data base(s) you want to use
2204 %% in this article (make sure to add the file extension, e.g. .bib):
2205 \bibliography{}
2206 %% Take note of the following closing bracket!
2207 }
2208 </article | issue>
2209 <*issue>
2210 \editor{My self}
2211 \received{24 Octover 2014}
2212 \accepted[2]{1 November 2015}
2213 \doi{10.5073/EMISA.2011.11.1}
2214 \license{License information}
2215 %% or
2216 \CCBYNCSThree
2217 %% or
2218 \CCBYNCSThree
2219 </issue>
2220 <*article | issue>
2221 %% Please insert your article text here.
2222 \section{Introduction}
2223 \subsection{The research problem}
2224 %% Remember to provide a unique label for each section, table, figure, listing and algorithm fo
2225 %%
2226 %% This directive typesets the bibliography. To achieve this, one has
2227 %% to run the biber program on the corresponding auxiliary file
2228 %% generated in the previous LaTeX run; you can just use the job name
2229 %% (the name of this file without ".tex")", e.g.: biber emisa-author-template
2230 \printbibliography
2231 %
2232 \end{article}
2233 </article | issue>
2234 <*issue>

```



```

2235
2236 %% Please insert as much article environments here as are needed.
2237 \begin{article}{%
2238   \title{}
2239   \subtitle{}
2240   \author*{<Name>}{<Email address>}
2241   \address{address line 1\\address line 2}
2242   % Author with unique address
2243   \author{<Name>}
2244   \address{address line 1\\address line 2}
2245   % Author with the same address as another author
2246   \author{<Name>}
2247   \address[a]{}
2248   \abstract{<Insert abstract>}
2249   \keywords{Keyword 1 \and keyword 2 \and keyword 3}
2250   \authornote{This article extends an earlier conference paper, see ...}
2251   \acknowledgements{}
2252   \editor{My self}
2253   \received{24 Octover 2014}
2254   \accepted[2]{1 November 2015}
2255   \doi{10.5073/EMISA.2011.11.1}
2256   \bibliography{}
2257 }
2258
2259
2260 \printbibliography
2261 \end{article}
2262
2263 \begin{cfp}
2264 %% Please insert your Call for papers here.
2265 \end{cfp}
2266
2267 \imprint
2268 \editorialboard
2269 \guidelines
2270 </issue>
2271 <article | issue>\end{document}
2272 </template>

```