



# Preparing Articles with the ECEASST L<sup>A</sup>T<sub>E</sub>X Document Class

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**Abstract:** This document instructs authors in the usage of the ECEASST document class. It also gives an overview over orthographic, bibliographic and typographic conventions for ECEASST articles.

Moreover, the document itself is written using the class and is, therefore, an example document, which can be inspected by authors.

**Keywords:** ECEASST, LaTeX, document class

## 1 Introduction

The ECEASST L<sup>A</sup>T<sub>E</sub>X document class is used to prepare articles, which should be published in the Electronic Communications of the EASST. It is derived from the standard L<sup>A</sup>T<sub>E</sub>X `article` class. In the following sections instructions for authors using this class will be given.<sup>1</sup> The source file of this document itself uses the class and may serve as an example.

In order to use this class the files `eceasst.cls` and `easst.pdf` or `easst.eps` have to be in the current directory (or somewhere L<sup>A</sup>T<sub>E</sub>X can find them). An article using the class starts with `\documentclass{eceasst}`. It does not have any options. Note, that the following packages are required for the class and therefore do not have to be included in the document again: `mathptmx`, `helvet`, `courier`, `graphicx`, `color`, `amsmath`, `amsthm`<sup>2</sup>, `amsfonts`, `amssymb`, `hyperref`, `hypcap`. These should be available in all contemporary L<sup>A</sup>T<sub>E</sub>X distributions, such as T<sub>E</sub>X Live and MiK<sub>T</sub>E<sub>X</sub>.

We suggest to compile your publication using `pdflatex`, because it results in better PDF output, especially in connection with the `hyperref` package. It should, however, be also possible to use `latex` and `dvipdfm`. Attention should be paid to the warnings issued by L<sup>A</sup>T<sub>E</sub>X during compilation. While underfull hboxes and vboxes may be not that bad, overfull boxes should always be avoided.

<sup>1</sup> Standard features of L<sup>A</sup>T<sub>E</sub>X and the `article` class, which are not documented here, such as footnotes, itemisations and enumerations, may be used if appropriate.

<sup>2</sup> The pre-defined theorem styles and environments are treated in [Subsection 3.2](#).

Table 1: Volume frontmatter commands

<code>\volume{<i>Nr.</i>}{<i>Year</i>}</code>	Required
<code>\volumetitle{<i>Volume Title</i>}</code>	Required
<code>\volumeshort{<i>Short Title</i>}</code>	Optional
<code>\voled{<i>Volume Editor</i>}</code>	One of these Required
<code>\voleds{<i>Volume Editors</i>}</code>	
<code>\gusted{<i>Guest Editor</i>}</code>	
<code>\gusteds{<i>Guest Editors</i>}</code>	

The `hyperref` package not only enables different kinds of hyperlinks to online resources and internal links (references to sections, figures, citations, etc.), but also creates metadata in the PDF document properties and a table of contents in the Adobe Reader “Bookmarks” tab. Therefore, line breaks, mathematical formulae and other non-text characters and commands are not allowed in section headings and the `\title`, `\author` and `\keywords` frontmatter commands. To circumvent this the `\texorpdfstring` command of `hyperref` may be used. Its first argument is the disallowed  $\LaTeX$  construction, while the second is the pure text equivalent for use in the PDF metadata. For example, a line break can be included by `\texorpdfstring{\}\{\}` or a mathematical formula by `\texorpdfstring{\$a+b\$}{a + b}`.

## 2 Frontmatter

There are two kinds of frontmatter commands used in the preamble of your document: On the one hand the commands in Table 1 are used to provide information about the volume of ECEASST in which the article will appear and described in detail in Subsection 2.1. On the other hand the commands in Table 2 are concerned with the article itself and described in Subsection 2.2.

The cover page and the title, authors, institutes, abstract and keywords on the first page are created by the `\maketitle` command which should be the first command issued after `\begin{document}`. Volume editors creating a preface for their volume should use the `\prefacetitle` command instead, where the article frontmatter commands are completely ignored and just the title “Preface” is used on the cover and the first page automatically.

Acknowledgements for sponsoring organisations can be inserted in the [article frontmatter](#). Acknowledgements for reviewers and other people should not be included in the frontmatter, but rather be inserted in an `acknowledge` environment at the end of the last section just before the bibliography.

### 2.1 Volume Frontmatter

The frontmatter commands for the volume typically do not have to be given by authors, but are distributed for all scheduled volumes on the ECEASST home page. They are available in  $\LaTeX$  files that are included into the article by the `\input` command.

We will, nevertheless, shortly describe the commands used in these files and summarised in Table 1 in the following.

Table 2: Article frontmatter commands

<code>\title{Article Title}</code>	Required
<code>\short{Short Title}</code>	Optional, but Recommended
<code>\author{Author(s)}</code>	Required
<code>\institute{Institute(s)}</code>	Required
<code>\abstract{Abstract}</code>	Required
<code>\keywords{Keywords}</code>	Required

The `\volume` command gets two parameters, the first is the volume number and the second the year of publication. This information is used in the title of the cover page and the footer of the content pages. The title provided by `\volumetitle` is printed on the cover page, while the short title given in `\volumeshort` is used for the footer of even pages. Both of these commands are optional, if they are not given the volume title on the cover page is omitted and the footer on even pages is the same as on odd pages (the volume number).

The editor commands are used to provide the first line of the bottom box on the cover page. For regular editors of ECEASST the `\voled(s)` commands are used, while for guest editors (organisers of workshops, editors for volumes on special subjects) the `\guested(s)` commands should be given. The `\voled` and `\guested` commands are used for single editors and the `\voleds` and `\guesteds` versions for volumes with multiple editors. Just use one of these four commands, multiple occurrences will override each other.

## 2.2 Article Frontmatter

The commands that have to be provided by article authors themselves are summarised in [Table 2](#). The title of the article is provided by `\title` and `\short`, where the former is the title printed on the cover page and the top of the first content page and the latter is used for the header of even pages. If `\short` is omitted the long title is used, which will nearly always be too long for the footer. Please capitalise the title except for prepositions, conjunctions, articles and auxiliaries. The abstract and keywords are given by the commands `\abstract` and `\keywords`, respectively.

The authors are given as parameter of the `\author` command and their affiliations in the `\institute` command. The standard  $\LaTeX$  `\and` command is *not* provided, please decide for yourself which enumeration scheme (“one, two and three”, “one, two, and three”, “one, two, three”) you want to use for multiple authors. In articles with multiple authors the `\autref` and `\autlabel` commands can be used to establish links between the individual authors and their addresses, where the reference should follow the last name of the author immediately without a space and the label should be placed in front of the (e-mail) address of the author separated by a space. If acknowledgements for sponsoring organisations should be included a `\sponsor` command can be used right after the author’s name (or after her `\autref`). This will typeset a footnote on the first page (but not on the cover).

The institute information should start with online addresses, where the commands `\email` and `\url` should be used for e-mail and home page addresses, respectively. The general information should consist of two lines, where the first is the department, institute or faculty (whatever

you deem appropriate) and the second contains the university (or company), city and country. The names of institutes, universities and cities should be given in native language, where the  $\LaTeX$  `inputenc` package or commands like `\'` and `\"` can be used to include special characters. (For languages with totally different alphabets, e.g., asian, greek or kyrillian, however, please use a transcription to the latin alphabet.) Multiple institutes should be separated by a paragraph break (empty line or `\par`).

## 3 Article Structure

In this section, we describe the methods for structuring an article, namely sections and subsections in [Subsection 3.1](#), theorems and similar environments in [Subsection 3.2](#) and figures and tables in [Subsection 3.3](#).

### 3.1 Sectioning

For sectioning of an article the standard  $\LaTeX$  structuring commands, such as `\section` or `\subsection` may be used. As in the `article` class, `\chapter` is not available. The `\part` command should not be used in normal articles, but could be permissible in larger contributions, such as tutorial overviews or surveys.

References to sections should have capitalised names as in “Section 3” and “Subsection 3.1” (created by `Section~\ref{sect}` and `Subsection~\ref{subject}`, respectively). A non-breaking space (`~`) should be put between the name and the number to avoid line breaks.

The `\autoref` command from the `hyperref` package can be used to generate complete references including the correct title before the number. Additionally, this command is useful, because in the resulting reference both the name and the number are hyperlinked and, therefore, constitute a larger target for readers. Thus, `\autoref{sect}` results in “[Section 3](#)” and `\autoref{subject}` in “[Subsection 3.1](#)”.

When referring to a section or subsection without explicitly giving its number, “section” is not capitalised. The referring text should, however, provide a hyperlink as in “[this section](#)” (typeset by `\hyperref[sect]{this section}`) and “[this subsection](#)” (typeset by `\hyperref[subject]{this subsection}`).

Additionally, you can use `\nameref` to refer using the name of the section as in “[Article Structure](#)” (typeset by `\nameref{sect}`). As usual in  $\LaTeX$ , it is also possible to use `\pageref` to refer to the page, but this is rather superfluous in short articles.

In the following, examples for the substructures not used in this introduction are given below. Note, that it is not possible to refer to paragraphs and subparagraphs using `\ref` and `\autoref`, but only using `\nameref` and possibly `\pageref`.

#### 3.1.1 Example Subsubsection

Example text in the Subsubsection [3.1.1](#) or better [Subsubsection 3.1.1](#).

**Example Paragraph** Example text in the Paragraph “[Example Paragraph](#)”.

**Example Subparagraph** Example text in the Subparagraph “[Example Subparagraph](#)”.

## 3.2 Theorems and Similar Environments

The following theorem-like environments are available. They are all numbered separately. All environments get the name as an optional argument. These names should be capitalised for the first six environments, while they should be left uncapitalised for examples and remarks, since these only provide additional information.

For the definition of these environments the `amsthm` package is used. See the documentation for this package for additional information on how you can create your own environments. The documentation should be available inside your  $\text{\TeX}$  distribution in the directory `doc/latex/amscs/amsthdoc.pdf`. Use one of the three theorem styles mentioned below for your own environments.

The first four environments are used for proper theorems, i.e., facts that are proven to be correct. They use the theorem style `ectheorem`, which is set in italics.

**Theorem 1** (Some Theorem) *For theorems we have the `theorem` environment.*

*Proof.* Proofs can be inserted using the `proof` environment. □

**Proposition 1** (Some Proposition) *The `proposition` environment may be used for propositions. The distinction between theorems and propositions is not precisely defined and left to the author.*

*Proof Sketch.* The `proof` environment gets an optional argument, which can be used to provide a custom title such as “Proof Sketch”. □

**Lemma 1** (Some Lemma) *Lemmata can be created by the `lemma` environment. Lemmata are facts that are not results for themselves but are rather used in more important theorems and propositions.*

*Proof Idea.* “Proof Idea” is also a possible idea for a proof title. □

**Corollary 1** (Some Corollary) *Corollaries can be created by the `corollary` environment and are propositions following immediately from previous theorems, propositions and lemmata.*

The next two environments are deemed for definitions and algorithms. They use the theorem style `ecdefinition` using a roman body font.

**Definition 1** (Some Definition) Definitions are created by the `definition` environment.

**Algorithm 1** (Some Algorithm) The `algorithm` environment can be used for algorithms, which should be referencable in the same manner as the other theorem-like constructs.

The last two environments are used for auxiliary information. More precisely, remarks and examples fall into this category. The theorem style `ecremark` with a slanted body font is used

Table 3: References to theorem-like environments

Manual Code	Result	<code>\autoref</code> Code	Result
<code>Theorem~\ref{the}</code>	Theorem 1	<code>\autoref{the}</code>	<a href="#">Theorem 1</a>
<code>Proposition~\ref{prop}</code>	Proposition 1	<code>\autoref{prop}</code>	<a href="#">Proposition 1</a>
<code>Lemma~\ref{lem}</code>	Lemma 1	<code>\autoref{lem}</code>	<a href="#">Lemma 1</a>
<code>Corollary~\ref{cor}</code>	Corollary 1	<code>\autoref{cor}</code>	<a href="#">Corollary 1</a>
<code>Definition~\ref{def}</code>	Definition 1	<code>\autoref{def}</code>	<a href="#">Definition 1</a>
<code>Algorithm~\ref{alg}</code>	Algorithm 1	<code>\autoref{alg}</code>	<a href="#">Algorithm 1</a>
<code>Remark~\ref{rem}</code>	Remark 1	<code>\autoref{rem}</code>	<a href="#">Remark 1</a>
<code>Example~\ref{ex}</code>	Example 1	<code>\autoref{ex}</code>	<a href="#">Example 1</a>

for these environments.

*Remark 1* (Remark concerning something) *Remarks are obtained by the `remark` environment.*

*Example 1* (An example) *Examples are created by the `example` environment.*

All of these environments should be referenced using capitalised names. To achieve this the `\autoref` command may be used. Table 3 summarises references to the example environments above.

### 3.3 Figures and Tables

Figures and tables should be included using the appropriate floating environments and *not* inserted directly into the text. Both should be centered by `\centering` as the first command inside the environment. The `\label` for the float should be inserted after the `\caption`, where the caption should be set below figures and above tables. Please capitalise the first word of a caption, but not the rest (except for names).

When referencing specific figures and tables “Figure” and “Table” should be capitalised as in “Figure 1” (typeset by `Figure~\ref{fig}`). Please use a non-breaking space (~) between the word and the `\ref` command to avoid a line break. Do *not* abbreviate “Figure” to “Fig.”. You may also use the `hyperref` command `\autoref` to create a link, where “Figure” or “Table” are inserted automatically and are also hyperlinked as in “[Figure 1](#)” (typeset by `\autoref{fig}`).

To save space and group related figures and tables you can use the `subfig` package with its `\subfloat` command as in our example figure. References to subfigures should also use the names “Figure” and “Table” as in “Figure 1a” (typeset by `Figure~\ref{subfig}`). The `\autoref` command can also be used as in “[Figure 1a](#)” (typeset by `\autoref{subfig}`). (Note that the `subfigure` package recommended in the previous version of the ECEASST class is deprecated.)

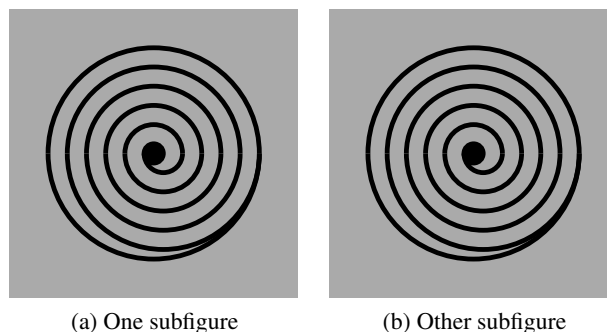


Figure 1: Example figure

## 4 Bibliographies

In this final section we will give the bibliographical conventions for ECEASST.

The Bib<sub>T</sub><sub>E</sub>X style `eceasst.bst` is distributed together with the ECEASST document class. It can be used to create bibliographies automatically. The scheme for citation references is derived from the standard `alpha` style, which uses the initials of authors rather than numbers.

Additionally to the fields available in the standard Bib<sub>T</sub><sub>E</sub>X styles, this style allows a `doi` and a `url` field for Digital Object Identifiers<sup>3</sup> and URLs, respectively. Please include this information if possible.

If you cite multiple articles from one journal issue, collection or proceedings or multiple volumes in a series, you can use the `crossref` field to save space.

The example bibliography at the end of this document is generated from the accompanying `example.bib` file, which is an example distributed together with Bib<sub>T</sub><sub>E</sub>X, but enhanced by `doi` and `url` examples.

**Acknowledgements:** Here, we may acknowledge colleagues, referees, family, pets, ...

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<sup>3</sup> See <http://www.doi.org/> for more details



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