

# The `mucproc` class\*

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## 1 Introduction

The `mucproc` class provides a document class which allows to use the L<sup>A</sup>T<sub>E</sub>X document preparation system for contributions to the German “Mensch und Computer 2017” conference. It corresponds to the Word-template offered via the conference’s homepage <http://muc2017.mensch-und-computer.de/> for the year 2017. By offering this document class and an additional usage demonstration file (`mucproc_demo.tex`) we want to offer an easy to use possibility to prepare conference contributions in L<sup>A</sup>T<sub>E</sub>X.

The goal of this document class is to create PDF-files which look like those created with the Word-template. Most of the contributions are still expected to be typeset in Word, that’s why the `mucproc` class uses the historically grown formatting guidelines which have been created for Word-Users. Therefore the settings of this document class might not always be the typographically best.

## 2 Usage

`mucproc` already configures all features needed for the usually required elements of a contribution to the MUC-conference. It loads a bunch of packages to simplify this process. Though the Syntax of the document using this class doesn’t differ from classic L<sup>A</sup>T<sub>E</sub>X documents.

### 2.1 Class options

`\documentclass` Start your document by loading the `mucproc` class with an option for the document’s main language. The class will expect either `ngerman` or `english` as main language. Otherwise an error message will be thrown.

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\*This document corresponds to `mucproc` v0.9conference, dated 2017/02/19.

For the language settings this class uses the **babel** package and loads **csquotes** for context sensitive quotations. The language option will also be used to configure the bibliography.

The other class option which can be used by authors is **anonymous=*truth value***. It activates the anonymous-mode which shall be used for the submission to the review process before a contribution may be accepted. This option disables the author-field for the title and the additional author information as will be described later.

The third type of class option is not meant to be used by the authors themselves. It rather provides a possibility to force a document to be compiled in the final mode and enables some additional features of the document class. The option **forcefinal=*truth value*** will be used for a recompilation process for the preparation of the final version for the publication process of the proceedings. It can be passed to the class via command line interface and will disable a manually set anonymous-mode.

## 2.2 Title creation

**\title** The **\title** command behaves identically to most popular document classes. There may be linebreaks created with **\** or **\newline** inside the argument. Other formatting macros shall not be used, since this argument is also used for the metadata of the final PDF-file.

**\author** The **author** macro can also be used similar to standard L<sup>A</sup>T<sub>E</sub>X documents.

**\and** If the document has more than one author, the names shall be separated

**\thanks** with **\and**. The **\thanks** command shall be used to add the corresponding institution.

```
\author{John Doe\thanks{Institution 1}\and
Jane Doe\thanks{Institution 2}}
```

In contrast to the standard classes, **mucproc** doesn't place the footnotes created by **\thanks** on the bottom of the page, they are positioned directly below the author field of the title.

Other possible entries for the title get ignored.

**\maketitle** The title has to be created by calling the **\maketitle** command as usual.

## 2.3 Additional author information

For the final version the authors of contributions have the possibility to add additional information about all authors. For this the **mucproc** class provides the **authoraddendum** environment.

**authoraddendum** This environment can take up to 2 arguments, one optional containing the path to a corresponding photograph and a mandatory one for the Authors name.

```

\begin{authoraddendum}[john_doe.png]{Doe, John}
Text describing the author.
\end{authoraddendum}

```

If the optional picture argument is left empty the text will be typeset over the whole `\textwidth`, otherwise there will be a 3 cm column on the left side containing the photograph.

## 3 Implementation

This section contains the source code to the `mucproc.cls`. It will be tried to explain how the class breaks the tasks.

### 3.0.1 Compatibility mode

This document class intends to be compiled on as many different distributions as possible. Because some of the fallback tests require a the `expl3` package version of 2015-09-07 or newer, a compatibility mode test is implemented first.

```

1 \RequirePackage{expl3}
2 \ExplSyntaxOn
3 \bool_new:N \g_MUC@compatibility_mode
4 \@ifpackagelater{expl3}{2015/09/07}{
5 \bool_gset_false:N \g_MUC@compatibility_mode
6 }{
7 \msg_new:nnn {mucproc}{compatibility}{
8   Your~ LaTeX-Distribution~ seems~ to~ be~ outdated.\\
9   Enabling~ compatibility~ Mode.\\
10  Some~ features~ won't~ be~ available.
11 }
12 \msg_warning:nn {mucproc}{compatibility}
13 \bool_gset_true:N \g_MUC@compatibility_mode
14 }
15
16 \RequirePackage{xparse}

```

The boolean `\g_MUC@compatibility_mode` is set true, if the `expl3` is older than required.

### 3.1 Class options

The key-value class options are implemented using the `scrbase` package defining a Family called MUC.

```

17 \RequirePackage{scrbase}
18 \DefineFamily{MUC}
19 \DefineFamilyMember{MUC}
20 \bool_new:N \g_MUC@pdfa_bool

```

The Options `anonymous` and `forcefinal` are implemented using the basic `scrbase` mechanism for boolean options:

```

21 \FamilyBoolKey{MUC}{anonymous}{MUC@anonymous}
22 \FamilyBoolKey{MUC}{forcefinal}{MUC@final}
23 \FamilyBoolKey{MUC}{headline}{MUC@headline}
24 \FamilyBoolKey{MUC}{copyrightinfo}{MUC@copyrightinfo}
25 \FamilyBoolKey{MUC}{pagestyle}{MUC@pagestyle}

```

Set up the default boolean values before processing options.

```

26 \MUC@headlinetrue
27 \MUC@copyrightinfotrue
28 \MUC@pagestyletrue
29
30 \FamilyProcessOptions{MUC}

```

The `pagestyle` settings can be disabled if `headline` and `copyrightinfo` are set false.

```

31 \ifMUC@headline
32 \else
33   \ifMUC@copyrightinfo
34   \else
35     \MUC@pagestylefalse
36   \fi
37 \fi

```

If the `forcefinal` option is set, all global options containing the substring “draft” or both of the substrings “final” and “false” are removed to avoid any global draft mode.

```

38 \ifMUC@final
39   \bool_if:NTF \g_MUC@compatibility_mode {
40     \msg_new:nnn {mucproc} {compatibility-final-error} {
41       forcefinal~ is~ not~ possible~ in~ compatibility~ mode.\\
42       Update~ your~ TeX~ distribution~ and retry!}
43     \msg_error:nn {mucproc} {compatibility-final-error}
44   }{
45     \clist_new:N \l_MUC@globalopts_clist
46
47     \msg_new:nnn {mucproc} {force-final} {
48       forcefinal~ option~ is~ enabled.\\
49       Ignoring~ all~ global~ complementary~ options.}
50     \msg_warning:nn {mucproc} {force-final}
51     \msg_new:nnn {mucproc} {remove-draft}{
52       forcefinal~ enabled:~ The~ global~ Option~ #1~ is~ ignored,~
53       because~ it~ seems~ to~ activate draft~ mode!}
54
55     \exp_args:Nx \clist_map_inline:nn {\@classoptionslist} {
56       \tl_if_in:nnTF {#1} {draft}
57         {\msg_warning:nnx {mucproc} {remove-draft} {#1}}
58         {\clist_put_right:Nn \l_MUC@globalopts_clist {#1}}

```

```

60      \tl_if_in:nnTF {#1} {final}
61      {\tl_if_in:nnTF {#1} {false}
62        {\msg_warning:nnx {mucproc} {remove-draft} {#1}}
63        {\clist_put_right:Nn \l_MUC@globalopts_clist {#1}}
64      }
65      {\clist_put_right:Nn \l_MUC@globalopts_clist {#1}}
66    }
67
68
69    \edef\@classoptionslist{\clist_use:Nn \l_MUC@globalopts_clist {,}}

```

Additionally enable PDF/A-mode and metadata generation and disable anonymization.

```

70    \bool_gset_true:N \g_MUC@pdfa_bool
71    \MUC@anonymousfalse
72  }
73 \fi

```

## 3.2 Basic Setup

The next step is loading `scrartcl` as base class. According to the formatting rules we pass some options and use the `mucfontsize10pt.clo` file for setting up the font sizes.

```

74 \newcommand*{@fontsizefilebase}{mucfontsize}
75 \PassOptionsToClass{fontsize=10pt,abstract=true,parskip=full,
76   twoside=semi,headsepline}{scrartcl}
77 \LoadClass{scrartcl}
78 \setparsizes{0pt}{7pt plus 7 pt}{1em plus 1 fill}
79 \raggedbottom

```

Now the other required packages can be loaded.

```

80 \RequirePackage{graphicx}
81 \RequirePackage{babel}
82 \PassOptionsToPackage{babel}{csquotes}
83 \bbl@frenchspacing
84 \RequirePackage{csquotes}
85
86 \RequirePackage{geometry}% setup margins
87 \geometry{paper=a4paper,top=4.8cm, bottom=5.7cm,left=3.8cm,right=4cm,
88   headheight=12pt}
89 \geometry{headsep=\dimexpr1cm-\headheight\relax}
90

```

## 3.3 Bibliography setup

The bibliography will be created using `biblatex` with `biber-backend`.

```

91 \PassOptionsToPackage{backend=biber}{biblatex}
92 \PassOptionsToPackage{citestyle=authoryear-comp}{biblatex}
93 \PassOptionsToPackage{bibstyle=apa}{biblatex}

```

```
94 \RequirePackage{biblatex}
```

The APA-style requires a Language mapping. It is set for both supported main languages.

```
95 \DeclareLanguageMapping{american}{american-apa}
```

```
96 \DeclareLanguageMapping{ngerman}{ngerman-apa}
```

Set up additional Settings to get an equal output, like the Word-version.

```
97 \renewcaptionname{ngerman}{\refname}{Literaturverzeichnis}
```

```
98
```

```
99 \renewcommand*{\nameyear delim}{\addcomma\space}
```

### 3.4 Font Choice

The formatting guidelines request Times New Roman as font. Since on most operating systems it is installed as a system font. We check if it is present and the currently used compiler supports the `fontspec` package.

```
100 \bool_new:N \g_MUC@fontspec_bool
```

These tests basically use the `expl3` methods, but also a fallback for older distributions is implemented to support older distributions. First we implement the compatibility-version.

```
101 \bool_if:NTF \g_MUC@compatibility_mode {
```

To test if `PDFTEX` is used, we check if `\pdfmatch` is defined.

```
102 \expandafter\ifx\csname pdfmatch\endcsname\relax
```

```
103   \else
```

```
104     \PassOptionsToPackage{utf8}{inputenc}
```

```
105     \RequirePackage{inputenc}
```

```
106 \fi
```

```
107   \bool_gset_false:N \g_MUC@fontspec_bool
```

Next step is the mechanism to check if the used compiler supports `fontspec`.

```
108 }{
```

```
109 \sys_if_engine luatex:TF {
```

```
110   \bool_gset_true:N \g_MUC@fontspec_bool
```

```
111 }{
```

```
112 \sys_if_engine xetex:TF{
```

```
113   \bool_gset_true:N \g_MUC@fontspec_bool
```

```
114 }{
```

```
115 \sys_if_engine pdftex:T {
```

```
116   \bool_gset_false:N \g_MUC@fontspec_bool
```

```
117   \PassOptionsToPackage{utf8}{inputenc}
```

```
118   \RequirePackage{inputenc}
```

```
119   }
```

```
120 }
```

```
121 }
```

```
122 }
```

The font fallback is saved in a macro. This prevents the code to be written twice. It is executed when either FONTSPEC is not supported or Times New Roman isn't installed.

```

123 \cs_new:Nn \MUC@font_Fallback: {
124 \PassOptionsToPackage{T1}{fontenc}
125 \RequirePackage{fontenc}
126   \IfFileExists{txfonts.sty}{\RequirePackage{txfonts}}{}
127 }
128
129 \if_bool:N \g_MUC@fontspec_bool
130 \RequirePackage{fontspec}
131 \fontspec_font_if_exist:nTF {Times~ New~ Roman}
132   {\setmainfont{Times~ New~ Roman}}
133 {\MUC@font_Fallback:}
134 \else:
135 \MUC@font_Fallback:
136 \fi:

```

### 3.5 PDF/A-mode and metadata creation

The PDF archiving mode is created using the pdfx package. For the correct creation the PDF/A format and the .xmpdata file for metadata specific system settings may be required. Therefore this mode is only active if the forcefinal mode is enabled.

```

137 \if_bool:N \g_MUC@pdfa_bool
138   \PassOptionsToPackage{a-1b}{pdfx}
139   \RequirePackage{pdfx}
140   \hypersetup{hidelinks}
141   \iow_new:N \MUC@xmpdata_stream
142   \iow_open:Nn \MUC@xmpdata_stream {\jobname.xmpdata}
143   \tl_new:N \g_MUC@xmp_title
144   \tl_new:N \g_MUC@xmp_author
145
146   \newcommand*{\MUC@passTitleData}{
147   \begingroup
148   \def\newline{}
149   \def\\{}
150   \xdef\MUC@author{\@author}
151   \xdef\MUC@title{\@title}
152   \cs_set:Npn \and {\exp_not:n {\exp_not:N \sep}}
153   \tl_gset:Nx \g_MUC@xmp_title {\@title}
154   \tl_gset:Nx \g_MUC@xmp_author {\@author}
155   \endgroup
156   \iow_now:Nx \MUC@xmpdata_stream
157   {
158   \exp_not:N \Title{\tl_use:N \g_MUC@xmp_title}
159   ^^J
160   \exp_not:N \Author{\tl_use:N \g_MUC@xmp_author}

```

```

161      ^^J
162      \exp_not:N \Org{Mensch~ und~ Computer~ 2017}
163    }
164  }

If no PDF/A shall be created, the \maketitle data will only be passed to
the headmarks.

165 \else:
166   \msg_new:nnn {mucproc} {no-pdfa}{The~ mucproc~ class~ won't~ create~ PDF/A-mode.}
167   \msg_info:nn {mucproc} {no-pdfa}
168   \newcommand*{\MUC@passTitleData}{
169     \begingroup
170     \def\newline{}
171     \def\\{}
172     \xdef\MUC@author{\@author}
173     \xdef\MUC@title{\@title}
174     \endgroup
175   }
176 \fi:
177 \ExplSyntaxOff

```

### 3.6 Title settings

```

178 \ExplSyntaxOn
179 \clist_new:N \l_MUCproc@thanks_clist
180 \cs_set:Nn \MUCproc@thanks:nn {
181   \clist_gput_right:Nn \l_MUCproc@thanks_clist
182     {{#2\def\@thefnmark{#1}\@makefnmark}
183   }}
184 \NewDocumentCommand{\MUCproc@thanks}{om}{
185   \footnotemark%
186   \IfNoValueF{#1}{
187     \prop_if_exist:NF \g_MUC@InstRef_prop {\prop_new:N \g_MUC@InstRef_prop}
188     \prop_put:Nnx \g_MUC@InstRef_prop {#1} {\thefootnote}
189   }
190   \exp_args:Nx \MUCproc@thanks:nn {\thefootnote}{#2}
191 }
192
193 \msg_new:nnn {mucproc} {thanks-label-missing} {
194   No~ institute~ labeled~ '#1'.\\
195   Add~ a~ label~ using~ the~ optional~ argument~ of~ the~ \thanks~ command.
196 }
197
198 \NewDocumentCommand\MUCproc@thanksref{m}{
199   \prop_if_in:NnTF \g_MUC@InstRef_prop {#1} {
200     \def\@thefnmark{\prop_item:Nn \g_MUC@InstRef_prop {#1}}\@makefnmark
201   }
202   {\msg_error:nn {mucproc} {thanks-label-missing}}
203 }
204

```



```

205 \newcommand*\typeset@MUCproc@thanks {
206     \clist_use:Nn \l_MUCproc@thanks_clist {\rule{0pt}{0pt}\}
207
208 \renewcommand*\maketitle{%
209 \begingroup
210 \DeclareExpandableDocumentCommand{\thanks}{om}{%
211 \def\thanksref##1{%
212 \def\and{\unskip,~\ignorespaces}
213 \MUC@passTitleData
214 \let\titlepage@restore\relax
215 \renewcommand*\thefootnote{\@arabic\c@footnote}
216 \let\thanks\MUCproc@thanks
217 \let\thanksref\MUCproc@thanksref
218 %\next@tdpage
219 \global\@topnum=\z@
220 \setparsizes{\z@}{\z@}{\z@\@plus 1fil}\par@updaterelative
221 \null
222 \vskip 41pt
223 {\usekomafont{title}{\Huge \@title \par}}%
224     {\ifx\@subtitle\@empty\else\vskip .5em\usekomafont{subtitle}%
225     \Large\@subtitle\par\fi}%
226     \vskip 7pt
227 {%
228 \usekomafont{author}{%
229 \lineskip .5em%
230 \@author
231 \par
232 }%
233 }%
234 \par
235 \vskip 8pt
236 \bool_if:NTF \g_MUC@compatibility_mode
237     {\thispagestyle{empty}}
238     {\thispagestyle{MUC@titlepagestyle}}
239 \typeset@MUCproc@thanks
240 \par
241 \vspace{8pt}
242 \endgroup
243 %\fi
244 \setcounter{footnote}{0}%
245 \bool_if:NT \g_MUC@compatibility_mode {
246 \let\thanks\relax
247 \let\maketitle\relax
248 \let\@maketitle\relax
249 \global\let\@thanks\@empty
250 \global\let\@author\@empty
251 \global\let\@date\@empty
252 \global\let\@title\@empty
253 \global\let\@subtitle\@empty

```

```

254 \global\let\@extratitle\@empty
255 \global\let\@titlehead\@empty
256 \global\let\@subject\@empty
257 \global\let\@publishers\@empty
258 \global\let\@uppertitleback\@empty
259 \global\let\@lowertitleback\@empty
260 \global\let\@dedication\@empty
261 \global\let\author\relax
262 \global\let\title\relax
263 \global\let\extratitle\relax
264 \global\let\titlehead\relax
265 \global\let\subject\relax
266 \global\let\publishers\relax
267 \global\let\uppertitleback\relax
268 \global\let\lowertitleback\relax
269 \global\let\dedication\relax
270 \global\let\date\relax
271 }
272 \global\let\and\relax
273 \global\let\thanksref\relax
274 }

```

### 3.7 Anonymization and additional author information

The anonymization is realized checking the setting using the corresponding if-expression. The \@author information to the language dependent meaning of \MUCanonymousauthor.

```

275 \newcaptionname{ngerman}{\MUCanonymousauthor}{Anonymisierte Fassung}
276 \newcaptionname{english}{\MUCanonymousauthor}{anonymous version}
277 \ifMUC@anonymous
278   \def\@author{Anonymisierte Fassung}
279   \def\author#1\relax

```

The authoraddendum environment shall create no output, if the anonymous mode is active.

```

280   \RequirePackage{comment}
281   \excludecomment{authoraddendum}
282 \else

```

authoraddendum The Implementation works via the typical xparse mechanisms.

```

283   \NewDocumentEnvironment{authoraddendum}{d<>om}{
284     \par
285     \IfNoValueTF{#2}{
286       {\usekomafont{authoraddendum}#3}\par\medskip
287     }{
288       \begin{minipage}[t]{3cm}
289       \vspace{0pt}
290       \IfNoValueTF{#1}{
291         \includegraphics[width=\linewidth]{#2}
292       }{

```

```

293         \includegraphics[#1]{#2}
294     }
295     \end{minipage}\hspace{.5cm}%
296     \begin{minipage}[t]{\dimexpr\linewidth-3.5cm\relax}
297     \vspace{0pt}
298     {\usekomafont{authoraddendum}#3}\par\medskip%
299     }
300     \usekomafont{authoraddendum}
301     }{
302     \IfNoValueF{#2}{\end{minipage}}
303     \par
304     }
305 \fi

```

### 3.8 Visible adjustment of sizes and spacing

To match the Word template we have to adjust a bunch of spacing settings as well as font sizes. The easiest way to achieve this is using the KOMA-Script mechanisms. In compatibility mode these settings will be ignored.

```

306 \reverse_if:N \if_bool:N \g_MUC@compatibility_mode

```

### 3.9 Structure Settings

Word indents the section headings independent from the width of the section number. To achieve this a macro called `\MUC@sectionnumberbox` is created and all section formats are redefined.

```

307 \newcommand*{\MUC@sectionnumberbox}[1]{\makebox[19pt][l]{#1\autodot}}
308 \renewcommand*{\sectionformat}{\MUC@sectionnumberbox{\thesection}}
309 \renewcommand*{\subsectionformat}{\MUC@sectionnumberbox{\thesubsection}}
310 \renewcommand*{\subsubsectionformat}{\MUC@sectionnumberbox{\thesubsubsection}}

```

The spacing around the headings also has to be adjusted:

```

311 \RedeclareSectionCommand[afterskip=1.5ex plus .2ex,%
312     beforeskip=-3.6ex plus -1ex minus -.2ex]{section}
313 \RedeclareSectionCommand[afterskip=.5ex plus .2ex,%
314     beforeskip=-1ex plus -1ex minus -.2ex]{subsection}
315 \RedeclareSectionCommand[afterskip=.5ex plus .2ex,%
316     beforeskip=-1ex plus -1ex minus -.2ex]{subsubsection}
317 \RedeclareSectionCommand[afterskip=1em,%
318     beforeskip=1ex plus 1ex minus .2ex]{paragraph}
319 \RedeclareSectionCommand[afterskip=1em,%
320     beforeskip=1ex plus 1ex minus .2ex]{subparagraph}

```

The font settings will be done together with all other font settings in the next subsection.

### 3.10 Font Settings

Adjusting the font settings to match the Word version:

```

321 \setkomafont{disposition}{}
322 \setkomafont{title}{}
323 \setkomafont{author}{\large}
324 \setkomafont{section}{\LARGE}
325 \setkomafont{subsection}{\Large}
326 \setkomafont{caption}{\footnotesize\itshape}
327 \setkomafont{captionlabel}{\usekomafont{caption}}
328 \newkomafont{abstractcontent}{\small}
329 \newkomafont{abstract}{\normalsize\bfseries}
330 \newkomafont{authoraddendum}{\small}

```

### 3.11 Abstract

The `abstract` environment is redefined to match the Word version.

```

331 \renewenvironment{abstract}{%
332     \setparsizes{0pt}{4pt}{0pt plus 1 fill}{%
333         \usekomafont{abstract}%
334         \abstractname}\par%
335     \usekomafont{abstractcontent}}{}

```

### 3.12 Pagestyle

The demo document shows a headline containing author and document title. To achieve this that information was passed inside the `\maketitle` macro and saved in the `\MUC@author` and `\MUC@title` macros. There is also a possibility to set a copyright-information box similar to the Word template. Both actions will only be used, when no compatibility-mode is active.

```

336 \ifMUC@pagestyle
337     \ExplSyntaxOff
338     \usepackage{scrlayer-scrpage}
339     \ifMUC@copyrightinfo
340         \DeclareNewLayer[align=tl,area={\dimexpr 1in + \hoffset +
341             \oddsidemargin\relax}{\dimexpr\paperheight-3.9cm\relax}{\textwidth}{2cm},content={
342             \setlength{\fboxrule}{.7bp}%
343             \setlength{\fboxsep}{6.5pt}%
344             \fbox{\hspace*{.8pt}\parbox[t][\dimexpr2cm-2\fboxsep-2\fboxrule\relax][t]{%
345                 \dimexpr\textwidth-2\fboxsep-2\fboxrule-1.6pt\relax}{%
346                 Platzhalter fr DOI und ggf. Copyright Text. (Bitte nicht entfernen).\par
347                 \vspace{7pt}
348                 Name, Vorname (2017): Titel.%
349                 Tagungsband Mensch und Computer 2017. Gesellschaft fr Informatik.%
350                 DOI: xxxxxx}%
351             }]{copyright}
352         \DeclareNewPageStyleByLayers{MUC@titlepagestyle}{copyright}
353     \else
354         \DeclareNewPageStyleAlias{MUC@titlepagestyle}{empty}
355     \fi

```

```

356 \clearpairofpagestyles
357 \ifMUC@headline
358     \lohead{\MUC@title}
359     \rehead{\csname MUC@author\endcsname}
360 \fi
361 \setkomafont{pagehead}{\normalfont}
362 \setkomafont{pagefoot}{}
363 \ExplSyntaxOn
364 %%%}
365 \fi
366 \fi:
367 \ExplSyntaxOff
i/!font-clo;

```