The maps class*

maps editorial board
maps@ntg.nl

May 4, 2015

Abstract

The `maps` class can be used for the preparation of articles for the Dutch TeX Usergroup (NTG) biannual periodical MAPS.

Keywords: Maps LaTeX class file Context module fonts

1 Options

\setupArticle   With the `\setupArticle` command, the *key=value* mechanism is used to set variables such as the title, the author(s), abstract, and more. This command takes a list of comma-separated *key=value* expressions as an argument. The *value* part must be enclosed in braces if it contains any commas. The available options and their defaults are:

Title	\<undefined\>
SubTitle	\<empty\>
RunningTitle	\<same as Title\>
Author	\<undefined\>
RunningAuthor	\<same as Author\>
Email	\<empty\>
Address	\<empty\>
Page	1
Period	notset
Number	99
Year	9999
Language	english
Abstract	\<empty\>
Keywords	\<empty\>

Options with an \<undefined\> default must always be set; if they aren't used, an error message is produced. Options with an \<empty\> default represent information that will only appear if the option is used with a non-empty value.

The `\setupArticle` command should be used in the preamble. Its contents become effectivewith the ececution of the `\maketitle` command, which has been redefined to include all that information.

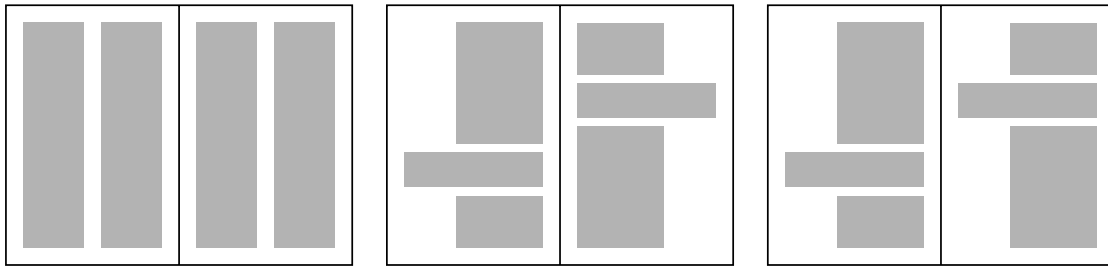*This document corresponds to `maps` v1.71, dated 2015/05/04.

Figure 1: The three Maps layouts: two-column, one-column and asymmetric. The latter two layouts each have 'wide' sections, sticking out into the wide margins.

2 Fonts

The revised Maps makes use of free fonts exclusively: Bitstream Charter as main text font, Euler[1] for math and Latin Modern[2] for everything else.

There are some nice correspondences in letterforms between Charter and Latin Modern Sans. However, the large x-height of Charter and the small x-height of Latin Modern Sans makes them tricky to combine. Charter is scaled to 95% to compensate for this.

Unfortunately, smallcaps for Charter don't belong to the free set. Therefore, the Maps style does not use smallcaps.

3 Getting the Maps style

If you are writing for the Maps, you may want to format your paper yourself in the Maps style. There is no real need to do this; the standard Latex article style or simple Context markup serve just as well.

There should be a download link on http://www.ntg.nl/maps.html. The package includes Latex- and Context sample files. The Maps font setup has not been activated, in order to avoid unnecessary complexities and incompatibilities for authors.

4 Using the Latex version

4.1 Document class options

4.1.1 Layout options

The default Latex Maps layout is two-column, with the title and the optional subtitle over both columns. There are two single-column layouts, a symmetric one (document option `onecolumn`) and an asymmetric one (document option `asym`).

The default two-column layout option is implemented with the built-in Latex two-column option rather than with the `multicol` package.

4.1.2 Other document options

There are two additional options to tune the look of your paper:

☐ `nosubsub` defines only two different levels of sectioning. If you use the two-column layout and don't need more, then this option will probably improve the look of your paper.

☐ `deftables` suppresses extra vertical space around vertical rules in tabulars; see the section on tabulars.

---

[1] The eulervm package by Walter Schmidt makes the Euler math font family a suitable drop-in replacement for Computer Modern, and combines well with many commercial fonts.

[2] Latin Modern is a Type 1 reimplementation of Computer Modern with a large character set, which supports the T1 encoding.

4.2 Article start

An short article may look like this:

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\documentclass{maps}
\usepackage{graphicx}
\setupArticle{
        Title = {Long title,\\
                 which may not fit on one line\thanks{Whoever...}
                },
 RunningTitle = Short title,
     SubTitle = An optional subtitle,
       Author = Anton Ulrich Thor,
RunningAuthor = A.U. Thor,
        Email = a.u.thor@uu.am.dw,
      Address = Institute of Indefinite Studies\\
                Unseen University\\
                Ankh Morpork,
       Period = voorjaar,
       Number = 36,
         Year = 2008,
         Page = 1,
     Keywords = {Example, Maps, Latex},
     Language = english,
     Abstract = {%
                   This is a very short abstract.\\
                   Indeed.
                }
}
\begin{document}
\maketitle
\section{A section}
Content of the first\footnote{and last} section.
Footnotes are endnotes.
\end{document}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

The optional RunningAuthor key will be used for the first and all odd page headers. The (long) Author key's argument, which has no particular structure, will be typeset at the end. You should include the optional parameter if the author command is long or complex or includes newlines.

Because the full author parameter is typeset at the very end, a thanks command is only supported for the title.

It is strongly recommended to include abstract- and keywords keys.

4.3 Section numbering

Use section numbers only if you actually refer to them. To encourage this, the classfile turns off section numbering even for sections. You can turn it back on with

```
\setcounter{secnumdepth}{..}
```

4.4 Lists

itemouter If you have lists with long entries and use the default two-column layout, give the itemouter, enumouter and descript environments a try. These avoid protracted indentation:

```
\begin{itemouter}
\item This is the first item of a
```

```
  non-indented itemized list,
  produced with the \texttt{itemouter}
  environment.
\item This is the second item.
\end{itemouter}
```

produces

☐ This is the first item of a non-indented itemized list, produced with the `itemouter` environment. There is no indentation at the start, nor at the continuation lines.

☐ This is the second item.

4.5 Tabulars

The Maps classfile adds some vertical space around horizontal rules in tables. This makes vertical rules look funny, but most of the time you are better off without vertical rules anyway; see table 1. If you really insist on vertical rules, use the `deftables` document option.

Table 1: Tabulars with and without vertical rules

var	value		var	value
$Q_{s,\mathrm{max}}$	0.18		$Q_{s,\mathrm{max}}$	0.18
K_s	1.0		K_s	1.0
$Y_{x/s}$	0.5		$Y_{x/s}$	0.5
$Y_{p/s}$	0.854		$Y_{p/s}$	0.854
$Q_{p,\mathrm{max}}$	0.0045		$Q_{p,\mathrm{max}}$	0.0045
μ_{crit}	0.01		μ_{crit}	0.01
k_h	0.002		k_h	0.002
m_s	0.025		m_s	0.025

4.6 Footnotes

Footnotes have been turned into endnotes. You need to manually add a command `\theendnotes` to get them to print. The title of the notes section is defined by the command `\notesname`.

4.7 Wide typesetting in single-column layout

For both single-column layouts, there are environments `fullwidth` and `verboutdent` which typeset their content across the full page, including most of the wide margin; see figure 1.

```
\begin{fullwidth}
x x x x x x x x x x x x x x x x x x x x x
x x x x x x x x x x x x x x x x x x x x x
x x x x x x x x x x x x x x x x x x x x x
x x x x x x x x x x x x x x x x x x x x x
\end{fullwidth}

\begin{verboutdent}
{}\/$xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
\end{verboutdent}
```

The implementation of `fullwidth` is rather simplistic and may easily break, in which case more sophisticated hackery will be needed.

5 The Context version

The Context version supports the same general layouts but not all the features of the Latex version. Consult the sample file in the Maps package.

5.1 Article start

A Context Maps article might start as follows:

```
% non-default layouts:
%\enablemode[onecolumn]
%\enablemode[asym]
% subsection lowest level of sectioning
%\enablemode[nosubsub]
\usemodule[map-se]


\starttext
\startArticle [%
   Page=13,
   Title={An example document},
   SubTitle={with an optional subtitle},
   Author={%
     Anton Ulrich Thor\\
     Institute of Indefinite Studies\\
     Unseen University\\
     Ankh Morpork\\
     \type{a.u.thor@uu.am.dw}},
   RunningAuthor={Anton Ulrich Thor}%
]

\startAbstract
...
\stopAbstract

\startKeywords
...
\stopKeywords

\section{...}
```

5.2 Section numbering

Use section numbers only if you actually refer to them. To encourage this, the Maps module turns off section numbering even for sections. You can turn them back on with

```
\setupheads [sectionnumber=yes]
```

5.3 Lists

A Context counterpart of the itemouter Latex environment is outeritemize:

```
\startouteritemize
\item ...
\item ...
\stopouteritemize
```

Table 2: Logo commands and their output

command	result	command	result	command	result
\BASH	Bash	\CONTEXT	ConTeXt	\CTX	CTX
\DVIPDFMX	DVIPDFMX	\ETEX	eTeX	\FOURDOS	4DOS
\GHOSTSCRIPT	GhostScript	\GHOSTVIEW	GhostView	\IMAGEMAGICK	Image Magick
\INKSCAPE	Inkscape	\LATEX	LaTeX	\LaTeX	LaTeX
\MAC	Mac	\MATHADORE	MathAdore	\MATHML	MATHML
\METAPOST	MetaPost	\MIKTEX	MiKTeX	\MODULA	Modula
\MPTOPDF	MPTOPDF	\MPTOPDF	MPTOPDF	\MSWINDOWS	MS Windows
\OPENMATH	OpenMath	\PDFETEX	pdfeTeX	\PDFTEX	pdfTeX
\PDF	PDF	\PERL	Perl	\RUBY	Ruby
\SVG	SVG	\TDS	TDS	\TETEX	teTeX
\TEXEXEC	TeXexec	\TEXLIVE	TeXLive	\TEXMFSTART	TeXMFstart
\TEXUTIL	TeXutil	\TEX	TeX	\TeX	TeX
\THANH	Hàn Thế Thành	\TOOLS	---tools	\TPM	TPM
\UNIX	Unix	\XETEX	XeTeX	\XML	XML
\XSLT	XSLT				

Full-width verbatims are also available:

```
\startwidetyping
...
\stopwidetyping
```

The Context version, like the Latex version, turns footnotes into endnotes. You may want to put a command such as

```
\def\notesname{Footnotes}
```

in your preamble. You also need to explicitly place the footnotes:

```
\placefootnotes
```

5.4 Logos

The class defines commands for many logos. The commands and their out are shown in table 2

6 More advice

As mentioned above, we certainly don't require authors to use the Maps style. We basically publish the Maps style because people ask for it. The Maps style is a work in progress anyway.

If you want to facilitate production, the following will make more of a difference to us:

☐ Use clean, minimalist markup.

☐ Don't try to fix typographic or layout problems yourself; your hacks are likely to get in our way.

☐ Minimize your use of packages. Don't use packages that merely serve to improve the appearance of your paper.

☐ Make sure you send a complete submission, including all the less-standard packages that you use.

☐ Use eps, pdf, png or jpg formats for graphics; jpg only for photographs.

☐ Don't convert screenshots to jpg; both compression rate and quality will be disappointing.

☐ Include a pdf of your document, as a check for us.

7 Implementation

keyval options The maps class uses xkeyval for its setup.

```
\RequirePackage{xkeyval}
\RequirePackage{ucs}
\RequirePackage[utf8x]{inputenc}
\RequirePackage[T1]{fontenc}
\usepackage{marvosym}
\def\Torque{\discretionary{\kern-3pt\Righttorque\kern-3pt}{\kern-3pt\Lefttorque\kern-3pt}{}}
```

Defaults:

```
\def\MAPSemail{}
\def\MAPSaddress{}
\def\MAPSsubtitle{}
\setcounter{page}{1}
\def\MAPSperiod{notset}
\def\MAPSnumber{99}
\def\MAPSyear{9999}
\def\MAPSabstract{}
\def\MAPSkeywords{}
```

Two languages allowed: dutch or english:

```
\def\@mapslangen{english}
\def\@mapslangnl{dutch}
\def\MAPSlanguage{english}
```

Keys:

```
\define@key{maps}{Title}        {\def\MAPStitle{#1}}
\define@key{maps}{SubTitle}     {\def\MAPSsubtitle{#1}}
\define@key{maps}{RunningTitle} {\def\MAPStitleshort{#1}}
\define@key{maps}{Author}       {\def\MAPSauthor{#1}}
\define@key{maps}{RunningAuthor}{\def\MAPSauthorshort{#1}}
\define@key{maps}{Email}        {\def\MAPSemail{#1}}
\define@key{maps}{Address}      {\def\MAPSaddress{#1}}
\define@key{maps}{Page}         {\setcounter{page}{#1}}
\define@key{maps}{Period}       {\def\MAPSperiod{\uppercase{#1}}}
\define@key{maps}{Number}       {\def\MAPSnumber{#1}}
\define@key{maps}{Year}         {\def\MAPSyear{#1}}
\define@key{maps}{Language}     {\def\MAPSlanguage{#1}}
\define@key{maps}{Abstract}     {\def\MAPSabstract{#1}}
\define@key{maps}{Keywords}     {\def\MAPSkeywords{#1}}
```

class options Some options are still class options, but should probably (also?) be xkeyval options.

```
\@twocolumntrue
\newif\ifrealfonts  \realfontsfalse
\newif\ifmapstables \mapstablestrue
\newif\ifasym \asymfalse
\newif\ifsubsub \subsubtrue
%
\DeclareOption{twocolumn}{\@twocolumntrue\asymfalse}
\DeclareOption{onecolumn}{\@twocolumnfalse\asymfalse}
\DeclareOption{asym}{\@twocolumnfalse\asymtrue}
\DeclareOption{realfonts}{\realfontstrue}
\DeclareOption{nosubsub}{\subsubfalse}
\DeclareOption{deftables}{\mapstablesfalse}
\DeclareOption*{\PassOptionsToClass{\CurrentOption}{article}}
\ProcessOptions\relax
```

page layout

```
\if@twocolumn
  \LoadClass[twoside,twocolumn,a4paper]{article}
\else
```

```
                 \LoadClass[twoside,a4paper]{article}
              \fi
```

```
              \paperwidth=595.3bp % 21cm, 597.5pt
              \paperheight=756bp % 759pt
              %
              \pdfhorigin=1in
              \pdfvorigin=1in
              \pdfpagewidth=\paperwidth
              \pdfpageheight=\paperheight
              \edef\pdfdate{%
                \the\year
                \ifnum \month < 10 0\the\month \else \the\month \fi
                \ifnum \day < 10 0\the\day \else \the\day \fi}
              \pdfoptionpdfminorversion=3
              \pdfinfo{%
                /CreationDate (D:\pdfdate)
                /ModDate (D:\pdfdate)
                /Trapped (False)
                /GTS_PDFXVersion (PDF/X-3)
                /Title (\jobname)
              }
              \pdfpageattr{/TrimBox [ 0 0 595.3 756] }
              %
              \RequirePackage{ifthen,graphicx,verbatim}
              \ifrealfonts
                \RequirePackage{mapsfont}
              \else
                \RequirePackage{charter}
              \fi
```

7.1   Font sizes

```
              \newdimen{\le@ding}\setlength{\le@ding}{11pt} % non-elastic
```

\normalsize

```
              \renewcommand\normalsize{%
                \@setfontsize\normalsize{10}{11}%
                \if@twocolumn
                  \abovedisplayskip 5.5\p@
                \else
                  \abovedisplayskip 9\p@
                \fi
                \abovedisplayshortskip \z@
                \belowdisplayshortskip \z@
                \belowdisplayskip \abovedisplayskip
                \let\@listi\@listI}
              \normalsize
```

\small

```
              \renewcommand\small{%
                \@setfontsize\small{9}{10}%
                \if@twocolumn
                  \abovedisplayskip 4.5\p@
                \else
                  \abovedisplayskip 7\p@
                \fi
                \abovedisplayshortskip \z@
                \belowdisplayshortskip 3.5\p@
                \def\@listi{\leftmargin\leftmargini
                            \topsep 3\p@
```

```
                        \parsep 2\p@
                        \itemsep \parsep}%
              \belowdisplayskip \abovedisplayskip }
```

\footnotesize

```
    \renewcommand\footnotesize{%
       \@setfontsize\footnotesize{8}{9}%
       \if@twocolumn
         \abovedisplayskip 4\p@
       \else
         \abovedisplayskip 6\p@
       \fi
       \abovedisplayshortskip \z@
       \belowdisplayshortskip 3\p@
       \def\@listi{\leftmargin\leftmargini
         \topsep 3\p@
         \parsep 2\p@
         \itemsep \parsep}%
       \belowdisplayskip \abovedisplayskip
    }
```

\scriptsize

```
    \renewcommand\scriptsize{\@setfontsize\scriptsize{7}{8}}
```

\tiny

```
    \renewcommand\tiny{\@setfontsize\tiny{6}{7}}
```

\large

```
    \renewcommand\large{\@setfontsize\large{11}{11}}
```

\Large

```
    \renewcommand\Large{\@setfontsize\Large{14}{14}}
```

\LARGE

```
    \renewcommand\LARGE{\@setfontsize\LARGE{24}{24}}
```

\huge

```
    \let\huge\LARGE
```

\Huge

```
    \let\Huge\LARGE
```

7.2   Basic typography

```
\setlength{\parindent} {11pt}
\newlength\parsave
\setlength{\parsave}{11pt}
\setlength{\parskip}{0pt}
```

\textstrut: phantom ascender+descender not used in classfile, but may come in handy anyway
```
\newbox\strutbox
\newlength\m@xh\newlength\m@xd
```

\textstrut

```
\newcommand{\textstrut}{\setbox\strutbox=\hbox{Aljgp)|}%
  \m@xh=\ht\strutbox\m@xd=\dp\strutbox\advance\m@xh \m@xd
  \rule[-\m@xd]{0pt}{\m@xh}}
```

7.3   Vertical page layout

vertical dimensions in picas and points

```
\topskip11pt
\setlength{\textheight}{605pt} % text height: 55*11pt
\setlength{\topmargin}{36pt}    % set topmargin
\addtolength{\topmargin}{-1in} % standard voffset
\setlength{\headheight}{\le@ding}
\setlength{\footskip}{33pt}
```

7.4 Horizontal typography and layout

underlying horizontal grid:

inside 70.3 pt, 4 106pt columns, separated by 11pt gutters, outside 70.3pt

70.3 106 11 106 11 106 11 106 70.3 | 70.3 106 11 106 11 106 11 106 70.3

two-column:

70.3 223 11 223 70.3 | 70.3 223 11 223 70.3

one column:

187.3 340 70.3 | 70.3 340 187.3

asym:

187.3 340 70.3 | 187.3 340 70.3

with marginpar, the latter two become:

70.3 106 11 340 70.3 | 70.3 340 11 106 70.3

70.3 106 11 340 70.3 | 70.3 106 11 340 70.3

```
\setlength{\oddsidemargin}{70.3pt}
\setlength{\evensidemargin}{70.3pt}
\addtolength{\oddsidemargin}{-1in} % default hoffset
\addtolength{\evensidemargin}{-1in}
\if@twocolumn
  \setlength{\textwidth}{457pt}        % set text width
  \setlength{\columnsep}{11pt}
```

dummy definitions for fullwidth and verboutdent

```
  \newenvironment{fullwidth}{\par}{\par}
  \newenvironment{verboutdent}{\verbatim}{\endverbatim}
\else
  \newlength{\twocoltextwidth}        % text width 2-col layout
  \setlength{\twocoltextwidth}{457pt}
  \newlength{\marginpartot}
  \setlength{\marginpartot}{\z@}
```

calculate 1-col widths: assume underlying 4-col grid with inner 3 cols together main col, and outer col reserved for e.g. verbatims

```
  \setlength\marginparsep{\columnsep}
  \setlength\marginparwidth{\twocoltextwidth}
  \addtolength\marginparwidth{-3\columnsep}
  \addtolength\marginparwidth{-0.75\marginparwidth}
  \setlength\textwidth{\twocoltextwidth}
  \addtolength\textwidth{-\marginparsep}
  \addtolength\textwidth{-\marginparwidth}
  \setlength\marginpartot{\marginparwidth}
  \addtolength\marginpartot{\marginparsep}
  \addtolength{\evensidemargin}{\marginpartot}
  \ifasym \addtolength{\oddsidemargin}{\marginpartot} \fi
  \ifasym
    \newenvironment{fullwidth}{%
      \bgroup
      \vspace{6pt}
      \leftskip-\marginpartot
      \par\parindent0pt}%
      {\par\vspace{6pt}\egroup}
    \def\verbout{\def\verbatim@processline{%
        \hspace*{-\marginpartot}\the\verbatim@line\par}}
    \newenvironment{verboutdent}{%
      \verbatim\verbout}{\endverbatim}
  \else
```

Simply testing on c@page unsafe because final pagebreaking not yet known

```
    \newcount\@evenodd\@evenodd=0
    \newenvironment{fullwidth}{%
```

```
        \global\advance\@evenodd1
        \par
        \bgroup
        \vspace{6pt}
        \ifthenelse{\isodd{\pageref{@eo\the\@evenodd}}}%
          {\rightskip-\marginpartot}%
          {\leftskip-\marginpartot}%
          \parindent0pt\label{@eo\the\@evenodd}}%
        {\par\vspace{6pt}\egroup}
      \def\verbout{%
        \global\advance\@evenodd1
        \label{@eo\the\@evenodd}
        \ifthenelse{\isodd{\pageref{@eo\the\@evenodd}}}{}{%
          \def\verbatim@processline{%
          \hspace*{-\marginpartot}\the\verbatim@line\par}}}
      \newenvironment{verboutdent}{%
        \verbatim\verbout}{\endverbatim}
    \fi % end not asym
  \fi % end not twocolumn
\widowpenalty=1000
\clubpenalty=1000
```

7.5 Verbatims

We like a smaller verbatim, but not in running text. `\every@verbatim` doesn't apply to the inline verb environment.

```
\def\sm@ller{%
  \@tempdima=\f@size pt
  \advance\@tempdima-0.1\@tempdima
  \fontsize{\@tempdima}{\f@baselineskip}\selectfont}
\addto@hook\every@verbatim{\sm@ller}%
```

less whitespace around verbatims

```
\def\less@white{\topsep=3pt}
\addto@hook\every@verbatim{\less@white}
```

7.6 Boxes and bullets

makeshift square bullet; in mapsfont.sty a wasysym character is used instead.

```
\newcommand\rectangle[2]{{%
  \setlength\fboxsep{0pt}%
  \fbox{\rule{#1}{0pt}\rule{0pt}{#2}}
}}
\ifx\mapsbullet\undefined
  \newsavebox{\squarebullet}
  \sbox{\squarebullet}{\raisebox{.2ex}{\rectangle{.75ex}{.75ex}}}
  \def\mapsbullet{\usebox{\squarebullet}}
\fi
```

7.7 Lists

```
  \@itempenalty-1000
```

define label formatting indirectly, for easy overruling

```
\partopsep=0pt
\def\@mklab#1{#1 \hfil} % left-align labels in lists
%
\def\mapslistargs#1{%
  \if@twocolumn
      \setlength{\topsep}{#1}
```

```
                  \setlength{\itemsep}{0.0pt}
                  \setlength{\listparindent}{0.0pt}
                  \setlength{\leftmargin}{1.25\parsave}
                  \setlength{\labelwidth}{\leftmargin}
              \else
                  \setlength{\topsep}{.5\le@ding}
                  \setlength{\itemsep}{.5\le@ding}
                  \setlength{\listparindent}{\parsave}
                  \setlength{\leftmargin}{2\parsave}
                  \setlength{\labelwidth}{\parsave}
              \fi
              \setlength{\parsep}{0.0pt}
              \setlength{\itemindent}{0.0pt}
              \setlength{\labelsep}{0pt}
              \setlength{\@rightskip}{0pt plus 2em} % lists raggedright
              \let\makelabel\@mklab % left-align labels in lists
            }
            %
            \def\noindentlistparams#1{%
              \topsep .5\le@ding
              \itemsep .5\le@ding
              \listparindent 0pt
              \leftmargin 0pt
              \labelwidth 0pt
              \parsep 0pt
              \itemindent 0pt
              \labelsep 0pt
              \setlength{\@rightskip}{0pt} % these lists fully justified
              \def\makelabel##1{\kern0pt \rlap{##1}\kern #1}%
              \advance\@itempenalty-1000
            }
            %
            \newif\ifinitemize % \initemize automatically initialized false
   itemize
            \renewenvironment{itemize}%
              {\ifinitemize
                  \begin{list}{--}{\mapslistargs{0pt}}%
               \else
                  \initemizetrue
                  \begin{list}{\mapsbullet}{\mapslistargs{\le@ding}}%
               \fi}{\end{list}}
 itemouter
            \newenvironment{itemouter}%
                {\ifinitemize\@toodeep
                 \else
                  \initemizetrue
                  \begin{list}{\mapsbullet}{\noindentlistparams{1em}}%
                 \fi}%
                {\end{list}}
            %
            \def\theenumii{\alph{enumii}}
            \def\theenumi{\arabic{enumi}}
            \newif\ifinenum
 enumerate
            \renewenvironment{enumerate}%
                {\ifinenum
                    \setcounter{enumii}{1}\begin{list}
                    {\theenumii.\hfil}{\usecounter{enumii}\mapslistargs{0pt}}%
                 \else
                  \inenumtrue
```

```
                    \begin{list}{\theenumi.\hfil}{%
                        \usecounter{enumi}\mapslistargs{\le@ding}}%
                    \fi}%
                    {\end{list}}
```

```
    \newenvironment{enumouter}%
        {\ifinenum\@toodeep
         \else
          \inenumtrue
          \begin{list}{{\small\bfseries \theenumi.\hfil}}{%
             \usecounter{enumi}\noindentlistparams{1.25em}}%
         \fi}%
        {\end{list}}
```

```
    \renewcommand\descriptionlabel[1]{\normalfont\bfseries #1\kern 9.5pt}
    \newenvironment{descript}%
     {\list{}{\noindentlistparams{3pt}%
        \labelwidth\z@ \@rightskip 0pt
        \let\makelabel\descriptionlabel}}%
     {\endlist}
```

```
    \renewenvironment{description}%
      {\list{}{\mapslistargs{11pt}\labelwidth\z@ \itemindent-\leftmargin
                            \let\makelabel\descriptionlabel}}%
      {\endlist}
```

list environment especially for named-references bibliographies no labels; hanging indents

```
    \newenvironment{biblist}%
      {\list{}{\mapslistargs{\le@ding}\labelwidth\z@ \itemindent-\leftmargin
                            \def\makelabel##1{\noindent}}}%
      {\endlist}
```

```
    \renewenvironment{quote}%
      {\begin{list}{}{\mapslistargs{\le@ding}}\item[]}{\end{list}}
```

7.8   Footnotes are endnotes

Redefinition of `\@makeenmark` lowers notemarks by 1pt because the digit 6 causes somewhat larger baselineskip

```
    \def\@textsuperscript#1{%
      \raisebox{-1pt}{{\m@th\ensuremath{^{\mbox{\fontsize\sf@size\z@#1}}}}}}
    \@definecounter{endnote}
    \def\theendnote{\@arabic\c@endnote}
    \def\@makeenmark{%
      \hbox{\@textsuperscript{\normalfont\footnotesize\@theenmark}}}
    \def\makeenmark{\@makeenmark}
    \def\theenmark{\@theenmark}
    \newdimen\endnotesep
    %
    \def\endnote{%
      \@ifnextchar[%
        {\@xendnote}%
        {\stepcounter{endnote}%
         \protected@xdef\@theenmark{\theendnote}%
         \@endnotemark\@endnotetext}}
    %
    \def\@xendnote[#1]{%
        \begingroup
          \c@endnote=#1\relax
```

```
      \unrestored@protected@xdef\@theenmark{\theendnote}%
   \endgroup
   \@endnotemark\@endnotetext}
```

Here begins a section of endnote code that's really different from the footnote code of LaTeX.

```
\let\@doanenote=0
\let\@endanenote=0
%
\newwrite\@enotes
\newif\if@enotesopen \global\@enotesopenfalse
%
\def\@openenotes{\immediate\openout\@enotes=\jobname.ent\relax
      \global\@enotesopentrue}
```

The stuff with \next and \meaning is a trick from the TeXbook, 382, there intended for setting verbatim text, but here used to avoid macro expansion when the footnote text is written. \next will have the entire text of the footnote as one long line, which might well overflow limits on output line length; the business with \newlinechar makes every space become a newline in the \@enotes file, so that all of the lines wind up being quite short.

```
\long\def\@endnotetext#1{%
      \if@enotesopen \else \@openenotes \fi
      \immediate\write\@enotes{\@doanenote{\@theenmark}}%
      \begingroup
         \def\next{#1}%
         \newlinechar='40
         \immediate\write\@enotes{\meaning\next}%
      \endgroup
      \immediate\write\@enotes{\@endanenote}}
```

\addtoendnotes works the way the other endnote macros probably should have, requiring the use of \protect for fragile commands.

```
\long\def\addtoendnotes#1{%
      \if@enotesopen \else \@openenotes \fi
      \begingroup
         \newlinechar='40
         \let\protect\string
         \immediate\write\@enotes{#1}%
      \endgroup}
```

End of unique endnote code

```
\def\endnotemark{%
   \@ifnextchar[%
      {\@xendnotemark}%
      {\stepcounter{endnote}%
       \protected@xdef\@theenmark{\theendnote}%
       \@endnotemark}}
%
\def\@xendnotemark[#1]{%
   \begingroup
      \c@endnote #1\relax
      \unrestored@protected@xdef\@theenmark{\theendnote}%
   \endgroup
   \@endnotemark}
%
\def\@endnotemark{%
  \leavevmode
  \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
  \makeenmark
  \ifhmode\spacefactor\@x@sf\fi
  \relax}
%
\def\endnotetext{%
```

```
    \@ifnextchar
      {\@xendnotenext}%
      {\protected@xdef\@theenmark{\theendnote}%
    \@endnotetext}}
%
\def\@xendnotenext[#1]{%
  \begingroup
    \c@endnote=#1\relax
    \unrestored@protected@xdef\@theenmark{\theendnote}%
  \endgroup
  \@endnotetext}
```

\theendnotes actually prints out the endnotes.

```
\def\notesname{Notes}
%
\def\enoteformat{\rightskip\z@ \leftskip\z@ \parindent=1em
  \noindent \@theenmark.\kern.4em
}
%
\def\enotesize{\small}
%
\def\theendnotes{%
  \immediate\closeout\@enotes \global\@enotesopenfalse
  \section*{\notesname}
  \begingroup
    \makeatletter
```

The machinery with \@ResetGT and > here ensures that \@doanenote works properly even if > is an active character at the point where \theendnotes is invoked. > needs to have catcode 12 when the arguments of \@doanenote are scanned, so that the > in the string "macro:->" is matched. The actual footnote text is not an argument to \@doanenote, but just follows it in the .ent file; so \@ResetGT can reset the category code for > that should be used when processing that text. That resetting takes place within a \begingroup-\endgroup block set up by \@doanenote and \@endanenote, so the catcode for > is back to 12 for the next note.

```
    \edef\@tempa{`\string >}%
    \ifnum\catcode\@tempa=12%
      \let\@ResetGT\relax
    \else
      \edef\@ResetGT{\noexpand\catcode\@tempa=\the\catcode\@tempa}%
      \@makeother\>%
    \fi
    \def\@doanenote##1##2>{\def\@theenmark{##1}\par\begingroup
        \@ResetGT
        \edef\@currentlabel{\csname p@endnote\endcsname\@theenmark}%
        \enoteformat}
    \def\@endanenote{\par\endgroup}%
    \enotesize
    \input{\jobname.ent}%
  \endgroup}
```

8 Bibliography

```
\let\@openbib@code\relax
\renewenvironment{thebibliography}[1]
  {\section*{\refname}%
   \def\@biblabel##1{[\,##1\,]\hfil}%
     \list{\@biblabel{\@arabic\c@enumiv}}{%
        \mapslistargs{\le@ding}%
        \settowidth\labelwidth{{\@biblabel[#1]}}%
        \setlength{\leftmargin}{\labelwidth}%
```

```
        \setlength{\itemindent}{0pt}%
        \setlength{\labelsep}{3pt}%
        \addtolength{\leftmargin}{\labelsep}%
        \@openbib@code
        \usecounter{enumiv}%
        \let\p@enumiv\@empty
        \renewcommand\theenumiv{\@arabic\c@enumiv}}%
    }{\def\@noitemerr
      {\@latex@warning{Empty `thebibliography' environment}}%
    \endlist}
```

9 Tabulars

```
\arraycolsep 6pt
\tabcolsep 6pt
\arrayrulewidth .4pt
\doublerulesep 2pt
%
\AtBeginDocument{%
  \ifmapstables
    \let\savehline\hline
    \def\hline{\noalign{\vskip2pt}\savehline\noalign{\vskip2pt}}
  \fi
}
```

9.1 Sectioning

change: now use serifed fonts

```
\setcounter{secnumdepth}{0}
\@secpenalty-\@highpenalty
%
\def\@runin#1{{\normalsize\bfseries\itshape #1.}}
%
\ifsubsub
  \def\section{\@startsection{section}{1}{\z@}%
    {-1.5\le@ding}{.5\le@ding}{\large\sffamily\bfseries\raggedright}}
  \def\subsection{\@startsection{subsection}{2}{\z@}%
    {-\le@ding}{1sp}{\normalsize\sffamily\bfseries\raggedright}}
  \def\subsubsection{\@startsection{subsubsection}{3}{\z@}%
    {0.5\le@ding}{-0.5em}{\@runin}}
\else
  \def\section{\@startsection{subsection}{2}{\z@}%
    {-\le@ding}{1sp}{\normalsize\sffamily\bfseries\raggedright}}
  \def\subsection{\@startsection{subsubsection}{3}{\z@}%
    {0.5\le@ding}{-0.5em}{\@runin}}
  \let\subsubsection\subsection
\fi
%
\let\paragraph\subsubsection
\let\subparagraph\subsubsection
```

9.2 Page styles (two-sided)

header items: (short) author and (short) title

```
\let\sectionmark\@gobble
\let\subsectionmark\@gobble
%
\if@twocolumn
  \def\ps@headings{%
    \let\@oddfoot\@empty\let\@evenfoot\@empty
```

```
    \def\@oddhead{%
      \normalfont\sffamily
      \ifnum \c@page= \c@firstpage \leftmark \else \rightmark \fi
      \hfill
      \MAPSdate
      \quad\textbf{\thepage}%
      \hskip-30pt\null}%
    \def\@evenhead{%
      \normalfont\sffamily
      \null\hskip-30pt
      \textbf{\thepage}\quad
      {\footnotesize MAPS \MAPSnumber}
      \hfill
      \mdseries\leftmark}}
  \def\ps@plain{%
    \let\@oddfoot\@empty\let\@evenfoot\@empty
    \def\@oddhead{%
      \normalfont\sffamily
      \null\hfill
      \MAPSdate
      \quad\normalsize\textbf{\thepage}%
      \hskip-30pt\null}%
    \def\@evenhead{%
      \normalfont\sffamily
      \null\hskip-30pt
      \normalsize\textbf{\thepage}\quad
      {\footnotesize MAPS \MAPSnumber}
      \hfill\null}}
\else \ifasym
  \def\ps@headings{%
    \let\@oddfoot\@empty\let\@evenfoot\@empty
    \def\@oddhead{%
      \normalfont\sffamily
      \null\hskip-\marginpartot
      \ifnum \c@page= \c@firstpage \leftmark \else \rightmark \fi
      \hfill
      \MAPSdate
      \quad\textbf{\thepage}%
      \hskip-30pt\null}%
    \def\@evenhead{%
      \normalfont\sffamily
      \null\hskip-\marginpartot
      \null\hskip-30pt
      \textbf{\thepage}\quad
      {\footnotesize MAPS \MAPSnumber}
      \hfill
      \mdseries\leftmark}}
  \def\ps@plain{%
    \let\@oddfoot\@empty\let\@evenfoot\@empty
    \def\@oddhead{%
      \normalfont\sffamily
      \null\hskip-\marginpartot
      \null\hfill
      \MAPSdate
      \quad\normalsize\textbf{\thepage}%
      \hskip-30pt\null}%
    \def\@evenhead{%
      \normalfont\sffamily
      \null\hskip-\marginpartot
      \null\hskip-30pt
      \normalsize\textbf{\thepage}\quad
```

```
        {\footnotesize MAPS \MAPSnumber}
        \hfill\null}}
\else
  \def\ps@headings{%
    \let\@oddfoot\@empty\let\@evenfoot\@empty
    \def\@oddhead{%
      \normalfont\sffamily
      \ifnum \c@page= \c@firstpage \leftmark \else \rightmark \fi
      \hfill
      \MAPSdate
      \quad\textbf{\thepage}%
      \hskip-\marginpartot\null
      \hskip-30pt\null}%
    \def\@evenhead{%
      \normalfont\sffamily
      \null\hskip-\marginpartot
      \null\hskip-30pt
      \textbf{\thepage}\quad
      {\footnotesize MAPS \MAPSnumber}
      \hfill
      \mdseries\leftmark}}
  \def\ps@plain{%
    \let\@oddfoot\@empty\let\@evenfoot\@empty
    \def\@oddhead{%
      \normalfont\sffamily
      \null\hfill
      \MAPSdate
      \quad\normalsize\textbf{\thepage}%
      \hskip-\marginpartot\null
      \hskip-30pt\null}%
    \def\@evenhead{%
      \normalfont\sffamily
      \null\hskip-\marginpartot
      \null\hskip-30pt
      \normalsize\textbf{\thepage}\quad
      {\footnotesize MAPS \MAPSnumber}
      \hfill\null}}
\fi\fi
\def\ps@empty{%
  \let\@oddfoot\@empty\let\@evenfoot\@empty
  \let\@oddhead\@empty\let\@evenhead\@empty}
```

9.3 Captions and figures

```
\long\def\@makecaption#1#2{%
  \vskip.5\abovecaptionskip
  \raggedright %\sffamily
  \small\textbf{#1.} #2\par
  \vskip\belowcaptionskip
}
%
\setlength{\textfloatsep}{11pt}
\setlength{\dbltextfloatsep}{11pt}
\setlength{\intextsep}{11pt}
%
\setcounter{topnumber}{7}
\setcounter{bottomnumber}{7}
\setcounter{totalnumber}{11}
\setcounter{dbltopnumber}{2}
\renewcommand{\topfraction}{.9}
```

```
\renewcommand{\textfraction}{.1}
\renewcommand{\bottomfraction}{.75}
\renewcommand{\floatpagefraction}{.9}
\renewcommand{\dblfloatpagefraction}{.9}
\renewcommand{\dbltopfraction}{.9}
%
\def\@floatboxreset{%
  \reset@font\sffamily\normalsize\@setminipage}
```

9.4 Maketitle

```
\newcounter{firstpage}
\def\setupArticle#1{%
  \setkeys{maps}{#1}
  \ifx\MAPSlanguage\@mapslangnl
    \RequirePackage[english,dutch]{babel}
  \else
    \ifx\MAPSlanguage\@mapslangen
      \RequirePackage[dutch,english]{babel}
    \else
      \ClassError{maps}{Language must be \@mapslangen\ or \@mapslangnl, not: \MAPSlanguage}
    \fi
  \fi
  \ifx\MAPStitle\undefined\ClassError{maps}{Title is undefined}\fi
  \ifx\MAPSauthor\undefined\ClassError{maps}{Author is undefined}\fi
  \def\MAPSdate{{\footnotesize\MAPSperiod\ \MAPSyear}}
  \ifx\MAPStitleshort\undefined\let\MAPStitleshort\MAPStitle\fi
  \ifx\MAPSauthorshort\undefined\let\MAPSauthorshort\MAPSauthor\fi
  \AtEndDocument{%
    \IfFileExists{\jobname.ent}{\theendnotes}{}
    \ifx\MAPSauthor\@empty\else
      \par \vskip \le@ding
      \noindent\small\sffamily
      \MAPSauthor
      \ifx\MAPSaddress\@empty\else\\\MAPSaddress\fi
      \ifx\MAPSemail\@empty\else\\\MAPSemail\fi
      \par
    \fi
  }
}
\renewcommand\maketitle{%
  \setcounter{firstpage}{\value{page}}}%
  \par
  \begingroup
    \def\thefootnote{\@fnsymbol\c@footnote}%
    \def\@makefnmark{\@textsuperscript{\normalfont\@thefnmark}}%
    \long\def\@makefntext##1{%
      \noindent\rule{1em}{0pt}%
        \@textsuperscript{\normalfont\@thefnmark}##1}%
    \if@twocolumn
      \twocolumn[\@maketitle]%
    \else
      \@maketitle
    \fi
    \@thanks
  \endgroup
```

thanks has done its work, now empty it, as it may not occur in the RunningTitle (which, by default, is the Title):

```
  \def\thanks##1{}
  \markboth{\MAPSauthorshort}{\MAPStitleshort}%
  \gdef\thanks##1{\message{%
```

```
      thanks command only allowed in title, not in author or elsewhere}}%
    \global\let\maketitle\relax
    \global\let\@maketitle\relax
    \global\let\@title\@empty
    \global\let\@subtitle\@empty
    \global\let\author\relax
    \global\let\title\relax
    \global\let\subtitle\relax
    \pagestyle{headings}%
```
`thanks` is to be a real footnote, but from now on we do only endnotes.
```
    \let\footnote\endnote
    \setcounter{endnote}{0}
    \ifx\MAPSabstract\@empty\else\begin{abstract}\MAPSabstract\end{abstract}\fi
    \ifx\MAPSkeywords\@empty\else\begin{keywords}\MAPSkeywords\end{keywords}\fi
}
%
\def\@maketitle{%
  \vspace*{36pt}
  \bgroup
    \parskip=0pt
    \parindent=0pt
    \raggedright
    {\LARGE\upshape
     \noindent{\bfseries
     \MAPStitle}\vadjust{\vskip6pt}%
     \par
     \ifx\MAPSsubtitle\@empty\else
       {\sffamily\itshape\MAPSsubtitle}\par
     \fi
    }
  \egroup
  \vspace*{24pt}%
}
%
\newcommand{\opener}[1]{%
  \bgroup
  \raggedright
  \rightskip=1em plus 1fil\parindent=0pt
  \sffamily\small\textbf{#1}\par\ignorespaces}
\def\endopener{%
  \par\egroup\vspace{\le@ding}}
%
\def\abstract{\opener{Abstract}}
\def\endabstract{\endopener}
%
\def\keywords{\opener{Keywords}}
\def\endkeywords{\endopener}
```

9.5   Some logos

Logo factory The rules are:

Acronyms: smallcaps: use the `\acro` macro

Text + acronym (MathML): regular font

Logo's containing TeX: regular font

Rest: regular font, capitalized (once (Bash) or twice (GhostScript))

Define here only what needs special treatment, plus hyphenation rules for what does not.
```
  \hyphenation{Ghost-Script Math-Adore Ink-Scape Meta-Post Open-Math}
```

```
\def\BASH{Bash}
\def\CONTEXT{Con\kern-.07em\TEX{}t}%
\def\CTX{\textsc{ctx}}
\def\DVIPDFMX{\textsc{dvipdfmx}}
\def\ETEX{e\TEX}
\def\FOURDOS{\textsc{4dos}}
\def\GHOSTSCRIPT{Ghost\-Script}
\def\GHOSTVIEW{Ghost\-View}
\def\IMAGEMAGICK{Image Magick}
\def\INKSCAPE{Ink\-scape}
\def\LATEX{La\kern-.07em\TEX}
\def\LaTeX{La\kern-.07em\TEX}
\def\MAC{Mac}
\def\MATHADORE{Math\-Adore}
\def\MATHML{\textsc{MathML}}
\def\METAPOST{Meta\-Post}
\def\MIKTEX{MiK\TEX}
\def\MODULA{Modula}
\def\MPTOPDF{\acro{mptopdf}}
\def\MPTOPDF{\textsc{mptopdf}}
\def\MSWINDOWS{\textsc{MS} Windows}
\def\OPENMATH{Open\-Math}
\def\PDFETEX{pdfe\TEX}
\def\PDFTEX{pdf\TEX}
\def\PDF{\textsc{pdf}}
\def\PERL{Perl}
\def\RUBY{Ruby}
\def\SVG{\textsc{svg}}
\def\TDS{\textsc{tds}}
\def\TETEX{te\TEX}
\def\TEXEXEC{\TEX{}exec}
\def\TEXLIVE{\TEX{}Live}
\def\TEXMFSTART{\TEX{}MF\-start}
\def\TEXUTIL{\TEX{}util}
\def\TEX{T\kern-.15em\lower.5ex\hbox{E}\kern-.1emX\@}
\def\TeX{T\kern-.15em\lower.5ex\hbox{E}\kern-.1emX\@}
\def\THANH{H\`an Th\^e\llap{\raise 0.5ex\hbox{\'{}}} Th\`anh}
\def\TOOLS{{-}{-}{-}tools}
\def\TPM{\textsc{tpm}}
\def\UNIX{Unix}
\def\XETEX{Xe\TEX}
\def\XML{\textsc{xml}}
\def\XSLT{\textsc{xslt}}
\def\acro#1{\textsc{\lowercase{#1}}}
```

9.6   A few special chars

Babel messes up the definition of LaTeX. Since the definitions are wrapped inside an \AtBeginDocument, they are hard to overrule from a classfile. We just have to use \latex or manually restore \LaTeX from \latex with an AtBeginDocument after Babel has done its evil thing.

```
\newcommand{\dbr}{\discretionary{}{}{}} % discretionary linebreak
\newcommand{\bsl}{\char92} % backslash in tt font
\newcommand{\ul}{\char95} % underline in tt font
\newcommand{\tild}{\char126} % tilde in tt font
\let\type\texttt
\def\quote#1{\relax`\relax#1\relax'\relax}
```

Change History