Preparing FP7 EU Proposals and Reports in LaTeX with `euproposal.cls`

Michael Kohlhase
Computer Science, Jacobs University Bremen
http://kwarc.info/kohlhase

August 19, 2020

Abstract

The `euproposal` class supports many of the specific elements of a Framework 7 Proposal. It is optimized towards collaborative projects. The package comes with an extensive example (a fake EU proposal) that shows all elements in action.

Contents

1 Introduction

Writing grant proposals is a collaborative effort that requires the integration of contributions from many individuals. The use of an ASCII-based format like LaTeX allows to coordinate the process via a source code control system like Subversion, allowing the proposal writing team to concentrate on the contents rather than the mechanics of wrangling with text fragments and revisions.

The `euproposal` class extends the `proposal` class [**Kohlhase:pplp:svn**] and supports many of the specific elements of Part B of a Framework 7 Proposal. The package documentation is still preliminary, fragmented and incomplete and only dwells on the particulars of DFG proposals, so we treat [**Kohlhase:pplp:svn**] as a prerequisite. Please consult the example proposal `propB.tex`, which comes with the package and shows the usage of the class in action. It is intended as a template for your proposal, but please bear in mind that the EU guidelines may change from call to call, if in doubt, please consult the FP7 guide for proposers.[1] EdN:1

The `eureporting` class supports most of the specific elements of the project reports to the EC. The example report `dfg/report.tex` is intended as a template for your final report[2]. EdN:2

The `euproposal` and `eureporting` classes and the `eupdata` package are distributed under the terms of the LaTeX Project Public License from CTAN archives in directory macros/latex/base/lppl.txt. Either version 1.0 or, at your option, any later version. The CTAN archive always contains the latest stable version, the development version can be found at https://github.com/KWARC/LaTeX-proposal. For bug reports please use the sTeX TRAC at https://github.com/KWARC/LaTeX-proposal/issues.

2 The User Interface

In this section we will describe the functionality offered by the `euproposal` class along the lines of the macros and environments the class provides. Much of the functionality can better be understood by studying the functional example `proposal.tex` (and its dependents) that comes with the `euproposal` package in conjunction with the proposer's EU proposer's guidelines (we have included it as `***` for convenience into the package distribution).[3] EdN:3

2.1 Package Options

As usual in LaTeX, the package is loaded by `\documentclass[`⟨*options*⟩`]{euproposal}`, where `[`⟨*options*⟩`]` is optional and gives a comma separated list of options specified in [**Kohlhase:pplp:svn**]. Some versions EU proposals want non-standard numbering schemes (e.g. starting with **B...** since we are writing Part B.), this can be reached by giving the `partB` option. Finally the `split` option cases the `euproposal` to write a file `SPLIT.at` that can be used in the `Makefile` to split the final proposal `final.pdf` into a files `final123.pdf` and `final45.pdf` for submission in the EU system (often this has to be separated so that the submission system can count pages.)

2.2 Proposal Metadata and Title page

The metadata of the proposal is specified in the `proposal` environment, which also generates the title page and the first section of the proposal as well as the last pages of the proposal with the signatures, enclosures, and references. The `proposal` environment should contain all the mandatory parts of the proposal text. The `proposal` environment uses the following EU-specific keys to specify metadata. `proposal`

- `callname` specifies the call the proposal addresses. It is usually a string of the form `ICT Call 1`, `callid` is the corresponding identifier, usually a string of the form `FP7-???-200?-?`. An overview over open calls can be found at http://cordis.europa.eu/fp7/dc/index.cfm `callname` `callid`

[1] EdNote: say something about the proposers guide.
[2] EdNote: say something about reporting
[3] EdNote: MK@MK do that and talk about reporting as well.

challenge
objective
outcome
challengeid
objectiveid
outcomeid
EdN:4
topicsaddressed
coordinator
Csite
Cemail
Ctelfax
iconrowheight

- The `challenge`, `objective`, and `outcome` keys specifies the specific parts in the call this proposal addresses. These are specified in the "call fiche" that can be obtained from the URL above. All of these have an identifier, which can be specified via the `challengeid`, `objectiveid`, and `outcomeid` keys.[4]
- `topicsaddressed` allows to enter free-form text instead of specifying the `challenge*`, `objective*`, and `outcome*` keys.
- The `coordinator` key full name of the proposal coordinator.
- The `Csite`, `Cemail`, and `Ctelfax` keys give further metadata of the coordinator (for the table).
- If given, the `iconrowheight` key instructs the `euproposal` class to make a line with the logos of the participants at the bottom of the title page, and specify their heights; `1.5cm` is often a good value.

2.3 Work Packages and Work Areas

type

The `type` key specifies the activity type of the work package: `RTD` = Research and technological development (including any activities to prepare for the dissemination and/or exploitation of project results, and coordination activities); `DEM` = Demonstration; `MGT` = Management of the consortium; `OTHER` = Other specific activities, if applicable in this call.

2.4 Milestones and Deliverables

verif
\milestone
\milestonetable
caption
wname
wdeliv
wverif

`euproposal.cls` adds the `verif` key to for specifying a means of verification that the milestone has been successful.

With this, we can generate the milestone table that is required in many EU proposals. This can simply be done via the `\milestonetable` macro. It takes a keyword argument with the keys `caption` for specifying a different caption, and the widths `wname`, `wdeliv`, and `wverif` that can be used to specify different widths for the name/deliverables/verification columns in the milestone table.

2.5 Risks

In some EU proposals (e.g. FET), we need to identify risks and contingency and specify mitigation plans for them. In the `euproposal` we use two environments to mark them up.

risk
riskcont

`\begin{risk}{`⟨*title*⟩`}{`⟨*prob*⟩`}{`⟨*grav*⟩`}`...`\end{risk}` makes a paragraph no a risk ⟨*title*⟩ with gravity ⟨*grav*⟩ and probability ⟨*prob*⟩, where the body of the environment contains a description of the risk. The `riskcont` is a variant, where ⟨*title*⟩ names a risk and the body is a description of the contingency plan.

2.6 Relevant Papers/Key Publications

\keypubs

Sometimes we want to list the relevant papers in the site descriptions. We use the `biblatex` package to automate this. We only need to use `\keypubs[`⟨*keys*⟩`]{`⟨*refs*⟩`}`, where ⟨*keys*⟩ that specify what papers are selected and ⟨*refs*⟩ is a comma-separated list of bibTEX keys from the bibTeX database used in the proposal.

BNP:5

The papers listed in `\keypubs` are put into a section bibliography which is displayed in place.

2.7 Reporting Infrastructure

report

The `eureporting` class gives an infrastructure for writing final reports of completed projects (see the file `finalreport.tex` in the package distribution). The `report` environment has functionality

[4] EdNote: MK@MK: the outcomeid should key should be a list key, I am not implementing this right now, since it comes more natural when we change the class to metakeys support.

[5] New Part: MK@MK: This is new, and only partially implemented

analogous to the `proposal` environment. It takes the same metadata keys — making it easy to generate by copy/paste from the proposal — but adds the keys `key` can be used to specify the reference key (something like `KO 2428 47-11`) given to the project by EU. Note that in the case of multiple proposers, you can use multiple instances of `key` to specify more than one reference key. `key` ENP:5

2.8 The Grant Agreement

EU Proposals reuse large parts of the proposal in the grant agreement – a part of the contract that describes the work and research the consortium has agreed to undertake. We can directly can directly generate the the grant agreement from the proposal by subsetting and adding some special source files. The `euproposal` class takes the option `grantagreement` for this, if this option is given, then a grant agreement is generated. This is most simply done by an options trick: We use a macro `\classoptions` in the class options in the preamble of the main proposal file `proposal.tex`, e.g.

```
\providecommand{\classoptions}{keys}
\documentclass[noworkareas,deliverables,\classoptions]{proposal}
...
```

and then we can just make a new file `grantagreement.tex` of the form

```
\newcommand{\classoptions}{submit,grantagreement}
\input{proposal.tex}
```

that amounts to running `proposal.tex` with different options.

3 Limitations and Enhancements

The `euproposal` is relatively early in its development, and many enhancements are conceivable. We will list them here.

1. none reported yet.

If you have other enhancements to propose or feel you can alleviate some limitation, please feel free to contact the author.

4 The Implementation

In this section we describe the implementation of the functionality of the `euproposal` and `eureporting` classes and the `eupdata` package.

4.1 Package Options and Format Initialization

We first set up the options for the package.

```
⟨*cls⟩
\newif\ifpartB\partBfalse
\DeclareOption{partB}{\partBtrue}
\newif\if@split\@splitfalse
\DeclareOption{split}{\@splittrue}
\DeclareOption*{\PassOptionsToClass{\CurrentOption}{proposal}}
⟨/cls⟩
⟨reporting⟩\DeclareOption*{\PassOptionsToClass{\CurrentOption}{reporting}}
⟨cls | reporting⟩\ProcessOptions
```

Then we load the packages we make use of

```
⟨cls⟩\ifpartB\LoadClass[report]{proposal}\else\LoadClass{proposal}\fi
⟨reporting⟩\LoadClass[report]{reporting}
⟨*cls | reporting⟩
\RequirePackage{longtable}
\RequirePackage{eurosym}
\RequirePackage{wrapfig}
\RequirePackage{eupdata}
\RequirePackage{datetime}
```

we want to change the numbering of figures and tables

```
\RequirePackage{chngcntr}
\counterwithin{figure}{subsection}
\counterwithin{table}{subsection}
```

And finally, we set the section numbering depth, so that paragraphs are numbered and can be cross-referenced.

```
\setcounter{secnumdepth}{4}
⟨/cls | reporting⟩
```

4.2 Proposal Metadata and Title Page

We extend the metadata keys from the `proposal` class.

```
⟨*pdata⟩
\define@key{prop@gen}{coordinator}{\def\prop@gen@coordinator{#1}\pdata@def{prop}{gen}{coordinator}{#1}}
\define@key{prop@gen}{Csite}{\def\prop@gen@Csite{#1}\pdata@def{prop}{gen}{Csite}{#1}}
\define@key{prop@gen}{Cemail}{\def\prop@gen@Cemail{#1}\pdata@def{prop}{gen}{Cemail}{#1}}
\define@key{prop@gen}{Ctelfax}{\def\prop@gen@Ctelfax{#1}\pdata@def{prop}{gen}{Ctelfax}{#1}}
\def\prop@gen@challenge{??}\def\prop@gen@challengeid{??}
\define@key{prop@gen}{challenge}{\def\prop@gen@challenge{#1}\pdata@def{prop}{gen}{challenge}{#1}}
\define@key{prop@gen}{challengeid}{\def\prop@gen@challengeid{#1}\pdata@def{prop}{gen}{challengeid}{#1}}
\def\prop@gen@objective{??}\def\prop@gen@objectiveid{??}
\define@key{prop@gen}{objective}{\def\prop@gen@objective{#1}\pdata@def{prop}{gen}{objective}{#1}}
\define@key{prop@gen}{objectiveid}{\def\prop@gen@objectiveid{#1}\pdata@def{prop}{gen}{objectiveid}{#1}}
\def\prop@gen@outcome{??}\def\prop@gen@outcomeid{??}
\define@key{prop@gen}{outcome}{\def\prop@gen@outcome{#1}\pdata@def{prop}{gen}{outcome}{#1}}
\define@key{prop@gen}{outcomeid}{\def\prop@gen@outcomeid{#1}\pdata@def{prop}{gen}{outcomeid}{#1}}
\define@key{prop@gen}{callname}{\def\prop@gen@callname{#1}\pdata@def{prop}{gen}{callname}{#1}}
\define@key{prop@gen}{callid}{\def\prop@gen@callid{#1}\pdata@def{prop}{gen}{callid}{#1}}
\define@key{prop@gen}{iconrowheight}{\def\prop@gen@iconrowheight{#1}}
```

```
\define@key{prop@gen}{topicsaddressed}{\def\prop@gen@topicsaddressed{#1}}
⟨/pdata⟩
```

and now the ones for the final report

```
⟨*reporting⟩
\define@key{prop@gen}{reportperiod}{\def\prop@gen@reportperiod{#1}}
\define@key{prop@gen}{key}{\@dmp{key=#1}%
\@ifundefined{prop@gen@keys}{\xdef\prop@gen@keys{#1}}{\xdef\prop@gen@keys{\prop@gen@keys,#1}}}
\define@key{prop@gen}{projpapers}{\def\prop@gen@projpapers{#1}}
⟨/reporting⟩
```

and the default values, these will be used, if the author does not specify something better.

If the `partB` option is given, we need to redefine some of the internal counters and table of contents mechanisms to adapt to the fact that the proposal text is just Part B.

```
⟨*cls⟩
\ifpartB
\def\thepart{\Alph{part}}
\setcounter{part}{2}
\def\thechapter{\thepart.\arabic{chapter}}
\def\numberline#1{\hb@xt@\@tempdima{#1\hfil} }
\fi% ifpartB
```

`\prop@sites@table`

```
\newcommand\prop@sites@table{\def\@@table{}
{\let\tabularnewline\relax\let\hline\relax
\@for\@I:=\prop@gen@sites\do{\xdef\@@table{\@@table\pdataref{site}\@I{number}}
\xdef\@@table{\@@table&\pdataref{site}\@I{shortname}\ifx\@I\prop@gen@coordinatorsite (coordinator)\fi}
\xdef\@@table{\@@table&\pdataref{site}\@I{acronym}}
\xdef\@@table{\@@table&\pdataref{site}\@I{countryshort}\tabularnewline\hline}}}
\begin{tabular}{|l|p{8cm}|l|l|}\hline%|
\# & Participant organisation name & Short name &  Country\\\hline\hline
\@@table
\end{tabular}}
```

`prop@proposal`

```
\renewenvironment{prop@proposal}
{\ifgrantagreement\else
  \thispagestyle{empty}\begin{center}
  {\Large \prop@gen@instrument}\\[.2cm]
  {\Large\textbf\prop@gen@callname}\\[.4cm]
  {\LARGE \prop@gen@callid}\\[.8cm]
  {\huge\textbf\prop@gen@title}\\[.4cm]
  \ifx\prop@gen@acronym\@empty\else{\LARGE Acronym: {\prop@gen@acronym}}\\[2cm]\fi
\end{center}
%{\large\prop@gen@instrument}\\
{\large\textbf{Date of Preparation: \today: \currenttime}}
% \ifsubmit\else\if@svninfo\if@gitinfo\\
% {\large\textbf{Revision}:
% \if@svninfo\svnInfoRevision\fi\if@gitinfo\gitAbbrevHash\fi
%  of
% \if@svninfo\svnInfoDate\fi\if@gitinfo\gitAuthorDate\fi}
% \fi\fi\fi
\\[1em]
\begin{large}
 \begin{description}
  % \item[Work program topics addressed by \pn:]
  %   \@ifundefined{prop@gen@topicsaddressed}
  %   {\textbf{Challenge \prop@gen@challengeid}: \prop@gen@challenge,
  %   \textbf{Objective \prop@gen@objectiveid}: \prop@gen@objective,
```

```
  %   \textbf{target outcome \prop@gen@outcomeid}) \prop@gen@outcome.
  %   {\prop@gen@topicsaddressed}\\[1em]
  \item[Coordinator:] \prop@gen@coordinator
  \item[e-mail:] \prop@gen@Cemail
  \item[tel/fax:] \prop@gen@Ctelfax
    \@ifundefined{prop@gen@keywords}{}{\item[Keywords:]  \prop@gen@keywords}
  \end{description}
\end{large}
\vspace*{1em}
\begin{center}
\prop@sites@table\vfill
\@ifundefined{prop@gen@iconrowheight}{}
{\@for\@site:=\prop@gen@sites\do{\includegraphics[height=\prop@gen@iconrowheight]{\pdataref{site}\@site{logo}
\end{center}
\newpage
\fi% ifgrantagreement
\setcounter{tocdepth}{2}\setcounter{part}{2}}
{\newpage\printbibliography[heading=warnpubs]%
\if@split
\newwrite\@@SPLIT%
\immediate\openout\@@SPLIT=SPLIT.at%
\protected@write\@@SPLIT{}{\thepage}%
\closeout\@@SPLIT%
\fi}% if@split

\def\prop@gen@instrument{Proposal Instrument (e.g. IP)}
```

4.3 Site Descriptions

EdN:6 [6]

EdN:7 [7] `\begin{sitedescritpion}[`⟨*opt*⟩`]{\meta{site}}` marks up the description for the site ⟨*site*⟩. The options argument ⟨*opt*⟩ is a key-value list for the keys `logo` (add the logo from `\WAinstitution` to the site description), `width`, `height` (intended dimensions of the logo), [8].

sitedescription
logo
width
height

EdN:8

```
\define@key{site@desc}{box}[true]{\def\site@desc@box{#1}%
\pdata@def{sitedesc}{\@site}{box}{#1}}
\define@key{site@desc}{logo}[true]{\def\site@desc@logo{#1}%
\pdata@def{sitedesc}{\@site}{logo}{#1}}
\define@key{site@desc}{width}{\def\site@desc@width{#1}%
\pdata@def{sitedesc}{\@site}{width}{#1}\@dmp{wd=#1}}
\define@key{site@desc}{height}{\def\site@desc@height{#1}%
\pdata@def{sitedesc}{\@site}{height}{#1}\@dmp{ht=#1}}
\newenvironment{sitedescription}[2][]%
{\def\c@site{#2}% remember the site ID
\newcounter{site@#2@PM} % for the site PM
\def\site@desc@box{false}% not box unless requested
\def\site@desc@logo{false}% not logo unless requested
\def\site@desc@height{1.3cm}% default height
\def\site@desc@width{5cm}% default width
\setkeys{site@desc}{#1}% read the keys to overwrite the defaults
\ifx\@site@desc@box\@true% if we want a logo
\begin{wrapfigure}{r}{\site@desc@width}\vspace{-2.5ex}%
\begin{tabular}{|p{\site@desc@width}|}\hline\vspace{1mm}%
\ifx\@site@desc@logo\@true% if we want a logo
\includegraphics[height=\site@desc@width]{#2}\\[1ex]%
```

[6] EdNote: this functionality should probably be refactored into proposal.dtx
[7] EdNote: document this above
[8] EdNote: more?

```
\fi% end logo
\textbf{\pdataref{site}{#2}{type}.\hfill \pdataref{site}{#2}{country}}\\%
\small\pdataref{site}{#2}{streetaddress}, \pdataref{site}{#2}{townzip}\\\hline%
\end{tabular}\vspace{-2.5ex}%
\end{wrapfigure}%
\fi% end box
\pdata@target{site}{#2}%
{\subsubsection{\pdataref{site}{#2}{acronym}: % space here
{\textsc{\pdataref{site}{#2}{shortname}}  (\pdataref{site}{#2}{countryshort})}}}%
\small%
\renewcommand\paragraph{\@startsection{paragraph}{4}{\z@}%
                                    {0.25ex \@plus1ex \@minus.2ex}%
                                    {-1em}%
                                    {\normalfont\normalsize\bfseries}}}
{\pdata@def{site}{\c@site}{reqPM}{\csname thesite@\c@site @PM\endcsname}}
```

participant [9] `\begin{picv}[`$\langle PM \rangle$`]{\meta{name}}` marks up the CV and metadata about a principal investigator of a site (it can only be use inside a `sitedescription` environment). The first argument $\langle PM \rangle$ specifies the involvement in person months: a fair estimation this PI will spend on this specific project over its whole duration. EdN:9

```
\define@key{site@part}{type}{\def\site@part@type{#1}\@dmp{type=#1}}
\define@key{site@part}{PM}{\def\site@part@PM{#1}\@dmp{PM=#1}}
\define@key{site@part}{salary}{\def\site@part@salary{#1}}%\@dmp{\euro=#1}}
\define@key{site@part}{gender}{\def\site@part@gender{#1}}%\@dmp{\euro=#1}}
\newenvironment{participant}[2][]%
{\def\site@part@type{}\def\site@part@PM{}\def\site@part@salary{}\def\site@part@gender{}%
\setkeys{site@part}{#1}%
\ifx\site@part@PM\@empty\else\addtocounter{site@\c@site @PM}{\site@part@PM}\fi%
\paragraph*{#2\ %
(\ifx\site@part@type\@empty\else\site@part@type\fi%
\ifx\site@part@gender\@empty\else, \site@part@gender\fi%
\ifx\site@part@PM\@empty\else, \site@part@PM~PM\fi%
)}%
\ignorespaces}
{\par\medskip}
```

4.4 Work Packages, Work Areas, and Deliverables

wp*

```
\newmdenv[frametitle=Objectives]{wpobjectives}
\newmdenv[frametitle=Description]{wpdescription}
```

workpackage

```
\renewenvironment{workpackage}[1][]
{\begin{work@package}[#1]\medskip\wpheadertable%
\addcontentsline{toc}{subsubsection}{\wp@label\wp@num: \pdataref{wp}\wp@id{title}}}
{\end{work@package}}
```

\wpheadertable We redefine the macro that computes the default work package header table, since there are more sites in a EU proposal, we do this in a tabular form as asked for in the template. We use the internal counter `@sites@po` (sites plus one) for convenience.

```
\newcounter{@sitespo}\newcounter{@sitespt}
\renewcommand\wpheadertable{%
\wp@sites@efforts@lines%
\setcounter{@sitespo}{\thewp@sites@num}\addtocounter{@sitespo}{1}%
```

[9] EdNote: document this above

```
\par\noindent\begin{tabular}{|l|*{\thewp@sites@num}{c|}c|}\hline%
\multicolumn{\the@sitespo}{|l|}{\textbf{\wp@mk@title{\wp@num}: }%
\textsf{\pdata@target{wp}{\wp@id}{\pdataref{wp}\wp@id{title}}}}
&\textbf{Start: }\pdataref{wp}\wp@id{start}\\\hline%
\wp@sites@line\\\hline%
\wp@efforts@line\\\hline%
\end{tabular}\smallskip\par\noindent\ignorespaces}
```

4.5 Milestones and Deliverables

wpdelivs We make the deliverables boxed in EU proposals, this is simple with `mdframed.sty`.

```
\surroundwithmdframed{wpdelivs}
```

\milestone

```
\define@key{milestone}{verif}{\gdef\mile@verif{#1}\pdata@def{mile}\mile@id{verif}{#1}}
```

milestonetable here we do the work, but only if the file `\jobname.deliverables` exists to make sure that the deliverables macros are really defined.

```
\define@key{mst}{caption}{\gdef\mst@caption{#1}}
\define@key{mst}{wname}{\gdef\mst@wname{#1}}
\define@key{mst}{wdeliv}{\gdef\mst@wdeliv{#1}}
\define@key{mst}{wverif}{\gdef\mst@wverif{#1}}
\newcommand\milestonetable[1][]{%
\IfFileExists{./\jobname.deliverables}{% to avoid errors
\message{euproposal.cls: Generating Milestones Table}%
\def\mst@caption{Milestones, Deliverables, and Verification}%
\def\mst@wname{2.5cm}\def\mst@wdeliv{7cm}\def\mst@wverif{4cm}
\setkeys{mst}{#1}%
{\gdef\mst@lines{}%initialize
\let\tabularnewline\relax\let\hline\relax% so they
\let\textbf\relax\let\emph\relax% do not bother us
\edef\@@miles{\pdataref{all}{mile}{ids}}
\@for\@I:=\@@miles\do{
\edef\@delivs{\pdataref@safe{mile}{\@I}{delivs}}%
\def\@@delivs{}
\@for\@J:=\@delivs\do{\xdef\@@delivs{\@@delivs\ \pdataref{deliv}\@J{label}}}
\def\@@line{
\textbf{\pdataref{mile}\@I{label}}&
\emph{\pdataref{mile}{\@I}{title}} &
\@@delivs&
\pdataref{mile}\@I{month} &
\pdataref{mile}\@I{verif}}
\xdef\mst@lines{\mst@lines\@@line\tabularnewline\hline}}}
\begin{table}[ht]
\begin{tabular}{|l|p{\mst@wname}|p{\mst@wdeliv}|l|p{\mst@wverif}|}\hline
\#&\textbf{\miles@legend@name}
&\textbf{\miles@legend@involved}
&\textbf{\miles@legend@mo}
&\textbf{\miles@legend@verif}\\\hline\hline
\mst@lines
\end{tabular}
\caption{\mst@caption\ ($^\ast$\miles@legend)}\label{tab:milestonetable}
\end{table}}
{\ClassWarning{not formatting mile stones table yet, deliverables are
  still missing; generate\jobname.deliverables\ to get it!}}}
```

now the multilinguality support

```
\newcommand\miles@legend@name{Name}
```

```
\newcommand\miles@legend@mo{Mo}
\newcommand\miles@legend@verif{Means of Verif.}
\newcommand\miles@legend@involved{WPs$^\ast$/Deliverables involved}
\newcommand\miles@legend{WP is first number in deliverable label}
```

`\prop@milesfor` the due date is the first argument to facilitate sorting

```
\newcommand\prop@milesfor[1]{\edef\@delivs{\pdataref@safe{mile}{#1}{delivs}}%
\let\m@sep=\relax\def\new@sep{,\ }%
\@for\@I:=\@delivs\do{\m@sep\pdataRef{deliv}\@I{label}\let\m@sep=\new@sep}}
```

4.6 Risks

`risk`

```
\newenvironment{risk}[3]
{\paragraph{Risk: #1}\hfill\emph{probability}: #2, \emph{gravity}: #3\par\noindent\ignorespaces}
{}
```

`riskcont`

```
\newenvironment{riskcont}[3]
{\begin{risk}{#1}{#2}{#3}\textbf{Contingency:} }
{\end{risk}}
```

4.7 Relevant Papers

`\keypubs` we just use the bibLaTeX `refsection` facility. NOTE, this needs biber to work easily.

```
\newcommand\keypubs[1]{%
\begin{refsection}\nocite{#1}\printbibliography[heading=empty]\end{refsection}}
```

⟨/cls⟩