

SEKI Reports and Working Papers

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May 22, 2009

Abstract

This `seki` class provides the cover pages and infrastructure for reports and working papers in the SEKI series of technical reports.

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1 Introduction

The SEKI repots and Working-Papers are a series of peer-reviewed technical reports running since 1976. The authors' affiliations were — among many others — the Universities of Essex, Karlsruhe, Kaiserslautern, and Saarland University. The series is currently published by the German Research Center for Artificial Intelligence (DFKI), the International University in Germany (Bruchsal), Jacobs University Bremen, and Saarland University.

The subjects of interest in the SEKI series are somewhat loosely clustered around mathematics assistance systems (MAS) and all you need for building one, such as — among others — software engineering (SE), artificial intelligence (in German: Knstliche Intelligenz, KI), logics, linguistics, cognitive psychology, human-computer interaction, automated theorem proving, term rewriting, During the three decades of appearance, the question what the letters of SEKI are actually standing for has been answered quite differently. Today SEKI simply stands for itself.

SEKI is not merely a series of internal reports. Currently and most of the time before, SEKIs have passed an informal but rigorous process of evaluation, including rejection and iteration after improvement. The internal review process is similar to a standard peer evaluation, but focus more on helpful collaboration of a known fatherly colleague.

SEKIs have to be submitted using the `seki` class described here. Further information on the SEKI series can be obtained from <http://www.dfki.de/seki>. The development version of `seki.cls` can be obtained from <https://svn.kwarc.info/repos/kwarc/doc/macros/ext/seki>.¹

EdNote(1)

2 The User Interface

We now specify the macros and environments introduced by the `seki` class.

2.1 Class Options

The first set of options allows to specify the type of report. `sekireport` stands for a SEKI Report, `sekiwp` for a SEKI working paper, and `internetcopy` for an internet copy. There is no set of fully specified rule for this classification; but Working Papers cover creative growing work with tentative and informal character. Reports cover mature final dying subjects and formal character. Reports *must* be in English. Quality is not a criterion for classification.

The next set of options specify the review status of the SEKI. `noreview` specifies that a SEKI has not been reviewed, this is only for edited volumes of reviewed papers — set `\subeditor` to name of Editor!. `internalreview` is used for internally reviewed SEKIs — set `\reviewer` to name of reviewer. And `externalreview`

¹EDNOTE: MK: should we put this onto CTAN? Then it would percolate into TeXlive. I know how to do this.

is used for SEKIs that have been reviewed externally — set `\refreeprocess` to name or institution of review.

The author has the choice to base the SEKI on the standard L^AT_EX classes `article` `article.cls` (use the `article` option) and `report.cls` (use the `report` class option).

Finally, we have to specify the provenance of the SEKI. We use the option `original` `original` to specify that the documents is not published elsewhere (yet); this is the normal situation. We use `republished` for a SEKI that republishes an original that was published at another venue (a journal¹ with limited or as a thesis) and differs at most in typesetting, table of contents, index, etc. The option `shortpub` is used for a SEKI where you have a (short) version at a conference e.g. and you know already about it, and finally `refines` is used if you already have published a pre-version at a conference. In the last three cases, use the `\publishedas` macro to specify the the publication venue.

The `notikz` option prevents the `tikz` package from being loaded, which is used for displaying the bid “Draft” superimposed over the cover pages if the SEKI number (see `\sekinr` below) is not provided.

2.2 SEKI Metadata

The `\sekinr` can be used to specify the SEKI reference number. The macro takes two arguments, the year and the report number. This number will be issued by the general editor after submission. If this is not specified, a large “Draft” sticker will be superimposed over the SEKI cover pages (unless the `notikz` option is specified).

If the `noreview` option was used to specify that a SEKI has not been reviewed because it is an edited volume of reviewed papers the `\subeditor` macro can be used to specify his name and affiliation.

SEKIs are peer-reviewed gray literature! If the SEKI is an original (the class option `original` has been specified) the `\reviewer` macro is used to specify the who did/organized the review. In all other cases, the SEKI has been reviewed elsewhere, and the can be used to specify how and where. Furthermore, the `\publishedas` macro should be used to specify where the SEKi has already been published. Both write something to the bottom line of the backside of the cover page.

2.3 Better Abstract and Theorems

Please do not allow whitespace between `\begin{abstract}` and your abstract! E.g. `\begin{abstract}We do ...`

Please do remember what an indentation is: Namely, a space-saving substitute for a blank line between two standard paragraphs *of the same type*. So please do avoid indentations at the beginning of your abstract, your text, a section, or *immediately after a theorem environment!!!*

¹Note that there may be copyright problems to be overcome for re-publishing such a publication as a SEKI.

WRONG:

```
\begin{definition}What I always wanted to define.\end{definition}
```

Now the definition being done, we go on with more silly things

NICE:

```
\begin{definition}What I always wanted to define.\end{definition}
```

```
\noindent
```

Now the definition being done, we go on with more silly things

EVEN NICER:

```
\begin{definition}What I always wanted to define.\end{definition}
```

Now the definition being done, we go on with more silly things

Note that there is an improved and extensible theorem environment provided and we would like you to use it! It contains lots of nice things like `\begin{theorem}`, `\begin{lemma}`, `\begin{sublemma}`, `\begin{corollary}`, `\begin{proposition}`, `\begin{conjecture}`, `\begin{example}`, `\begin{definition}`, `\begin{remark}`, `\begin{requirement}`, `\begin{globalrequirement}`, `\begin{specification}`, `\begin{aufgabe}`, `\begin{problem}`, `\begin{fact}`. If you want to extend it, do it similar to the following:

```
\newtheorem{myfancyenvironment}  
[theorem]{Myfancyenvironment's Name}{\mbox{} \mbox{}}\rm}
```

Note that the last block is inserted to the beginning of the the contents of the environment. The first `\mbox{}` gets rid of the following "there is no line to end here" error message. The second serves for proper spacing and is not necessary if you use `\it` or `\sl` instead of the `\rm` of the example. If the environment's content is big, we suggest to call it as

```
\begin{definition}[Long Notion]\ \ \ \ \end{definition}
```

If it is even bigger, as

```
\begin{definition}[Long Notion]\par\noindent \ \ \ \end{definition}
```

3 The Implementation

The implementation is rather standard.

3.1 Class Options

We first set up the options for the package. These options set in ternal macros that will be used in `\ifcase` statements later.

```
1 <*cls>
2 \def\SEKI@type{0}
3 \DeclareOption{sekireport}{\def\SEKI@type{0}}
4 \DeclareOption{sekiwp}{\def\SEKI@type{1}}
5 \DeclareOption{internetcopy}{\def\SEKI@type{2}}
6 \DeclareOption{noreview}{\def\SEKI@reviewstatus{0}}
7 \def\SEKI@reviewstatus{1}
8 \DeclareOption{internalreview}{\def\SEKI@reviewstatus{1}}
9 \DeclareOption{externalreview}{\def\SEKI@reviewstatus{2}}
10 \def\SEKI@cls{article}
11 \DeclareOption{article}{\def\SEKI@cls{article}}
12 \DeclareOption{report}{\def\SEKI@cls{report}}
13 \def\SEKI@publishedtype{0}
14 \DeclareOption{original}{\def\SEKI@publishedtype{0}}
15 \DeclareOption{thesis}{\def\SEKI@publishedtype{1}}
16 \DeclareOption{shortpub}{\def\SEKI@publishedtype{2}}
17 \DeclareOption{refines}{\def\SEKI@publishedtype{3}}
18 \newif\ifSEKI@tikz\SEKI@tikztrue
19 \DeclareOption{notikz}{\SEKI@tikzfalse\SEKI@draftfalse}
20 \ProcessOptions
```

The next step is to load the appropriate class and some auxiliary packages

```
21 \LoadClass[twoside,12pt]{\SEKI@cls}
22 \RequirePackage[T1]{fontenc}
23 \RequirePackage{url}
24 \RequirePackage{rotating}
25 \ifSEKI@tikz\RequirePackage{tikz}\fi
```

3.2 SEKI Metadata

Then we set up the SEKI bookkeeping infrastructure, these macros act as the interface and set internal token registers. We take the existence of a SEKI number as the indication that the SEKI has been accepted. So

```
26 \newif\ifSEKI@draft\SEKI@drafttrue
27 \def\SEKI@subeditor{????}
28 \newcommand{\subeditor}[1]{\long\def\SEKI@subeditor{#1}}
29 \def\SEKI@reviewer{????}
30 \newcommand{\reviewer}[1]{\long\def\SEKI@reviewer{#1}}
31 \def\SEKI@reviewprocess{????}
32 \newcommand{\refereeprocess}[1]{\long\def\SEKI@reviewprocess{#1}}
33 \def\SEKI@nr{unreviewed}%default
```

```

34 \newcommand{\sekinr}[3]{\def\SEKI@nr{#1--#2}\SEKI@draftfalse}
35 \def\SEKI@publishedas{???}
36 \newcommand{\publishedas}[1]{\long\def\SEKI@publishedas{#1}}

```

\Keywords

```

37 \newcommand\moreKeywords[2]{\vspace*{4ex}\par\noindent{\small{\em #1\}/: #2\par}}
38 \newcommand\Keywords[1]{\moreKeywords{Keywords}{#1}}

```

3.3 The SEKI Cover Page

```

39 \newcommand\SEKI@reporttype
40 {\ifcase\SEKI@type SEKI Report\or SEKI Working-Paper\or Internet Copy\fi}

Now comes the real big thing
41 \newcommand\makecover{%
42 \ifSEKI@draft\begin{tikzpicture}[remember picture,overlay]
43 \node [rotate=60,scale=15,text opacity=0.2]
44 at (current page.center) {Draft};
45 \end{tikzpicture}\fi
46 \def\majorfootroom{\raisebox{-1.9ex}{\rule{0ex}{.5ex}}}
47 \def\SEKI@url{\url
48 {http://www.dfki.de/seki}%old but valid
49 %{http://www.dfki.de/SEKI}% not existing yet
50 }%
51 \def\SEKI@titlepagehelper##1##2{\GIGA SEKI\begin{tabular}[b]{@{}r@{}}
52 \sf\LARGE~~% no dash here anymore
53 ##1
54 \\end{tabular}~%
55 \begin{tabular}[b]{@{}l@{}}
56 \sf\SEKI@url\raisebox{-2.79ex}{\rule{0ex}{.5ex}}
57 \\normalsize\sf ##2\hskip.9mm\mbox{}
58 \\end{tabular}}
59 }%
60 \def\SEKI@itemhelper##1##2{\par\noindent{\bf##1:}\\\{\footnotesize
61 ignorespaces##2\par}\mbox{}\par}%
62 \def\footroom{\raisebox{-1.5ex}{\rule{0ex}{.5ex}}}%
63 \ifcase\SEKI@type
64 \def\WHATAMI{\large\SEKI@reporttype\ SR--\SEKI@nr}
65 \def\Titlepagetype{\SEKI@titlepagehelper{Report}{ISSN~1437-4447}}
66 \or
67 \def\WHATAMI{\large\SEKI@reporttype\ SWP--\SEKI@nr}
68 \def\Titlepagetype{\SEKI@titlepagehelper{Working-Paper}{ISSN~1860-5931}}
69 \or
70 \def\WHATAMI{\large\SEKI@reporttype: \today}
71 \def\Titlepagetype{\GIGA OMEGA \sf\huge PUBLICATION}
72 \fi
73 \setcounter{page}{-99}%
74 \thispagestyle{empty}%
75 \noindent\hskip-1ex
76 \raisebox{1mm}{\includegraphics[height=11.7mm]{dfki}}%

```



```

127 \\E-mail: {\tt wirth@logic.at}
128 \\WWW: \url{http://www.ags.uni-sb.de/~cp}}
129
130 \SEKI@itemhelper{Please send surface mail exclusively to}
131 {DFKI Bremen GmbH
132 \\Safe and Secure Cognitive Systems
133 \\Cartesium
134 \\Enrique Schmidt Str.\,5
135 \\D--28359 Bremen
136 \\Germany}
137 \vfill\vfill\vfill
138
139 \ifcase\SEKI@publishedtype
140 \or
141   \SEKI@itemhelper
142   {This \SEKI@reporttype\ is published as}
143   {\SEKI@publishedas}
144 \or
145   \SEKI@itemhelper
146   {The following publication is a short version of this \SEKI@reporttype}
147   {\SEKI@publishedas}
148 \or
149   \SEKI@itemhelper
150   {This \SEKI@reporttype\ refines and extends the following publication}
151   {\SEKI@publishedas}
152 \fi
153 \ifcase\SEKI@reviewstatus
154   \SEKI@itemhelper
155   {This \SEKI@reporttype\ was edited and the individual contributions were
156     sub-edited by}
157   {\SEKI@subeditor}
158 \or
159   \SEKI@itemhelper
160   {This \SEKI@reporttype\ was internally reviewed by}
161   {\SEKI@reviewer}
162 \or
163   \SEKI@itemhelper
164   {\bf
165     \ifcase\SEKI@publishedtype
166       This
167     \or
168       This
169     \or
170       The above short version of this
171     \or
172       The above previous version of this
173     \fi
174     \SEKI@reporttype\ successfully passed the following external
175     anonymous referee process}
176   {\SEKI@refereeprocess}

```



```

177 \fi
178
179 \thispagestyle{empty}
180 \mbox{}}

```

3.4 Page Geometry

```

181 \cleardoublepage\pagestyle{myheadings}\setcounter{page}{1}}
182 \font\GIGA=cmss12 scaled 4000
183 \font\HUGE=cmss12 scaled 3000

184 \setlength\oddsidemargin{3.0cm}           %intended inner margin
185 \setlength\textwidth{16.3cm}             %intended textwidth
186 \setlength\columnsep{1cm}                %intended columnsep with in twocolumn

```

Note(2) Remember: dina4 has 21cm breadth Thus Your outer margin is $21\text{cm} - \text{oddsidemargin} - \text{textwidth}^2$

```

187 \setlength\topmargin{3cm}                 %intended topmargin
188 \setlength\textheight{24cm}              %intended textheight

```

Note(3) Remember: dina4 has 297mm height Thus Your bottom margin is $297\text{mm} - \text{topmargin} - \text{textheight}^3$

Further settings:

```

189 \reversemarginpar
190 \setlength\marginparwidth{1.4cm}
191 \setlength\marginparsep{0.5cm}
192 \setlength\parskip{5pt}

```

Follows some computation. Please don't modify!

```

193 \setlength\evensidemargin{21cm}           %dina4 breadth
194 \addtolength\evensidemargin{-1\textwidth} %adjust right
195 \addtolength\evensidemargin{-1\oddsidemargin}%set margin
196 \addtolength\evensidemargin{-1in}        %internal correction factor
197 \addtolength\oddsidemargin{-1in}         %internal correction factor
198 \addtolength\topmargin{-1in}             %internal correction factor
199 \addtolength\topmargin{-1cm}             %internal correction factor
200 \addtolength\evensidemargin{-0.1cm}      %fine tuning

```

3.5 Better Theorems

```

201 %
202 \def\newtheorem#1{\@ifnextchar[{\@othm{#1}}{\@nthm{#1}}}
203
204 \def\@nthm#1#2{%
205 %%typical #1=definition, #2=Definition
206 \@ifnextchar[{\@xnthm{#1}{#2}}{\@ynthm{#1}{#2}}}
207
208 \def\@xnthm#1#2[#3]#4{%next line commented for brutal redefinition
209 %%\expandafter\@ifdefinable\csname #1\endcsname
210 %%typical #1=definition, #2=Definition, #3=section, #4=cpspecial
211 {\@definecounter{#1}\@addtoreset{#1}{#3}%
212 \expandafter\xdef\csname the#1\endcsname{\expandafter\noexpand

```

²EDNOTE: MK: put this into user interfac?

³EDNOTE: MK:user interface too?

```

213 \csname the#3\endcsname \@thmcountersep \@thmcounter{#1}}%
214 \global\@namedef{#1}{\@thm{#1}{#2}{#4}}\global\@namedef{end#1}{\@endtheorem}}%
215
216 \def\@ynthm#1#2#3{%next line commented for brutal redefinition
217 %%\expandafter\@ifdefinable\csname #1\endcsname
218 %%typical #1=definition, #2=Definition, #3=cpspecial
219 {\@definecounter{#1}%
220 \expandafter\xdef\csname the#1\endcsname{\@thmcounter{#1}}%
221 \global\@namedef{#1}{\@thm{#1}{#2}{#3}}\global\@namedef{end#1}{\@endtheorem}}%
222
223 \def\@othm#1[#2]#3#4{%next line commented for brutal redefinition
224 %%\expandafter\@ifdefinable\csname #1\endcsname
225 %%typical #1=definition, #2=theorem, #3=Definition, #4=cpspecial
226 {\global\@namedef{the#1}{\@nameuse{the#2}}%
227 \global\@namedef{#1}{\@thm{#2}{#3}{#4}}%
228 \global\@namedef{end#1}{\@endtheorem}}%
229
230 \def\@thm#1#2#3{\refstepcounter
231   {#1}\@ifnextchar[{\@ythm{#1}{#2}{#3}}{\@xthm{#1}{#2}{#3}}}
232
233 \def\@xthm#1#2#3{\@begintheorem{#2}{\csname the#1\endcsname}{#3}\ignorespaces}
234 \def\@ythm#1#2#3[#4]{\@opargbegintheorem{#2}{\csname
235   the#1\endcsname}{#4}{#3}\ignorespaces}
236
237 %%DEFAULT VALUES
238 \def\@thmcounter#1{\noexpand\arabic{#1}}
239 \def\@begintheorem#1#2#3{\trivlist \item[\hskip \labelsep\bf #1\ #2]}#3}
240 \def\@opargbegintheorem#1#2#3#4{\trivlist
241   \item[\hskip \labelsep\bf #1\ #2\ (#3)]#4}
242 \def\@endtheorem{\endtrivlist}
243
244 %%\def\@thmcountersep{}
245 %%\newtheorem{theorem}{Theorem}[thmcounter]{\mbox{}\it}
246 \def\@thmcountersep{.}
247 \def\globalrequirement{Global Requirement}
248
249 \newtheorem{theorem}{Theorem}[section]{\mbox{}\it}
250 \newtheorem{lemma}[theorem]{Lemma}{\mbox{}\it}
251 \newtheorem{sublemma}[theorem]{Sublemma}{\mbox{}\it}
252 \newtheorem{corollary}[theorem]{Corollary}{\mbox{}\it}
253 \newtheorem{proposition}[theorem]{Proposition}{\mbox{}\it}
254 \newtheorem{conjecture}[theorem]{Conjecture}{\mbox{}\it}
255 \newtheorem{example}[theorem]{Example}{\mbox{} \mbox{}\rm}
256 \newtheorem{remark}[theorem]{Remark}{\mbox{} \mbox{}\rm}
257 \newtheorem{forderung}[theorem]{\globalrequirement}{\mbox{}\it}
258 \newtheorem{requirement}[theorem]{Requirement}{\mbox{}\it}
259 \newtheorem{definition}[theorem]{Definition}{\mbox{} \mbox{}\rm}
260 \newtheorem{aufgabe}[theorem]{Aufgabe}{\mbox{} \mbox{}\rm}
261 \newtheorem{specification}[theorem]{Specification}{\mbox{} \mbox{}\rm}
262 \newtheorem{problem}[theorem]{Problem}{\mbox{} \mbox{}\rm}

```

```

263 \newtheorem{fact}[theorem]{Fact}{\mbox{} \mbox{} \rm}
264 \end{document}

```