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Joint work with:

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Motivations

• **Enterprise modelling**: modelling the relevant aspects of an enterprise.

• Enterprise modelling is a **collaborative** activity involving a team of modellers.

• Our collaborative modelling paradigm:
  
  – asynchronous collaboration toward the creation of the enterprise model;
  
  – specification at different **degrees of formality**;
  
  – automated alignment between informal/formal specification.
MoKi: the Modelling Wiki

- It supports our collaborative paradigm.
- It currently supports the creation of integrated domain and process models.
- It is built on top of Semantic MediaWiki.
  - wikis support collaborative editing;
  - users are quite familiar with wikis;
  - only a web-browser is required on the client side;
  - wikis can provide a uniform tool/interface for the specification of enterprise model;
  - semantic information provided in the wiki can be reused to automatically create the formal models.
Pages in Moki

• A page for each element of the enterprise model, containing:
  – an informal description in natural language, to document and clarify the model;
  – a structured part composed of triples (subject, relation, object), to represent the intra/inter-connection between elements of the models.

• Use of appropriate forms/templates to guide users in providing valuable descriptions.
A domain concept page

Modify Concept: Workshop

<table>
<thead>
<tr>
<th>Annotations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong> An educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants</td>
</tr>
<tr>
<td><strong>Synonyms:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hierarchical Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Is a:</strong> Event</td>
</tr>
<tr>
<td><strong>Is part of:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Property:</strong> participant</td>
</tr>
<tr>
<td><strong>Property target:</strong> Person,</td>
</tr>
</tbody>
</table>

- Similarly for properties and processes.
Import

- Import of an available **domain ontology**.
- Input of **structured lists of elements**.
  - inserting lists of domain concepts organized according to pre-defined semantic structures (taxonomy or partonomy).
- **Text analysis** functionalities.
  - extract relevant terms from digital resources, and to cluster such terms according to their relatedness. (KnowMiner)
## List domain concepts

Number of concepts in the Domain Model: 71

<table>
<thead>
<tr>
<th>Concept</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misc</td>
<td>Work of another or undetermined type or &quot;Other&quot;</td>
</tr>
<tr>
<td>UndergraduateIntermediateClass</td>
<td>see: <a href="http://www.neurolabor.de/cgi-bin/dict/urlexp/200307052">http://www.neurolabor.de/cgi-bin/dict/urlexp/200307052</a></td>
</tr>
<tr>
<td>UndergraduateAdvancedClass</td>
<td>see: <a href="http://www.neurolabor.de">http://www.neurolabor.de</a></td>
</tr>
<tr>
<td>GraduateClass</td>
<td>see: <a href="http://www.neurolabor.de">http://www.neurolabor.de</a></td>
</tr>
<tr>
<td>Topic</td>
<td>If changing this concept (or its child topic), the swrc topic ontology depends on the forest. <a href="http://ontoware.org/frs/downlo">http://ontoware.org/frs/downlo</a></td>
</tr>
<tr>
<td>Document</td>
<td>Dublin Core elements added. See: <a href="http://dublincore.org/documents/dcf">http://dublincore.org/documents/dcf</a> for document types see: <a href="http://www.bsz-bw.de/diglib/m">http://www.bsz-bw.de/diglib/m</a></td>
</tr>
</tbody>
</table>

### Domain Model: Is_a Browser

- **Thing**
  - **Document**
    - **Publication**
    - **Unpublished**
  - **Event**
  - **Organization**
  - **Person**
    - **Employee**
      - **AcademicStaff**
      - **AdministrativeStaff**
      - **Manager**
      - **TechnicalStaff**
    - **Student**
  - **Product**
  - **Project**
  - **Topic**
  - **Relation**
Write a paper

Description: The process of writing a scientific paper

Required concept: Publication, Research Topic, Event
Revision & Export

• Revision support: **automatic checks** to verify the quality of the enterprise model.

• Export functionalities: **automatic export** of the enterprise model to an **OWL ontology**.
  
  – The process model and the domain model can also be exported **separately**.

  – The process model can also be exported in a **BPMN specification** (eRDF serialisation).
Usage of MoKi

• Used to create six medium-size enterprise models for the use cases in APOSDLE (FP6 EU-project – www.aposdle.org).
• Used in a Knowledge Management course at TU Graz (6 installations with ~50 users each).
• In use @ the Joint European Summer School on Technology Enhanced Learning 2009.
• Twin tools:
  – Clip-MoKi – collaborative tool for modeling clinical protocols encoded in ASBRU;
  – BP-Moki – collaborative tool for the creation of semantically annotated business processes.
Things we are working on…

- Support modelling of **individuals** and **data-type properties**.
- Provide **tailored templates** for different families of ontology concepts.
- Extend **import/export** functionalities to support more expressive constructs.
- Extend support for **revision**.
- Support different **levels of formality** for differently skilled users.
This is the end...

- A demo version of MoKi is available online at: moki.fbk.eu
- For any questions/info feel free to contact me at: Marco Rospocher (rospocher@fbk.eu)

See you @ the demo!