Megamodeling at Softlang@Koblenz

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Megamodel — Definition

- A megamodel is a model

  - in an IT context, e.g., usage of technologies in

    - in software development, or

    - office automation

  - with model elements ('entities') such as

    - Digital artifacts, and

    - Conceptual entities

  - and relationships between entities such as

    - language-based typing of artifacts, or

    - I/O behavior of technology application.

Megamodeling — Applications

- **Repository management**: model properties or relationships for artifact in a repository, e.g., conformance or transformability.

- **Technology documentation**: model scenarios of technology usage in terms of key artifacts and related properties and relationships:

  - *Prescriptive models*: The model is normative for the development of a system that may want to use the technology.

  - *Descriptive models*: The model is an abstraction of a system that readily uses the technology.

- **Adaptive systems**: subject to models@runtime, the megamodel supports propagation of changes across the involved models.

Megamodeling — Infrastructure

- **MegaL** http://www.softlang.org/megal

  - **MegaL checker** + **MegaLib** https://github.com/softlang/megalib

  - **MegaL/Xtext** https://github.com/avaranovich/megal-xtext

- **Ueber** http://www.softlang.org/ueber

- **LAL** http://www.softlang.org/lal

Megamodeling — Challenges

- Stable vocabulary

  - Entity types, relations

- Infrastructure

  - Triple store, IDE support, …

- Megamodeling methodology

  - Prescriptive mode: coverage

  - Descriptive mode: analysis

- Stronger (logical) properties

- Significant use cases

- Usability

  - Traceability visualization

Megamodeling — Team

- Andrei Varanovich — submission of thesis with foundations

- Marcel Heinz — work across pretty much all challenges

- Lukas Härtel — MegaL/Xtext

- Johannes Härtel — Methodology (coverage of megamodels) et al.

- Ralf Lämmel — Application to software language repository

- Wojciech Kwasnik — Logo!

- *Several others may join in!?*