



Unifying multi-level modeling: A position paper

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Our goal with this presentation is to ...

- stimulate a discussion on the future of MLM research
- to summarize the current state of the community as we see it
- to propose a roadmap for future collaboration/unification

Our proposal is not set in stone. Discussion and disagreement is welcome!

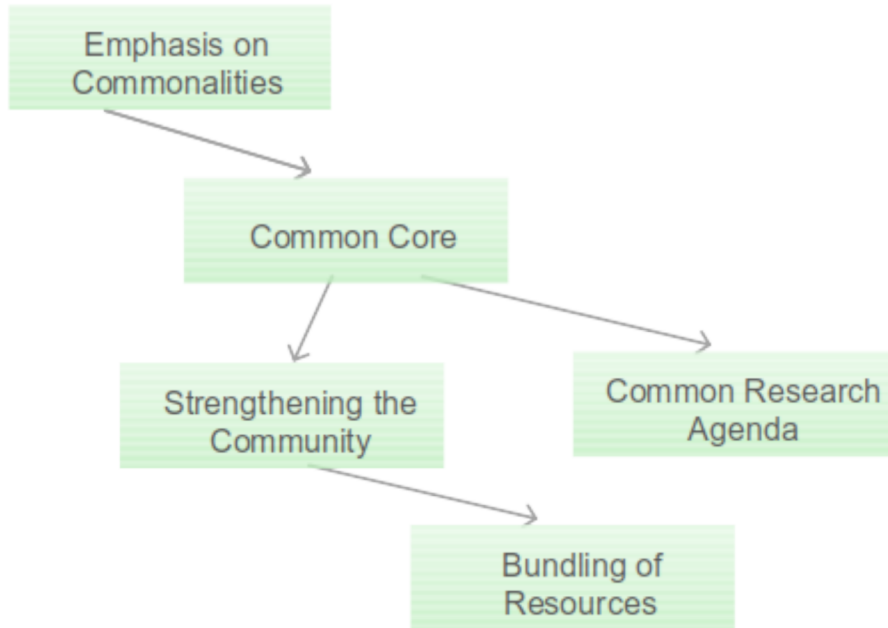


The current state

- A considerable number of approaches for MLM, many of them partially implemented by prototypes or near-professional systems
- Principal agreement what MLM is about and why it represents an important contribution to conceptual modeling and software engineering
- Rather small impact on the broader modeling community; no measurable impact on the industry
- Tendency to extend the own approach by adding more features, adding to the diversity
- MLM is not a systemic part of conceptual modeling courses
- The MLM community is quite small



Roadmap cornerstones





MLM agreed principles

- Arbitrary number of abstraction levels
- Classes are objects
- Properties defined at one level are instantiated at some lower level

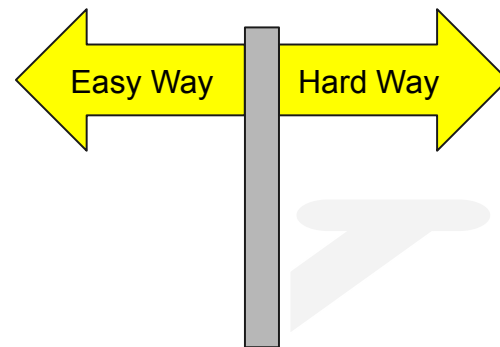
Benefits of outstanding relevance: MLM suited to promote

- system integrity (reduction of accidental complexity)
- adaptability
- reuse
- mitigation of essential design conflicts

... through additional **abstraction**



MLM at the crossroads



“**Diversity road**”: Continue with adding features to research prototypes, making them more and more diverse; nothing needs to change but impact of MLM will also be limited

“**Unify road**”: Develop a *MLM Core* that is supported by (almost) all MLM implementations; need to invest in a task force with increased chances for impact on the broader modeling community



Aspects of Unification

- unification as an evolutionary process that
 - is not a power-game (like in industry), but based on communication and competition
 - does not freeze a certain state
 - that leaves room for specific extensions, “dialects”
- collaboration and competition - with a common objective
- at best: “win-win”-situation for all through bundling of resources
- in any case
 - need for common “stories” presented to the outside
 - critique and competition within the field, but always with appreciation for other approaches



Unify Team?

- All MLM researchers welcome, in particular those who designed MLM systems/formalisms
- Aim for minimal compromise on MLM Core
- Assignment: Define and formalize constructs of the MLM Core



MLM Core Milestones

M1: Define MLM Core constructs and their semantics

M2: Define mappings from existing MLM frameworks to MLM Core

M3: Define mapping of MLM Core models to two-level UML models

M4: Reference implementation of MLM Core

M5: Translations of MLM Core models to MLM implementations supporting MLM Core



Your Vote

Diversify or Unify?