Status-Talk Hendrik Schön

Title: “Role-based Adaptation of Structural Reference Models to Application Models”

Date: 30.11.2018

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Abstract:

Large software systems are in need of a construction plan to determine and define every concept and element used in order to not end up in complex, unusable and cost-intensive systems. Different modeling languages, like UML, support the development of these construction plans and visualize them for a system’s stakeholders. Reference models are a specific kind of construction plan, used as templates for information systems and already capture business domain knowledge for reuse and tailoring. By adaptation, reference models are tailored to enterprise-specific application models, which can be used for software construction and maintenance. However, current adaptation methods suffer from the limitations of pure object-oriented development (e.g., identity issues, large inheritance trees, and inflexibility).

We propose the usage of roles as the sole adaptation mechanism to solve these problems. With the help of roles, it is possible to create rich model variations and adaptations from existing domain models, and it is simpler to react to model evolution and changing business logic. Adaptations can be specified with more precision by maintaining or even increasing the model’s expressiveness. As a consequence, the roles enriched final application model can be used to describe systems in more detail, with different perspectives, and, if available, can be implemented with a role supporting programming languages. However, even without this step, the application model itself will provide valuable insights into the overall construction plan of a system through the combination of structure and behavior and a clear separation of relatively stable domain knowledge from its use case specific adaptation.

In this talk, an overview of the related work and state of the art is given as well as an introduction to the current state of the research project.