

Statusvortrag
von Christopher Werner

Titel: "Role-Modeling in Round-Trip Engineering for Megamodels"

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Zeit: 10:45 Uhr

Ort: August-Bebel-Str. 1, 09577 Lichtenwalde (Best Western Hotel)

Gutachter 1: Prof. Dr. rer. nat. habil. Uwe Aßmann

Gutachter 2: Prof. Dr. rer. pol. Susanne Strahringer

Kurzfassung

Model-driven software development has to manage the dependencies between requirement models, design models (platform-independent and platform-dependent), implementation models, and test models, as well as the generated code. This ensemble of models, denoted a megamodel, must be kept consistent, i.e., in case of changes to one model the others need to be synchronized to still fit together. The modification of such a megamodel requires round-trip engineering, i.e., the synchronization of software artifacts while model edits occur. With the usage of roles in models and metamodels, it is easy to form views on models as compartments and use special synchronization compartments to synchronize multiple related models. For round-trip engineering, this means that edits can be restricted to a view on the megamodel, and the synchronization overhead is reduced. A lot of approaches try to solve these tasks at design time but do not think about the runtime integration of new models in such a megamodel or the creation of unforeseen views at runtime. While classical object-oriented approaches have been investigated for megamodels I argue that the dynamism of roles allows for adapting the megamodel, its views, and their synchronization both at design- and runtime.

In this status talk, I give an overview of existing model synchronization and view-based modelling approaches. The talk will show the features of roles and how their advantages are used to establish consistent extensible megamodels. In detail, I will describe my role-based single underlying model and role-based synchronization approaches to facilitate a role-based megamodel that is manageable, understandable, simple, and extensible at runtime.