

Handling Complexity in Organizational Modeling

Summary

Many software systems track the real world. As the real world changes, the software system has to change, ideally without having to program. This thesis reviews and abstracts how in object-oriented modeling, the use of description layers (knowledge layers) and instance layers achieve a flexibility that allows a software system to track the real world by using configuration data only. The results are applied to a system under development at Audi AG for the visualization of Audi's world-wide resource hierarchy: From global HQ down to individual components at assembly lines at various factories around the world.

Work Results

- Literature review
 - Martin Fowler: Analysis Patterns; David Hay: Data Model Patterns
 - Johnson & Woolf: Type Object; Yoder et al. Adaptive Object Models
 - Riehle et al. Dynamic Object Models
- Research approach
 - Definition of a generic model for resource representation
 - Comprises description (knowledge) and instance layer
 - Unclear: Consider embedding in UML
- Research execution
 - Exploratory validation by using model in Audi project
 - Review of appropriateness of model based on project experiences

Supervisor

Prof. Dr. Dirk Riehle, dirk.riehle@fau.de

Open Source Research Group, Computer Science Department, Friedrich-Alexander University

Link to thesis descriptions: <http://osr.cs.fau.de/fun>

Link to layout of final theses: <http://wp.me/pDU66-S1>

Link to grading framework for final theses: <http://wp.me/pDU66-MF>