

Master Thesis

Enactment of Software Engineering Methods with the Support of BPEL Workflow Engines

Background

Together with its partner, HJP Consulting GmbH, the s-lab develops a tool-driven approach that allows for the project-specific assembly of models that represent software development methods (SDM). The approach is developed with specific attention to the domain of eID systems. Examples for eID applications are electronic passports and electronic eHealth cards like the German “Gesundheitskarte”.

In software projects typically software engineering methods (SEMs) like V-Modell XT or Scrum are used as best practices for how to plan, develop and test the software. One important question is how to mix or extend these SEMs in order to provide optimal support for each individual project situation, e.g. by mixing agile and plan-driven software development.

Developing software by applying a SEM is difficult, especially for large projects with multiple involved parties and a distributed team. Coordination of the tasks and subtasks, and assigning tasks to the responsible people has to be done manually. This usually forces to repeat a whole lot of tedious tasks manually, which by themselves do not add any value to the final product, but instead waste serious amounts of time, thus increase overall costs.

Task

The aim of this thesis is to enable the execution of the SEMs created with our approach with a BPEL workflow engine. The following are the sub-goals:

1. Define the transformation of TASQ SEMs into BPEL process models
2. Refine the TASQ metamodel
3. Define the creation of Human Task and forms
4. Provide a runnable tool-chain by integrating TASQ components, the transformation component and WSO2 BPS with BPEL4People support for BPEL Process execution and Human task deployment.

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