

## Master Thesis

### Matching of Situational Factors with Method Services

#### 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.

The research area of situational method engineering investigates approaches to create specific SEMs that fit to the situation of the project by taking into account factors like team size and existing risks. In our approach, SEMs are created by choosing suitable method building blocks (method services) from a database and combining them to a SEM.

#### Task

As there can be many method services in the database the manual search can be very tedious. The aim of this thesis is to improve the process of finding suitable method services by providing a gradual matching algorithm based on a project situation description (situational factors) and interface descriptions of the method services. A proof-of-concept shall be implemented and integrated into the existing Eclipse-based tool chain.

#### Helpful Knowledge:

- Service Matching, Matching Algorithms
- Eclipse Plug-In Development, Java
- Software Development Methods, e.g. Scrum, XP, (R)UP
- Metamodeling and Modeling, e.g. Ecore, UML, SPEM

#### Supervision:

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