Abstract:

Software processes help to structure and organize software projects. Since software projects are complex endeavors and continuously grow in terms of size, budget, and complexity, software processes are used to coordinate people and teams, to define interfaces in a multi-site project setting in global distributed development, and to provide a shared terminology and knowledge base. Since much process knowledge is available, appropriate tools are required to structure knowledge and to make it accessible. Meta-modeling is an accepted technique to create structure and semantics and, finally, to allow for creating tools. However, metamodeling remains a frequently discussed topic in the area of software processes. There is a number of approaches courting for the favor of the process users; ranging from small and situation-specific approaches, over vendor-based solutions/services, to generic process standards. The report at hand investigates Software Process Metamodels (SPMM) for the state-of-the-art, state-of-application, and tool support. The goal is to create a big picture of systematic software process engineering. We report on a comprehensive literature review for SPMMs (concrete metamodels, software processes that are built on an SPMM) and tool infrastructures to support process design, implementation, deployment, and management. We analyze the metamodels w.r.t. their appearance and their evolution, their acceptance, and how they are supported by tools. This report includes all the results of the guided research project “Metamodel-based Determination of Key Performance Indicators for Software Process Management & Improvement”.

Stichworte:

Software Engineering, Software Process, Software Process Metamodels, Literature Review

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