TU Clausthal

Diplomanden- und Doktorandenseminar
des Instituts für Informatik

Emergent Process Design in Software Engineering

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High quality of complex large software in given time and cost constrains can only be insured through application of a systematical and efficient process. A systematical and efficient process is needed to guide the project team and to insure project planning, and controlling.

The *problem addressed by the thesis* is the situation that the applied project specific processes often do not lead to achievement of project goals. Either the specified functionality is reduced or the project duration becomes longer than planed. The reason for it is often the applied process design method. First deficiency of the applied process design methods is the fact that they do not provide specific enough domain know-how. For example in automotive domain, so called “A cycles” are typically prescribed. “A cycle” is a cycle during which the software parameters of control devices are configured and tested. Second deficiency of the applied process design methods is the fact that they require much more effort for design of a project specific process than needed. For example the guidelines proposed by V model XT encompasses for about 800 pages, which content first has to be understood. Further the content has to be translated in the domain terminology, and the decision has to be taken which elements the project specific process should have and which not. This makes the application of the proposed process design methods, especially by process designers having little domain specific know-how, difficult.

Therefore the *thesis goal* is to develop a process design method contributing to following aspects. First the design of a process helping to achieve project goals and having the required level of flexibility. Second to a more efficient process design. Third providing missing domain specific know-how and so especially supporting process designer having little domain know-how. The method is successfully validated in context of an experiment and two case studies. In the presentation the method and its validation will be introduced.

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