

Title of Paper

Experiences with Quality Management for Architecture and Code

Presenter

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Instructional Level

Introductory Intermediate Advanced

Target Group

Software Development Manager, Software Architect, Quality Assurance, Project Manager, Developer

Keywords

- Check of architectural model compliance
 - Quality model (Architecture model, programming guidelines)
 - Monitoring of structural and qualitative evolution
 - Refactoring
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Abstract

The presentation focus on the experience by maintaining the compliance of architecture models and programming guidelines during the implementation of complex software systems within Giesecke & Devrient. Due to very short Time-to-Market Cycles these non-functional aspects become more and more important within Giesecke & Devrient to allow for very immediate but reliable implementations of change requests. In both cases – Architecture and Coding – the challenge is to set additional quality gates where derivations are identified as early as possible. Among these operational aspects the management aspect how to motivate for non-functional work is presented too.

Maintaining the Architecture

At the beginning of the development of a software system the architecture is defined and well documented. During the implementation phase new requirements, changes, unplanned releases etc. occur. The consequence can be that the implementation diverges from the architecture model over the time and at the end of a project the architecture is degenerated completely. The presentation shows how you can build up a system to drive the compliance of the architectural model by using continuous refactoring until the end of the implementation phase und further. Doing so the Architecture becomes a valuable delivery of the development step that has attention to many stakeholders (management, developer, customer) and that really improves the manageability of a system.

Maintaining the Code

At the beginning of the implementation phase programming guidelines are defined and known to the developers. However, the underlying goal to have technical homogenous applications can only be

reached if these programming guidelines are covering as many aspects as possible and on a periodically basis checked. Without a process of automated proofing of the source code against the programming guidelines the compliance of the source code with the programming guidelines cannot be assured. This situation creates problems and additional cost during testing and maintaining. The presentation shows how to define a complete quality model and how to establish an automated support of the developers for fulfilling the programming guidelines and the experiences.

Presenter



Biography

Wilhelm Buntscheck is responsible for Software development in the Division Banknote processing at Giesecke & Devrient GmbH in Munich. Wilhelm Buntscheck has worked in the embedded software development industry since 1979 after completion of his Software Engineering study. He has expertise in software methodologies, requirement engineering, project estimation, software construction, systems integration and management of international software teams. Before he joined Giesecke & Devrient he has worked for different companies with different technical applications. Today he is working in the area of software development management and international projects.

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Biography

Frank Simon is working for the Competence Centre Application Intelligence within SQS AG covering all aspects of non-functional quality management and technical quality assurance. Since over 7 years he has succeeded many projects by focusing architectural and coding topics. These works include setting and discussing complete quality models that are able to integrate all architectural and non-functional parameters to improve the technical sustainability of IT-systems. These quality models help to bring technical team members and their management together since they consist of detailed technical rules as well as of a systematic and powerful aggregation. Today Frank Simon is the head of the SQS Research & Innovation Group to extend these kinds of services into complete quality governance.

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