The UMIC Software Quality Initiative

A prospected lack of software quality has been identified as one of the major challenges future mobile information and communication systems. This project aims at the development of methods and tools for mobile development, as well as the identification and design of design patterns and architectures for mobile applications, in order to improve the quality of mobile software.

As a first step towards this target we captured the status quo of software quality assurance of mobile software and defined a clear problem statement. This has already started in a pathfinder project for this SQI project. Within the pathfinder project, it turned out that a quality model for mobile software is basically non-existent, but is needed to clarify the problems, explain solutions, and in the end also to measure the gains that come with the new methods and tools, design patterns and architectures. We developed a mobile software quality model as an extension of the ISO 9126 software quality model. This model focuses on the quality attributes that we identified as most important for mobile applications: Usability, efficiency, flexibility, extensibility, adaptability, portability and data persistence. To evaluate these qualities of a software, we faced the problem of measuring this non-functional software requirements. We already specified ways to measure adaptablity and scalability of mobile devices. Next techniques and methods have to be specified, to measure the other qualities. We also already did specify different approaches to do this, but they require further refinement and extensive evaluation. These methods, techniques, design patterns, tools and guidelines that are resulting from the work on mobile software quality shall be integrated into a mobile quality model evaluation framework.

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