Bidirectional Tracing of Requirements in Embedded Software Development

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Overview

Requirement of embedded systems are often difficult to capture. How can you specify, for example, that the powertrain system provides the "feeling appropriate for a Porsche". The aim of this thesis is to first analyze the state-of-the-art in capturing requirements in embedded software development. Based on this analysis, we try to suggest improvements of both the capturing of requirements and the bi-directional tracing of requirements to the implementation and back.

Interviews with at least two different companies, which are specialized in constructing embedded systems, are planned. Those interviews should reveal the state-of-the-art of dealing with requirements in embedded systems construction. The interviews will also focus on the tools used by the developers, the problems they experience and the tools' missing features. Based on the analysis a tool prototype will be implemented which will sketch how the handling of embedded software requirements could be improved.

The thesis will start in October 2005 and will be finished by the end of February 2006.