Forschungsprojekt:
Generation of Requirements-based Test Cases for an Adaptive Cruise Control System

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Requirements-based testing is used during the last phase of software development called acceptance testing, in which the final system is put in the operating environment and is tested against the customer requirements. Testing complex system against a large catalogue of requirements can only be managed by complementing manual testing with an automated requirements-based testing approaches.

In this paper, we apply the method of Staats et al. for the automatic requirements-based test case generation for an ACC prototype system. We investigate two hypotheses: (1) test cases generated with the Unique-First Cause (UFC) criterion are better with respect to fault detection than test cases generated with Requirement Coverage (RC) criterion or Antecedent Coverage (AC) criterion; (2) test cases generated with the UFC criterion are better with respect to branch coverage than test cases generated with RC or AC criterion. Our results indicate that the first hypothesis is not supported, but that the second one is confirmed.