

## ***Development of Metrics for Comparing and Evaluating Test Efforts in the Validation of Highly Automated Vehicle Architectures***

### **Task description**

At the Institute for Automotive Engineering at the Technical University of Darmstadt (FZD), research is being conducted in collaboration with industry and other German universities on a modular validation approach for highly automated vehicles. By shifting as much testing activity as possible from the vehicle and system level to tests of separate subsystems, called modules, the aim is to reduce the testing effort of continuous updates and upgrades during operation. A central research question is what influence this shift has on the test effort and whether it can actually be reduced. The aim of this work is therefore to develop metrics for the description, evaluation and comparison of test efforts, which allow newly developed methods and approaches of modular validation to be evaluated in terms of their ability to reduce test efforts.

### **Task Details**

- Research and familiarization with the concept of a modular safety approval and the testing of highly automated vehicles
- Research and development of methods and metrics for the test effort estimation
- Development of a methodology for the identification and selection of suitable metrics for the test effort estimation
- Development of a verification and validation concept for the selected metrics
- Documentation of results

**NOTICE: All projects and theses at FZD can be done in English or German, as preferred.**

**ANMERKUNG: Alle Projekte und Arbeiten bei FZD können wahlweise in Englisch oder Deutsch durchgeführt werden.**

# Modular Safety in Automated Driving

Methoden zur Modularen Absicherung im  
Automatisierten Fahren



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