

# Diagnostics of mechatronic systems

On-board, off-board and remote diagnostics are indispensable for maintaining the functionality of a product. The FKFS is traditionally occupied with improvements of these technologies from the ECU software with the

corresponding sensors up to the analysis strategies in the tester. ECU application and software access in the field (flashing) is an integrated part of the diagnostics as we see it. Besides the traditional approaches of

signal-based diagnostics, we also research approaches of AI (artificial intelligence) in this context.

## Application example:

Model-based creation of series code for the detection of a gas tank leak of an OEM. The diagnostics system is set up without additional sensor system and uses the state of the pump and other built-in sensors (e.g. outside temperature, current fuel flow) a fault that may occur. The creation of the code was based on the A sample and carried up to the series.



Demonstrator for a model-based leakage diagnosis of a fuel tank without additional sensor systems



Diagnostics test bench for student training in very small groups

## Current activities:

- Concept studies for “non-vehicle” diagnostics
- Diagnostics integration in standard software modules of complex systems
- Safety examinations and manipulation studies on the vehicle
- Teaching and research