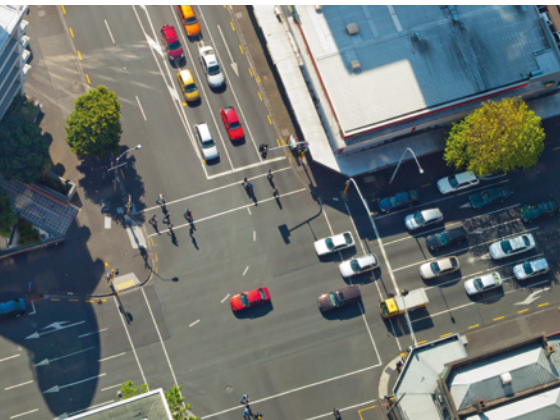


# SIMULATION OF ATTACK RECOGNITION IN VEHICLE-TO-X COMMUNICATION

Securing the traffic of the future



In the future, vehicle-to-X communication will network vehicles and infrastructure and should achieve significant improvements in road safety and efficiency. The first networked vehicles are available on the market already. But to prevent communication itself from turning into a security risk, attacks from networked vehicles must be detected and averted.



## Misbehaviour detection

Methods for detecting attacks on networked vehicles are at an early stage and are an active research topic. It is therefore all the more important to be able to make statements about their quality before the V2X technology is used on a large scale. So far, the evaluation of such methods in practical situations is complex and expensive to implement – alternative approaches are required.

## Simulation as Efficient Solution

At the FZI, we therefore work with a simulation solution that calculates attacks on V2X systems in a realistic simulation of communication and driving behaviour and carries out various attacks on the V2X network. This environment allows for testing and objective comparison of the detection performance of various methods.

The simulative approach enables cost-effective and fast evaluation of a range of attack detection methods without deploying multiple fully equipped test vehicles. In addition, diverse and detailed scenarios can be modelled that would be very near-impossible to reproduce in real traffic.

In connection with recorded traffic data from the Test Area Autonomous Driving Baden-Wuerttemberg, it will be possible in the future for the simulation to be carried out particularly realistically.

*The FZI Research Center for Information Technology at the Karlsruhe Institute of Technology is a non-profit institution for applied research in information technology and technology transfer. Its task is to provide businesses and public institutions with the latest research findings in information technology.*

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