VERIFICATION
VALIDATION
METHODS

PROJECT of the PEGASUS FAMILY

EXTRACTION AND RESIMULATION OF SCENARIOS FROM THE TEST AREA IN KARLSRUHE

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Recording → Synthesis → Resimulation → Validation

At the Test Field Autonomous Driving Baden-Württemberg (TAF BW), companies and research institutions can test future-oriented technologies related to connected and automated driving in everyday road traffic. We use the data recorded here as a basis to find scenarios for testing and resimulation in our simulation environment.

Recording

The Autonomous Driving BW test area collects realistic traffic scenes in the form of object lists at any time of day or night. In order to narrow down the amount of data, scenarios are to be evaluated for their criticality and then these can be further evaluated.

Synthesis

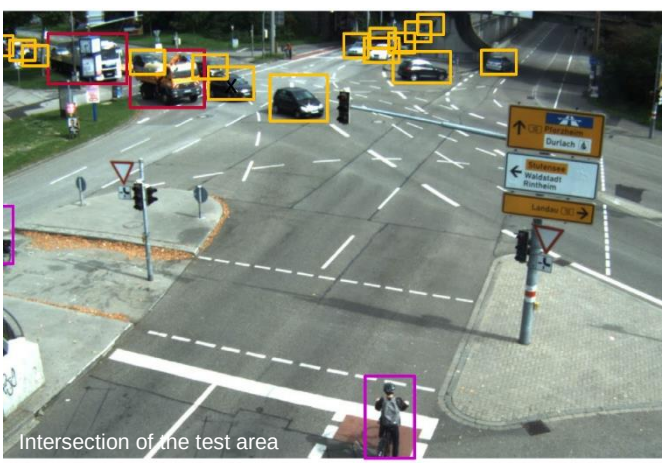
In order to abstract the recorded trajectories a maneuver recognition and subsequent scenario extraction shall be performed. This will determine the recorded scenario space and parameters of the scenarios. The extracted maneuvers can be used as parameterizable input for the simulation.

Resimulation

The extracted maneuvers can be imported directly into the simulation platform together with a set of variable parameters. In addition to these maneuver specific parameters global environment parameters can be defined during the resimulation to further analyze differenct effects on the SuT.

Validation

After the re-simulation it is checked that the desired scenario has been generated. By e.g. parameter variation it could happen that the semantics of the scenario changed during the re-simulation process. For this purpose, the similarity between the generated and the original scenario is measured. Methods to determine the similarity (e.g. via maneuvers or directly on the scenarios) are to be further investigated.



Intersection of the test area

Virtual intersection

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Projektpartner

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