Safety Assessment of Future Mobility using MOBATSim

Motivation

- Testing of control and decision algorithms and autonomous driving functions of intelligent vehicles in urban traffic
- Intelligent transportation systems testing for managing urban traffic
- Testing these systems/functions consisting of decision and control algorithms, in a unified manner requires a comprehensive traffic simulation framework

MOBATSim: Model-Based Autonomous Traffic Simulation Framework

- Model-based design in Simulink
- Flexible, reusable, customizable, scaleable autonomous vehicles/components models
- Animations using Simulink 3D Animation™ and Unreal Engine

Goals

- Virtual validation and safety analysis of autonomous and connected vehicles and their functionalities in urban traffic
- Error propagation analysis by scenario-based test case generation and guided simulations

Safety Analysis – Simulation-based Fault Injection

- Derivation of fault-error-failure chain and propagation analysis
- Early phase testing for model-based development cycles
- Reduced times for virtual validation of safety analysis

Publications

- FKFS2021
- DSN-W2020
- FKFS2020
- IAV2019
- MATLAB EXPO2019
- FKFS2019
- Simulink Challenge 2018 and 2019
  1st Place (Two times)
- NECSYS2018
- Many other online events and online articles