Gulliver (WP 5.2)
## A Test−bed for Developing, Demonstrating and Prototyping Vehicular Systems
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Motivation

- The traditional development environment allows the vehicular system designer to simulate and visualize components of the vehicular system before installing it and testing it in testing tracks.

- The Gulliver toolkit allows the prototype experimenter to use the test-bed for setting up an experiment in which the vehicular system is tested over a scaled vehicle platform.

- The experiment is logged for later execution visualization by the simulator.
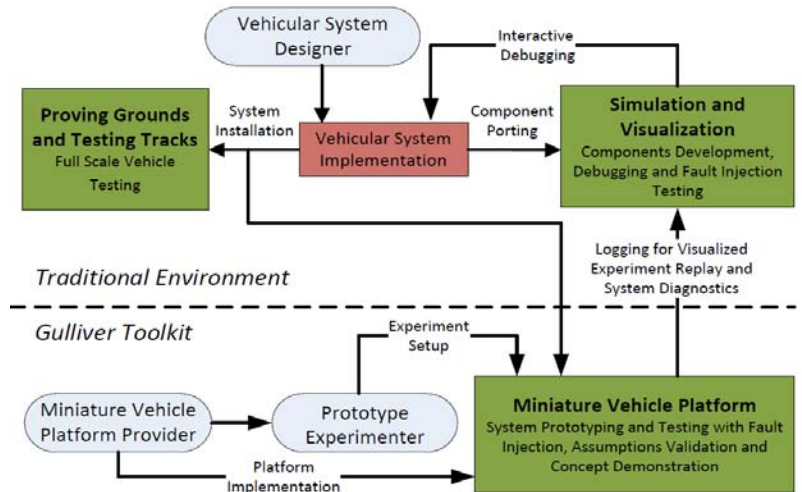
Concept
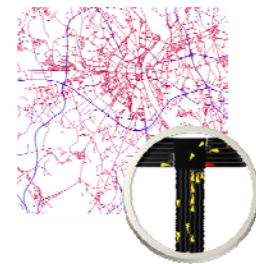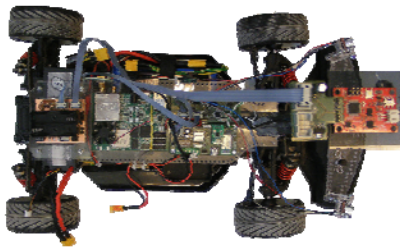
- The Gulliver project studies vehicular systems via a test-bed of low cost miniature vehicles that use wireless communication on a large scale open source test-bed.
- The vehicles are geared with onboard sensors, such as cameras, laser, radar, speed sensors, etc.

- Very large scale evaluation of vehicular systems is facilitated via co-execution of computer-simulated traffic (SUMO) and the miniature vehicle test-bed.

Test Cases
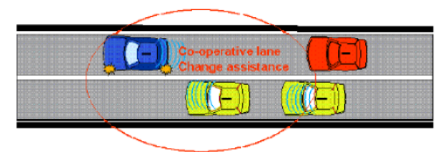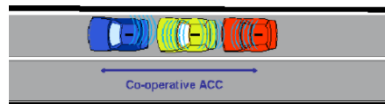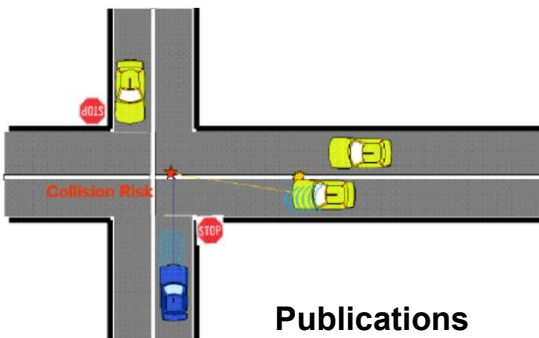
Publications

- Christian Berger, Erik Dahlgren, Johan Grundén, Daniel Gunnarsson, Nadia Holtryd, Anmar Khazal, Mohamed Mustafa, Marina Papatriantafilou, Elad M. Schiller, Christoph Steup, Viktor Swantesson, Philippas Tsigas: Bridging Physical and Digital Traffic System Simulations with the Gulliver Test-Bed. In the 5th International Workshop, Nets4Cars/Nets4Trains 2013.

- Christian Berger, Michel Chaudron, Rogardt Heldal, Olaf Landsiedel, Elad M. Schiller: Model-based, Composable Simulation for the Development of Autonomous Miniature Vehicles. In the Mod4Sim'13: 3rd International Workshop on Model-driven Approaches for Simulation Engineering at SCS/IEEE Symposium on Theory of Modeling and Simulation in conjunction with SpringSim 2013.

- Mitra Pahlavan, Marina Papatriantafilou, Elad Michael Schiller: Gulliver: a test-bed for developing, demonstrating and prototyping vehicular systems. In the 10th ACM International Symposium on Mobility Management and Wireless Access (MOBIWAC 2011), pp. 1-8. Also appeared in the IEEE 75th Vehicular Technology Conference: VTC2012-pring, Yokohama, Japan..