Head:	Dr. A. Kouvelas / Dr. M. Makridis
Topic:	**Using Traffic Simulation Software to Simulate a Realistic Traffic Disturbance**
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Registration:	www.ivt.ethz.ch/en/studies/downloads/assignments.html#registration

Description:

Transportation researchers always propose novel methods to optimize traffic systems or to study transportation behavior. Therefore, multiple traffic simulation software has been developed to help researchers for different purposes in a simulated scenario.

To ensure a high level of traffic simulation fidelity, the input data and models we need should closely resemble the real-world situation. From the model side, commonly used microscopic traffic simulation software, e.g., SUMO, AIMSUM, VISSIM, apply various assumptions and abstracted models when dealing with the vehicles in a traffic flow. With these assumptions and models, the simulation results may be as close to a real-world scenario as possible. Another piece of the puzzle missing is a set of realistic input data, the traffic demand. Although it is almost impossible to record all the ODs for every single trip in a city, there are some possible alternatives including generating a synthetic population and their traffic attributes. In this aspect, MATSim has achieved quite some results based on the network and synthetic population generated for the city of Zurich.

The objective of this assignment is to use the ODs generated from MATSim and simulate them in microscopic traffic simulation software, in which we can create some virtual disturbances, such as lane closure, to simulate traffic incidents, which should be as realistic as possible.

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Additional remarks:	Individual work recommended
Minimum credits:	8-11 ECTS based on the study program and type of the thesis
Recommended lectures:	101-0416-10L Road Transport Systems 101-0491-00L Agent Based Modeling in Transportation
Additional remarks:	A basic understanding of transport models and metrics is required Knowledge of MATSim plus a microscopic simulation software (SUMO/AIMSUM/VISSIM) is highly recommended Interested students may contact linghang.sun@ivt.baug.ethz.ch