Using agent-based models to simulate impacts of self-driving trucks

Simulation based research is a useful method for analysing potential future impacts of self-driving vehicles. However, most simulation research is oriented towards passenger transport while freight transport may be the most attractive area for early adoption of self-driving vehicles.

Most current freight transport models capable of system-level analysis are not well-suited to represent operational changes resulting from self-driving operations of trucks. There are recent advancements in agent-based modelling, e.g. MATSim which might be useful tools to make more granular analysis.

**This aim of the thesis** is to investigate how agent-based simulations models could be used to simulate various aspects of self-driving truck operations on a system-level. If time allows, model implementation and simulation analysis will also be performed.

**We seek one student or a team of two students,** preferably with a transport background and a strong interest in modeling, simulation and analysis. Experience with agent-based models and/or MATSim is qualifying. The thesis requires an interdisciplinary approach and a successful self-organization in order to scope, organize and drive the work.

The thesis work is hosted by Integrated Transport Research Lab (ITRL) at KTH. The thesis is part of an ongoing research project about impacts of driverless vehicles in Sweden performed by Trafikverket, ITRL and VTI. Depending on timing and results, you may also have the opportunity to write a scientific paper based on your work.

**Your application, including CV and a short personal letter, is welcome to** Albin Engholm via email: [aengholm@kth.se](mailto:aengholm@kth.se) Selection of thesis workers will be performed continuously. The thesis work will be done January-June 2020.

**About Integrated Transport Research Lab ITRL**

ITRL is a research centre at KTH performing research on future’s sustainable mobility and transport from an integrated perspective. In our projects, we work both on a holistic level and with demonstrations and Living Labs. Our focus areas are Connected & Automated transport systems, Efficient transports and Mobility services. Scania and Ericsson are partners in ITRL. More information at: [www.itrl.kth.se](http://www.itrl.kth.se).