

TOPIC FOR A BACHELOR OR MASTER'S THESIS

Towards on Demand Mobility Services in Urban

Areas

PROF. DR. GREGOR ENGELS, SOFTWARE INNOVATION CAMPUS (SICP)

MOTIVATION

Climate-friendly, user-oriented and networked - this is what the future of mobility looks like. With new vehicle concepts in lightweight construction and sustainable energy generation, the transport of people and goods is becoming digital and cooperative. The heart of this idea is the development and implementation of a swarm-like mobility system. Hubs are set up at central nodes as mobility-energy interfaces. The journeys are made individually according to demand and run without interruptions as well as without changing the vehicle from the starting point to the destination. This concept probably ensures high acceptance among passengers.

GOALS OF THIS THESIS

Building on SUMO (an open-source, portable, microscopic, and continuous multimodal traffic simulation package), this work evaluates the use of the presented concept in simulation. The simulation study is based on existing models of the city of Paderborn.

Primarily, existing interfaces to SUMO have to be extended and a function library has to be created to enable vehicle control in simulation.

REFERENCES

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Krajzewicz, D. (2010). Traffic Simulation with SUMO – Simulation of Urban Mobility. In: Barceló, J. (eds) Fundamentals of Traffic Simulation. International Series in Operations Research & Management Science, vol 145. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-6142-6_7

CONTACT

UNIVERSITÄT PADERBORN

s-lab – Universität Paderborn

Tobias, Harges

Room: A.01.10

Phone: +49 (0) 5251 / 60-6492

Email: Tobias.Harges@upb.de