

Thesis
B.Sc.

Thesis
M.Sc.

IDP,
Guided
Research

Simulation of Time Sensitive Networks

Motivation

Time Sensitive Networking (TSN) is a set of new Ethernet standards, that support time-deterministic networking. Our chair is currently developing a testbed for TSN where much of the configuration is automated. With discrete event simulators the behavior of networks can be approximated. To verify the behavior of our testbed and also to assess new currently unsupported TSN standards we want to evaluate strengths and weaknesses of a simulation approach.

Your Profile

- General interest in computer networks
- Some programming experience
- **Plus:** Experience with Shell, Ansible, a scripting language, C++, and Linux

Your Tasks

- Look into open source TSN simulation tools that support real world configurations and a subset of standards (e.g. Omnet++ and the TSN plugin)
- Get familiar with one discrete event simulator
- Configure an example network architecture in our intra vehicular networking testbed and capture traffic
- Implement the same architecture in the simulation environment
- Compare the resulting traffic in the simulator and the physical testbed
- Optional: Automate configuration of the simulator

Literature

- https://www.net.in.tum.de/fileadmin/TUM/NET/NET-2020-11-1/NET-2020-11-1_08.pdf
- <https://ieeexplore.ieee.org/abstract/document/8854500>

Contact

Kilian Holzinger	holzinger@net.in.tum.de
Filip Rezabek	rezabek@net.in.tum.de
Henning Stubbe	stubbe@net.in.tum.de
Benedikt Jaeger	jaeger@net.in.tum.de

