Topic and Goal of the Thesis

Cloud- and edge-based computing in the context of connected driving promises to support, enhance, as well as completely replace intelligent driving functions of automated vehicles. A prerequisite for cloud-connected driving is the availability of a sufficiently performant mobile network, as targeted by the most recent mobile communication standard, 5G.

In order to evaluate the potential of cloud-connected driving within a given networking area, it is beneficial to evaluate the expected network performance as a function of position.

The goal of this thesis is to develop and implement an automatic system for measuring network performance along the road. To this end, existing software components for remote communication as well as localization should be combined.

Working Points

- Literature research on network performance metrics and evaluation
- Familiarization with existing software components for remote communication and localization
- Implementation of an automatic system for measuring network performance along the road
- Evaluation of the implemented system as well as the measured network performance using ika’s research vehicle

Requirements

- Good English or German language skills
- Reliability, commitment, and enjoyment of working independently
- Experience with …
  - ROS
  - Python
  - C++
  - Git
  - Unix-Shell

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German or English

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Earliest possible date