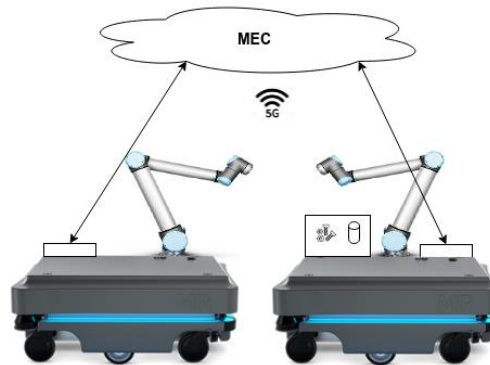


„Development of a mobile robotic system“

Topic for Work as a Student Research Assistant



Summary: Currently, industrial robots are controlled by connections based on Ethernet. Of course, a wireless connection would be preferable, as this would result in lower planning and investment costs. Additionally, use cases such as mobile robotics would be feasible.

Wireless connections based on the 5G standard can meet the high standards required for industrial protocols.

To test the application for the use case, a mobile robot will be designed together with our industrial partners. For this purpose, a robot arm (Kuka or UR) and an Autonomous Guided Vehicle (AGV) will be combined. Both devices should be controlled together from a Mobile Edge Cloud (MEC).

As part of your job you would participate in the project and you could work on the following possible tasks:

- Development and implementation of the control software for both devices
- Evaluation of different sensor data (e.g. optical, wireless signals), for localization and object recognition
- Implementation of path planning algorithms

Keywords: robotics, industrial networks, 5G, smart factory

Tools: Programming language (C, C++, python), plotting tools.

The language of the project supervision can be English or German.

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