

## Crane Simulator: Remote Control a Wheeled Robot via CAN-Interface

As part of the OPTIMUM project, the university collaborates with the company DEMAG, a German crane manufacturer. To be able to implement and demonstrate new crane functions without the need to install an industrial crane equipment, a prototype robot needs to be developed. To reach this goal, the existing wireless remote control needs to be connected to the



robot. This requires the extension of a Raspberry Pi with a CAN module as well as the processing of incoming CAN messages and generation of motor control commands.



Furthermore, the robot shall simulate crane movements. Due to the limitations of a wheeled robot compared to a material handling crane, a translation of the movement commands needs to be developed.

The following tasks shall be completed:

- Development of a concept for the hard- and software of a CAN-interface for the robot
- Mechanical and electrical assembly of the CAN module onto the Raspberry Pi and robot
- Mechanical and electrical assembly of the wireless receiver onto the robot
- Implementation of the CAN interface and processing of control commands
- Development of a control program to translate crane commands to corresponding robot wheel commands for crane simulation

**Project type** Bachelor's thesis, student project  
**Requirements** Experience in programming (e.g. C, Python)  
**Supervision** M.Sc. Hannes Raddatz, M.Sc. Fabian Hölzke,  
Dr.-Ing. Frank Golatowski

**Contact** M.Sc. Hannes Raddatz – [hannes.raddatz@uni-rostock.de](mailto:hannes.raddatz@uni-rostock.de)  
M.Sc. Fabian Hölzke – [fabian.hoelzke2@uni-rostock.de](mailto:fabian.hoelzke2@uni-rostock.de)  
**Telephone** 0381 / 498 - 7290  
**Office** Institute MD, Building 1, Room 1339

