

Development of a System for Precise 2D Localization of Mobile Robots in Indoor Environments

✓ Bachelor- / Studien- / Masterarbeit

A project at the Institute of Mechanics and Adaptronics focuses on robot-based assembly of large, compliant components. As part of this project, a system is required to determine the position and orientation of a mobile robot in indoor environments. The primary goal is precise 2D localization of the mobile platform, which is shown in the image on the right, beneath the robot. Since GPS can be ruled out due to its low accuracy indoors, localization must rely on methods such as LIDAR or camera-based techniques. In the scope of the thesis, various methods for localizing the mobile robot are to be researched. Based on this research, one method will be selected, a tracking system will be designed, and tested in practice. Validation experiments will be conducted to examine the accuracy of the designed system.



Tasks:

- Researching methods for precise 2D localization
- Designing and practical testing of the tracking system
- Validation of the system's accuracy

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