Lehrstuhl Steuerung, Regelung und Systemdynamik

Master Thesis
Practical, Programming

Adjustment and testing of a software for a 3DOF motion platform of a driving simulator

Keywords: embedded device control, software development

Conditions:

Duration:	6 months
Requirements:	Matlab/Simulink, C or C++
Language:	English
Target group:	Master students

Contents:

A 3DOF motion platform simulates real world driving experience by providing haptic and dynamic feedback. This makes it possible to conduct research and generate data from more realistic driving scenarios using test drivers. The driving simulators of the SRS chair use the professional driving simulator software Scaner Studio, which computes the movement of the simulated vehicle depending on the driver's inputs (steering wheel angle, pedal position, etc.). The three actuators of the motion platform are controlled by the motion simulation software SimTools. Depending on the simulated vehicle movement, the software of the motion platform calculates the movement of the driver's seat.

[dofreality.com]

In a previous thesis a software was developed to connect the motion platform to the driving simulator. This software provides the motion platform software with the required data from the driving simulator software. As the driving simulator software has been updated to the latest version (Scaner Studio 1.9), the developed communication software between driving simulator and motion platform must be adjusted. Experiments need to be designed to test the adapted software. After the tests have been successfully completed, the motion platform and the adjusted software can be implemented in the driving simulator in MB 134.

Thus, the goals of this work are:
- Review the documentations/literature related to the motion platform and the software of the driving simulator
- Adjustment of a software connecting the motion platform to the driving simulator
- Complete test of the motion platform and the developed software
- Implement the motion platform and the new software in the driving simulator in MB 134
- Complete and detailed documentation/presentation of the research results

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