SOMC: Dynamic software for dynamic systems

The Chair of Computer Science 11 - Embedded Software (i11) collaborates with the Institute of Automatic Control (IRT, Faculty of Mechanical Engineering) on the new project Service-Oriented Model-based Control (SOMC) funded by the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG). By tightly coupling software engineering and control theory, a service-oriented architecture (SOA) should improve the flexibility and maintainability of control systems. This architecture enables the control system to adapt to situations not foreseen at design time by exchanging control components dynamically at runtime.

The i11 explores a SOA fit for the requirements of real-time, embedded control systems while enabling the necessary flexibility. The IRT develops the required models and investigates stability conditions for switching between control components.

The proposal was submitted by Dr.-Ing. Bassam Alrifaee (head of the Cyber-Physical Mobility Group at i11) and Dr.-Ing. Lorenz Dörschel (IRT). The research associates Ole Greß, M. Sc. (i11) and Markus Zimmer, M. Sc. (IRT) are working on the project.

More information about the Cyber-Physical Mobility Group: CPM Group
More information about the Institute of Automatic Control: Website
More Information about the project: Project page
Autonomous Driving – Looking for PhD. Students

Leading German universities in the automotive sector and selected researchers from the industry plan to cooperate on the AUTOtech.agil project starting in October 2022. The goal of AUTOtech.agil is to create an open architecture for the mobility system of the future. A particular focus is on the standardization of interfaces, updateability, and expandability of functional building blocks. Future mobility is electric, interconnected, and autonomous leading to a comprehensive transformation of road traffic as we know it today. This trend is accompanied by great opportunities for novel mobility and transportation concepts and improvements in road safety and quality of life. This transformation requires agile approaches based on innovative software and hardware architectures that enable machine learning.

For this project, the Cyber-Physical Mobility Group is currently looking for motivated graduates of technical disciplines interested in pursuing a PhD at Lehrstuhl Informatik 11 - Embedded Software.

More information about the job offer

More information about the Cyber-Physical Mobility Group

Spring Colloquium 2022
Between 13.06. and 15.06.2022, our scientific staff presented and discussed current research results during our spring colloquium in beautiful Möderscheid in Belgium. In addition, we discussed strategies for a modern external presentation of the Chair and spent a creative break while hiking in the High Fens. Once again, it became clear how important and indispensable the meetings and exchanges on site are for a motivating social life at the chair.

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