



Call for Papers

SS04 - Automation of Modular Systems and the Module Type Package

Organized and Co-Chaired by

Michelle Blumenstein¹, Stephan Hensel², Mario Hoernicke³, Anselm Klose⁴, Andreas Stutz⁵

¹ Helmut Schmidt University / University of the Federal Armed Forces Hamburg (michelle.blumenstein@hsu-hh.de)

² Semodia GmbH (stephan.hensel@semodia.com)

³ ABB Corporate Research Ladenburg (mario.hoernicke@de.abb.com)

⁴ TU Dresden (anselm.klose@tu-Dresden.de)

⁵ Siemens AG, Technology and Innovations, Karlsruhe (andreas.stutz@siemens.com)

❖ FOCUS

For a few years, the concepts of modular automation have been seen as a key technology for highly flexible operation in the process industry. The basic idea of this concept is that fully automated modules, so-called Process Equipment Assemblies (PEAs), with specified functionalities can be combined to form modular process plants. Recently, the attention for this topic has increased in industries far beyond the process industry. There's research to use those concepts e.g. in production-related logistics for the supply and disposal of production plants, in shipbuilding for the integration of the various sub-systems into a ships' information system, and in manufacturing industry in the context of machine capabilities and skills.

Starting some years ago as German standard VDI/VDE/NAMUR 2658, the concepts are now on the threshold to international standardization in the form of a New Work Item Proposal for IEC 63280. In addition to that, other standardization activities such as OMAC PackML, the Open Process Automation Standard, the Industry 4.0 base system BaSys or the concept of the Asset Administration Shell are related to the VDI/VDE/NAMUR 2658 as they also act in the area of modular automation.

Next to those standardization efforts, industry associations such as the BioPhorum or the VDMA are taking up the basic concepts of the VDI/VDE/NAMUR 2658 and develop them further within the framework of industry-specific extensions, concretizations and adaptations.

With this proposal the organizers would like to provide a first international platform for work in this community and to support the international dissemination of the VDI/VDE/NAMUR 2658 concepts with regard to the beginning standardization within IEC 63280.

❖ TOPICS

- ❖ Cross-industry applications of Modular Automation concepts: process industry, discrete industry, intralogistics, ships/marines, energy industry, ...
- ❖ Industry-specific extensions and adaptations: bio-pharmaceutical, logistics, dairy, ...
- ❖ Conceptual comparisons: Open Process Automation Standard, OMAC PackML, OPC UA for Machinery, UMATI, ...
- ❖ Life cycle and scalability: engineering, operation / laboratory, piloting, production, ...
- ❖ New technologies in the context of Modular Automation: Microservice architectures, micro frontends, method-based orchestration, low code programming/configuration, ...

❖ AIM

The aim of the Special Session is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of modular automation and the use of the Module Type Package Concept (VDI/VDE/NAMUR 2658, IEC 63280)

❖ CONFERENCE FORMAT

The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations, as well as work-in-progress (WiP) and industry practice sessions.

❖ AUTHOR'S SCHEDULE (2022)

❖ Regular and special sessions papers

Submission deadline April 1
 Acceptance notification May 6
 Deadline for final manuscripts June 17

❖ Work-in-progress/Industry practice papers

Submission deadline May 13
 Acceptance notification June 10
 Deadline for final manuscripts June 17