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## INDIN 2023 Special Session on

# SS 11 – Open Automation Architecture and the Module Type Package

organized by

Principal Organizer: **Mathias Maurmaier**

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Affiliation: Siemens AG, Germany



As Senior Key Expert at Siemens Digital Industries, Mathias Maurmaier plays a major role in shaping the portfolio for modular automation, especially the Process Orchestration Layer with SIMATIC PCS neo. He did his Ph. D. the University of Stuttgart in the field of model-driven automation engineering. He led international research and standardization projects in the field of process automation at Siemens. As Committee Lead, he moderates the further development of the MTP technology within PI (PROFIBUS & PROFINET International).

**Organizer 1: Mike Barth**

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Mike Barth is professor for interconnected secure automation technology at the KIT-Institute for Control Systems. His main research focus areas are information models, IT/OT security, IIOT as well as the engineering of cyber physical production systems. Research results are new methods and tools for the automation of complex engineering tasks in combination with a software-based assistance of human workflow processes.

**Organizer 2: R. Donald Bartusiak**

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Affiliation: Collaborative Systems Integration, United States



Don Bartusiak is President of Collaborative Systems Integration Inc. and Co-chair of The Open Process Automation Forum. In Oct 2020, he retired as Chief Engineer - Process Control for ExxonMobil Research and Engineering with 33 years of experience. From 1977 to 1984, he was a Research Engineer for Bethlehem Steel. At ExxonMobil, he implemented real-time artificial intelligence, linear and nonlinear model predictive control, and real-time optimization applications. From the mid-1990s, he held supervisory or senior technical positions responsible for instrumentation, process analyzers, control systems, and control applications. From 2000 to 2002, he was Adjunct Professor at Rice University. Don received a B. Sc. from the University of Pennsylvania and M. Sc. and Ph. D. degrees from Lehigh University. He has published 10 journal articles and is co-inventor on 5 patents.

Organizer 3: **Michael Krauss**  
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Affiliation: BASF SE, Germany



After finishing his Ph. D. in theoretical physics in 2010, Michael Krauss joined the Competence Center for Automation at BASF SE in Ludwigshafen. From 2013-2018, he was responsible for a team concerned with DCS systems and automation. 2018 Michael has been appointed Senior Expert of Control Systems. Currently he is in charge of the technical expertise domain automated valves. Michael is also head of the NAMUR working field 4 “Operation and Maintenance”.

Organizer 4: **Andreas Stutz**  
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Affiliation: Siemens AG, Germany



Andreas Stutz is a project manager in the Technology and Innovations department at Siemens AG in Karlsruhe. His focus is on future automation architectures in the process industry. Furthermore, he is an external Ph. D. student at Helmut Schmidt University/University of the Federal Armed Forces Hamburg at the chair of professor Alexander Fay. His Ph. D. research deals with the application of Service Choreographies in distributed automation systems.

## Call for Papers

With current developments in the context of Industry 4.0, the field of automation technology is changing. The desire arises to no longer design monolithic production systems in a closed and proprietary way, but to ensure openness in terms of interoperability, interchangeability and data exchange without sacrificing aspects such as process reliability and security. Thus, in recent years, new approaches for open, secure and distributed automation architectures have increasingly emerged.

In this context, two major standardization activities came up in the process industry – the Open Process Automation Standard (O-PAS) and the Module Type Package (MTP). Also, other standardization efforts in this direction can be recognized, that already have or will have an impact on future automation architectures. Examples are the Namur Open Architecture (NOA), from

process industry as well, Universal Machine Technology Interface (UMATI) and the Asset Administration Shell (AAS) in the manufacturing industry, OMAC PackML in the field of packaging or OPC UA for Machinery for the entire mechanical engineering sector. In addition, lots of research projects deal with this topic. High-profile examples are the BaSys projects and the Arrowhead Framework.

Even though this variety of activities originated from different backgrounds and pursue different objectives in detail, they all serve overlapping ideas in the area of open automation architectures. An exchange between the various groups of people behind them is therefore existential and partly already in progress. Only if this exchange is practiced, the various concepts can benefit from each other and mesh as well as possible in the future.

The goal of this special session is therefore to provide an international platform for the topic of open, secure, and distributed automation architectures. We invite national and international researchers from the above mentioned or similar initiatives to exchange ideas, make new contacts and share their work and insights here in Lemgo.

Among others, the following topics are in focus of this proposal:

- Cross-industry applications of open automation architectures: process industry, discrete industry, intralogistics, ships/marines, energy industry, ...
- Industry-specific contributions to the standards: bio-pharmaceutical, logistic areas, dairy, ...
- Conceptional comparisons: Open Process Automation Standard, OMAC PackML, OPC UA for Machinery, UMATI, Asset Administration Shell, Namur Open Architecture (NOA), ...
- IT/OT-Security aspects regarding open and modular automation architectures
- 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, ...

**Submissions Procedure:** All the instructions for paper submission are included in the conference website <https://2023.ieee-indin.org/index.php>

### **Deadlines:**

Deadline for submission of papers:	<b>March 01, 2023</b>
Notification of acceptance of papers:	<b>April 15, 2023</b>
Final manuscripts due:	<b>June 05, 2023</b>