

3rd IEEE International Conference on Industrial Cyber-Physical Systems (ICPS)

Special Session on

“Distributed machineries and smart systems for material handling and smart manufacturing using Industry 4.0 technologies”

organized by

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Call for Papers

Scope of the Special Session

Today's control of industrial processes is done in a highly centralized and hierarchical manner. Future concepts like component based and collaborative automation, as planned to be introduced with the Digital Manufacturing or Industry 4.0 initiatives, paving the way for the 4th industrial revolution, require much more distributed control functionalities. There are many challenges to support this development enhancing the aspects of distributed control, adaptation of IIoT technologies to industrial needs, enhancement of control and applications by context and location awareness as well as application design and common-model based 3D engineering and supervision. The objective of this special session is to provide opportunities to the researchers and practitioners for discussing solutions to those challenges in industrial applications.

Topics of interest for this special session include

- Approaches and applications for distributed industrial control
- Distributed control via industrial communication networks
- Industrial IoT protocols and platforms
- New localization approaches for the factory floor
- Collaborating industrial machines
- Modelling and Simulation of industrial components and systems

- Engineering of distributed industrial components and systems
- Visualization and monitoring of distributed machineries and smart systems
- System security of material handling and smart manufacturing applications
- Application of time-sensitive networking technology for real-time networks

Submissions Procedure: All the instructions for paper submission are included in the conference website <https://events.tuni.fi/icps2020/authors/>

Deadlines: The same as the general [conference deadlines](#)

CVs of the proposers



Thomas Bangemann is Deputy Head of the ifak Institut f. Automation und Kommunikation e.V. in Magdeburg and is responsible for coordination of research activities. Formerly he headed the departments “IT & Automation” as well as “Industrial Communication Systems” at ifak. After he finished his scientific studies on monitoring, control and diagnostics of automation systems in 1993 with the doctoral level he has been working on the subjects of communication systems and their applications, the application of automation systems, the introduction of information technologies to management applications as well as integration of automation systems into SOA based systems. During the last few years he has been involved in several European and national funded projects, e.g. FP6 SOCRADES, ITEA2 AIMES, ITEA PROTEUS, FP7 IMC-AESOP, FP7 ECOSSIAN or ITEA3 OPTIMUM. He is a member of several working groups within the ZVEI - German Electrical and Electronic

Manufacturers' Association, Association of German Engineers – Division Measurement and Automatic Control VDI/VDE-GMA (Architectures for Industry 4.0) and he also gives lectures dedicated to automation systems at the University of Applied Sciences Magdeburg-Stendal. Thomas Bangemann participated in the organization of several sessions on Cyber Physical Systems at international conferences and gave numerous presentations on the integration and migration of legacy systems into SOA based CPS.



Daesub Yoon is director of cognition & transportation ICT research section in ETRI (Electronics and Telecommunications Research Institute) in Korea. ETRI is the largest Korean government funded research institute on ICT areas. He had received the M.S. and Ph.D. degree in Computer Science & Software Engineering from Auburn University in the USA. From 2001 to 2005, he was a Research Assistant in the Intelligent & Interactive System Laboratory at Auburn University. He has been at ETRI in Korea since 2005. His research interests include assistive technology, eye tracking, attentive user interfaces, mental workload and human factors in automated driving vehicles and smart factories. He is currently joining the OPTIMUM project from the EU Eureka program. In that project, he is

developing Industrial IoT platform and Distributed control platform for future smart factory environments.



Dr.-Ing. habil. Peter Danielis currently holds a substitute professorship at the Chair of Distributed High Performance Computing, University of Rostock, Germany. His research focuses on real-time communication in the Internet of Things and in industrial automation environments. He has worked as a post doctorand at the University of Rostock and in the research fellowships project "A reliable distributed computing system for mobile cloud computing" at KTH Stockholm, Sweden, until October 2018. Starting in October 2018, he has worked as consultant for IT security for T-Systems Multimedia Solutions GmbH in Rostock until August 2019. He received his habilitation degree in communication technologies in June 2019. He published more than 60 publications at international conferences and in journals and won several awards including best paper awards, a research competition, teaching awards, an award for his dissertation, and awards for supervised student works. Among other things, he was a member of the committee co-organizing the international IFIP conference Networking in 2017. He served as reviewer of various conferences (e.g., SYSCON, ETFA, Networking, WFCS) and journals (e.g. IEEE TII, IEEE JSAC, Proceeding of the IEEE, IEEE TNSM). He has been involved in joint projects like ITEA3 project OPTIMUM on topics related to Industry 4.0 and the DFG research project RTiPS-4-IoT dealing with real-time publish/subscribe for the Industrial Internet of Things. For more than 10 years, Dr. Danielis has also been involved in joint projects with several industrial partners that dealt with the development of real-time hardware and software systems.