



IEEE ICPS 2020 - <http://icps2020.fi>

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

Special Session on

“Interoperability Challenges for the Industrial Cyber-Physical Systems”

organized by

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Call for Papers

Scope of the Special Session

The interoperability challenges of Cyber-physical Systems (CPS) originate from various roots. Depending on the dynamics, flexibility, and general requirements of cyber-physical system of systems (CPSoS), some or all challenges have to be addressed, and the related problems have to be solved. These challenges can include protocol-related issues, semantic matching, timing constraints, network-specific behaviours, Quality of Service (QoS) issues, security and safety constraints, not to forget about issues that have economics- and legal-origins, among others. Another dimension of the problem space is being added by the heterogeneity of the technologies, often used for enabling CPSoS use cases. These include sensors and actuators on embedded devices at one end and powerful cloud backends at the other. Besides addressing the specific challenges individually in depth, the research community is working on frameworks and general concepts to allow gluing the best ideas together; in other words, the interworking of these concepts and technologies is an important issue to be covered. This special session is organized by the European ECSEL research project Productive4.0.

Topics of interest for this special session include

- Current and future trends in CPS interoperability
- Interoperability between standards
- Interoperability between legacy and IoT/SoS/CPS/SOA technologies
- Interoperability on the plant (or production floor) level
- Real-time issues and CPS interworking
- Resource allocation and QoS management challenges
- Security and Safety issues, triggered by interoperability
- Semantic interoperability
- Architectures of Cyber-physical System of Systems



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- Frameworks and middlewares for CPS interoperability
 - Engineering tools and procedures supporting ICPS
 - Engineering design of mechatronic systems
 - Accounting and smart contracts in Cyber-physical Systems
 - Case studies and Results on system deployments

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

Dr. Pal Varga is an Associate Professor at Budapest University of Technology and Economics, Hungary. His main research topics include network and service monitoring and management, 5G architectures and use-cases, as well as industrial Internet of Things – especially interoperability, security, QoS and scalability issues.

Dr. David Hästbacka is an Assistant Professor (tenure track) in Software Engineering at the Faculty of Information Technology and Communication Sciences, Tampere University, Finland. His research focuses on systems and software architectures in industrial Internet of Things, information semantics, and integration of information systems across domains related to automation, production and smart energy systems.