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2019 IEEE International Conference on Industrial Cyber-Physical Systems (ICPS2019)
2019 IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI2019)

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Special Session on "Interoperability Challenges for the Industrial Cyber-Physical Systems" organized by

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Call for Papers

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 mention 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 device 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 include, but are not limited to:

- 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
- Accounting and transaction settlement issues, smart contracts
- Frameworks and middlewares for CPS interoperability
- Engineering tools and procedures supporting ICPS
- Case studies and Results on system deployments

The authors of the accepted papers of this special session will be invited to submit an extended version of their works in a special issue of HTE/IEEE Infocommunications Journal in 2019.

Deadlines:

Reception of full paper: December 30, 2018
Paper acceptance notification: February 28, 2019