



# ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

Chicago | Illinois, November 3-6, 2024

## Special Session on Smart Transducer Interoperability Towards Process Digitalization

### Organized and co-chaired by:

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### Call for Papers

#### Technical Outline of the Session and Topics:

Smart transducers (sensors and actuators) are the building blocks for digitalization in the Industrial Internet of Things (IIoT), Industry 4.0, Smart Cities, Smart Grid, Water Management, Energy Management, Urban Mobility, and so on. All those infrastructures and processes have digitalization based on Cyber-Physical Systems (CPS).

Interoperability is a critical challenge that needs to be solved to promote digitalization based on the CPS, composed of many standards and protocols that need to be interconnected. Different Levels of Interoperability are required to transform data from the physical layer. Smart sensors acquire and convert data from the physical to the digital domain. Data-to-information conversion using syntactical serialization combines all the elements from the acquisition chain, turning information into knowledge. Linked data (Research Description Framework and Web Ontology Language) at the application layer allows crosscommunication and decision-making, granting machines to understand and act autonomously during a process inside an infrastructure in a local and external network.

This Special Session focuses on discussion, challenges, and solutions allowing smart transducers' Interoperability towards infrastructure and process digitalization.

#### Topics of the Session include, but are not limited to:

- CPS and CPPS interoperability
- Industry 4.0 and IIoT interoperability
- Digitalization and Digital Twin
- Standards interoperability syntactical and semantic levels
- Smart Transducer Ontologies
- Smart Devices Interoperability and Security
- Interoperability in measurement and control systems
- AI-powered infrastructures
- Smart water, smart energy, smart manufacturing, and smart mobility

#### Author's schedule:

Deadline for submission of special session papers	April 15, 2024
Notification of acceptance	June 10, 2024
Deadline for submission of final manuscript	July 01, 2024

Early submission is highly encouraged for early decision notifications!



All the instructions for paper submission are included in the conference website:

[www.iecon-2024.org](http://www.iecon-2024.org)