

**Hybrid Event:**  
**(On-site In-person Presentation & Virtual Presentation)**

Barcelona, Spain  
August 1-3, 2022  
<https://coinsconf.com>



Call for  
Papers

## Special Session on Cyber-Physical Systems

We would like to invite you to submit a contribution to the COINS Special Session on Cyber-Physical Systems. IEEE COINS includes a multi-disciplinary program on the latest technology developments and innovations. IEEE COINS will address all important aspects of the IoT & AI ecosystem.

A Cyber-Physical System (CPS) is a physical system managed or monitored by computation-based algorithms and tightly interconnected. In CPS, the physical elements and the SW/FW layer are tightly coupled. Each element works autonomously but coordinated at different temporal moments leading to multiple functionalities depending on the context in which they are applied. Closely related to the Internet of Things (IoT), CPSs focus on the interaction between elements and methodology of data acquisition, data processing, modeling and possible interaction (closed loop). This is why it involves a multidisciplinary approach ranging from system simulation to industrial process design and physical developments, including data processing and the implementation of AI algorithms. It has traditionally been found in areas such as automotive, traditional industry and aeronautics. But recently it is permeating everything, such as smart grids, Industry 4.0, or eHealth.

The goal of this Special Session is to provide a platform for researchers, engineers, and industrial practitioners from different fields to share and exchange their ideas, research results, and experiences in the developments in CPS. Contributions to this special session are welcome to present novel methods, algorithms, frameworks, architectures, platforms, and applications.

Potential topics of interest include, but are not limited to the following:

- Smart cities and autonomous robots
- AI and CPS applications in Industry 4.0
- Smart Grid systems in CPS
- Architecture design and development of smart systems
- Telepresence robots and IoT-based CPS
- AI for Fog-Edge-Cloud Computing Integration in CPS
- Context-aware sensing and computing in IoT-based CPS
- Applications in environmental monitoring and transportation
- Medical Cyber-Physical Systems
- CPS and wearable devices tracking
- Human-Machine Interaction processes
- CPS platforms for modeling, simulation, and testing
- Standards, protocols, and methodologies for CPS and IoT
- Ambient intelligence and intelligent platforms for collaborative test-beds

### Submission and publication

The submitted papers will undergo the same review process as regular conference papers. The selected papers will be published as part of the IEEE COINS Proceedings, and the proceedings will be submitted to the IEEE Xplore Digital Library.

### Track Chair

Josué Pagán, Technical University of Madrid, Spain

### Special Track Program Committee

Andrea Acquaviva, University of Bologna, Italy

Andrés Otero, Technical University of Madrid, Spain

Cristian Pasluosta, University of Freiburg, Germany

Elisabetta Farella, Fondazione Bruno Kessler, Italy

Francesco Barchi, University of Bologna, Italy

Hassan Ghasemzadeh, Arizona State University, USA

Joachim Denil, University of Antwerp, Netherlands

Luis Almeida, University of Porto, Portugal

Pablo Casaseca-de-la-Higuera, University of Valladolid, Spain

Roberto Passerone, University of Trento, Italy

Sara Pérez Carabaza, University of Cantabria, Spain

Vincent Cheutet, University of Lyon, France