

# Open Invited Track Proposal

**Code:** 33b84

**Title:** Co-creative Cyber Physical System in Smart Manufacturing and Logistics

**Track proposed by:**

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This open invited track is organized by the members of the IFAC WC 2023 Industrial Group SG 14 (Systems Science and Technology). The aim of our group is to enhance interactions between researchers from the academia and the industry in the general area of systems science and technology and we welcome contributions from practitioners as well as researchers in this field.

**IFAC2023 Technical Committee for evaluation:** TC 5.2 (Management and Control in Manufacturing and Logistics)

**Abstract:**

Recent developments of IoT technologies have enabled the advancement of smart factory in Industry 4.0. Co-creation in manufacturing refers to the participation of stakeholders such as customers, suppliers, manufacturers, logistic providers in a product design or problem-solving to produce mutually valued outcomes. These outcomes include new things, new values, new services, new ways to overcome delivery problems or solutions to complex manufacturing and logistic problems. The adoption of this framework in smart manufacturing and logistics systems is, however, not straightforward. This open invited track aims to present recent advances on co-creative cyber physical system in smart manufacturing and logistics with rich objectives, and new challenges for smarter world. The topics covered here are closely related to the TC 5.2 research areas, such as the development of management decision-support systems in digital, resilient and sustainable manufacturing and supply chain systems, and we look forward to receiving many contributions to this track from the TC 5.2 and many others.

**Description of the topic:**

IoT technologies has remarkably progressed to realize smart factory in Industry 4.0. New technologies or digital twin technologies are required to develop Cyber Physical Systems (CPS) for Industry 5.0 by integrating various systems that have strong capabilities to sensing systems, data-driven systems, machine learning, artificial intelligence, production management, control, monitor, communicate, and computing in a cyber and physical environment. Nowadays, co-creation in CPS in smart manufacturing and logistics is one of the key issues in product design for customers and manufactures, human machine interaction, and new challenges for smarter world. This open invited

track is related to Co-creative CPS (CCPS) in smart manufacturing and logistics. The open invited track aims at, but are not limited to, the following themes and developments in the field of CCPS in smart manufacturing and logistics.

- Autonomous Systems; Cloud-based Systems; Cognitive Automation; Cyber physical production systems and industry 4.0;
- Data science and data-driven systems in smart manufacturing/logistics; Human-in-the-loop, Human-machine interactions, Human-robot collaboration; Virtual reality;
- Integration between model-driven and data driven approaches in smart manufacturing/logistics; Machine learning and artificial intelligence; Modeling, simulation, and optimization of manufacturing and logistics systems;
- Sensor-fusion for intelligent automation systems; Smart factories, Smart logistics and supply chains; Smart products with embedded intelligence;
- Standardization in smart manufacturing/logistics; Sustainability and green automation; new challenges with CPS for smarter world etc.