



## CALL FOR PAPERS

### Special Section on “Control issues in the cyber-physical manufacturing enterprise”

in IFAC Annual Reviews in Control, Elsevier  
(CiteScore<sup>1</sup>: 10.1, 2 Year Journal Impact Factor<sup>2</sup>: 7,829)

<https://www.journals.elsevier.com/annual-reviews-in-control>

Organized by:

Prof. Hervé Panetto ([Herve.Panetto@univ-lorraine.fr](mailto:Herve.Panetto@univ-lorraine.fr))

Professor of Enterprise Information Systems at University of Lorraine, France

Former chair IFAC CC5 - Cyber-Physical Manufacturing Enterprises (<https://tc.ifac-control.org/5>)

Prof. Arturo Molina Gutiérrez ([armolina@tec.mx](mailto:armolina@tec.mx))

Professor of Product Innovation at Tecnológico de Monterrey; Mexico

Former chair IFAC TC 5.3 - Integration and Interoperability of Enterprise Systems  
(<https://tc.ifac-control.org/5/3>)

Dr. Priv. Doz. Georg Weichhart ([georg.weichhart@profactor.at](mailto:georg.weichhart@profactor.at))

Key Scientist Robotic and Autonomous Systems, PROFACTOR GmbH, Austria

Chair IFAC TC 5.3 - Integration and Interoperability of Enterprise Systems (<https://tc.ifac-control.org/5/3>)

Chair IFIP WG 5.8 - Enterprise Interoperability (<https://www.ifip-ei.org/>)

Prof. Marco Macchi

[marco.macchi@polimi.it](mailto:marco.macchi@polimi.it)

Professor of Industrial Technologies and Asset Lifecycle Management at Politecnico di Milano, Italy,

Chair IFAC TC 5.1 - Manufacturing Plant Control (<https://tc.ifac-control.org/5/1>)

## Context

Emerging new approaches are enabled by Industrial Internet-of-Things (IIoT) and Cyber-Physical Systems (CPS) technologies and methods. The smart, sensing and sustainable enterprise (S<sup>3</sup> Enterprise) is a digital business innovation concept making use of IIoT, CPS for aggregating intelligent sensors and actors through a service-oriented architecture. New AI and model-driven approaches enhance the support to the human decision makers, enabling agile, flexible, and proactive management of the enterprise. The S<sup>3</sup> Enterprise requires new capabilities enabled by next-generation information systems to perform sensing, modelling, analysis and interpretation of “any” signal, with real-time data gathering and analysis and/or with offline historical data series elaboration. The data and intelligent algorithms support flexible, and autonomous adaptation of the enterprise to the changing needs of the business and socio-technical context.

In this scenario, human operator and computing technologies are relevant assets to build intelligent control in the S<sup>3</sup> Enterprise. The human operator, interacting with intelligent systems, is constantly monitoring, and re-configuring complex manufacturing and production systems. The emergence of cloud and edge-computing technologies have a significant impact on the design and implementation of these systems-of-systems. Cloud and edge computing systems bring the required computing power to manufacturing and production systems, supporting also digital business innovations in the S<sup>3</sup> Enterprise.

These trends lead to an increasing number and diversity of systems that need to work together in the future enterprises. In this evolving context, the capability to handle a complex and dynamic system requires a shift from classic approaches of central control of systems, towards systems-of-systems interoperability as a basis for

<sup>1</sup> <https://www.scopus.com/sourceid/27843>

<sup>2</sup> <https://www.scijournal.org/impact-factor-of-annu-rev-control.shtml>

distributed and collaborative control. This shift will have consequences on future enterprise architectures as a basis for control of such systems. Furthermore, it will bring new control and management practices thanks to Cyber-Physical Systems applications supporting decisions and actions in key areas of the manufacturing enterprise as operations and logistics management, and product and asset lifecycle management.

## Topics

- Smart Systems Interoperability
- Cyber Physical Systems modelling
- Cyber Physical Systems applications
- Industrial Internet-of-Thing (IIOT)
- Industrial information in Cyber-Physical Systems
- Cyber Physical Production Systems (CPPS)
- Cyber Physical Manufacturing Enterprise (CPME)
- Cyber Logistics Systems
- CPS for Control and Manufacturing in Smart Cities Systems/Transportation/Energy/Water
- Sensing, Smart and Sustainable Enterprises/Manufacturing Systems
- Model-driven CPPS & CPME engineering
- Systems-of-Systems Design and Engineering for Manufacturing
- Cloud and Edge Computing for CPME, CPPS
- AI in CPPS and CPME
- Resilient CPPS and CPME
- Ontology-based models for CPS/IIOT
- Cloud / Edge Computing for CPPS and CPME

## Publication Schedule

- Submission Deadline: November 2020
- Notifications of Acceptance: January 2021
- Revised Manuscript: February 2021
- Final Decision: March 2021
- Expected Date of Publication: April 2021

## Contact

For further questions concerning the special issue, please contact the organizers.