

Open Invited Track on “Intelligent Methods and Tools supporting Decision Making in Manufacturing Systems and Supply Chains”

Open Invited Track Code: **8316w**

IFAC World Congress 2023
Yokohama, JAPAN, July 9-14, 2023

Chairs:

- Prof. Dr.-Ing. Michael Freitag, University of Bremen, Bremen, GERMANY
- Associate Prof. Dr.-Ing. Raphaël Oger, IMT Mines Albi, Albi, FRANCE
- Prof. Dr.-Ing. Enzo Morosini Frazzon, Federal University of Santa Catarina, BRAZIL
- Prof. Dr.-Ing. Carlos Eduardo Pereira, Federal University of Rio Grande do Sul, BRAZIL

Abstract:

This Open Invited Track is concerned with the development of decision support systems and approaches for managing manufacturing systems and supply chains. Systems and approaches can be inspired from combinations of tools and approaches from industrial engineering, operations research, decision science, computer science, and data science.

The Volatility, Uncertainty, Complexity, Ambiguity (VUCA), and diversity of manufacturing system and supply chain environments lead to an increasing complexity for decision makers to make decisions. So, decision makers need to be supported by proper decision-making models, methods, and software tools. Such systems can be for example based on simulation, optimization, data analytics, machine learning, what-if analyzes, ontologies, taxonomies, or combinations of these. At the same time, these systems are connected to sensors for data acquisition and as well as communication systems to exchange data and information both in vertical and horizontal direction. The proper exchange of data between the physical process and intelligent systems allows for the emergence of adaptive, agile and resilient manufacturing systems and supply chains.

The track chairs invite scientists, engineers and decision makers from government, industry, and academia to contribute with theoretical and applied research papers. From the business perspective, the track will cover different activities such as design, planning, scheduling, control, monitoring, and maintenance for supply chains, production, transportation, logistics, inventory, and warehouse. From the decision support perspective, the aim of this track is to attract high-quality papers contributing to these business activities by proposing new decision support systems and approaches. In the context of a highly uncertain and opportunistic world, a special attention will be given to paper contributing with new decision support systems and approaches contributing to risk/uncertainty and opportunity management. A special attention will also be directed towards practical relevance and approaches that can foster innovation in manufacturing and supply chains.

This Open Invited Track is proposed by the working group #6 (Intelligent methods and systems supporting supply chain decision making) of the IFAC Technical Committee 5.2 (Management and Control in Manufacturing and Logistics).

Keywords: IFAC TC 5.2, Modeling of manufacturing operations; Production planning and control; Logistics in manufacturing; Supply Chain Management; Risk management.

Submission:

For author guidelines, please refer to www.ifac-control.org. All papers must be submitted electronically at <https://ifac.papercept.net/>. All papers must be prepared in a two-column format in accordance with the IFAC manuscript style. Please use the official IFAC instructions and template to prepare your contribution as full-length draft paper and submit it on line. Submission details are available on the conference website. All submissions must be written in English. All papers that conform to submission guidelines will be peer-reviewed by IPC members.

The corresponding authors need to submit their paper online (pdf format) as Open Invited Track Paper using the following code: **8316w**

Important dates:

- Oct. 31, 2022: Open invited track paper submission
- Feb. 21, 2023: Notification of acceptance
- Mar. 31, 2023: Final paper submission