

IFAC Coordinating Committee 5 “Manufacturing and Logistics Systems”

THE FUTURE OF MANUFACTURING AND LOGISTICS SYSTEMS

Chair:

Prof. Dr. Hervé Panetto

Université de Lorraine, CNRS, CRAN

IFAC CC5

Control and modelling in manufacturing plant

Systems Integration and Interoperability

Supply chain and logistics

Applications to large scale systems



TC 5.1. Manufacturing Plant Control

Chair: Prof. Benoit Iung

Scope:

- IMS Modeling and Experiments
- Production & Logistics over Manufacturing Networking
- Manufacturing Automation over Networks
- Dependable Manufacturing Systems Control
- Discrete Event Systems in Manufacturing
- e-Manufacturing Technologies and Facilities
- Advanced maintenance modelling and Prognostics & Health Management consideration (PHM)

TC 5.2. Manufacturing Modelling for Management and Control

Chair: Prof. Dr. Dmitry Ivanov

Scope:

- Models of manufacturing tasks in production and processes
- Design of Architectures of workstations, cells and production lines, quality assurance and maintenance
- Design of process planning, production planning and control, job and activity scheduling, inventory control and logistics;
- Models of supply networks
- Models of Industry 4.0, cyber-physical systems, computer-aided, communication-based and Internet-based procedures and processes

TC 5.3. Enterprise Integration and Networking

Chair: Dr. Georg Weichhart

Scope:

- Enterprise integration, Enterprise interoperability, Enterprise architectures
- Cyber Physical Systems, IoT, Co-Bots, HMI in the manufacturing and service engineering
- Product Lifecycle Management (PLM) systems
- Virtual enterprise networks
- Smart, Sensing and Sustainable Enterprise

TC 5.4. Large Scale Complex Systems

Chair: Prof. Dr. Xiaofan Wang

Scope:

- Manufacturing and other related systems characterized by a large number of variables, nonlinearities, uncertainties
- Networked structure composed of a number of interconnected subsystems
- Decentralized, hierarchical multilayer - multilevel and multi agent control methods
- risk based decision-making technologies



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TC 5.1

- From Integrated to Interoperable to Intelligent control
- Factory of the Future, servitization
- Cyber-Physical Production Systems
 - New characteristics of the control
 - Distributed control



TC 5.2

- Modelling of resilient and digital manufacturing networks
- Data Analytics for Decision support



TC 5.3

- Integration of Human and artificial agents
- Interoperability of Cyber-Physical systems
- Intelligent systems-of-systems
- Connecting everything seamlessly
- Self-improving and adaptative systems

