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Invited Session (Code xxxxxxxx)

AI applications in Manufacturing and Service Resilient Systems

Proposed by

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Abstract

This session covers AI applications in present and future use-cases in manufacturing fields and service systems in context of resilient systems. Current AI applications can prove beneficial in the design and planning stages of manufacturing or resources, that can assist in solving scheduling and control problems, and that can be used in manufacturing integration.

The objective of this session is to bring together researchers working on theoretical and application studies in the corresponding items, which can be extended:

- Design and manufacturing through integration of Quality;
- Teamwork among intelligent agents: Framework and case study in robotic/cobotic or transport services;
- Application of machine learning to industrial planning and decision making;
- Incorporating special purpose resource design in planning to make more efficient plans;
- An expert system approach for interactive problem solving for production planning and economic evaluation of machining operation planning;
- An architecture for distributed dynamic & real time distributed scheduling;
- Exploiting local flexibility during execution of provisional schedules;
- Enterprise management network architecture and integrated software system for intelligent manufacturing.

Main research themes

Sustainable manufacturing systems
Inventory control, production planning and scheduling
Supply network dynamics and control
Distribution, logistics, supply chain and networks
Resilience, flexibility and agility
Manufacturing information systems
Transportation and distributions systems
Network systems
Logistics and resource configuration in service systems

Keywords

Industry 4.0; Decision Support System; Resilient System; Qualitative Simulation and Applications; Modelisation and Performance evaluation.