

IEEE ICNSC 2023

October 25-27, 2023, Marseille, France



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Proposal for Special Session at ICNSC'23

Session Title: Recent advances in integrated maintenance modeling and optimization for manufacturing-distribution systems

Description and Aim:

Manufacturing systems represent a significant portion of industrial capital. For the management and the design of such systems, integrated approaches have proven to be more effective and have hence attracted researchers from reliability, availability, and maintainability studies (RAMS) as well as the operational research (OR) communities. Several recent studies demonstrated the benefit of making joint decision on production and maintenance planning problems. In addition to maintenance and production activities, other studies also integrated quality control, outsourcing and carbon emissions issues into the decision processes. Many analytical and simulation models have been proposed to support joint decision making. There are however many important areas of manufacturing systems decision making that are not studied or are insufficiently covered such as warranty, logistics, remanufacturing and other sustainability engineering and management aspects.

This session aims to bring together a group of researchers who have investigated these topics and will have them share their research work with the community with the goal of fostering future research on these key issues. The session also aims to establish a bridge between scientific communities sharing research issues in reliability & maintenance, operational research, etc..

The potential topics include (but are not limited to):

Original research papers, methodological papers, case studies, reviews and short communications on the theme of this special session are welcomed. Topics may include but are not limited to:

Design for sustainable manufacturing systems

Failure data analysis and condition assessment models for remanufacturing

Integrated analysis of quality, production and maintenance for sustainable manufacturing systems

Reliability assessment of manufacturing and remanufacturing systems

Robust optimization of joint maintenance and production planning

Warranty and leasing models for new or reconditioned manufacturing systems

Safety models for manufacturing and remanufacturing systems



GDR Groupement de recherche
MACS Modélisation, Analyse et
Conduite des Systèmes dynamiques



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Integration of Industry 4.0 concepts with RAMS

Sensor-data and data-driven maintenance and reliability optimization

Expected number of papers: 5

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