Invited Session on "Integrated Spare Parts Systems"
for IFAC MIM 2019

Invited session identification code
IFAC MIM 2019, August 28-30, 2019, Berlin, Germany
https://ifac.papercept.net/

Session Chairs:

- Prof. Dr. José Ceroni, Dean of Engineering, Pontifical Catholic University of Valparaiso, CHILE
- Prof. Dr. Gabriel Gutiérrez, School of Industrial Engineering, Pontifical Catholic University of Valparaiso, CHILE
- Prof. Dr. Orlando Durán, School of Mechanical Engineering, Pontifical Catholic University of Valparaiso, CHILE
- Prof. Dr. Pablo Miranda, Andres Bello University, CHILE

Spare parts have become crucial to ensure the continuity of the internal processes at any industrial plant. Moreover, the unavailability of spare parts may lead to unproductive down times that may significantly impact the company results. Spare parts use behavior tends to be different to typical materials and products, then traditional management approaches may be not the most suitable ways to deal with the way specific replacement components behave. Most of the proposed spare parts management systems works are developed without considering the impact and relationship of the specific spare part features with other decisions that must be addressed by practitioners (e.g. supply chain network structure, or transport-distribution strategies). Only a few of these works consider and highlight the relevance of integrated approaches. The supply chain network supports the entire spare parts operation, consequently it is a relevant issue that must be integrated into the spare parts management context. Subsequently, more precise response would be attained in the spare parts management if perfect information on the machines components could be available and integrated into the spare parts management system. This requirement for information could be satisfied in a timely matter by means of arrays of sensors in each sensible component of machines employed in operations. This scenario of high amounts of data available lies within the principles of Internet of Things and it would make possible for the spare parts management system to operate under a scenario of perfect information about the historical and real time behavior of each component under supervision ti support an improved decision making process. The amount if data available would also require adequate capacities of data analysis for ensuring the right information extraction. The special session aims to analyze proposals on the integration of Internet of Things, big data analysis and spare parts management systems.

Session topics:

The session chairs invite researchers and decision-makers from academia, industry, and government to contribute theoretical and applied research papers in areas including but not limited to the following topics:

Planning spare parts supply chain network (SPSCN) performance under uncertainty, SPSCN integration with big data analysis systems, sensor arrays for operational component replacement, disruption propagation in the SPSCN, resilient SPSCN design, SPSCN risk analytics; Flexibility and adaptability in the SPSCN ; Reliability theory, control theory.

Submission

For author guidelines, please refer to www.ifac-control.org. All papers must be submitted electronically using Symposium Manuscript Management System (CMMS). 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 online by December 15, 2018. Submission details are available on the symposium website. All submissions must be written in English. All papers that conform to submission guidelines will be peer-reviewed by IPC members. The corresponding author submits the paper online (pdf format) as an invited session paper. Submission as an invited paper requires the invited session code . Several international journals are associated with the MIM 2019 for publication of special issues.

Important dates:	
December 15, 2018	Deadline for the submission
February 20, 2019	Notification of acceptance/rejection
March 15, 2019	Deadline for the final submission

Proposal 121 submitted to 9th IFAC Conference on Manufacturing Modelling, Management and Control. Received November 25, 2018.