6th CIRP Conference on Industrial Product-Service Systems (IPSS 2014) Keynote Speakers

Service Innovation and Smart Analytics for Industry 4.0 and Big Data Environment

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L.W. Scott Alter Chair Professor and Distinguished University Professor; Founding Director – NSF Multi-Campus Industry/University Cooperative Research Center on Intelligent Maintenance Systems (IMS)
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Abstract: Today, in an Industry 4.0 factory, machines are connected as a collaborative community. Such evolution requires the utilization of advance prediction tools so that data can be systematically processed into information that can explain the uncertainties and thereby make more "informed" decisions. Cyber-Physical System based manufacturing and service innovations are two inevitable trends and challenges for manufacturing industries. This paper addresses the trends of manufacturing service transformation in big data environment as well as the readiness of smart predictive informatics tools to manage big data to achieve transparency and productivity.

Service knowledge capture and reuse

Prof. Rajkumar Roy
Head of Manufacturing & Materials Department
Director, EPSRC Centre for Innovative Manufacturing in Through-life Engineering Services
Cranfield University, Bedford, UK

Abstract: The keynote will start with the need for service knowledge capture and reuse for industrial product-service systems. A novel approach to capture the service damage knowledge about individual component will be presented with experimental results. The technique uses active thermography and image processing approaches for the assessment. The paper will also give an overview of other non-destructive inspection techniques for service damage assessment. A robotic system will be described to automate the damage image capture. The keynote will then propose ways to reuse the knowledge to predict remaining life of the component and feedback to design and manufacturing.

The State-of-the-Art Product-Service Systems in Japan - The Latest Japanese Product-Service Systems Development

Prof. Yoshiki Shimomura
Professor, Service Engineering, Product-Service System, Life Cycle Engineering
Department of System Design, Tokyo Metropolitan University, Japan

Abstract: Throughout the history of Japan, manufacturing companies have supported the national economy. However, most of them have lost the competitive advantage in the global market today. To contribute to the resurgence of the Japanese manufacturing industry, the authors have conducted studies of design methodology for Product-Service Systems (PSSs) and carried out several collaborative projects with industrial and academic partners. In this paper, the latest developments of PSSs in Japan are presented by introducing the collaborative projects.

Multi-physical simulation for product-service performance assessment

Prof. Alain Bernard
Director of Research, Laboratory IRCCyN
Professor and Head, Industrial Products and Systems Engineering Department
Ecole Centre de Nantes, France

Abstract: Complex cyber-physical systems need particular attention both for physical architecture but also for service integration. In order to exploit the system but also to aid in controlling and driving it, one solution consists in elaborating functional models and to put them on board. During the lifecycle of the system, any person in charge of one given task or service has the possibility to get some help in driving the system and also to get some feedback with respect to reference models. The aim of the keynote is to present a global modeling approach and to illustrate the application of the propositions with ship building and controlling systems, both for the need of technical and functional people on board and also for the services dedicated to passengers.