

INCOM 2015

15th IFAC/IEEE/IFIP/IFORS Symposium
Information Control Problems in Manufacturing



Ottawa, Canada, May 11-13, 2015
Ottawa Convention Centre

Workshop No. 3

Manufacturing Systems Engineering: Fundamental Issues and Case Studies

Presenters: *G rard Morel – Professor, Lorraine University, Nancy, France*
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OBJECTIVES

This workshop addresses fundamental problems and open issues in systems engineering that arise from the increasing global complexity of manufacturing systems. Systemic failures remain in real life a main **a posteriori** complaint about the efficiency of systems the complexity of which is driven by the increasing Information Communication Technology capabilities. The workshop will address the fundamental question: *Can we apply systemic approaches and innovative paradigms a priori in manufacturing systems engineering?*

CONTENT

The content of the workshop will emphasize the training of the audience on application of systemic thinking and systems engineering precepts both in R&D and in education.

The first part of this 2-hour workshop will be organized as a 1-hour long training session to guide the audience in the generic systems engineering and management paradigm. In this part, participants will first learn systemic fundamentals in order to model and to engineer any manufacturing system as a whole. A special attention will be paid through a short tutorial on the holistic foundation and the heuristic rationale for Model Based Systems Engineering beyond the technical-driven approach predominant in current acceptations.

The second part will be presented in the form of a 1-hour long interactive session. Educational application will be presented for project-based learning issues in order to train student in systemic thinking before applying process-based as well as model-based systems engineering technics. In term of engineering practice, the workshop will offer an opportunity for a debate with the audience about systemic foundations of some of the main manufacturing paradigms. In particular, issue related to the application of systems engineering methodologies in cyber-physical systems will be a topic for a detailed analysis and discussion.

The Workshop will take place on May 12, 2015.

Registration fee for full conference registrants: Regular – CAN\$120, Student – CAN\$80

Please register at <http://incom2015.org/registration.html>.