

1st IEEE International Conference on Industrial Cyber-Physical Systems ICPS2018

Special Session on

“TOWARDS HUMAN-MACHINE COOPERATION IN INDUSTRIAL SOCIO-CYBER-PHYSICAL SYSTEMS”

organized by

Principal Organizer: PACAUX-LEMOINE, M.-P. (Email: marie-pierre.lemoine@univ-valenciennes.fr)
Affiliation: LAMIH, France

Organizer 1: FLEMISCH, Frank (Email: frank.flemisch@fkie.fraunhofer.de)
Affiliation: Fraunhofer FKIE, Germany

Organizer 2: YOKOTA, Sho (Email: s-yokota@toyo.jp)
Affiliation: Toyo University, Japan

IEEE IES TC on Human Factors and IEEE IES TC on Industrial Agents

Call for Papers

Scope of the Special Session (~200 Words):

The strong increase of control systems capabilities, linked to the continuous rise of physical systems complexity, involves tight integration and coordination between computation and physical systems by the means of networking. In view of such a challenge, Human is more and more considered as a key element that should be able to respond to ensure global system safety and efficiency. Human is then coupled to cyber-physical systems, defining Human - Cyber Physical Systems. Moreover, Human is also more and more considered regarding social aspects with the integration of interaction between several Humans from similar or different decisional levels. It is then interesting to extend the definition to HumanS - Cyber Physical Systems in order to aim at supporting cooperation between Human and Systems, as well as between Humans and to reach safe, secure, acceptable and efficient Socio-Cyber-Physical System.

Such aspects have already been studied in other domains than the industrial ones, especially in the domain of Human-machine Cooperation. In aeronautics, automotive, railway and robotics for example, goals have been to balance the increase of machine capabilities with the increase of machine abilities to communicate with Humans and to understand Humans. The term “machine” refers to physical systems as well as cyber systems, as well as their combination; the objective of this special session is to make the connection between both

approaches in order to provide some clues on this “hot topic”, objectives of lots of calls and projects currently funded, such as the SO-PC-PRO, MAN-MADE, PERFoRm or Humanism projects, that should gain from this SS.

Topics of interest include, but are not limited to (~100 Words):

- Human-Machine Cooperation, Human Factors, Multilevel cooperation
- Levels of Automation, Dynamic Task Allocation, Modeling
- Design and evaluation methodology
- Application fields: Industry 4.0, Factory of the Future, Transportation, Robotics, Intelligent Manufacturing Systems, Operator 4.0

Submissions Procedure: All the instructions for paper submission are included in the conference website <http://icps2018.net/>

Deadlines:

Deadline for submission of papers:	22 Dec 2017	31 Jan 2018
Notification of acceptance of papers:	28 Feb 2018	
Final manuscripts due:	31 Mar 2018	

International Program Committee (Reviewers) for the Special Session

- Prof. Sho Yokota Toyo University, Japan
- Prof. Cesare Fantuzzi University of Modena and Reggio Emilia, Italy
- Dr. Stamatis Karnouskos SAP Research, Germany
- Prof. Paulo Leitao Polytechnic Institute of Bragança, Portugal
- Dr. Marie-Pierre Pacaux-Lemoine Univ. of Valenciennes and Hainaut-Cambrésis, France
- Prof. Frank Flemisch Fraunhofer FKIE, Germany
- Prof. Damien Trentesaux Univ. of Valenciennes and Hainaut-Cambrésis, France
- Prof. Hiroshi Hashimoto AIIT, Japan
- Prof. Hideyuki Sawada Waseda Univ., Japan
- Prof. Patrick Millot Univ. of Valenciennes and Hainaut-Cambrésis, France