17th IFAC Symposium on Information Control Problems in Manufacturing

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Invited session

Digital Twins for the control, integration and management of Industrial Systems
Session code: xxxxx

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Abstract:

The notion of Cyber-Physical Systems is closely related to the development of a Cyber model of the system on which data are gathered, simulations are performed, and calculations are made. This Cyber model is generally referred as the Digital Twin of the product or the system.

In the industry, the Digital Twin conforms to the expectations of next generation industrial systems. It is meant to be the basis element enabling efficient development of tools such as virtual or augmented reality, cloud manufacturing, data mining or machine learning for maintenance, online simulation, etc. Concepts such as Internet of Things, Industrie 4.0 and Digital Twins are now seen as major opportunities for actors in many industrial sectors to improve their products, processes, and services. The coupling between the real world and the virtual world – provided by new data collection architectures and innovative data management

strategies – allow to gather the needed data for Digital Twin construction, update and maintenance.

While the notion of the Digital Twin in itself is still not clearly defined and very few proofs of concept can be found, the idea has sparked interest across multiple domains (manufacturing, architecture and construction, etc.) leading to several projects involving academia and industry all around the world. Conjointly, digitisation strategies and innovative asset management frameworks have arisen to support the development of the Digital Twin.

As a result, this session aims at bringing together multiple actors of this concept in order to foster convergence, innovative tools and applications. All the aspects of the implementation of a Digital Twin in all type of industries (manufacturing, construction, …) are targeted. Position papers and applications feedback are particularly welcome. Works related to Digital Twin architectures, digitisation methodologies and data asset management in the era of the IoT will be highly appreciated.

Keywords: Digital Twin, Digitisation strategies, Data Asset Management

Submission shall respect the normal procedure on papercept: https://ifac.papercept.net/
The authors have to select « **invited session** » as submission type and use the session code (**xxxxxx**) at the second step of submission.

If the theme of the paper is not suited to the invited session, the paper will be evaluated and considered for a regular session.

Please send an email with your intention to submit a paper to the organisers.

Key dates
31st October 2020 – Draft paper submission
15th December 2020 – Notification of acceptance
1st February 2021 – Camera-ready final manuscripts