

Virtualization of Production Using Digital Twin Technology

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Abstract : The contribution deals with the current situation in modern manufacturing enterprises, which is affected by digital virtualization of different parts of the production process. The overview part of this article points to the fact, that wide informatization of all areas causes substitution of real elements and relationships between them with their digital, often virtual images, in real practice. Key characteristics of the systems implemented using digital twin technology along with essential conditions for intelligent products deployment were identified across many published studies. The goal was to propose a template for the production system realization using digital twin technology as a supplement to standardized concepts for Industry 4.0. The main resulting idea leads to the statement that the current trend of implementation of the new technologies and ways of communication between industrial facilities erases the boundaries between the real environment and the virtual world.

Keywords : communication, digital twin, Industry 4.0, simulation, virtualization

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