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# Industrial Cyberphysical Systems: A Backbone of the Fourth Industrial Revolution

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### Abstract

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##### Abstract:

Cyberphysical systems (CPSs) are perceived as the pivotal enabler for a new era of real-time Internet-based communication and collaboration among value-chain participants, e.g., devices, systems, organizations, and humans. The CPS utilization in industrial settings is expected to revolutionize the way enterprises conduct their business from a holistic viewpoint, i.e., from shop-floor to business interactions, from suppliers to customers, and from design to support across the whole product and service lifecycle. Industrial CPS (ICPSs) blur the fabric of cyber (including business) and physical worlds and kickstart an era of systemwide collaboration and information-driven interactions among all stakeholders of the value chain. Therefore, ICPSs are expected to empower the transformation of industry and business at large to a digital, adaptive, networked, and knowledge-based industry with significant long-term impact on the economy, society, environment, and citizens.

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**Background**

The increasing penetration of information communication technologies (ICT) in industry is transforming the industrial environment into a multifaceted system featuring a tight combination and coordination between the computational and physical elements, including their digital (virtual) representation, e.g., in the cloud, resulting in the formation of the so-called ICPS [1]. Digitalization and interconnection of products, services, enterprises, and people are expected to generate significant opportunities and benefits [2], assuming the risks and challenges are properly addressed.

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