

3rd IFAC Conference on Embedded Systems, Computational Intelligence
and Telematics in Control (CESCIT 2018)

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<http://www.cescit2018.org>

Open Invited Track on:

<Wireless Communication in Industrial Automation>

TC3.3 “Telematics: Control via Communication Networks”

Organizers:

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Abstract:

Wireless communication in industrial automation is still an important research topic. The demand for reliable and secure wireless real-time communication requires new concepts taking into account the limited spectrum. Following topics are especially of interest:

- Control over wireless networks
- Advanced network architectures and standards for wireless industrial automation
- Protocols for reliable and real-time wireless communication
- Network engineering methods and management tools
- Methods and procedures for coexistence management
- Wireless networks performance, simulation, RF measurements, modelling and case studies
- Security and safety issues in industrial wireless networks and applications
- Emerging wireless concepts, such as related to Internet-of-Things, for industrial applications

IFAC technical committee(s) for evaluation: Telematics

Detailed description:

The evolution of industrial networks can be summarized as a constant battle to define the universal technology that integrates field devices and applications. In the last 10 years, the development of deterministic scheduling techniques and redundant routing algorithms, advances in dependability and security embedded systems, and energy saving issues have brought wireless sensor networks into the industrial domain. Therefore, there is a need to investigate and disseminate research directions coming from adoption of wireless communication to automation domain. The challenge is exploiting network-related effects such as end-to-end reliability, robustness and an automated coexistence management process in order to attain the stringent dependability requirement of automation applications.

The aim of this session is to provide the latest research work of wireless communication in automation. This session seeks contributions related to the methods, tools and practices in industrial wireless communication for automation systems. The demand for reliable and secure wireless real-time communication requires new concepts taking into account the limited spectrum. Therefore, this special session will focus on (but not be limited to) the following topics:

- Control over wireless networks
- Advanced network architectures and standards for wireless industrial automation
- Protocols for reliable and real-time wireless communication
- Network engineering methods and management tools
- Methods and procedures for coexistence management
- Wireless networks performance, simulation, RF measurements, modelling and case studies
- Security and safety issues in industrial wireless networks and applications
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