



Proposal for IECON 2012 Special Session

Send your proposal to the SS chairs

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Special Session on: “Network-based Control Systems”

Special Session Organizers **Josep M. Fuertes, josep.m.fuertes@upc.edu (IEEE IES TC NBCS)**
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Technical Outline of the Session (50 words) and Topics:

Network-based Control Systems (NBCS) can be described by a collection of spatially distributed sensing, controlling and actuation components, which exchange control and feedback signals using information packages over digital communication links. The design, study and application of such systems present challenging and fundamental problems underlying the theoretical foundations for the integration of several disciplines going from Automatic Control to Communications and Real-Time Computing. Distributed Network-Based Control Systems allow us to do distributed control and computing, tele-robotics, cost-effective factory automation, among many other critical applications.

Topics of interest include, but are not limited to:

- Controller design methods in constrained networked control systems
- Time-driven and event-driven control in networked control systems
- Real-time issues in networked control systems
- Task and message scheduling for networked control systems
- Effect of network delays on control system performance
- Modeling and simulation in networked control systems
- Worst-case execution time and Quality of Service
- Performance issues and communication constraints
- Fault-tolerance in networked control systems
- Distributed wireless networks for control
- Autonomous distributed control systems
- Distributed sensing, estimation, computation and control
- Industrial communication and control systems
- NBCS in vehicles, space, medical, and other applications

IES Technical Committee Sponsoring the Special Session (if any):

Network based Control Systems and Applications Technical Committee