

CALL FOR PAPERS

Special Session on Network Control Systems for Interactive Power/Energy Networks

to be held in the frame of
IECON 2013 - The 39th Annual Conference of the IEEE Industrial Electronics Society
10th - 13th of November 2013, Austria Center, Vienna, Austria



TOPIC OF THE SPECIAL SESSION

This special session focuses on control strategies for partially-distributed interactive-power-network (IPN) applications by merging distributed/pseudo-decentralized control and heterogeneous communication (i.e., wireless/fiber-optic/wire based). The idea is to treat such IPNs (that could be legacy-power/smart grid, microgrid, distributed-generation systems, power-electronics networks, electromechanical systems such as multi-axis drives, wireless-power-transfer based systems, or emerging-industrial/new applications) as a cyber-physical-energy system and come up with a collection of relevant articles that define new research needs in this evolving area of great importance, new scientific/technological/cross-disciplinary approaches or mechanisms, new and viable solutions to pre-existing problems, or even quality comprehensive overview of the state-of-the art. There are several top level goals that this compendium will seek to address in the context of the IPNs including but not limited to the following: interplay of control and communication on the optimality of control design, recognize and develop mechanisms to address the cyber layer as an added disturbance layer apart from the conventional destabilizing influences, distributed

SPECIAL SESSION ORGANISATION

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The organizers look forward to welcoming you to Vienna, Austria from 10th to 13th November 2013.

Important Dates

Regular Paper submission:	April 01, 2013
Notification of acceptance:	June 15, 2013
Final submission:	August 01, 2013



performance optimization, mechanisms to deal with (the physical as well as the cyber) network spatio-temporal singularity events (e.g. fault or structural change or disruption in network connectivity), new mechanisms to reduce and compensate delay (e.g. combining distributed state estimation with information coding or data fusion etc.), event-based rather than time-based sensing and information flow and scheduling to support the power-network controllability, resolving real-time constraint issues demonstrated by practical implementations.

Topics of interest include, but are not limited to:

- Emerging issues, innovative practical solutions, and practical solutions for control-communication based IPNs
- Stability of networked-controlled IPNs in the presence of delays and packet dropouts
- Robust IPN stabilization against network spatio-temporal singularity or cyber/physical layer destabilization effects
- Joint optimization of control-communication network
- Consensus based overlapping decentralized estimation and control in lossy networks
- Control scalability and interoperability
- Proactive and reactive communication protocols
- Software-defined and cognitive radio concepts for enhanced network-capacity based distributed control
- Data fusion and network coding
- Network survivability and reconfigurability
- Event-based sensing and information flow and scheduling
- Impact of cyber security issues on IPN performance and mitigation mechanisms
- Controlled evolution of network complexity in IPNs
- Control mechanism for applications with simultaneous energy and information transfer over physical and/or spatial links

SUBMISSION OF PAPERS

The working language of the conference is English. Submit the full paper as PDF following the IEEE layout requirements by using the templates given at the conference web page. Accepted and presented papers will be published in an IEEE Proceedings volume and will be sent to IEEE Xplore. In addition, selected authors are encouraged to submit their papers for publication in the IEEE Transactions on Industrial Electronics or in the IEEE Transactions on Industrial Informatics.

THE CONFERENCE

IECON 2013 is the 39th Annual Conference of the IEEE Industrial Electronics Society, focusing on industrial and manufacturing theory and applications of electronics, controls, communications, instrumentation and computational intelligence. The objectives of the conference are to provide high quality research and professional interactions for the advancement of science, technology, and fellowship.

Papers with new research results are encouraged for submission. IECON 2013

will be held concurrently with the 7th IEEE International Conference on E-Learning in Industrial Electronics (ICE-LIE 2013). Participation in any of these events just requires a single conference registration fee. The world's industry, research, and academia are cordially invited to participate in the wealth of presentations, tutorials, special sessions and social activities, and furthermore, enjoy beautiful Vienna.