

Call for Papers

Special Track on

“Energy-efficient, Reliable, and Secure Smart Energy Networks”

Part of “Ad-Hoc, Mobile and Wireless Networks”

ADHOC-NOW 2015

June 29 – July 02 2015, Athens, Greece

Scope of the Special Track

Smart energy networks (SENs) are electric systems that use two-way networking technologies, cyber-secure communications technologies, along with computational intelligence and control, in an integrated fashion to efficiently manage energy consumption and provide a new electricity grid that is clean, safe, secure, reliable, resilient, efficient, and environmentally sustainable. SENs can be well regarded as a system of many systems, whose design challenges, requirements, and expectations can only be achieved through a holistic analysis, design, and optimization of all of its components. The need of delivering in a cost-effective manner, highly robust, secure, and real-time smart energy/management solutions to a rapidly growing market is an important issue. On the other hand, the use of advanced security solutions and communication technologies is considered as the key enabler towards reducing greenhouse gas emissions and improving the overall energy efficiency. Since a plethora of new SEN actors enters the electricity market, including telecom operators, energy services companies, data aggregators, and prosumers, the development of ground-breaking business models will also play a key role in jointly optimizing the interplay between the corresponding values-added.

Although some important steps have been made in resolving such fundamental SEN challenges, in this special session we encourage the submission of original works describing more sophisticated solutions in the areas of smart energy management, reliable communications and networking, cyber-secure and fault-tolerant SEN communications, aiming to fully exploit the benefits of the new technologies in the future SEN. More specifically, we encourage the submission of papers from both the ICT and the energy sectors in the following topics of interest:

- Modeling, design, and implementation of innovative SEN architectures
- Metrics and key performance indicators relevant to SEN
- User satisfaction and consumer experience for the SEN
- Optimization methods for distributed SEN systems
- Fault-resilient and reliable SEN networking
- Forecasting, prediction, model-fitting methods for SENs
- Modeling, prediction, and forecasting techniques for Distributed Energy Sources
- Data analytics for power generation, transmission, and distribution
- Modeling, simulation, and optimization techniques for SEN micro-Grids
- Big Data analysis and protocols for SENs
- Demand-Response protocols for reliable SEN networking
- Load distribution and scheduling algorithms for the future SEN
- Field trials and testbeds
- Advanced signal processing and network coding algorithms for energy sensor information
- Highly-efficient communication protocols for large-scale SEN deployments
- Localization and location-aware decision for SENs
- Secure and reliable networking solutions for large-scale SEN deployments
- Innovative pricing policies, business models and regulatory frameworks for the future SEN

Special Track Organizers

Special Track Chairs:

Nikos Passas, University of Athens, Greece

Marco di Renzo, CNRS, France

Technical Program Chairs:

Stefano Tennina, WEST Aquila, Italy

Dionysis Xenakis, University of Athens, Greece

Important Dates

- Paper submission deadline: February 07, 2015
- Notification of acceptance: March 07, 2015
- Camera-ready due: March 28, 2015

Paper Submission

Submission will be through the OCS system used for the main workshop, in a separate track that will be announced shortly. For more information please contact Dr. Nikos Passas (passas@di.uoa.gr). More details on the submission guidelines and the electronic submission can be found here: <http://www.netmode.ntua.gr/adhocnow2015/Track-index.html>