IEEE CAMAD 2015

Special Session

"ICT-Based Solutions for the Smart Energy Grid"

Smart Energy Grid (SEG) aims to exploit Information and Communication Technologies (ICT) towards making the energy sector more secure, reliable and efficient. A plethora of novel architectures, algorithms, communication protocols and business modelsare already being discussed in the international research community receiving contributions from both academia and industry.

Regarding innovative SEG architectures, ICT-based solutions are needed to support the decentralization trend of SEG data management systems and the widespread integration of Renewable Energy Sources (RES). Novel ICT algorithms are also needed for intelligent data acquisition (i.e. pattern recognition and analysis, advanced signal processing, etc), energy modeling and forecasting, decision-making (i.e. clustering, scheduling, machine learning, etc) and active network management (i.e. demand response, load balancing, congestion management, emergencies handling, etc). Robust and reliable communication frameworks will ensure the efficient information exchange among the various actors and stakeholders in the converged energy-ICT sector, too. Finally, innovative business models are expected to emerge as a result of new SEG actors' entrance in the electricity markets (e.g. telecom/service operators, energy services companies, aggregators, prosumers), each one of them offering SEG-related value-added services.

Conclusively, this special session, organized by EU FP7-ICT VIMSENproject, encourages the submission of papers that provide joint research work from both ICT and energy sectors. Authors are invited to submit papers describing the original and unpublished work in the following topics of interests (but not limited to):

- Optimization methods for distributed and hierarchicalSEG systems and architectures
- Virtual Power Plants (VPPs) and Virtual MicroGrids (VMGs)
- ICT-enabled S/W Platforms for efficient energy assets' management
- Distributed Energy Resources Management
- Forecasting and modeling methods about energy consumption and production profiles/patterns
- RES supply/demand load scheduling algorithms for Demand Response (DR) systems
- Real-time SEG data analysis, exchange and decision making algorithms
- Communication protocols optimized for (real-time)SEG information collection and control applications
- Novel pricing policies, business models and regulatory frameworks for SEGs
- Field trials and testbeds

Expected number of papers and links to different projects and activities:
The expected number of submitted papers are approximately ten (10) as many EU-funded projects have already declared their initial interest on contributing to the current Special Session.
VIMSEN Project (http://www.ict-vimsen.eu/) is member of the ICT-2013.6.1 cluster on Smart Energy Grids. Project Coordinators of all other five projects have already declared their initial interest on contributing (i.e. SEMIAH, SUNSEED, SEMIT, OS4ES and Smart Rural Grid projects). Moreover, the majority of VIMSEN project partners (six out of eight) are already participating in other related Smart Grid projects and thus a large pool of potential contributors is available. Special Session Chairs have successfully organized a related special

Venue

To be held in conjuction with IEEE CAMAD 2015 (7-9 September 2015)
University of Surrey, Guildford, UK

Author Guidelines
http://www.ieee-camad.org/

Important Dates
- Paper Submission:June15, 2015
- Notification of acceptance:July1, 2015
- Submission of camera-ready papers:August 1, 2015

Special Session Chairs
Prof. Emmanouel Varvarigos (Computer Technology Institute, Greece)
Prof. Kostas Berberidis (University of Patras, Greece)

TPC Members
Dr. Ganesh Sauba (DNV-GL, Netherlands)
Dr. Prodromos Makris (Computer Technology Institute, Greece)
Dr. Vassilis Kekatos (University of Minnesota)
Prof. Damien Ernst(University of Liège, Belgium)
Dr. Antonio Ruzzelli (WATTICS, Ireland)
Prof. Nikolaos Doulamis, (NTUA, Greece)