

CALL FOR PAPERS

for Special Section on

Cloud Computing in Smart Grid Operation and Management

Theme: The modernized grid so called “Smart Grid” is said to be digitally controlled, self-monitoring and self-healing. The Smart Grid is capable to provide two-way communication for energy production, adopt more renewable energy sources, transmission and distribution, control and monitoring, supply and demand balancing, etc. with more customer choices. In the operation of Smart Grid, multiple devices are implemented such as smart meters, substations, micro-grids, home appliances, sensor nodes, and communication network devices, etc. The advent of advanced metering infrastructure (AMI) has increased the level of data collection dramatically that the utility may collect in conventional grid. In the smart Grid operation and management, it's the energy flow has to be monitored, controlled, and conserved. Thus, Smart Grid forms a heterogenous architecture necessitating compatibility with various communication mechanisms and requiring large-scale computing. The computation needs is in terms of decentralization, scalability, time criticality, consistency, data security, reliability. There is great opportunity suggesting use of cloud computing to serve in the information management in the Smart Grid Operation and Management. However, there are several challenges in getting this vision coming true. The objective of this special issue is to address, discuss, and present novel applications of Cloud Computing for Smart Grid Operation and Management.

Topics:

- Cloud-computing based intelligent power dispatch center
- Cloud-computing based data analytics
- Cloud-based services using enterprise service bus (ESB), service oriented architecture (SOA) and other services
- Cloud system design and analysis for smart grid
- Cloud protocols for smart grid
- Machine learning engines in the cloud for smart grid
- Lab-demonstration set-up with power grid and cloud computing domains
- Intelligent cloud application in energy management in building, home, etc.
- Sensor fusion, cloud data analytics, and data mining for smart grid
- Statistical and adaptive signal processing for smart grid
- Virtualization for cost reduction, resource optimization, and server management
- Specialized data abstraction
- Real-time processed information extraction from PMUs signal-Events detection and Classification, Damage assessment, Identifying and Preventing cascading failures
- Grid and Cloud Computing Intrusion Detection System
- Workflow and resource management in the Cloud for Smart Grid
- Real-time PMUs signal monitoring for network conditioning
- Real-time PMUs signal monitoring for power system components

Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Informatics <http://tii.ieee-ies.org/>
Please submit your manuscript in electronic form through Manuscript Central web site: <http://mc.manuscriptcentral.com/tii>. On the submitting page #1 in popup menu of manuscript type, select: SS on **Cloud Computing in Smart Grid Operation and Management**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Extended versions of papers previously published in conference proceedings may be eligible for consideration if conditions listed in <http://tii.ieee-ies.org/o/PC.pdf> are fulfilled. Before submitting manuscript check the review criteria (<http://tii.ieee-ies.org/o/RC.pdf>) and other information (<http://tii.ieee-ies.org/o/DI.pdf>)

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable:

Deadline for manuscript submissions
Expected publication date (tentative)

February 28, 2017
February 28, 2018

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