

IEEE PES Conference on Innovative Smart Grid Technologies Europe 2010 News Letter - Issue 2 - June 01, 2010

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1. **About The News Letter:** This is the second issue of the news letter of the IEEE PES Conference on Innovative Smart Grid Technology Europe 2010. The letter bring latest updates from the conference. The material is later posted on the conference web Site at www.ieee-isgt-2010.eu.
2. **Reviewer Process:** Thanks to the positive responses from our colleagues worldwide, we have now finalized the Reviewer Pool for the paper review process. The paper review process is expected to take place during July 2010. and the submission of papers is still open until end of June from here: www.ieee-isgt-2010.eu/papers/submission
3. **Tutorial Program:** Tutorials are technical sessions provided on Sunday October 10th. Three parallel sessions have been prepared covering different aspects of Smart Grid. Registration to these sessions can be made from www.ieee-isgt-2010.eu/registration . Below you find a detailed program which we proudly present!

Tutorial-1: Future Smart Electricity Networks for a Sustainable Energy-efficient Society

Karl Elfstadius (Chair), Smart Grid ABB, Sweden
Per Halvarsson, ABB FACTS/Smart Grid, Sweden
Mats Karlberg, ABB CEWE, Sweden
Bertil Nygren, ABB Corporate Research, Sweden
Claudio Marchetti, Smart Grid ABB, Sweden
Tomas Wall, Fortum, Sweden

*"Future Smart Electricity
Networks for a
Sustainable Society"*

This tutorial will focus on recent ABB activities in Smart Grid. The tutorial will cover following topics:

- ✓ Values of Smart Grid; Public utilities Prospective.
- ✓ Which necessary components must be added to the existing power systems?
- ✓ Integration of for electric vehicles and future charging Infrastructure for them.
- ✓ Active house in a smart community.
- ✓ Network Manger Technology and operational issues with grid automation.
- ✓ Issues related to Electricity Market within smart grid, from a Swedish utility perspective.

- ✓ Pilots: Sustainable Cities; Djurgården City (ABB and Fortum large-scale smart grid project for sustainable city, implemented in a new district of Stockholm City)

Tutorial-2: Role of State Estimation and PMUs in Smart Grid Applications

Ali Abur (Chair), University of Northeastern, USA

Antonio Gómez-Expósito, University of Sevilla, Spain

This tutorial will focus on recent trends in state estimation techniques and specific requirement from state estimators output in smart Grid environment. The following topics will be covered in this tutorial:

- ✓ Review of Basic concepts for state estimation problem and some examples of how to solve the problems by well known methods.
- ✓ Discussion on concepts of network observability, identification of observable islands and their significance in system operation.
- ✓ Measurement design in maximizing the benefits and effectiveness of estimation.
- ✓ Wide Area Monitoring and incorporating the Synchronized Phasor Measurements Units (PMU) and their capabilities in Real-time Power System Control.
- ✓ Specific requirement of state estimation within Smart Grid applications.
- ✓ Substation-level monitoring.
- ✓ Future directions for state estimation techniques and their use in smart Grid concept.
- ✓ Applying state estimation concept to very specific scenarios, such as power system with large share of distributed generation, etc.
- ✓ State Estimation for smarter distribution networks.

*“State Estimation
and PMUs
in Smart Grid”*

Tutorial-3: Smart Grid and Interoperability Standards

Carl Öhlen (Chair), STRI, Sweden

Karlheinz Schwarz, Netted Automation, Germany

Lars Nordström, Royal Institute of Technology, Sweden

Nicholas Etherden, STRI, Sweden

Everybody talks about Smart Grid but what is interesting about standards? What is a “smart” standard? Integration of more intermittent power generation, e-mobility, energy storage and active houses with “Prosumers” will require fast and efficient communication of information for efficient real time management. The transmission and distribution grid has to handle these new requirements and has to migrate to a more intelligent level. Information and Communication Technology will be the core of this evolution. This information flow will have several tasks and users. It will basically be a Power System Internet but with even higher requirements of reliability and security.

Different products and solutions from different manufacturers have to be able to interact smoothly throughout the power grid. This interoperability is essential and includes interoperability between systems of systems. Since the ICT infrastructure represents a significant investment it is important for both manufacturers and power utilities to plan this evolutionary process in a future proof way when this is possible. International standardization will be a fundamental key to success here. This “smart” standard should ensure a future proof interoperability but also allow continuing technical development.

*“Smart Grid
and Interoperability
Standards”*

IEC61850 for Power Utility Automation is therefore an important step towards such a global standard which is much more than a communication protocol but also an information model for a Smart grid. This standard has now evolved into several other areas.

This tutorial will review the present status and planned future regarding this standardization. Interoperability is not restricted to Intelligent Electronic devices (IED) by themselves but also involves required tools for engineering and documentation. IEC 61850 offers self-description, seamless integration and object oriented communication of semantically well defined messages. Combined with a powerful configuration language the standard could potentially be used for semi-automatically configured devices in intelligent grids. This tutorial furthermore looks at the requirements of the engineering process for smart grids and what the IEC 61850 standard has to offer to meet these needs. A Smart Grid requires a “smart” implementation process.

Best regards!

**Lina Bertling
Conference chair
ISGT Europe 2010**