

A global insight on the technology and business drivers

Tutorial 2

IEC 61850 for distribution grids

The course will be presented at the Frankfurt / Main Congress Center (Messe Frankfurt) on **Monday, 6th June 2011** from 09.30 hrs to 15:00 including a lunch break at 12:30 hrs). The course will be given in English;

Background

Increasing interest is being given in the automation of distribution grids by utilities and power system industry. The accelerating proliferation of distributed generation and the volatile behavior of renewable resources are challenges for system operators to keep distribution grids stable and manageable. As a consequence there is a growing demand for enhanced system supervision beyond substations even covering the low voltage level. In order to increase or at least keep a certain level of system reliability, voltage-var compensation schemes and fault detection and restoration functions are reasonable.

IEC 61850 - as state-of-the-art communication technology - is a proven basis for high performing and cost efficient power utility automation solutions. Therefore the use of IEC 61850 communications for distribution / feeder automation is crucial for future proof and economic power system management.

Aim of the tutorial

This tutorial is intended to introduce power system experts in IEC 61850 technology and concepts with dedicated focus on its practical application in distributions grid.

Content

- [1] Overview on international activities in standardization and industry
- [2] Basic concepts of IEC 61850
- [3] Engineering workflow for devices and systems
- [4] IEC 61850 based applications for distribution grids
- [5] Practical recommendations for projects
- [6] Experiences from current research projects
- [7] Conclusion and outlook

Expected benefits

Participants will gain an improved understanding of:

- State-of-the-art IEC 61850 technology
- Engineering concepts of IEC 61850 devices and systems
- Use cases, requirements and applications of IEC 61850 methodology in distribution grids
- Future development of IEC 61850

Support material

Copies of presented slides will be handed out.

Who should attend

Technical management level, planning engineers, project managers, projects engineers responsible for power system protection, substation automation, distribution / feeder automation and DER integration.

About the presenter(s)



Christoph Brunner has graduated as electrical engineer at the Swiss Federal Institute of Technology in 1983. He is Utility Industry professional with over 25 years of industry experience with both knowledge across several areas within the Utility Industry and of technologies from the Automation Industry. He is president of it4power in Switzerland, a consulting company to the power industry. He has worked as a project manager at ABB Switzerland Ltd in the business area Power Technology Products in Zurich / Switzerland where he was responsible for the process close communication architecture of the substation automation system. He is convener of the working group (WG) 10 of the IEC TC57 and member of WG 17, 18 and 19 of IEC TC57. He is senior member of IEEE-PES and IEEE-SA. He is active in several working groups of the IEEE-PSRC (Power Engineering Society – Relay Committee) and member of the PSRC main committee and the subcommittee H. He is international advisor to the board of the UCA international users group.

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Dipl.-Ing.-Oec. **Henry Dawidczak** studied "Automation and control systems in energy" in Moscow.

He has been working for Siemens since 1991 in different positions in substation automation technology. Currently he is project manager of standardization of communications in utility automation in Siemens Energy Distribution, Energy Automation.

He is member of the German National Committee DKE K952 and member of WG10, WG17 and WG19 of the IEC TC57.

He is convener of working group DKE AK 952.0.1 "IEC 61850 Engineering" of the German National standardization committee.

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Heiko Englert received the Dipl.-Ing. degree and Dr.-Ing. degree in electrical engineering from Saarbrücken University and Darmstadt University of Technology in 1997 and 2002, respectively. After working as research assistant at Institute of Electrical Power System at Darmstadt University of Technology, he joined IDS GmbH, Ettlingen, where he was product manager for protection and substations automation systems. Since 2006 he is working for Siemens Energy Distribution, Energy Automation.

He is in charge of the standardization and regulation management. He is secretary of IEC TC57, member of IEC TC 57 WG 19 and DKE AK 952.0.1 "IEC 61850 Engineering".

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