

SMi presents its 4th annual conference on...

Distribution Automation Europe

Improving communication system architecture to
increase the reliability and efficiency of future networks

Holiday Inn Regents Park Hotel, London, UK

29 - 30
SEPT
2014

KEY TOPICS FOR 2014:

- **The new role of DSOs:** IT and regulatory framework as key enablers
- Centralising distributed logical control for **system performance improvement**
- How big data provides utilities with a **Unique Lever to Optimize the Grid**
- Role and value of **flexible technologies** in **supporting efficient Distribution Network Operation** and development
- The integration of renewables using **Voltage Regulated Distribution Transformer (VRDT)**

EXPERT SPEAKERS INCLUDE:

- **David Trebelle**, Active Management, Network Control and Advanced Applications, **Union Fenosa Distribucion**
- **Stuart Neumann**, Director, Advisory Services, **Verdantix**
- **John Kirkwood**, Automation NCP Manager, **Scottish Power Energy Networks**
- **Bas Mulder**, Senior Consultant, Operational Excellence, **DNV GL - Energy**
- **Pavla Mandatova**, Advisor, **Eurelectric**
- **Furong Li**, EPSRC Advanced Research Fellow, **University of Bath**
- **Stewart Reid**, Future Networks Policy Manger, **Scottish and Southern Energy Power Distribution**
- **Goran Strbac**, Chair, Electrical Energy Systems, **Imperial College London**

PLUS AN INTERACTIVE HALF-DAY POST-CONFERENCE WORKSHOP

1st October 2014, Holiday Inn Regents Park Hotel, London, UK

From Big Data to Smart Data - Using signal, image and statistical processing techniques to extract value from Smart Grid and Smart Metering data

Hosted by **Furong Li**, EPSRC Advanced Research Fellow, **University of Bath**

8.30am - 12.30pm

www.distribution-automation.net

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BOOK BY 30TH MAY AND SAVE £300 / BOOK BY 30TH JUNE AND SAVE £100



8.30 Registration & Coffee

9.00 Chairman's Opening Remarks

David Trebolle, Active Management, Network Control and Advanced Applications, **Union Fenosa Distribucion**

KEYNOTE ADDRESS

9.10 The new role of DSOs: IT and regulatory framework as key enablers

- The smart grid process
- The new role of DSOs
- Flexibility and active system management
- The new era of IT and control systems

David Trebolle, Active Management and Advanced Applications Operation, **Union Fenosa Distribucion**

9.50 Automation to increase flexibility in low carbon distribution networks

- Integration of distributed generation
- Integration of storage and demand response
- Voltage control in future networks

Ian Madley, Associate Director, Business Relations, Electrical Energy and Power Systems Research Group, **University of Manchester**

10.30 Morning Coffee

10.50 Centralising distributed logical control for system performance improvement

- Defining Logic sequences for networks with OH UG and mixed topologies.
- Common challenges to adding greater levels of intelligence to system logical control
- Sustaining logical functionality with reduced remote I/O, but making the correct decision.
- Migrating to open standard systems and protocols.

John Kirkwood, Automation Manager, **Scottish Power**

11.30 How Big Data Provides Utilities with a Unique Lever to Optimize the Grid

- What market forces are driving the transformation of the power and utilities sector?
- What data-driven technology innovations are emerging for the utilities sector?
- What are the usage scenarios for smart grid data analytics?

Stuart Neumann, Director, Advisory Services, **Verdantix**

12.10 Networking Lunch

13.30 ITIL for OT: OTIL? - Configuration management of field equipment

- What is configuration management
 - Definition and scope
 - Configuration management vs Asset management
- Configuration requirements and complexity
- Configuration management and DTAP
- Configuration management as part of ITIL
 - Example of ITIL process

Frans Campfens, Senior Business Architect, Asset management, **Alliander**

14.10 Load Characterisation from Smart Metering - From big data to smart date

- Differences in local and national load characteristics for mass consumers
- Key limitations for mass demand responses with national load characterisation
- Drawbacks with existing techniques for local load characterisation
- Alternative local load characterisation for effective demand responses

Furong Li, EPSRC Advanced Research Fellow, **University of Bath**

14.50 Afternoon Tea

15.10 Smart grid communications to support integration of distributed generation – Learning from the Flexible Plug & Play project

- Implementation of a RF Mesh communications network for Active Network Management applications
- System Integration using IEC61850
- Developing a cyber-security framework for smart grid projects

Tim Manandhar, Low Carbon Solutions Design Manager, **UK Power Networks**

15.50 Distribution Planning in the era of Smart Grid - The position of CIGRE

- The planning process at present hinges very strongly on data related to customers usage and city planning to form accurate load forecasts, which is the main input into the technical planning portion of the study.
- Little or no consideration is given to distributed generation or demand side integration in the development of these forecasts and distribution.
- While of interest to many utilities, demand-side integration and active distribution network concepts fail to be seriously taken by utilities as viable alternatives in the planning process.
- The most suitable planning methods and potential tools that could ensure the transition to future distribution networks overcoming the inadequacies and shortcomings of current practices will be identified with practical examples

Fabrizio Pilo, Professor of Power Systems, Chairman of CIGRE WG C6. 19, **University of Cagliari, Italy**

16.30 Chairman's Closing Remarks and Close of Day One

Register online at: www.distribution-automation.net • Alternatively for

WHO SHOULD ATTEND?

- DA Program Managers
- Chief Engineers
- Directors of Smart Grid and Strategic Planning
- Vice Presidents
- Distribution Engineers
- Research and Development managers
- Senior Analyst
- Sales Director
- Senior project manager
- Director
- Storm Team Director
- Manager of Distribution Grid Operations
- Project manager
- Marketing Manager
- President
- Executive Director
- Managing Director
- Regulatory and Energy Policy Officer
- IT Solutions Manager
- Smart Grid Strategy Manager
- Chief Technology Officer
- Metering Infrastructure Manager
- Smart Grid Analyst
- Technical Sales Engineer/DA Specialist
- Systems Integration Engineer
- Technology Innovations Director
- Distribution Support Manager
- Senior Advisor
- Senior Research Analyst

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8.30 Registration & Coffee

9.00 Chairman's Opening Remarks

Pavla Mandatova, Advisor for Distribution, **EURELECTRIC, Union of the Electricity Industry**

KEYNOTE ADDRESS

9.10 **European DSOs and their role in the smart energy system**

- European DSOs: roles and ambitions
- Active distribution system management for integration of distributed energy resources
- Smart distribution network investments: what regulation do we need?

Pavla Mandatova, Advisor for Distribution, **EURELECTRIC, Union of the Electricity Industry**

9.50 **The integration of renewables using voltage regulated distribution transformer (VRDT)**

- Uptake of Renewables forces DSOs to upgrade networks
- Conventional grid extension measures ease the problem – however, at high costs
- Voltage regulated distribution transformers are available as market ready solution and provide an economic alternative to integrate more renewables and new loads into the grid
- E.ON is using this technology as standard product, but also investigating other controllers further down in LV DSO networks

Robert Heilliger, Project Portfolio Manager, **E.ON Innovation Center Distribution**

10.30 Morning Coffee

10.50 **Pushing the envelope**

- How SSEPD are deriving more benefits from automation
- How SSE are blending asset management and automation
- How automation is linking with big data to move the game to the next level

Stewart Reid, Future Networks Policy Manger, **Scottish and Southern Energy Power Distribution**

11.30 **61850: An enabler for a flexible and durable Smart Grids**

- History of 61850 and transition from TSO to DSO
- Integration of smart meter data
- Automation and fault recovery
- Low cost standardized and conformant devices

Bas Mulder, Senior Consultant, Operational Excellence, **DNV GL - Energy**

12.10 Networking Lunch

13.30 **Exploring the value of data analytics in operational and strategic decision support**

- Challenges for Alliander
- Data domains and characteristics
- Exploring value of data analytics
- Examples of solutions in data analytics

Robin Hagemans, Manager Innovations & Livelab, **Alliander**

14.10 **FALCON Project - Intelligent planning and design for smart grids**

- Creating a business case for new technology
- Prognostics in network simulation as a route to lower technology costs
- Integration of local knowledge into the strategic network planning process
- Ensuring robustness of network investment plans

Dr Eugene Butan, Senior Research Fellow, **IVHM Centre, Cranfield University**

14.50 Afternoon Tea

15.10 **Electricity North West Smart Street Project – Application of conservation voltage reduction to a DNO network**

- Project aims and objectives
- Project scope
- Application of smart grid technologies to DNO networks

Kevin Hoban, Future Networks Project Manager, **Electricity North West**

Damien Coyle, Future Networks Engineer, **Electricity North West**

15.50 **Role and value of flexible technologies in supporting efficient Distribution Network Operation and development**

- Need for automation and control in future distribution networks
- Benefits of flexible demand and generation and advanced network control technologies
- Role of automation in future distribution network planning
- Commercial framework for automation and control of future distribution networks

Goran Strbac, Chair, Electrical Energy Systems, **Imperial College London**

16.30 Closing Remarks and Close of Conference

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From Big Data to Smart Data - Using signal, image and statistical processing techniques to extract value from Smart Grid and Smart Metering data

Hosted by
Furong Li, EPSRC Advanced Research Fellow,
University of Bath

Overview:

The workshop aims to provide broad understanding of key issues in big data processing, particularly for the purpose of extracting value and knowledge from big smart grid and smart metering data.

This workshop gives in-depth introduction to big data processing techniques, their key principles and differences in extracting features/values in time domain and/or frequency domains, and their applications to customer/network classification, data reduction, phase identification and correlations with internal and external factors (such as weather) in power and other industries.

Agenda:

8.30 Registration and Coffee

9.00 Big Data analyses requirements

- Where data comes from
- What value we hope to extract from smart grid and smart metering data

9.40 Recognition and classification case-studies in the power and other industries

- Statistical clustering and scaling techniques to load profiling - WPD Low Voltage Network Templates
- Signal processing techniques for spectral analyses of load profiles – extracting load features in frequency domain
- Image processing techniques for recognition and classification for faces and remote sensing

10.30 Networking Break

11.00 What data mining techniques are out there to extract features from big data

- Where do we go next?

12.00 Group discussions on wider applications to power industry

12.30 End of Workshop

About the workshop host:

Professor Li is a Royal Society Wolfson Research Merit Fellow (2013-2018), and was an EPSRC Advanced Research Fellow (2006-2011). She has expertise in smart grid planning, operation and pricing, and value analyses of network flexibility, energy storage and demand response. She has undertaken research and consultancies for DECC, Ofgem, NPower, Centric, Wessex Water, Areva, and the UK's transmission and distribution licensees. She chairs the International Working Group for Distribution Pricing and Tariffs (USA), and is an executive member of the IET Power Trading and Control network (UK).

SMI ENERGY AND UTILITIES FORWARD PLANNER

JUNE

Oil and Gas Cyber Security

3rd - 4th June 2014, Oslo, Norway

Utility Energy Storage Europe

18th - 19th June 2014, London, UK

Gas Storage and Transmissions

18th - 19th June 2014, London, UK

Meter Asset Management and Operations

23rd - 24th June 2014, London, UK

JULY

Big Data & Analytics for E&P

9th - 10th July 2014, London, UK

Social Media in the Telecoms Sector

16th - 17th July 2014, London, UK

SEPTEMBER

Telecoms for Smart Grids

22nd - 23rd September 2014, London, UK

Distribution Automation Europe

29th - 30th September 2014, London, UK

OCTOBER

Energy from Waste

13th - 14th October 2014, London, UK

Shale Gas Environmental Summit

27th - 28th October 2014, London, UK

Gas to Liquids

29th - 30th October 2014, London, UK

NOVEMBER

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24th - 25th November 2014, London, UK

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DISTRIBUTION AUTOMATION EUROPE

Conference: Monday 29th & Tuesday 30th September, 2014, Holiday Inn Regents Park Hotel, London, UK Workshop: Wednesday 1st October, London

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