Session 3 poster tours

Block 1 Operation:

09:00 – 10:30 Tour 1

Sub Block 2 - Distribution Management

0040 Enedis approach for the roll-out of technical smart grid industrial solutions
L Karsenti, P Daguzan, Enedis, France

0209 Loss estimation of medium voltage lines based on real and synthetic load profiles
C Groiß, W Schaffer, Salzburg Netz GmbH, Austria, M Stifter, AIT, Austria, A Einfalt, Siemens, Austria

0325 Convex power flow models for scalable electricity market modelling
F Geth, D Van Hertem, KULeuven/EnergyVille, Belgium, R D’hulst, EnergyVille & VITO, Belgium

0423 Real time simulation of large distribution networks with distributed energy resources
M Dyck, O Nzimako, RTDS Technologies Inc, Canada

0610 Risk prediction in distribution networks based on the relation between weather and (underground) component failure
T Gu, J Janssen, E Tazelaar, G Popma, Alliander N.V., Netherlands

0649 Incorporating asset management into power system operations
I Sarantakos, Newcastle University, United Kingdom/Siemens AG, United Kingdom, P Lyons, ESB Networks, Ireland/Newcastle University, United Kingdom, S R Blake, P C Taylor, Newcastle University, United Kingdom, L Tao, Siemens AG, Germany, S Celik, MIT, United States, S Rowland, Siemens AG, United Kingdom

0712 Smart fault management scheme for electrical distribution networks
N Sherbilla, BCED, Egypt

0722 Evaluation of practical experience of fault indicator performance in medium voltage networks
E Koreneva, Streamer Electric Inc, Russia

0871 Next-generation network restoration approaches on distribution feeders
J Duller, A Halim, UK Power Networks, United Kingdom, G Paton, B Traill, S Sparling, General Electric, United Kingdom

0899 Standardisation to reduce lifecycle cost and lead time with improved quality, efficiency and flexibility
F Voilbada, A Geshiere, E Piga-Gehrke, Liander, Netherlands

0965 A reference architecture for open, maintainable and secure software for the operation of energy networks
A Goering, J Meister, S Lehnhoff, OFFIS, Germany, P Herrdt, Main-Donau Netzgesellschaft, Germany, M Jung, develop-group, Germany, M Rohr, BTC, Germany

1037 Helen Electricity Network Ltd’s process towards high level of supply reliability
M Loukkalahlut, M Hyvärinen, O Siirto, P Heine, Helen Electricity Network Ltd, Finland

1214 IOT services for a smart LV grid management
N Clerc, H Hoeltzel, Socomec, France, I Beyl, Electricité de Strasbourg Réseaux, France

1330 Smart fault selection: new operational criteria and challenges for the large scale deployment in e-distribuzione’s network
C D’Adamo, G Valtorta, L Consiglio, A Cerretti, L D’Orazio, A Malerba, F Marmeggi, e-distribuzione SpA, Italy

09:00 – 10:30 Tour 2

Sub Block 1 - Maintenance and condition assessment

0195 TDR measurement with utility-pole-interval resolution of real-scale distribution system
S Oe, T Sasaoka, Kansai Electric Power Co.,Inc, Japan, T Matsumisha, T Hisakado, O Wada, Kyoto University, Japan

0290 Autonomous inspection in transmission and distribution power lines - methodology for image acquisition by means of unmanned aircraft system and its treatment and storage
R Z Homma, Celesc Distribuição,Brazil, A Cosentino, C Szymanski, C Szymanski, INERGE, Brazil

0426 Locating the causes of recurrent supply interruptions and flickering lights on Scottish Power’s low voltage cable network using travelling waves
P Gale, A Wang, Kehui (UK) Ltd, United Kingdom, J Livie, Scottish Power, United Kingdom

0711 Advancement in maintenance operation for managing various types of failure and vastly aging facilities
T Suzuki, H Yamamoto, T Oka, Chubu Electric Power Co Inc, Japan

0724 Field experiments in a power line inspection with an unmanned aerial vehicle
J Formiga, J Dinis, EDP Labelel, Portugal, J Fialho, F Moreira, EDP Distribuição, Portugal, J Almeida, A Dias, E Silva, INESC TEC/SEP, Portugal, M Moreira, T Santos, INESC TEC, Portugal

1356 Terna fleet management of power transformers: through fault current monitoring to plan proper maintenance
M Rebolini, C A Serafino, Terna, Italy, E Savorelli, M Tozzi, A Salsi, Camlin Power, Italy
Sub Block 3 – Crisis and workforce management

0188 Emergency Operational Plan (EOP) - crisis situation management
M Pulice, Edener SA, Argentina

0390 Creating a mobile centric operational model in utilities
D McFarlane, DMA, United Kingdom, A Stamp, Yambay, Australia, G Paton, General Electric, United Kingdom

0405 The future of fossil resilience for electricity distribution infrastructure in Great Britain (GB)
J Booth, P McFarlane, Electricity North West Ltd., United Kingdom, M Drye, S McDonald, Northern Powergrid, United Kingdom, D Whensley, Energy Networks Association, United Kingdom

0628 Efficient coordination in major power disruption
T Kupila, T Ihonen, T Keränen, Elenia Oy, Finland, L Anttila, Futurice Oy, Finland

1203 Service prioritisation and crew dispatch in an electricity utility
F Romero, P H Baumann, T Milagres Miranda, D Takahtah, A Uehara Antunes, Daimon Engineering and Systems, Brazil, A C L Alves, S L P C Valinho, L M Azevedo, CEMAR, Brazil

1212 Dashboard and smartphone application to support operation and planning of electric distribution systems
D P Duarte, B H Nakata, Sinopsis, Brazil, M S Hoshina, M M Martinelli, I C Pires, AES Eletropaulo, Brazil

Sub Block 4 – Ancillary Services on Distribution Level

1033 Requirements for coordinated ancillary services covering different voltage levels
S Übermesser, AIT, Austria, C Groß, Salzburg Netz GmbH, Austria, A Einfalt, Siemens, Austria, N Thie, M Vasconcelos, RWTH Aachen, Germany, J Helguero, HS-Kempten, Germany, H Laaksonen, P Hovila, ABB Oy, Finland

1182 DSO TSO coordination needs induced by smart grids: the ongoing French project between RTE and Enedis
O Arnaud, RTE, France, M Chapert, O Carré, Enedis, France

1199 Improving actionable observability of large distribution networks for transmission operators to support improved system control, fault detection & mitigation
C Shand, G Taylor, Brunel University London, United Kingdom, E Stewart, C Roberts, Lawrence Berkeley National Laboratory, United States, A McMorran, Open Grid Systems Ltd, United Kingdom, P Mohapatra, SP Energy Networks, United Kingdom

Block 2: Control

11:00 – 12:30 – Tour 1

Sub Block 1 - Medium Voltage automation

0074 Multi-agent system design for automation of a cluster of microgrids
M Khederzadeh, Shahid Beheshti University A.C, Iran

0151 Pilot project using curtailment to increase the renewable energy share on the distribution network
T L Vandoorn, L Degroote, P Lindeboom, D Meire, P Reyniers, Eandis, Belgium, L Vandevelde, Ghent University, Belgium

0297 Voltage stability monitoring methods for distribution grids using thevenin impedance
S Polster, H Renner, Graz University of Technology, Austria

0511 Fast self-healing control of faults in MV networks using distributed intelligence
T Yip, J Wang, Kehui Power Automation, China, B Xu, K Fan, Shandong University of Technology, China, T Li, State Grid Fujian Electric Power, China

0538 Interaction of MV- and LV- automation systems for a smart distribution grid
P Steinbusch, M Modemann, J Meese, R Uhlig, M Stötzel, M Zdrallek, University of Wuppertal, Germany, T Kumm, EWE NETZ GmbH, Germany, W Friedrich, U Schütler, Mauell GmbH, Germany

0615 Computation and visualisation of reachable distribution network substation voltage
M Sankur, D Arnold, L Schecter, E Stewart, Lawrence Berkeley National Laboratory, United States

0749 ELECTRA IRP voltage control strategy for enhancing power system stability in future grid architectures
J Merino, J E Rodriguez-Soeco, Tecnalia, Spain, I Garcia-Villalba, University of the Basque Country, Spain, A Temiz, TUBITAK MAM, Turkey, C Caerts, VITO, Belgium, R Schwalbe, T I Strasser, AIT, Austria

0904 State forecasting in smart distribution grids: a modular approach using CARMA-algorithm
K Korotkiewicz, M Ludwig, M Stötzel, M Zdrallek, University of Wuppertal, Germany, T Braje, SAG Gmb, Germany, U Dietzler, Energiesversorgung Leverkusen GmbH, Germany, W Friedrich, Maurl GmbH, Germany

0914 Real-time, centralised voltage control in 33kV and 11kV electricity distribution networks
V Mavrocostanti, J Berry, Western Power Distribution, United Kingdom

0946 Characterisation and performance of a medium voltage DC link
A Aithal, J Wu, Cardiff University, United Kingdom

0948 A new approach for on-load tap-changer control based on intelligent voltage stability margin estimation by using local measurements
H Feng, K Vierreck, Maschinenfabrik Reinhausen GmbH, Germany, S Breker, J Rudolph, EnergieNetz Mitte GmbH, Germany
Low power instrument transformer based MV automation: lessons learned and future applications
A Larrabeiti, I Garabieta, J A Lozano, M G Zamalloa, ARTECHE, Spain, Z Ojinaga, V Macias, Iberdrola, Spain

11:00 – 12:30 – Tour 2
Sub Block 4 - Communication
0081 An innovative solution sustaining SCADA-to-Remote terminal unit G3-PLC connectivity over dynamic grid topologies
C Lavenu, EDF R&D, France, D Dufresne, X Montuelle, ENEDIS, France
0167 Remote management in Elektrilevi OÜ
H Luus, Elektrilevi OÜ, Estonia
0183 AIR - intelligent grid automation
F Rover, T Morais, J Aith, Elektro, Brazil
0302 Development of PLC system with large capacity and high reliability
Y Inoue, M Uchiyama, KANSAI Electric Power Co Inc, Japan
1170 Service quality assurance in the IP networks for Smart Grids
P Ceferin, R Djkic, I Stih, B Zupan, Smart Com, Slovenia, Z Toros, Elektro Primorska, Slovenia

14:00 – 15:30 – Tour 3
Sub Block 3 - SCADA / Distribution Management Systems
0262 Decision support for distribution automation: data analytics for automated fault diagnosis and prognosis
X Wang, S McArthur, S Strachan, University of Strathclyde, United Kingdom, B Paisley, SP Energy Networks, United Kingdom
0301 Using synchrophasors in distribution networks for synchronised switching
M Wache, Siemens AG, Germany, D Willems, SIBELGA, Belgium, F van Cauteren, Siemens NV, Belgium
0379 From simulation to reality - testing today a decentralised grid operation of the future
E Drayer, University of Kassel, Denmark, P Perinigotto, M Lazarus, Electricité de Strasbourg Réseaux, France, J L Garrote Molinero, Schneider Electric, United Kingdom, F Ramos, Schneider Electric, Spain, M Braun, University of Kassel, Denmark /Fraunhofer IWES, Denmark
0484 The grid of the future and the need for a decentralised control architecture: the web-of-cells concept
L Martini, RSE, Italy, H Brunner, T Strasser, AIT, Austria, C Caerts, VITO, Belgium, E Rodriguez, TECNALIA, Spain, G M Burt, University of Strathclyde, United Kingdom
0613 The scenario-based approach adopted in the ELECTRA project for deriving innovative control room functionality
M Marinelli, K Heussen, A Prostejovsky, H W Bindner, Technical University of Denmark, Denmark, V M Catterson, University of Strathclyde, United Kingdom, J Merino, TECNALIA, Spain, C Tornelli, Enel SpA, Italy
0641 Enel – Endesa SCADA/ADMS convergence assessment methodology
B J Deaver, EPRI, United States, G Di Lembo, C Noce, Enel SpA, Italy
0923 Decentralised control through self healing grids
G Mane, S Parkhe, S Dhabale, The Tata Power Company Ltd, India
0945 Fast alarm processing without connectivity information
A C Lisboa, D A G Vieira, ENACOM, Brazil, E C Pereira, CEMIG D, Brazil
1107 Supporting control room operators in highly automated future power networks
M Chen, V Catterson, M Syed, S McArthur, G Burt, University of Strathclyde, United Kingdom, M Marinelli, A M Prostejovsky, K Heussen, Technical University of Denmark, Denmark
1169 Intelligent network assets supervision and control in Enedis
M Lagouardat, J M Wine, O Carré, Enedis, France
1363 Mitigating power system inertia reduction within a web-of-cells control framework: a preliminary analysis
M Cabiati, S Canevese, A Gatti, M Rossi, RSE SpA, Italy
14:00 – 15:30 – Tour 4

Sub Block 2 - Low Voltage Automation

0481 Online control algorithm for sub-half-hourly operation of LV-connected energy storage device owned by DNO
T Yunusov, M J Zangs, B A Potter, University of Reading, United Kingdom, W Holderbaum, Manchester Metropolitan University, United Kingdom, M Fila, Scottish and Southern Electricity Networks, United Kingdom

0490 Active management of generation in low voltage networks
S Jupe, S Hoda, S Hodgson, Nortech Management Ltd., United Kingdom, A Park, M Wright, SP Energy Networks, United Kingdom

0651 Electric vehicles and low voltage grid: impact of uncontrollable demand side response
L Hattam, D Vukadinovic Greetham, University of Reading, United Kingdom, S Haben, University of Oxford, United Kingdom, D Roberts, EA Technology, United Kingdom

0686 Implementation and validation of synthetic inertia support employing series-produced electric vehicles
M Rezkalla, S Martinenas, A Zecchino, M Marinelli, Technical university of Denmark, Denmark, E Rikos, CRES, Greece

0792 UPGRID Project - the management and control of LV networks
S Noske, D Falkowski, ENERGA-OPERATOR SA, Poland, K Swat, T Boboli, Atende Software Sp zoo, Poland

0966 Enhanced LV supervision by combining data from meters, secondary substation measurements and MV SCADA
N Etherden, A K Johansson, U Ysberg, Vattenfall, Sweden, K Kvamme, Powel A/S, Norway, D Pampliega, Schneider Electric, Spain, C Dryden, General Electric, United Kingdom

1026 Coordinated voltage control in LV grid with solar PVs: development, verification and field
M M Viyathukattuva Mohamed Ali, T H Vo, P H Nguyen, Eindhoven University of Technology, Netherlands, Y Xiang, SIM-Cl, Netherlands, J Marjan, Elektro Gorenjska, Netherlands, J F G Cobben, Eindhoven University of Technology, Netherlands/Alliander NV, Netherlands

1060 Experimentation of voltage regulation infrastructure on LV network using an OLTC with a PLC communication system
C Baudot, G Roupioz, O Carre, Enedis, France, J Wild, Schneider Electric, France, C Potet, WDB, France

1080 Interaction of smart grid applications supporting plug and automate for intelligent secondary substations
A Einfalt, S Cejka, K Diwold, A Frischenschlager, Siemens AG Österreich, Austria, M Faschang, M Stefan, F Kupzog, AIT Austrian Institute of Technology, Austria

1192 Smart building potential within heavily utilised networks
W Peat, J Whyte, SP Energy Networks, United Kingdom, C Higgins, Derryherk Ltd, United Kingdom

On automated microgrid control system
T Jiang, L M Costa, N Siebert, GE, United Kingdom, P Tordjman, GE, France

Sub Block 5 – Islanding

0248 Fractional-order PID controller design of frequency deviation in a hybrid renewable energy generation and storage system
K Nosrati, H R Mansouri, H Saboori, Great Tehran Electrical Distribution Co, Iran

0312 Determination of load frequency dependence in island power supply
C J Steinhart, M Finkel, Hochschule Augsburg, Germany, G Kerber, LEW Verteilnetz GmbH, Germany, R Witzmann, M Gratza, TU München, Germany

0416 Data driven approach for monitoring, protection and control of distribution system assets using micro-PMU technology
E Stewart, M Stadler, C M Roberts, D Arnold, J Y Joo, Lawrence Berkeley National Laboratory, United States, J Reilly, Reilly Associates, United States

Block 3: Protection

16:00 – 17:30 Tour 1

Sub Block 2 - Applications

0019 Open or closed ring networks?
H Grasset, Schneider Electric, France

0278 Why the operation failure of high breaking capacity fuses is so frequent?
J C Gomez, D H Tourn, S Nesli, L Sanchez, H Rovere, Rio Cuarto National University, Argentina

0309 New protection coordination system according to ESS and renewable energy expansion
K S Lee, J M Kim, B H Shin, KEPCO-HQ, Korea

0763 New settings including rate of change of frequency for interface protection relays used for generators connected to MV grid
S Emelin, Enerdis, France, V Gabrion, EDF, France

0863 New and smart multi-ended differential solution for power networks
J Jesus, S Richards, S Subramanian, H Ha, GE Grid Solutions, United Kingdom
1082 Protection scheme for energy storage systems operating in island or grid connected modes
A Neves, B Almeida, M Loruo, R Santos, A Araujo, J Ferreira Pinto, EDP Distribuição, Portugal, J Santana, S Pinto, P Gamboa, M Chaves, INESC ID, Portugal, J Damasio, Siemens, Portugal

1331 Impact of the cables’ shields disconnection on the thermal stress reduction in case of cross-country faults
M Della Corte, L D’Orazio, A Malerba, F Marmege, e-distribuzione SpA, Italy

0192 Designing a coordinated protection system for microgrids enabled with DERs based on unidirectional FCL
M M Khademi, Hormozgan Electric Power Distribution Company, Iran

0205 Practise-oriented consideration of the dynamic fast fault current of power park modules in grid protection analysis
M Jäkel, H Vennegeerts, A Moser, FGH e.V., Germany, F Glinka, A Schnettler, RWTH, Aachen, Germany

0276 Viability assessment for a centralised protection and control systems architectures in MV substations
B de Oliveira e Sousa, J Starck, J Valtari, ABB Oy, Finland

0330 Hardware based characterisation of LV inverter fault response
I Abdulhadi, F Coffele, Power Networks Demonstration Centre, United Kingdom, A Dysko, University of Strathclyde, United Kingdom, C Foote, C Kunau, SP Energy Networks, United Kingdom, M Lee, Scottish and Southern Energy Power Distribution, United Kingdom

0344 Protection system analysis in LV grid, with high DG penetration, in parallel and islanding operation
N L Filipe, A Leiria, EDP Labelc, Portugal, R André, EDP NEW R&D, Portugal, J Damasio, SIEMENS SA, Portugal, M Gerlich, SIEMENS AG, Germany, S Rodriguez, GPTech, Spain

0352 NDZ of an anti-islanding protection with ROCOF threshold
O Arguence, F Cadoux, B Raison, UGA, Q2Elab, France, L De Alvaro, Enedis, France

0368 Anti-islanding protection of distributed generators with regard to sensitivity in a balance and power system stability
M Lukáč, Z Matišić, HEP-ODS, Croatia

0392 EDPS’s experience in optimising in-service protection system units
M Verissimo, B Almeida, H M Nunes, M Louro, C Cura, H Heitor, L Candeias, EDP Distribuição, Portugal, F Carvalho, J Mateus, AmberTREE, Portugal

0459 The need for zero sequence voltage protection in MV networks with high levels of distributed generation
J Mateus, M Ferreira, P Carvalho, AmberTREE, Portugal, A Leiria, Lablec, Portugal, M Louro, B Almeida, EDP Distribuição, Portugal

0506 Rate of change of frequency protection: toward a viable algorithm for a protective relay
M Klemann, V Piskarow, Sprecher Automation, Germany

0573 Evaluation of existing DC protection solutions on an active LVDC distribution network under different fault conditions
D Wang, A Emhemed, P Norman, G Burt, University of Strathclyde, United Kingdom

0714 Challenges and solutions for MV & LV protection in grids with large amount of distributed generation – A final report from the German research project ProFuDiS
F Glinka, T Wippenbeck, RWTH Aachen University, Germany, T Schmidt, T Wiedemann, innogy SE, Germany, C Bennauer, Schneider Electric GmbH, Germany

0716 Fast protection against islanding and unwanted tripping of distributed generation caused by ground faults
K Pandakov, H K Hoidalen, NTNU, Norway, J I Marvik, SINTEF, Norway

0970 Reliable protection systems for locally supplied MV distribution networks
F Bignucolo, A Savio, M Coppo, R Turri, University of Padova, Italy, A Cerretti, R Calone, e-distribuzione, Italy

0993 Estimation of short circuit currents in future LVDC microgrids
A Virdag, T Hager, Hager Group, Germany, R W De Doncker, RWTH Aachen, Germany

16:00 – 17:30 Tour 2

Sub Block 1 - Fault location / Earth fault

0170 Impact of voltage fluctuation on Petersen-coil control and results of a tuning method with evaluation of side frequencies
M Schloemmer, T Schinerl, H Osterkorn, Trench Group, Austria

0308 New method for high-impedance fault detection
H Laaksonen, P Hovila, ABB Oy, Finland

0382 New solution of fault directional detection for MV fault passage indicators
Y Chollot, J Mecreant, D Leblond, P Cumnel, Schneider Electric, France

0564 Why does the earth fault detection method based on 3RD harmonic work in large meshed 110-kV networks
G Druml, Sprecher Automation, Austria, O Skrbinjek, Energie Steiermark, Austria, U Schmidt, University Zittau, Germany, P Schegner, TU-Dresden, Germany, L Fickert, TU-Graz, Austria
0622 An optimisation algorithm for earth fault location on MV distribution feeders
T D Le, M Petit, CentraleSupélec - GeePs, France

0759 Accurate localisation of ground faults in non-solidly earthed networks based on transients analysis
C Dzienis, A Jurisch, Siemens AG, Germany

0817 Evaluation of different solutions of faulted phase earthing technique for an earth fault current limitation
D Topolanek, P Toman, M Ptacek, Brno University of Technology, Czech Republic, J Dvorak, E.ON, Czech Republic

0862 Effect of core balance current transformer errors on sensitive earth-fault protection in compensated MV-networks
A Wahlroos, J Altonen, ABB Oy, Finland, P Vano, ABB sro, Czech Republic

0967 Application of multi-frequency admittance-based fault passage indication in practical compensated MV-network
J Altonen, A Wahlroos, ABB Oy, Finland, S Vähäkuopus, Elenia Oy, Finland

1153 Improved fault location algorithm for MV networks based on practical experience
T Gu, F Provoost, Alliander N.V., Netherlands

1355 Capacitive voltage sensors for an auxiliary fault locating service with traveling waves
B M Keune, C Rehtanz, TU Dortmund, Germany, M Kleemann, Sprecher Automation, Germany