

IEEE Communications Society Emerging Technical Subcommittee on Smart Grid Communications

IEEE SmartGridComm'16

Room: Sussex 1
Four Points Sheraton Sydney

Tuesday, November 8, 2016
12 – 1 pm

Agenda

- Welcome and introduction
- 2016 conference and journal reports
- Potential merging with IEEE Power Line Communications Technical Committee
- Ideas about 2017 and 2018 events
- Other business and discussions

Mission Statement

- Support the IEEE Smart Grid Initiative
- Promote ComSoc's position in the development and promotion of smart grid related technologies
- Ensure that ComSoc members play a decisive technological role in smart grid communications

Current Status of Smart Grid Communications ETC

- Our ETC has 102 registered members as of November 3, 2016.
- Our last meeting was held on Tuesday, May 24, 2016, from 8 am to 9 pm at Mandarin Oriental Hotel during IEEE ICC'16.

Current Status of Smart Grid Communications ETC

- Officers (November 1, 2014 – Present)
 - Chair: Vincent Wong
 - Vice Chair: Stephen Bush
 - Vice Chair: Lutz Lampe
 - Vice Chair: Hamed Mohsenian-Rad
 - Secretary: George Michailidis
- Past Officer
 - Chair: Petar Popovski (2011 – 2014)

Our Smart Grid Communications ETC

- Website:

<http://sg.committees.comsoc.org/>

- To become a **member**, it is necessary to subscribe to the Smart Grid Communications mailing list as specified on the above website.

Update on Activities

- Nomination of **Symposium Co-chairs** of IEEE ICC and Globecom, Selected Areas in Communications (SAC) Symposium, **Smart Grid Communications Track**.
 - IEEE ICC 2016, Lutz Lampe
 - IEEE Globecom 2016: Dusit Niyato
 - IEEE ICC 2017: Deepa Kundur
 - IEEE Globecom 2017: Walid Saad (nominated)
 - IEEE ICC 2018: Vincent Wong
- If you are interested in co-chairing future conferences, please let one of ETC officers know.

IEEE ICC'16

- Selected Areas in Communications (SAC) Symposium, Communications for the Smart Grid Track
- May 23 – 27, 2016, Kuala Lumpur, Malaysia
- Chair: Lutz Lampe
- Number of TPC members: 35
- Number of papers submitted: 29, but one was moved due to fit, so 28 left for review
- Number of papers accepted: 11
- Acceptance rate: $11/28$ (= 39%)
- Number of sessions: 1 oral with 6 papers, remaining in interactive session (only 4, as 1 withdrawn after acceptance)

IEEE Globecom'16

- Selected Areas in Communications (SAC) Symposium, Smart Grid and Power Line Communications Track
- December 4 – 8, 2016, Washington DC, USA
- Chair: Dusit Niyato
- Number of TPC members: 58
- Number of papers submitted: 27
- Number of papers accepted: 10
- Acceptance rate: $10/27$ (= 37%)
- Number of sessions: 2

IEEE ICC'17

- Selected Areas in Communications (SAC) Symposium, Communications for the Smart Grid Track
- May 21 – 25, 2017, Paris, France
- Chair: Deepa Kundur
- Number of TPC members: 38+
- Number of papers submitted: 46 (50% more papers than last year)

IEEE JSAC Special Issue

- IEEE Journal on Selected Areas in Communications (JSAC), special issue on Emerging Technologies, March 2016.
- Guest Editor: Vincent Wong
- List of invited papers
 - Tianyi Chen, Yu Zhang, Xin Wang, and Georgios B. Giannakis , “Robust Workload and Energy Management for Sustainable Data Centers”
 - Liyan Jia and Lang Tong, “Renewables and Storage in Distribution Systems: Centralized vs. Decentralized Integration”
 - Lingwen Gan and Steven H. Low, “An Online Gradient Algorithm for Optimal Power Flow on Radial Networks”
 - Yashar Ghiassi-Farrokhfal, Catherine Rosenberg, Srinivasan Keshav, and Marie-Bénédicte Adjaho, “Joint Optimal Design and Operation of Hybrid Energy Storage Systems”

IEEE Wireless Communications Special Issue

- IEEE Wireless Communications, special issue on “Smart Grids”
- Guest Editors: Petar Popovski and Vincent Wong
- Call for papers deadline: June 5, 2016
- Number of submissions: 27
- Accepted papers will be published in April 2017 issue.

Call for Paper

- IEEE ICC'2017 Workshop on Integrating Communications, Control, and Computing Technologies for Smart Grid (ICT4SG)
- Date of Workshop: May 25, 2017
- Paper submission deadline: November 18, 2016
- Date of Notification Date: February 17, 2017
- Final Paper: March 10, 2017
- Workshop Enquiries, Contact: Hazel.Cox@ed.ac.uk
- ICC 2017 Workshops Web Page: <http://icc2017.ieee-icc.org/call-workshop-papers>
- <http://icc2017.ieee-icc.org/sites/icc2017.ieee-icc.org/files/u51/WT06.pdf>

Activities between our ETC and IEEE Power and Energy Society (PES)

Hamed Mohsenian-Rad,
Associate Professor, University of California, Riverside
Liaison between our ETC and IEEE PES Power System
Communications and Cybersecurity Committee

Panel Session #1

- Craig Preuss and Hamed Mohsenian-Rad organized a Panel Session on "Research Priorities and Open Problems in Power Systems Communications and Networking" at the IEEE PES General Meeting, Boston, MA, in July 2016.
- Identify the industry requirements, research priorities, open problems, and emerging applications of communications and networking in power systems.
- Communications architectures and protocols as well as communication-centric data-management solutions will be discussed with applications at transmission, distribution, and utility-scale microgrid settings.

Panel #1: List of Presentations

- Deepak Maragal: Modern Substation Automation System: Current status & Potential Areas of Development
- Andrea Tonello: Power Line Communications for the Smart Grid: Realities and Future
- Jay Murphy: Precise Time Synchronization: Importance, Challenges and the Future
- Rajit Gadh: Distributed Energy Resources integrated with Microgrids, Electric Vehicles, Solar Generation and Energy Storage - A Model for the Modern Grid
- David Bakken: Communications and Coordination Requirements and Technologies for the Wide-Area Smart Grid
- Manimaran Govindarasu: Cyber Physical System Security Testbeds for the Smart Grid: Research Priorities and Challenges

Panel Session #2

- Hamed Mohsenian-Rad organized a Panel Session on "Domain-Specific Big Data Analytics Tools in Power Systems" at the IEEE PES General Meeting, Boston, MA, in July 2016.
- Growing interest in employing big data analytics in the context of power systems to examine diverse data sets of large volumes to uncover hidden patterns, unknown correlations, market trends, customer preferences, and other useful business information.

Panel #2: List of Presentations

- Zhenyu Huang: From data to actionable information: data curation, assimilation, and visualization
- Chuanyi Ji: Resilience of power distribution: Large scale data analysis
- Le Xie: Dimensionality reduction and system identification using synchrophasor data
- Seung-Jun Kim: Online learning and optimization approaches for smart power grids
- Panel Discussion

IEEE PES Big Data Subcommittee

- Hamed Mohsenian-Rad will co-chair Data Availability Task Force in IEEE PES Big Data Subcommittee.
- ComSoc can contribute:
 - Smart Grid Communications Data (Field and Lab Tests)
 - Noise, Delay, Packet Loss, Waveform, etc.
 - Wired and Wireless Communications
 - Example: PLC data under different grid operation scenarios.
- Datasets will be documented and made available to public through the Task Force's website.
- Panel at IEEE PES General Meeting 2017 in Chicago, IL.

Activities in IEEE Smart Grid

Angela Yingjun Zhang, CUHK

Yiyu Shi, University of Notra Dame

Representatives of our ETC to serve as
committee member in IEEE Smart Grid

Activities in IEEE Smart Grid R&D Activities (SG-R&D)

Stefano Galli

ComSoc representative on IEEE Smart Grid
Steering Committee

Chair of IEEE Smart Grid Technical Activities
Committee (SG-TAC)

Potential merging with IEEE Power Line Communications Technical Committee (TC-PLC)

- Rationale:
 - Many members in our ETC are also members of TC-PLC
 - Our ETC and TC-PLC have jointly proposed a track on “Smart Grid and Power Line Communications” within the SAC Symposium in both IEEE ICC’18 and IEEE Globecom’18.
- We submitted the “2014 - 2016 Sub TC Activity Report” to the ComSoc’s Emerging technology committee on September 30.
- Vincent Wong and Andrea Tonello (Chair of TC-PLC) will have a Skype session in mid-November.
- TC-PLC will have a meeting during Globecom’16.

Ideas about 2017 and 2018 events

- Other activities we can organize?
- How to recruit more members?