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## **Networking and the Smart Grid: the Relevance of Communications in the Future of Power Grid**

by

**Dr. Fabrizio Granelli**

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**DATE:** Friday, June 15, 2012.

**TIME:** Refreshments, Registration and Networking: 10:30; Seminar: 11:00 am – 12:00 noon

**PLACE:** Room 211, 2<sup>nd</sup> floor, Ottawa Convention Centre, 55 Colonel By Drive, Ottawa, Ontario K1N 9J2. See the [Map/Direction](#).

**PARKING:** Public parking, to see the location and payment method, click [here](#).

**ADMISSION:** Free. Registration required. To ensure a seat, please register by e-mail contacting: [Wahab Almuhtadi](#), [Yifeng Zhou](#), or [Qingsheng Zeng](#).

### **Abstract**

The Smart Grid represents a clear step forward in improving power generation, distribution, consumption. Indeed, the Smart Grid is a digitally enabled electrical grid that gathers, distributes, and acts on information about the behavior of all participants (suppliers and consumers) in order to improve the efficiency, importance, reliability, economics, and sustainability of electricity services.

In this scenario, communications gain a central point as a key enabling technology in supporting the “intelligence” of the system. Nevertheless, the area of communications and associated knowledge can even play a greater role, in supporting modeling, simulation and design of the next generation power grid.

The seminar aims at providing an overview of the concept and architecture of the Smart Grid, focusing on the contributions of the communications community in terms of communications infrastructure and methodologies. Sample scenarios will be presented to illustrate the relevance of communications in the power grid.

### **Bio**

Fabrizio Granelli is IEEE ComSoc Distinguished Lecturer for 2012-13, and Associate Professor at the Dept. of Information Engineering and Computer Science (DISI) of the University of Trento (Italy). From 2008, he is deputy head of the academic council in Information Engineering. He received the «Laurea» (M.Sc.) degree in Electronic Engineering from the University of Genoa, Italy, in 1997, with a thesis on video coding, awarded with the TELECOM Italy prize, and the Ph.D. in Telecommunications from the same university, in 2001. Since 2000 he is carrying on his research and didactical activities (currently Associate Professor in Telecommunications) at the Dept. of Information Engineering and Computer Science – University of Trento (Italy). He was coordinator of the Networking Laboratory in 2006-2010. In August 2004 and August 2010, he was visiting professor at the State University of Campinas (Brasil). He is author or co-author of more than 130 papers published in international journals, books and conferences. His main research activities are in the field of networking, with particular reference to performance modeling, cross-layering, wireless networks, cognitive radios and networks, green networking and smart grid communications. Dr. Granelli is guest-editor of ACM Journal on Mobile Networks and Applications, special issues on “WLAN Optimization at the MAC and Network Levels”, “Ultra-Wide Band for Sensor Networks” and “Recent Advances in IEEE 802.11 WLANs: Protocols, Solutions and Future Directions”, guest-editor of ACM TOMACS special issue on “Modeling and Simulation of Cross-layer Interactions in Communication Networks”, of Hindawi Journal of Computer Systems, Networks and Communications special issue on “Lightweight Mobile and Wireless Systems: Technologies, Architectures and Services”. He was Co-Chair of 10th and 13th IEEE Workshop on Computer-Aided Modeling, Analysis, and Design of Communication Links and Networks (CAMAD’04 and CAMAD’08). Dr. Granelli is Founder and General Vice-Chair of the First International Conference on Wireless Internet (WICON’05) and General Chair of the 11th and 15th IEEE Workshop on Computer-Aided Modeling, Analysis, and Design of Communication Links and Networks (CAMAD’06 and CAMAD’10). He is TPC Co-Chair of GLOBECOM 2007-2009 and 2012 Symposia on “Communications QoS, Reliability and Performance Modeling”. He was voting member of IEEE SCC41 for standards IEEE P1900.1 and IEEE P1900.2, and he’s currently voting member of the IEEE ComSoc Education Board. He was officer (Secretary 2005-2006, Vice-Chair 2007-2008, Chair 2009-2010) of the IEEE ComSoc Technical Committee on Communication Systems Integration and Modeling (CSIM), and Associate Editor of IEEE Communications Letters (2007-2011) and Journal of Wireless Communications and Networking (2008-2011). He is Senior Member of IEEE and Associate Editor of IEEE Communications Surveys and Tutorials and Wiley International Journal on Communication Systems.