IEEE PES Distinguished Lecturer Program

"Keeping the Lights On! Yesterday, Today, Tomorrow"

Director of Power Systems Technology and Strategic Initiatives
GE Grid Software Solutions
Redmond, Washington - USA

27 giugno 2016, ore 10
Salone di Villa Cambiaso
Scuola Politecnica – Università degli Studi di Genova
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Energy Management Systems (EMS) have been deployed for decades at utility control centers to monitor and manage the electricity grid in real-time. Today these EMS capabilities are poised to be enhanced quite dramatically with growth of synchrophasor PMU measurements. These enhancements will help us manage the challenges posed by the future smart grid.

This presentation will describe:
- *The history and evolution of the EMS from its digital genesis in the 1970's.*
- *The primary functions of a modern EMS:*
- *Emerging new industry drivers*
- *Emerging new technology trends*
- *Impact of growth of microgrids, renewables and distributed generation on the EMS*
- *Growth of Phasor Measurement Units (PMUs) and synchrophasor measurements worldwide*
- *Wide Area Monitoring (WAMS)*
- *The EMS for the future grid*
- *Concluding thoughts on the challenges and opportunities to manage the future grid.*

Short Bio. Jay Giri is Director of Power Systems Technology and Strategic Initiatives at GE Grid Software Solutions in Redmond, Washington. He leads a team of power system engineers who deliver generation control, market applications and synchrophasor/phasor measurement unit (PMU) applications to control centers. He is a liaison for university research activities and an affiliate professor at the University of Washington.

In 1978, Jay and 11 other engineers co-founded Energy System Computer Applications (ESCA). Over time, ESCA became Alstom Grid in 2010 and GE Grid Solutions in 2015. Jay designed and implemented the original software for the ESCA automatic generation control (AGC) and dispatcher training simulator (DTS) power system simulation functions. Today this AGC controls over 50% of North American generation as well as generation in many other countries, and the DTS is one of the predominant simulators used by control centers worldwide.

He has a PhD from Clarkson University in New York and a B.Tech from the Indian Institute of Technology (IIT), Madras. In 2002, he was elected IEEE Fellow: "For contributions to the design and implementation of power system control centers" and is a member of the IEEE Power & Energy Society (PES) Governing Board. He is an Alstom Grid Senior Fellow and a member of the Washington State Academy of Sciences.