



Power Systems Engineering Research Center

AMI: Communication Needs and Integration Options

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PSERC Public Webinar

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[Note: a poster on this and other broad analysis white papers are available on the [PSERC website](http://www.pserc.org). The white paper and slides associated with this webinar will be posted on the PSERC website at www.pserc.org in advance of the webinar.]

Description

One of the major components of the smart grid is the interface with the customer. This interface is primarily through the meter connection. This presentation analyzes the current state of communication infrastructure for AMI and informs about the future actions needed to enable consumer participation in the smart grid. It describes the motivation for AMI, surveys the current state of the art and deployment status, and points out technical, policy, and other challenges in moving forward. This white paper focuses on the technical aspects and capabilities of communication technologies being considered for AMI and what future research needs to be done to hasten the realization of benefits attributed to the AMI application scenario.

On a global scale, the U.S. has made good progress in deploying AMI, lagging behind only some European countries. In terms of actual communications technologies being relied upon, there seems to be greater consensus on how to build HANs than the backhaul links. Further research is required evaluating such options and possible communication architectures. In contrast, information security and privacy needs to be addressed more from a HAN perspective due to involvement of consumers and their data. Future actions needed at a federal level in terms of communication needs and integration options for meeting AMI goals are (i) encouraging more far-reaching investments in back-haul communication infrastructures, and (ii) developing information security and privacy regulations to protect consumers and guide utility reactions to threats and malicious behavior.

This webinar is based on one of nine white papers in the project “The Future Grid to Enable Sustainable Energy Systems: An Initiative of the Power Systems Engineering Research Center” funded by the U.S. Department of Energy. More information about the Future Grid Initiative is available on the [PSERC website](http://www.pserc.org).

Biography:

Vinod Namboodiri is an Assistant Professor of Electrical Engineering and Computer Science at Wichita State University. His current research interests are in the area of Sustainable Energy Systems as it applies to Smart Grids and Green Computing. His current research goals include designing a framework that leverages Information and Communication Technologies (ICT) to enable active consumer participation for a more efficient and cleaner delivery of energy. Dr. Namboodiri currently serves on the program committees of various conferences in the communications and networking areas, and also serves as a reviewer for various journals including IEEE Transactions on Smart Grids, IEEE Transactions on Mobile computing, and IEEE Transactions on Wireless Communications. He is the lead author of a recent paper titled “On the Design of a Graduate-Level Cross-Disciplinary Course on Smart Grids” to appear at the PES General Meeting panel on *Collaborative Smart Grid Education* in July 2012. This paper is based on the experience co-teaching a multi-disciplinary course in Spring 2012 on Smart Grids involving power systems engineers and those with a communication and networking background.

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