UPnP and the Smart Grid Opportunity

Global home networking standards group, UPnP Forum, has published a new whitepaper detailing how its IP-based standards play a vital role in implementing next generation Smart Grid and Smart Energy networks.

The document, titled "UPnP Technologies for the Smart Grid-Enabled Home [1]", gives an in-depth account of UPnP device architecture and specifications, explains how these function, and describes the benefits they bring to vendors whose products embody UPnP specifications.

The white paper goes on to highlight the relevance to energy management of UPnP standards that provide a common communications architecture from a utility or energy service provider into the Home Area Network (HAN), and between all of the intelligent devices within the home. It also provides illustrations involving the use of UPnP technologies in different energy system scenarios.

In practice, the current widespread deployment of UPnP-based products means that utilities have a well-established developer and support ecosystem for delivering cost-effective energy management solutions. UPnP technologies already provide the foundation in the home to complement a variety of energy management gateways and device control scenarios incorporating well-vetted mechanisms for security, discovery and service advertisement.

Additionally, UPnP technologies support modular integration with multiple Smart Grid and Smart Energy protocol solutions while providing a robust, reliable, manageable and secure IP platform used to facilitate energy data communications targeting other data models including SEP 2.0, OpenHAN, OpenADR and OASIS. It is easy for utilities to become involved with the development and adoption of UPnP standards because there is no cost to join the UPnP Forum or to download and contribute to the specifications.

"UPnP-certified devices on existing home networks provide a perfect platform for communicating energy-related messages and performing load-shedding actions," comments Dr. Alan Messer [2], President and Chairman of UPnP Forum. "Smart Grid communications – related to pricing, alerts, meter readings and so on – can bridge easily to IP-based home or small business networks, allowing utilities and providers to communicate over the Internet or via a private IP backbone with their customers.

"Connecting Smart Grid devices in the home is easy, robust and secure using the installed base of UPnP-networks already in place," adds Dr. Messer. "At the same time, a rich set of power systems interfaces are defined already by the UPnP Forum. And additional Home Energy Management System (HEMS) application enhancements are under discussion via liaisons between UPnP Forum and other industry efforts."

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[1] http://upnp.org/resources/whitepapers/UPnP%20SmartGrid%20Whitepaper_November%202011.pdf
[2] http://www.linkedin.com/in/alanmesser