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News Fact Sheet

Intelligently Managing the Smart Grid

Jan. 29-31, 2013 — To help today's smart grid respond more quickly and efficiently to energy fluctuations, Intel Corporation developed an intelligent end-to-end synchrophasor data management reference implementation with Dell*, National Instruments* and OSIsoft*. The concept measures the health of the smart grid to improve system reliability and reduce costs.

Synchrophasor technology has become a critical component for managing the smart grid, enabling utilities to more intelligently control and protect the grid. Synchrophasors monitor grid activity and can provide near real-time data to allow operators to immediately detect disturbances that would have otherwise been difficult to capture. This capability has been in testing in small-scale deployments for a number of years. However, the high cost and complexity of the technology have hindered broad adoption.

To overcome these challenges, Intel and its partners used cost-effective and standards-based computing components commonly found in many IT and embedded computing applications to build an end-to-end implementation. The intelligent synchrophasor implementation demonstrates how utilities can reliably manage, validate and test real-time data remotely. Synchrophasor technology captures up to 60 time-synchronized snapshots of the grid per second, allowing grid operators to understand conditions of all parts of the grid at any precise point in time. The solution gathers and translates synchrophasor data into actionable intelligence.

The solution starts with Intel® Core™ i7 processor-based phasor measurement units (PMUs) from National Instruments that enable utilities to easily acquire many types of data on a single device. The data is passed to a centralized computing, networking and storage platform provided by Dell, including three tiers of scalable storage. The Intel® Xeon® processor-based Dell PowerEdge servers deliver data in near real-time to grid operators. The grid operators are then able to use OSIsoft's PI System for advanced visualization and analytics to understand what is happening throughout the grid network. The PI System also helps to meet strict North American Electric Reliability Corporation Critical Infrastructure Protection requirements, ensuring that the data is highly secure and the PI System early warning capabilities help operators react to problems quickly.

The solution will be on display during DistribuTECH at the Intel booth (#1231). For more information about synchrophasor solutions, visit www.intel.com/go/energytech.