

Summary / Update of the NIST Smart Grid Standards process

- In 2007 per the EISA Act, NIST was formally assigned the primary responsibility to coordinate the development of a framework and a road map that includes protocol and model standards for information management to achieve Smart Grid (SG) interoperability Without this there is a potential for these SG devices to become prematurely obsolete or devoid of appropriate security.
- NIST developed the 3-phase action plan to accelerate the identification of standards while establishing a robust framework/map for certification and testing as well. This was approved by the USA Govt.
- The draft Phase 1 Report (90 pages) is now out for public review and comments. This identifies the high level reference model for SG of about 80 Standards likely impacted + 14 priority gaps (of 70 identified) + cyber security for which new or revised standards are needed. Input to the draft was provided in three sessions in April, May and August 2009 which was attended by 1500 people representing hundreds of organizations. *As far we know the Canadian reps were Hydro One, Hydro Quebec and Measurements Canada.*
- The various recognized Standards Development Organization (SDO) have now been charged with the task to fill the gaps and recommend a plan to do so and meet aggressive timelines
- Key Summary of the Phase 1 report:
 - SG Model is complex and needs a shared understanding (architecture, inter-relation and building blocks) and will be further developed by the SG Architecture Board
 - Seven domains identified: Bulk Generation, Transmission, Distribution, Markets, Operation, Service Provider and Customer
 - Priorities: DR/CDM, Wide Area Measurement, Storage, Transportation AMI, DG, Cyber security, Communications
 - 16 Standards – reasonably strong consensus; 31 + (additional 46) to be worked on;
 - 70 gaps identified
 - Priority actions:
 - SM upgradeability (almost complete)
 - Common Spec for Price/Product Definition (2010)
 - Common Scheduling mech. for energy transaction (end 2009)

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- CIM for DG management (end 2010)
 - Standard DR signals (Jan 2010)
 - Standard for energy use (Jan 2010)
 - IEC 61850/DNP3 Mapping (2010)
 - Time Synch. (mid 2010)
 - T&D Power System Models (end 2010)
 - IP Protocols Guidelines for SG (mid 2010)
 - Wireless Communications for SG (mid 2010)
 - Electric Storage Interconnections (mid 2010)
 - Standards for PHEV interconnects (end 2010)
 - SM data profiles (end 2010)
- Cyber Security Actions
 - Critical Priority
 - NIST led Taskforce of 200 professionals to be set up
 - Risk Assessment, profiles and requirements and mitigations
 - AMI is a key area for security risk
 - Next Steps:
 - A new panel of public-Private Partnership Organization structure for all of the above work by end 2009
 - Robust framework for Testing and certification
 - 2010 implementation plan
 - Cyber security issues

The Edison Electric Institute is also planning an action group to respond to the above.

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