
Re-energizing America: Establishing Standards for a Nationwide Smart Grid

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The NIST Role

***Energy Independence and Security Act (EISA) of 2007
Title XIII, Section 1305.
Smart Grid Interoperability Framework***

In cooperation with the DoE, NEMA, IEEE, GWAC, and other stakeholders, **NIST** has “primary responsibility to **coordinate development of a framework** that includes protocols and model standards for information management **to achieve interoperability of smart grid devices and systems...**”

The Need for Standards is Urgent

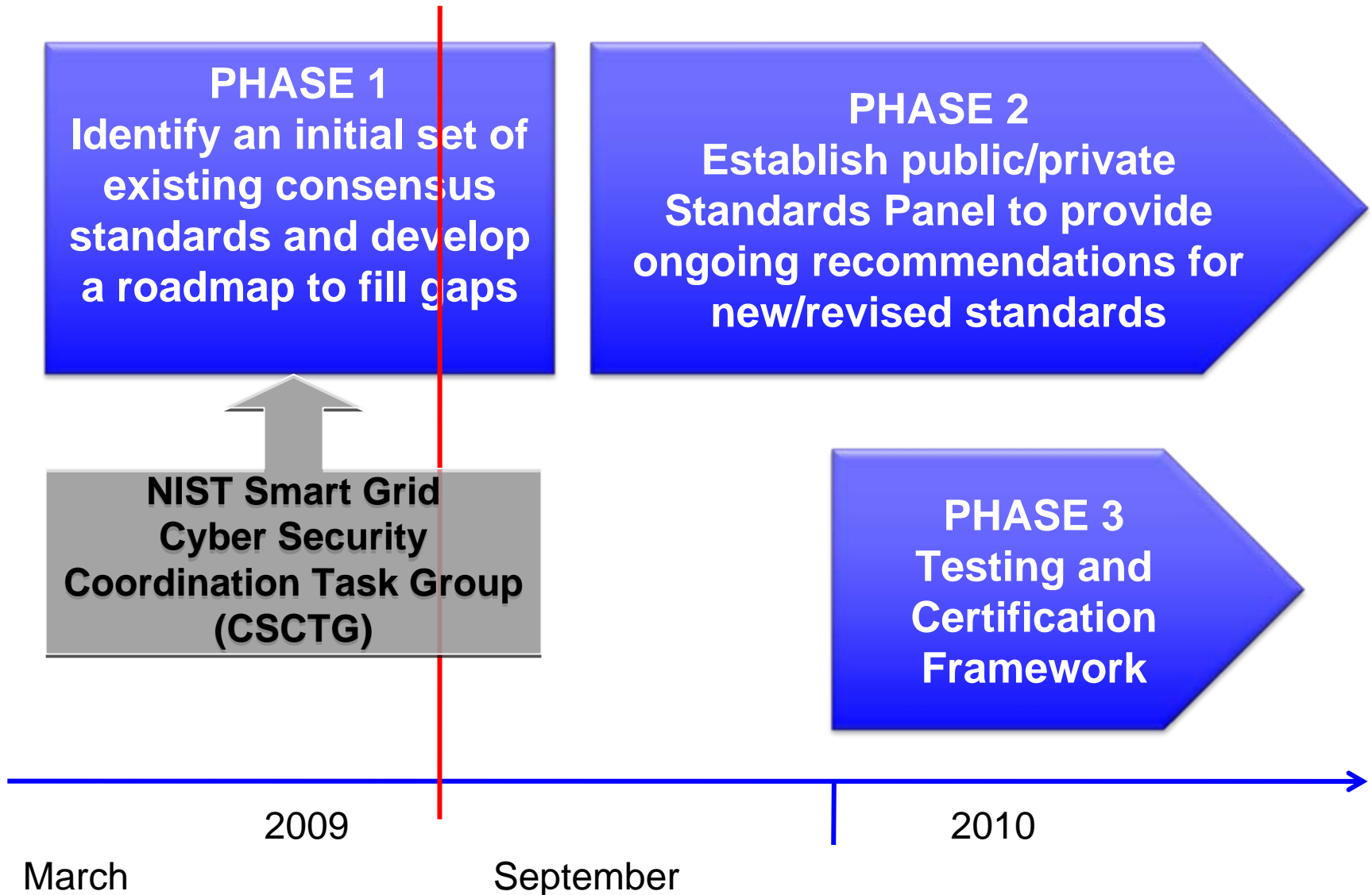


Example: Smart Meters

- \$40 - \$50 billion dollar deployment nationwide
- Underway now
- ARRA will accelerate
- Rapid technology evolution
- Absence of firm standards

Source: Congressional Research Service Report

NIST Three Phase Plan

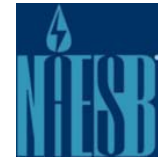


Progress to Date

- Three public workshops
- More than 1500 participants
- Draft report issued for comment
- 16 initial standards
- >80 candidates identified
- 70 gaps & issues identified
- 14 high priority items selected for immediate action-- SDO meeting held to develop action plans to close gaps



Next Step: Fill The Gaps



Priority Action Plans: What, Who, When

Priority Action Plans

Breakout Session 1				
PAP	Priority Action Plan / Breakout Subject	NIST Lead	EPRI Lead	Scribe
1	Role of IP in the Smart Grid	David Su	Erich Gunther	Joe Hughes
3	Common Pricing Model	David Holmberg	Toby Considine	Bill Cox
4	Common Scheduling Mechanism			
6	Common Semantic Model for Meter Data Tables	Tom Nelson	Aaron Snyder	Brian Seal
5	Standard Meter Data Profiles Standard			
7	Electric Storage Interconnection Guidelines	Al Hefner	Mark McGranaghan	Frances Cleveland
10	Standard Energy Usage Information	Dave Wollman	Marty Burns	Stuart McCafferty
13	Time Synchronization, IEC 61850 Objects/IEEE C37.118 Harmonization	Jerry FitzPatrick	Christoph Brunner	Bruce Muschlitz
Breakout Session 2				
PAP	Priority Action Plan / Breakout Subject	NIST Lead	EPRI Lead	Scribe
2	Wireless Communications for the Smart Grid	David Su	Erich Gunther	Brian Seal
8	CIM for Distribution Grid Management	Jerry FitzPatrick	Christoph Brunner	Aaron Snyder
14	Transmission and Distribution Power Systems Model Mapping			
9	Standard DR Signals	David Holmberg	Bill Cox	Toby Considine
11	Common Object Models for Electric Transportation	Eric Simmon	Stuart McCafferty	Marty Burns
12	IEC 61850 Objects/DNP3 Mapping	Tom Nelson	Bruce Muschlitz	Joe Hughes
15	Cybersecurity	Annabelle Lee	Frances Cleveland	Bobby Brown

Priority Action Plans

- Wireless Communications for the Smart Grid
 - Assess the capabilities and strengths/weaknesses of wireless technologies operating in both licensed and unlicensed bands
 - Develop guidelines on their use for different Smart Grid application requirements
 - Take into account potential interference issues
 - Data throughput
 - Latency
 - Propagation characteristics
 - Etc.

Upcoming Milestones

- Rollout of NIST SG Interoperability Framework Document
 - Will utilize data from draft report, Priority Action Plans and include a revised Standards List
 - Announcement and Posting September 21 at GridWeek
 - Workshop on NIST Framework September 24
- SG Standards Panel contract award in mid-August
 - First meeting of SGP: November 17 at GridInterop '09 in Denver
- SG Testing and Certification Framework – initial steps by mid-December