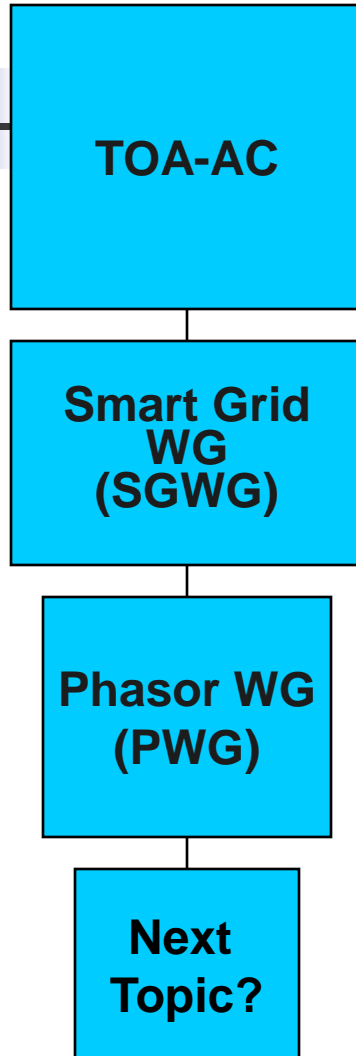




Smart Grid Working Group Progress Report

TOA-AC Meeting
July 9, 2009

Smart Grid Working Group History



- The PJM Transmission Owner's formed the Smart Grid Working Group (SGWG) in 2007.
- The SGWG's review of **smart grid technologies** resulted in formation of the Phasor Working Group (PWG) in 2008.
- Next Topic?



Next Topic for the SGWG?

An important topic for the next phase of the SGWG could be involvement with NIST's smart grid standards.

- Under the Energy Independence and Security Act (EISA) of 2007, the National Institute of Standards and Technology (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..."

NIST Three Phase Plan

PHASE 1

Recognize a set of initial existing consensus standards and develop a roadmap to fill gaps

PHASE 2

Establish public/private Standards Panel to provide ongoing recommendations for new/revised standards to be recognized by NIST

PHASE 3

Testing and Certification Framework

2009

2010

March

September



What is the Purpose of the Roadmap?

When completed, NIST's Smart Grid Interoperability Standards Roadmap will:

- Set priorities for interoperability and cybersecurity requirements;
- Identify an initial set of standards to support early implementation of smart grid technologies, and;
- Specify plans to meet remaining standards development needs.

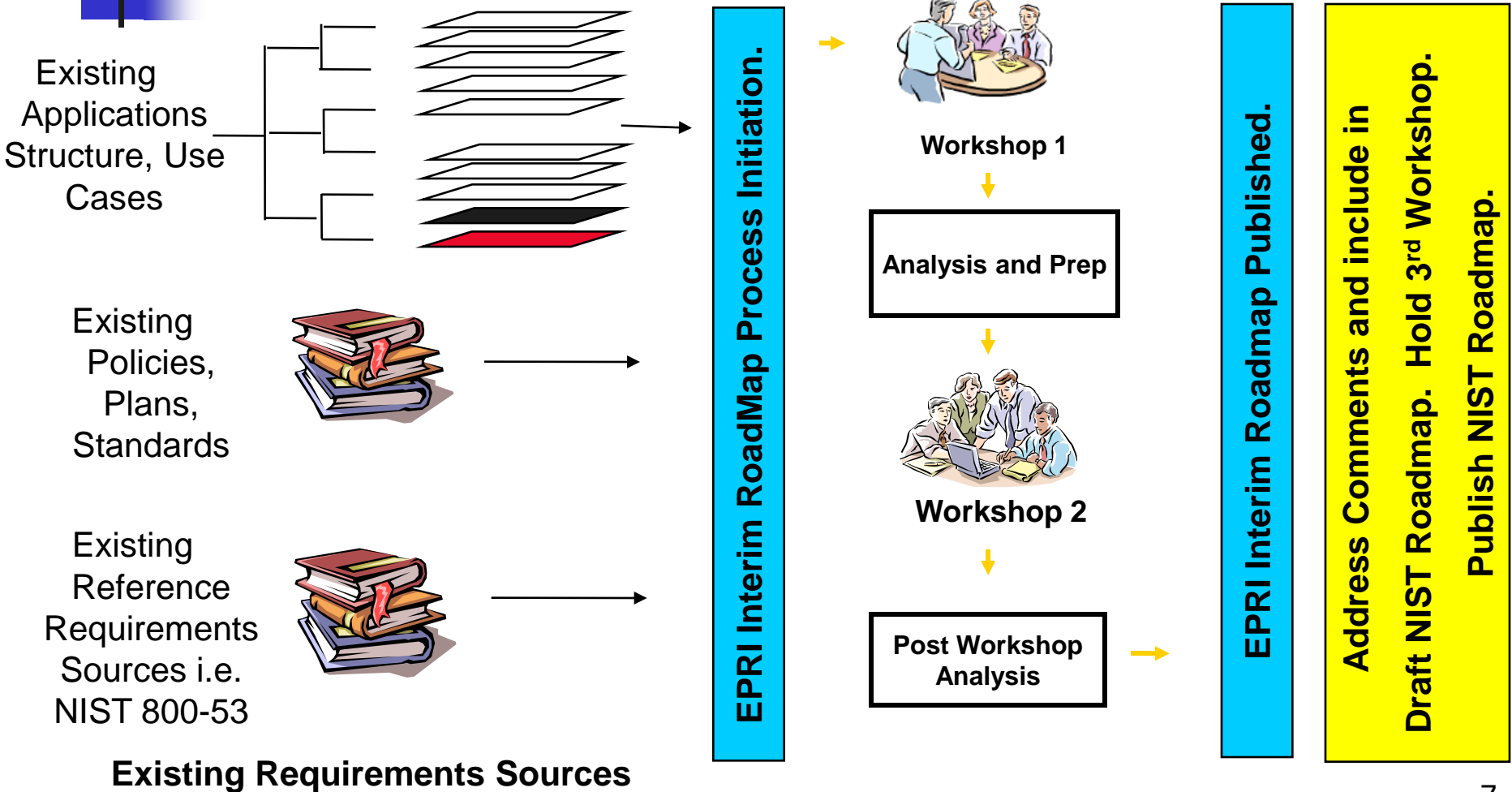


EPRI Interim Roadmap

EPRI was awarded a contract to develop an interim standards “roadmap” which was issued on June 17th; NIST will use this document as a starting point for developing a NIST Roadmap for Smart Grid Interoperability Standards.

- NIST is inviting public comment on the EPRI Roadmap. A request for comments will be issued shortly in the *Federal Register*.

Interim Roadmap Processes



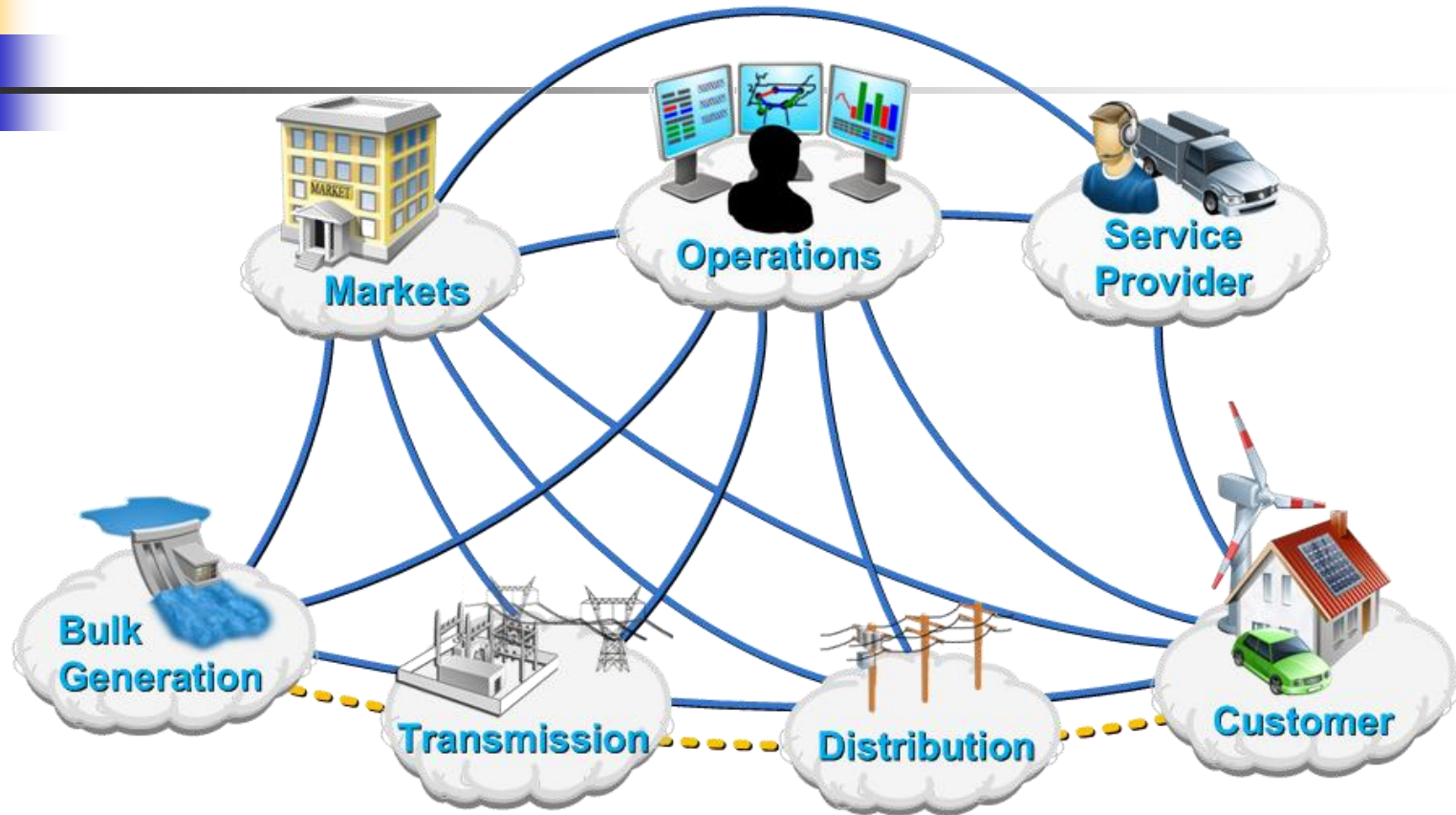


EPRI Roadmap

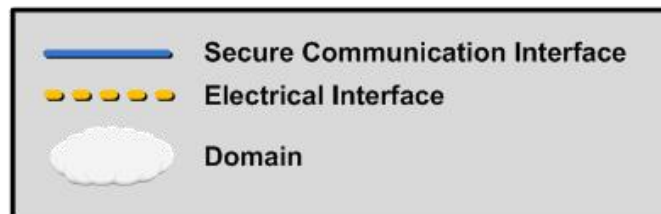
Both NIST and EEI have noted the absence of participation by many of the Country's major utilities in developing the EPRI Roadmap, and have asked for our help. Vendors, however, have been heavily involved in developing the standards.

- By early fall, after reviewing all the comments received, NIST intends to publish its version of the Smart Grid Interoperability Standards Roadmap.

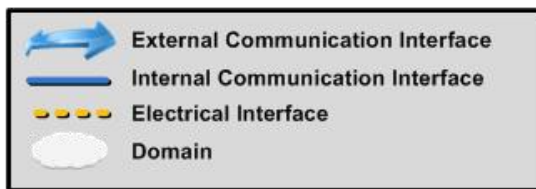
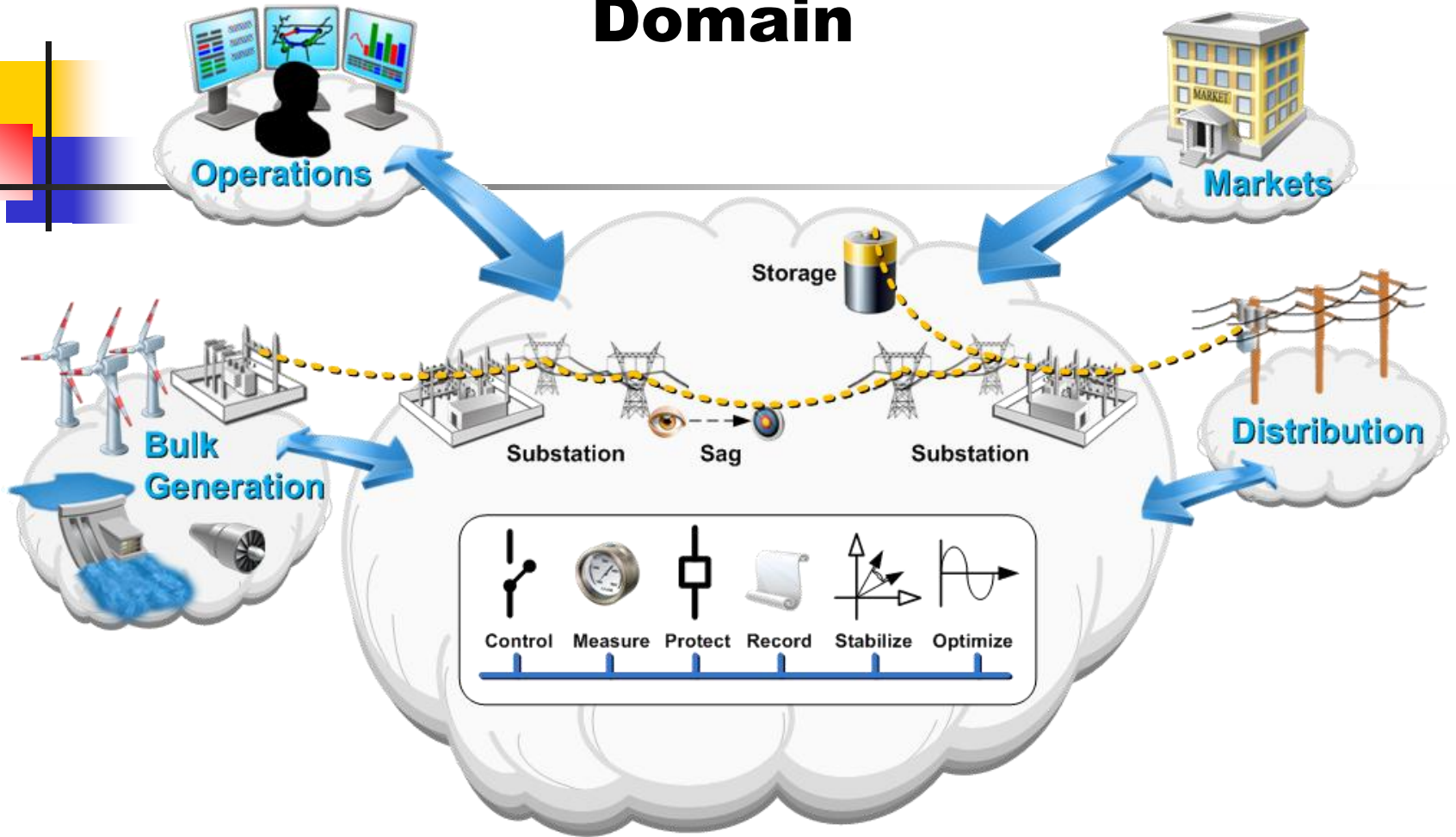
Smart Grid Conceptual Model



From EPRI Roadmap



Transmission Domain



From EPRI Roadmap

Smart Grid Standards Domains





NIST Release 1.0 Interoperability Standards

Published by NIST in Federal Register June 9th, comments due July 9th.

Standard	Application
AMI-SEC System Security Requirements	Advanced metering infrastructure (AMI) and Smart Grid end-to-end security
ANSI C12.19/MC1219	Revenue metering information model
BACnet ANSI ASHRAE 135-2008	Building automation
DNP3	Substation and feeder device automation
IEC 60870-6 / TASE.2	Inter-control center communications
IEC 61850	Substation automation and protection
IEC 61968/61970	Application level energy management system interfaces
IEC 62351 Parts 1-8	Information security for power system control operations
IEEE C37.118	Phasor measurement unit (PMU) communications



NIST Release 1.0 Interoperability Standards

Published by NIST in Federal Register June 9th, comments due July 9th.

Standard	Application
IEEE 1547	Physical and electrical interconnections between utility and distributed generation (DG)
IEEE 1686-2007	Security for intelligent electronic devices (IEDs)
NERC CIP 002-009	Cyber security standards for the bulk power system
NIST Special Publication (SP) 800-53, NIST SP 800-82	Cyber security standards and guidelines for federal information systems, including those for the bulk power system
Open Automated Demand Response (Open ADR)	Price responsive and direct load control
OpenHAN UtilityAMI 2008 HAN SRS	Home Area Network device communication, measurement, and control
ZigBee/HomePlug Smart Energy Profile	Home Area Network (HAN) Device Communications and Information Model



NIST Phase I Next Steps

From the DEWG Webcast, June 24th.

- June 9 – July 9 - NIST Release 1.0 Interoperability Standards posted for public comment.
- EPRI Interim Roadmap report to NIST posted for public comment.
- Mid-July - Address comments and include in Draft NIST Roadmap.
- August 3-4 - Third workshop – will focus on SDO roles/responsibilities to fill gaps.
- NIST Roadmap to be published mid-September.
 - Leads into Phase II



How Can We Help

By combining the efforts of all the PJM TOs through their involvement in the SGWG, and in collaboration with PJM, we could develop consensus comments on the EPRI Roadmap, and get our concerns into NIST.

- Remember, by early fall, NIST intends to issue its Smart Grid Interoperability Standards Roadmap, which means comments will be needed quickly after the *Federal Register* notice comes out, probably 30 days.
- The SGWG could focus more on the Transmission and System Operations standards, to narrow its focus.



How Can We Help

An initial meeting/conference call of the SGWG could be scheduled to develop an approach to gathering comments.

- The TOs could nominate specific individuals that would be more focused on the standards to participate with the SGWG.
- The SGWG would then give an interim report to its Steering Committee, in order to further refine the scope and methodology for assembling the comments.
- Comments could be filed jointly with PJM, or on a stand-alone basis.

Any Questions?

