

# IEEE P2030 Smart Grid Interoperability Power Engineering Technology Task Force 1 July 26, 2009

Hosted by Power Engineering Society, Calgary, AB

## Task Force Chairs

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# Agenda

- Call to Order/Introductions
- IEEE Patent Slides
- Overview of P2030 and TF-1 for new comers
- Sub Group Reports
  - Energy Sources
  - Transmission
  - Transmission Substations
  - Distribution
  - Load Side/Customer Premises
  - Cyber Security
- TF-2 Initial Report
- TF-3 Initial Report
- Next TF-1 Meeting
- Adjourn

# Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy.  
Participants:

- “Shall inform the IEEE (or cause the IEEE to be informed)” of the identity of each “holder of any potential Essential Patent Claims of which they are personally aware” if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
  - “Personal awareness” means that the participant “is personally aware that the holder may have a potential Essential Patent Claim,” even if the participant is not personally aware of the specific patents or patent claims
- “Should inform the IEEE (or cause the IEEE to be informed)” of the identity of “any other holders of such potential Essential Patent Claims” (that is, third parties that are not affiliated with the participant, with the participant’s employer, or with anyone else that the participant is from or otherwise represents)
- The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group

Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2

- Early identification of holders of potential Essential Patent Claims is strongly encouraged
- No duty to perform a patent search



# Patent Related Links

All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development.

Patent Policy is stated in these sources:

IEEE-SA Standards Boards Bylaws

*<http://standards.ieee.org/guides/bylaws/sect6-7.html#6>*

IEEE-SA Standards Board Operations Manual

*<http://standards.ieee.org/guides/opman/sect6.html#6.3>*

Material about the patent policy is available at

*<http://standards.ieee.org/board/pat/pat-material.html>*

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at [patcom@ieee.org](mailto:patcom@ieee.org) or visit <http://standards.ieee.org/board/pat/index.html>

This slide set is available at <http://standards.ieee.org/board/pat/pat-slideset.ppt>



# Call for Potentially Essential Patents

- If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:
  - Either speak up now or
  - Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or
  - Cause an LOA to be submitted

# Other Guidelines for IEEE WG Meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
  - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
  - **Don't discuss specific license rates, terms, or conditions.**
    - Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.
      - Technical considerations remain primary focus
  - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
  - **Don't discuss the status or substance of ongoing or threatened litigation.**
  - **Don't be silent if inappropriate topics are discussed ... do formally object.**

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See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.

# **P2030 Overall Goals**

- 1. Provide guidelines in understanding and defining smart grid interoperability of the electric power system with end-use applications and loads**
- 2. Focus on integration of energy technology and information and communications technology**
- 3. Achieve seamless operation for electric generation, delivery, and end-use benefits to permit two way power flow with communication and control**
- 4. Address interconnection and intra-facing frameworks and strategies with design definitions**
- 5. Expand knowledge in grid architectural designs and operation to promote a more reliable and flexible electric power system**
- 6. Stimulate the development of a Body of IEEE 2030 smart grid standards and or revise current standards applicable to smart grid body of standards.**

- **P2030 Draft Guide for Smart Grid Interoperability of Energy Technology and Information Technology Operation With the Electric Power System (EPS), and End-Use Applications and Loads. (PAR Approved March 19, 2009)**

## **Scope and Purpose**

- **Scope:** This document provides guidelines for smart grid interoperability. This guide provides a knowledge base addressing terminology, characteristics, functional performance and evaluation criteria, and the application of engineering principles for smart grid interoperability of the electric power system with end use applications and loads. The guide discusses alternate approaches to good practices for the smart grid.
- **Purpose:** This standard provides guidelines in understanding and defining smart grid interoperability of the electric power system with end-use applications and loads. Integration of energy technology and information and communications technology is necessary to achieve seamless operation for electric generation, delivery, and end-use benefits to permit two way power flow with communication and control. Interconnection and intra-facing frameworks and strategies with design definitions are addressed in this standard, providing guidance in expanding the current knowledge base. This expanded knowledge base is needed as a key element in grid architectural designs and operation to promote a more reliable and flexible electric power system.
- <http://grouper.ieee.org/groups/scc21/>

# Three Task Forces Formed to Lead the Effort

- TF-1 Power Engineering Technology
  - PES Centric
  - Focusing on definition of the needs
- TF-2 Information Technology
  - IEEE Computer Society Centric
- TF-3 Communications
  - IEEE Communications Society Centric

Unprecedented collaboration of these three IEEE Societies

First Meeting – 150 live participants (limited by space) approx 450 remote participants

# Many Attendees New to IEEE-SA Efforts

- PAR Process/Scope/Purpose
- SCC Policies and Procedures
- NesCom/RevCom/Balloting Processes
- Incorporation of external entity references
- Basic Purpose of an IEEE Standard effort
- Many participants in TF-1 that are not PES members

# TF-1 Attendees Consensus of Direction

- TF-1 will focus on functional requirements of interoperability
- Draw as much as possible from existing/concurrent efforts of others (PES, ISA)
- Proactively Outreach for input/participation (e.g. EEI, NARUC, NEMA)
- Realtime Collaboration with TF-2 and TF-3 essential to every aspect of our effort
- Break from traditional thinking to “future-proof” the efforts
- Solutions must accommodate existing infrastructure (e.g., 80,000 – 90,000 existing substations)

# TF-1 Sub Groups

- 6 Sub Groups Identified and Populated
  - Energy Sources
  - Transmission
  - Transmission Substation
  - Distribution
  - Load Side (Working Title)
  - Cybersecurity
  
- Additional Work Group for Market Operation needs thought
  
- Leadership Candidates identified and will be in place by June 8th
  
- Some amalgamation/segmentation may occur as determined by Sub Group activity

# Desirable Liaisons Identified

- TF-2
- TF-3
- ISA
- PES IGCC
- IEC (TC57)
  
- Others expected to develop as a result of outreach efforts and other SDO exposure to P2030

# Schedule of Activities Before Oct Plenary Session

- All Sub Groups to hold first meeting within two weeks
  - Refine Sub Group Direction
  - Establish schedule of Activities
- One live meeting of TF-1 (place and date TBD)
- Liaison with IGCC and PES Outreach (Calgary Annual Meeting)

# Sub Group Reports

Energy Sources – Alex Takahashi

Transmission – Madhav Manjrekar

Transmission Substation – Tony Johnson

Distribution – Greg Obenchain

Load Side/Customer Premises – Don Bowen

Cyber Security – Greg Bernstein

Information available at

<http://www.ieeeP2030.org>

# Closing Thoughts

- Relatively few utilities were present in Santa Clara
- PES members outnumbered by Computer Society and Communications Society members
- SCC21 is on a fast track to define Smart Grid interoperability
- TF-2 and TF-3 are looking to TF-1 and the PES to define the requirements

# Next Meeting

Sub Groups – visit the calendar at  
<http://www.ieeeP2030.org>

TF-1 To be determined

SCC21 (all three TFs) – Late October, IBM  
White Plain, New York (dates to be  
announced)