NASPI North American SynchroPhasor Initiative

Performance Requirements, Standards & Verification Task Team

- Task Team Co-Leaders:
  - David Bertagnolli, New England ISO
  - Jim O'Brian, Duke Energy
  - Farnoosh Rahmatian, Quanta Technology
- Task Team Technical Support: Henry Huang/PNNL
- Task Team Administrative Support: Teresa Carlon/PNNL
- This task team comprises ~ 200 members (>70 Active)

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Accomplished | Recently Accomplished | Ongoing High Priority | Under Consideration

Summary of PRSVTT/PSTT Activities

PMU/PDC Hardware

- PMU Testing And Calibration
- Phasor Accuracy
- Define PMU
- Commissioning & Maintenance
- PDC Functions
- PDC Testing
- Multi-function PMUs
- C37.118 for "Dynamic" Phasor
- C37.118.1 Advisory

Phasor Network

- Synchronization Techniques
- PMU Installation
- PDC Communication
- HW & SW Upgrade
- Network Connection
- Network Configuration
- *Network Testing
- *Naming Convention
- *Cyber Security Std for Phasor

Phasor Data

- *Format & compression std
- Phase Angle Reference
- Phasing Survey
- Phase Mapping
- Archival System

- Phasor Tutorials
- PSTT - IEEE Standards Development

Applications

- Req't for Visualization
- Req't for State Estimation
- Advanced Applications & Deployment
- Performance Metrics
- Phasor "ROI"
- Phasor Tools Repository

* Coordination with DNMTT

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Performance Requirements, Standards & Verification Task Team

- System requirements and monitoring
- Standards and guidelines development and coordination
- Migration between versions of standards and interaction with standard-setting bodies
- Performance requirements for data exchange
- System interoperability and compatibility testing, conformance, and certification

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PRSVTT Mission Statement

The PRSVTT is a group of professionals from utilities, academia, manufacturers and government. Our aim is to help the adoption of phasor measurement technology through standardization. We provide a forum for discussing, developing and monitoring requirements. We identify areas where synchrophasor technology would benefit from guidelines and standards. We coordinate the development of these guidelines with other NASPI task teams and, as appropriate, migrate those guides to IEEE Power & Energy Society (PES) Working Groups.

PRSVTT Update – 3/23/2015

- Dave Bertagnolli (& Tony Weekes)
  - Guide on Application Requirements and Benefit Metrics
- Frank Tuffner
  - NASPI PMU Data Application Classification Document – shared 3/10/2015
- Allen Goldstein Update
  - ICAP Synchrophasor Conformity Assessment
  - NASPI-wide PMU Application Data Requirements
- Harold Kirkham
  - Presentation on synchrophasor measurement definition and relevance to a mathematical model of synchrophasor, and need for update to C37.118.1
- And six research presentations

PRSVTT Active Initiatives

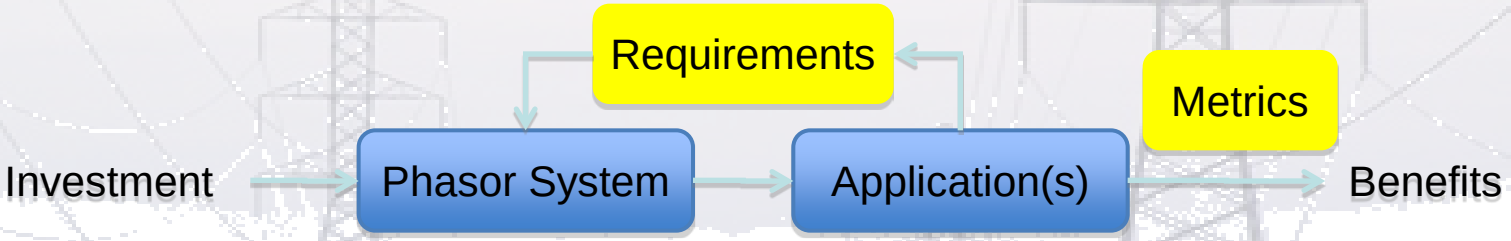
- Continue to Support ICAP* Synchrophasor Conformity Steering Committee for PMU certification
- Continue Coordination with IEEE PSRC (C23) and IEEE PES Technical Council
- Guide on Application Requirements and Benefit Metrics (Phasor “ROI”)
- Guide on Data Archival Systems – transferred to IEEE-PES (Substation Committee – C0) – support IEEE process
- Support of NASPI-wide “PMU Application Data Requirements Document.”

Guide on Using PMUs in Multi-function Devices

- **Scope**: Develop a guide on the use of synhrophasor functions in multi-function devices.
- **Background**: More and more multi-function devices (relays, DFRs, …) provide phasor functions. Concerns exist about availability, interference, resource competition, and cyber security.
- **Status**: Published on NASPI website (October 2014). Transfer to PSRC C23.

Guide on Phasor Application Requirements and Benefit Metrics (*Phasor "ROI"*)

- **Scope**: Develop a guide for developing phasor system specifications and evaluating benefits of intended phasor applications. (Defining phasor "ROI")



- **Background**: Post-SGIG needs investment from utility companies to sustain phasor development. This guide will help them to determine their phasor "ROI" in decision making.
- **Status**: Defined requirements and metrics. In the process of writing the basic guide (10 of 21 applications have first drafts ready). Need to coordinate with other focus areas based on their scope.

Guide on Phasor Data Archival Systems

- **Scope**: Develop a guide that addresses the following topics:
  - Archiving system hardware requirements
  - Data types and categorization
  - Data Management and Administration
  - Data query, reconstruction, and compression
  - Testing, training, and information dissemination
  - Cost vs. performance
- **Background**: Multiple formats for phasor data archiving exist, limiting data sharing, storage capabilities, portability, and interoperability.
- **Status**: Transferred to PSRC C23 (to be integrated through revision of IEEE Std. C37.1 by Substation Committee WG C0)