NASPI Work Group Meeting
Albuquerque, NM
April 24-26, 2018

Albuquerque Marriott
2101 Louisiana Boulevard NE
Albuquerque, New Mexico, 87110
(505) 881-6800

The North American Synchrophasor Initiative (NASPI) will hold its spring meeting in Albuquerque, New Mexico, April 24-26, 2018. This meeting will feature technical sessions and presentations on new synchrophasor-based applications for planning or operational purposes, as well as uses that enhance the reliability and resilience of the power system. We also plan to share and discuss new research in the synchrophasor technology deployment and advanced analytics. Robert W Cummings, the Senior Director of Engineering and Reliability Initiatives for the North American Electric Reliability Corporation will deliver the keynote speech.

On April 24th from 8:30AM – 12:00PM we will be hosting an optional technical workshop. Plan to join us for the *NASPI Technical Workshop — Emerging Network and Communications Technologies.*

NASPI Work Group registration. The *early bird* registration fee will be $390 for regular attendees and $75 for students. The regular rate will be $490 and $175 respectively for registrations made on March 26, 2018.

Book your hotel reservations. We have secured a block of rooms at the Albuquerque Marriott Hotel, the group rate for this block will be $139/night. You may reserve your room by using the link provided or calling 1 (888) 236-2427 and requesting a room from the North American Synchrophasor Initiative (NASPI) Work Group Meeting room block. The Albuquerque Marriott Hotel is also providing a limited number of rooms at the federal government per diem rate of $93/night, these rooms can **only** be reserved by sending an email to: Monica Sanchez monica.sanchez@marriottsales.com. Please include the following details: meeting title (North American Synchrophasor Initiative (NASPI) Work Group Meeting), guest name, company, phone number, email address, arrival date, and departure date. These rates are applicable for the nights of April 23-26, 2018 and will be available until April 2, 2018.

Draft Agenda (3/7/2018)

Tuesday, April 24, 2018	
8:00 - 9:00 am	NASPI Registration and coffee
8:30 – 12:00 pm	*NASPI Technical Workshop - Emerging Network and Communications Technologies*
12:00 – 1:00 pm	Lunch
1:00 – 1:10 pm	Welcome, Introductions, and Logistics Review – Jeff Dagle (PNNL)
1:10 - 1:20 pm	NASPI Project Manager Update – Alison Silverstein
1:20 – 1:45 pm	Keynote Speaker: Robert W Cummings, Senior Director of Engineering and Reliability Initiatives, North American Electric Reliability Corporation
1:45 – 2:15 pm	NASPI Awards - Alison Silverstein
2:15 – 2:25 pm	Department Of Energy (DOE) update - Phil Overholt
2:25 – 2:35 pm	Electric Power Research Institute (EPRI) update - Paul Myrda
2:35 – 2:45 pm	North American Electric Reliability Corporation (NERC) / Synchronized Measurement Subcommittee (SMS) update - Ryan Quint

2:45 – 2:55 pm	Institute of Electrical and Electronics Engineers (IEEE) update - Allen Goldstein
2:55 – 3:05 pm	Peak Reliability update - Hongming Zhang
3:05 – 3:20 pm	Break
3:20 – 4:35 pm	Session 1: • Case Study: Benefits and Lessons - using synchrophasor measurements for Wide Area Situational Awareness (WASA)_ Dan Brancaccio, BRIDGE; Tariq Rahman, SDG&E • The Role of a High-Performance Sandbox in Your Synchrophasor Analytics Pipeline_ Kevin D. Jones, Dominion Energy; Sean Murphy, PingThings, Inc. • A Simplified Data Architecture for Synchrophasor Data_ Matthew Rhodes, Salt River Project; Jerry Schuman & Sean Murphy, PingThings, Inc.
4:35 – 5:00 pm	NASPI updates and adjournment

Wednesday, April 25, 2018	
8:00 – 9:00 am	Registration and coffee
9:00 – 10:40 am	Session 2 • Substation Secondary Asset Health Monitoring Based on Synchrophasor Technology -- DE-OE0000850 Project Update_ Heng Chen, Lin Zhang, Xinyang Zhou, Tingyang Zhang, & Joshua Chynoweth, Electric Power Group; Yanfeng Gong & Qiushi Wang, American Electric Power • PMU Emulator for Power System Electromechanical Dynamics Simulators_ Evangelos Farantatos & Mahendra Patel, EPRI; Anurag Srivastava & Param Banerjee, Washington State University • Time Synchronization Interval Attack: Impact and Detection_ Jiecheng Zhao, Yilu Liu, University of Tennessee; Yilu Liu, Peter Fuhr, & Marissa E. Morales Rodriguez, Oak Ridge National Laboratory • Vulnerability of Synchrophasor-based WAMPAC Applications' to Time Synchronization Spoofing_ Luigi Vanfretti, Rensselaer Polytechnic Institute; M. Shoaib Almas, Royal Institute of Technology KTH
10:40 – 10:55 am	Break
10:55 – 12:10 pm	Session 3 • Special Reliability Assessment on Oscillatory Modes in North American Interconnections_ Mani V. Venkatasubramanian, Ryan Quint, & John Skeath, NERC • Recent Progress on Forced Oscillation Detection and Source Locating Findings at Peak Reliability_ Jiawei 'Alex' Ning & Hongming Zhang, Peak Reliability • PMU Measurement-Model Based Voltage Security Monitoring Application_ Keith Mitchell, MISO; Saugata Biswas, Tushar, Anil Jampala, Manu Parashar, GE Power; Chaitanya Baone, GE Global Research Center
12:10 – 1:10 pm	Lunch
1:10 – 2:25 pm	Session 4 • Wide-Area Synchrophasor based Transient Instability Prediction and Control_ Dinesh Rangana Gurusinghe, RTDS Technologies Inc; Neethu Raju & Athula D. Rajapakse, University of Manitoba • Enhancing the System Resiliency using PMU based RAS Scheme_ Tushar, Vignesh V, P. Banerjee, A. Srivastava, Washington State University • System Operator Synchrophasor Training_ Bill O'Brien, PJM Interconnection
2:25– 2:40 pm	Break
2:40 – 6:00 pm	**Task Team Breakouts**
	Control Room Solutions Task Team • CRSTT business

	• Training System Operators in Synchronized Phasor Measurement Technology by simulating major WECC system events_ Bharat Bhargava, Advanced Power System Technologies; Armando Salazar, Southern California Edison Co • Real Time Applications Using Linear State Estimation Technology_ Ken Martin & Lin Zhang, Electric Power Group • 3-level Measurement Data Validation System_ Alexey Danilin, Pavel Kovalenko, & Viktor Litvinov, GRT Corporation
	Data & Network Management Task Team • DNMTT business • Real-time Cyber-Physical Co-simulation of Synchrophasor-based Systems Coupled with Communication Network Emulation_ Vahid Jalili-Marandi & Thomas Kirk, OPAL –RT; Jason Protacio, SCALABLE Network Technologies
	Distribution Task Team • DisTT business • Metrological characterization of a calibrator for static and dynamic characterization of Distribution Network PMUS_ Guglielmo Frigo, Asja Derviškadić, & Mario Paolone, Swiss Federal Institute of Technology (EPFL) – Distributed Electrical System Laboratory (DESL) • Monitoring of Active Distribution Networks using Synchrophasor Applications benefiting Joint T&D Operations_ Luigi Vanfretti, Rensselaer Polytechnic Institute • The Kaiser Richmond Microgrid: scheduling and control of renewable power with phasor feedback_ Raymond De Callafon, University of California San Diego; David Bliss, Charge Bliss • Intelligent PMU_ Alexey Danilin, Pavel Kovalenko, & Viktor Litvinov, GRT Corporation
	Engineering Analysis Task Team • EATT business • Machine Learning Techniques for Oscillation Baselining in the Western Interconnection_ Jim Follum, Jason Hou,, Pavel Etingov, Frank Tuffner, & Heng Wang, Pacific Northwest National Laboratory; Dmitry Kosterev & Gordon Matthews, Bonneville Power Administration • Big Data Framework for Synchrophasor Data Analysis_ Pavel Etingov, Jason Hou, Huiying Ren, Heng Wang, & Dimitri Zarzhitsky, Pacific Northwest National Laboratory • Surveying Time Series Data Platforms: A Technology Overview with Benchmarks _ Sean Murphy, PingThings, Inc.; Kevin D. Jones, Dominion Energy; Michael Andersen, UC Berkeley • Applicability of Synchrophasor Data for Fault Analysis _ Nuwan Perera, ERLPhase Power Technologies Ltd. • New Approaches to Protection and Control Enabled with GPS-Synchronized Merging Units _ Sakis Meliopoulos, Georgia Institute of Technology
	Performance, Requirements, Standards & Verification Task Team • PRSVTT business • PMU-based Non-Linear State Estimation for network areas with limited measurement data_ Gilburt Chiang, Bigwood Systems, Inc. • Using Virtual PMU measurements to evaluate Generator Control System Performance_ Christoph Lackner & Dr. Joe H Chow, Rensselaer Polytechnic Institute; Dr. Felipe Wilches-Bernal, Sandia National Laboratories
6:00 – 8:00 pm	Reception – Marriott

Thursday, April 26, 2018	
8:00 – 9:00 am	Registration and coffee
9:00 – 10:00 am	Task Team Report-outs

	• CRSTT • DisTT • PRSVTT • DNMTT • EATT
10:00 – 10:50 am	Session 5 • Event Detection and the Importance of Feature Selection_ Brett Amidan & Jim Follum, Pacific Northwest National Laboratory; Tianzhixi Yin, University of Wyoming • Advanced Machine Learning for Synchro-Phasor Technology_ Michael (Misha) Chertkov, Los Alamos National Laboratory
10:50 – 11:05 am	Break
11:05 – 12:20 pm	Session 6 • Automated Power Plant Model Verification (APPMV) at ISO New England_ Meng Wu, ASU; Weihong Huang, UTK; Qiang (Frankie) Zhang & Xiaochuan Luo, ISO-NE • Input Estimation for Power Plant Model Validation_ Josh Wold, Dan Trudnowski, & Matt Donnelly, Montana Tech • SDG&E Experience in Real-time Measurements of Transmission Line Impedances_ Tariq Rahman & Hassan Ghoudjehbaklou, SDG&E; Vahid Salehi, Quanta Technology
12:20 - 1:20 pm	Lunch
1:20 – 2:35 pm	Session 7 • The Pacific DC Intertie Wide Area Damping Controller Utilizing Real-Time PMU Feedback_ Brian J. Pierre, Felipe Wilches-Bernal, David A. Schoenwald, Ryan T. Elliott, Raymond H. Byrne, & Jason C. Neely, Sandia National Laboratories; Daniel J. Trudnowski, Montana Tech University • Real Power Modulation of a Wind Turbine Using Wide-Area PMU Feedback_ Ian Gravagne, Baylor University • Under-Frequency Load Shedding based on PMU Frequency and ROCOF Measurement_ Asja Derviškadić, Zuo Yihui, Guglielmo Frigo, & Mario Paolone, Swiss Federal Institute of Technology (EPFL) – Distributed Electrical System Laboratory (DESL)
2:35 – 2:50 pm	Closing comments and adjournment