



**NASPI Work Group Meeting  
San Diego, CA  
April 15-17, 2019**

**Hilton San Diego Mission Valley  
901 Camino Del Rio South  
San Diego, California, 92108**

The North American SynchroPhasor Initiative (NASPI) Work Group meeting will be held in San Diego, California, April 15-17, 2019, featuring technical sessions and presentations that showcase innovative applications of synchrophasor technology. We will also feature opportunities associated with wide-area streaming applications of high-speed (so-called “point-on-wave”) time-synchronized measurements, including issues associated with inverter-based generation and the ability to maintain essential reliability services. Mr. Ali Yari, Director, Electric Grid Operations, from San Diego Gas & Electric (SDG&E) is the keynote speaker.

[NASPI technical workshop](#) related to communication and networking issues delivered the afternoon of April 15, 2019.

**Final Agenda**

<b>Monday, April 15, 2019 – Cortez II &amp; III</b>	
1:00 - 5:00 pm	<b>Technical Workshop:</b> <i>In-depth presentations and panel discussions related to communications and networking issues</i>
<b>Tuesday, April 16, 2019 – Cortez II &amp; III</b>	
8:00 - 9:00 am	<b>Registration and coffee - Cortez Foyer</b>
9:00 - 9:10 am	Welcome, Introductions and Logistics Review -- Jeff Dagle (PNNL)
9:10 - 9:30 am	<a href="#">Keynote Speaker</a> -- Ali Yari, Director, Electric Grid Operations, San Diego Gas & Electric (SDG&E)
9:30 - 9:40 am	NASPI Project Manager Update -- Alison Silverstein
<b>Organizational Updates</b>	
9:40 – 9:50 am	<a href="#">US Department of Energy (DOE)</a> -- Ali Ghassemian
9:50 – 9:55 am	<a href="#">Electric Power Research Institute (EPRI)</a> -- Paul Myrda
9:55 – 10:00 am	<a href="#">North American Electric Reliability Corporation (NERC)</a> -- Bob Cummings
10:00 - 10:20 am	Updates on <a href="#">Dominion Energy’s Synchrophasor Analytics Development Initiative</a> -- Kevin Jones (Dominion Energy)
10:20 - 10:35 am	<b>Break – Cortez I</b>
10:35 – 11:00 am	Tariq Rahman (SDG&E) <ul style="list-style-type: none"> <li>• <a href="#">Real-time monitoring of controls and power flow on 2x400MVA 230kV Phase-shifting Transformer using PMUs</a> -- Tariq Rahman &amp; Bill Cook (San Diego Gas &amp; Electric) and Kamal Garg (Schweitzer Engineering Laboratories)</li> <li>• <a href="#">Inertial Response of Synchronous Condensers: SDG&amp;E Experiences</a> -- Hassan Ghoudjehbaklou &amp; Tariq Rahman (San Diego Gas &amp; Electric)</li> </ul>

<b>Control Implementation</b>	
11:00 - 11:15 am	<a href="#">Data Considerations in Real-Time PMU Feedback Control Systems</a> --David Schoenwald, Felipe Wilches-Bernal, Brian Pierre, Ryan Elliott (Sandia National Laboratories) and Dan Trudnowski (Montana Technological University)
11:15 - 11:30 am	<a href="#">Adaptive Wide-Area Damping Controller Using Transfer Function Model Derived from Measurements: Case Studies on Realistic Power Grid Models</a> -- Yilu Liu (The University of Tennessee/Oak Ridge National Lab), Lin Zhu, Yi Zhao, Huangqing Xiao, Ibrahim Altarjami (The University of Tennessee), Evangelos Farantatos, Mahendra Patel (Electric Power Research Institute), Atena Darvishi, George Stefopoulos (New York Power Authority) and Giorgio Giannuzzi & Roberto Zaottini (TERNA)
<b>Point-on-wave Measurements</b>	
11:30 - 11:45 am	Session Introduction; <a href="#">Point-on-wave Measurements Introduction</a> -- Farnoosh Rahmatian
11:45 - 12:00 pm	Development of low-cost time synchronized point-on-wave data recorder and fault-tolerant grid frequency measurements technologies -- Lingwei Zhan, Bailu Xiao, Zhi Li, Wenxuan Yao (Oak Ridge National Laboratory), Yilu Liu (Oak Ridge National Laboratory, The University of Tennessee), Fuhua Li, He Yin, Shutang You (The University of Tennessee), and Maozhong Gong (GE Global Research)
12:00 - 1:00 pm	<b>Lunch – Cortez I</b>
<b>Point-on-wave Measurements (continued)</b>	
1:00 - 1:15 pm	<a href="#">Point-on-wave Data of EPFL- campus Distribution Network</a> -- Asja Derviškić, Guglielmo Frigo & Mario Paolone (Swiss Federal Institute of Technology (EPFL) – Distributed Electrical System Laboratory (DESL))
1:15 - 1:30 pm	<a href="#">Escaping Point-on-Wave Ground Hog Day with the National Infrastructure and Software-defined Sensors</a> -- Dr. Kevin D. Jones (Dominion Energy), Dr. Benjamin Bengfort (PingThings), and Michael Andersen (University of California Berkeley)
1:30 - 1:45 pm	<a href="#">Streaming Time-Series Platform for Power System Operations Reliability and Resilience</a> -- Dr. Greg Zweigle, Jared Bestebreuer & Eric Hewitt (Schweitzer Engineering Laboratories)
1:45 - 2:00 pm	<a href="#">Analyzing Point-on-Wave Measurements with the Archive Walker Tool</a> -- Jim Follum, Pavel Etingov, Frank Tuffner, Heng Wang, Urmila Agrawal (Pacific Northwest National Laboratory) and Dmitry Kosterev, Steve Yang & Tony Faris (Bonneville Power Administration)
2:00 - 2:15 pm	<b>Break – Cortez I</b>
2:15 - 3:15 pm	PANEL: Big Data Analytics Platforms Architecture Requirements and Analysis Techniques ( <a href="#">Introduction</a> ) Moderator: Matthew Rhodes (Salt River Project). Speakers: Dr. <a href="#">Anamitra Pal</a> (Arizona State University), <a href="#">Deep Deka</a> (Los Alamos National Lab), <a href="#">Sean Murphy</a> (Ping Things), <a href="#">Tom Anderson</a> (SAS), & <a href="#">Viktor Litvinov</a> (GRT Corp)
<b>Statistical Analysis and Deep Learning</b>	
3:15 – 3:30 pm	<a href="#">EATT White Paper: Data Mining Techniques and Tools for Synchrophasor Data</a> - Evangelos Farantatos
3:30 – 4:00 pm	<a href="#">Synchrophasor Analytics using Cloud Based Machine Learning Platform</a> - Pavel Etingov, Jason Hou, Huiying Ren, & Heng Wang (Pacific Northwest National Laboratory)
4:00 – 4:30 pm	<a href="#">Grid Eye to Grid Mind - A Data-driven Autonomous Grid Dispatch Robot Based on PMU Measurements</a> , Di Shi, Ruisheng Diao, Jiajun Duan, Zhe Yu (GEIRI North America), and Zhiwei Wang, Xiao Lu, Haifeng Li, Chunlei Xu (State Grid Jiangsu Electric Power Company)
4:30 – 5:00 pm	<a href="#">Statistical learning based online prediction, detection and classification of anomalies in power grids</a> -- Andrey Lokhov, Christopher Hannon, Deepjyoti Deka & Marc Vuffray (Los Alamos National Laboratory)

5:00 – 5:15 pm	<a href="#">Deep Learning Application for Power Grid Event Detection and Classification Using the Synchrophasor Data</a> -- Tianzhixi Yin & Brett Amidan (Pacific Northwest National Laboratory)
6:00 - 8:00 pm	<b>NASPI Reception, Awards, &amp; Poster Session – Cortez I</b>

<b>Wednesday, April 17, 2019 – Cortez II &amp; III</b>	
8:00 - 9:00 am	<b>Registration and coffee – Cortez Foyer</b>
9:00 - 9:30 am	<a href="#">Use of Time-Synchronized Measurements in the Real-Time Ops Horizon</a> -- Michael Cassiadoro (Total Reliability Solutions) and Eric Andersen (Pacific Northwest National Laboratory)
9:30 - 10:00 am	Performance, Requirements, Standards & Verification Task Team ( <a href="#">PRSVTT</a> )
10:00 - 10:30 am	Data & Network Management Task Team ( <a href="#">DNMTT</a> )
10:30 - 10:45 am	<b>Break – Cortez I</b>
10:45 - 11:15 am	Engineering Analysis Task Team ( <a href="#">EATT</a> )
11:15 - 11:45 am	Distribution Task Team ( <a href="#">DisTT</a> )
11:45 - 12:15 pm	Control Room Solutions Task Team ( <a href="#">CRSTT</a> )
12:15 – 1:15 pm	<b>Lunch – Kensington Terrace</b>
<b>Testing and Standards</b>	
1:15 - 1:30 pm	<a href="#">Life Cycle Testing of Synchrophasor Based Systems used for Protection, Monitoring and Control</a> -- Mladen Kezunovic (Texas A&M University)
1:30 - 1:45 pm	<a href="#">Vulnerability Analysis of Distance Relays using PMU data</a> -- Gopal Gajjar, Rajeev Gajbhiye, S. Soman (Indian Institute of Technology Bombay), and Vahid Madani (Institute of Electrical and Electronics Engineers)
<b>Model Validation</b>	
1:45 - 2:00 pm	<a href="#">How Well Does a Model Simulation Match with System Response?</a> -- Mani Venkatasubramanian & Ebrahim Rezaei (Washington State University)
2:00 – 2:15 pm	<b>Break – Cortez I</b>
<b>DOE Research Updates</b>	
2:15 – 2:30 pm	<a href="#">Real Time Applications Using Linear State Estimation Technology</a> -- DE-OE0000849 Project Update -- Ken Martin, Lin Zhang, Neeraj Nayak, Iknor Singh, Wenyu Ju (Electric Power Group), Tony Faris (Bonneville Power Administration), and Atena Darvishi (New York Power Authority)
2:30 – 2:45 pm	<a href="#">Substation Secondary Asset Health Monitoring Based on Synchrophasor Technology</a> -- DE-OE0000850 Project Update -- Neeraj Nayak, Lin Zhang, Tianyu Hu (Electric Power Group), Yanfeng Gong & Qiushi Wang (American Electric Power)
2:45 – 3:00 pm	<a href="#">A Generic and Robust Model Validation Software with Real-world Multi-event Applications</a> (Funded by the US Department of Energy under Award Number DE-OE0000858)-- Sherman Chen (Pacific Gas and Electric Company), Xiaochuan Luo, Frankie Zhang (ISO-NE), Manu Parashar, Krish Srinivasan (GE Grid Solutions), George Zheng (Powertech Labs), & Honggang Wang (GE Global Research), and Haris Ribic, & Feng Dong (GE Energy Consulting)
3:00 - 3:15 pm	<a href="#">A Practical Approach to Streaming Point-on-wave Data</a> -- J. Ritchie Carroll (Grid Protection Alliance, Inc.)
<b>NERC Update</b>	
3:15 – 3:35 pm	<a href="#">EI Large Oscillation Event</a> -- Aftab Alam & Tim Fritch (North American Electric Reliability Corporation)
3:35 – 3:50 pm	<a href="#">SMS meeting preview</a> -- Aftab Alam & Tim Fritch (North American Electric Reliability Corporation)
<b>4:00 pm</b>	<b>Adjourn</b>

NASPI would like to say “**THANK YOU**” to the following partners for their support

**Gold Level Partners**



**SCHWEITZER  
ENGINEERING  
LABORATORIES**



**GEIRINA**  
GEIRI NORTH AMERICA  
GLOBAL ENERGY INTERCONNECTION RESEARCH INSTITUTE NORTH AMERICA

**Silver Level Partners**



**PingThings**

If you are interested in becoming a meeting partner, please email Paul Myrda [pmyrda@epri.com](mailto:pmyrda@epri.com) for additional information.