

NASPI Update

September 26, 2023

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Pacific Northwest National Laboratory

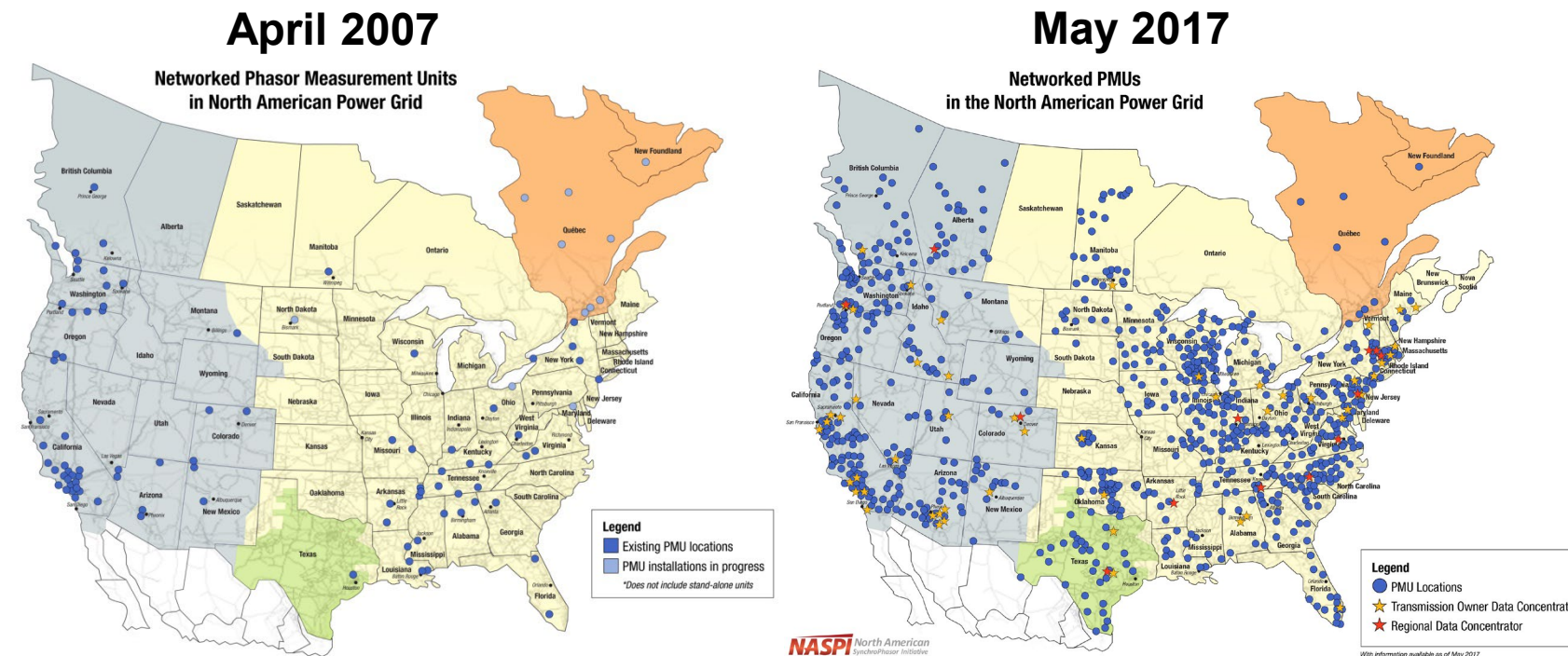


The North American SynchroPhasor Initiative (NASPI)

The U.S. Department of Energy (DOE) and EPRI are working together closely with industry to enable wide-area time-synchronized measurements that will enhance the reliability of the electric power grid through improved situational awareness and other applications.

Current and emerging areas of emphasis/focus for NASPI:

- Networking and communications technologies (advanced architectures)
- Statistical analysis and deep learning for extracting actionable information from large datasets
- High-resolution sensors to characterize the transient behavior of inverter-based resources and other fast-acting phenomena



“Better information supports better - and faster - decisions.”

NASPI Status Report

- Prior work group meeting - April 4-5, 2023, Tempe AZ (in-person)
 - ✓ Vendor show and poster session
 - ✓ Inverter-Based-Resources Super Session
 - ✓ Practical Applications of Synchrophasor Technology
 - ✓ Streaming Telemetry Transport Protocol (STTP)
 - ✓ Data Quality
 - ✓ Advanced Applications
 - ✓ Inertia Estimation
 - ✓ Visualization and Operator Training
- This work group meeting – September 26-27, Charlotte NC (hybrid)
 - ✓ Utility digital transformation and DOE prize panel
 - ✓ Resilient Precision Timing
 - ✓ Operational Requirements for the Grid of the Future
 - ✓ Experiences with Integrating Inverter Based Resource Generation
 - ✓ Energy Management System (EMS) Tools and Technologies
 - ✓ Utility Experiences Deploying Time Synchronized Measurements
 - ✓ NASPI – NERC SMWG Joint Workshop - Next Generation Measurement-Based Reliability Tools
- Next work group meeting – April 16-17, 2024, Salt Lake City, UT (in-person)

Tuesday's Agenda – September 26

All Times Eastern Time Zone

Tuesday, September 26, 2023 (Eastern Time)	
8:30 - 9:30 am	Registration and coffee
	Session 1: Keynote & NASPI Update
9:30 - 9:40 am	Welcome, Introductions, and Logistics Review: Jeff Dagle (PNNL)
9:40 - 10:10 am	Past-Present-Future Keynote Speaker: Dr. Damir Novosel (Quanta Technology)
10:10 – 10:30 am	NASPI Update – Jeff Dagle (PNNL)
10:30 – 11:00 am	Break
	Session 2: Digitizing Utilities Prize
11:00 – 11:05 am	Prize Overview - Jim Follum (PNNL) on behalf of Sandra Jenkins (DOE)
11:05 – 11:15 am	Dominion's Perspective - Kevin Jones (Dominion)
11:15 – 11:30 am	Contestant Presentation - Bruno Leao (Siemens)
11:30 – 11:45 am	Contestant Presentation - Christoph Lackner (Grid Protection Alliance)
11:45 – 12:00 pm	Additional Contestants and Wrap Up - Jim Follum (PNNL)
12:00 – 1:00 pm	Lunch
	Session 3: Control Room Solutions Task Team (CRSTT)
1:00 – 1:15 pm	CRSTT Business – James Kleitsch (ATC) (<i>virtual</i>) & Michael Nugent (SPP)
1:15 – 1:35 pm	Group Discussion: Obstacles to integration in Real Time Operations – James Kleitsch (ATC)

Tuesday's Agenda – September 26 cont.

All Times Eastern Time Zone

	Session 4: Data and Network Management Task Team (DNMTT)
1:35 – 1:50 pm	DNMTT Business – Dan Brancaccio (Quanta Technology)
1:50 – 2:10 pm	Cloud-based Demo of Linear State Estimation - Xiaochuan Luo (ISO-New England) (<i>virtual</i>)
2:10 – 2:30 pm	Break
	Session 5: Distribution Task Team (DisTT) Projects Kick-off – Panos Moutis
2:30 – 2:40 pm	SRP Synchrophasors From Value Proposition to Implementation – Matthew Rhodes (SRP)
2:40 – 2:50 pm	Utility-Vendor Partnering on Designing and Deploying Synchronized Measurement Applications - Ali Alvi (ComEd) and Marianna Vaiman (V&R Energy)
2:50 – 3:00 pm	Making the Case for High Performing PMUs in Distribution Grids - Yoav Sharon (S&C Power Company)
3:00 – 3:10 pm	Synchronized Measurements for Controlling Inverter Based Resources - Evangelos Farantatos (EPRI) (<i>virtual</i>)
3:10 – 3:20 pm	Not all distribution feeders need phasor measurements - Dan Dietmeyer (SDG&E)
3:20 – 3:30 pm	Q&A and discussion – Dan Dietmeyer (SDG&E) & Panos Moutis (City College of New York)

Tuesday's Agenda – September 26 cont.

All Times Eastern Time Zone

	Session 6: Engineering Analysis Task Team (EATT)
3:30 – 3:45 pm	EATT Business – Evangelos Farantatos (EPRI) & Matthew Rhodes (SRP)
3:45 – 4:05 pm	IBR Synchrophasor Perspective - Priya Mana (PNNL)
4:05 – 4:25 pm	Utility Experience with IBR Integration and Synchrophasor Monitoring - TBD
	Session 7: Technology Partner Flash talks (5 min ea.)
4:25 – 5:00 pm	<ul style="list-style-type: none">• Schweitzer Engineering Laboratories - Jared Bestebreur (Gold Partner)• PingThings – Sean Murphy (Gold Partner)• Meinberg USA - Allan Armstrong (Silver Partner)• SATEC Inc. -Stephen Suto (Silver Partner)• V&R Energy – Marianna Vaiman (Silver Partner)• NextNav – Ed Mortimer and Cristina Seibert (Silver Partner)
5:00 – 5:15 pm	Recap of Day 1 – Jeff Dagle
5:15 - 7:00 pm	NASPI Reception, Vendor Show, & Poster Session

Wednesday's Agenda – September 27

Wednesday, September 27, 2023 (Eastern Time)	
8:30 - 9:30 am	Registration and coffee
9:30 - 9:35 am	Welcome, Introductions, and Logistics Review: Jeff Dagle (PNNL)
	Session 8: Organizational Updates
9:35 - 9:55 am	NERC Synchronized Measurement Working Group (SMWG) – Clifton Black (Southern Company)
9:55 - 10:15 am	IEEE – Yi Hu (Quanta) (<i>virtual</i>)
10:15 - 10:35 am	CIGRE C4/C2.62 liaison report – Evangelos Farantatos (EPRI) (<i>virtual</i>)
10:35 - 10:55 am	EIDSN – Kent Simendinger (<i>virtual</i>)
10:55 - 11:10 am	Break
	Session 9: Resilient Precision Timing
11:10 - 11:30 am	GNSS Vulnerabilities – Common-Sense Solutions – Allan Armstrong (Meinberg USA)
11:30 - 11:50 pm	Lessons Learned from the Use of the Precision Time Protocol by Electricity Utilities – Dan Burch (Oscilloquartz)
11:50 - 12:10 pm	Maintaining Precise Time for Power System Applications in the Event of Wide-Area Loss of GPS - Motaz Elshafi (Schweitzer Engineering Laboratories, Inc.) and Dustin Williams (Burns and McDonnell)
12:10 - 12:30 pm	IEEE P1952 Standard Summary Update – Jeff Dagle (PNNL)
12:30 - 1:30 pm	Lunch

Wednesday's Agenda – September 27 cont.

All Times Eastern Time Zone

	Session 10: Operational Requirements for the Grid of the Future
1:30 - 1:50 pm	Electricity Transmission System Research and Development: Grid Operations – Anjan Bose (Washington State University) and Tom Overbye (Texas A&M University) (<i>virtual</i>)
	Session 11: Experiences with Integrating Inverter Based Resource Generation
1:50 - 2:20 pm	IBR Model Verification Using Measurement Playback Method - Qiang “Frankie” Zhang and Xiaochuan Luo (ISO-NW) (<i>virtual</i>)
	Session 12: Energy Management System (EMS) Tools and Technologies
2:20 - 2:40 pm	Global WAMS and WAMPAC – Manu Parashar (GE Vernova)
2:40 – 3:00 pm	Aspentech (OSI) experience with PMUs in an EMS environment - Roopa Akkala (OSI)
3:00 – 3:20 pm	PMU-based EMS and Power Network Analysis Applications - Marianna Vaiman (V&R Energy) and Robin Manuguid (SDG&E)
3:20 – 3:35 pm	Break – 15 mins

Wednesday's Agenda – September 27 cont.

All Times Eastern Time Zone

	Session 13: Utility Experiences Deploying Time Synchronized Measurements
3:35 - 3:55 pm	TBD – David Schooley (ComEd) (<i>virtual</i>)
3:55 – 4:15 pm	Operating Procedures for Oscillation Monitoring and Mitigation – Urmila Agrawal (CASIO) (<i>virtual</i>) on behalf of RC West
4:15 – 4:35 pm	PJM Use Case of Synchrophasors–Automated Generator Model Validation (AGMV) - Yang Chen (PJM)
	Session 14: NASPI – NERC SMWG Joint Workshop – Clifton Black Title: Next Generation Measurement-Based Reliability Tools
4:35 – 4:45pm	Workshop introduction, scope, and objectives – Clifton Black (Southern Company)
4:45 - 5:30 pm	<ul style="list-style-type: none">• NERC RTOS – Tim Beach, NERC RTOS Vice-Chair (<i>virtual</i>)• Schweitzer Engineering Laboratories (SEL) – Richard Kirby• EPRI – Evangelos Farantatos• Rensselaer Polytechnic Institute (RPI) – Joe Chow (<i>virtual</i>)
5:30 – 5:40 pm	Closing remarks – Jeff Dagle



**Thank you
NASPI Partners for your continued support**



PingThings

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NASPI 2023 Webinar Series

- Webinar materials are available at www.naspi.org/webinars
- June 28 - Leveraging Risk Information to Protect Critical Operation & Assets - Brad Rossiter (Quanta)
- July 26 - Securely Storing Archival synchrophasor Data in the Cloud: Access Control and Usage for CIP NERC Compliant Government Data on AWS - Alex Curley and Alia Wilkinson (Source70Consulting)
- August 23 - The 2003 Blackout, Twenty Years Later - Bob Cummings (Red Yucca Power Consulting)
- The winter webinar series will kick off January

POWER SECTOR TRANSMISSION & DISTRIBUTION DATA AND INFORMATION WEBINAR SERIES

TOPIC 1: T&D Information Sharing

Wednesday, October 11 | 10:00 a.m. to 12:30 p.m. PDT

TOPIC 2: Cross-sector & Open Data Sharing and Risks

Wednesday, October 18 | 10:00 a.m. to 12:00 p.m. PDT

TOPIC 3: Sensor Systems and Platforms

Wednesday, October 25 | 10:00 a.m. to 12:00 p.m. PDT

TOPIC 4: Sensor Data and Device Research

Wednesday, November 1 | 10:00 a.m. to 12:00 p.m. PDT

REGISTER
TODAY!



NASPI Roadmap

A gap analysis was performed that assessed past NASPI accomplishments and determined several areas that should be further explored:

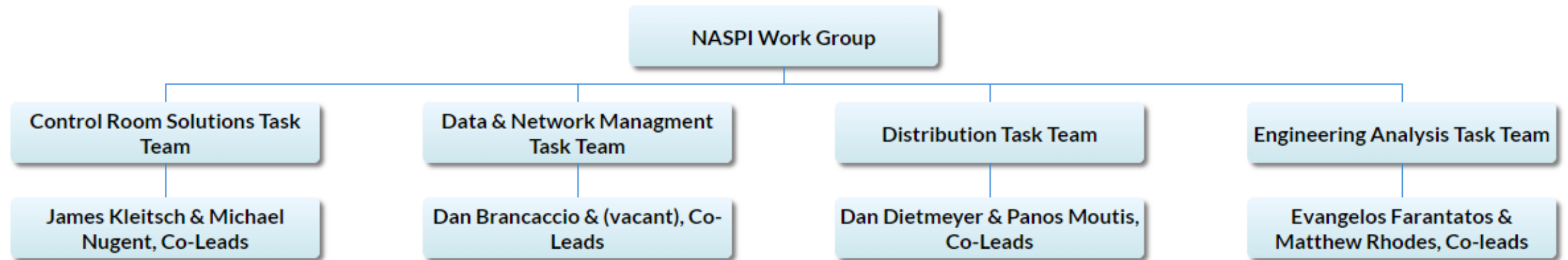
- NERC CIP issues continue to negatively affect widespread deployment
- Better engagement with TOPs
- More training and workshops
- Engage industry (including vendors) on deployment drivers/inhibitors
- Data quality and interoperability
- Inverter-based resources issues
- Point on Wave applications
- Distribution system deployment
- Catalog and index content on website to make it easier to find/explore
- Consider refreshing/modernizing older content

The NASPI roadmap report is available on the NASPI website.

NASPI Path Forward

- Continue to support and liaison with industry
 - Various IEEE Standards activities
 - North American Electric Reliability Corporation
 - ✓ Synchronized Measurement Working Group
 - Western Electricity Coordinating Council
- No major changes to overall NASPI work group activities
 - Intending to maintain status quo work group meeting tempo (twice per year)
 - Continuing monthly webinar series between work group meetings
 - Desire to maintain approximately equal representation among utilities, vendors, and academia, which has been a unique attribute and key value proposition for NASPI
- Current and emerging areas of emphasis/focus for NASPI:
 - Networking and communications technologies (advanced architectures)
 - Statistical analysis and deep learning for extracting actionable information from large datasets
 - High-resolution sensors to characterize the transient behavior of inverter-based resources and other fast-acting phenomena

The NASPI Technical Task Teams



- Email naspi@pnnl.gov if you would like to be part of a task team.

Save the Date

The next NASPI Work Group Meeting and
Vendor Show will be held:

April 16-17, 2024
Salt Lake City, UT

Note: The NERC SMWG is planned for April 18, 2024



MENU

NASPI

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North American SynchroPhasor Initiative

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Thank you

