



# NASPI Update

October 15, 2024

**Jim Follum**

Sensing & Measurement Team

Energy Systems Engineering Group

Pacific Northwest National Laboratory



PNNL is operated by Battelle for the U.S. Department of Energy

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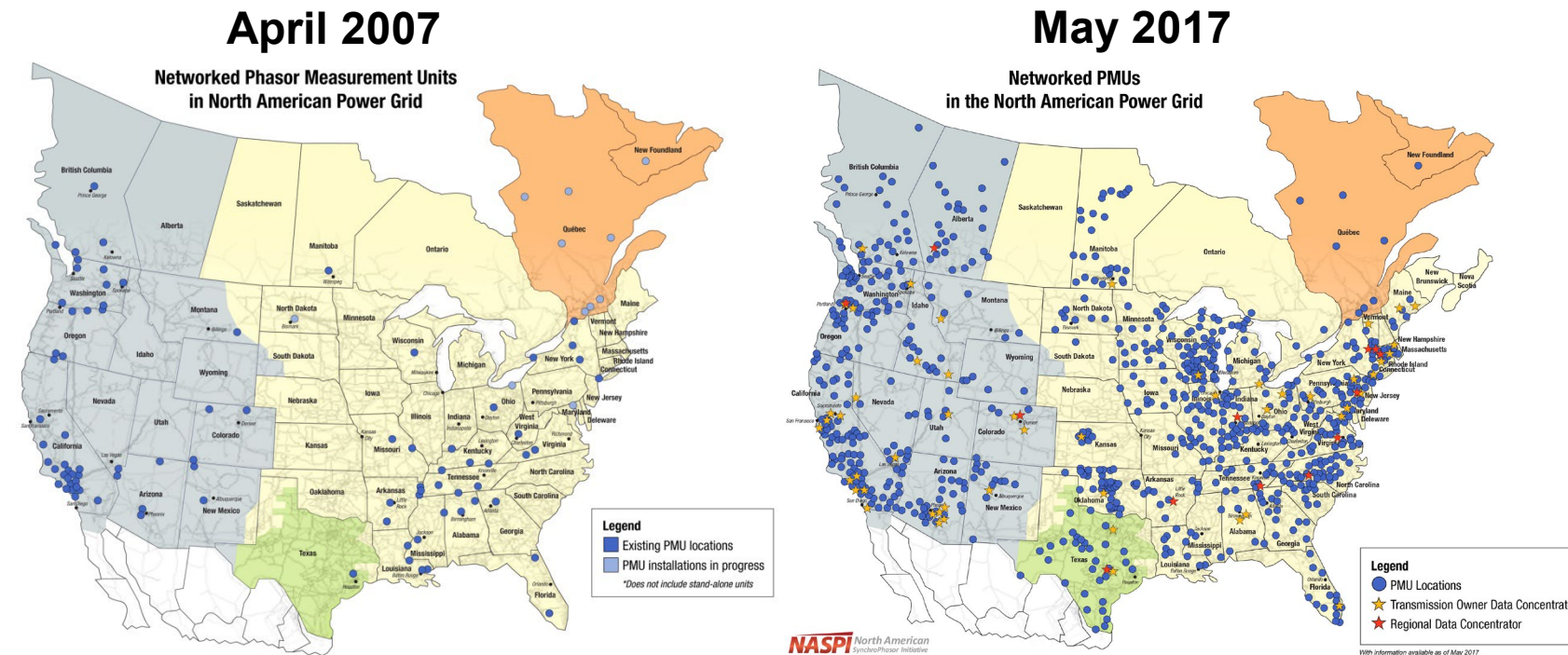


# The North American SynchroPhasor Initiative (NASPI)

*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 16-17, Salt Lake City UT (in-person)
  - Synchrophasor Application Success Stories and Research
  - Synchronized Waveforms in the Distribution System
  - Data Management and Sharing
  - NASPI-NERC Synchrophasor Data Analytics Workshop
- This work group meeting – October 15-16, Charlotte NC (hybrid)
  - Utility Perspectives
  - DOE Project Updates
  - Task Team Sessions
    - ✓ Business
    - ✓ Technical Presentations
    - ✓ Discussion
- Next work group meeting – April 15-16, Minneapolis, MN (in-person)

# Tuesday's Agenda – October 15

8:30 - 9:30 am	<b>Registration and coffee</b>
	<b>Session 1: Keynote &amp; NASPI Update</b>
9:30 - 9:40 am	Welcome, Introductions, and Logistics Review: Jim Follum (PNNL)
9:40 - 10:00 am	Keynote Speaker: Matthew Gardner (Dominion Energy)
10:00 – 10:20 am	NASPI Update – Jim Follum (PNNL)
10:20 – 10:40 am	Break (20 Minutes)
	<b>Session 2: Utility Perspectives on Challenges, Solutions, and Needs</b>
10:40 – 11:00 am	SRP IBR Integration and Operations Challenges – Matthew Rhodes (Salt River Project)
11:00 – 11:20 am	Southern Company – Clifton Black (Southern Company)
11:20 – 11:40 am	Dominion Energy – Kevin Jones (Dominion Energy)
11:40 – 12:00 pm	Southwest Power Pool – Michael Nugent (SPP)
12:00 – 1:00 pm	<b>Lunch</b>

# Tuesday's Agenda – October 15 cont.

	<b>Session 3: Department of Energy Awards</b>
1:00 – 1:15 pm	Overview of FOA 3127 Awards - Sandra Jenkins, DOE
1:15 – 1:30 pm	Overview of OPTIMA Awards - Marissa Morales-Rodriguez, DOE
	<b>Session 4: Department of Energy Project Updates 1</b>
1:30 – 1:50 pm	Arcing Detection Using Point-On-Wave Measurements in Distribution Systems for Wildfire Mitigation – Jhi-Young Joo (LLNL) and Abder Elandalousi (Southern California Edison)
1:50 – 2:10 pm	Constructing Steady-State Datasets with Derivative Information: An Application in Optimal PMU Placement – Chih-Che Ryan Sun (LLNL)
2:10 – 2:30 pm	Measurement Trustworthiness: Value Proposition and Steps to Demonstration – Artis Riepnieks (PNNL)
2:30 – 2:50 pm	Break (20 Minutes)



# Tuesday's Agenda – October 15 cont.

2:50 – 3:10 pm	The Grid Event Signature Library: An Open-Access Repository of Power System Waveform Signatures – Aaron Wilson (ORNL), Jhi-Young Joo (LLNL), and Shuchi Biswas (PNNL)
3:10 – 3:30 pm	Sensor Placement – Andrew Reiman (PNNL)
3:30 – 3:40 pm	Introduction to PROGRESS MATRIX – Jim Follum (PNNL)
3:40 – 4:00 pm	PROGRESS MATRIX: IBR Distribution Grid Stability: Practical Risk Measurements at 120-volt Outlets at Hawaiian Electric, and What's Next for GridSweep – Alex McEachern (McEachern Labs)
4:00 – 4:20 pm	PROGRESS MATRIX: Analytical Methods and Stability Analytics Leveraging WAPA Practical Data using Digital Twin at NREL-ARIES – Yashodhan Agalgaonkar (NREL)
	<b>Session 6: Technology Partner Flash talks (5 min ea.)</b>
4:20– 4:25 pm	Mehta Tech, Inc.
4:25– 4:30 pm	Topolonet
4:30– 4:35 pm	Meinberg
4:35– 4:40 pm	Electric Power Group
4:40– 4:45 pm	SATEC, Inc.
4:45 – 5:00 pm	PingThings
5:00 – 5:05 pm	Recap of Day 1 – Jim Follum
<b>5:05 - 7:00 pm</b>	<b>NASPI Reception &amp; Vender Show</b>

# Wednesday's Agenda – October 16

8:30 - 9:30 am	<b>Registration and coffee</b>
9:30 - 9:40 am	Welcome, Logistics Review: Jim Follum (PNNL)
	<b>Session 7: Organizational Updates (10 minutes each)</b>
9:40 – 9:50 am	NERC Synchronized Measurement Working Group (SMWG) – Clifton Black (Southern Company)
9:50 – 10:00 am	IEEE –PSRC - Yi Hu (Quanta)
10:00 – 10:10 am	CIGRE C4/C2.62 – Evangelos Farantatos (EPRI)
10:10 – 10:20 am	IEEE Syncho-Waveform TF - Hamed Mohsenian-Rad (UCR) and Jhi-Young Joo (LLNL)
10:20 – 10:40 am	Break (20 Minutes)
	<b>Session 8: Control Room Solutions Task Team (CRSTT)</b>
10:40 – 11:00 am	CRSTT Business – Michael Nugent (SPP)
11:00 – 11:20 am	Requirements for Real-Time Stability Monitoring - Kevin Ostash (Manitoba Hydro)
11:20 – 11:40 pm	TVA Real Time PMU One Lines – Jon Hayden (TVA)
11:40 – 12:00 pm	SDGE update – Daniel Dietmeyer (SDGE)
12:00 – 1:00 pm	<b>Lunch</b>

# Wednesday's Agenda – October 16 cont.

	<b>Session 9: Engineering Analysis Task Team (EATT)</b>
1:00 – 1:15 pm	EATT Business – Evangelos Farantatos (EPRI) & Matthew Rhodes (SRP) <ul style="list-style-type: none"> <li>• IPRAM document</li> <li>• Model validation/calibration document</li> </ul>
1:15 – 1:35 pm	Synchro-Waveform Measurements from IBR Rich Grids - Hamed Mohsenian-Rad (UCR)
1:35 – 2:05 pm	IBR Monitoring Challenges - Matthew Rhodes (SRP) & Doug Bowman (SPP)
2:05 – 2:25 pm	Evaluation of Dynamic Line Rating Software using Field-Measured PMU Data – Ashkan Ashrafi (Topolonet) and Shuchi Biswas (PNNL)
2:25 – 2:45 pm	Break (20 minutes)
	<b>Session 10: Data and Network Management Task Team (DNMTT)</b>
2:45 – 3:00 pm	DNMTT Business – Dan Brancaccio (Quanta Technology)
3:00 – 3:20 pm	The Importance of PMU and Signal Naming Conventions – Dan Brancaccio (Quanta Technology)
3:20 – 3:40 pm	STTP Compatible Point of Wave Data Compression - Ritchie Carroll (GPA)
3:40 – 4:00 pm	NERC CIP Standards and Cloud Applications – Scott Mix, PNNL
	○ <b>Session 11: Distribution Task Team (DisTT)</b>
4:00 – 4:10 pm	DisTT Business – Panos Moutis (City College of New York)
4:10 – 4:30 pm	“Train the Champion” project – Compiling a promotional showcase for synchronized measurements at distribution systems
4:30 – 4:55 pm	Towards a PMU standard for distribution – IEEE WG C41 briefing, use cases & volunteers
	<b>Meeting Closeout</b>
4:55 – 5:00 pm	Closing remarks – Jim Follum
5:00 pm	<b>Adjourn</b>



Thank you  
NASPI Partners for your continued support

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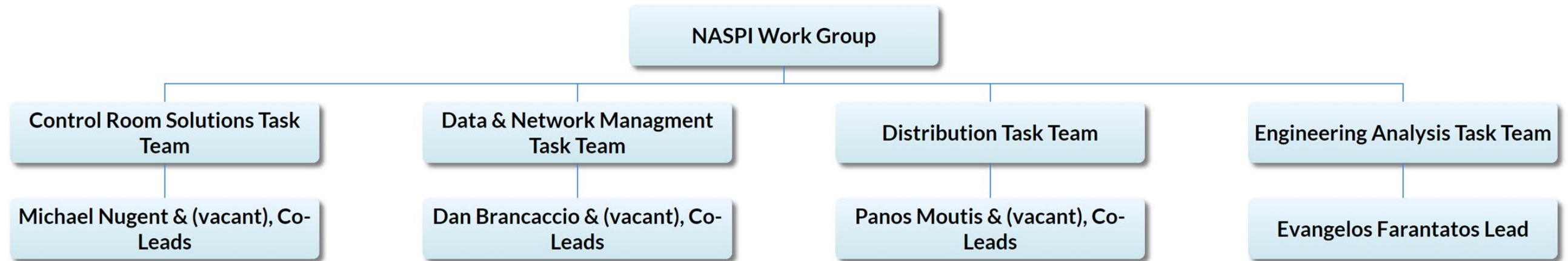


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# The NASPI Technical Task Teams



Email [naspi@pnnl.gov](mailto:naspi@pnnl.gov) if you would like to be part of a task team.



# Task Team Activity Highlights

- CRSTT
  - Upcoming white paper "Challenges to Operational Adoption of PMUs"
  - Exploring need for real-time monitoring requirements
- DisTT
  - Evaluating need and prospects for a distribution PMU standard
  - Train the champion on distribution synchronized measurement use cases
- DNMTT
  - Data sharing: naming conventions, file formats, revisiting NASPI NET architectures
  - Communication: protocols (STTP), bandwidth
  - Best practices: PMU registry, archiving
- EATT
  - Published the white paper "Advanced Model Validation and Calibration using Synchrophasors"
  - Continuing to draft the IBR Performance Response and Analytics Monitoring (IPRAM) white paper



**NASPI WHITE PAPER**

**Advanced Model Validation and Calibration using Synchrophasors**

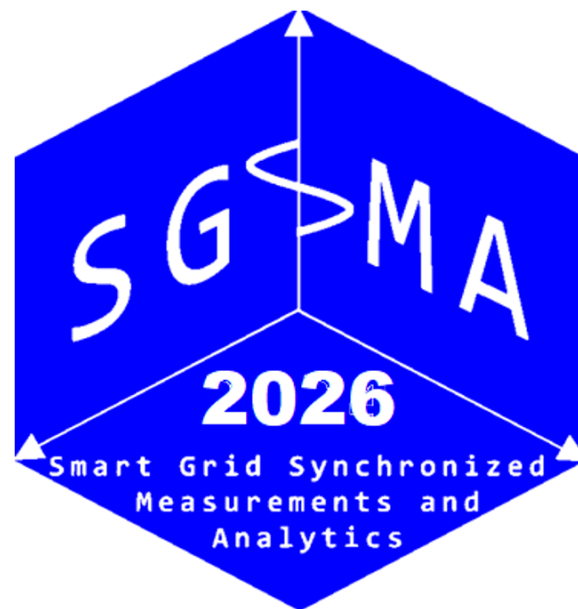
**Prepared by NASPI Engineering Analysis Task Team (EATT)**

**2024**

**<https://www.naspi.org/node/993>**

## Coordination

# Call for Technical Program Committee Members & NASPI-driven activities



May/June 2026  
Santiago, Chile

Technical Program Committee Chairs  
Panagiotis Moutis, CCNY, USA  
Sara Sulis, University of Cagliari, Italy



## Liaisons

- NERC Synchronized Measurement Working Group (SMWG) – Clifton Black
- IEEE Power System Relaying & Control Committee (PSRC) – Yi Hu
- EIDSN – Kent Simendinger
- IEEE PES Task Force on Synchro-Waveforms – Hamed Mohseman-Rad and Jhi-Young Joo
- CIGRE Joint Working Group C4/C2.62 – Evangelos Farantatos

# NASPI Webinar Series

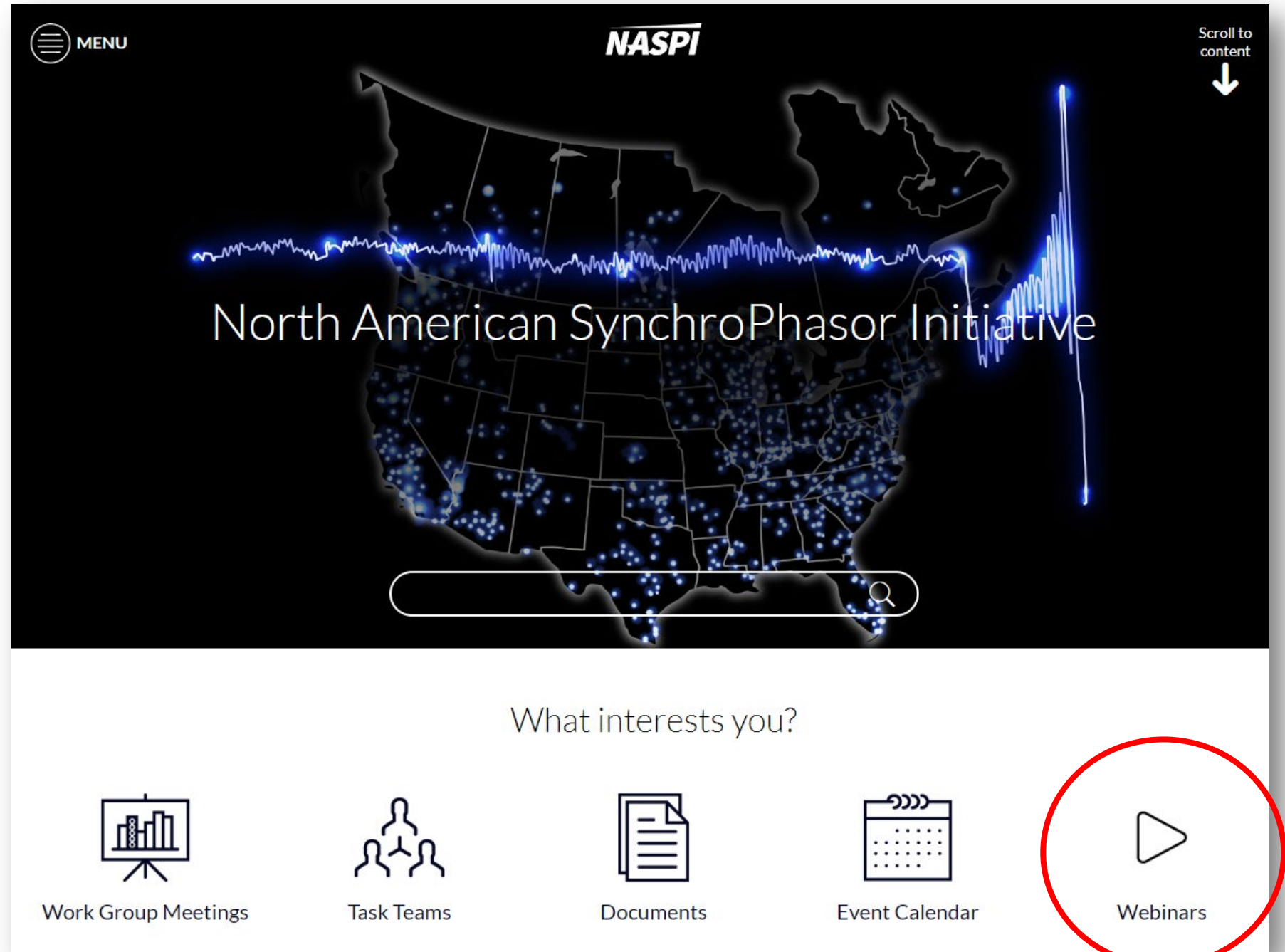
## Summer Webinar Series

- May 29 – Resilient Timing for Grid Measurements: Best Practices and New Solutions
  - Douglas Arnold, Meinberg
  - Rick Knea, Oscilloquartz
  - Carter Christopher, Oak Ridge National Laboratory
- July 10 – Recent BESS Oscillations: Root Cause Analysis and Wide-Area Impacts
  - Matthew Rhodes, Salt River Project
  - Daniel Goodrich, Bonneville Power Administration
- August 28 – Importance of High Resolution Data in IBR Disturbance Analysis
  - Rich Bauer, NERC

**The winter webinar series will kick off in January**

# NASPI Webinar Series

Webinar materials are available at [www.naspi.org/webinars](http://www.naspi.org/webinars)



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North American SynchroPhasor Initiative

What interests you?

- Work Group Meetings
- Task Teams
- Documents
- Event Calendar
- Webinars



# 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
- The Leadership Team is actively discussing options to ensure lasting relevance and impact
  - Refining and communicating NASPI's scope
  - Continuing to alternate between hybrid and in-person meetings
  - Task Teams transitioning to more substantial quarterly meetings
- 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

## **Save the Date**

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

**April 15-16, 2025**

**Minneapolis, MN**

Note: The NERC SMWG is planned for April 17, 2025



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**Thank you**

