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NASPI Update

Jim Follum, PNNL

Pacific Northwest NATIONAL LABORATORY

U.S. DEPARTMENT of ENERGY

EPRI ELECTRIC POWER RESEARCH INSTITUTE

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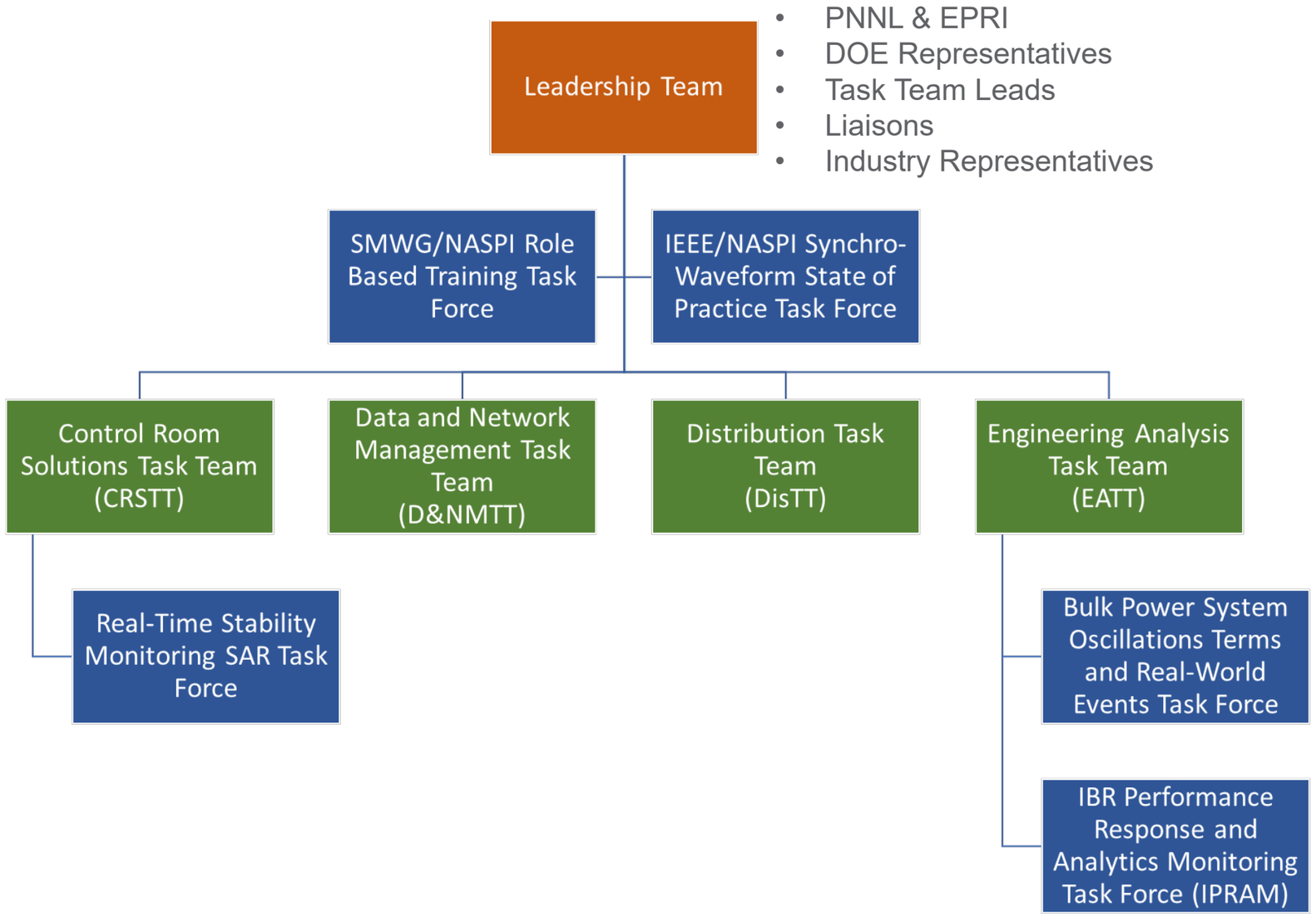
Work Group Structure



Meeting Cadence

Content available at NASPI.org under the Past Recording tab

January	February	March	April	May	June	July	August	November
Virtual Quarterly Task Team Meetings	Webinar	Webinar	Chicago Work Group Meeting	Webinar	Webinar	Virtual Quarterly Task Team Meetings	Webinar	Hybrid Work Group Meeting

Task Forces meet as needed throughout the year

Task Teams: Incubators for New Ideas and Approaches to Solve Challenges

- **Control Room Solutions Task Team (CRSTT):** works to advance the use of real-time applications to improve control room operations and grid resilience and reliability.
  - Leads: Michael Nugent and Kliff Hopson
- **Engineering Analysis Task Team (EATT):** develops, tests, and validates engineering applications, assists in their deployment and utilization, and recommends R&D activities.
  - Leads: Lin Zhu and Urmila Agrawal
- **Data and Network Management Task Team (DNMTT):** provides guidance for data networking, archiving, and access issues, and reviews new archiving and networking technologies.
  - Lead: Dan Brancaccio
- **Distribution Task Team (DisTT):** fosters the use and capabilities of synchronized measurement data at the medium-voltage distribution level.
  - Leads: Panos Moutis and Bryce Johanneck

Task Teams meet quarterly: in-person at work group meetings
and virtually during summer and winter meeting series

Send an email to naspi@pnnl.gov to get involved!

Quarterly Task Team Meeting Series

Wednesday, July 8

Data & Network Management Task Team (DNMTT)

Distribution Task Team (DisTT)

Thursday, July 9

Engineering Analysis Task Team (EATT)

Control Room Solutions Task Team (CRSTT)

Task Team meetings feature engaging presentations, technical discussions, and contributions to work products.

A save-the-date is available on the NASPI website. Registration coming soon.

Task Forces: Delivering Impactful Work Products

- **IBR Performance Response and Analytics Monitoring:** documenting the unique capabilities of synchronized measurements to monitor IBRs
  - Lead: Priya Mana
- **Bulk Power System Oscillations Terms and Real-World Events:** promoting consensus by updating an oscillation terminology document
  - Leads: Urmila Agrawal and Jimmy Zhang
- **Real-Time Stability Monitoring SAR:** developing a NERC Standard Authorization Request (SAR) to require real-time stability monitoring
  - Leads: Kevin Ostash, Jared Tarr, Mani Venkatasubramanian, Marianna Vaiman, Mike Nugent
- **Joint NERC SMWG/NASPI Task Force for Role-Based Synchrophasor Training:** empowering utility stakeholders with tailored synchrophasor knowledge
  - Leads: Clifton Black and Eric Andersen
- **Joint IEEE/NASPI Task Force on Synchro-Waveform State of Practice:** conducting an industry survey to summarize current state-of-practice and emerging interests
  - Leads: Hamed Mohsenian-Rad, Jhi-Young Joo, and Kaustav Chatterjee

Task Forces meet as needed, typically monthly.
Send an email to naspi@pnnl.gov to get involved!

NASPI Winter Webinar Series

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- February
  - Recent Advancements in Technology and Applications of Synchrophasor Measurements: Findings of the CIGRE JWG C4/C2.62
  - Dr. Athula Rajapakse, University of Manitoba
- March
  - PMU Adequacy for Monitoring Data Center Oscillations
  - Dr. Kaustav Chatterjee, PNNL
- Recordings are available on the NASPI website

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WEBINAR SERIES

Recent Advancements in Technology and Applications of Synchrophasor Measurements: Findings of the CIGRE JWG C4/C2.62

Wednesday, February 18, 2026, at 10 a.m. PT (1 p.m. ET)
Register today for the free one-hour webinar

As modern power systems evolve to accommodate increasing penetration of renewable energy, energy storag
electric vehicle loads, real-time monitoring has become essential for maintaining system stability, reliability, a
operational efficiency. Synchrophasor technology, with its precisely time-synchronized and high-resolution
measurements, has enabled a wide range of advanced power system applications, including real-time situatio
awareness, data analytics, control, and model validation.

This webinar will present an overview of the CIGRE Technical Brochure "Recent Advancements in Technology
Applications of Synchrophasor Measurements", developed by Joint Working Group C4/C2.62.

Meet the Presenter

Dr. Athula Rajapakse is a professor in the Department of Electrical and Computer Engi
at the University of Manitoba, Canada, where he leads the Intelligent Power Grid Labor
He received his B.Sc. (Eng.) from the University of Moratuwa, Sri Lanka, and his M.Eng.
Ph.D. degrees from the Asian Institute of Technology, Thailand, and The University of T
Japan, respectively. His research interests include power system protection, wide-area
protection and control, HVDC grid protection, and renewable energy integration. He is
Member of IEEE, a Professional Engineer in Manitoba, and a Fellow of Engineers Canad
served as Convener of the CIGRE Joint Working Group C4/C2.62 on synchrophasor tech
and applications and has contributed to several IEEE and CIGRE Working Groups relate
power system stability, protection, and AI and ML applications.

Let's Engage

Feel free to share this Novel Applications for Synchronized Power Instrumentation (NASPI) webinar with your colleagues. You can also view prior webinars and related content in the NASPI Webinars Archive.

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please visit www.naspi.org, or email naspi@pnnl.gov. Stay informed on the latest NASPI updates, events, and
resources by subscribing to the NASPI mailing list—subscribe now.

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WEBINAR SERIES

PMU Adequacy for Monitoring Data Center Oscillations

Wednesday, March 18, 2026, at 10 a.m. PT (1 p.m. ET)
Register today for the free one-hour webinar

AI training data centers with periodic load profiles induce grid oscillations across a wide frequency range. Monitoring these oscillations is critical for grid operation. This talk will evaluate the adequacy of existing measurement systems, particularly phasor measurement units (PMUs), and examine their limitations in observing higher-frequency oscillations arising from constraints in reporting rates and estimation filter designs. It will demonstrate that PMUs, even when configured with higher reporting rates, may significantly attenuate AI-load-induced oscillations, giving an optimistic view of system reliability. The talk will cover how system operators, aware of these limitations, may design monitoring and compliance thresholds for data center oscillations. It will also motivate the use of high-resolution point-on-wave (POW) measurements as a complement to PMUs for high-frequency oscillation monitoring.

Meet the Presenter

Kaustav Chatterjee is a power systems research engineer at the Pacific Northwest National Laboratory. His research focuses on power system dynamics and stability, advanced measurements, and design of analytics for wide-area monitoring and situational awareness. He received Ph.D. in Electrical Engineering from Penn State in 2022 and M.Tech. from the Indian Institute of Technology Bombay in 2018. He currently co-leads the NASPI–IEEE joint task force on the state-of-practice and adoption of synchro-waveform measurement systems.

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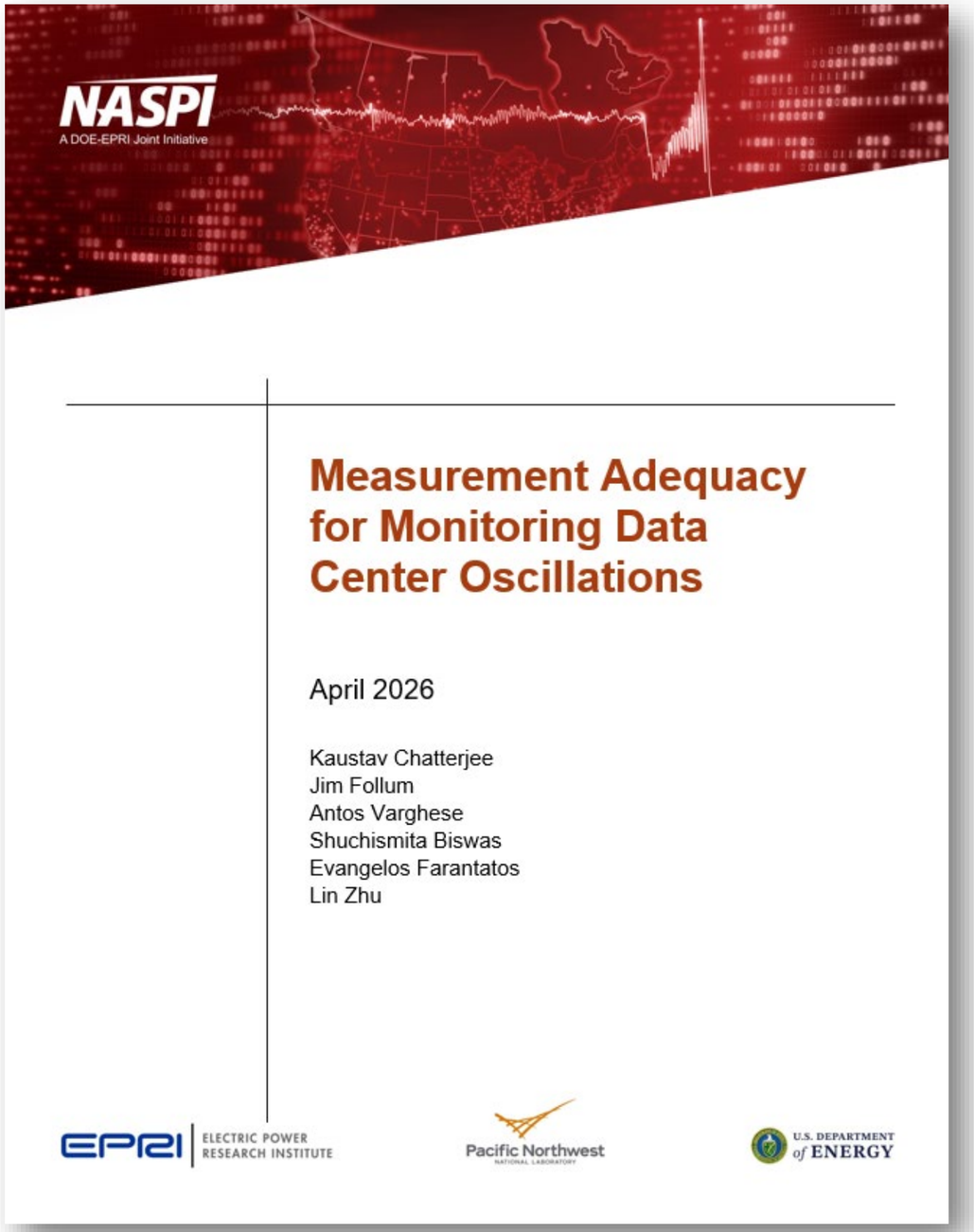
Just Released!

Available now on the NASPI website under the Resources tab



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Summer Webinar Series

Going Off Grid:
Third Party Sources of Synchronized Measurements

We'll explore how measurements from wall outlets, advanced metering infrastructure (AMI), cable networks, and low-cost sensors can enhance visibility for distribution and transmission system operators

This two-part series is scheduled for May 27 and June 17

Registration coming soon

Leadership Team Liaisons

- IEEE Power System Relaying & Control Committee (PSRC) and Power System Communications and Cybersecurity Technical Committee (PSCCC)
  - Yi Hu
- NERC Synchronized Measurement Working Group (SMWG)
  - Kat Sico, Nadia Smith, and Clifton Black
- CIGRE C4/C2.62
  - Evangelos Farantatos
- IEEE PES Task Force on Synchro-Waveforms
  - Hamed Mohsenian-Rad and Jhi-Young Joo
- IEEE PES Forced Oscillation Task Force
  - Farrokh Aminifar
- EIDSN (formerly Eastern Interconnection Data Sharing Network)
  - Kent Simendinger
- Smart Grid Synchronized Measurement and Analytics (SGSMA) Association
  - Panos Moutis

Liaison Update: IEEE PES Task Force on Forced Oscillations

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Chairs: Kai Sun (UTK) and Jim Follum (PNNL), Secretary: Bin Wang (ISO New England)
Outreach Liaison: Farrokh Aminifar (Danovo Energy Solutions)

New monthly talks since the October 2025 NASPI meeting updates

- Dataset for Power System Forced Oscillation Responses (DPSYFOR) (by Mani V. Venkatasubramanian, WSU)
- Limitations of PMU Data for High Frequency Oscillations (by Bin Wang, ISONE)
- Oscillation detection and analysis using SCADA data (by Mani V. Venkatasubramanian, WSU)
- Planning for Large Load Oscillations: Evaluating Risks and Measurement Limitations (by S. Biswas and K. Chatterjee, PNNL)
- Oscillations mitigation experiences in Terna (by Giorgio Maria Giannuzzi, Terna)
- Wide-Area Power System Oscillations from Large-Scale AI Workloads (by Min-Seung Ko, UT Austin)
- Spain Blackout: Oscillatory Phenomena (by Giorgio Maria Giannuzzi with Terna)

TF report on the survey of approaches for identifying effective mitigation locations for sustained oscillations in modern power grids. In Progress with tentative completion of 9/30/2026

Details available at our TF Portal https://web.eecs.utk.edu/~kaisun/FOTF/index.html

Recordings available at TF YouTube Channel @IEEEPESForcedOscillationsTF

All cases now hosted on IEEE DataPort

Liaison Update: NERC Synchronized Measurement Working Group (SMWG)

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- New Work Plan items!!(seeking volunteers to contribute)
  - **Technical Reference Document: IBR-Driven Inertia Risk Awareness Using Synchronized Measurements**
    (Improving Industry awareness and technical understanding of system inertia using synchronized measurement technologies to support IBR inertia-related frequency performance risks.)
  - **Technical Reference Document: Measurement-Based Interpretation of Oscillation Severity and Reliability Impact**
    (Develop measurement-based methods to interpret the severity and reliability impact of oscillatory behaviors for different stakeholders in utility.)
- Work Plan items wrapping up soon
  - ✓ **Roadmap for Integrating Synchrophasors into Real-time Operations – White Paper.**
  - ✓ **PMU Data Accuracy Maintenance Manual**
  - ✓ **Technical Reference Document: Power System Oscillation Monitoring and Mitigation**
- Interested in Joining/Contributing?
  - Contact Kat Sico (kat.sico@duke-energy.com) or Nadia Smith (nadia.smith@nerc.net)

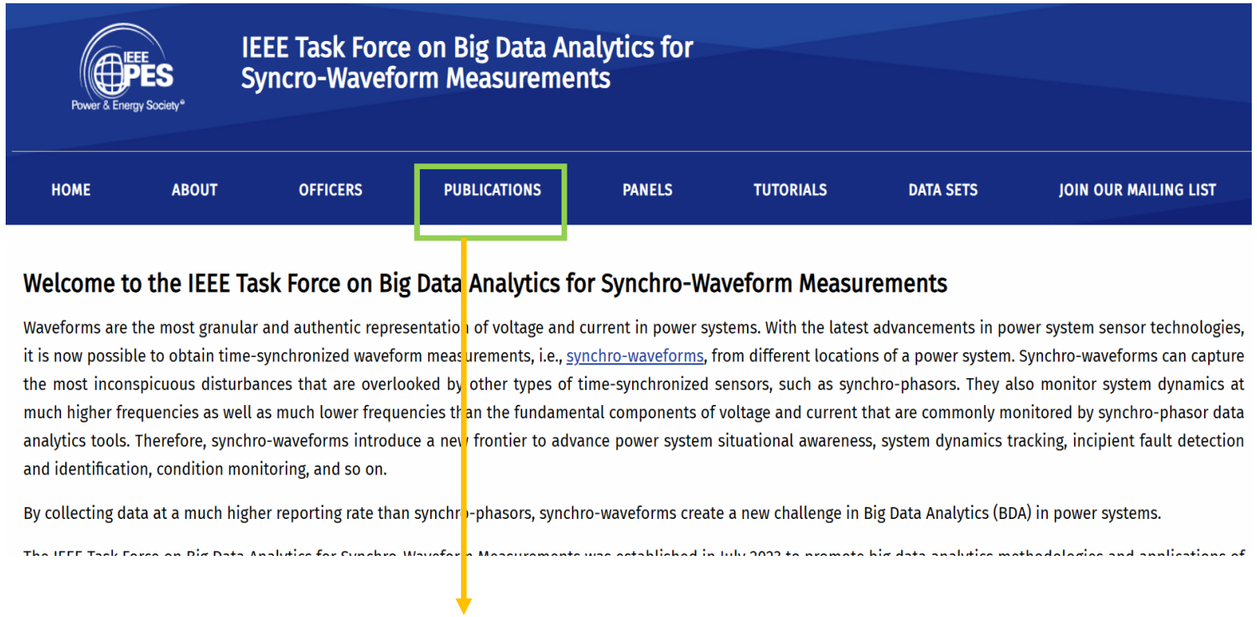
Want to be added to the SMWG Meeting Distribution List?

Seen an oscillation?

Find out if it meets the criteria for SMWG reporting.

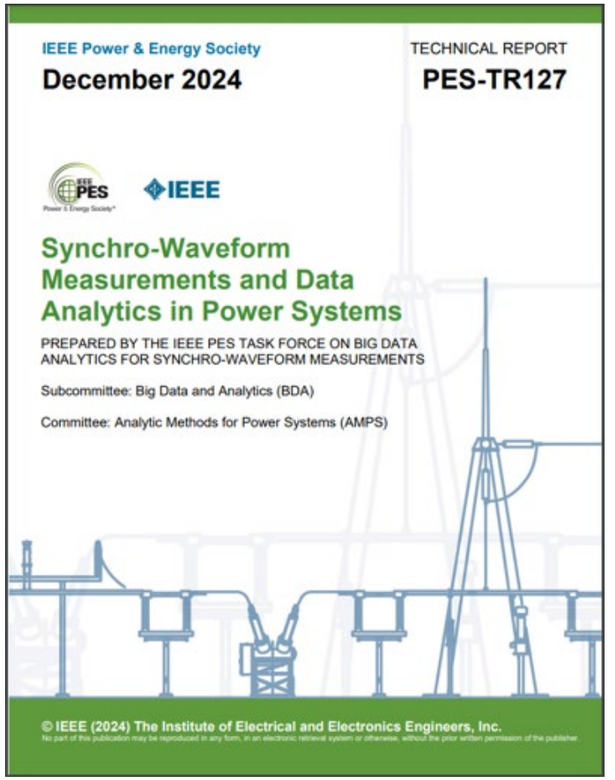
Liaison Update: IEEE Synchro-Waveform Task Force

- Publications Library



40 papers and industry reports have been indexed so far

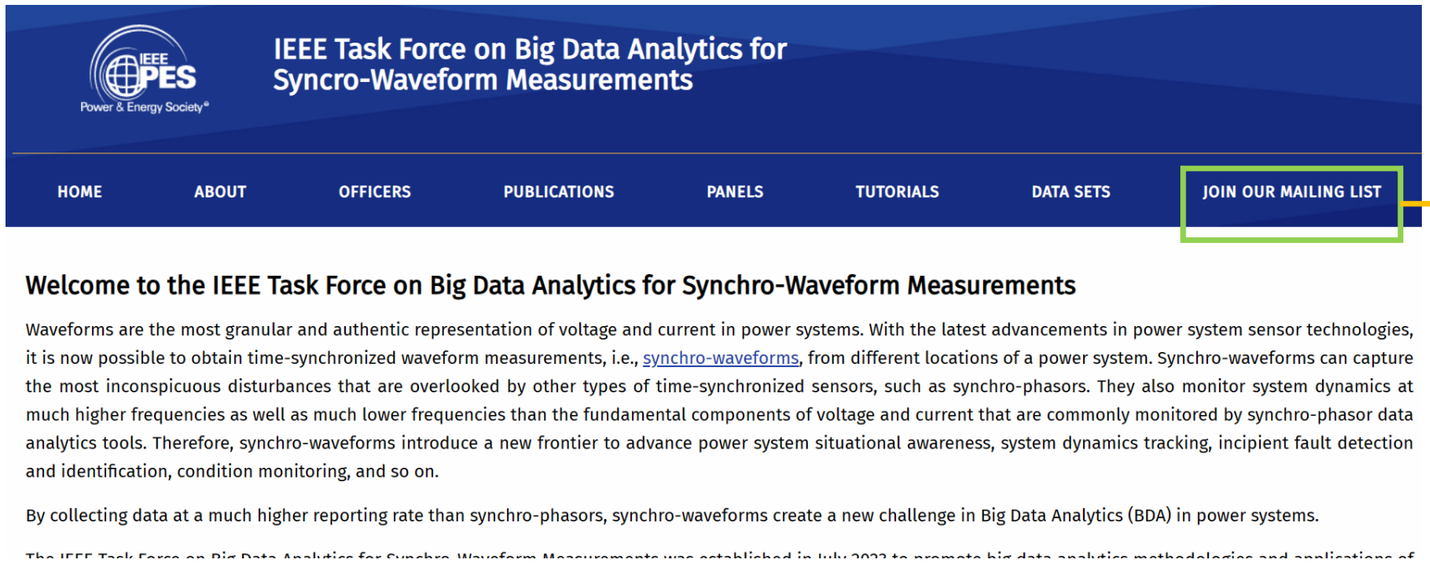
Suggest papers through the website or via email.



PES-TR-127
Published in December 2024

Liaison Update: IEEE Synchro-Waveform Task Force

- Join Us



To Join the Task Force

Reach out to Co-Chairs:

Hamed Mohsenian-Rad (hamed@ece.ucr.edu) and Jhi-Young Joo (J9JU@pge.com)

Liaison Update: CIGRE JWG C4/C2.62

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Technical Brochure Published

"Review of Advancements in Synchrophasor Measurement Applications"

Liaison Update: IEEE/CIGRE SGSMA 2026, Santiago de Chile – June 1st - 4th (Register Now!)

- Welcome remarks by the IEEE PES & CIGRE Presidents
- Keynote by Chile System Operator
- Two hands-on tutorials & two workshops
- PhD Dissertation Competition (3 finalists)
- Students' Travel Grants
- Nine panel sessions by Experts & Academics
- Ten sessions of 44 peer-reviewed papers
- Best Paper Competition

Registration open:

https://sgsma2026.cl/register-2026

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Thank you NASPI Partners!

Gold Partners

SEL SCHWEITZER ENGINEERING LABORATORIES

reactive technologies

PingThings

Silver Partners

OSCILLOQUARTZ
A division of Adtran

simple thread

Electric Power Group

POWERSIDE®

DATASOCIETY:

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Agenda Overview

Day 1

- Morning
  - Opening Session
  - Utility Success Stories
  - Next-Generation Architectures and Analytics
- Afternoon
  - Analysis of Emerging System Dynamics
  - Task Team Breakout Sessions
  - NASPI Reception

Day 2

- Morning
  - NASPI Task Team Report Outs
  - NASPI Challenge
  - Utility Experience
  - Resilient Timing
- Afternoon
  - Data Availability
  - NASPI Technical Reports
  - Joint Task Force Updates
  - Inertia Monitoring

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Save the Date!

The next NASPI work group meeting will be held in Charlotte, NC November 3-4

NERC SMWG is scheduled for November 5

Super early-bird ($200 off) available until **this Friday!**

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Thank you