DNP Users Group Workshop Series

DER Cybersecurity Implications - IEEE P1815.2™ (DNP3) vs IEEE Std 2030.5™ vs SunSpec Modbus – Friends or Foes?

Distributed Energy Resource (DER) Communications *Cybersecurity* for the Energy Transition

Tuesday, November 18, 2025, 3:30 – 5:00 PM ET

(Note an additional 30 minutes will be available for open Q&A)

This workshop is offered at no charge to our members and non-members.

Register

Description

The DNP Users Group (DNP-UG) develops and presents periodic workshops that are open to the public. Each event features industry leaders addressing important topics relevant to the industry and our members. Workshops will generally be followed by related tutorials and training courses for our members.

With the deployment of Distributed Energy Resource (DER) systems on the rise, developing robust solutions to secure their communications infrastructure is becoming increasingly critical. This advanced workshop builds on our previous session by focusing on the cybersecurity implications of

the three protocols specified in IEEE Std 1547™–2018 for the Local DER Communication Interface: DNP3, IEEE 2030.5, and SunSpec Modbus.

Unlike traditional SCADA systems, which typically operate in centralized, isolated environments, DER systems can be decentralized, internet-connected, and deployed across diverse network conditions. These characteristics introduce new threat vectors and require thoughtful approaches to authentication, confidentiality, and data integrity. System designers and integrators have a range of options to address these challenges—some tailored to a specific protocol's architecture and capabilities, and others more broadly applicable across DER environments.

Join our panel of experts as they explore how each protocol addresses these challenges, what makes DER cybersecurity uniquely demanding, and how utilities and vendors can build resilient systems without compromising interoperability or performance. Whether you're selecting a protocol or refining your security posture, this session will provide actionable insights to inform your next steps."

This panel will share valuable insights while discussing the cybersecurity implications of IEEE P1815.2 (DNP3), IEEE 2030.5 and SunSpec Modbus.

Ample time will be allotted for audience participation and discussion.

Speakers (see bios below)

- John McDonald, Panel Chair, JDM Associates
- Ben Ealey, Electric Power Research Institute
- Grant Gilchrist, Tesco Automation
- Robby Simpson, Enetrics
- Tylor Slay, Pacific Northwest National Labs

To receive periodic updates and news, click here: **Enroll**

The DNP-UG is a non-profit group. Our mission is to actively support measures that improve interoperability, new features and cybersecurity in DNP3-based systems by developing technologies and standards, providing a conformance program, and providing education to the industry. Utilities

and vendors benefit significantly with reduced project and development costs and risks due to a broadly adopted, well managed, highly interoperable and secure protocol (if implemented).

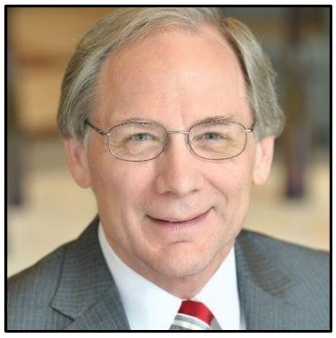
To participate and support our work please join us! Click here: **Membership Guide** or **Join**

For more information click here: **dnp.org home**

Follow us on **LinkedIn**

For assistance or more information, contact Sara at membership@dnp.org

Speaker Pictures and Short Bios



John D. McDonald, P.E., Founder & CEO of JDM Associates, LLC, Panel Chair

John D. McDonald has 50 years of experience in the electric utility transmission and distribution industry. John received his B.S.E.E. and M.S.E.E. (Power Engineering) degrees from Purdue University and an M.B.A. (Finance) degree from the University of California-Berkeley.

John is a Life Fellow of IEEE (member for 53 years), member of IEEE-HKN (inducted 53years ago) and Tau Beta Pi (inducted 51 years ago), member of the Delta Sigma Phi Fraternity, and was awarded the IEEE Millennium Medal, the IEEE Power &Energy Society (PES) Excellence in Power Distribution Engineering Award, the IEEE PES Substations Committee Distinguished Service Award, the IEEE PES Meritorious Service Award, the 2024 CIGRE US National Committee (USNC) Philip Sporn Award, the2016 CIGRE Distinguished Member Award, the 2016 CI GRE USNC Attwood Associate Award, the 2021 CIGRE Honorary Member Award, the Smart Energy Consumer Collaborative (SECC) Lifetime Achievement Award, and the Delta Sigma Phi Fraternity Career Achievement Award.

John received the 2009 Purdue University Outstanding Electrical and Computer Engineer Award and the 2023 Purdue University Distinguished Engineering Alumni Award. John teaches Smart Grid courses at the Georgia Institute of Technology and the University of Tennessee at Chattanooga, and Smart Grid courses for various IEEE PES local chapters as an IEEE PES Distinguished Lecturer (since 1999). John has published one hundred fifty papers and articles, has co-authored five books and has one US patent.

Ben Ealey, Principal Team Lead, DER Communication and Data Integration, Electric Power Research Institute (EPRI), Panelist

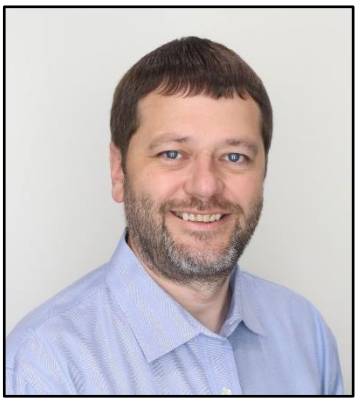
Ben is an industry expert on grid interoperability and currently manages EPRI's DER Data and Connectivity Team. His research focuses on integrating DERs, specifically developing and implementing interoperability, telecommunications, and data requirements for integrating DERs with grid systems. Ben has led and served on several industry committees and standards related to grid interoperability and DERs. He leads the interoperability and cyber security subgroup in the IEEE 1547 revision, was a member of the IEEE 1547-2018, and 1547.1-2020 work groups, led the P1547.2 and 1547.9-2022 interoperability work group, and was principal investigator for the project that led to DNP Application Note AN2018-001 (DNP3 Profile for Communications with DERs).

bealey@epri.com

DNP Users Group Workshop Series

Grant Gilchrist, P. Eng., Systems Engineer, Tesco Automation. Founding Member of the DNP-UG Technical Committee, Panelist

Grant Gilchrist, P. Eng., is a Systems Engineer specializing in grid modernization for Tesco Automation. He is a member of several utility data communications standards groups including the IEC working groups for SCADA and utility protocol security. He is a founding member of the Technical Committee for the Distributed Network Protocol (DNP3) and was secretary of that committee for seven years. Grant is an active member of the Cybersecurity Task Force. He was editor and primary author of several standards documents, including the IEC 62351-5 standard for cyber-security of the IEC 60870-5 and DNP3 protocols, the award-winning IEEE 1815.1 standard for gateways between IEC 61850 and DNP3, and the DNP3 Application Note AN2018-001, soon to become IEEE standard 1815.2 (in collaboration with MESA), which describes how to use DNP3 to communicate with Distributed Energy Resources (DERs). He has helped several major utilities develop technical requirements for their Advanced Metering Infrastructures (AMI) and other grid modernization programs, including some of the original use case definitions for AMI. He specializes in visualizations of the Smart Grid and developed the NIST Smart Grid Framework "cloud" diagrams.



Dr. Robby Simpson, Co-Founder and Principal of Enetrics, Panelist

Robby has been engaged in grid modernization for several years, particularly in the areas of distributed energy resources, AMI, metering, and demand response, and has been heavily involved in accelerating standards for smart grid interoperability. Robby is active in IEEE (he is a former member of the IEEE SA BOG and Chair of IEEE P2030.5), IEC, and IETF. Through these efforts, he not only helps to accelerate standards development, but also ensures the adoption of those standards within Enetrics and the market as a whole.

At Enetrics, Robby creates innovative software and tools for distributed energy resources with a primary focus on standards conformance testing.

Robby received his B.S. in Computer Engineering from Clemson University and his M.S.E.C.E. and Ph.D. (Electrical and Computer Engineering) degrees from the Georgia Institute of Technology (Georgia Tech), where he focused on Internet measurements, large-scale simulation, network protocols, and information security. Prior to focusing on smart grid, Robby worked on satellite communications at MIT's Lincoln Labs.

Robby has published several refereed conference and journal papers on topics ranging from network measurements, network security, and network simulation to superconductor behavior. Robby has also received numerous awards for his academic and industry efforts and is an Eagle Scout (and still believes it to be worth mentioning all these years later).

For more information, please visit http://www.robbysimpson.com

Tylor Slay, Electrical Engineer, PNNL, Panelist

Tylor Slay received his B.S. in mechanical engineering from Oregon State University in 2013 and a M.S. in electrical engineering from Portland State University 2018. He is working on finishing his Ph.D. in electrical engineering this coming spring term in 2026 and is currently a power systems research engineer at Pacific Northwest National Lab (PNNL). His research focuses on distributed energy resource integration, standardization, and interoperability.

He currently participates in IEEE std 2030.5.1, SunSpec Modbus, IEEE std P1815.2, DNP3 CSTF, and SEPA interoperability working groups. He has implemented standards including SunSpec Modbus, IEEE 2030.5, CTA 2045, and is currently working on the development of IEEE std 1815.2 reference Control Station and Outstation.