CALL FOR PARTICIPATION

for the first annual

SunSpec Interoperability Plugfest

February 4 – 5, 2027

Location: Arizona State University Polytechnic Campus • Phoenix / Tempe, Arizona

Registration is capped at 50 participants — apply soon!

Sponsors & Partners

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Sponsors

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Why Host the Plugfest in Arizona?

Arizona combines an advanced manufacturing and technology base with one of the strongest renewable energy and DER growth stories in the U.S., making it an ideal place to advance real-world interoperability for SunSpec Modbus, IEEE 2030.5, CSIP profiles, V2G, IEEE 1547, and related use cases.

The 2026 midterms have created a huge opportunity for an “IRA 2.0” and new perspectives on utility regulation, ratepayer protection, data center growth, and the energy mix. Long-duration BESS and aggregated DER systems make timely, hands-on interoperability work even more valuable for Arizona’s grid and economy.

Objectives

- Test and confirm the interoperability of SunSpec Modbus and IEEE 2030.5 client/aggregators and servers
- Create the habit for software developers from different companies coming together to improve their understanding of the technologies and learn from each other
- Real-time debugging
- Programming using the Satori open-source stack
- Utilize authorized software test tools for free

Activities

Scheduled, pair-wise testing of products under various use cases, including:

- CSIP, CSIP-AUS, CSIP-India
- Pricing data exchange
- Meter profile
- V2G
- IEEE 1547
- SunSpec Modbus Poland Profile
- SunSpec client/server profile against another protocol (for which you will bring a translational mapping)
- Other scenarios proposed by participants
- Compile results and present lessons learned in a face-to-face group setting
- Testing versus novel-new use cases presented by participants
- Evening social hour, prizes and swag

Duration & Lab Setup

Duration: 1.5 Days

- One full day of testing plus social hour
- Half day for results reporting

Lab Setup

- Communications Testing: 50 participants maximum, W-LAN and Wi-Fi
- End-to-End Testing: Communications configuration and inverter testing after successful software-based testing

Who Can Come

- SunSpec Alliance members, ASU graduate students and faculty, SRP employees (free)
- Software developers, equipment vendors, DER simulator providers ($70 – covering a t-shirt, food and drinks)

Outcomes

- Public report of outcomes and product profiles (anonymized if required)
- Matrix of results (e.g., number of tests completed and number of successful tests)
- Prizes: Most tests completed, most exotic use case, most vendors tested against, implementations with most successful tests, top student, and more!

Recommended Lodging

Camping

- Rowland Campground at McDowell Mountain
- Usery Park Campground

Hotels (3-star, under $250)

- Hampton Inn and Suites Tempe
- Hyatt Place Tempe/University
- Moxy Phoenix Tempe/ASU

Application

Send your application details to membership@sunspec.org

Name:

Email:

Company/Institution:

Title:

Interest (please choose two or more):

- CSIP
- CSIP-AUS
- CSIP-India
- Pricing data exchange
- Meter profile
- V2G
- IEEE 1547
- SunSpec Modbus Poland Profile
- SunSpec client/server profile against another protocol (for which you will bring a translational mapping)
- Other scenarios:

Appendix: Specifications & Resources

The following standards, profiles, and resources are relevant to the testing scenarios at the Interoperability Plugfest. Links are provided for participant reference.

Core Communication Standards

All core standards can be found on the SunSpec Alliance Specifications page.
SunSpec Modbus: SunSpec Modbus is the default communication interface specified in IEEE 1547-2018 for DER devices.
IEEE 2030.5: Application-layer protocol for communication between utility systems and DER devices/aggregators.
IEEE 1547-2018: Standard for interconnection and interoperability of distributed energy resources with associated electric power systems interfaces.

Profiles & Use Cases

- **CSIP (Common Smart Inverter Profile)** – California Rule 21 smart inverter communication profile based on IEEE 2030.5
- **CSIP-AUS** – Australia's adaptation of the Common Smart Inverter Profile
- **CSIP-India** – India's adaptation of the Common Smart Inverter Profile
- **Secure SunSpec Modbus** – Using TLS
- **SunSpec Modbus to KNX** – Building automation and prosumer integration
- **SunSpec Modbus Poland Profile** – Regional SunSpec Modbus profile for Polish market requirements
- **Upcoming SunSpec Mappings** – With other major communication protocols
- **Battery Energy Storage (BESS)** – Standardized storage monitoring and control
- **DER Aggregation and VPPs** – Coordinated control of distributed energy resources
- **Cybersecurity and PKI** – Certificate management, authentication, and secure communications
- **V2G (Vehicle-to-Grid)** – Bidirectional power flow and communication between electric vehicles and the grid, including SAE 3072 and SAE 3068

Supporting Tools & Resources

- **Satori Open Reference Implementations:** IEEE 2030.5 and SunSpec Modbus open-source implementations: open-satori.org
- **Satori Scout:** Mobile app for device discovery, simulation, and VPP connectivity, available in app stores
- **SunSpec Alliance Specifications:** sunspec.org/specifications/
- **LF Energy CUPID:** IEEE 2030.5 implementation and legacy protocol conversion: lfenergy.org/projects/cupid/
- **LF Energy EVerest:** Open-source EV charging software framework: lfenergy.org/projects/everest/
- **GitHub Repositories:** Open-source tools and implementations from manufacturers, researchers, developers, and standards organizations
- **Software Testing Tools:** Interoperability and conformance testing resources from Codibly, DERSec, QualityLogic, and other providers

For the latest specifications, certification information, and technical documentation, please visit the SunSpec Alliance website or contact the event organizers at membership@sunspec.org.