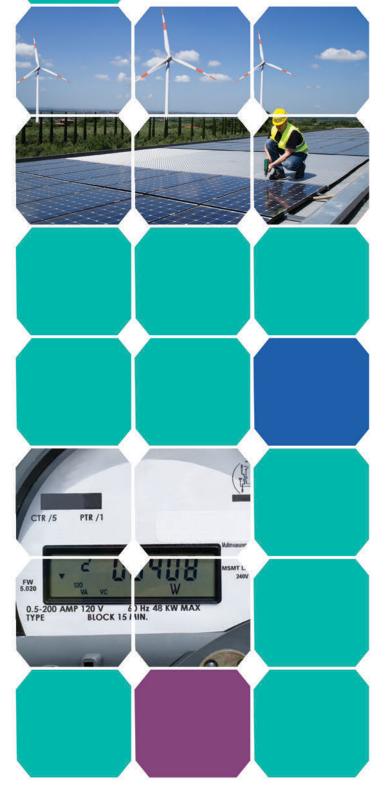# IEEE 2030.5 DER WORKSHOP

FOR THOSE PLANNING TO MEET CA RULE 21 REQUIREMENTS

ABOUT THIS WORKSHOP

If you are marketing Smart Inverters, DER Management Systems, DER aggregation systems or services, gateways for smart inverters or certification services for the CA Distributed Energy Resource market, you are probably aware of the CA PUC mandate to certify an IEEE 2030.5 implementation by Q4-2018 (or 9 months after the release of the SunSpec Certification Test Plan). That's not much time to develop a conformant implementation. But you can jump start your efforts with our two-day public or private training class on development and testing of IEEE 2030.5 server, aggregator, and client implementations.

Implementing IEEE 2030.5 isn't simple. Our analysis shows that 18 (out of 30) IEEE 2030.5 Function Sets will need to be implemented to satisfy the Common Smart Inverter Profile (CSIP) for CA Rule 21. We'd be happy to send you our analysis of the CSIP IEEE 2030.5 Requirements. The workshop will help you get over the hurdles IEEE 2030.5 implementation presents and provide you with solid and practical technical understanding of IEEE 2030.5 and CSIP.

"Awesome workshop! I gained a better understanding of 2030.5 and CSIP as well as the guidelines about certification."

WHO SHOULD ATTEND

• Vendors developing IEEE 2030.5 servers, end-device clients, and aggregator clients to meet CA Rule 21 requirements

• Vendors/system integrators/aggregators planning to acquire and use IEEE 2030.5 compliant products for DER communications

• End-user utilities, ISOs/RTOs and regulators specifying IEEE 2030.5 products

DEVELOPER'S WORKSHOP OUTLINE

DAY ONE

Session 1: Background
- Smart Grid Landscape
- 2030.5 Purpose
- CSIP's guide to Rule 21

Session 2: IEEE 2030.5 Introduction
- Open Standards
- Discovery process
- Function Sets/Categories
- Servers and Clients
- Security

Session 3: Function Sets/Categories
- Support Resources
- Common Resources
- Smart Energy Function Sets

Session 4: Support and Common Resources
- IEEE 2030.5 Conventions
- Device Capability
- Basic Resources (Design, EndDevice, Time)
- Subscription/Notification

Session 5: Smart Energy Function Sets
- DER and DERP
- Metering and Mirrored Meter
- Pricing
- Events and Randomization

Session 6: Rule 21/CSIP Overview
- Core Functionality
- DER Functions
- Usage Scenarios

Session 7: CSIP Communications
- Scenarios: inverter, aggregator, EMS
- 2030.5 Communications
- 2030.5 Security
- 2030.5 Authorization

Session 8: CSIP Basic Functions
- DER devices and groups
- DER Events and Controls
- Scheduling and Prioritization

DAY TWO

Session 9: CSIP & IEEE 2030.5 Function Sets
- High Level Architecture
- 2030.5 Function Sets
- Inverter Identification/EndDevice
- Commissioning

Session 10: CSIP Utility/Aggregator
- Group Assignment of Inverters
- Utility Server Start-up
- Utility-Aggregator Operations
- DER Controls and Curves

Session 11: Polling and Subscription
- Polling
- Subscription/Notification
- Example Usages

Session 12: DER Event Scenarios
- Simple Event Scenario
- Multiple Events Scenario
- Conflicting Events Scenario
- Rules of 2030.5 Event Handling

Session 13: Meter Data, Status and Alarms
- Metered Data from DERs
- Status Information from DERs
- Alarms from DERs
- Error Handling

Session 14: Introduction to QualityLogic Tools
- Testing CSIP using QualityLogic Tools
- Functional Test Suite Tool
- Ad-Hoc Test Tool

Session 15: Conformance and Certification
- CSIP and SunSpec
- SunSpec DER Test Plan
- SunSpec Certification Program