

# DER Workshop

## IEEE 2030.5 / CA Rule 21

The CA PUC mandated certification of IEEE 2030.5 implementations effective June 22, 2020. Jump start your efforts with our multi-day private training class. We've been teaching the IEEE 2030.5 class for over 7 years and trained thousands of staff in seven countries on IEEE 2030.5/CSIP. Interact with one of the leading experts of IEEE 2030.5, CSIP and SunSpec CSIP Certification Test Procedures.

### WORKSHOP AT A GLANCE

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. This workshop will help you get over the hurdles that IEEE 2030.5 implementation presents and provide you with solid and practical technical understanding of IEEE 2030.5 and CSIP.

### ON-SITE OR ONLINE WORKSHOPS DESIGNED FOR

- 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
- Test labs planning to certify IEEE 2030.5 products for the SunSpec CSIP Certification Program and vendors.

**"Steve did an amazing job presenting this in a professional manner while keeping it light hearted and encouraging. We had a lot of questions that probably seemed like simple issues to him, but he took the time to explain in detail every solution.. (And time to verify we understood!)."**

- David Koll, Sr Project Engineer, UL

## WORKSHOP DETAILS

### 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, end device, time)

### 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 FUNDAMENTALS

- DER client types
- Topology based grouping
- Required grid support functions

### SESSION 8: CSIP & IEEE 2030.5

- IEEE 2030.5 subset for CSIP
- Server and clients comparison
- Walk through a typical sequence

### SESSION 9: CSIP UTILITY SERVER

- Registration of inverters
- Creation of 2030.5 resources
- Grouping of inverters

### SESSION 10: AGGREGATOR OPERATIONS

- Aggregator responsibilities
- Typical commissioning process
- Subscription process

### SESSION 11: DER EVENT SCENARIOS

- Simple Event Scenario
- Multiple Events Scenario
- Conflicting Events Scenario
- Rules of 2030.5 Event Handling

### SESSION 12: METER DATA, STATUS, AND ALARMS

- Metered data from DERs
- Status information from DERs
- Alarms from DERs
- Error handling

### SESSION 13: OTHER 2030.5 USAGE AND ADOPTION

- Global interest in 2030.5
- Additional use of 2030.5
- Vehicle to grid example

### SESSION 14: IEEE 1547.1 INTEROPERABILITY USING 2030.5

- What is IEEE 1547.1 certification?
- Relationship to other test standards
- IEEE 1547.1 interoperability testing

### SESSION 15: CONFORMANCE AND CERTIFICATION

- CSIP and SunSpec
- SunSpec DER test plan
- SunSpec certification program

### SESSION 16: INTRODUCTION TO QUALITYLOGIC TOOLS

- Testing CSIP using QualityLogic tools
- Functional Test Suite Tool
- Ad-Hoc Test Tool

#### Headquarters

9576 West Emerald St  
Boise, ID 83704

#### California

2245 First Street, Suite 103  
Simi Valley, CA 93065

#### Oklahoma

4045 NW 64th Street, Suite 120  
Oklahoma City, OK 73116

