SunSpec Certified Test Lab Open Request for Proposal

September 17, 2018

Abstract This Open Request for Proposal is an offer to qualified Independent Testing Laboratories (including Nationally Recognized Testing Laboratories) to partner with the SunSpec Alliance in order to deliver high quality communication protocol compliance testing and certification services to the Distributed Energy Resources (DER) industry. The objective of this program is to increase stakeholder confidence in DER communication solutions, including those enabling smart inverters, smart PV modules, EV charging, and energy storage.

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Table of Contents

Definitions and Abbreviations

Acronym	Meaning
CA	California
CSIP	Common Smart Inverter Profile
DER	Distributed Energy Resources
EV	Electric Vehicle
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Standards Organization
ITL	Independent Test Laboratory
PICS	Protocol Implementation Conformance Statement
PV	Photovoltaic
RFP	Request For Proposal
TCP/IP	Transmission Control Protocol/Internet Protocol

1. Introduction and Background

Distributed Energy Resources (DER), including solar, energy storage, and electric vehicle (EV) charging infrastructure, are revolutionizing how electricity is generated and consumed across the globe. California is leading the energy revolution and has policies in place that require 100% of energy generated in California comes from renewable sources by the year 2045. A significant portion of this capacity will come from DER installed on homes, commercial buildings, and campuses.

To achieve state deployment goals, the state of California modified its DER interconnection rule (CA Rule 21) to require that all systems installed after February 22, 2019 be capable of communicating with the host utility. The default DER-to-utility communication standard is IEEE 2030.5. Configuration options stipulated the Common Smart Inverter Profile (CSIP) document refine California requirements. CA Rule 21 states that products using the communication standard shall be evaluated against the SunSpec Alliance compliance criteria.

Approximately 250,000 DER systems per year will require SunSpec Certification in California by 2020. To address this requirement, SunSpec is seeking to partner with qualified Independent Testing Laboratories (ITLs) and Nationally Recognized Testing Laboratories (NRTLs), collectively referred to as "Test Labs," to establish a "SunSpec Certified" product certification program. This program will establish a uniform quality standard for communication interface compliance and communication interoperability and will be supported by the SunSpec Certified branding program.

To qualify prospective Test Labs and evaluate their capabilities and interest in promoting the SunSpec Certified program, SunSpec asks applicants to complete this Open RFP questionnaire. Information gathered will be used only for the purpose of evaluating applicants and held in strict confidence.

Applicants meeting program requirements will be designated as SunSpec Certified Test Labs. This program provides a variety of benefits and is non-exclusive.

2. Open RFP Timeline and Submission Requirements

Responses to this Open RFP will be accepted at any time. Determination of eligibility for the SunSpec Certified Test Lab program shall be provided to applicants within 30 days of receipt of application. Responses should be in PDF format and should be emailed to certification@SunSpec.org.

Given the upcoming CA Rule 21 Phase 2 and Phase 3 compliance deadline, the first SunSpec Certified Test Labs will be announced in October 2018.

3. Participartion Requirements

To qualify for participation in the program, applicants must demonstrate:

- Company is experienced with certification programs such as the one offered by SunSpec.
- Company has record keeping, security, and confidentiality procedures that are adequate.
- Test lab resources and infrastructure are available to implement the SunSpec program.
- The testing platform is capable of supporting SunSpec test results reporting requirements.
- Personnel performing and administering the test procedure are technically competent.
- Company agrees to the SunSpec Certified Test Lab program business terms.

4. Terms of the SunSpec Approved Test Lab Program

The SunSpec Certified Test Lab program is designed to operate at high efficiency in order to minimize operational impact on participants and maximize program value and ROI for all stakeholders. Accordingly, SunSpec encourages program participants to integrate SunSpec Certification into their normal product testing processes and business practices. With that said, each Test Lab admitted to the program must abide by the program terms:

- Maintain membership in the SunSpec Alliance.
- Pay annual program fees to cover the costs of onboarding, training, technical support, and administrative compliance.
- Demonstrate the company's test platform can generate test results in SunSpec standard format.
- Collect SunSpec Certification fees at time of customer engagement.
- Remit fees to SunSpec at time of certification issuance.

The pricing of SunSpec Certification fees is to be determined. The Open RFP questionnaire asks for your input on this topic.

5. Testing and Certification Artifacts for Initial Standard

5.1   Specifications and Standards

The initial standard to be tested and certified is IEEE 2030.5-2018 as further defined by California Rule 21 interconnection requirements. The IEEE 2030.5-2018 specification is available for purchase from IEEE.org. Information about California Rule 21 can be found at http://www.cpuc.ca.gov/Rule21/.

The Common Smart Inverter Profile (CSIP) is the other source of criteria for California Rule 21 phase 2 and phase 3 compliance. This document is available for free download at SunSpec.org.

5.2   Test Specifications

The SunSpec Common Smart Inverter Profile (CSIP) Conformance Test Procedures are used to evaluate products for compliance to SunSpec certification criteria for CA Rule 21. This document is also available for free download at SunSpec.org.

5.3   Protocol Implementation Conformance Statement Template

The Protocol Implementation Conformance Statement (PICS) template enables product vendors to declare product capabilities to be evaluated by the Test Lab. This document is also available at SunSpec.org.

6. Other Standards To Be Certified

In addition to certification for CA Rule 21 compliance, SunSpec plans to offer certification for the IEEE 1547-2018 communication standards (IEEE 2030.5, IEEE 1815, and SunSpec Modbus) and for SunSpec Communication Signal for Rapid Shutdown standard (a widely-adopted Power Line Communication standard for PV modules). Test Labs that qualify and have interest will be offered the opportunity to provide SunSpec Certification testing services for these technologies.

7. Working With SunSpec

7.1   Business Relationship

SunSpec Alliance is a non-profit trade alliance dedicated to expanding the market for Distributed Energy by establishing information and communication standards. Accordingly, SunSpec and Test Lab partners will enter into standard, non-exclusive agreements that allow the parties to cooperate as equals to provide testing and certification services to the market.

7.2   Certification Testing Program Principles

Competence, record keeping, and data management are essential requirements of the SunSpec certification program. SunSpec anticipates that the primary business of a typical program applicant is that of standards compliance and certification testing. We assume that many Test Lab applicants are compliant with International Standards Organization (ISO) standards given the use of these standards in industries that require testing and certification.

Test Engineer competence is essential. Accordingly, Test Engineers assigned to perform SunSpec certification must demonstrate competence in the technology to be evaluated.

7.3   Test Tools

The SunSpec Certification program is non-specific as to how a SunSpec Certified Test Lab may evaluate compliance to a given standard. With that said, it is assumed that most test tools will be software based.

Each SunSpec Certified Test Lab is entitled to make its own make-or-buy decision regarding test tools. The only requirements of test tools are that they execute the specified test procedure reliably and that they generate SunSpec standard test results reports. Contact us for more information on this topic.

8. Open RFP Questionnaire

In your written response to this Open RFP, please answer all the questions in this section and provide responses numbered and ordered as presented here. Responses should be in PDF format and should be emailed to certification@SunSpec.org.

8.1   Corporate Overview

Success of the SunSpec certification process depends on the financial success of the Test Lab. Please provide details about the laboratory and the nature of its business.

	Requested Information
1	Corporate Overview:
2	Headquarters location:
3	Company web site:
4	Company locations:
5	How many total employees does the company have?
6	Describe the primary nature of your company's business.
7	Who are your key customers and where are they located?
8	How many years has your company been in operation?
9	What is the name, title, phone number, and email address of the person who is responsible for making the decision to participate in the SunSpec Certified Test Lab program?

8.2 Test Facilities

This section of the response should include information about Test Lab location(s) indicating which locations are suitable for SunSpec testing.

	Requested Information
10	List locations where SunSpec certification testing will be performed (city, state, country):
11	How do you guarantee that the service offered in each location is identical?
12	What other types of projects are handled at each location?
13	What are your staffing levels at each location? Technical: _____, IT support: _____, Administrative: _____, Management: _____
14	Do you have ISO 17025 accreditation? (Yes/No)
15	What are your current regulatory testing and approval capabilities?
16	Which markets, applications, and standards do you address?
17	Are you willing to provide resumes of key technical and management staff assigned to SunSpec certification testing? (Yes/No)
18	What is the physical size of each lab where SunSpec certification testing will be performed?
19	How do you protect customer confidentiality?
20	Do your facilities have office space for visitors? (Yes/No)
21	Do your facilities offer wireless Internet access to visitors? (Yes/No)
22	Is high speed Internet access available for use in testing? (Yes/No)
23	Describe your testing environment for TCP/IP related communication technologies:
24	Describe your data backup and archiving process:

25	Describe your data retention policy:
26	Describe how your company maintains its test equipment:

8.3   SunSpec Testing Preparations

Please describe your equipment and test automation capability.

	Requested Information
27	Do you have a test platform that you will use for SunSpec certification testing? (Yes/No)
28	Do you plan on acquiring 3rd party testing tools for SunSpec Certification? (Yes/No)
29	Are your test engineers experienced in testing TCP/IP based products? (Yes/No)
30	Are your test engineers experienced in testing cryptographic products? (Yes/No)
31	Are you prepared to test and certify cloud-based software products? (Yes/No)
32	Are you willing to designate a program manager for this program? (Yes/No)
33	Are you prepared to administer SunSpec Certified branding requirements? (Yes/No)

8.4   Relevant Experience

	Requested Information
34	What pertinent experience makes your company exceptionally qualified to provide SunSpec certification testing?
35	Provide references of other alliances like SunSpec that you've worked with:

8.5   Confidentiality

It is important to maintain confidentiality of all test results.

	Requested Information
36	How do you plan to enforce confidentiality of test results?
37	How do you plan to make sure that a device or software product submitted for testing can be accessed only by authorized personnel?
38	What are your security measures to protect confidential and proprietary information?
39	How do you address situations where confidential and proprietary information is compromised?

8.6   Certifiction Fees

Certification fees allow the SunSpec Alliance to provide, maintain, and enhance this valuable service. Our objectives are to keep costs low, generating enough money to continually improve the program, and stay in line with other successful programs. To that end, we seek your input.

	Requested Information
40	Do you offer certification for alliances like SunSpec? (Yes/No)
41	List the names of the other alliances for which you offer certification:
42	In your experience, what is a typical fee for communication product certification?
43	For a given certification program, do fees vary by product type? If so, how do they vary?

9. Thank You

The SunSpec Alliance appreciates the opportunity to work with your organization on this important initiative. If you have any questions or suggestions about how to improve this program, please contact us at any time.