SOURCING STATEMENT OF WORK

Contractor Name: Boreas Group VID 108368

EPRI Contract ID:

Contract Title: “DER Test Harness Update”

EPRI Task ID: 1-106256-02-01

Introduction and Background

In 2011 EPRI created a Test Harness[[1]](#footnote-1) that would facilitate the testing of Common Information Model (CIM)-based messages, that used web services (SOAP over HTTP), and a test framework utilizing soapUI[[2]](#footnote-2).

In the interim EPRI has been working in collaboration with industry stakeholders to develop a set of enterprise integration message for what has been called a Distributed Energy Management System (DERMS). A DERMS will manage and aggregate messages to DER in the field using IEC 61850 or DNP3-based messages. However, for communication to other enterprise systems such as Geospatial Information Systems (GIS) or Distribution Management Systems (DMS), these standardized messages must be based on the CIM or MultiSpeakTM. In 2013 EPRI developed the CIM and MultiSpeak messages based on several high priority use cases[[3]](#footnote-3).

However, now that the messages have been created a means to facilitate vendors and utilities to test the ability of their applications to generate or consume these messages need to be developed. To that end, the existing EPRI Test Harness needs to be updated with the functional tests to support these new messages.

The test plan is specified in the EPRI draft document (publication is set for Q4, 2014), Enterprise Integration Functions Test Plan for Distributed Energy Resources, Phase 1,

Technical Update.

Objectives

Update the EPRI Test Harness to support both CIM and MultiSpeak messages based on the test plan.

Third Party Intellectual Property

The test plan will leverage MultiSpeak release candidate v5.0.4 WSDLs and XSDs. This test plan will also leverage CIM-based XSDs (created by EPRI), and WSDLs that are conformant to International Electrotechnical Committee (IEC) 61968-100.

All material that is created as part of the update of this test plan will belong to EPRI. All prior artifacts, (test plan, message specifications, etc.) have been developed by EPRI, or under contract to EPRI (where EPRI retains the IP).

(SmartBear will of course retain IP over their soapUI product).

MultiSpeak and the IEC retain IP considerations for their respective standards.

Tasks

Test Plan Use Cases

Note: All use cases have both CIM and MultiSpeak associated messages.

Create DERGroup

* This includes maintenance functions, adding, removing, updating DER members, and also the deletion of created DER groups.

DERGroup query

* A request that returns all the members of a given DERGroup

DERGroup status monitoring

* The reporting of status by DERGroup

DERGroup capabilities discovery

* Asking for and receiving the current capability of a group based on the request, e.g. real power

DERGroup Dispatch

* A command to release the requested capability, e.g. real power

DERGroup Forecast

* Given a start and end date, a number of intervals, e.g. 3, and interval type, e.g. days, return the DER capability and confidence.

All XSDs and example XML have been developed by EPRI.

**On-site Test Harness Support**

EPRI will be co-hosting a conformance test workshop based on the test harness at NREL facilities in Golden, CO. A support person will need to be in attendance to troubleshoot any errors and work with test participants. This test event will be for two days, Oct. 28th-29th, 2014.

**Out of Scope:**

The creation of any business functionality or capability within the DERMS itself. The SOW is only for these enterprise messages enumerated above.

Deliverables

* 1. Updated Test Harness which supports the enumerated test cases above.

Schedule

|  |  |
| --- | --- |
| **Task/Milestone/Deliverable Description** | **Due Date** |
| * Updated Test Harness that supports the DER Test Plan | October 27, 2014 |

EPRI Material/Other Documents

|  |  |
| --- | --- |
| **Source** | **IP Ownership** |
| EPRI Test Harness | EPRI |
| EPRI DER Test Plan | EPRI |
| IEC 61968-100 Integration Guidance for 61968 | IEC |
| MultiSpeak RC 5.0.4 | MultiSpeak |
| Message XSDs/WSDLs | EPRI |
| Use Cases | EPRI |
| soapUI | SmartBear |

1. Common Information Model (CIM) Conformity and Interoperability Test Procedure Development,

   Available [Online] http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000000001024448 [↑](#footnote-ref-1)
2. soapUI is a product of SmartBear, www.smartbear.com [↑](#footnote-ref-2)
3. Enterprise Integration Functions for Distributed Energy Resources, Phase 1, 3002001249, Technical Update, October 2013 [↑](#footnote-ref-3)