

# OpenADR 2.0b

## Protocol Implementation Conformance Statement (PICS)

Version 1.1.4  
Valid for Certification as of March 2, 2019

Manufacturer:	Allied Air Enterprises
Product Type:	HVAC Thermostat
Product Name:	Comfort Sync A3
Firmware Revision:	OpenADR Stack: 1.0.4-0:1 / Lennox Application 3.66.0608
<i>Tested OpenADR 2.0b Profile Spec version:</i>	1.1

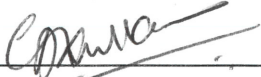
**Disclaimer:**

The information provided in this document can be made available to the general public in order to identify the tested versions, features and options.

By signing this document, the manufacturer confirms that all information provided in this document is correct and the applicable features have been tested.

Manufacturer Name: Lennox International Inc.

Representative Name and Title: Kulkarni, Chandrashekhar, Manager of Residential Control Quality

Signature:  \_\_\_\_\_

Date: February 25, 2020

## Revisions:

Version	Changes	Date/Editor
1.0.0	<ul style="list-style-type: none"> <li>Released Version</li> </ul>	06/28/13
1.0.1	<ul style="list-style-type: none"> <li>Added additional optional test case conditions</li> </ul>	07/28/13
1.0.2	<ul style="list-style-type: none"> <li>Added test case A_E1_0285 and A_E0_0285 to optional list</li> </ul>	08/15/13
1.0.4	<ul style="list-style-type: none"> <li>Added test case A_E3_0680 to optional list</li> </ul>	08/20/13
1.0.5	<ul style="list-style-type: none"> <li>Added the following test cases to optional list. A_E2_0435, A_E3_0435, A_E2_0685, A_E3_0685, R1_3070_TH_VTN_1, R0_8070_TH_VTN_1, R1_3080_TH_VTN_1, R0_8080_TH_VTN_1, R1_3090_TH_VTN_1, R0_8090_TH_VTN_1, R1_3100_TH_VTN_1, R0_8100_TH_VTN_1, R1_3120_TH_VTN_1, R0_8120_TH_VTN_1, R1_3050_TH_VEN, R0_8050_TH_VEN_1, R1_3060_TH_VEN, R0_8060_TH_VEN, R1_3120_TH_VTN_1 and R0_8120_TH_VTN_1.</li> </ul>	09/09/13
1.0.6	<ul style="list-style-type: none"> <li>Corrected typo.</li> <li>Removed test case A_E0_0295.</li> <li>Mentioned G0_9005.</li> </ul>	2/11/2014 EP, BD
1.0.7	<ul style="list-style-type: none"> <li>Corrections</li> </ul>	11/7/2015 JZ
1.1.2	<ul style="list-style-type: none"> <li>Revision incremented</li> </ul>	4/25/17 JZ
1.1.3	<ul style="list-style-type: none"> <li>Corrected typo on skipped test cases in item 5 of Optional Test Case Guidelines. R1 was changes to R0 on last 4 test cases</li> <li>Clarified payloads required if VEN or VTN do not implement optional characteristics of reporting.</li> <li>Corrected test specification and profiles specification references</li> </ul>	12/12/18 JZ
1.1.4	<ul style="list-style-type: none"> <li>Changed version to sync with test harness version</li> </ul>	9/12/19

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## Introduction

The purpose of this PICS document is to provide a mechanism whereby a supplier of an implementation based on the following requirements may provide information about the implementation in a standardized manner.

These requirements are drawn from the OASIS Energy Interoperation standard and related schemas. With the exception of OpenADR Alliance schema extensions, payloads generated by OpenADR 2.0b implementations should validate against the Energy Interop schemas.

Information provided by the supplier will be used to assess the implementation's compliance to the requirements, as well as to configure the certification tests performed on the implementation.

## References

- OpenADR 2.0b Profile Specification 1.1
- OpenADR 2.0b Test Spec V1.1.4
- OpenADR 2.0b Schema

## Abbreviations and Conventions

The PICS information comprises information in a tabular format as follows:

- **Item Column** – A number which identifies the item in the table
- **Capability Column** – A brief description of the requirement
- **Reference Column or Section Header** – A reference to a specific requirement in the specification
- **Status Column** – Contains notations regarding the requirements
  - M – Mandatory
  - O – Optional
  - N/A – Not applicable
  - X – Prohibited
  - O-i – Qualified Optional (mutually exclusive or selectable options from a set identified with the same “i” value)
  - C-i – Conditional (status dependent on support of other optional requirements, identified in footnotes at bottom of table with “i” being a reference integer for the footnote(s))
- **Support Column** – Yes or No answer is required. If feature is not applicable, answer No.
- **Values Allowed Column** – Optional column representing set of values allowed.
- **Values Supported Column** – Optional column where supplier can indicate a set of values supported by the implementation.

Note that all requirement references in the tables on the following pages are with respect to the OpenADR 2.0b Profile Specification, Version 1.1.



## Instructions for Completing the PICS

The first part of the PICS document, System Identification, is to be completed as indicated with the information necessary to fully identify both the supplier and the implementation.

The main part of the PICS document is a fixed format questionnaire. Answers to questionnaire items are to be provided in the rightmost column by simply marking an answer to indicate a choice, typically Yes or No.

If an implementation fails to support a mandatory item, or supports a prohibited item, the supplier should provide supplementary information with the PICS document explaining the rationale for the exception.

**Note: The burden of interoperability falls to the VTN implementation. Therefore any certified VTN must support the 2.0A profile and the 2.0B profile including the applicable schemas.**

## Documents required for final certification

- This PICS document
- Manufacturers Declaration of Conformity
- Completed Test Report from appointed test house
- Product marketing description for website (50 words)
- Product picture or logo if applicable
- Web link to product

**If you would like to postpone posting your product on the OpenADR Alliance website for a period of time (maximum 3 months), please fill out the following section.**

\_\_\_\_\_ (Manufacturer) herewith requests that the submitted product shall not be posted on the OpenADR Alliance product web page until \_\_\_\_\_ (date, max 3 months from submittal).

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

## Implementation and Supplier Information

Date of Statement	February 25, 2020
Product Name	Comfort Sync A3
Product Model Number	106527-XX
Version Number(s)	OpenADR Stack: 1.0.4-0:1 / Lennox Application 3.66.0608
Non-Default Hardware Configuration	Equipment Interface Module (EIM) which is HVAC Indoor/Outdoor unit simulator.
Non-Default Software Configuration	NA
Supplier Name, Address, Phone, Email	Kulkarni, Chandrashekhar 1600 Metrocrest Dr, Carrollton, TX 75006 972-497-7397 Chandrashekhar.Kulkarni@Lennoxind.com
Contact name, email, phone for questions	Kulkarni, Chandrashekhar Chandrashekhar.Kulkarni@Lennoxind.com

## Global Statement of Conformance

Requirement	Support
Are all mandatory capabilities supported for the indicated roles supported by this implementation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## Roles

Item	Role	Status	Support
1	VEN - Full Function	O-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	VEN - Energy Reporting Only	O-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3	VTN	O-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

O-1) Must answer Yes to one Role. Note that if an implementation supports both VEN and VTN functionality, two separate PICS documents should be submitted, one for each role.

## Profile Support

Requirements Reference: Conformance rule 506

Item	Role	Profile	Status	Support
1	VEN/VTN	"A" Profile	C -1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2	VEN/VTN	"B" Profile	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

C-1) VTNs must support the A and B Profile

C-1) VENs may support ONLY the B profile

## Transports /Exchange Pattern Support

Requirements Reference: Figure 1, OpenADR 2.0 Certification Levels and conformance rule 37

Item	Role	Transport	Status	Support
1	VEN/VTN	SimpleHTTP - Pull	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	VEN/VTN	SimpleHTTP - Push	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3	VEN/VTN	XMPP - Push	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

C-1) VTNs must support all transports and exchange patterns.

C-1) VENs must support at least one item from the list. If SimpleHTTP items are selected this must include the "SimpleHTTP-Pull" option from the list.

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## Service Support

Requirements Reference: Section 7.2.2 and conformance rules 501 and 507

Item	Role	Service	Status	Support
1	VEN/VTN	EiEvent	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	VEN/VTN	EiOpt	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	VEN/VTN	EiReport	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4	VEN/VTN	RiRegisterParty	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5	VEN/VTN	OadrPoll	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

C-1) VTNs and Full Function VENs must support these Services, but are not supported by Report Only VENs.

C-2) VTNs must support; VENs must support if simpleHTTP transport is supported.

## Security Support

Requirements Reference: Conformance rules 67, 68, and 514

Item	Role	Security	Status	Support
1	VEN	SHA2 Security -TLS 1.2 -Client and server x.509 certs with SHA2 -Alliance RSA <b>or</b> ECC SHA2 Ciphers -SASL_EXTERNAL (XMPP Only)	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	VTN	SHA2 Security -TLS 1.2 -Client and server x.509 certs with SHA2 -Alliance RSA <b>and</b> ECC SHA2 Ciphers -SASL_EXTERNAL (XMPP Only if supported)	M	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3	VEN/VTN	XML Signatures	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



## Payload Schema Conformance

For each payload generated by a VEN or VTN, indicate if it conforms to the OpenADR B Profile schema. Note that the Status is relative to the Role listed.

Item	Role	Payload	Status for Role	Validates Against B Schema
1	VEN-Pull	oadrPoll	C-1	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	VEN	oadrRequestEvent	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	VEN	oadrCreatedEvent	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4	VEN	oadrCreateOpt	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5	VEN	oadrCancelOpt	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6	VTN	oadrCanceledOpt	C-2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7	VEN	oadrQueryRegistration	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
8	VEN	oadrCreatePartyRegistration	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9	VEN/VTN	oadrResponse	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
10	VEN/VTN	oadrCancelPartyRegistration	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
11	VEN/VTN	oadrCanceledPartyRegistration	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
12	VEN/VTN	oadrRegisterReport	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
13	VEN/VTN	oadrRegisteredReport	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
14	VEN/VTN	oadrCreateReport	C-3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
15	VEN/VTN	oadrCreatedReport	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
16	VEN/VTN	oadrUpdateReport	C-4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
17	VEN/VTN	oadrUpdatedReport	C-3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
18	VEN/VTN	oadrCancelReport	C-3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
19	VEN/VTN	oadrCanceledReport	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
20	VTN	oadrCreatedOpt	C-2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
21	VTN	oadrDistributeEvent	C-2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
22	VTN	oadrCreatedPartyRegistration	M	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
23	VTN	oadrRequestReregistration	M	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

C-1) VENs with SimpleHTTP pull support must support oadrPoll, other implementations must not.

C-2) All implementations must support these options except for Report Only VENs.

C-3) VENs are not required to implement requesting reports from VTNs. If the VEN does not implement requesting reports from the VEN, the indicated payloads are not required

C-4) VTNs are not required to offer reports, so delivering reports other than metadata is not mandatory. If the VTN does not offer reports, the indicated payload is optional.



## Operational Sequence Support

The table below demonstrates the operational sequences and the conditional behavior for each of the services. The push HTTP acknowledgement (empty payload) of oadrDistributeEvent is not shown in the table. Indicate if all of the behavior shown in each section is supported by the implementation. Brackets are used to indicate conditional behavior which must be supported. Requirements reference: All figures in the B profile specification with interaction diagrams

Item	Service	App Level Exchange Sequence	Status	Support
1	EiEvent	{VEN: RequestEvent {Reply Limit}} VTN: oadrDistributeEvent {Response Required, baseline} {VEN: oadrCreatedEvent {Opt State}} VTN: oadrResponse }	C-1	[x]Yes [ ]No
2	EiOpt	VEN: oadrCreateOpt {Availability schedule} VTN: oadrCreatedOpt ---- VEN: oadrCancelOpt VTN: oadrCanceledOpt --- VEN: oadrCreateOpt - {Event Opt State} VTN: oadrCreatedOpt	C-1	[x]Yes [ ]No
3	EiRegisterParty	VEN: oadrQueryRegistration VTN: oadrCreatedPartyRegistration ---- VEN: oadrCreatePartyRegistration VTN: oadrCreatedPartyRegistration ---- VEN/VTN: oadrCancelPartyRegistration VTN/VEN: oadrCanceledPartyRegistration --- VTN: oadrRequestReregistration VEN: oadrResponse VEN: oadrCreatePartyRegistration VTN: oadrCreatedPartyRegistration	M	[x]Yes [ ]No
4	EiReport	VEN/VTN: oadrRegisterReport VTN/VEN: oadrRegisteredReport (Create Report *) ---- VEN/VTN: oadrCreateReport (Once or Periodic) VTN/VEN: oadrCreatedReport ---- VEN/VTN: oadrUpdateReport VTN/VEN: oadrUpdatedReport {Cancel Report *} ---- VEN/VTN: oadrCancelReport VTN/VEN: oadrCanceledReport {Report to Follow}	C-3	[x]Yes [ ]No
5	OadrPoll	VEN: oadrPoll VTN: Any payload sent by VTN	C-2	[x]Yes [ ]No

C-1) All implementations must support these options, except for Report Only VENs.

C-2) Required for SimpleHTTP Pull VENs only.

C-3) VENs and VTNs are not required to demonstrate initiating piggyback report requests and report cancellations (\*), but must understand them and act upon them if received from the other party. As noted in the prior Payload Schema Conformance section, VENs are not required to demonstrate requesting reports from VTNs and VTNs are not required to deliver reports other than metadata..

## Standard Event Signal Support

Indicate which of the following Alliance-defined standard signals are supported by the VEN or VTN .  
Requirements Reference: Conformance rule 510

Item	Role	Signal Name	SignalType	Status	Support
1	VEN/VTN	SIMPLE	LEVEL	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	VEN/VTN	ELECTRICITY_PRICE	Price	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	VEN/VTN	LOAD_DISPATCH	setpoint	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## Standard Report Support

Indicate which of the following Alliance-defined standard reports are offered as part of report registration by the VEN or VTN. Requirements Reference: Conformance rule 510

Item	Role	Report Name	Status	Support
1	VEN	METADATA	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	VEN	TELEMETRY_UASGE	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	VEN	TELEMETRY_STATUS	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4	VEN	HISTORY_USAGE	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5	VTN	METADATA	M	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

C-1) Optional for full function VENs; mandatory for Report Only VENs.

## Alliance “B” Profile Detailed Requirements

In addition to the requirements defined by the schema, the OpenADR 2.0b Profile has a detailed set of conformance rules that define the expected behavior of VTN and VEN implementations. As these rules already reflect the testable requirements, there is no need to relist them here. Please refer to the OpenADR 2.0b Profile Specification while indicating which of the following conformance rules are supported by the implementation.

Item (Rule)	Role	Status	Support
1	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
8	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
9	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
10	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
12	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
13	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
14	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
15	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
16	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
17	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
18	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
19	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
20	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
21	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
22	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
23	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
25	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
27	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
29	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
30	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
31	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
32	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
33	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
35	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
36	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
37	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
38	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
40	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
41	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
42	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
43	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
45	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
46	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
47	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
48	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
50	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
51	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
52	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Item (Rule)	Role	Status	Support
53	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
56	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
57	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
58	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
59	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
60	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
61	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
62	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
63	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
65	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
66	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
67	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
68	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
70	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
100	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
101	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
102	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
103	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
104	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
105	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
106	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
107	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
108	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
109	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
110	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
111	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
112	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
113	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
114	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
115	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
116	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
200	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
201	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
202	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
203	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
204	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
205	VTN	C-1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
206	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
207	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
208	VEN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
209	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
210	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
211	VEN/VTN	C-1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
300	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
301	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
302	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
303	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
304	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
305	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
306	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
307	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
308	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
309	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



Item (Rule)	Role	Status	Support
311	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
312	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
313	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
314	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
315	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
316	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
317	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
318	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
319	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
321	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
322	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
324	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
325	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
327	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
328	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
329	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
330	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
331	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
333	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
334	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
335	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
336	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
337	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
338	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
339	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
340	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
341	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
342	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
343	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
344	VEN/VTN	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
345	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
346	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
400	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
401	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
402	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
403	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
404	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
405	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
406	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
407	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
500	VEN/VTN	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
501	VEN/VTN	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
502	VEN/VTN	C-2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
506	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
507	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
508	VEN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
509	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
510	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
511	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
512	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
514	VEN/VTN	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
515	VEN/VTN	M	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

C-1) Required for all but Report Only VENs.

C-2) All VTNs and Simple HTTP VENs must support this requirement.



## Implementation Capabilities and Configuration

For each of the questions below, indicate if the implementation has the necessary functionality, configurability, and documentation to successfully complete the certification testing process.

Item	Description	Support
1	Does the implementation being submitted for certification support the capabilities outlined in the DUT Implementation Limits section of the OpenADR 2.0b Test Specification documentation? Note that these limits do not imply minimum market needs for a “b” profile implementation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	Does the implementation being submitted for certification support methodologies necessary to trigger specific actions during test execution as outlined in the DUT Configuration Requirements section of the OpenADR 2.0b Test Specification documentation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Have you attached documentation to this PICS statement regarding how to configure the implementation as outlined in Appendix A of the OpenADR Certification Test Harness User Guide?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4	Does the implementation being submitted for certification have pre-installed x.509 certificates from the OpenADR/NetworkFX portal?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5	Does the VEN's being submitted for certification must have host authentication of the X.509 client certificate CN field disabled in order to avoid complex reconfiguration of the test harness and Openfire server? Answer No if not testing a VEN	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6	Does the VTN being submitted for certification have the XMPP Server per-configured for the user name of 111111111111 which the test harness uses to connect to the implementation's VTN XMPP server. Answer No if not testing a VTN or XMPP is not supported	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7)	Does the VTN being offer reports as part of its metadata report. If so, periodic reporting will be tested. Answer No if not testing a VTN or no reports are supported	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

## Optional Test Case Guidelines

Following test cases may be skipped if the criterion noted is met.

Item	Criteria	
1	Implementations will support either a push and/or pull exchange model. XMPP is always push, whereas HTTP may be either push or pull. Test cases are listed within Eclipse in a tree with branches labels Push or Pull. Only test cases appropriate to the exchange models supported should be run on the implementation.	Http pull is supported
2	If the implementation supports multiple transport and exchange model combinations, the full test suite shall be run across at least one push and one pull configuration. If there is more than one push configuration, then at least 4 non-negative randomly selected test cases shall be run across each service, with execution of the GO_9005_TH_xxx/GO_9010_TH_xxx security test being mandatory as part of the test cases run.	Not supported
3	The following test cases may be skipped if HISTORY_USAGE reporting is not supported by a full function VEN. However, Report Only VENs must pass these test cases.  _R1_3130_TH_VTN _RO_8130_TH_VTN _R1_3140_TH_VTN _RO_8140_TH_VTN	Not supported
4	If the implementation is a Report Only VEN, then all of the tests under the EiEvent and EiOpt service headings may be skipped as these services are not required.	Not supported
5	If the answer to question 7 in the Implementation Capabilities and Configuration section is No and the implementation is a VTN, the following test cases may be skipped:  R1_3080_TH_VEN R1_3090_TH_VEN R1_3100_TH_VEN R1_3120_TH_VEN RO_8080_TH_VEN RO_8090_TH_VEN RO_8100_TH_VEN RO_8120_TH_VEN	Not supported
6	If the VTN cannot send an Empty oadrDisributeEvent skip test case EO_6010_TH_VEN	Not supported
7	If the VTN cannot be configured to set oadrResponseRequired to never skip test cases A_E2_0468, A_E2_0480, A_E2_0498,	Not supported

	A_E3_0468, A_E3_0480, and A_E3_0498	
8	If VEN cannot be configure with multiple Market Context, skip test case A_E1_0285 and A_E0_0285	Supported
9	If the VTN cannot set a ramp up period skip test cases A_E2_0527 and A_E3_0527	Not supported
10	If the VTN cannot configure multiple intervals in an event skip test case A_E2_0432 and A_E3_0432	Not supported
11	If a VTN cannot set an event's priority skip test case A_E2_0510, A_E3_0510, A_E2_0520, and A_E3_0520	Not supported
12	If the VTN does not support configuration of eiTarget subelements, skip test case A_E3_0435 and A_E2_0435.	Not supported
13	If the VTN does not support configuration of randomization with a startafter element skip test cases A_E2_0685 and A_E3_0685.	Not supported
14	If the VEN cannot be configured to request reports from VTN skip test case R1_3070_TH_VTN_1, R0_8070_TH_VTN_1, R1_3080_TH_VTN_1, R0_8080_TH_VTN_1, R1_3090_TH_VTN_1, R0_8090_TH_VTN_1, R1_3100_TH_VTN_1, R0_8100_TH_VTN_1, R1_3120_TH_VTN_1 and R0_8120_TH_VTN.	Not supported
15	If the VTN or VEN cannot be configured to send piggy back report requests and report cancellation payloads skip test cases R1_3050_TH_VEN, R0_8050_TH_VEN_1, R1_3060_TH_VEN, R0_8060_TH_VEN, R1_3120_TH_VTN_1 and R0_8120_TH_VTN.	Not supported
16	Test cases E1_1050_TH_VTN and E1_6050_TH_VTN may be skipped the VEN cannot configured to send an async odrRequestEvent as required by this test case.	Not supported