Webinar Q&A:
IEEE 1547.1 Interoperability

On December 17, 2020, QualityLogic held a webinar on IEEE 1547.1 interoperability. These are the questions that were asked by the webinar attendees along with our answers.

To view the webinar in full, visit:
www.qualitylogic.com/december-2020-webinar-ieee-1547-interoperability/

Question: Where does OpenADR play in reference to "Which Protocol to Use" while handling DER use cases?

Answer: OpenADR does not play in this domain today. It is not one of the named protocols in 1547.1. When the 1547 workgroup was putting together their list of protocols, OpenADR was seen as a demand response protocol and not as a protocol for dealing with the advanced inverter functions, so it was not included. There is some work going on in the OpenADR Alliance to address this, but at this point in time, it's not there.

Question: For CA Rule 21 — 2030.5 interoperability IS required, correct? Even if the supported protocol is DNP3 or SunSpec MODBUS.

Answer: IEEE 2030.5 is not actually required at the local inverter interface unless that inverter is directly communicating with the utility. However, most of the inverters are expected to be communicating either through an aggregator or some other gateway, such as a cloud-based or local gateway, and California Rule 21 has not yet addressed how that communication happens. All that is stated is that you have to use 2030.5 to get to the first leg of the communication that the utility is communicating directly with. Now that's temporary (maybe). When 1547.1 / UL1741SB is mandated in California, there could be a requirement that one of the 3 protocols is used locally, unless California determines they want to specify 2030.5 has to be supported as part of the UL 1741 SB certification.

Question: Have you seen aggregators adopting your tools or test environment for testing interoperability conformance?

Answer: Absolutely. Anyone who goes through certification ends up using our tools, and the labs use our tools to do the certification testing itself. They're very helpful for being able to do development testing as well as for pre-certification testing.

Question: Why are aggregators not required to provide IEEE 2030.5 interface?

Answer: The aggregators are required to provide a 2030.5 interface in California if their system is communicating directly with the utility. Aggregators are not required, at this point anyway, to use 2030.5, SunSpec, or anything else to talk to the inverters.

Question: **So in California only, the aggregators need a 2030.5 interface to the utility?**

Answer: Yes, but what we think you will see is that because California is requiring it, other states and countries will leverage the interface.

Question: **Is it mandatory if a utility and service provider have a mutual agreement, then can they use Aggregator?**

Answer: I think it's going to be state to state, jurisdiction to jurisdiction, and utility to utility. In California it's not mandated that they use an aggregator. What is mandated is that if you are going to use an aggregator, there are a set of rules to explain how the aggregator is going to communicate to the utility DERMS. We think that's going to be an area still to be figured out in the industry. There's a business side to dealing with aggregation, and that hasn't been determined.

Question: **Can Section 6 interoperability of 1547.1 be applied to synchronous generator–based power plants control systems communication base, or just for smart inverters.**

Answer: It's a question that the industry is also talking through to understand. The 1547 standard does reference rotating generators. . If the control system is 1547 compliant and gets certified, then it would need to support one of the interoperability profiles.

Question: **Is 1741SB an evolution of 1741SA?**

Answer: Evolution can mean a lot of things, but it is an update to 1741SA to reflect the new requirements coming in from 1547-2018 and the 1547.1 spec that was just released. 1741 SB has been approved and is available from the UL website.

Question: **What are the requirements to connect to utilities?**

Answer: It depends on the utility, the state, and the country. That's one of the complexities of this industry. Look at the inverter vendors - they have very complex systems that keep track of all of the nuances of the certification requirements, settings, and everything else. So if you're sending an inverter to Mississippi, then it probably has a basic set of requirements that are comparable, but it won't have anything like a CSIP 2030.5 requirement.

Question: **Is there an effort to standardize asset information exchange for synchronizing asset details between Utilities and Aggregators? An asset would be a DER, the location, ownership, etc.**

Answer: Within 1547 there is a standardized reports format to report from the labs the exact results of the testing and certification test. It is specified in a standardized CSV file. Utilities are looking at using that same report format to specify what the settings need to be for installed systems, or even capturing the configuration of the installed system. But in terms of a larger database, there's some work going on in SunSpec with the Orange Button, which is more around standardizing this kind of asset. It also gets into the kind of details of the assets so that people making financial decisions can also evaluate it. They're focused on issues like how long ago it was installed, how many hours before maintenance, what's the maintenance history, etc.

Question: **We used to reference function 17 and 18 in SA 1741. Are those functions still part of the UL 1741 SB requirements? Or is the 19 and 20 now?**

Answer: SA 17 & 18 have not changed. They are still part of the next revision. SB adds onto the SA* tests for 1547-2018/1547.1-2020 by referring to the 1547.1 sections.