October 17, 2017 WEBEX MEETING NOTES

Summary
- Attendance: approximately 50 attendees via Webex
- Presentations and notes available online: http://www.cpuc.ca.gov/vgi/
- Facilitator Justin Regnier reminded everyone of the need for professional conduct.
- Presentation 1: Josh McDonald, SCE
    - Proposed the use of the EVSE as a "bridge" to meet a variety of design constraints, as a way of future proofing investment.
    - Parties provided concerns regarding the implications of which standards could be used in the EVSE setup, the use of terminology, the applicability of different use cases including Rule 21, vehicles using high-level communications, and the prevalence of this design in current uses and private investments.
    - Josh indicated that he would receive feedback and edit slides for posting on the website
- Presentation 2: Justin Regnier, CEC
    - Reviewed the Deliverable 1.3 process taken to map the requirements that are met by standards and displayed a tabular result: a high-level summary of underlying analyses and system diagrams completed by the subject matter experts.
    - Parties provided feedback about the need to provide sufficient resolution of the results and sought to review underlying spreadsheets analyzing requirements, to understand how standards met the requirements in combination with others, and to provide comment if they believed elements were incomplete.
    - Justin requested that SMEs indicate whether they did not want to post their analysis online by Tuesday.

Action Items & Next Steps
- Josh McDonald sought feedback on the EVSE bridge presentation, which will be posted online.
- Justin Regnier sought confirmation from the Deliverable 1.3 SMEs on whether they opposed posting their spreadsheet analysis online by 10a on Tuesday.
- The next working group webex is October 30 and the next in-person meeting is November 14.

Resources
- Email the state agencies (CPUC, CEC, ARB, CAISO, GO-Biz) with any questions or comments: vgiworkinggroup@cpuc.ca.gov

Detailed Comments
- Questions on Bridging
    - Amy Mesrobian: what would this entail?
        - Josh Macdonald: Goal is to use 1 application for communicating from the grid to the EV.
        - AM: For the 7 to 8 protocols currently being examined, how many would be excluded?
            - JM: There is only one protocol to support: IEEE 2030.5. We're interested in allowing choice, but only one meets this design construct. This is

focused on what is possible in the future. Currently there is no EV that supports High Level Communications.

- Lance Atkins: IEEE 2030.5 would be able to support this, but it's not the only one that would be able to support VGI.

▪ Jennifer Kalafut: On what basis would this be future proofing?

- JM: Would allow functional requirements to be met in the future.
- Jen: It implies a certain type of DER to be used. What are the limiting factors?
  - It allows any application to be used, as opposed to a single application.

▪ Noel: How does this related to Rule 21 applications?

- JM: It is compatible with R21, which sets smart inverter capabilities and functionality. If there are AC or DC charging, it supports the capability. It doesn't depend on specific capability and functionality. This does not relate to translation to the cloud. This presentation does not relate to Rule 21 as it does not describe function or application.

▪ Hank McGlynn: If an automaker wanted to use OpenADR, they could.

- Mike Bourton: None are excluded as they use IP. Bridge compatible.

▪ Alec Brooks: ISO 15118 is the only one that is gaining traction with AC charging. Point that High Level Communications is not available in existing cars is right, but most automakers are making them capable of it, and are only supporting 15118.

- JM: That's a program design issue and the IOUs are concerned about taking a guess about what's being supported in the future.

▪ Oleg Logvinov: Need to understand "bridging" vs "routing" especially with translating EVSE communications. In the nomenclature used here, what's the difference between protocol translation and routing?

- JM: Design detail will determine what is automatically supported. All EVSE must support the bridge, but can't support every physical layer communication, which may vary depending on the deployment.

▪ Noel Crisostomo: What design construct is currently being implemented in the EVSE and EV?

- Mike Bourton: There are no protocol converters, but a DOE project is building the bridge.
- Tom Ashley: Greenlots project is translating SEP 2 and 15118. Currently in the process of doing ISO 15118 and OCPP, but it is not live.
- Oleg Logvinov: The deployment of 15118 to OCPP is widespread in most of the networks that are being used in Europe, and more deployments are occurring in the U.S.
- Alec Brooks: EVSEs, rather than vehicles, are energy metering. Whoever is running the EVSE is paying the electrical bill. Since the EVSE is stationary, it allows for "association." No automaker has installed a grid meter.
- Stephan Voit: There is a good reason that there are no automotive grade energy meters since metering must be associated with an individual connection point.
- Mike Bourton: Metering is not precluded in the bridge concept.

- o AB: If energy use information can't be passed through, what is being passed?
- o MB: It is not precluded in the bridging function, which is not meant to deal with anything other than PFE/EV communication.
- o JM: Some regulatory uses for metering. Currently demonstrating getting metering information from automakers for M&V.
- o AB: NIST Handbook 44 defines it at the EVSE.
  - NC: DMS already requires this level of specificity for public EVSE.
- o SV: A mobile meter is tricky with respect to balancing power. How much energy is being provided and settled region is done constantly and the EV kWh needs to be associated with a specific location.
- o Peter Klauer: CAISO needs to have measurement coordinated between two parts: 1) the EVSE and EV to define the DER and 2) coordination among the recipients of the communication: IOU and ISO. Energy measurement is a settlements issue.
- o Oleg Logvinov: Need to distinguish between bridging and how the network packet is handled.
  - JM: The EVSE will be IP capable.
  - OL: Why only 1 application? The whole point of IP is to use multiple applications through 1 pipe. Are you suggesting to use a single transport mechanism?
    - JM: Yes
  - OL: Need more detail to flush out the proposal.
- o Alec Brooks: Clarify: you're not precluding EVSEs to be connected to cloud application? None of today's cars support the bridge concept. Furthermore, the EVSE is the contactor to allow the charge and will be used to authenticate.
  - JM: There may be near term needs. The proposal as it stands is a good future proofing deployment. It does not point to other applications.
  - AB: Even long into the future you'll need the vehicle to authenticate.
    - JM: How authentication works will be determined.
  - AB: How does the EVSE get notified?
    - JM: That depends on deployment.
- o Hank McGlynn: If you were to standardize the EVSE, it needs its own ability to converse: another model is the gateway. This is the model where the EV/PFE is connected.
  - JM: The bridge represents one application.
  - Mike: this doesn't exclude anything and this hasn't discussed authentication.
  - Hank: The EVSE manufacturer will have to make a decision.
- o Greenlots: Supports communication between the car and the ecosystem, but there are strong positives to facilitating an environment between the EV around the service provider. Main concern is how to reduce vendor lock-in and the primary method to do that is OCPP. How does this relate?
  - JM: This doesn't relate to OCPP unless modified to include EVSE communication. If the EVSE is certified to OCPP, it prevents vendor lock in.
- Deliverable 1.3
  - o Dean: Miscellaneous?
    - Defined to mean renewable content for electricity and GPS coordinates.

- - Oleg Logvinov: where is DC charging?
    - Would like to analyze both DC and AC.
    - There is equivalence for DC charging: 15118-2, SAE 2847/2
    - Important to give information to provide an intelligent decision. The scorecard doesn't give an accurate representation.
  - Dean: Requests definition on how "support in combination" is achieved and to name the other protocols involved.
    - Amy: Can these be made public?
    - Justin requests SMEs to confirm public.
  - Oleg: Geographically, it is hard to find analogous identities of other standards. This is missing economies of scale. Need to fix to ensure accuracy and resolution of information.
    - Hank McGlynn: Need information specialized for each node.
    - Mike Bourton: Need a better report. DC charging in combination.
    - HM: Does 2030.1.1 even deal with smart AC charging? Could have a table for AC and DC?
    - Noel Crisostomo: Look at ACR 5 for further assessment of extensibility.

Attendees

- Alec Brooks, Ted Bohn, Brian Chen, Brian Hamilton, Chad Bass, David Goldgraben, David McCreadie, Dean Taylor, Elpiniki Apostolaki, Fahad Saadat, George Bellino, Gordon Lum, Hank McGlynn, James Tarchinski, Jamie Hall, Jason Harper, Jeremy Whaling, Joe Kaatz, John Mengwasser, Jordan Smith, Josh McDonald, Kayva Balaraman, Keith Hardy, Kiel Pratt, Lance Atkins, Liam Weaver, Lydia, Mahdi Ghamkhari, Matt Fung, Mike Bourton, Nidia Bautista, Oleg Logvinov, Quang Pham, Ralph Troute, Rich Scholer, Rob Solaski, Robert Uyeki, Ross Ponder, Samuel Lerman, Scott Turik, Stephan Voit, Steven Yip, Tom Ashley, Tim Lipman, Wufan Jia
- Agencies: Justin Regnier, Elise Keddie, Stephanie Palmer, Amy Mesrobian, Carrie Sisto, Jen Kalafut, Noel Crisostomo, Tyson Eckerle, Peter Klauer