July 10, 2017 WEBEX MEETING NOTES

Summary
- Attendance: approximately 50 attendees via Webex
- Presentations and notes available online: http://www.cpuc.ca.gov/vgi/
- Presentation 1: Stephanie Palmer, Overview of Deliverable 1 Outline
  - Stephanie presented a draft outline of Deliverable 1 for Working Group feedback. The outline for Deliverable 1 is included in the email with these meeting notes and available under the July 10 meeting materials on the VGI website.
    - If anyone is feeling the outline is missing a topic that was discussed in the group please comment and send back to Stephanie Palmer Stephanie.palmer@arb.ca.gov or the VGIworkinggroup@cpuc.ca.gov
    - Agency staff will be writing up this deliverable, working group members will be able to provide comments to the draft before it is published
  - Requests: In completing Deliverable 1, consider how to briefly summarize the use cases, feedback on additional points for the outline.
  - ISO 15118 will present use cases on Tuesday.
  - Requirements for use cases in the spreadsheet on Google Drive are due by Friday, July 14.
- Presentation 2: Justin Regnier, Standards Mapping Subgroup
  - Request: Need leadership and subject matter experts
    - Self-nominated leaders should let us know their intent by Friday, July 14.
    - Mike Bourton will facilitate but won't contribute technical opinion
  - Key Tasks
    - Leadership to determine timeline and subtasks/meetings similar to the Use Case Sub-Working Group
    - List standards that map to use case requirements
    - Subject Matter Experts of a particular standard vet the standard's ability to meet the requirement, with reference to the standard's documentation.
  - Participants
  - Barry Sole, Harmeet Singh, Adam Langton, Oleg Logvinov, Stephen Yip, Vincent Chen, Lisa McGhee, Hannah Goldsmith, Dave McCreadie, Scott Tourick, Craig Rodine, John Mengwasser, Jordan Smith, Hank McGlynn, Philippe Phanivong, Timothy Lipman, Jeremy Whaling
  - Brainstorm of standards to examine (participants may identify additional standards at a later date)
    - IEEE 2030.5/ SEP 2.0
    - Telematics
    - OpenADR v2.0b
    - ISO 15118 v1
    - CHAdeMO (IEEE 2030-1-1)
    - CNMP (IEEE 2690)
    - SAE J3072, J2847, J2931, J1772
    - OCPP v1.6

Action Items & Next Steps

- For the Use Case Sub-Working Group, participants should finish listing requirements to complete their use case in the XLS ASAP.
- Provide feedback to vgiworkinggroup@cpuc.ca.gov by July 20 on the Deliverable 1 outline.
- For the Standards Mapping Sub-Working Group, leadership and additional participants should identify their intentions by Friday, July 14. Agencies will follow up with leadership to assist with scoping.
- Agencies will amend the workplan to accommodate refined scope of Deliverables, and updated timeline.
- The next full Working Group meeting is a Webex on Monday, July 24.

Resources

- Email the state agencies (CPUC, CEC, ARB, CAISO, GO-Biz) with any questions or comments: vgiworkinggroup@cpuc.ca.gov
- Access the Use Case Sub-Working Group documents, including requirements template, on Google drive: https://drive.google.com/drive/folders/0B4_ZRQzLAsLNeXRYcjRKa2FwUjg?usp=sharing
- Access the Definitions Sub-Working Group documents on Google drive: https://drive.google.com/open?id=0B4_ZRQzLAsLNdV9Fc0doVHZPZEU

Detailed Comments

- Barry: 2 standards being considered within the EVSE for communications are ISO and SEP
- Adam: Agencies are asking the wrong question, and should instead ask to identify the communications pathways.
- Justin: Use cases entail communications pathways already, and through this exercise we will be able to learn what standards are applicable, and prove how they solve the requirement.
- Adam: Should ask what communication standards would be helpful for connecting the utility and the EV
  - o Amy: This is already captured in the spreadsheet that defines the use case requirements
  - o Noel: it is captured in the NSP/EV path
  - o Stephanie confirms the intent of the XLS
  - o Mike Bourton: agreed
- Dean: There could be multiple paths that cross...how is that shown in the spreadsheet?
  - o Mike: It is laid out by identifying end-points
  - o Justin: If you have a use case that requires particular pathway to complete a use case, be specific in filling the XLS.
- Dean: How are you going to do a gap analysis to ensure completion?
  - o Mike: Refer to Adam's matrix
- Adam: If a use case uses a different communication pathway, it should be separate
  - o Justin: If achieving end goal is dependent on alternative path, it requires a separate use case. If one use case has many bifurcations with several pathways, separate them.
- Hank: Paths depend whether or not the EVSE or EV is controlling load.

- o Stephanie: Capture different implementation by separating 2 line items and notate using yellow column in XLS
- Lisa: More information is needed to accommodate fleet charging and speed
  - o Jeremy: Similar to BMS demand charge management case, suggests a combination of SEP 2.0b to ISO 15118
  - o Noel: agrees that DCFC can be smart too, it is just a matter of magnitude
  - o Mike: In describing a requirement shouldn't define an implementation architecture
- Gadi: What is in scope? Are potential cases being left out?
  - o Barry: Scope says that we will not make a new protocol. Must use an existing protocol and be determined inside the EVSE, per PUC assignment.
  - o Mike: Must have the architecture discussion before pointing to EVSE or protocols.
  - o Noel: Explained that the XLS identifies requirements for completing use cases. The Standards Mapping Sub-Working Group takes requirements and maps them to existing standards or protocols that complete requirements
  - o Hank: Believes that the spreadsheet makes an assumption on the architecture.
- Gadi and Oleg: Adjacent question: One of the assumptions was that everything was in scope. Are we going to identify all pathways? What is the schedule?
  - o Amy: Agencies want to understand all pathways that could unlock the value of VGI. But CPUC has jurisdiction only over certain aspects (the EVSE) related to investments of the investor-owned utilities, which we regulate. Need to know larger context to answer tiny question. The Working Group is scheduled to conclude in the fall, to potentially inform a CPUC decision in early 2018.
  - o Oleg: With the permutations of scope, previous similar tasks did not take a couple of months, took years.
- Justin: Scope question has been heard to confirm that we need to identify standards to meet requirements. Only 2 standards have been proposed. What others exist?
  - o Stephanie: Goal in workplan is to map all standards to actors for context.
  - o Adam: A standard is used on part of, not the entire, communication pathway, (e.g. EV telematics + OpenADR 2.0b).
  - o Noel: The XLS allows for such flexibility with the communication path segments and actors. Can designate primary, secondary, alternative, none, etc.
  - o Adam: Differentiates 2 questions: 1) What's get used to complete VGI and 2) What is put on EVSE. Concerned about precluding future cases.
  - o Barry: We need to consider an open standard on public investments.
  - o Lisa: we need information for purposes of garage/maintenance services
  - o Barry: Goal should be interoperability for any EV, connecting to any EVSE, at any time
  - o Stephanie: We are examining application of standards across all domains for due diligence on the whole system, though our ultimate decision is narrow.
  - o Craig: For a recommendation, we are talking about many ultimate communications, but we are really focusing on EVSE and EV, and perhaps the EVSE and another system. The EVSE communications is a primary concern, because the other concerns are softer. For example, once you decide connector physics, it's "sticky."
- Justin: Options for consideration in recommending standards on EVSE are one, many, or none. If there's a pathway dependency, describe it in the use case. We will do further winnowing, but

only once we figure which standards are being used. To complete this task we examine Use Cases, what is required to complete the UC, and which standards complete the requirement

- o Craig: I don't think of telematics as an entrant/option for connection. The EV could be talking to the EVSE or the cloud. The entrant is responsible for preparing information. If you're looking for candidates, there are many ways to present information. Concern about expansion of work.
  - o Noel: We aren't intending to boil the ocean in examine all standards but ultimately this will allow us to better examine a cup, e.g. the EVSE part. In doing so, we have to understand what people want to use in the use cases.
  - o Oleg: if we cast a wide net, anything can be accomplished with enough time and resource. Instead, consider what is tractable in the market.
- Justin: what are we relying on for use cases?
  - o Craig: Northbound and Southbound: CHAdeMo (IEEE 2030-1-1). CNMP (IEEE 2690)
  - o Lance: CHAdeMo has some advancements underway in IEEE 2030-1-1
  - o Mike: SAE J3072, J2847, J2931
  - o Hank: Lower level protocols (ISO 15118-3) need to be discussed as they implicate hardware. ISO and SAE have harmonized physical layers.
  - o OCPP
  - o Lisa: Utility interconnection SAE J3072. Consider charge speed/adequacy and efficiency
    - ▪ Noel: speed, line length resistance, and input/outputs are too detailed and are tangential to the scope of communications but can be derived if the information that is gathered at certain points like at the primary service meter, EVSE, EV (if available)
    - ▪ Ted/Stephanie: DMS Handbook 44 (ANSI C12) requires metrology to ensure accuracy for commercial sales of electricity as a transport fuel
  - o Hank: Compliance with Rule 21 for inverter functions
  - o OpenADR
  - o Dean: Is there a difference between IEEE 2030.5 and SEP 2.0b?
  - o Mike/Hank/Noel: No, they are interchangeable because of consolidation (Zigbee not maintained)

Participants

- Facilitator: Justin Regnier
- CA Agencies: Amy Mesrobian, Carrie Sisto, Peter Klauer, Stephanie Palmer, Elise Keddie, Noel Crisostomo
- Jeremy Whaling, Thomas Ashley, Vincent Oleg, Gadi Lenz, Stephen Yip, Barry Sole, John (Shell), Dean Taylor, Ted Bone, Hannah Goldsmith, Mike Bourton, AJ Howard, Jordan Smith, Gordon Lum, Gunnar Barwaldt, Hank McGlynn, Harmeet Singh, James Tarchinski, JC Martin, John Mengwasser, Kelsey Johnson, Lance Atkins, Lonneke Driessen, Lydia Krefta, Mark Fruechtnicht, Philippe Phanivong, David Goldgraben, ~20 additional unidentified.