July 24, 2017 WEBEX MEETING NOTES

Summary

- Attendance: approximately 30 attendees via Webex
- Presentations and notes available online: http://www.cpuc.ca.gov/vgi/
- Presentation 1: Carrie Sisto (CPUC), Revised Workplan
  - Overviewed revisions, which clarify and specify agencies' intentions for the Working Group. These revisions incorporate several rounds of parties' comments, and consider discussion during calls and progress within the subgroups.
  - Any comments, which should not rehash older issues, are due Wednesday.
- Presentation 2: Dean Taylor(SCE), Terminology and Definitions
  - Is considering many external inputs including CPUC, DOE, and European guides on DER.
  - Requests participants to add terms, definitions, and source documents that will be organized by categories.
  - Will need to reduce number of VGI value frameworks. May distinguish between 1) procurable services and 2) benefits to the site host. Need to avoid double counting.
  - To participate, email Dean.Taylor@sce.com
- Presentation 3: Stephanie Palmer (ARB), Requirements Subgroup
  - Proposed a framework (i.e. octagon figure) to harmonize extracted requirements and categorize the actors involved. Provided examples of how the implementation of use cases would be overlaid with the octagon figure to describe what equipment is involved.
  - Contact Stephanie.palmer@arb.ca.gov to participate on Tuesday and Thursday 730-9a calls.
  - On 7/25 call, will normalize the terminology in used to describe the Use Case requirements.
  - Requirements subgroup will finish extracting the requirements to hand over to the mapping group in two weeks
- Presentation 4: Stephanie Palmer (ARB), Deliverable 1
  - Described outline of Deliverable 1 and key additions.
  - Agencies will summarize outputs from subgroups (Use Cases, Requirements, and Definitions) into Deliverable 1. Deliverable 1 will be a work in progress as subgroup tasks are completed
    - A general summary about the effort to compile definitions will be included in Deliverable 1, though the appendix itself is not complete. The full Definitions appendix will be written in concurrence as input is gathered.

Action Items & Next Steps

- Parties may comment on the Workplan until July 26 by sending an email to the agencies.
- To participate in the Definitions subgroup, email Dean Taylor.
- To participate in the Requirements subgroup, email Stephanie Palmer.
- Mapping communications protocols to use case requirements group start up TBD
- The next full Working Group meeting is in San Francisco on Monday, August 7.

Resources

- Email the state agencies 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

Revised Workplan

- Mike Bourton
  - Re: Deliverable 1.3, suggests swapping "Requirements" and "Communication Protocols"
  - Suggest "Mapping Communications protocols to Use Case Requirements"
- Dave McCreadie
  - It is important to quantitatively estimate economic value to help OEMs understand a range of value for VGI
    - Carrie Sisto: This deliverable will generally categorize costs and benefits.
- Jeremy Whaling
  - Agrees with Dave, requests order of magnitude estimate of the values
  - Identified that values could conflict (e.g. max RE use coincident with Demand Charge).
    - Noel Crisostomo
      - We are not ranking or prioritizing use cases in quantifying value.
      - Beyond anecdotal information, and to quantify costs and benefits, we need more detailed information from OEMs, EVSPs, and utilities.
    - Amy Mesrobian
      - Welcome quantitative information, but we are avoiding the creation of a new methodology for assigning costs and benefits to use cases.
- Dean Taylor
  - What's the purpose of Appendix A, which describes how value might be considered among other constraints, describing the tradeoffs between choices?
    - Noel: Appendix A describing the Exemplary Criteria is not extricated on purpose, and provides a guiding policy perspective.
  - Deliverable 3 – where are pilots?
    - Amy: Requiring pilots are out of scope of the Workplan, which is focusing on Communications Protocols. However, pilots could be recommended after the process in other forums.
- George Bellino
  - Could the recommendation include pilots?
    - Amy: Could test pilots including use cases that are not supported by communication protocols.
    - Peter: This effort does not replace pilot demonstrations, but could highlight how to streamline access to resources.
    - Noel: Agreed with Peter, the effort does not preclude demonstrations. CEC just announced EPIC funding for Advanced VGI in Fleets.
- Name Unknown, UC Berkeley

- o What are costs of implementing standards?
  - ▪ Noel: Deliverable 2 examines this question.
  - ▪ Justin: Please share quantitative information, since costs are unknown.
- Dean Taylor
  - o What about a situation where no protocols are used? Will the use case need to prove why that's the case?
    - ▪ Amy/Noel: Sections referring to "alternative" means to complete VGI remain included, e.g. on the 2nd paragraph of page 4.
- George Bellino
  - o Please explain last paragraph on page 4, "…but are not necessary to achieve the use case."
    - ▪ Amy defers to Jeremy: This entails a case where standards allow for a better customer interaction. For example with Demand Charge mitigation, higher level communications would enhance the use case by avoiding stranding.
- Name Unknown, UC Berkeley
  - o What methodology is being used to extract requirements?
    - ▪ Stephanie: See subsequent presentation.
- Dean Taylor
  - o How do we provide comments?
    - ▪ Justin: Due Wednesday
    - ▪ Noel: These edits reflect changes to the workplan over the past several months, so do not rehash prior issues in comments.

Definitions

- Mike Bourton
  - o Power Flow Entity (PFE): need to distinguish between aggregator and the control entity. Essentially, who is the last in the chain for managing vehicle?
- Peter Klauer
  - o Concerned and identifies need to coordinate with the T&D interface work by CAISO and IOUs. http://morethansmart.org/wp-content/uploads/2017/06/MTS_CoordinationTransmissionReport.pdf
  - o Suggests term is a placeholder definition for now, and shouldn't detract from the task to define what protocols can assist in enabling dispatch.
- Philippe Patavong
  - o Is this just EV or all DER? (EV-specific, see discussion on Requirements below)

Requirements

- Stephanie Palmer
- Methodology – normalizing the terms to actor list. Then go through the requirements and normalize the terms.
  - o PFE is not the "controller" – the term control implies obeying something and that is not always the case

- o Recognize that it is a EV-specific Battery System that is connected to grid in a variety of ways
- o Distinguishes the EV connection system ("the plug") is different than the EV Power Converter, depending on the use case.
- o EV Driver, which can include driver, owner and manager
- o Utility Customer of Record bill payer at the customer location
  - ▪ Dean: These could be three entities: Owner of property, Site Host (a tenant on the property), and Utility customer of Record. "Ratepayer" is generally a non-participant and should be kept separate.
- o Energy Meter – intended to identify that there are meters on site. But each use case may have different meters
  - ▪ Lance Atkins: Who is the entity at the site from a metering standpoint?
  - ▪ Noel: Should harmonize with Submetering Protocol work.
- Philippe
  - o If this glossary leaves our working group, there will be confusion.
  - o The Power Flow Entity should be distinguished as a concept only for EV)
- Hank
  - o Controlling Entity: who is the driver engaging with?
    - ▪ Stephanie: The ones posted are examples, so indicate what you're doing with a particular use case.
- Peter
  - o Will need to align with other work but ok for now.
- Noel
  - o Is the intent of the figure to identify where fragmentations occur?
    - ▪ Stephanie: Can find redundancies and missing information.
- Philippe
  - o Specify that the Energy Connection is just for the EV
- Dean
  - o Clarify what the topography looks like for separated service drops for the EV and for the non-EV building load. Clarified that it is not an "in-series" service using a submeter.
- Add to group or let Stephanie know: Barry Sole (barry.sole@porsche.de), Noel Crisostomo

Mapping Requirements to Protocols to Sub-working group

- Justin
  - o Email Justin to work on Mapping Requirements to protocols subgroup, but it is depending on outputs from previous groups – requirements and definitions
- Dean
  - o Relays that Adam Langton (BMW, absent), is concerned that the working group is focused on specifying protocols for the EVSE, although the EVSE might be optional.
  - o George: Disagrees because if we map the requirements to protocols, the importance of the actors involved will flow from requirements. This requirements extraction in other

areas alleviates focus on EVSE and will determine whether or not the use case can be completed.

- Several parties assent to summary.
  - Mike Bourton (Kitu)
  - Dave McCreadie (Ford)
  - Jim Tarkinski (GM)
  - Robert Uyeki (Honda)
  - Rich Scholer (FCA)

- George
  - Unsure if future pilots will incorporate results from the process.
    - Peter: Pilots might be needed as identified and documented as part of this process, but we're not there yet. The process will highlight what makes sense to enable us to incorporate and access EVs faster.
    - Justin: Trying to address this question in the workplan. Directing pilots at this time is out of scope.
    - Amy: Could be identified in the VGI Roadmap effort, but there is no resource to address that.
    - Noel: We are addressing Updating the VGI Roadmap in IEPR.

Attendees

Barry Sole (Porsche), Steven (VW), Gadi Lenz (ioTecha), Jeremy Whaling (Honda), Scott Turik (Ford), Abigail Tinker (PG&E), Alec Brooks (EMW), Philippe Patavong (UC Berkeley), Dave McCreadie (Ford), Mike Bourton (Kitu), Hank McGlynn (Aech), Keith Hardy (INL), Lance Atkins (Nissan), Francesca Wahl (Tesla), George Bellino (EPRI), James Tarchinski (GM), Jamie Hall (GM), John Mengwasser (Shell), Matthias Weber (VW), Robert Uyeki (Toyota), Stephan Voit (Oxygen Initiative) + unidentified call-in.

Carrie Sisto & Amy Mesrobian (CPUC), Stephanie Palmer & Elise Keddie (ARB), Noel Crisostomo & Justin Regnier (CEC), Peter Klauer (CAISO), Tyson Eckerle (GoBiz)