CAISO Metering/Telemetry Scenarios Working Group

November, 15, 2012

Please address comments/corrections to randerson@olivineinc.com
Agenda

• Discuss scope of overall M&T workgroup
• Discuss existing scenarios
• If time, discuss audit methodology
• Determine Action items
Work Plan

1. Complete Identification of Business Scenarios
2. Select Scenarios that are in Scope
3. Draft Deeper Documentation of Scenarios
4. “Full use cases”?
5. Draft sections for issue paper
Scope

• Still having scope questions of overall process
  – Focus is on metering and telemetry (and control) for existing CAISO products and resource types
  – Focus is on collection and reporting of measurement values (and related data)
  – The business scenarios are about participation scenarios not ISO business scenarios.
  – Lower cost is a driver to support renewable/GHG mandates, but not the only driver since certain scenarios are not supported regardless of cost
Scope

• Some items are naturally in scope:
  – ECN requirements
  – Resource owner RIG requirement
  – Direct meter access by ISO
  – Many others . . .

• Some are not
  – Scale restrictions (# of resources/MW, applicability to solution)
  – Relaxing 4-second telemetry

• Some debate
  – “how small is too small to meter/telemeter”
  – The line between not excluding the PDR Regulation use case (in scope?) and including it (out of scope).
  – Certainly others . . .
Scenarios - Feedback

• Should scenarios be combined across M&T?
  – ISO says: yes from a scenario standpoint
  – Suggestion, combine, but be explicit

• Other feedback:
  – ?
## Scenarios

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#1 Concentration

- Collect meter data from multiple sites to a central data center, providing meter data to ISO.
- Collect telemetry data from multiple sites to a central data center, providing data to CAISO EMS.
- Receive ISO AGC signals to the data center and then distribute control signal to sites to achieve ISO response.
- When necessary, combine / disaggregate such data in the data center as applicable to resource level.
#2 Flexible Aggregations

- Register a multi-location aggregation with the ISO that is made up of a set of end points that may at different times contribute to achieving the ISO dispatch.
- Impacts metering & telemetry & control (and likely baselines)
- Question: some assert that baselines make flexible aggregations unnecessary
#3 Calculated Aggregations

- Calculate telemetry and revenue meter data for multi-location aggregations using information from the end points directed to respond.
- Might include sub-metering or appliance characteristics
#4 Statistical Aggregations

- Calculate telemetry and revenue meter data for multi-location aggregations using statistical methods.
MEETING NOTES
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<th>CAISO Metering/Telemetry Scenarios Meeting list</th>
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<tr>
<td>Ed Koch</td>
<td>'Jill Powers'</td>
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<td>'Robert Anderson'</td>
<td>Tom Cuccia</td>
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<tr>
<td>Dave Hardin</td>
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<td>Kevin Komara</td>
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<td>'Dave Watson'</td>
<td>Robert Hinchman</td>
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<td>'Dean Schoeder'</td>
<td>'Jeremy Laundergan'</td>
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(list may be incomplete, please contact randerson@olivineinc.com if you have been omitted)
Discussion Topics

• Continued discussion on the scope of this group (and overall project):
  – General confirmation that the scope of this project does include
    • When is it appropriate to relax 4-second telemetry?
    • Are scale restrictions reasonable for data concentrations?
  – General agreement to eliminate scenarios that are restatements of current acceptable practices

• Discussion on scenario #1: Concentrations
  – Some discussion on whether this should be split in two:
    • 3rd-party hosted in another location; and
    • Concentration of multiple resources in that other location
    • Ultimately decided not to, but to distinguish between these issues in the scenario

• Discussion on scenario #2: Flexible Aggregations
  – Explicitly describes excluding certain locations from meter data aggregations if they are withheld from deployment; some overlap with #3
  – This scenario cross from M&T into product definition and is therefore out of scope
  – We will continue with it for now under the premise that such a construct could be advantageous in bringing DR online and therefore can be considered at this high level.

• Discussion on scenarios #3/#4:
  – There was not much discussion on these scenarios at this point; except that #3 includes sub-metering.

• We may begin to combine Business Scenarios with Architecture in coming sessions.
Action Items for Next Meeting

• We will plan for an update from Ed on the Architectural WG during the 11/29 meeting.
• Robert will take another, deeper pass on the existing scenarios and circulate in advance of the meeting