Requirements for Energy Management

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Status

- At IETF #80 we stated as first next step:
  - "After agreement on some basic issues we will revise the entire draft carefully: elaboration needed for several sections"
- This led to a restructuring of the draft
  - Many changes from version - 01 to version -05
  - List of numbered requirements
  - Definitions of terms in EMAN – to be agreed in terminology draft
  - Use cases discussed in Applicability Statement
- Good news: we are getting closer to completeness
  - List of open issues reducing
  - Getting closer to a base-lined draft

Status

- Document outline
  - Section 3 – General considerations for Energy Management
  - Requirements -
    - Section 4 – Identity of Energy Object
    - Section 5 - Monitoring power of Energy Object
    - Section 6 – Energy measurement
    - Section 7 – Reporting on other entities
    - Section 8 – Control of other powered entities
  - Section 9 – Security considerations

Open Issues from the last version

- Revise security considerations and references
- Terminology for reporting on other entities to be improved
- Requirement to re-use existing standards?
- Features
  - Universal Unique Identifier?
  - Power and energy time series?
    - Do we need both or just one of them?
  - Need to measure impedance?
  - High/Low power notifications?
  - Producers and Consumers
    - Producers are not yet considered. Shall we do so?
  - Outlet gang
    - Can anybody contribute a requirement for outlet gangs?
  - Aggregation functions: Do we need them? What are they?

Section 4: Identification

4.1. Identifying powered entities

4.2. Identifying components of powered devices

4.3. Persistency of Identifiers

4.4. Reuse the identifiers from other MIBs

- Link to ENTITY-MIB - entPhysicalIndex
- Link to LLDP-MIB - LldpPortNumber
- Link to PoE-MIB (rfc 3621) – pethPsePortIndex and pethPsePortGroupIndex

Section 5.1: General Information

5.1.1. Type of powered entity

5.1.2. Context information on powered entities

5.1.3. Grouping of powered entities

5.1.1. Type of powered entity

- Textual description of the object similar to Entity MIB
- WG email consensus

Section 5.2: Power State

- Open Issue – 5.2.3. Multiple Power State Sets – discussion on the mailing list

  "The energy management standard must provide means for supporting multiple power state sets simultaneously at a powered entity."

- Alternatives :

  1. We remove this requirement: a single power state series is supported.
  2. device can support multiple power state series for reading, but only one for control
  3. the device does its best in terms of mapping between Power State Sets

- Keep this requirement as such (Bill, Ira, John, Benoit)

Section 5.4: Power

- Open Issue - 5.4.10. Time series of power values

"Do we need to collect Time series of Power, Voltage values ? "

- Proposal – For instantaneous measurements (power, voltage) can be obtained by polling the device as often as necessary.

Section 5.5: Energy

- Open Issue - 5.5.4. Time series of energy values

- Proposal – Averaged values (Energy, Demand) can be stored as a time series

Section 5.5: Energy

- Open Issue – Directional metering of Energy.
- Proposal – Energy meters for
  - EnergyConsumed
  - EnergyProduced
  - EnergyNet
- Consistent with ODVA information model

Section 5.7: Notifications

- High/low value notifications

  “The energy management standard must provide means for creating notifications if values of measured quantities are above or below given thresholds.”

Section 9: Security Considerations

- Security considerations updated

9.1. Secure energy management

"The energy management standard must provide privacy, integrity, and authentication mechanisms for all actions addressed in Section 5 - Section 8, RFC 3411".

Temperature

- Temperature measurement added to battery.
- Does it make sense to add it to other Energy Objects (e.g. Chassis?)
- However, we can simply rely on the ENTITY SENSORY MIB, which contains the temperature.

Next steps

- A lot of constructive comments from reviews

Thank you very much!

- Many open issues resolved
- Requirements almost near completion
- Feeback from the WG