Site-Level Protocol Converter Proposal

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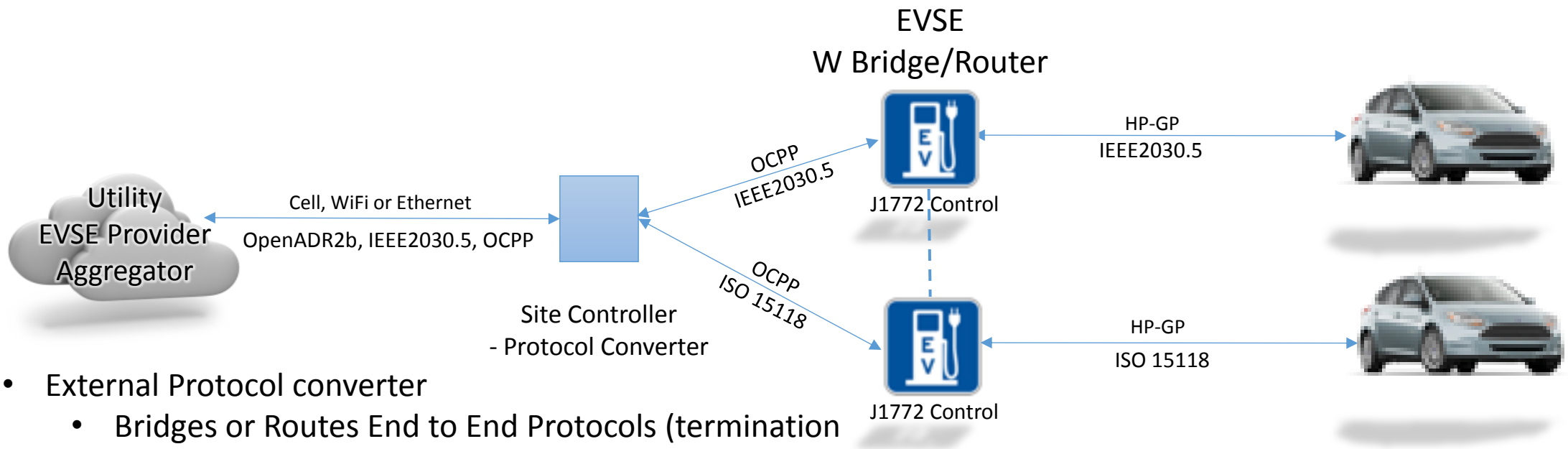
Mike Bourton, Kitu Systems

Recommendation to Lower Protocol Conversion and Physical Security Costs in EVSE:

Recommendation: Allows site hosts more flexibility to lower costs: Don't require processor / memory in every multi-use, public-access EVSE* but allow an option for sites that want a large Protocol Converter that has one processor / memory for the entire site (able to handle potentially 100s of EVs at a time)



- External Protocol converter
  - Bridges or Routes End to End Protocols (termination
  - Convert Protocols e.g. IEEE2030.5 to ISO 15118
    - Decryption, mapping of data fields, and re-encryption

*Recommend defining "multi-use" to mean only public-access locations, workplaces or common areas in MUDs with unassigned parking in order to reduce costs for home and fleet locations

Details on Site-Level Protocol Converter Proposal

- Assumptions
  - All of the protocols are IPv6 compatible
    - The Application Layer (Layer 7) can be Bridged or Routed
  - The EVSE is defined as a bridge or router (physical layer dependent)
    - Does not matter to the Application Layer
- Proposal
  - Allow site hosts a new option: Use a site-level protocol converter (at the application layer) which can be located anywhere in the premise by inserting in the northbound pathway
    - E.g. Do not decrypt/re-encrypt the data in each EVSE with this option
- Advantages
  - Common practice in consumer products
    - E.g. Philips Hue Lights or Lutron Lighting systems)
  - Provide choice to site hosts in order to lower cost and improve security
  - Very cost –effective when there are many EVSE at a site (compared to having protocol conversion in each EVSE)
  - The secure processor and memory as well as security requirements are in the large-scale site-level protocol converter (not each EVSE)
  - A protocol converter does not need to be added to each EVSE
    - just a bridge / router for those end-to-end communication solutions that do not need conversion
  - Can be retrofitted easily without a truck role and would be plug-and-play
  - Could be more physically secure (i.e. Protocol Converter located in a building)
  - Very cost effective as a single device per site for multiple EVSE (or implemented by site controller)