

Use Case Development

Context: As an Idea from COVESA marketing team weekly meeting in-regards to the topic of increasing OEM participation in projects we discussed using EV-charging BoF as a topic area for creating use-cases and value propositions that could be used to eventually create strong and engaging storyline content that helps inspire and onboard OEMs in the future.

Already things that pop to mind are

- **VSS spec** for charging & battery related signals & data > I started to categorize what could become branches of a charging .vspec or even potentially multiple .vspec's

> vehicle info - trip data, make & model, battery data > health, time to 80% SoC, charge curve etc

> charge site info - environmental data from vehicle sensor (**VSSo?**) + user feedback + energy providers info

> charge point info – exact location of charger per vehicle (GPS/dead reckoning), occupancy, health, total charges, number kWh, avg charge duration, max power

- **VSC spec** for standardizing EV charging functionality such as: Lock/unlock charge port (this has been a personal pain on multiple occasion for myself), perhaps a charge event type service could be standardized + others
- **android automotive for UI** elements or even charge providers app integration
- **digital.auto** to host and manage the development and evolution of said use-cases
- **in-vehicle payments** potential ?
- **cloud analytics** potential for charge providers & 3rd party companies
- **digital twin**
- **SdV service implementation (V-app)** that aggregates and reports all data/functionality relating to a specific charging use-case (template charging V-app could be created with say Eclipse Velocitas & deployed to hardware with Leda)

ISO15118 > charging std needs to be considered for technical content also

We need to create a Business Value proposition for EV charging use-cases! "Techie 2 Becky" user experience can be mapped pretty well already as Ford presentation already details various pain points & myself and other EV drivers can flood this with numerous other issues I'm sure!



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Major Questions that need to be tackled:

- Q1: Can we really make EV charging “stress free” ? (through technology & standardization alone or do we need much more)
- Q2: If Yes where and how do we achieve this, in the smart routing or better pump experience etc, fewer broken events etc?
- Q3: Does Rfid still matter if this becomes a reality? (this would be redundant once the vehicle can communicate directly with charge point providers)
- Q4: Can we enable useful data for grid and energy suppliers from this effort?
- Q5: What is our Vision for this BoF if PoC and project is a success ? - aka what is the north star concept (this is really critical for a clear marketing message and call to action)

OEM specific

- Q6: Do Auto-makers(OEMs) really want EV charging to become non-differentiating?
- Q7: Will Auto-makers(OEMs) allow remote control of vehicle functionality regarding EV charging?
- Q8: Can making EV charging non-differentiating save Auto-makers(OEMs) cost?
- Q9: Will we generate new revenue streams or better business from EV charging standardization?
- Q10: Do Auto-makers (OEMs) want to centralize EV charging payments and operations? (Currently public EV charging is predominantly B2C, could it become B2B and even real-time in the future)

TIER's specific

- Q11: Where and how can we assist in the EV charging PoC stage, potential for hardware integration/abstraction?

Use-case idea's

- *"Dynamic & real-time charging costs"* based on grid load/balancing requirements or incentives/offers from nearby stores/shops /parking providers
- *"Multi-vendor automated EV charging"* – PoC with x3 different charge point providers across x2 OEMs + 1x TIER1. Needed VSS & VSC for EV charging standardization + digital twin of all data
- *"Intelligent charging"* - vehicle environmental sensors data + user feedback + charger feedback >> digital twin in cloud (central public database OR OEM owned)
- *"Data driven City planning & infrastructure"* for evolution of charging networks and ongoing maintenance and grid/energy supplier collaboration
- *"Intelligent EV trip planning"* from utilising BIG data, analytics, AI & real-time feedback loops from distributed systems

Next Steps:

1. Mapping use-cases to existing COVESA projects and BoFs. We need to make it very clear for Auto-makers (OEMs) where we need their efforts
2. Value proposition canvas creation for "User experience"
3. Selection of a focus use-case (this would also be content for the marketing team in preparation for the next AMM)
4. Value proposition canvas for selected focus use-case