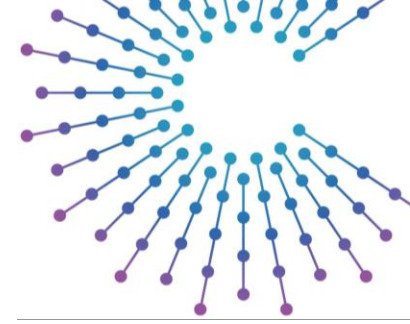# EV-Charging-Event-Data-Aggregation PoC

Goal

- Creating an data-space for (public) EV charging that enhances the user experience
…subsequently leading to a greater acceptance of E-mobility

- Multi-OEM aggregation based on an established data-model (e.g. COVESA VSS-data-tree)
…a source-of-truth from the fleet perspective (vehicle-as-a-sensor that "sees" the charging infrastructure)

- Win-Win
…<u>OEM</u>: EV driver satisfaction, <u>CPO</u>: awareness, quick issue fixing, awareness <u>POI-provider</u>: better location data <u>TIER1</u>: better apps

What is needed

- Step1 : <u>focus</u> on essentials :

  from OEM: vehicle data: GPS-location, power, occupation (is charging + TimeToComplete), if available EVSE-ID via ISO15118)

  from CPO/POI-provider : infrastructure, EVSE-ID, location, power (nominal, max-planned, average)

- Step2 : add vehicle size, trailer, final destination

- Step3 : arrival time at the next three charging points along the trip
(utilization forecasting / prediction)

Proposed PoC Infrastructure – to be aligned

- Extend MDS-PoC or central neutral server with dynamic trip data
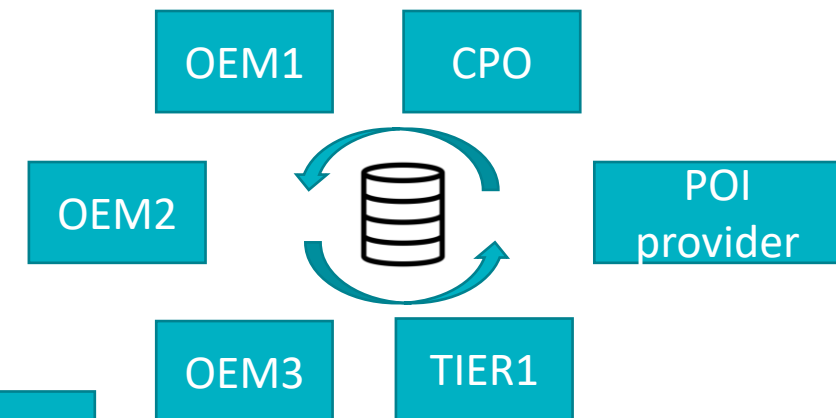
Boost transition and introduction of Electro-mobility

Proposed Data set according COVESA VSS

Step 1

Signal					Type	Data Type	Unit	Min	Max	Description
Vehicle	CurrentLocation	Latitude			sensor	double	degrees	-90	90	Current latitude of vehicle in WGS 84 geodetic coordinates, as measured at the position of GNSS receiver antenna.
Vehicle	CurrentLocation	Longitude			sensor	double	degrees	-180	180	Current longitude of vehicle in WGS 84 geodetic coordinates, as measured at the position of GNSS receiver antenna.
Vehicle	Powertrain	TractionBattery	Charging	IsCharging	sensor	boolean				True if charging is ongoing. Charging is considered to be ongoing if energy is flowing from charger to vehicle.
Vehicle	Powertrain	TractionBattery	Charging	AveragePower	sensor	float	W			Average charging power of last/current charging event
Vehicle	Powertrain	TractionBattery	Charging	MaxPower	sensor	float	W			Maximum charging power of last or current charging event
Vehicle	Powertrain	TractionBattery	Charging	EvseID	sensor	string	W			EVSE charging point ID acc. ISO15118 Annex H (length min 7, max 37: If an SECC cannot provide the ID data, the value is add to zero e.g. "ZZ00000")
Vehicle	Powertrain	TractionBattery	Charging	TimeToComplete	sensor	uint32	s			The time needed for the current charging process to reach Charging.ChargeLimit. 0 if charging is complete or no charging process is active or planned.

Step 2

Signal						Type	Data Type	Unit	Min	Max	Desc
Vehicle	Length					attribute	uint16	mm			Overall vehicle length.
Vehicle	Height					attribute	uint16	mm			Overall vehicle height.
Vehicle	Width					attribute	uint16	mm			Overall vehicle width.
Vehicle	Trailer	IsConnected				sensor	boolean				Signal indicating if trailer is connected or not.
Vehicle	Cabin	Infotainment	Navigation	DestinationSet	Latitude	actuator	double	degrees	-90	90	Latitude of destination in WGS 84 geodetic coordinates.
Vehicle	Cabin	Infotainment	Navigation	DestinationSet	Longitude	actuator	double	degrees	-180	180	Longitude of destination in WGS 84 geodetic coordinates.

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