

# Project proposal for an environment to enable data exchange between several entities

---

**Author: [swen.schisler@endava.com](mailto:swen.schisler@endava.com)**

## Introduction

COVESA is actively investigating essential standards and solutions needed to enable a data-oriented, connected vehicle architecture. Connected cars will become the predominant form of individual automotive transportation. A number of actors are now working at breaking down the barriers to adoption for mobility services based on automotive data and at helping drivers, communities, mobility services, aftermarket and repair services and automotive manufacturers extract the most value from that data. But this has already resulted in a somewhat fragmented ecosystem where different actors are using different solutions to access the data of connected cars.

Also it needs to be considered, that different use cases require different ways of accessing data. While training an AI model on data will not require live streamed data, the inference of the model may work on a data stream directly from a car or a fleet.

Last but not least, regulation is changing. The upcoming EU data act require the access to raw data for the data producer in a way that he can make it accessible to third parties. There is no solution yet that solves that problem. It might be noted here, people may own more than one car and it seems inappropriate to believe that customers are willing to join multiple OEM driven ecosystems.

## Framing question

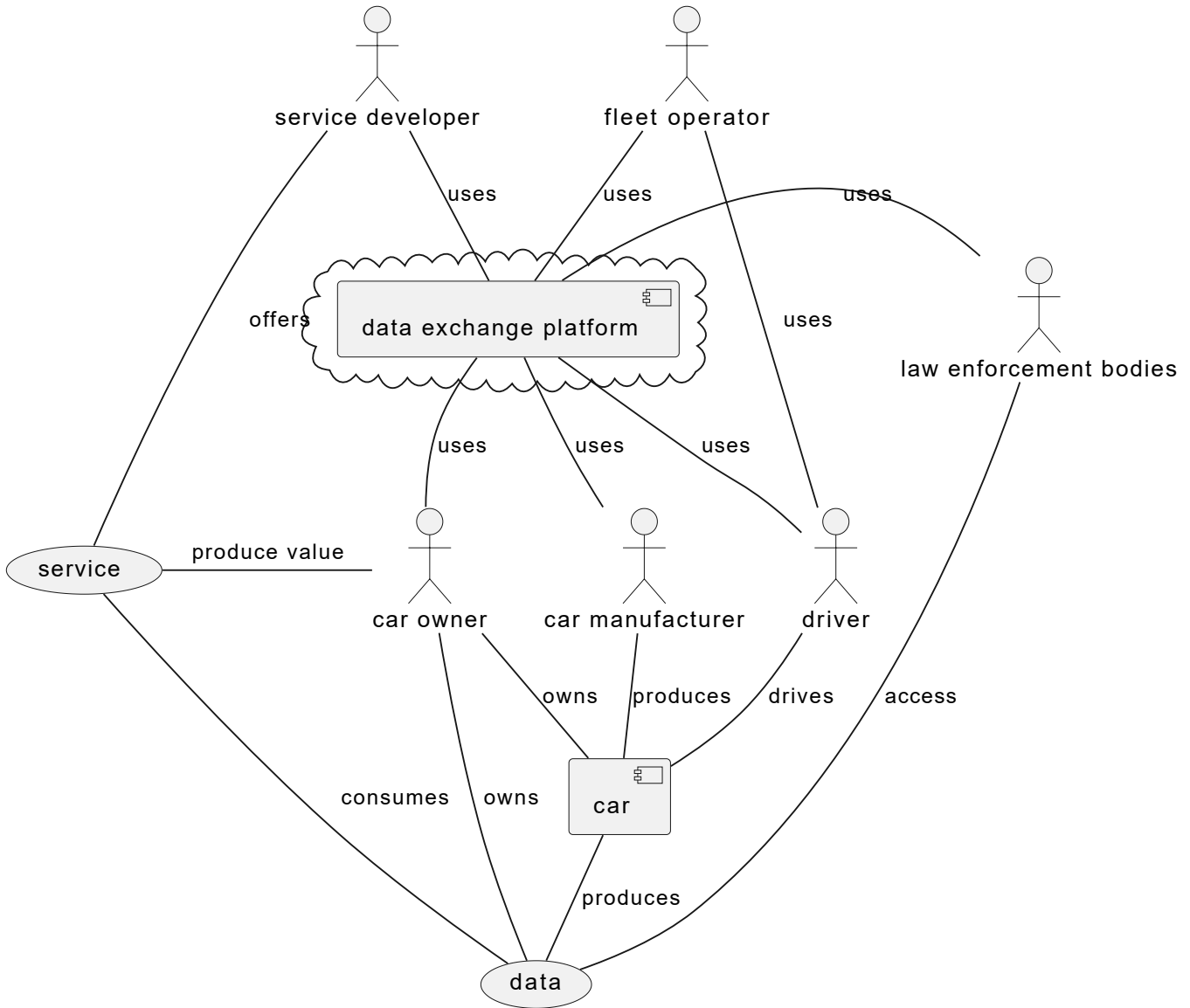
How can COVESA create an ecosystem that allows car manufacturers, car owners (drivers), 3rd party service providers and others to offer, monetize and consume services in a:

- secure,
- reliable,
- compliant, and
- managed

environment. To support business of scale, members of the ecosystem are required to onboard through self-services.

## Insights

When collecting data from cars things get easily complicated. Cars are owned, driven by different individuals but the data is personally relatable to the owner of the car. So the use cases need to consider all possible permutations of the actors in the system, related to their produced data. The following figure displays the relations between the parties. This figure can be extended in the future to reflect more possible use cases.



Furthermore for a professional environment of exchanging data you need to consider the following as well:

- Services are based on exchange of data (historical, actual and near realtime).
- exchange of personal identifiable information (PII) is governed by user rights based on laws.
- this implies contracts (usually referred as consent) between the user and the data controller and contracts between the controller and the processor
- data is distributed in different environments (OEM cloud space, 3rd parties ...)
- data is available in different formats (preferably VSS)
- data is protected by several access mechanisms
- near realtime data access must be optimized to preserve bandwidth
- data access must be governed by SLA's

Needless to mention that all data needs to be secured by state of the art security measures and access is only granted to authenticated and trusted individuals.

## Product vision

Putting the above mentioned knowledge in a solution COVESA should aim for providing:

A scaling and managed environment with:

- a unified access to cross OEM and service provider data,
- a well defined SLA and legally compliant,
- a proper separation of safety relevant and regulated data,
- straight access to a number of data points,
- optimized data consumption on transport side,
- upload to any data store,

protected by

- access right management,
- rate limitation,
- a paywall, and
- state of the art security measures.

## Outcomes

- The OEM's and other data owning entities get the peace of mind by having access managed according to law.
- Individual contract negotiations are not required and data can be monetized more easily.
- Accessibility increases attractiveness, usefulness and visibility to third party developers, and enables them to experiment with their business ideas with very low entry barriers.

To enable scale, all must be self-services. No human interaction is required to onboard car manufacturers users, cars, new services.

Two options are possible and needs to be evaluated.

1. Direct data access after onboarding (bypassing the OEM cloud) or
2. indirect access via the OEM cloud.

For different development phases, not only car data can be utilized but also recorded data in a data lake (served by the playground) or synthetic data.

## Project proposal

Endava would like to initiate and lead a project to

- collected and considered requirements
- document of all considered use case
- define and document this ecosystem,
- implement a prototype to demonstrate the capabilities.

Our suggestion is to base this project on already existing work done previously for COVESA, see references.

## References

Date	Dokument	Comment
May 16th, 2019	<a href="#">Kuksa</a>	With some shortcomings of VSS v1, but an IoT connectivity does not work for all use cases, direct access to vehicle data will be faster

Date	Dokument	Comment
May 15th, 2019	<a href="#">Car2Cloud</a>	First find of an IoT-like Interface for driving use cases ""Big Data"" style of data usage to generate new services"
May, 2019	<a href="#">neutral server</a>	brought up the idea of accessing read only data for use case sharing across OEM's, there is a slide showing the journey to a API driven ecosystem, that's what we aiming for
November, 2019	<a href="#">High Mobility</a>	Again brought in the concept of monetizing API's and build an ecosystem for 3rd parties
May 2020	<a href="#">Proposal GraphQL Server</a>	a similar solution was already presented in 2020, extending the VSS with a more flexible GraphQL interface to achieve some of the below listed goals a github <a href="#">repo</a> was created
May 2020	<a href="#">cloud and connected services</a>	Project charter
May 2020	<a href="#">CVII</a>	CVII (Bosch, Mr. Kerstan)
October, 2021	<a href="#">The value of data</a>	Geotab
October 2021	<a href="#">SDV</a>	Bosch presentation Mr. Thomas Spreckley
October, 2021	<a href="#">NMFTA</a>	had a view on cybersecurity risks due to legislation
Oct. 2021	<a href="#">Butzel's security review</a>	contains a lot of regulatory requirements tbc
Oct. 2021	<a href="#">Arlou's view on security</a>	contains a good source of attack scenarios
October 2021	<a href="#">ExtVeh</a>	Denso presentation
Feb, 2022	<a href="#">Vehicle integration Platform</a>	Blog post
May, 2022	<a href="#">Business Cases for SDV</a>	Slide 2, 3, 5, and 7 hold crucial statements
May, 2022	Status updates on AMM	CVII already worked on higher level API, <a href="#">output</a>
May 2022	<a href="#">PFA French Automotive Industry</a>	Explaining a need for a commonly shared interface across OEMs, in <a href="#">this</a> paper use cases are given that did not succeed with the current architecture
July, 20th, 2023	<a href="#">EV charging event aggregation</a>	A white paper and proposal to collect data for a complex use case

# Legal references

---

1. [EU comission](#)
2. [ISO20078](#)