

Software-Defined Vehicles and FOSS

Using open source to shape
automotive software

Disclaimer

I am mostly here presenting as myself.
My views do not necessarily represent those of Volvo.

What is Software-Defined Vehicles (SDV)?

Business definition

A vehicle to a large degree controlled and managed by updatable software.

Technical definition

A vehicle with accessible on/offboard APIs, together with SDKs and upgrade processes.

What is cooking in SDV?

- Service catalog
- Tooling (IFEX and others)
- Platforms
- Coordination between OEMs and vendors
- Reference implementations (Early discussion)

Focus is on enablers – not features

Who are the players?

Eclipse SDV	Hosting of open-source projects
COVESA	Tooling & semantics standardization
AGL	Onboard FOSS components
SOAFEE	Cloud and in-vehicle platform standardization
World Economic Forum	Coordinate across organizations
AUTOSAR	Proprietary industry standards

https://www3.weforum.org/docs/WEF_Unlocking_Safety_and_Innovation_in_Vehicle_Software_2023.pdf

How antitrust laws force open source mentality

- All meetings must be open
- Protocol must be published
- Shared repos must be public
- No one can be excluded from technical or business conversations

**FOSS is the only way to collaborate
on automotive software standardization**

Core technical SDV principles

- Decouple API from implementation
- Architect (and negotiate) around APIs, not implementation
- Evolve specification with implementation
- Decouple software product from carlines

Automotive needs to catch up with
the wider software industry

<https://www.youtube.com/watch?v=KdbMfxiV6rk&t=9s>

Where automotive can contribute

Resources

- Fund and maintain tooling & reference vehicle service implementations
- Dedicated FOSS teams to drive and future-proof key projects

Event Hosting

- Hackathons
- FOSS events
- Open houses

The costs for an OEM to fund FOSS projects are not an issue

Automotive's problem

Focus is on commercial "directed" open source

- We pay for key projects we want to open source
- Very little relevance outside automotive (SOME/IP, IFEX, etc)

No business incentive for us to open source our code

- What is our return on investment?

Our problem – Please help!

How do we set the stage for FOSS projects driven by the community?

V O L V O

Thank You!

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