



COVESA

Accelerating the future of connected vehicles

Unlocking the Potential of Connected Vehicles with COVESA

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1.1 Introduction to COVESA

[COVESA](#) is an open and member-driven global technology alliance focused on connected vehicles and their related technologies, emphasizing collaboration and open standard approaches. Our mission is to enable our community to unlock the full potential of connected vehicles.

COVESA is well positioned as an experienced community given its strong GENIVI foundation of industry-driven approaches for open and collaborative software solutions. Openness, in our opinion, is essential to realizing the full potential of connected vehicles. Members are encouraged to build on this foundation by introducing projects that deliver guidance and specifications, open source licensed software, and related materials that equip the industry with useful assets for commercial solution development.

1.2 The Challenges of Connected Vehicles

Our work is well aligned to address opportunities and challenges in the automotive industry, which is experiencing a digital transformation driven by fundamental customer expectations:

- Digital experiences in and around the vehicle must continually evolve
- Automotive experiences must integrate seamlessly with the consumer’s digital world
- Vehicles must be part of a connected mobility ecosystem of solutions and services

Given these expectations, we have expanded our technology focus to help enable innovative vehicle experiences and consumer interactions while growing our community to reflect the market changes brought about by digital transformation.

At COVESA, we recognize that the power and reach of each OEM, supplier, or partner is limited. Meeting customer expectations often requires the integration of solutions from other ecosystems that are not directly developed by the automotive industry.

To meet the evolving consumer expectations, the industry will need solutions that can scale and are easy to maintain. At COVESA we believe this can be achieved by:

- Well-established, documented, and robust data models
- Maintain up-to-date industry frameworks and standardized APIs
- Lightweight and flexible solutions to integrate easily with 3rd parties

To begin the foundational work of addressing digital expectations, COVESA is focused on three core challenges.



Challenge 1 – Keeping the In-Vehicle Digital Experience Up to Date

Automotive electrical and electronic architectures have evolved over the years, and each OEM instantiation is different. This makes long-term support difficult, expensive, and inefficient. The challenge of frequent updates and long-term support over a vehicle's lifetime is compounded by the fact that the pace of change for digital experience is several orders of magnitude greater than for traditional automotive systems.



At the heart of COVESA, we believe vehicle capabilities relevant to the digital experience should be abstracted from the specific technical implementation. This can be achieved by transforming vehicle network signals into a standardized, OEM-independent data model using a standard and governed data taxonomy (COVESA VSS). As a result, digital development can be encapsulated and abstracted from the underlying hardware. Enabling the application of different development approaches and removing the need for developers to understand the implementation complexity of core vehicle systems.

Challenge 2 – Embracing the Customer's Digital Life

Currently, the integration of a customer's digital life into a vehicle's digital experience involves the integration of a "hosted operating system" such as embedded Android Automotive (AOSP) and others, or the integration of software to support "projected modes" such as Apple CarPlay or Android Auto. As an example, within the recently formed AOSP Application Framework Standardization expert group, the COVESA community is working to ensure that each OEM AOSP implementation has consistent interfaces for developers to access devices and deliver apps. The aim is to provide AOSP app developers with consistency across OEMs.



Challenge 3 – Integrating Vehicles into Broader Mobility Solutions

A seamless customer journey requires data elements from multiple data sources. The ability to effectively combine data elements depends on the existence of aligned data models from multiple industry sectors. The COVESA community is committed to establishing links and partnerships with other open communities to exchange non-competitive knowledge and lessons learned. By fostering collaboration and promoting active member contributions, we aim to align data models across industry sectors, enabling the developer community to create innovative solutions.



**Drives
Innovation**



**Supports Future
Business**



**Enables
Scalability**



**Vehicle
Signal
Specification**



**Faster Time to
Market**

1.3 Join the COVESA Community

COVESA is an open community where members can address challenges that cannot be realistically solved or scaled alone. The three challenges outlined in this paper are the foundation for COVESA's currently active collaborations. By consciously setting a clear initial scope, COVESA can effectively coordinate automotive industry contributions to initiatives, including software-defined vehicles (SDV). We welcome all active contributions and collaborations that help us achieve our ambitious goals.



We invite you to have a voice in this important work and [join](#) the COVESA community now.