



COVESA

ACCELERATING THE FUTURE OF

Connected Vehicles

Jan Kubovy, BMW

Emil Dautovic, RemotiveLabs

Connected Vehicle Systems Alliance

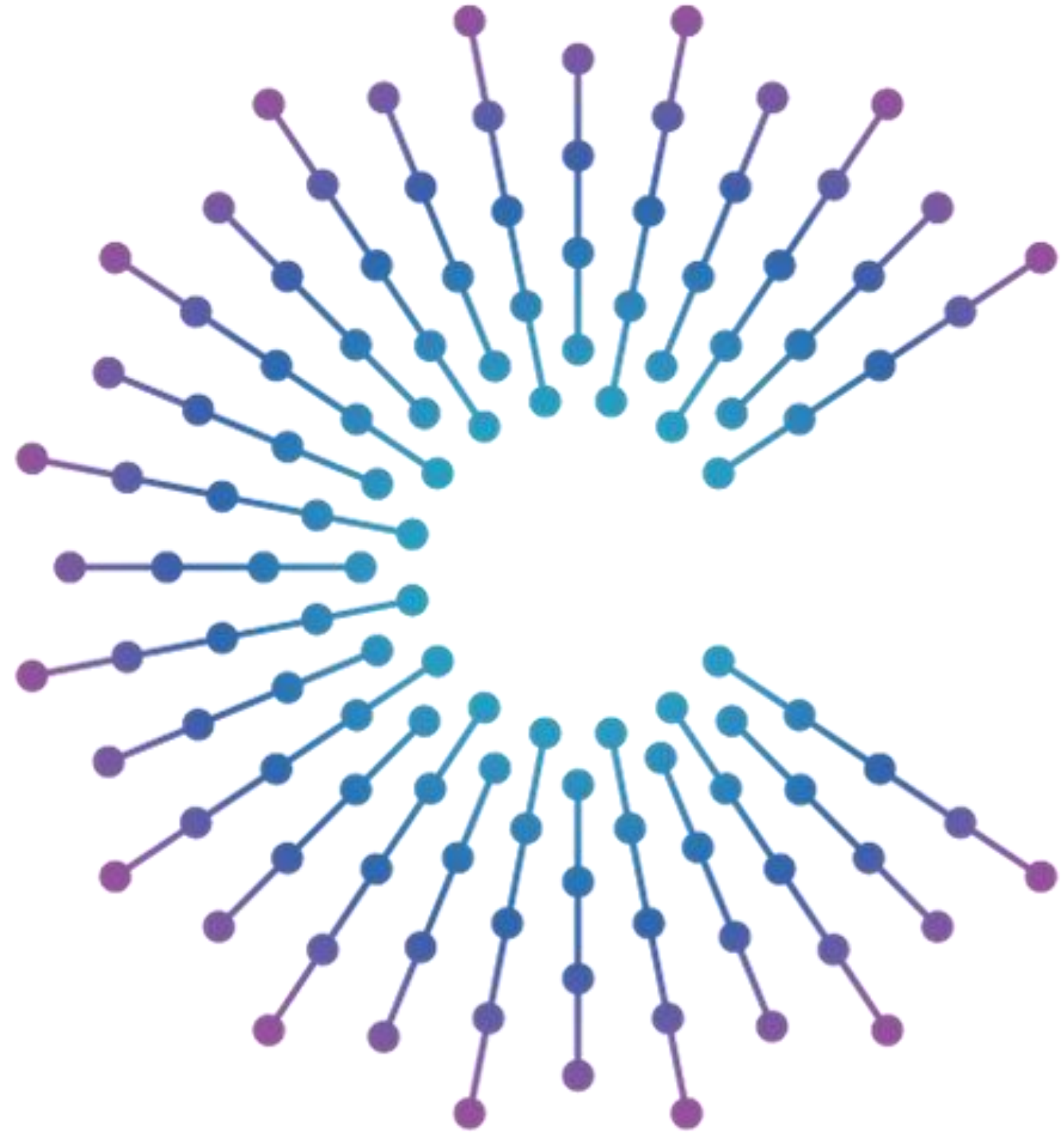


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About COVESA

Technical Focus

Membership Benefits & Visibility

Join COVESA



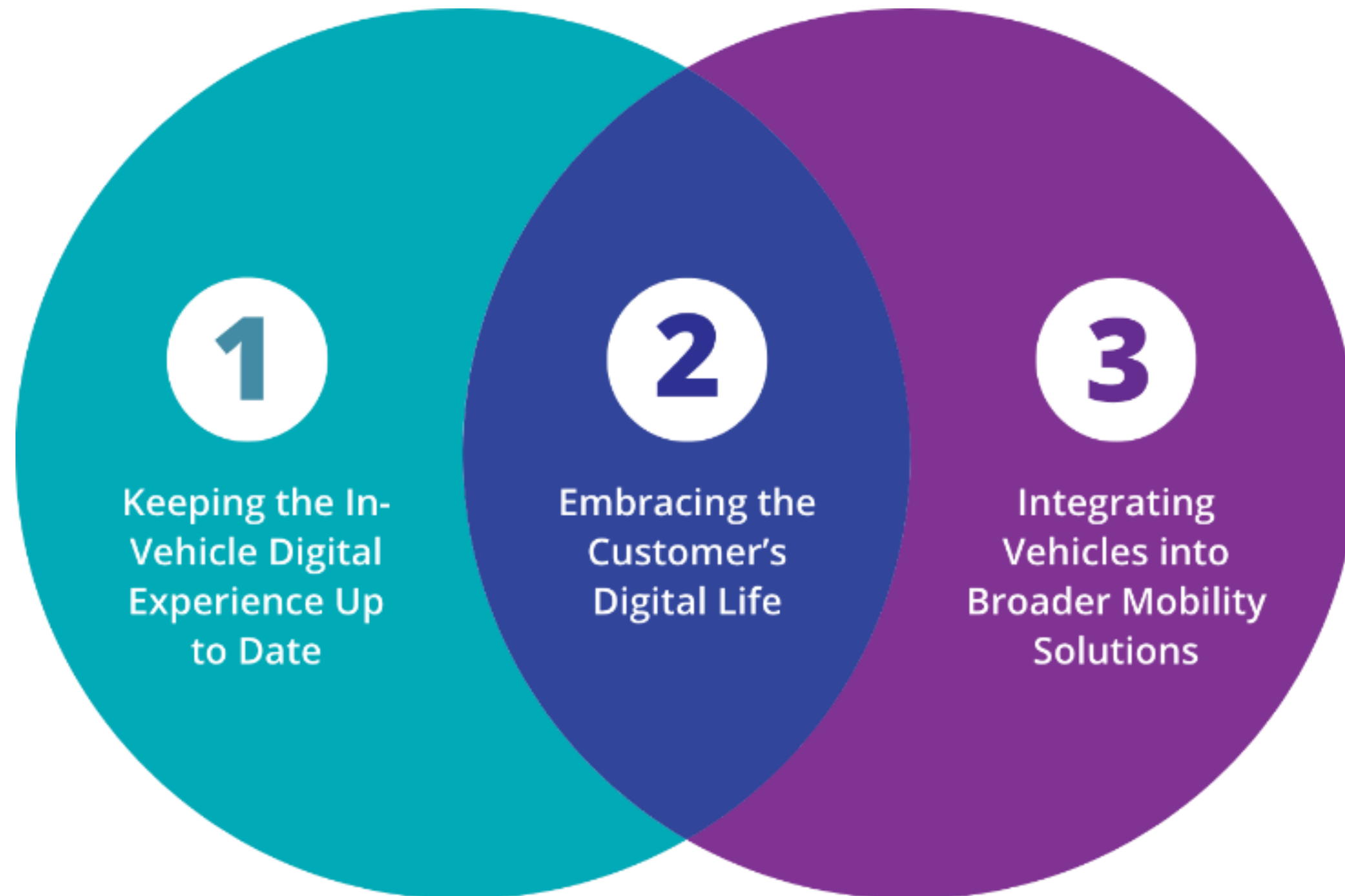
COVESA is...

Open & Global

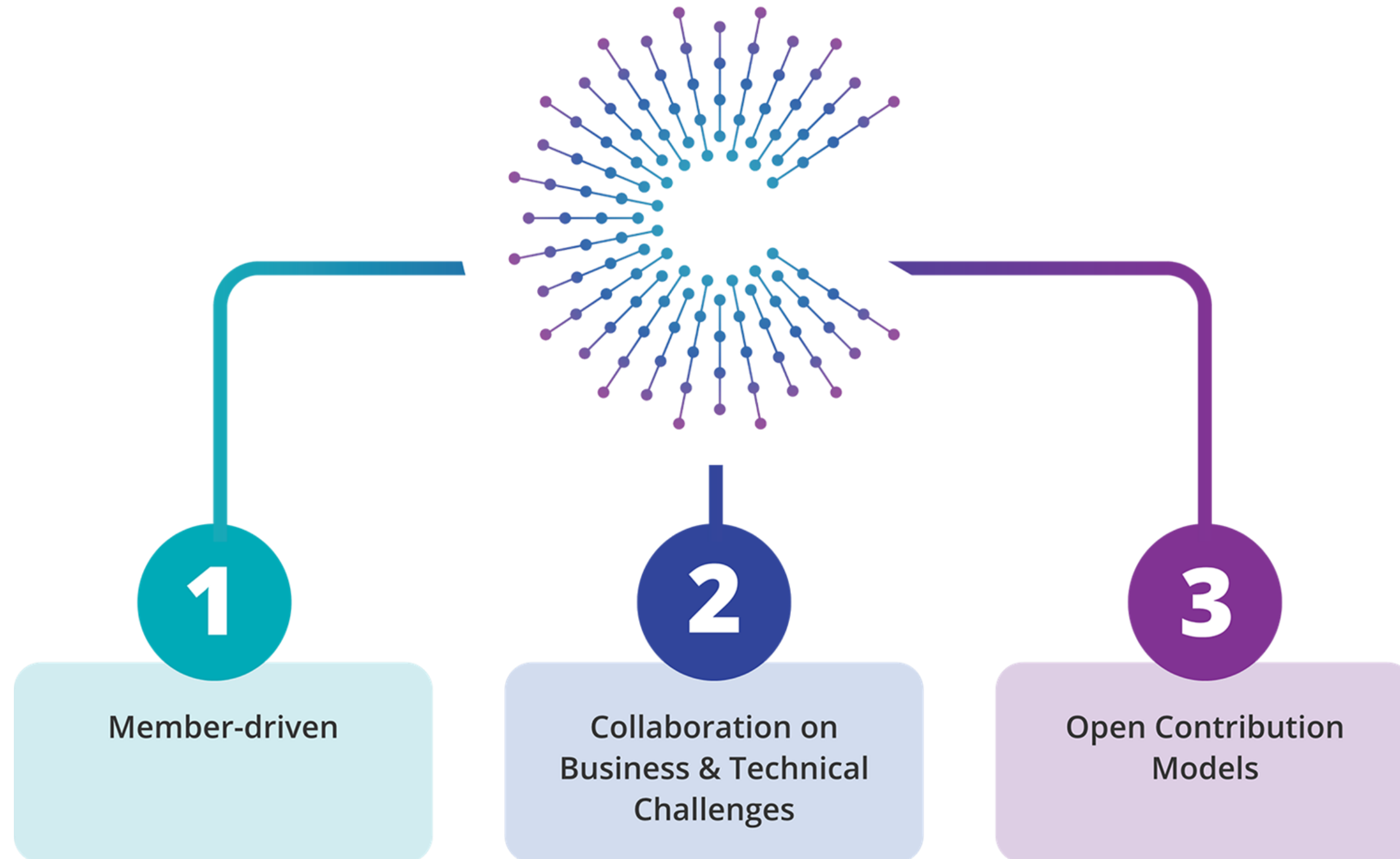
Strong 100-organization Collaborative Community

**Addressing Business and Technical Challenges in the
Connected Vehicle Ecosystem**

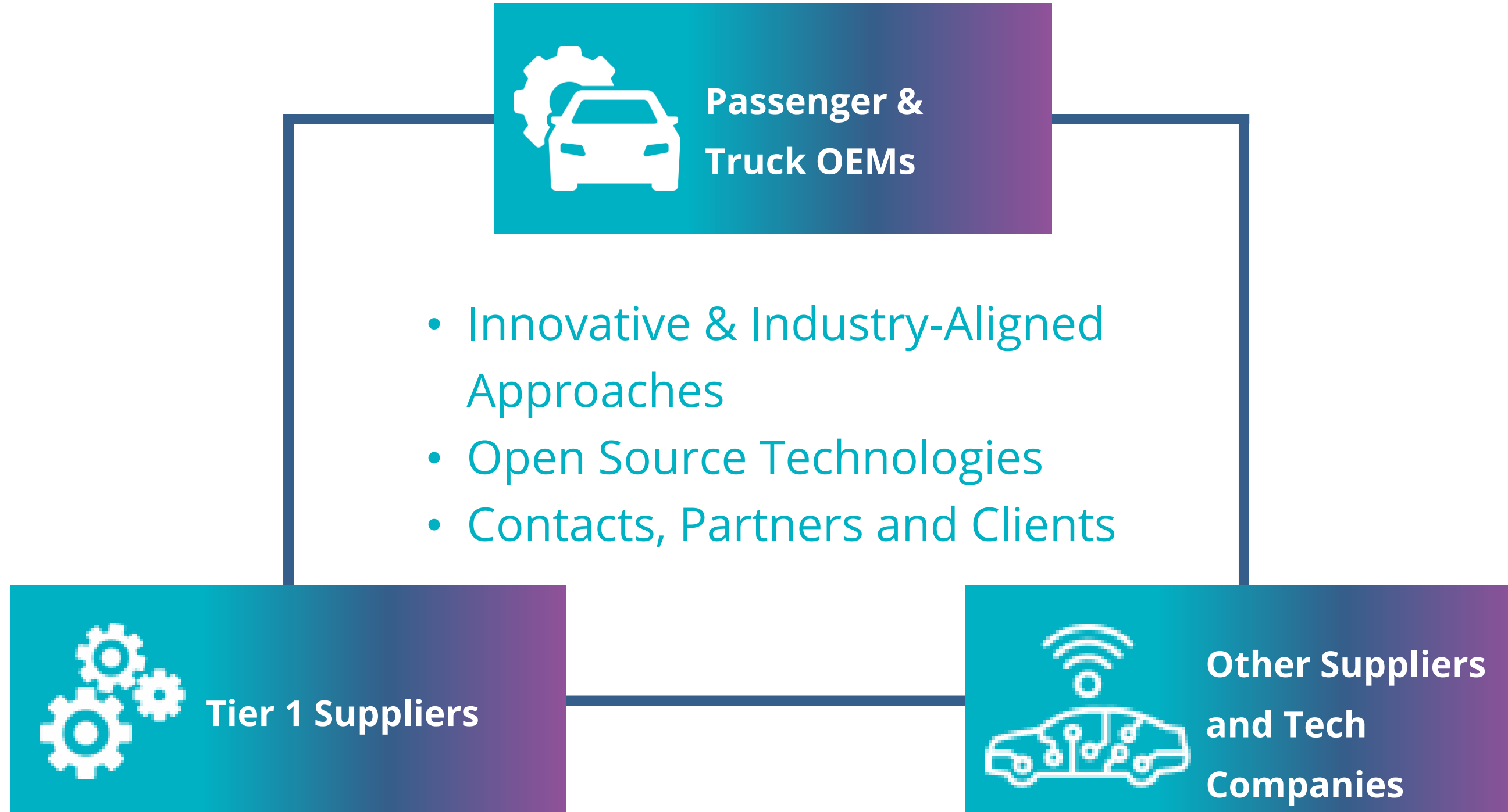
Our Purpose: Addressing Challenges



Our Values: Guiding the Alliance



Value to Members



Members

BMW Group



gm



KARMA





HONDA

The Power of Dreams

HYUNDAI

MOTOR GROUP



NISSAN

MOTOR CORPORATION



ALPSALPINE

ALPS ALPINE GROUP

HARMAN

A SAMSUNG COMPANY



LG



Astemo



MICHELIN

• A P T I V •

MOBIS



BOSCH

Invented for life

FORVIA

faurecia

JOYNEXT

智 联 行



VERRA

MOBILITY™

Silicon

arm

NXP

RENESAS

Other

W3C®

OSV, Middleware, Hardware & Service Suppliers

3SS

Abalta

aicas

AIDEN



AirConsole

Appsfactory

AREA.X.O

BlackBerry

CANBUSHACK

CLOUDERA

cognizant

COMPREDICT

CATL

时代智能

COSWORTH

DiSTI

Elektrobit

EMERGENCY SAFETY SOLUTIONS

endava

epicnpoc

ETRI

Electronics and Telecommunications Research Institute

GEOTAB

GitHub

Globant

Green Hills

SOFTWARE



HAAS ALERT

ICS

intellias

KPIT

L&T Technology Services

MathWorks

movi.io

In-Cor OnMyWay Commerce™

mimik



Qi

MongoDB

MOTER

PARADOXCAT

POTENTIAL

Profilence

publicis sapient

Qt Group

Red Hat

REVIVER

DIGITAL LICENSE PLATE

rti

remotiveLabs

SASKEN

SHEEVA

SIILI AUTO

SIMPLENIGHT

SMART

SONATUS

starfish*

TATA TECHNOLOGIES

tietoevry

TUXERA

valtech

Vouch.io

Warner

WirelessCar

Xouba

DATA FOR SAFER ROADS

Technical Focus

Primary Technical Activities



Vehicle Data

- Common Language for Data Definition and Exchange
- Common Interfaces for Accessing Data and Services



AOSP App Framework

- Reduced Fragmentation in the Automotive App Market
- Write-once, Deploy Across Brands



Commercial Vehicle & Fleet Management

- Leverage Common Data Definition for Fleet Management Use Cases



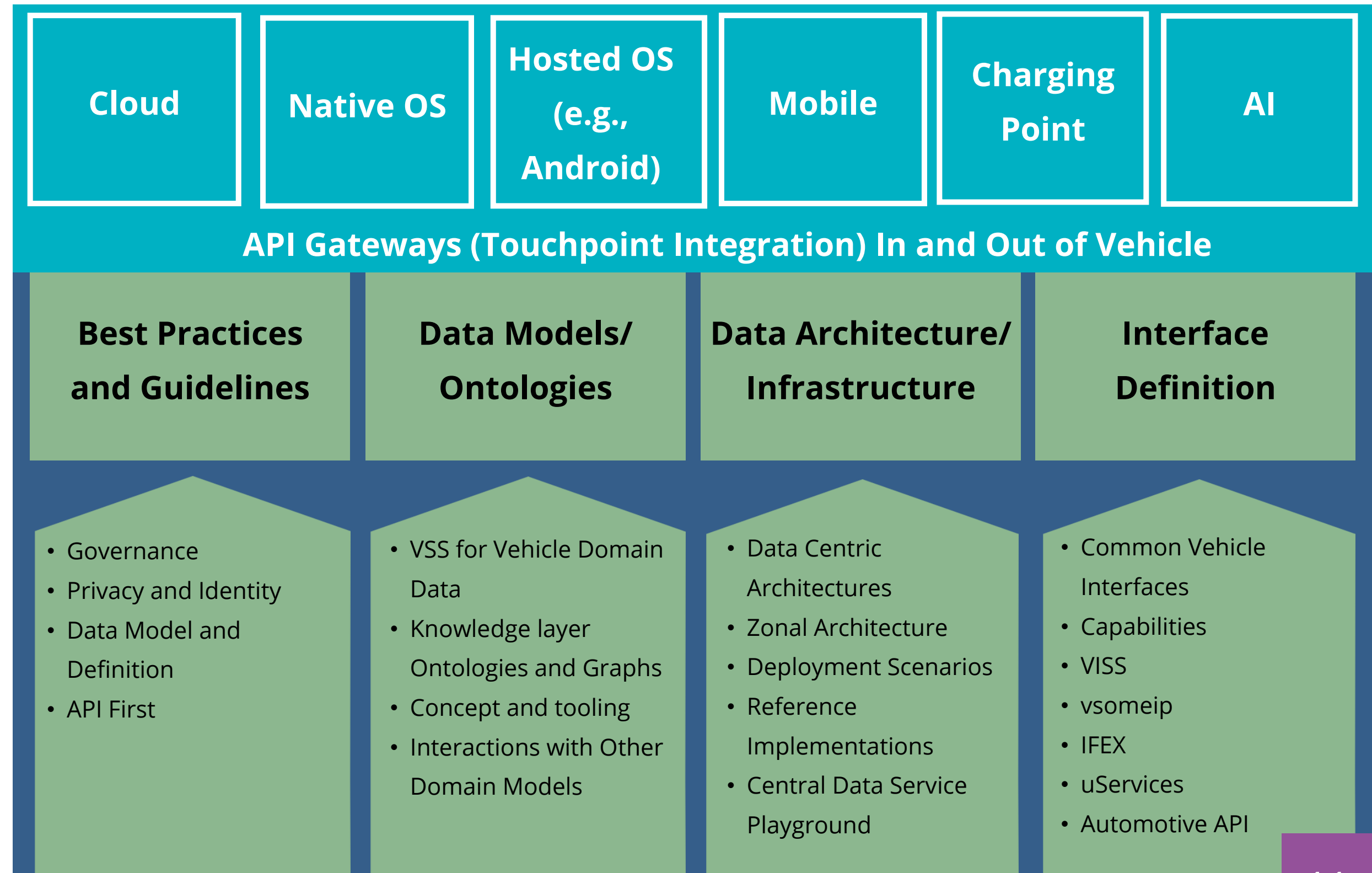
Open Source Code Projects

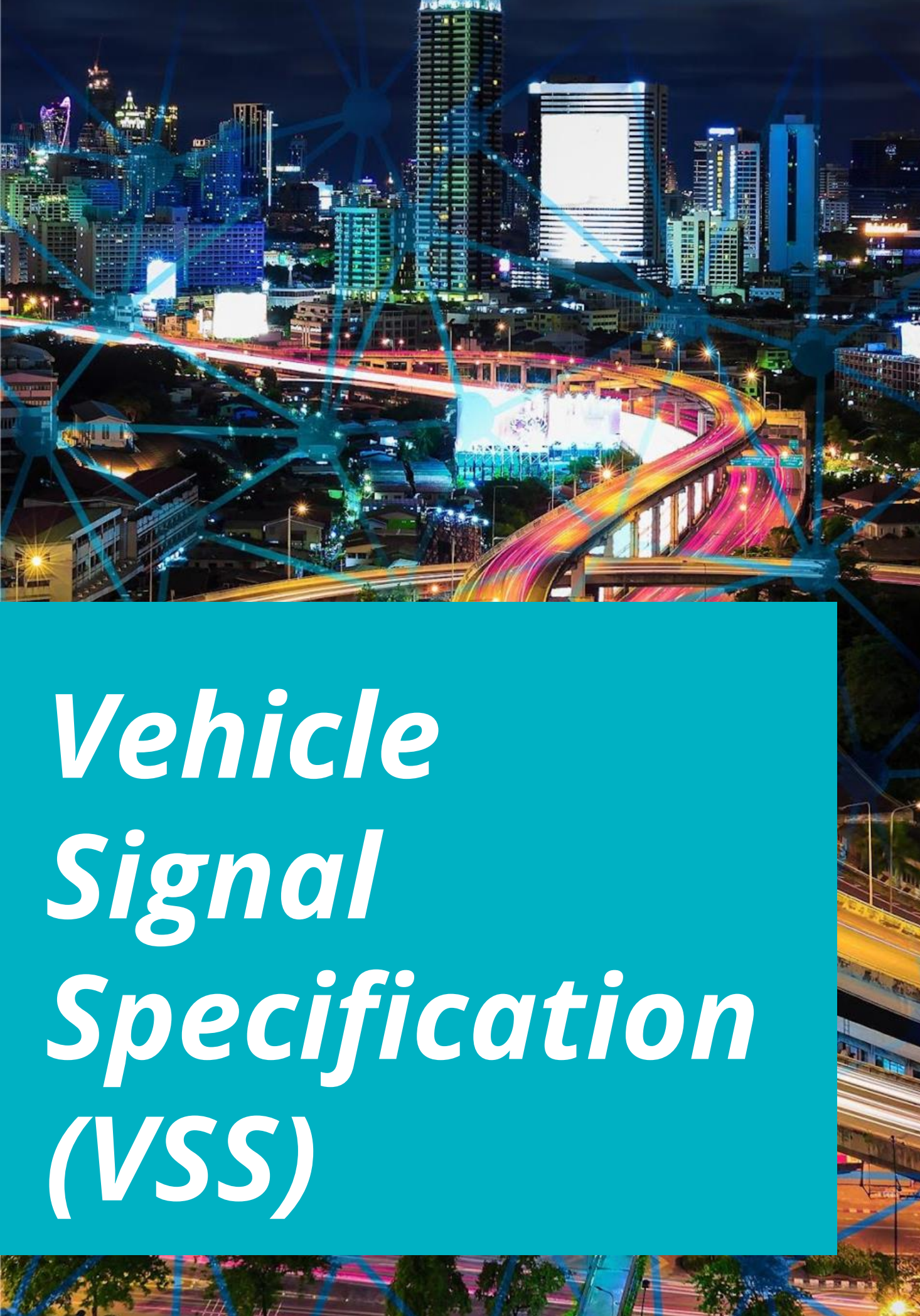
- 15-year History of Hosting Open Code Projects

Data Expert Pillars of Work

- API Gateway Components for Endpoint Integration (e.g., VISS)
- Data Exchange
- Remote Service execution
 - Definition of concept and approach

COVESA
Data Expert Group





Vehicle Signal Specification (VSS)

Widely Adopted Open Data Model for Consistent and Usable Vehicle Data



Enables Scalability



Faster Time-to-Market

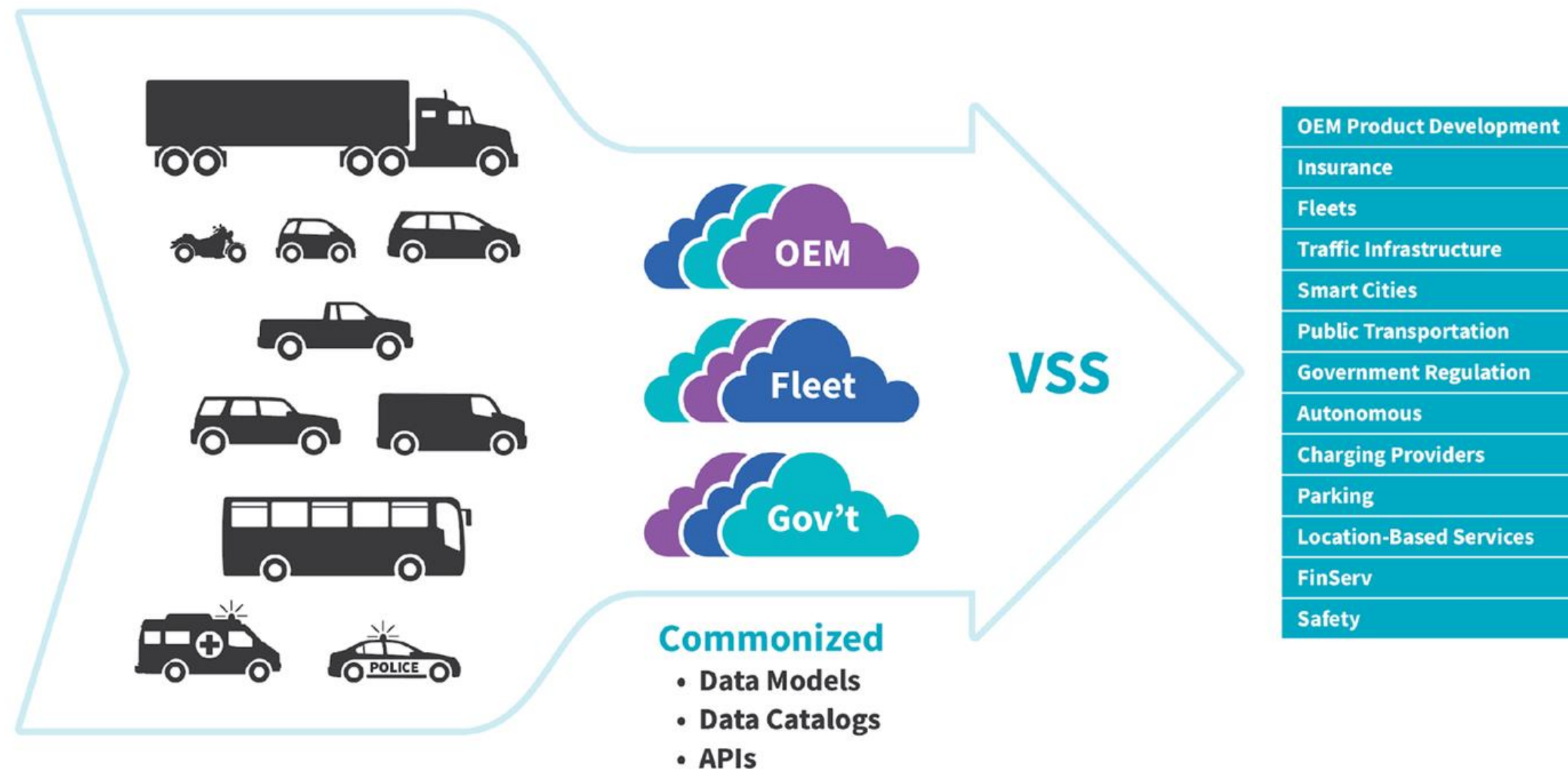


Supports Future Business



Drives Innovation

VSS: Key Engagement to Maximize Connected Vehicle Opportunities



VSS commonizes diverse data sources enabling focus on business value.

VSS: OEMs and Open Source Projects

OEMS

BMW Group



OPEN SOURCE PROJECTS



(Eclipse SDV Fleet Management Blueprint and Eclipse Service-to-Signal)



(Pivot Project)



VSS Adoption

COMPANIES, PRODUCTS AND SOLUTIONS





Automotive AOSP App Framework Standardization

Reduce Fragmentation, Expand Options, and Grow the AOSP Automotive Ecosystem

1

Enabling App Innovation and Rich Experiences

2

Frictionless Onboarding and Testing for App Developers

3

Building a Cross-OEM App Ecosystem

4

Avoid Fragmentation

AOSP: Active Workstreams

- **UnifiedPush Notifications:** Open source push notification service specification and implementation.
- **Emulator:** Developing and Testing apps in an automotive representative environment to help reduce friction among app developers.
- **Data:** Harmonizes AOSP vehicle properties with the Vehicle Signal Specification.
- **COVESA SDK:** Code developed in the workstreams is combined as a collection of all “COVESA libraries.”
- **Entertainment:** Reduces access barriers for content providers by standardizing the technical implementation in the car.



Other Areas of Technical Focus

COVESA Groups and Projects are organizational structures for members to collaborate on the advancement of connected vehicle systems and software-defined vehicles.

Technical Focus

COVESA Groups are Board-approved Expert Groups or Birds-of-a-feather (BoF) formed to advance a specific domain through a project or a series of projects.



AOSP App Framework Standardization Group

Minimize fragmentation in automotive.



Commercial Vehicle Group

Identify gaps, solutions, and standards for VSS in commercial vehicle fleets.



Connected Safety Group

Enhance road safety with connected technologies.



Data Expert Group

Facilitate and improve integration and interoperability of connected vehicles.



Data Expert Group: Architecture and Infrastructure Group

Define and prove standard data-centric architectures and infrastructure.



Data Expert Group: Common Vehicle Interfaces Group

Explore vehicle interfaces to ease integration and spur innovation.



Electric Vehicle Charging Expert Group

Understand and prove novel EV charging approaches.



Payments Group

Provide a foundation in, and access to automotive, payments, and retail ecosystems.



Security Group

Deliver automotive cybersecurity guidelines and education for more secure vehicles.



Vehicle Experience Group

Lead, validate, and collaborate on vehicle experiences.

Technical Focus

COVESA Projects are specific work done in the open associated with an Expert Group, Birds-of-a-Feather (BoF), or team, resulting in a work product.



Central Data Service Playground

Investigate and demonstrate data services.



Commercial Vehicle Information Specifications

Developing signal and service catalogues for commercial vehicles using the HIM rule set.



Common Vehicle Capabilities

Technology-neutral interface definitions of vehicle capabilities.



Data Architecture Terminology

Identify and define common data architectures and terminology.



Hierarchical Information Model (HIM)

Rules and tools for defining domains in a tree structure.



In-Car Wallet - Payments & Orchestration

Design a secure and convenient payment system framework for vehicles.



Interface Exchange (IFEX)

Interface description and transformation.



Private Cross OEM Joint Compute for EV Charging

Protect privacy while leveraging cross OEM data sharing.



Unified Push Notifications

Standardize 3rd party push notifications for automotive user experiences.



uServices

Defines common vehicle services.



Vehicle Information Service Specification (VISS)

Service for accessing vehicle data.



Vehicle Information Service Specification Reference (VISSR)

VISS Reference Implementation.



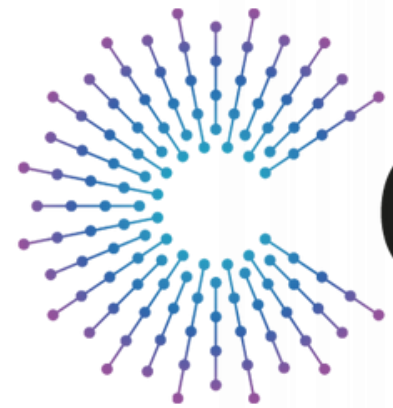
Vehicle Signal Specification (VSS)

A common approach for describing vehicle data.



vsomeip

Implement scalable service-oriented middleware over IP (SOME/IP) protocol.



COVESA

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Technical Participation: wiki.covesa.global

Contact Us: help@covesa.global

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