COVESA

MICHAEL NIKLAS-HÖRET

STEVE CRUMB

AUTOSAR and COVESA as part of the SDV Alliance: Unifying the Software Defined Vehicle Ecosystem

Why the Software-Defined Vehicle (SDV) ?

The promises of a future software-defined vehicle are great and wide-ranging

- Hardware-based (static) → Software-centric (dynamic)
- Introduction of new features & services
- **SW-driven platform-approach** across carlines and models
- Tracking/correcting bugs/issues in the field
- Extending lifecycle of the vehicle (and keeping it up-to-date, secure and safe)
- Alignment with the digital world of the vehicle occupants
- Opportunities for new relationships and business between OEM and vehicle user
- And many more…

The SDV Journey is Underway

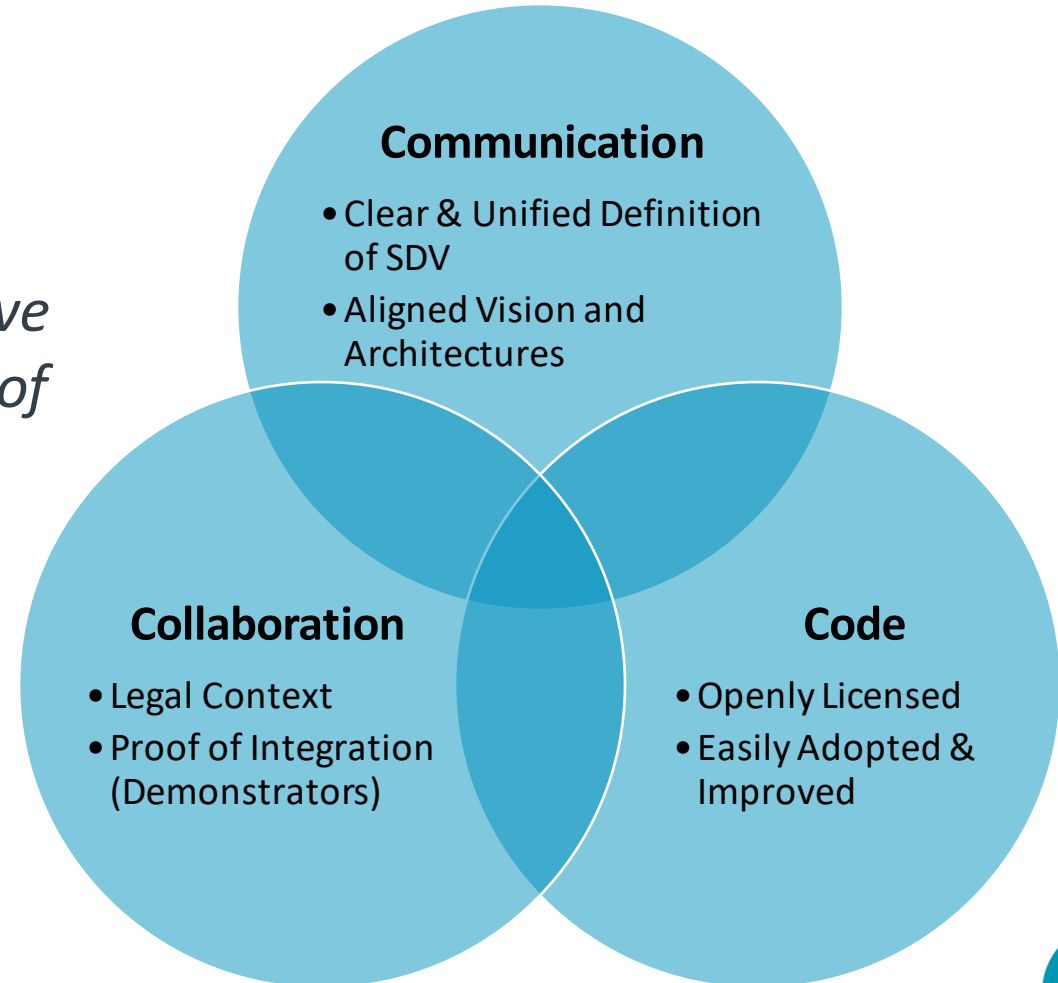In 2023, 50% of Top 10 Automakers Will Offer New Features Through Software Updates

SOURCE: GARTNER

44% of respondents would pay up to $20 per month for additional services after buying a car; 14% would even pay up to $50

SOURCE: AURORA LABS/STRATEGY ANALYTICS

SDV ALLIANCE

SDV is bigger than any one organization

Aligning the Industry Around SDV

*How will the automotive-centric communities, including technology standards and software organizations drive the **change** to realize the **great promises** of the **SDV** in reality?*

Communication
- Clear & Unified Definition of SDV
- Aligned Vision and Architectures

Collaboration
- Legal Context
- Proof of Integration (Demonstrators)

Code
- Openly Licensed
- Easily Adopted & Improved

SDV ALLIANCE

A new alliance

- Initial collaboration between 4 SDV organizations

- Bringing over 500 automotive and software ecosystem companies to meet the needs of the software-defined vehicle

- Combines cloud to edge, connected car, open source, open standards, safety, and real time

SDV Alliance - Launch

- Launched on January 9th at CES
- SDV Alliance booth at COVESA networking event (~ 2200 attendees)
- Two demos showcasing technologies from the 4 organizations
- Good interest from automotive industry

SDV Alliance – What does collaboration mean ?

Aligning efforts in the SDV ecosystem

Create clear definition of what constitutes an SDV

Examine the technologies, methodologies, and standards from each of the alliance consortia and show how they can work together for the development of the SDV

Education of SDV market for the artefacts from SDV Alliance consortia members and how they interoperate

Pooling the skills from each consortia to create a joint SDV vision

Focus on architecture, technologies and copyright and IP collaboration

SDV Alliance - FAQ

- SDV Alliance is not a legal entity, it is a collaboration framework for automotive software related consortiums to work together

- SDV is an open alliance and is open to other like-minded consortia to join and collaborate

- Any member of any of the SDV Alliance collaborating consortia can get involved with the SDV Alliance workstreams

- SDV Alliance's purpose is not to produce technology, but to align necessary technologies and plan for integration of those technologies produced by its participating consortia

- When possible, results from the SDV Alliance will be published on a joint and open github instance

Initial alliance members

SDV Alliance brings industry-leading consortiums together for the first time

- Software Standards for Microcontrollers and Microprocessor Systems
- Methodology and Exchange Formats for cross organizational development
- Explicit focus on safety and cyber security
- Very high adoption rate in the market
- Representing more than 350 partners of the automotive and related industries

AUTOSAR™

- A variety of OPEN collaborative projects that accelerate innovation for connected vehicle systems and advance the mobility ecosystem
- A widely adopted, developer-friendly, extensible data model and catalog with industry-supported tooling
- Multi-year success facilitating open-source projects that deliver common vehicle automotive APIs and software

COVESA
Accelerating the future of connected vehicles

SDV ALLIANCE

- Vibrant and fast growing OSS community
- Wide range of OSS projects, both in-vehicle and off vehicle, from Services to Communication to Tooling
- Experience with vendor-neutral, transparent, open governance
- Initiative of initiatives - place to build distribution stacks and the supporting toolchain

SDV™
Eclipse Software Defined Vehicle

- Offers a cloud-native development and deployment architecture based on open standards for automotive software
- Enables mixed-critical software development for in-vehicle deployments
- Over 100 members from automotive, software and cloud ecosystem
- Open-source and commercial software components enables shift-left development

SOAFEE
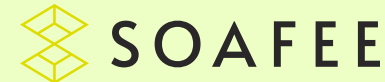
Each organization brings different technologies and collaboration models to the alliance

SDV ALLIANCE

Collaboration in action

Initial PoCs and demonstrators from CES 2024

Demonstrator goals and existing setups

- Mid-Term goal: Show the compatibility of identified and selected SDV related technologies from different consortia

- The technologies will be based on the elaborated joint definition of the SDV alliance of an SDV

- These identified technologies need to work as seamless as possible together

- Until mid-term demonstrator based on the technologies is defined, existing industry demonstrators are extended to show current compatibility
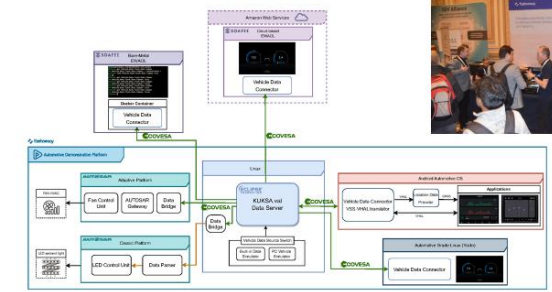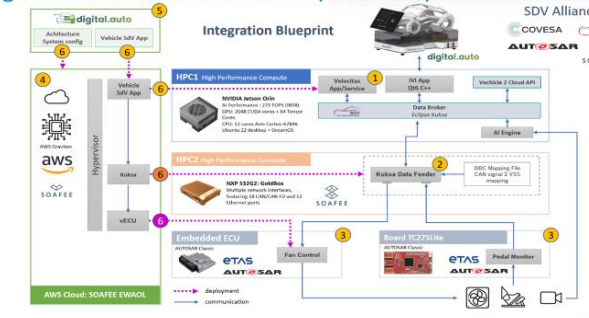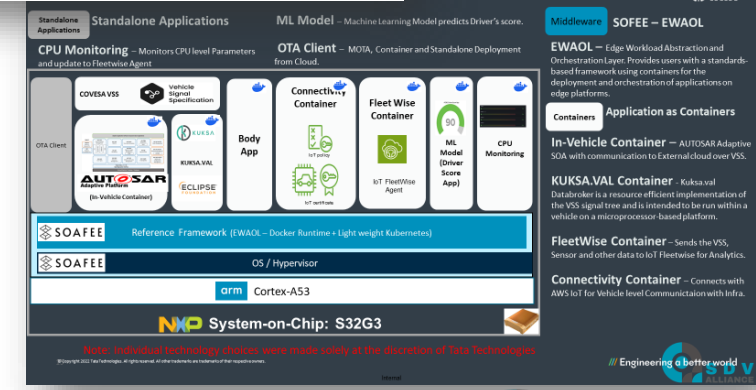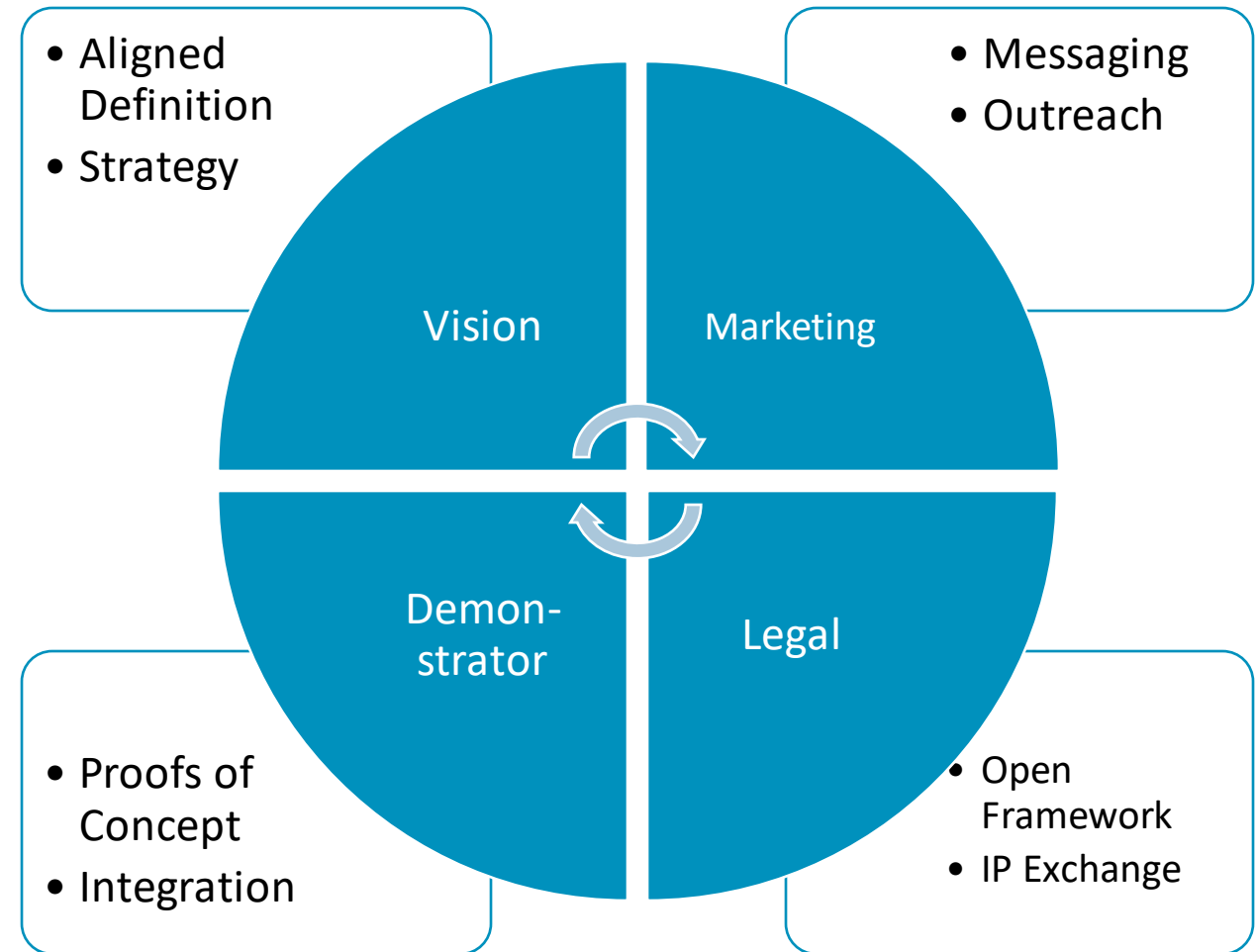
SDV Alliance
What's next ?

What's Next for SDV Alliance

Four Active Work Streams

- Each workstream led by one of the alliance consortia, and manned by members from all
- Each workstream will have its goal and roadmap for 2024 and beyond
- Active workstream recruitment starting now

- Aligned Definition
- Strategy

- Messaging
- Outreach

Vision

Marketing

Demon-strator

Legal

- Proofs of Concept
- Integration

- Open Framework
- IP Exchange

How to get involved

- The alliance workstream members will reach out to their consortia members to look for active participation in the workstreams

- Alternatively – please reach out to your consortia's SDV alliance representative :

  - AUTOSAR :   Michael Niklas-Höret - michael.niklas-hoeret@continental-corporation.com
  - COVESA :   Steve Crumb - scrumb@covesa.global
  - Eclipse SDV :   Michael Plagge - michael.plagge@eclipse-foundation.org
  - SOAFEE: Robert Day – robert.day@arm.com

Thank You

Danke

Gracias

谢谢

ありがとう

Asante

Merci

감사합니다

धन्यवाद

Kiitos

شكرًا

ধন্যবাদ

תודה

The AUTOSAR Opening Strategy

A Set of Measures

✓ Regional Representations

✓ 3rd Party Collaboration

✓ Premium Partner Plus

✓ Derived Applications

- Mobility infrastructure
- Agricultural machinery
- Maritime Shipping
- Railway

Derived Applications

- Urban Mobility
- Industrial Automation
- Building Automation
- Household appliance
- Medical technology

- Easier Access to a limited scope of AUTOSAR Work

- Automotive API Project

The AUTOSAR Opening Strategy

Software Defined Vehicle (SDV) - Easier Access

- **The new "Associate Partner Light" variant**

  - For free.

  - Exploitation rights for very limited scope of AUTOSAR standards.

Easier access to provide AUTOSAR compatible components or products
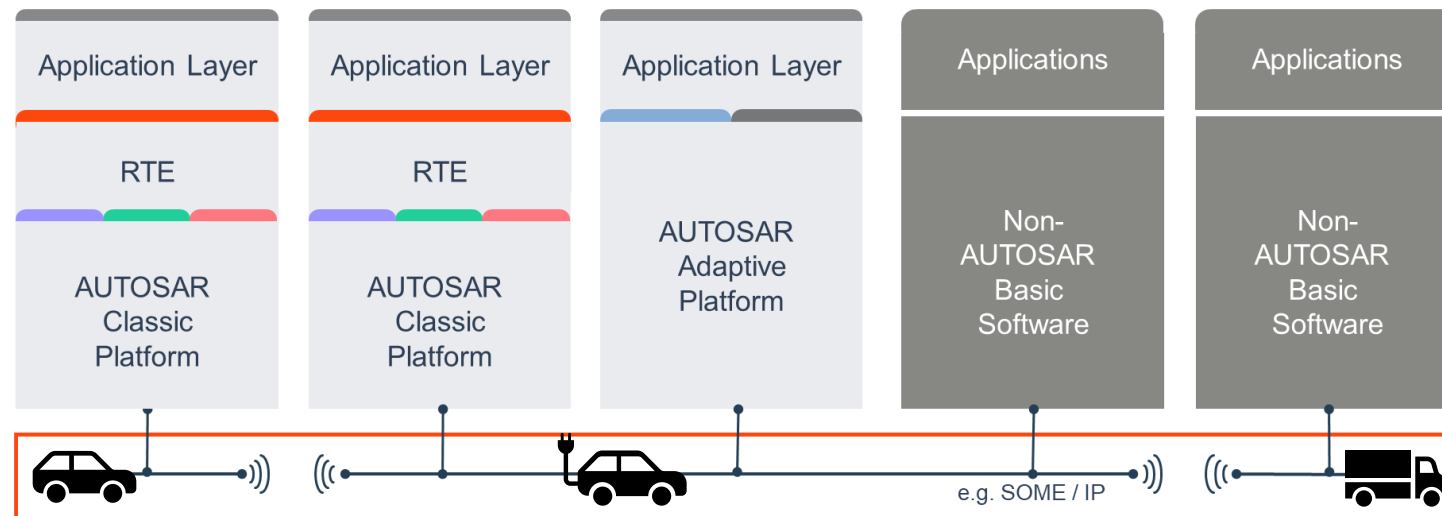
The AUTOSAR Opening Strategy

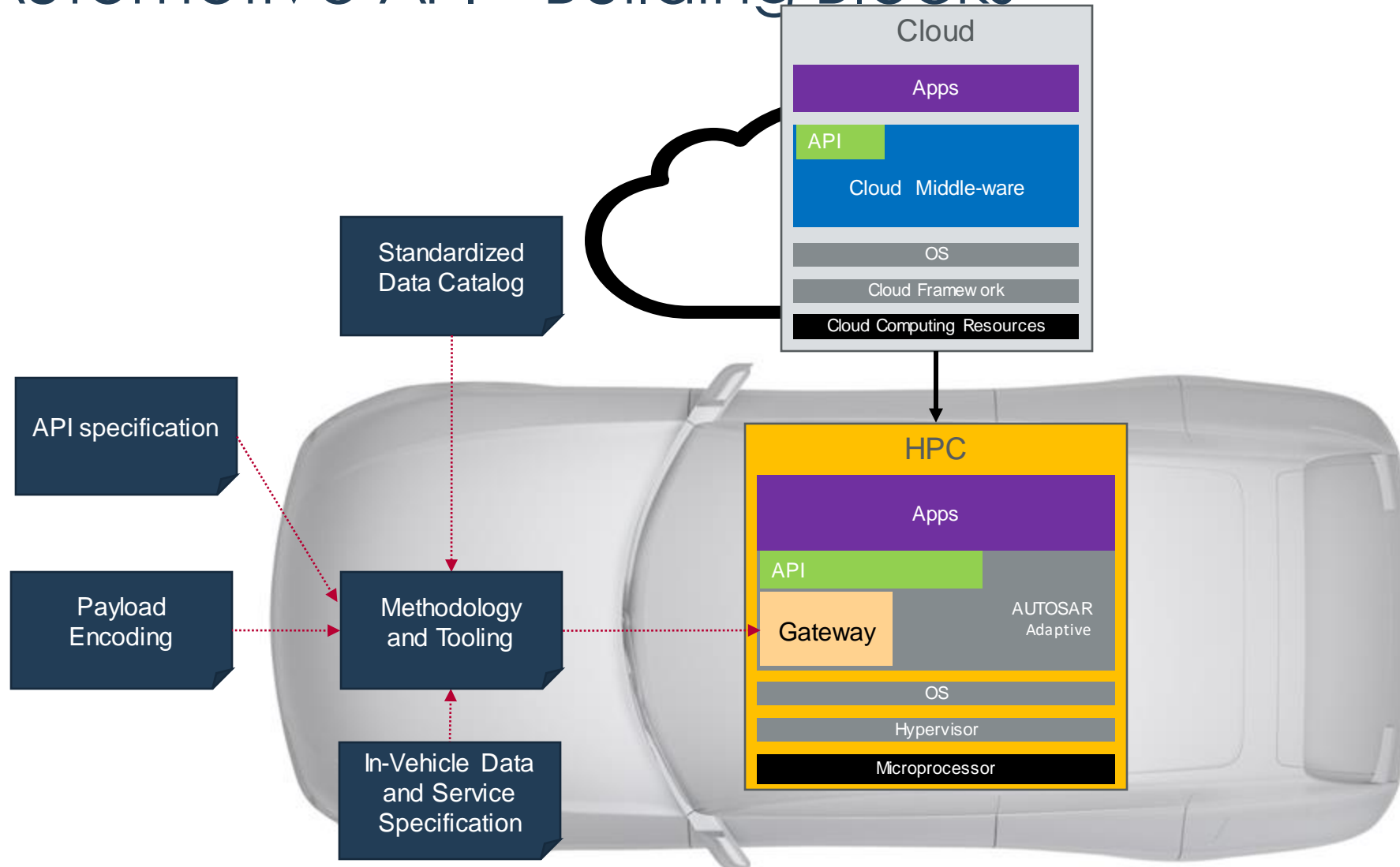Software Defined Vehicle (SDV) - Enable Collaboration

- **The new AUTOSAR Open Framework (AOF)**
  - to enable open collaboration in the SDV ecosystem **considering the overarching purpose of AUTOSAR**.
  - to **foster an ecosystem** of complementary standards, software implementations, and capabilities
  - to allow new activities **beyond the limits** of the AUTOSAR Development Cooperation.
  - is **open for interested parties** from the automotive and related industries to develop joint solutions.
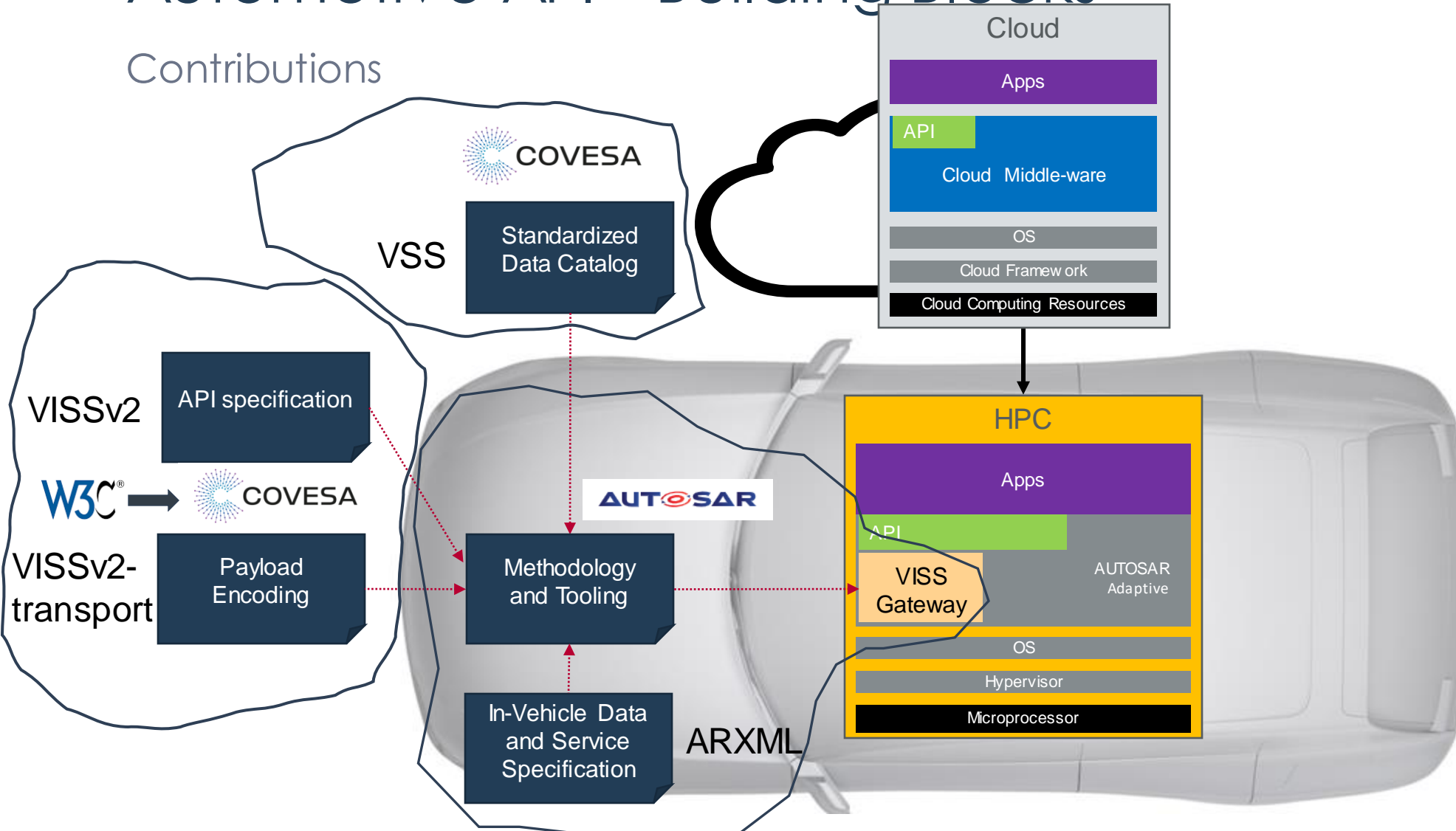
Automotive API

Goals

▶ **Open standard** to support **safe and secure** access to vehicle data and services

▶ For **on-board** applications and **off-board** applications

▶ For Automotive **and Non-Automotive** Service Providers
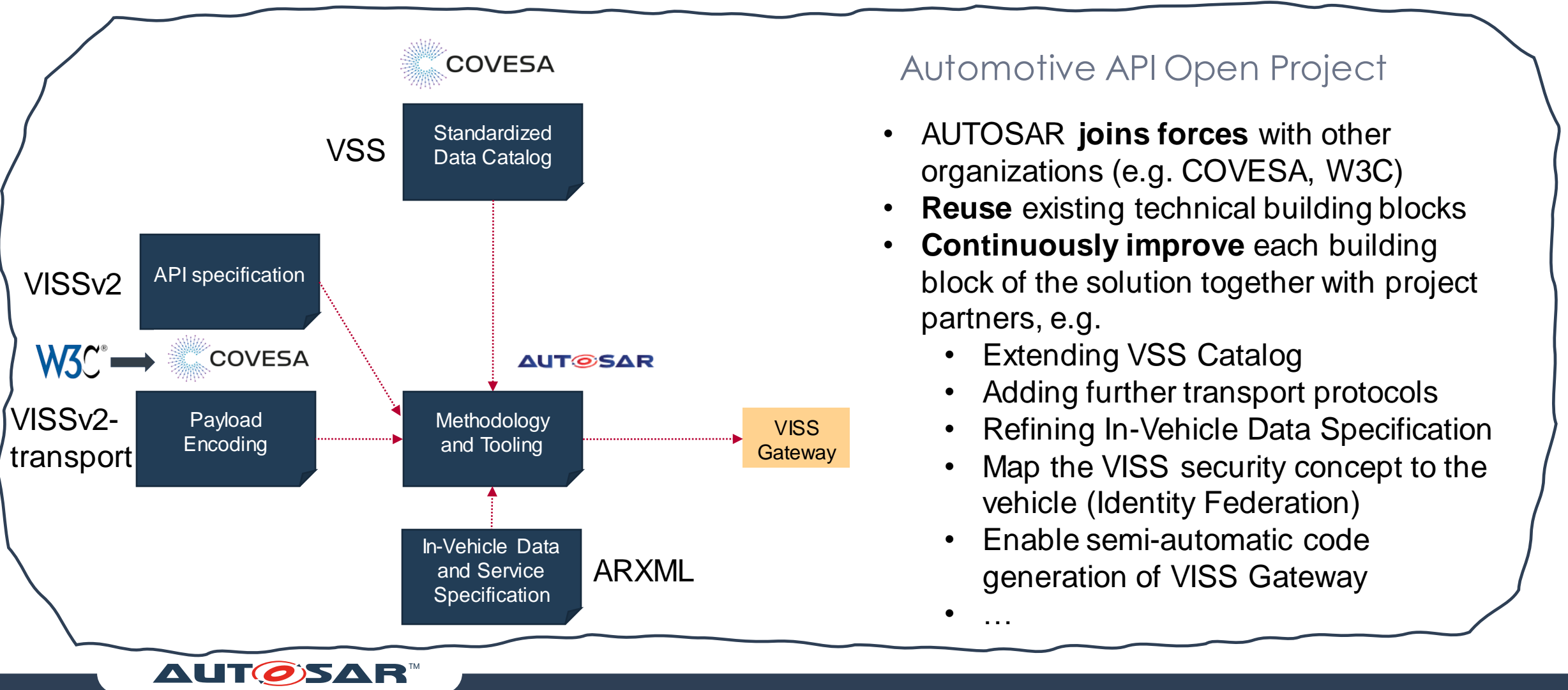
Automotive API - Building Blocks

Automotive API - Building Blocks

Contributions

AUTOSAR Open Project

VSS

VISSv2

VISSv2-transport

Standardized Data Catalog

API specification

Payload Encoding

Methodology and Tooling

In-Vehicle Data and Service Specification

ARXML

VISS Gateway

Automotive API Open Project

- AUTOSAR **joins forces** with other organizations (e.g. COVESA, W3C)
- **Reuse** existing technical building blocks
- **Continuously improve** each building block of the solution together with project partners, e.g.
  - Extending VSS Catalog
  - Adding further transport protocols
  - Refining In-Vehicle Data Specification
  - Map the VISS security concept to the vehicle (Identity Federation)
  - Enable semi-automatic code generation of VISS Gateway
  - …