

COVESA AMM, 25th – 27th April 2023, Porto

AUTOSAR & COVESA Synergies

- a strategic Bosch perspective

Achim Henkel, Director, Robert Bosch GmbH
Jean Luc Augier, Robert Bosch GmbH

Agenda

- Introduction in mobility eco-systems (Achim)
- How to combine AUTOSAR + COVESA (Achim)
- What happened since 10/2022 (Achim)
- A concept for the AUTOSAR-bridge (Achim)
- An in-vehicle implementation of VSS (Jean-Luc)
- Next Steps (Achim)

Introduction

E/E Evolution (E/E classics)

Feature effect chains

Mobility eco-system

neighbors

world wide grid

multi fleet (TIER1, other)

multi digital twins (fleet)

single digital twin (OEM)

offboard connectivity

onboard connectivity

vehicle computer

embedded

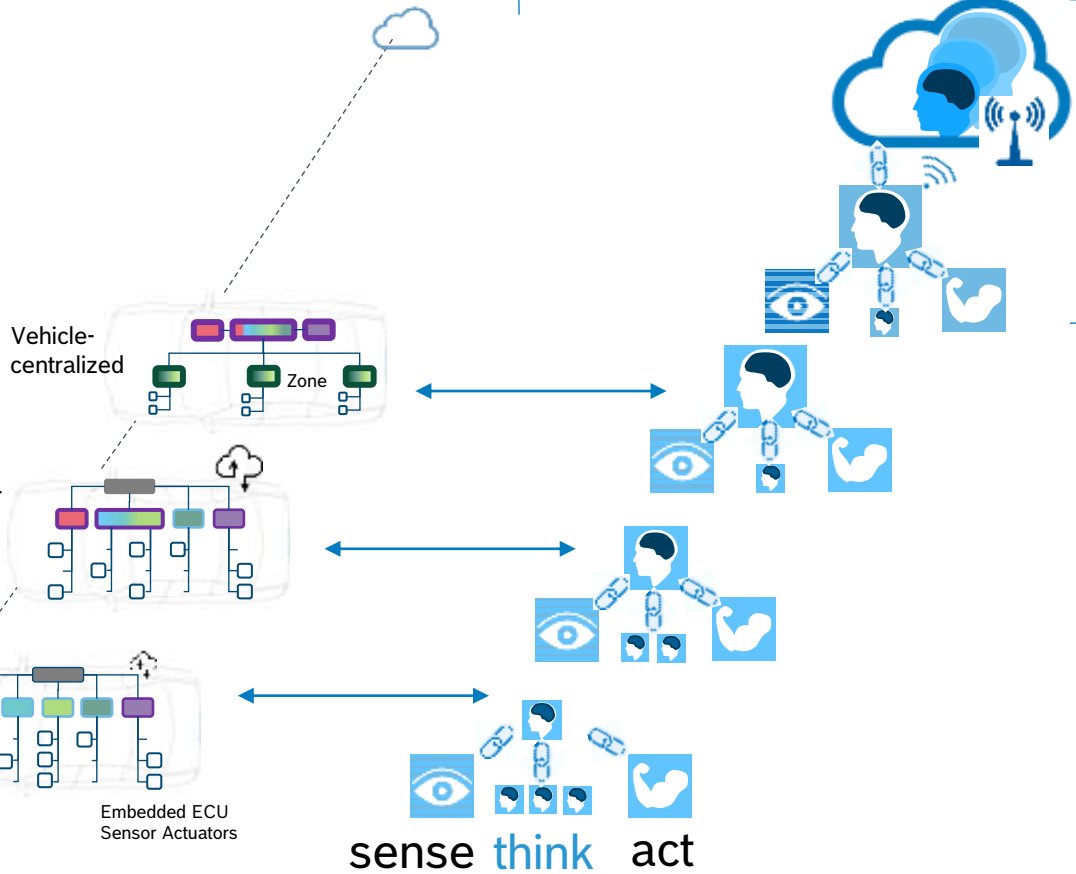
world wide reality

Road Infrastructure ECO

Energy ECO

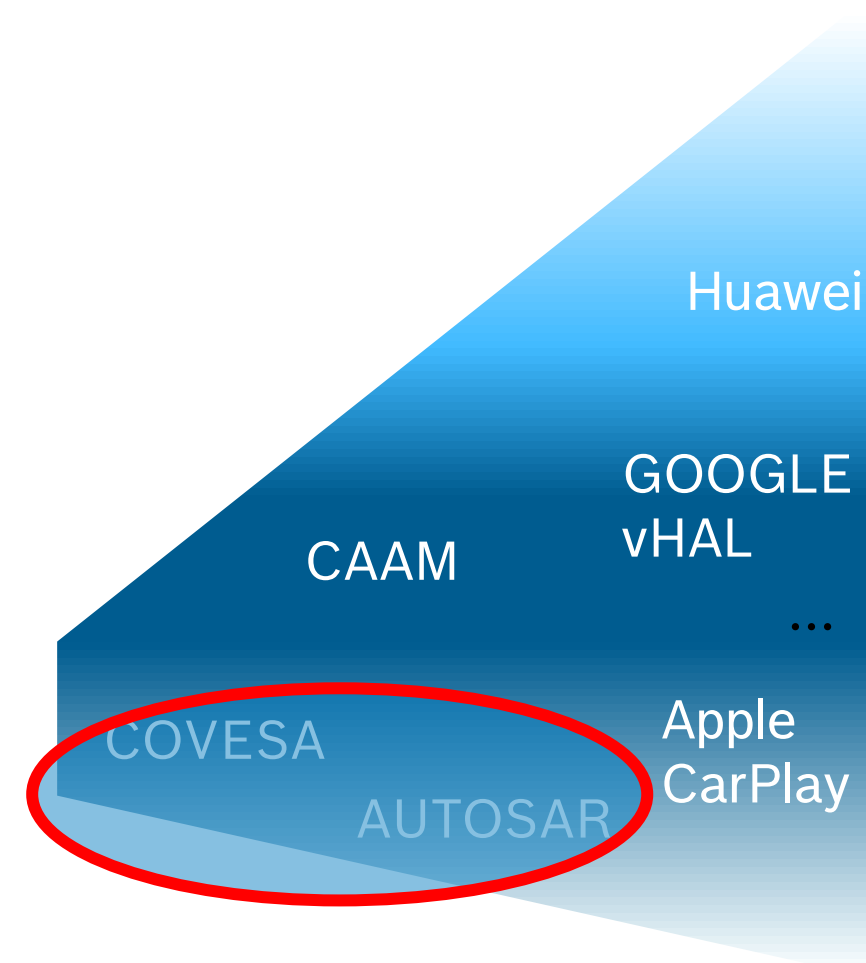
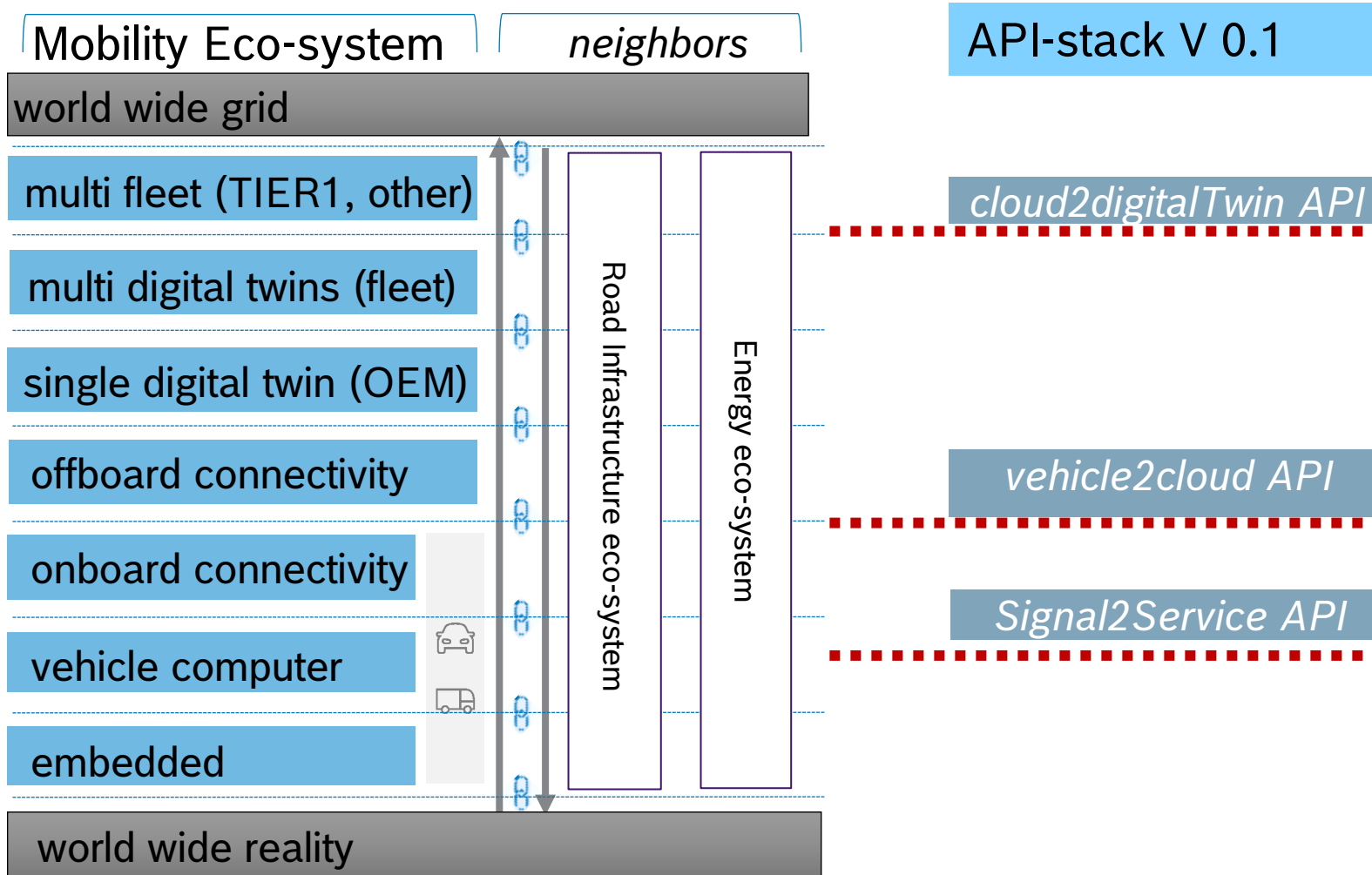
Device- Connect- Cloud-Layer

Onboard Offboard



When vehicle becomes a part of the internet and is connected to road- & energy-infrastructure
 -> a new big eco-system is created

How to manage complexity ?



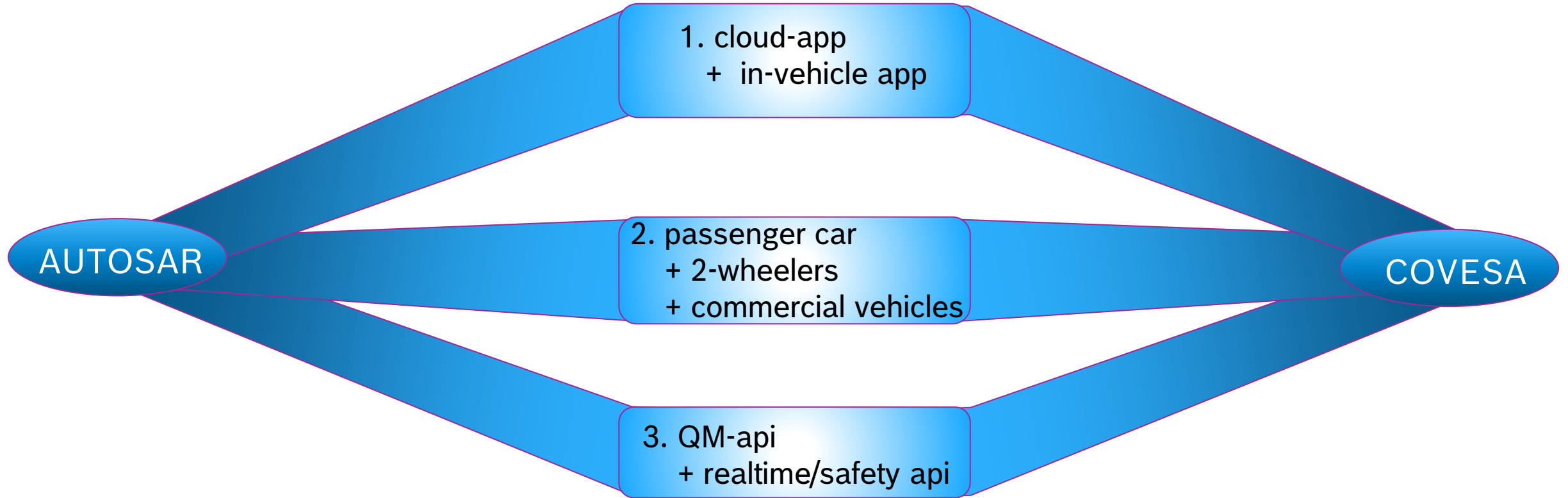
The increasing complexity is managed / controlled via a new API-stack



How to combine **AUTOSAR + COVESA**

How to combine AUTOSAR + COVESA

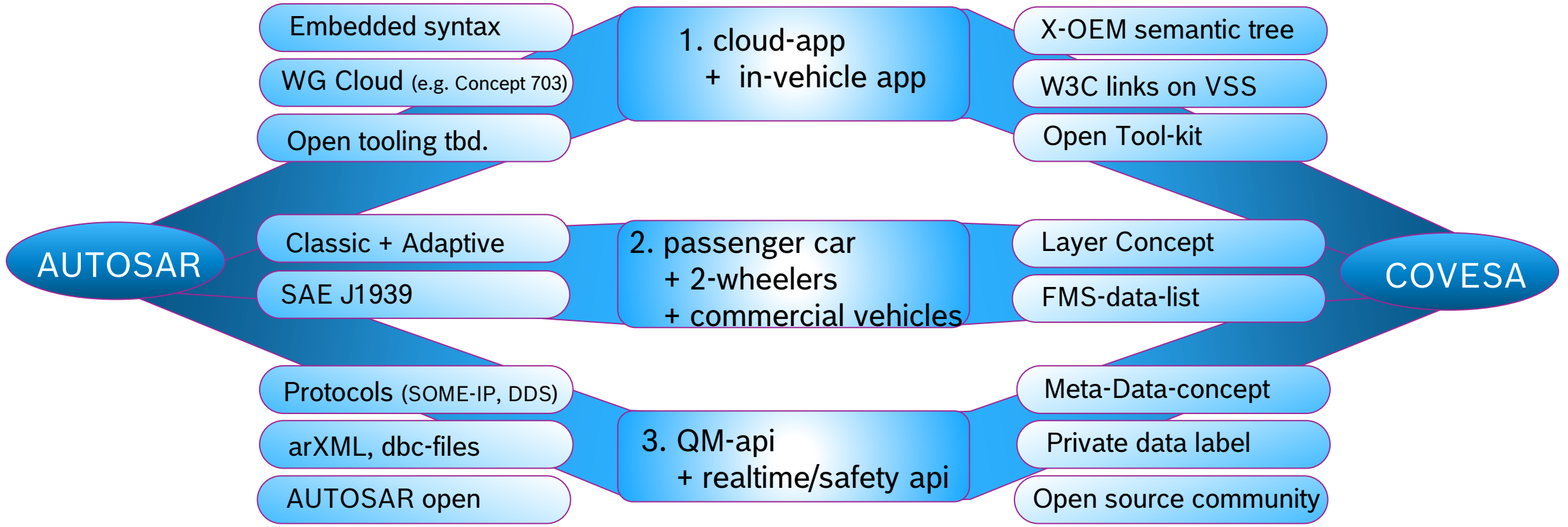
View back to AMM 2022 in Dearborn



3 synergy areas between AUTOSAR and COVESA identified

How to combine AUTOSAR + COVESA

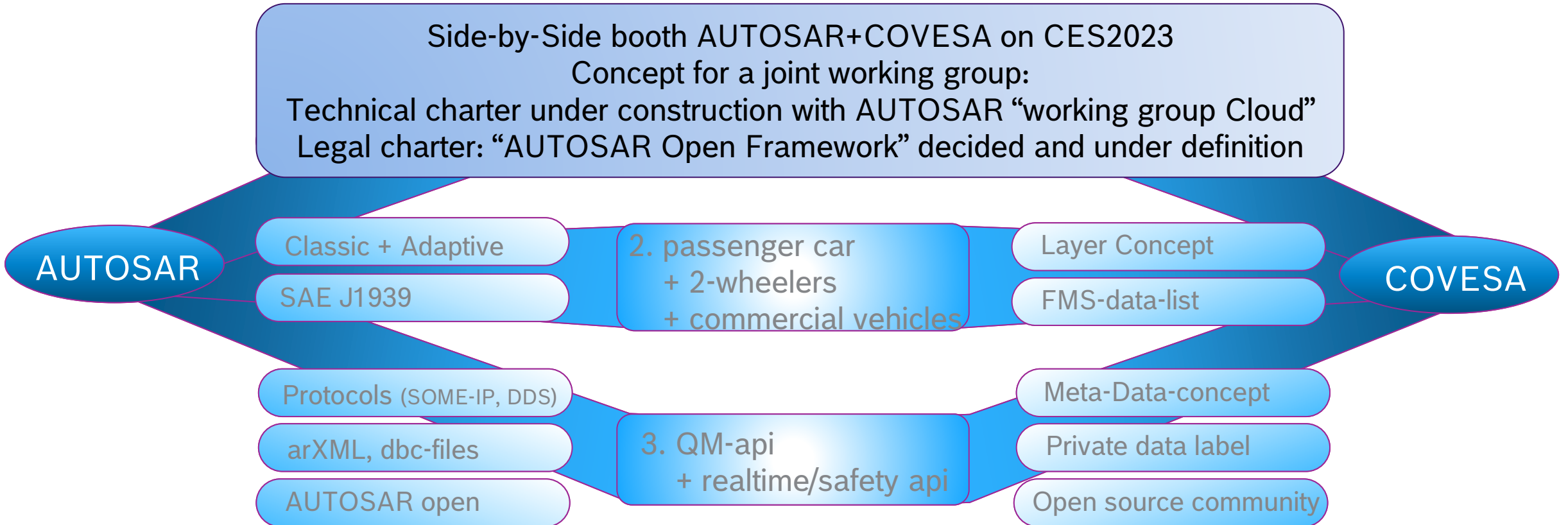
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Progress in many areas

How to combine AUTOSAR + COVESA

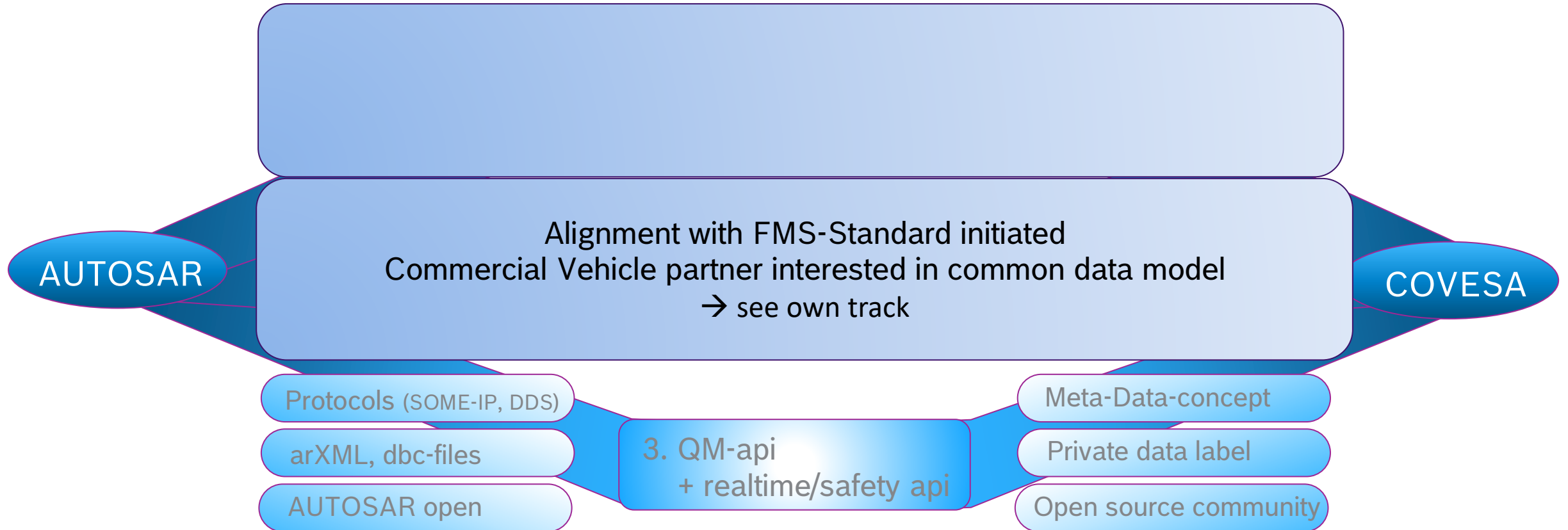
What happened since last AMM



Organizational alignment with AUTOSAR ongoing

How to combine AUTOSAR + COVESA

What happened since last AMM



Scope of VSS extended on trucks and open source fleet operations

How to combine AUTOSAR + COVESA

What happened since last AMM

FMS (LogiCom)

- Well established industry standard
- High OEM acceptance in EU (truck/bus only)
- Based on SAE 1939 (read-only from CAN)
- Long experience (>20 years)
- High precision (e.g. cycle time, resolution,...)
- Driver related info (→ cf. privacy)
- Secure write access via FMS-gateway open

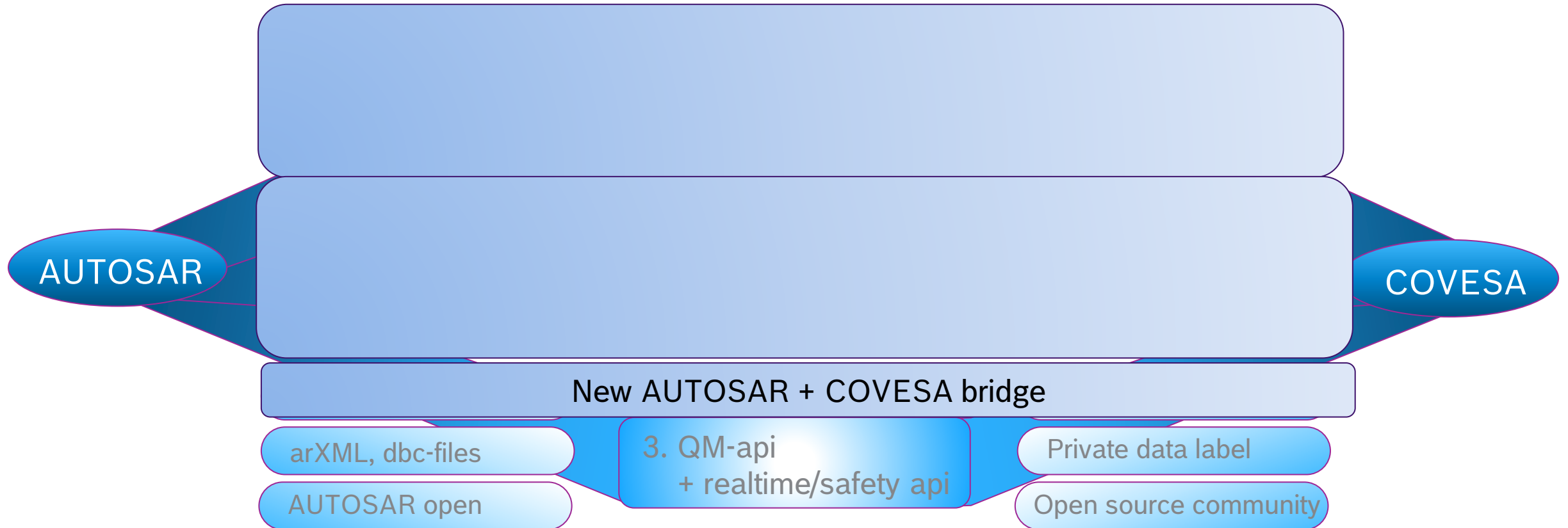
VSS (COVESA)

- Based on *Genivi* consortium -> service oriented
- Active, fast growing community
- Extensive vehicle data-model (>800 data)
- Increasing market interest (e.g. AUTOSAR, VDA,...)
- Detailed model of electrical powertrains
- Linked to US/California regulation¹⁾
- Secured access protocol defined with W3C (VISS2)

Possible approx. >30% overlap between FMS-V04 and VSS-V3.0 (e.g. EV, charging, tooling)

How to combine AUTOSAR + COVESA

What happened since last AMM



How to link COVESA semantic to AUTOSAR-syntax technologies



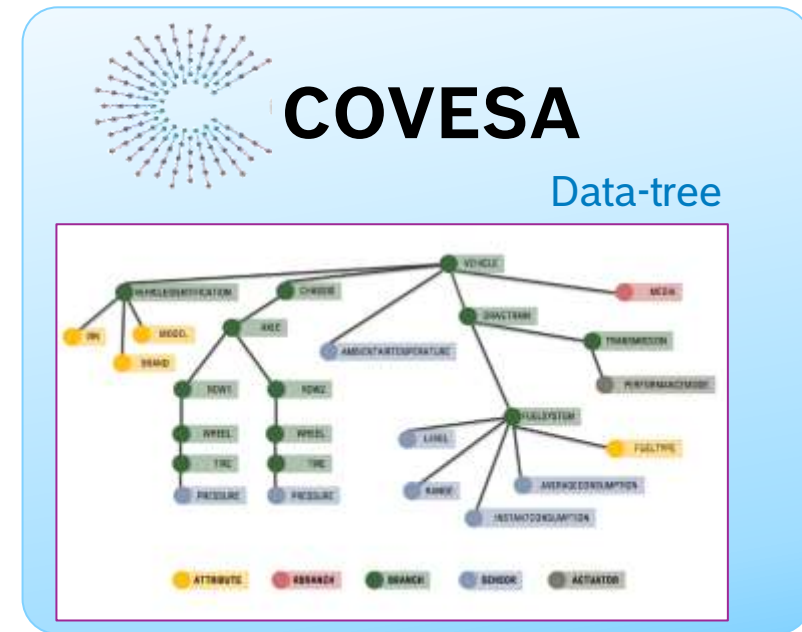
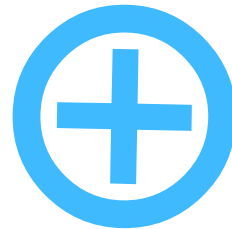
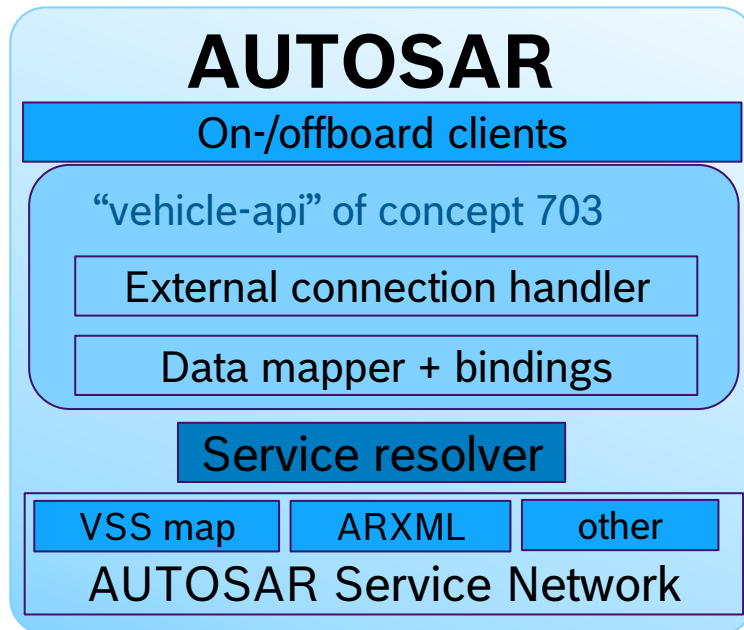
A concept for an AUTOSAR / COVESA bridge

A concept for an AUTOSAR / COVESA bridge

A gateway shall link AUTOSAR to COVESA

Many activities in the market to set standards for connected vehicles.

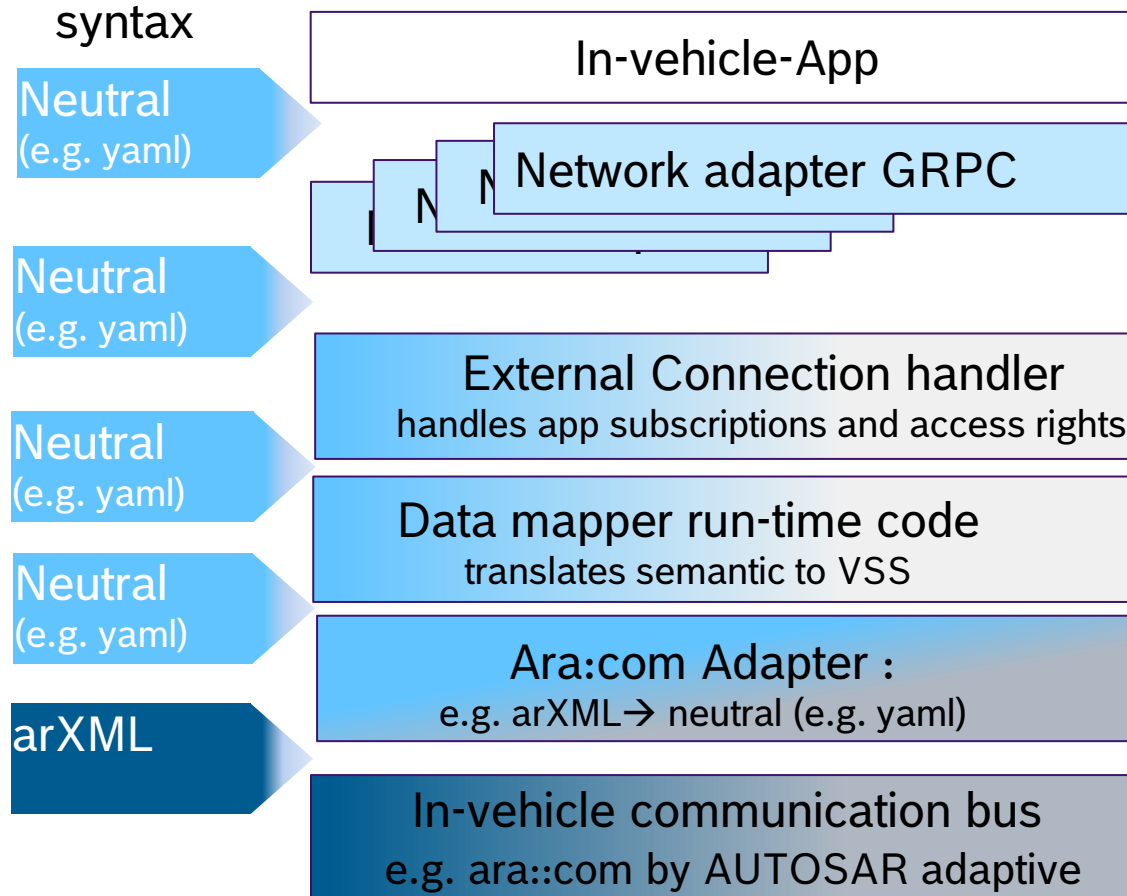
But, a vehicle-api might be realized by a SW-gateway based on AUTOSAR and COVESA



A concept for an AUTOSAR / COVESA bridge

AUTOSAR offers syntax + COVESA offers semantic

AUTOSAR



COVESA

semantic

VSS

VSS

VSS

OEM spec.

AUTOSAR/
OEM spec.

VISS2 supports MQTT, Websocket, http

AUTOSAR, aligned with COVESA, needs to find technical and methodological solutions to connect the AUTOSAR ecosystem and the SdV world.



An in-vehicle implementation of the AUTOSAR – VSS bridge

Embedded smart wiper control via smart phone

Example Implementation of AUTOSAR-VSS Bridge

AUTOSAR offers syntax + COVESA offers semantic

Smart Wiper app based on VSS3.0

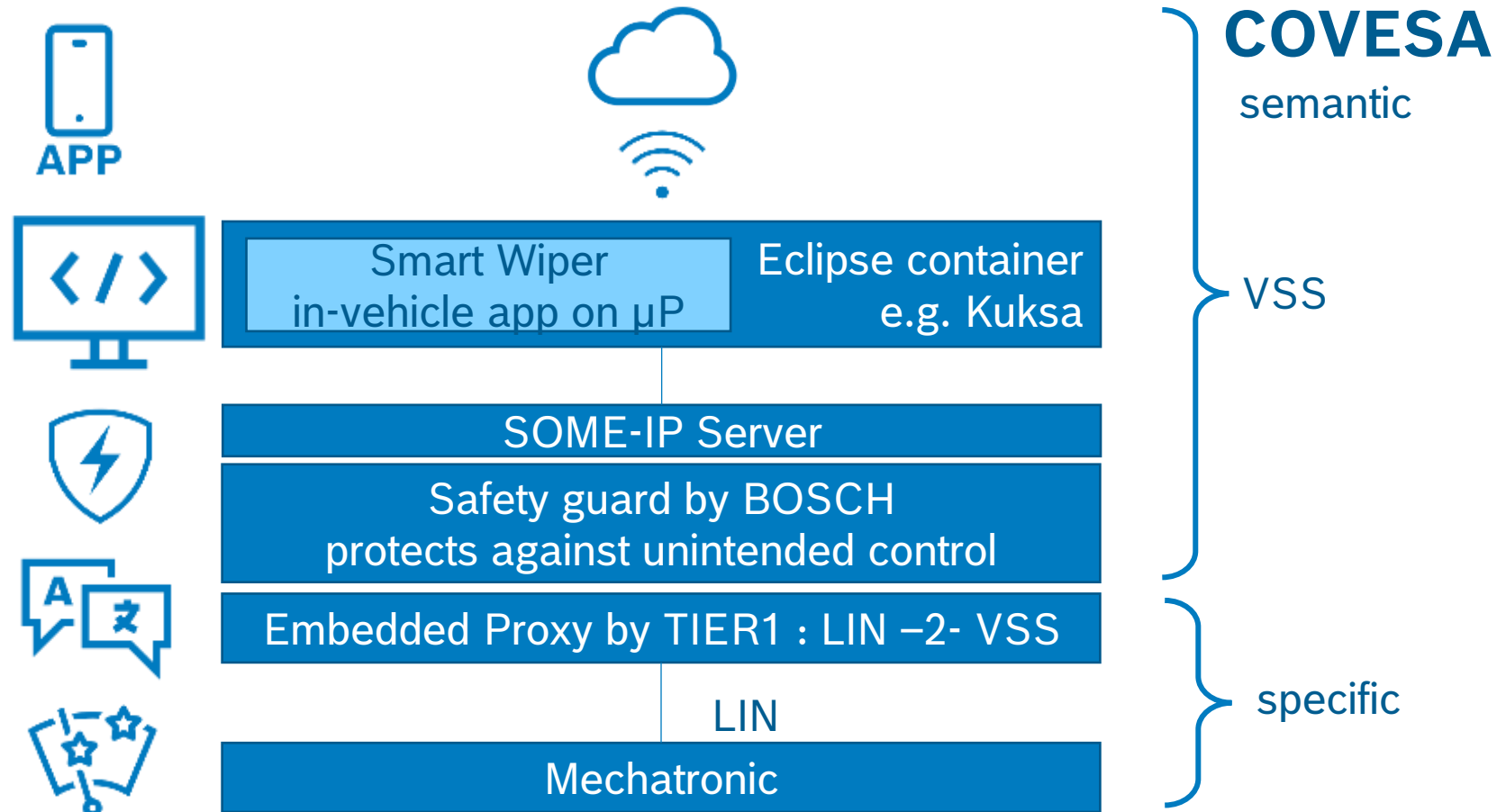
- Supports deeply embedded actuator access
- Enables flexible app upgrade over lifetime
- Remote control of mechatronics
(from smart phone or cloud)

➤ Book the zone-wiping-app: **Wiper is cleaning camera area**
“Do not be disturbed by the wiper during camera cleaning
and increase the robustness of camera assisted functions”

Example Implementation of AUTOSAR-VSS Bridge

AUTOSAR offers syntax + COVESA offers semantic

Smart Wiper app based on VSS3.0





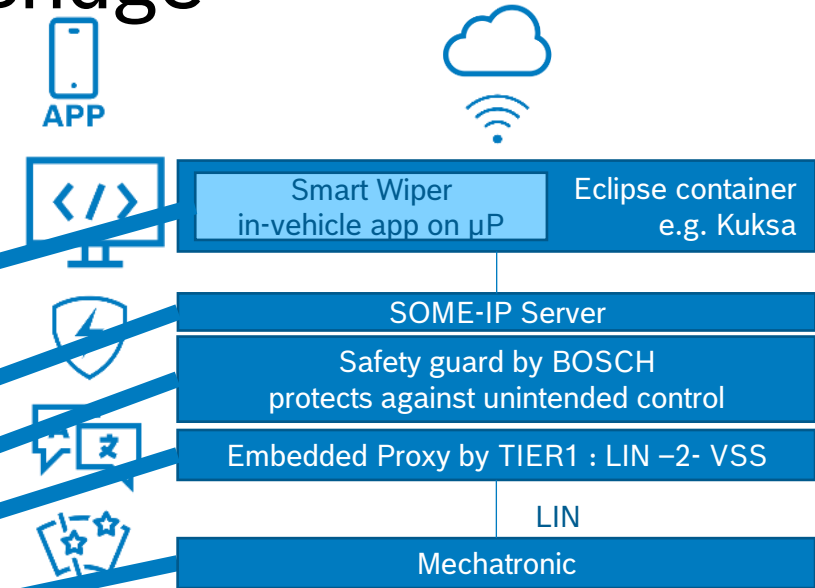
Smart Wiper app based on VSS

Safetyguard API-extension in real life

→ video

Example Implementation of AUTOSAR-VSS Bridge

AUTOSAR + COVESA demonstrator



Safety guard protects wiper and driver from damages, when the hood is opened.
Wiping is stopped, when hood is opening



Next Steps

Next steps

Closer cooperation COVESA & AUTOSAR under construction

- COVESA-VSS might harmonize the semantic in a cross-OEM in-vehicle-API
- First implementation of an in-vehicle API on “smart wiper”
→ might be extended to further features on μ C and μ P
- More details published on “*IAA-mobility*” Sept 2023 in Munich



Thank you

achim.henkel@de.bosch.com

JeanLuc.augier@de.bosch.com