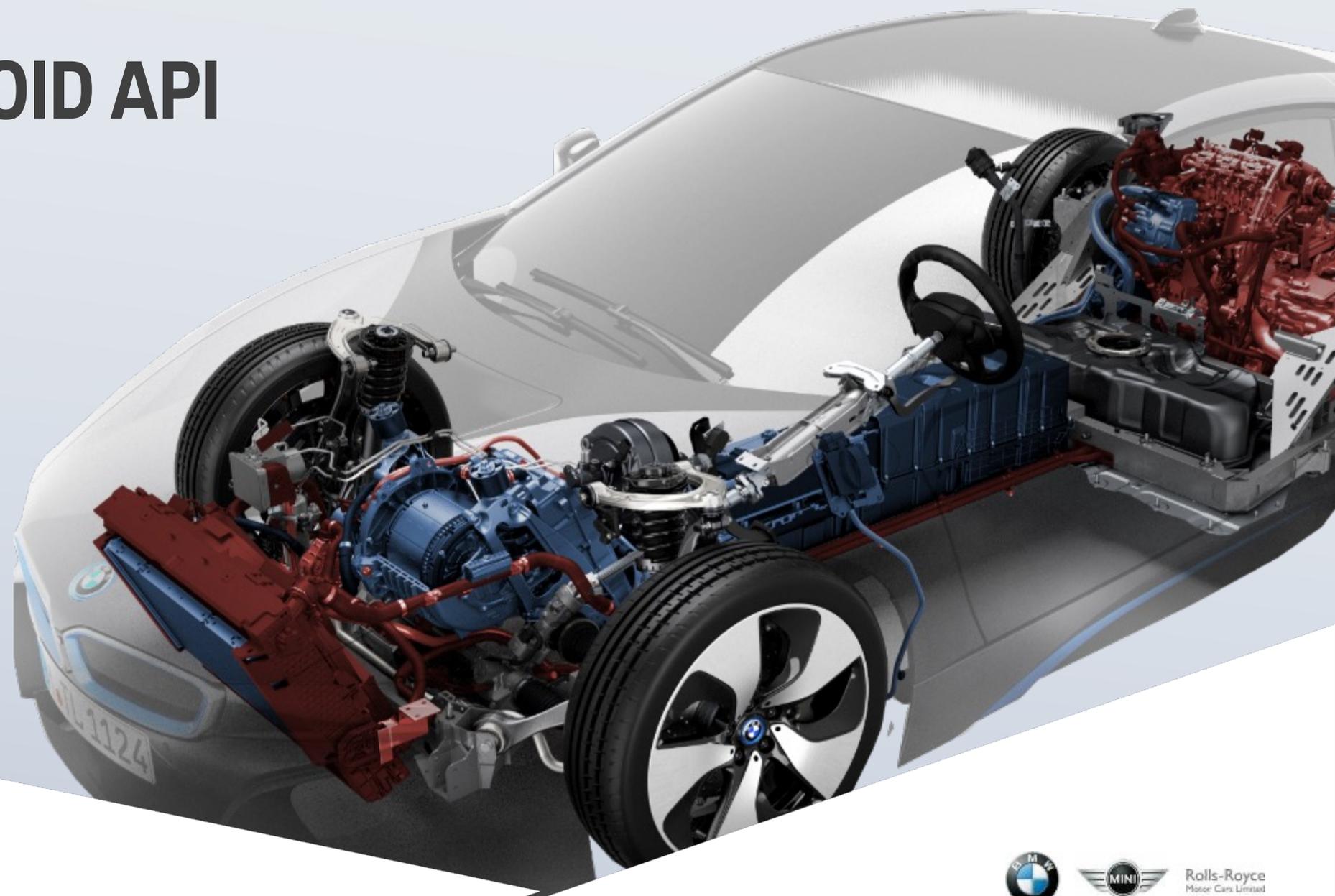# VISS – ANDROID API

CLOSING THE GAP

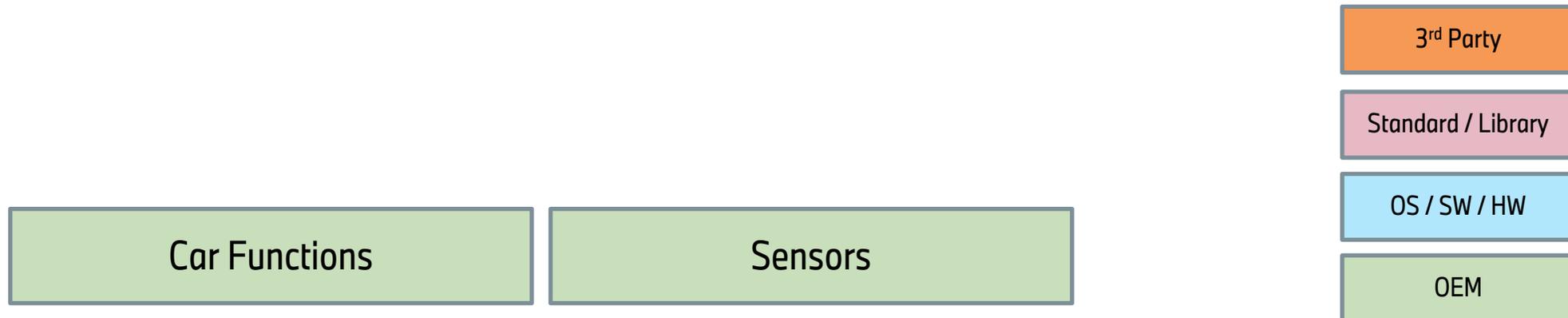**Jan Kubovy, BMW Group AG | April 2023**

BMW
GROUP

AGENDA

- **High level overview**
  - Data – Operating System – VISS
- **Vehicle Dataflow**
  - Data – Gateway - API
- **Android VHAL**
  - Reference Implementation
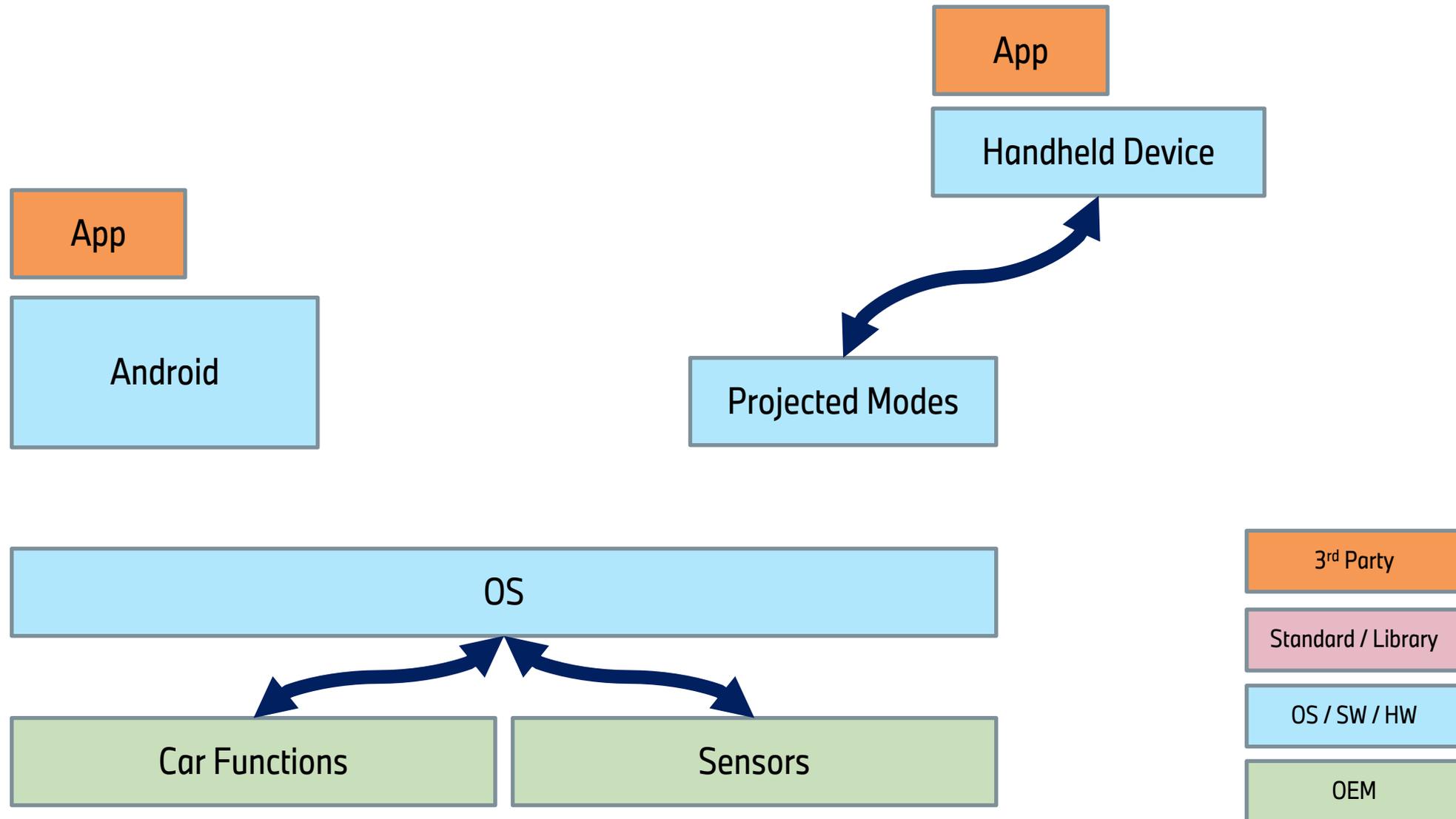- **Platform Providers**
  - Today, Future
- **Conclusion**
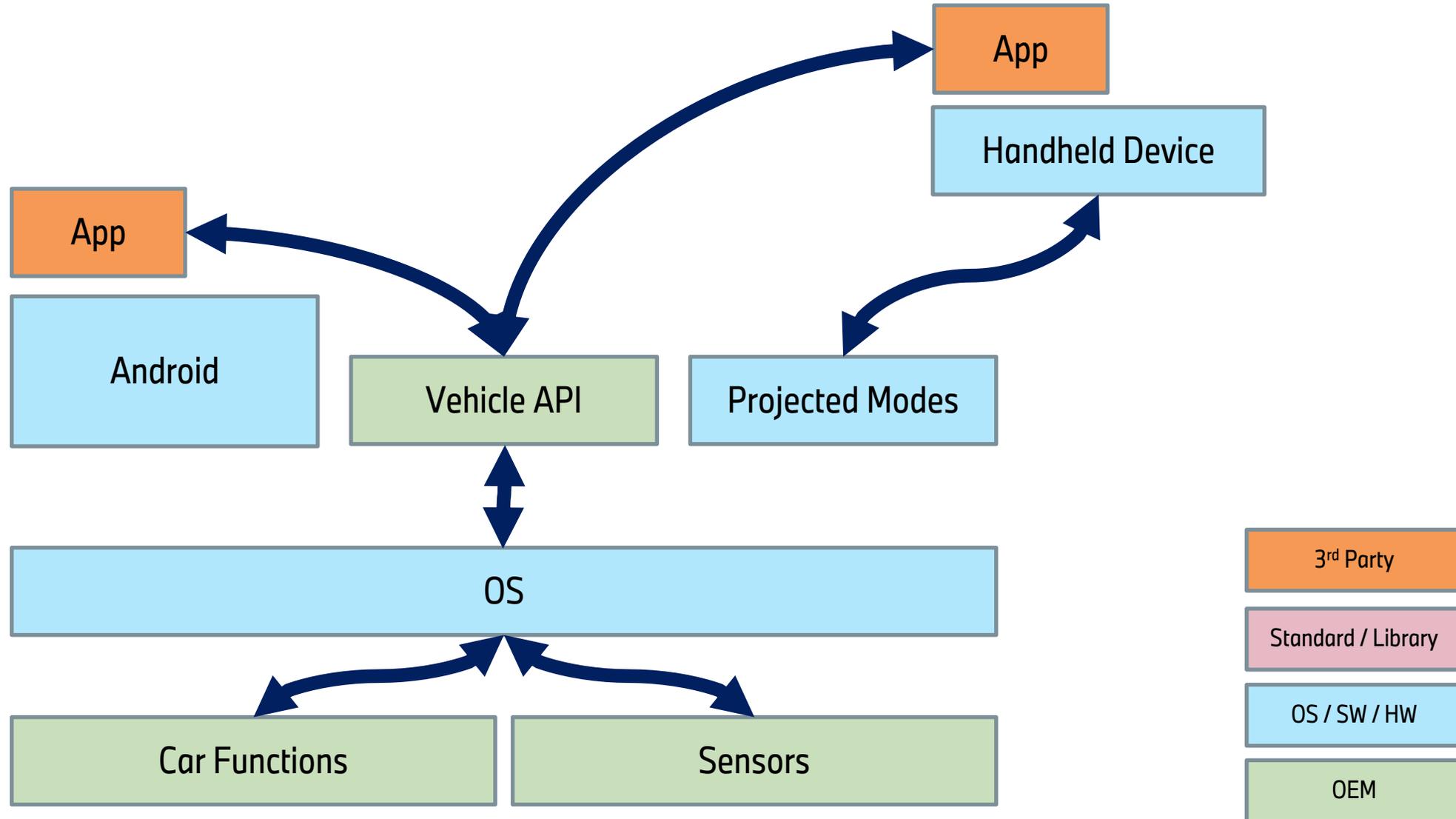
STATUS QUO

- Standardized vehicle data API – VISS (https://www.w3.org/TR/viss2-core/)
- OEM need to implement Vehicle HAL

HIGH LEVEL OVERVIEW

3rd Party
Standard / Library
OS / SW / HW
OEM

Car Functions	Sensors

HIGH LEVEL OVERVIEW

App

Android

App

Handheld Device

Projected Modes

OS

Car Functions

Sensors

3rd Party
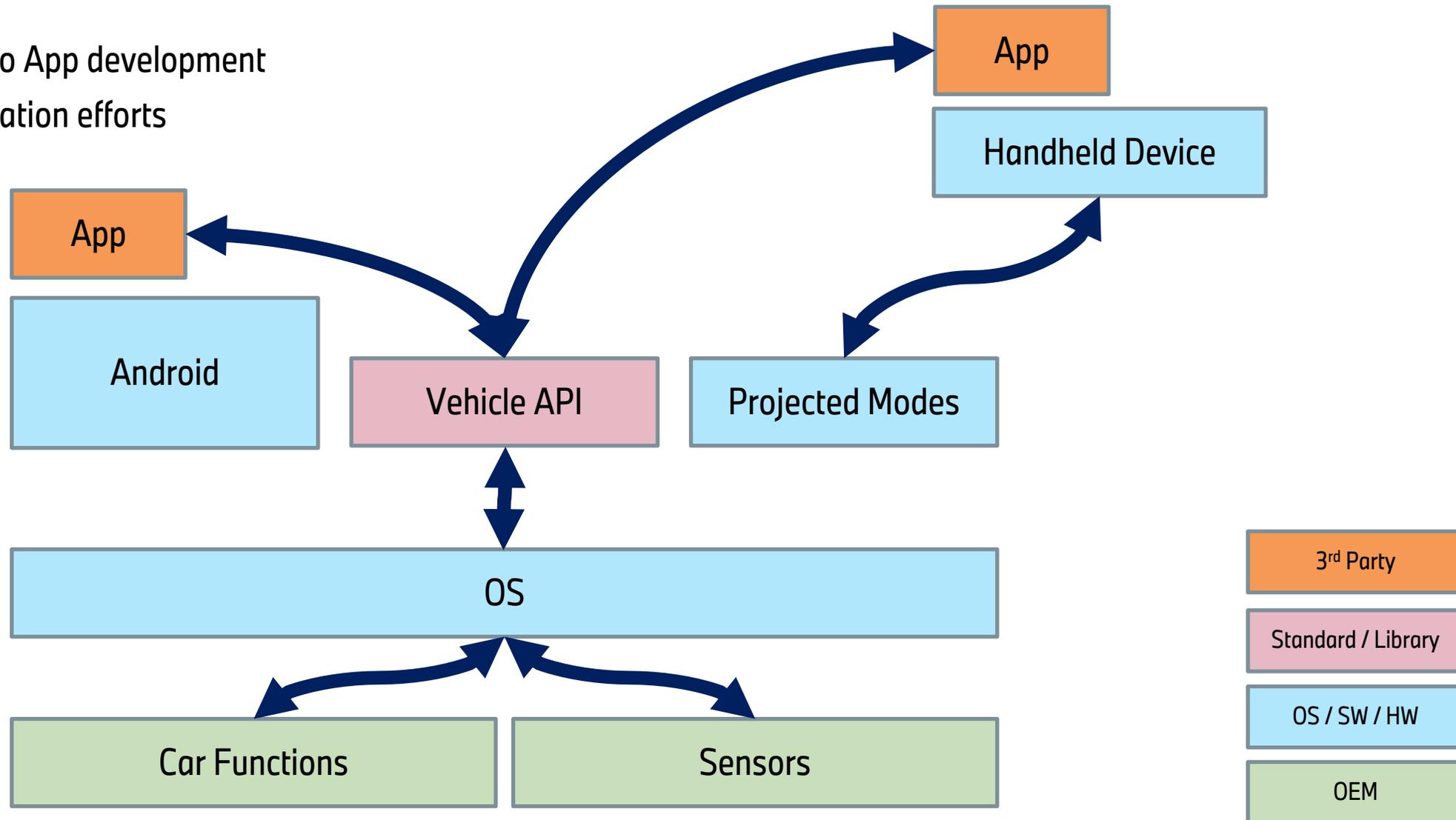
Standard / Library

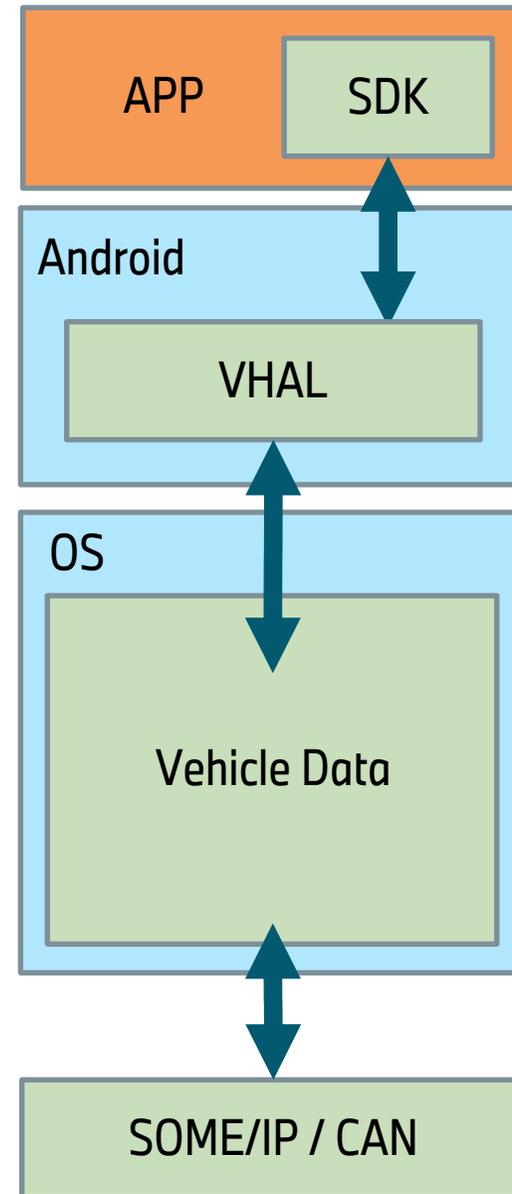OS / SW / HW
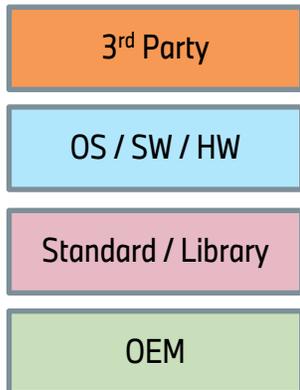
OEM

HIGH LEVEL OVERVIEW – STATUS QUO

HIGH LEVEL OVERVIEW - GOAL

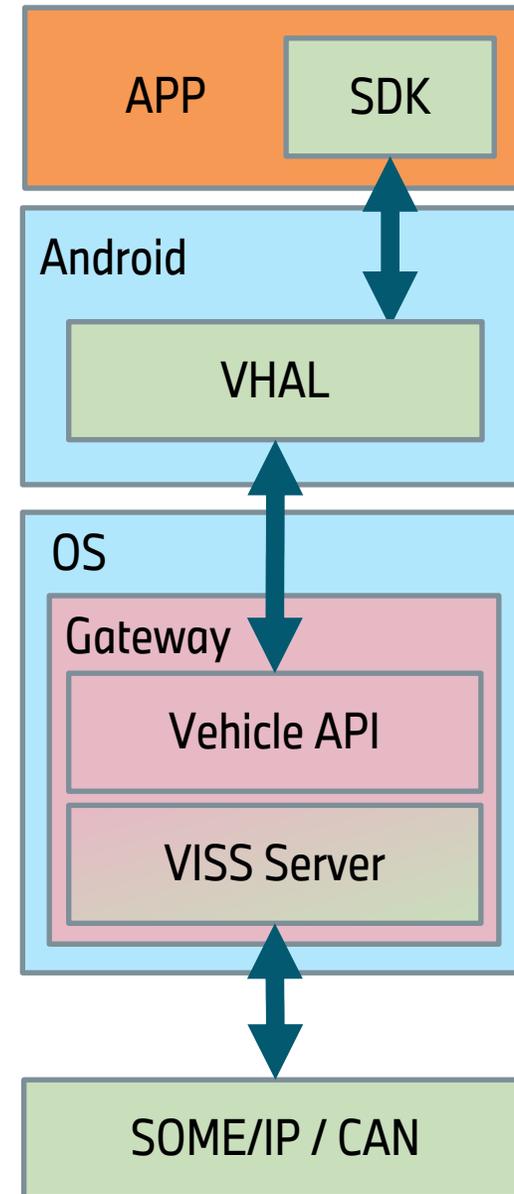- Moving the standard to App development
- Minimizing implementation efforts

VEHICLE DATA FLOW – STATUS QUO

APP | SDK

Android

VHAL

OS

Vehicle Data

SOME/IP / CAN

3rd Party

OS / SW / HW

Standard / Library

OEM

VEHICLE DATA FLOW – STANDARDIZATION STEP 1

- Vendor specific VISS implementation
  - Existing Reference Implementation

3rd Party

OS / SW / HW

Standard / Library

OEM
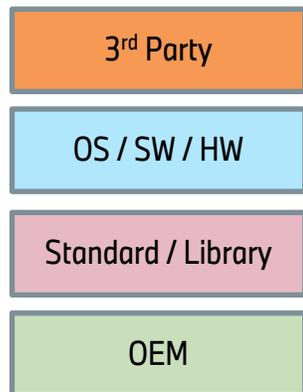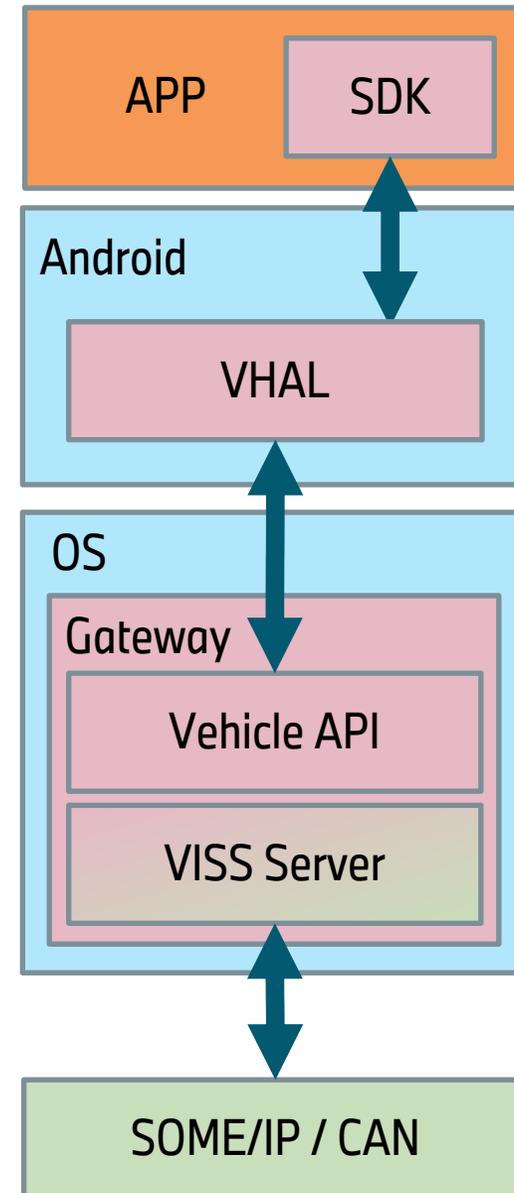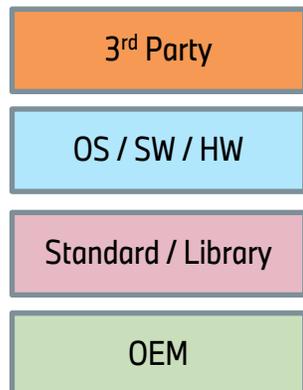
APP | SDK

Android

VHAL

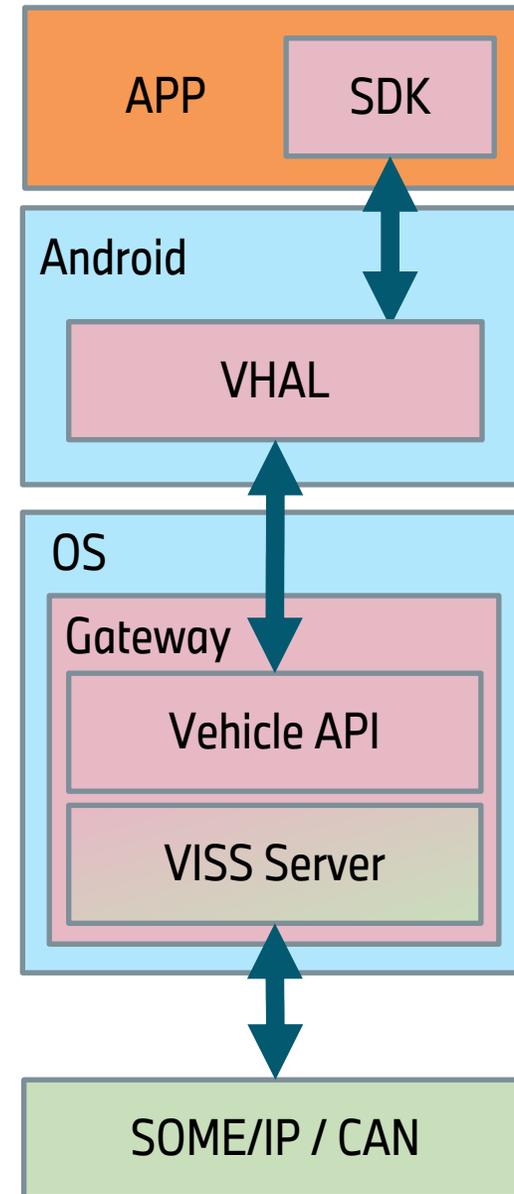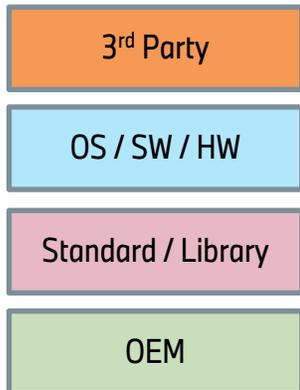**OS**

Gateway

Vehicle API

VISS Server

SOME/IP / CAN

VEHICLE DATA FLOW – STANDARDIZATION STEP 2

- Vendor specific VISS implementation
  - Existing Reference Implementation
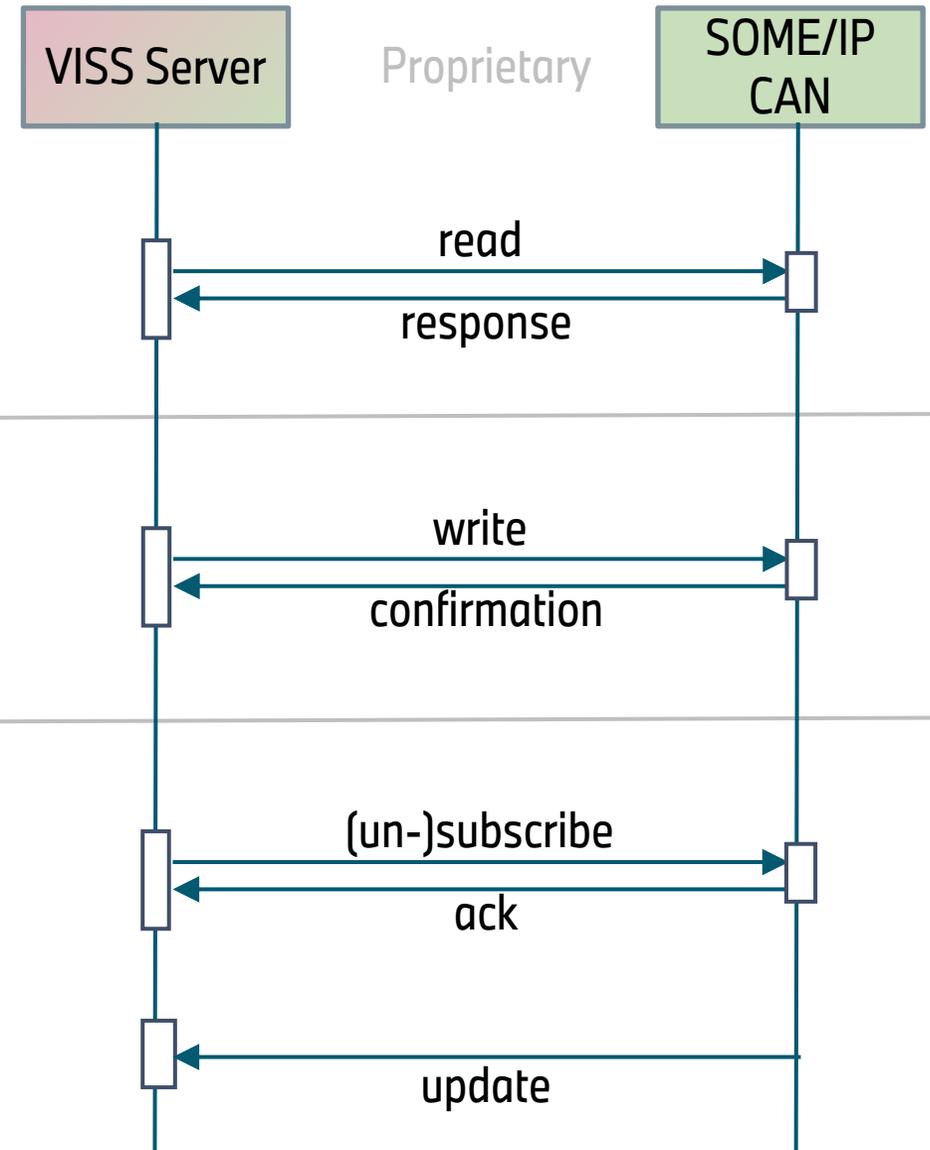- Standard API for 3rd party developers

VEHICLE DATA FLOW

- Vendor specific VISS implementation
  - Existing Reference Implementation
- Standard API for 3rd party developers
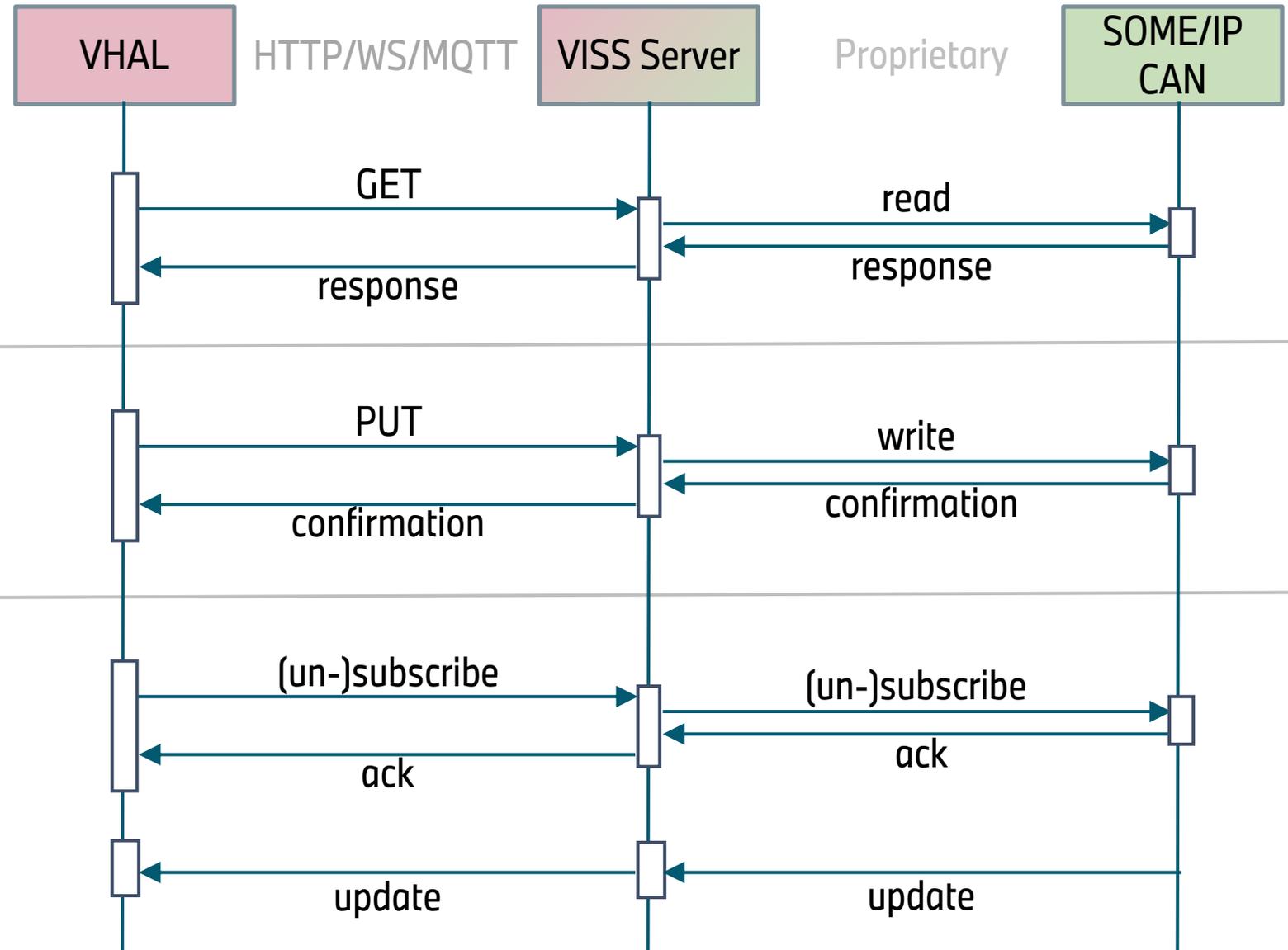- Support for Native Head Unit Apps and Projected modes apps

VEHICLE DATA FLOW

VEHICLE DATA FLOW

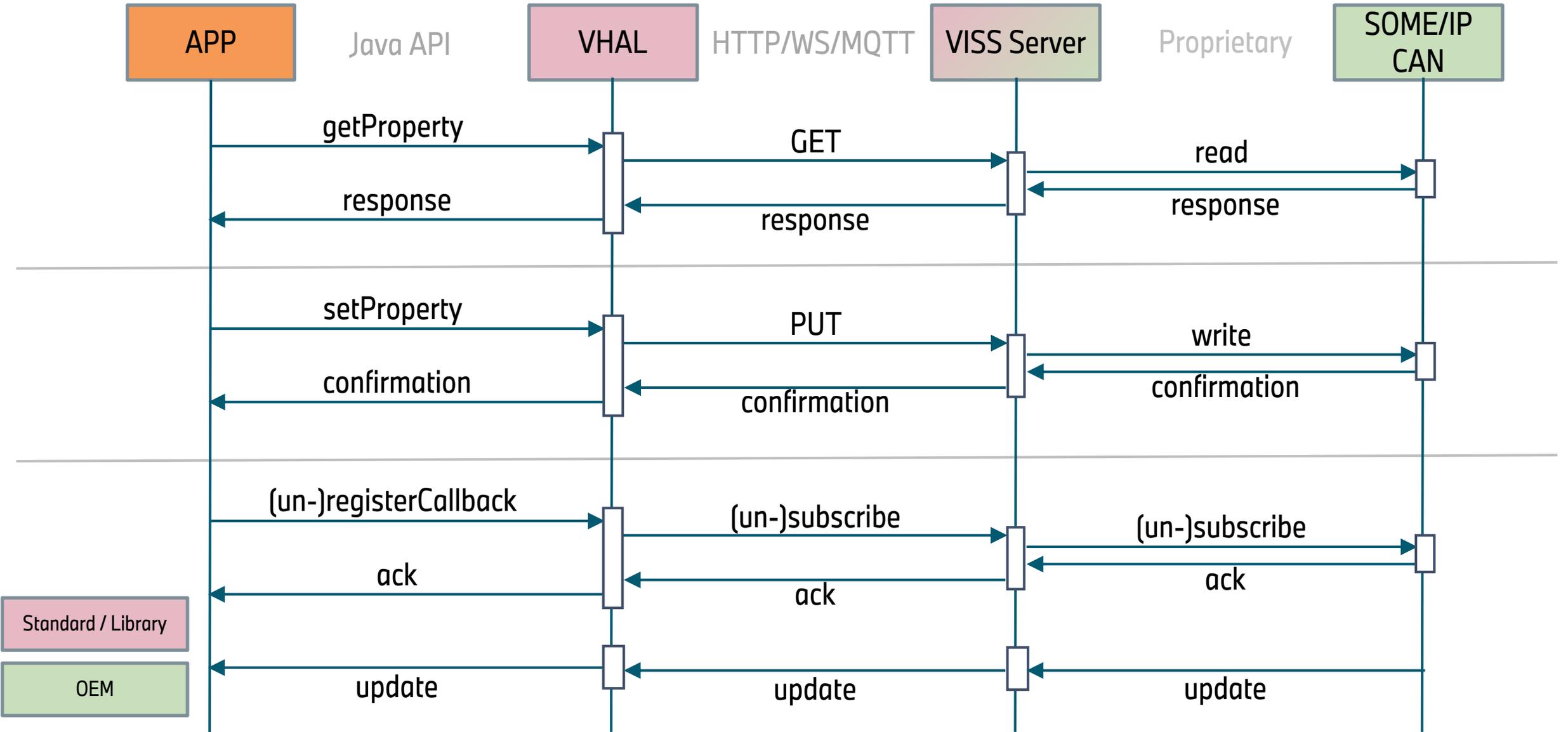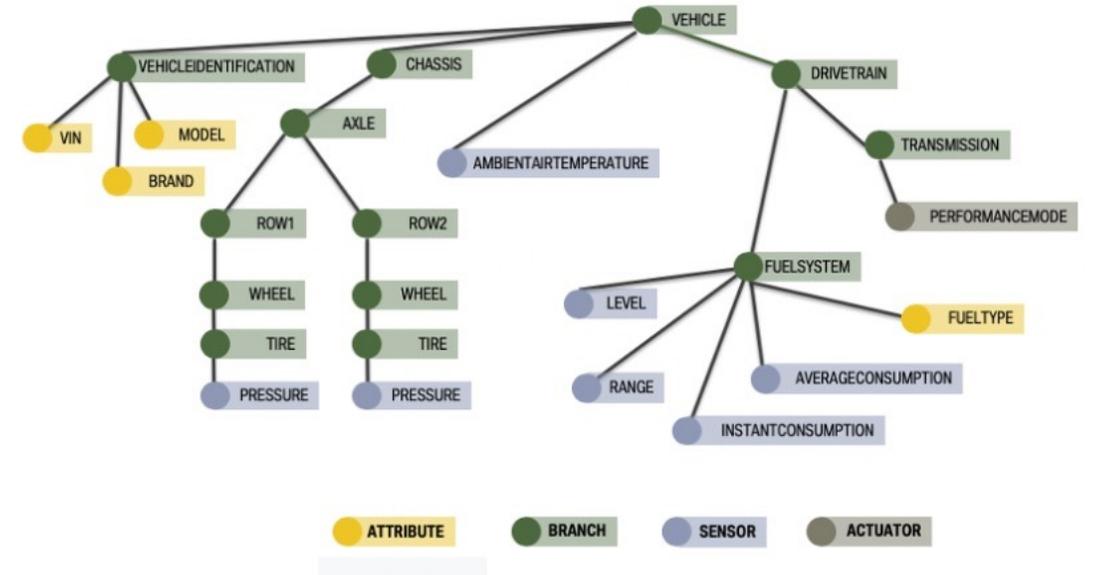# VEHICLE DATA FLOW

OPEN QUESTIONS

- Different Data Model in VISS and VHAL
  - Deterministic mapping needed
- Need for SDK

3RD PARTY APPS

- Goals
  - Enabling car integration for other platforms
  - Off-loading development of use-cases for cars
  - Implementation of market and niche specific use-cases too expensive to develop centrally
  - Faster reaction time to customer needs
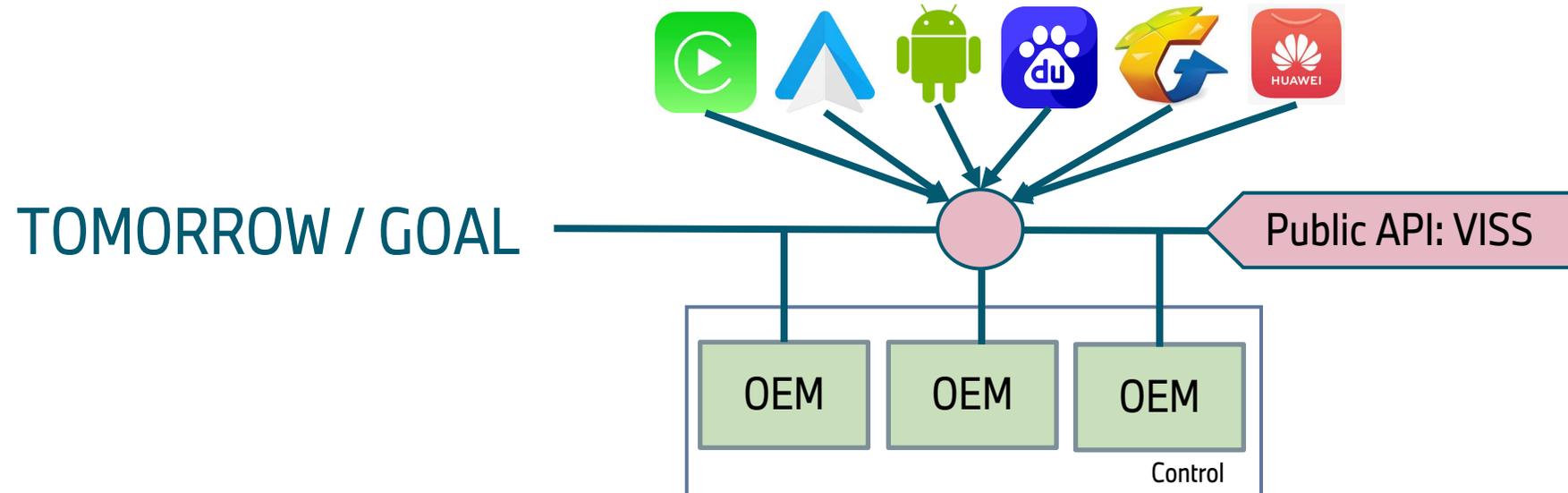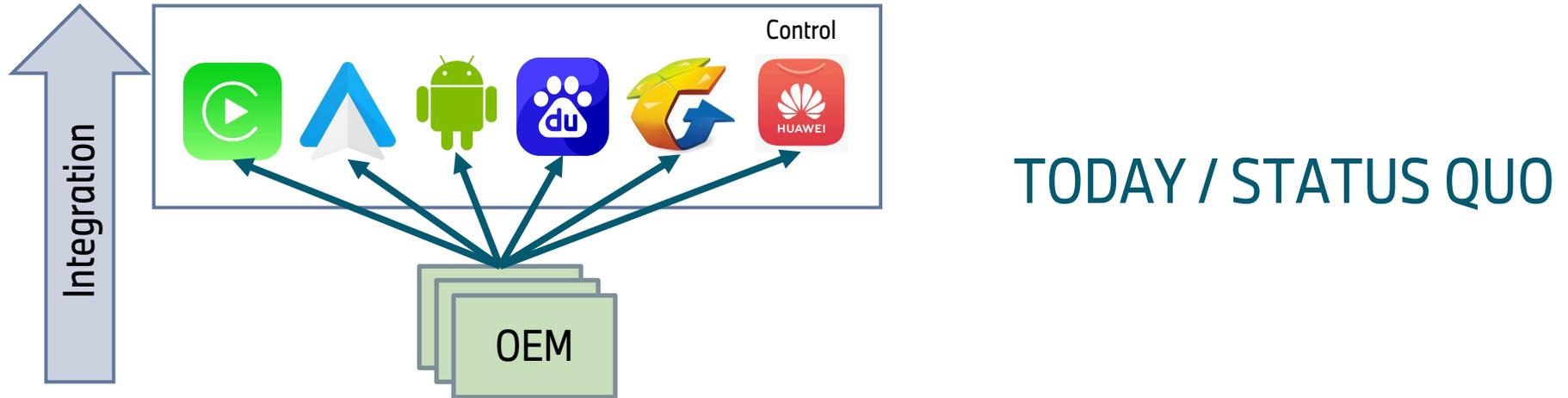
- Challenges
  - Establishing and maintaining standard API for Vehicle Data

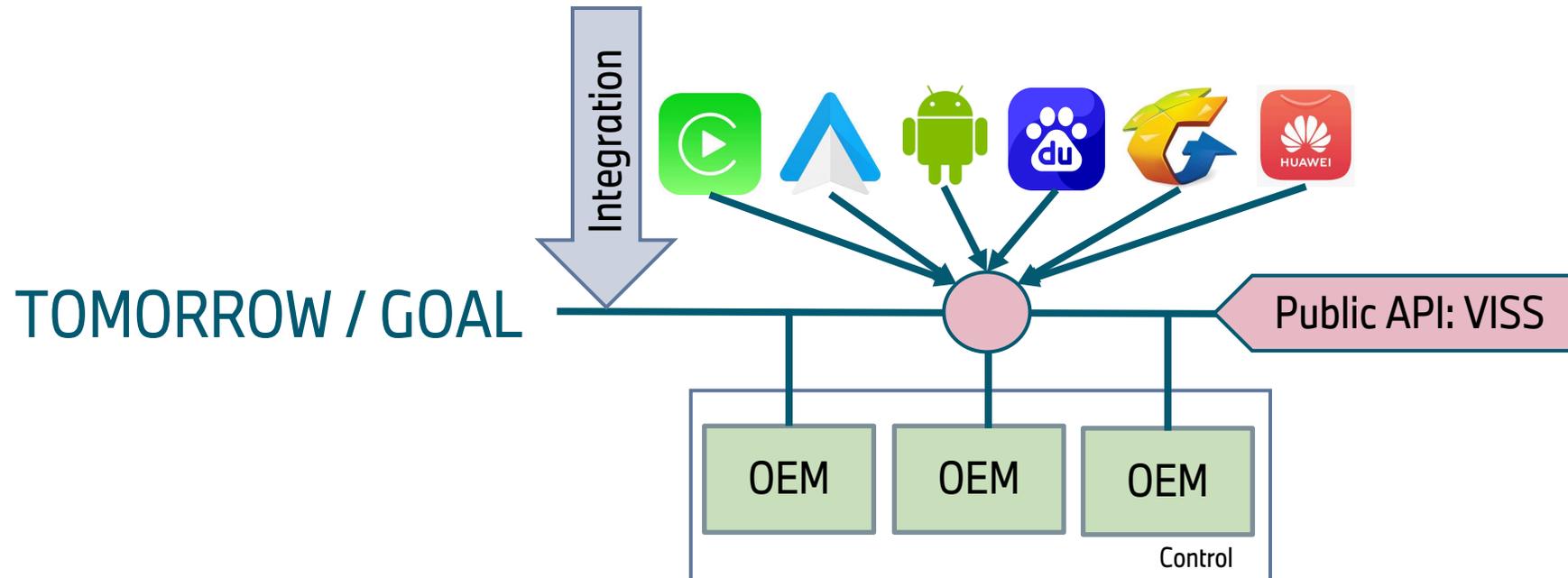# CAR INTEGRATION WITH OTHER PLATFORMS

TODAY / STATUS QUO

CAR INTEGRATION WITH OTHER PLATFORMS

TODAY / STATUS QUO

TOMORROW / GOAL

Public API: VISS

CAR INTEGRATION WITH OTHER PLATFORMS

TODAY / STATUS QUO

TOMORROW / GOAL

CONCLUSION

- Common API will
  - Optimized effort and costs
  - Standardise programming API
  - Enable 3rd parties, suppliers, partners and platform providers
- Common VHAL Implementation supporting VISS API
  - No need to implement own VHAL
- Reference VISS implementation
  - Can be used as is or adapted

THANK YOU FOR
YOUR ATTENTION