VISS – ANDROID API
CLOSING THE GAP
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

- Car Functions
- Sensors

3rd Party
Standard / Library
OS / SW / HW
OEM
HIGH LEVEL OVERVIEW
HIGH LEVEL OVERVIEW – STATUS QUO

- Android
- Vehicle API
- Projected Modes
- App
- Handheld Device
- 3rd Party
- Standard / Library
- OS / SW / HW
- OEM

OS

Car Functions

Sensors
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
**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 3\textsuperscript{rd} party developers
- Support for Native Head Unit Apps and Projected modes apps
VEHICLE DATA FLOW

VISS Server

SOME/IP CAN

- read
- response
- write
- confirmation
- (un-)subscribe
- ack
- update

Proprietary

Standard / Library

OEM
VEHICLE DATA FLOW

- VHAL
- HTTP/WS/MQTT
- VISS Server
- Proprietary
- SOME/IP CAN

- GET
- read response
- PUT
- write confirmation
- (un-)subscribe
- ack
- update
- (un-)subscribe
- ack
- update

Standard / Library

OEM
VEHICLE DATA FLOW

APP -> Java API
VHAL -> HTTP/WS/MQTT
VISS Server -> Proprietary
SOME/IP CAN

getProperty
response
setProperty
confirmation
(un-)registerCallback
ack
update

GET
response
PUT
confirmation
(un-)subscribe
ack
update

read
response
write
confirmation
(un-)subscribe
ack
update

Standard / Library
OEM
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

OEM

OEM

OEM

shares

Public API: VISS

Control

Integration
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