

Developing with Drive Playback

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V O L V O



Sharing signal data in automotive is **complex and hindering collaborations**

OEM
Proprietary data

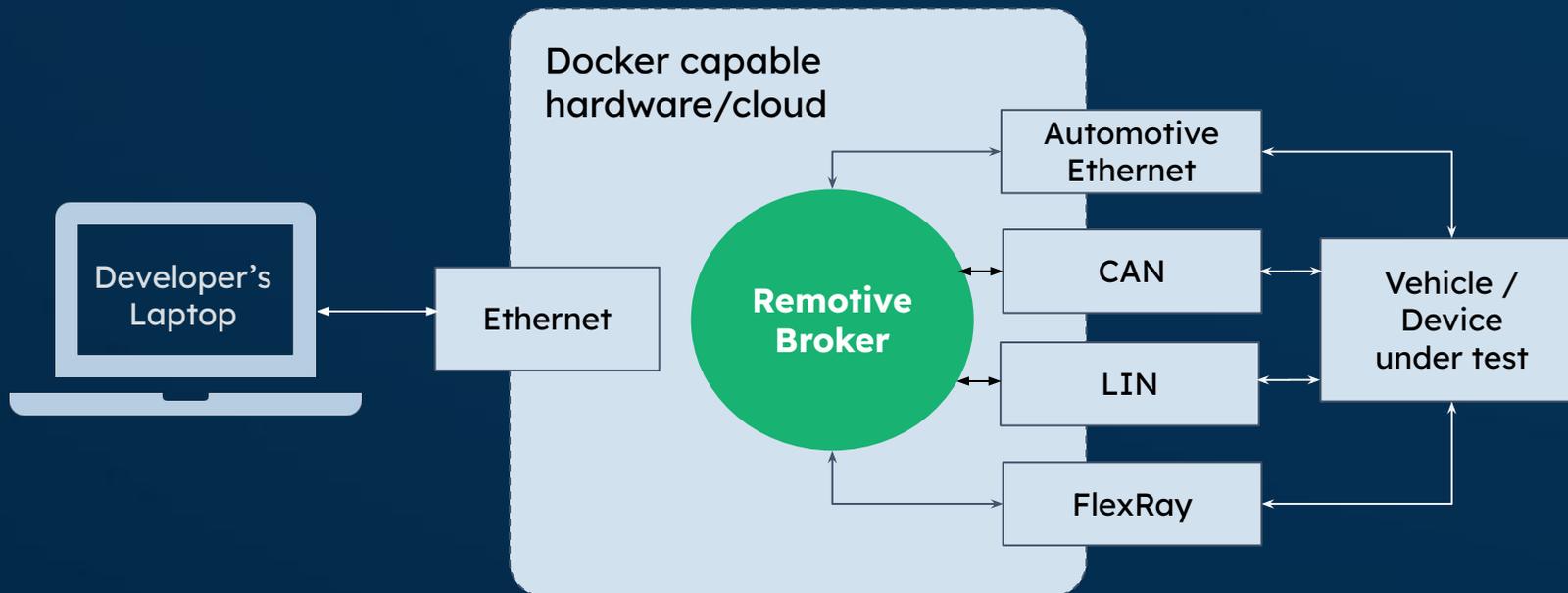


3rd parties/
partners



RemotiveBroker (a.k.a software ECU)

- the core component and data aggregator



Protocols & Features

Supports gRPC

Use the programming language of your choice including Python, Rust, C++ etc.

Supported network protocols

CAN (.dbc), SocketCAN, FlexRay (fibex /arxml), LIN (.ldf), UDP arxml, LDF.

Record and Playback

Easy to record signals - replay locally or in the cloud

Remote access

Access the product from anywhere over the Internet

Hardware of your choice

Any Linux/Docker-capable HW

Just download the Docker-image, e.g. to development PC or Nvidia Drive

Host Mobility

Preconfigured
- HMX
- MX-4 T30 FR



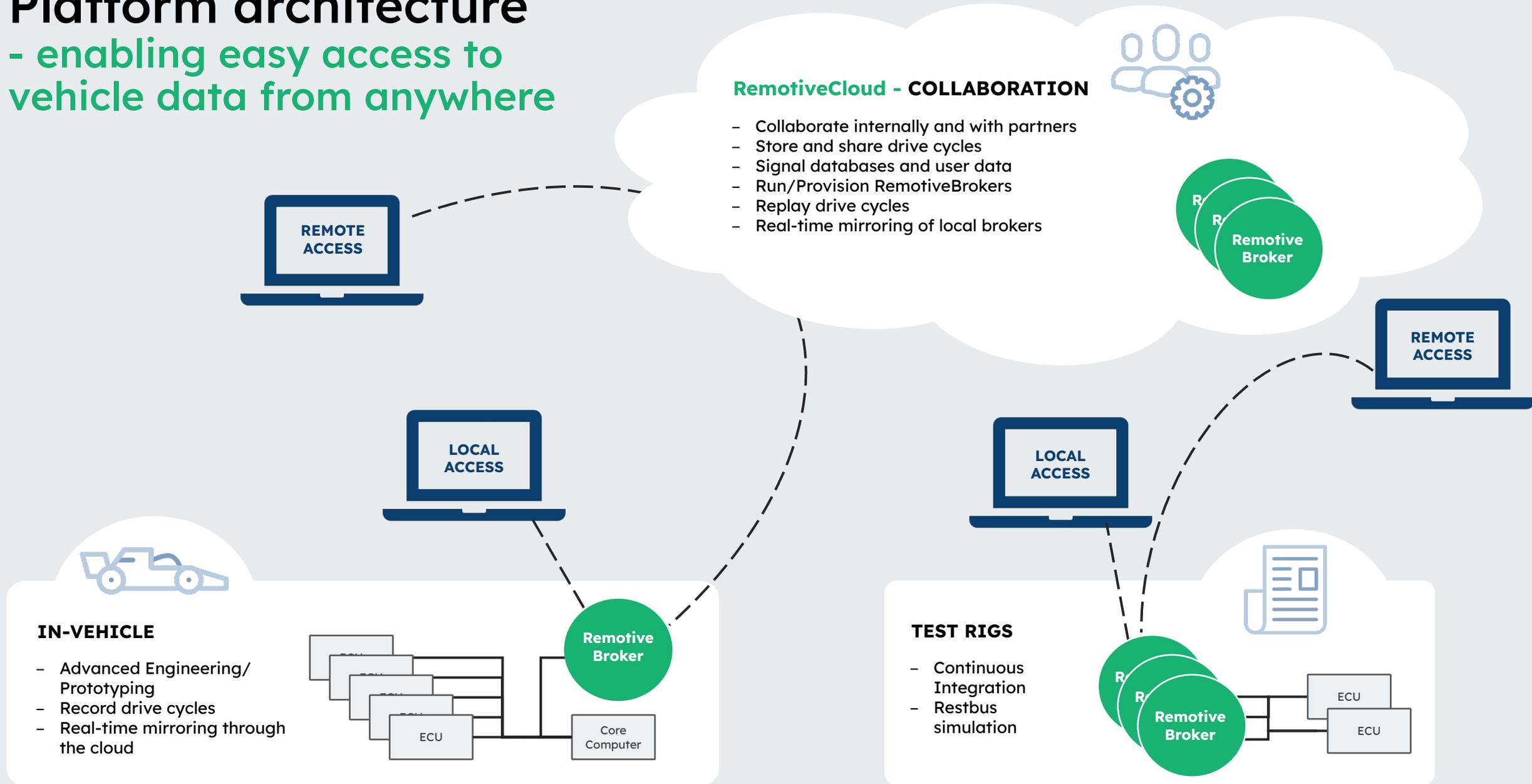
RemotiveBox

Raspberry Pi + CAN shield

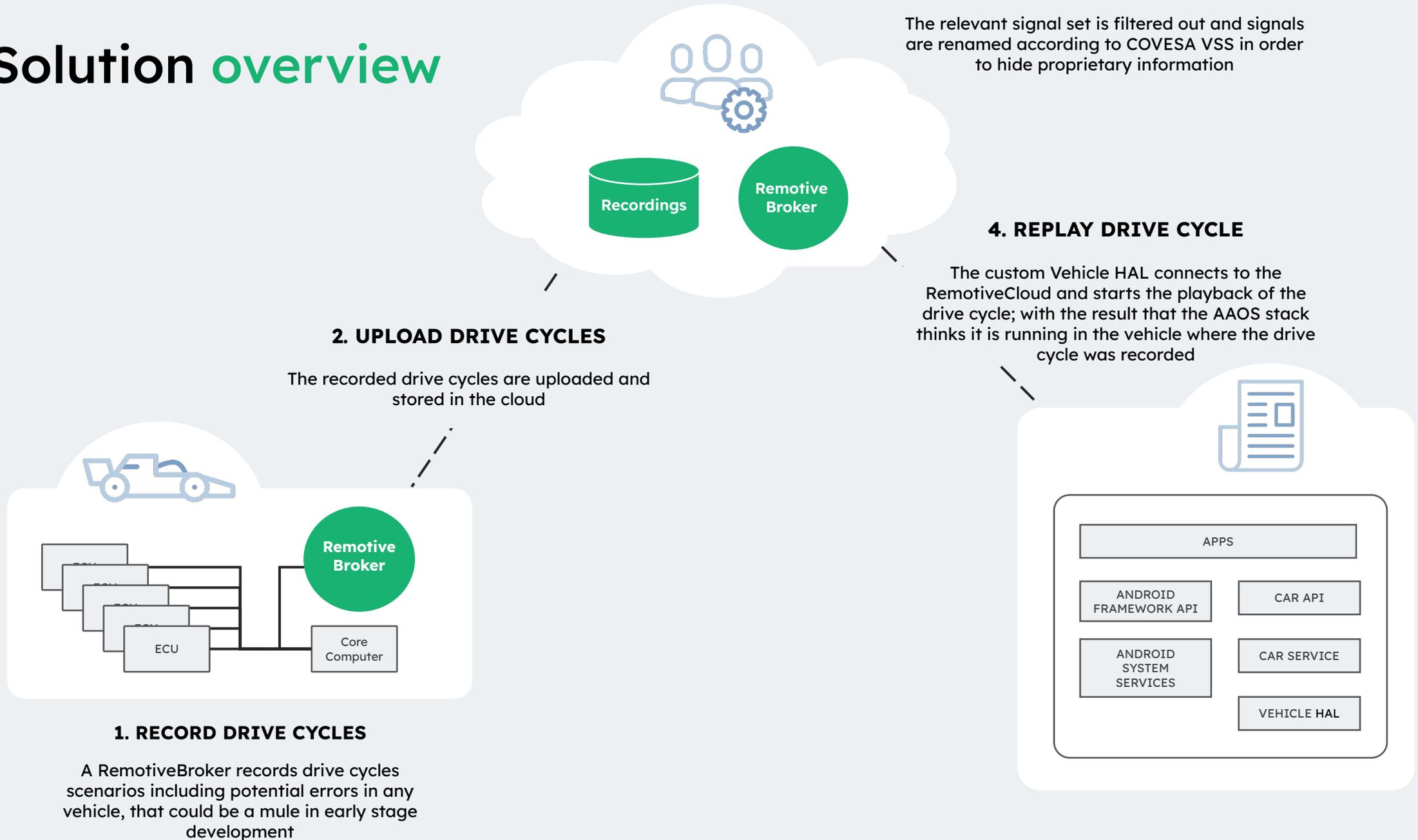


Platform architecture

- enabling easy access to vehicle data from anywhere



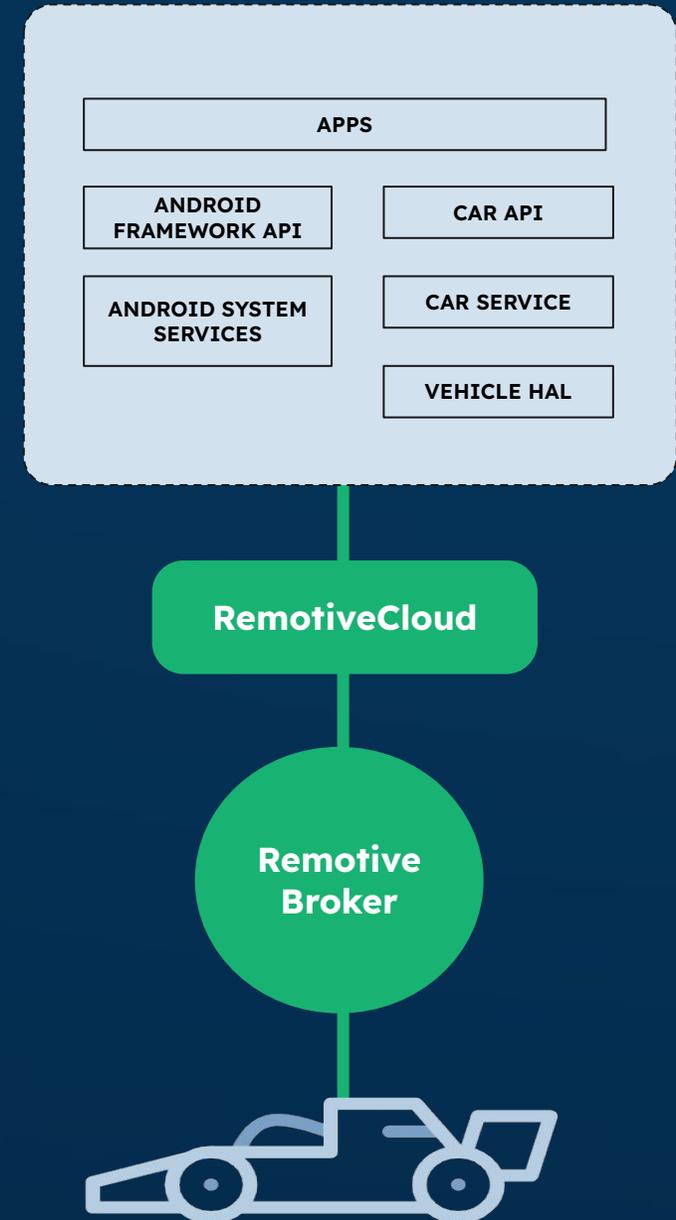
Solution overview



Android Automotive debugging

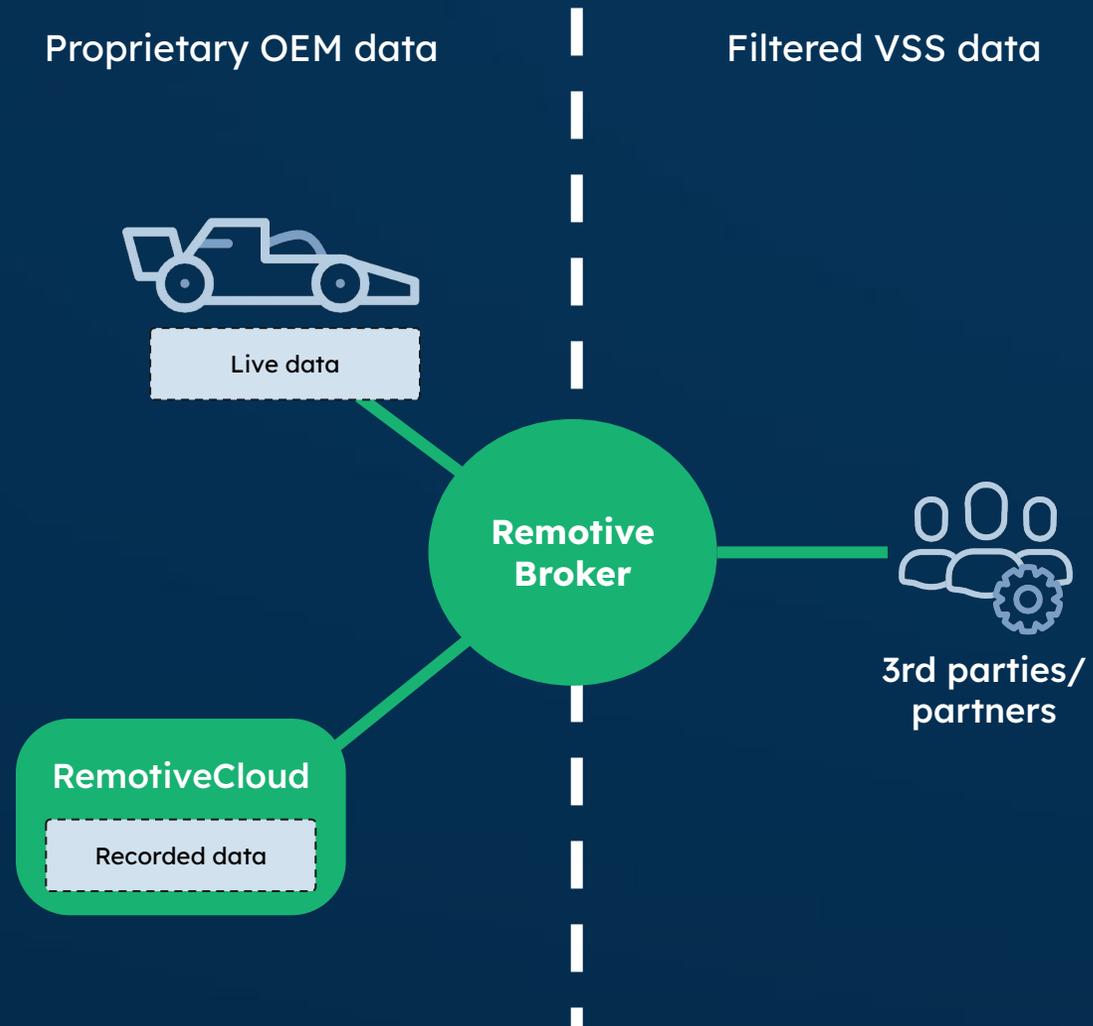
A custom Vehicle Hardware Abstraction Layer integrates with the RemotiveCloud and engineers can select which recordings to playback, start/stop and seek in a user-friendly way.

- Feed real car signals to an AAOS stack
- Reduced need to have a car platform present
- VSS - filtering out proprietary/irrelevant signals incl. renaming/scaling



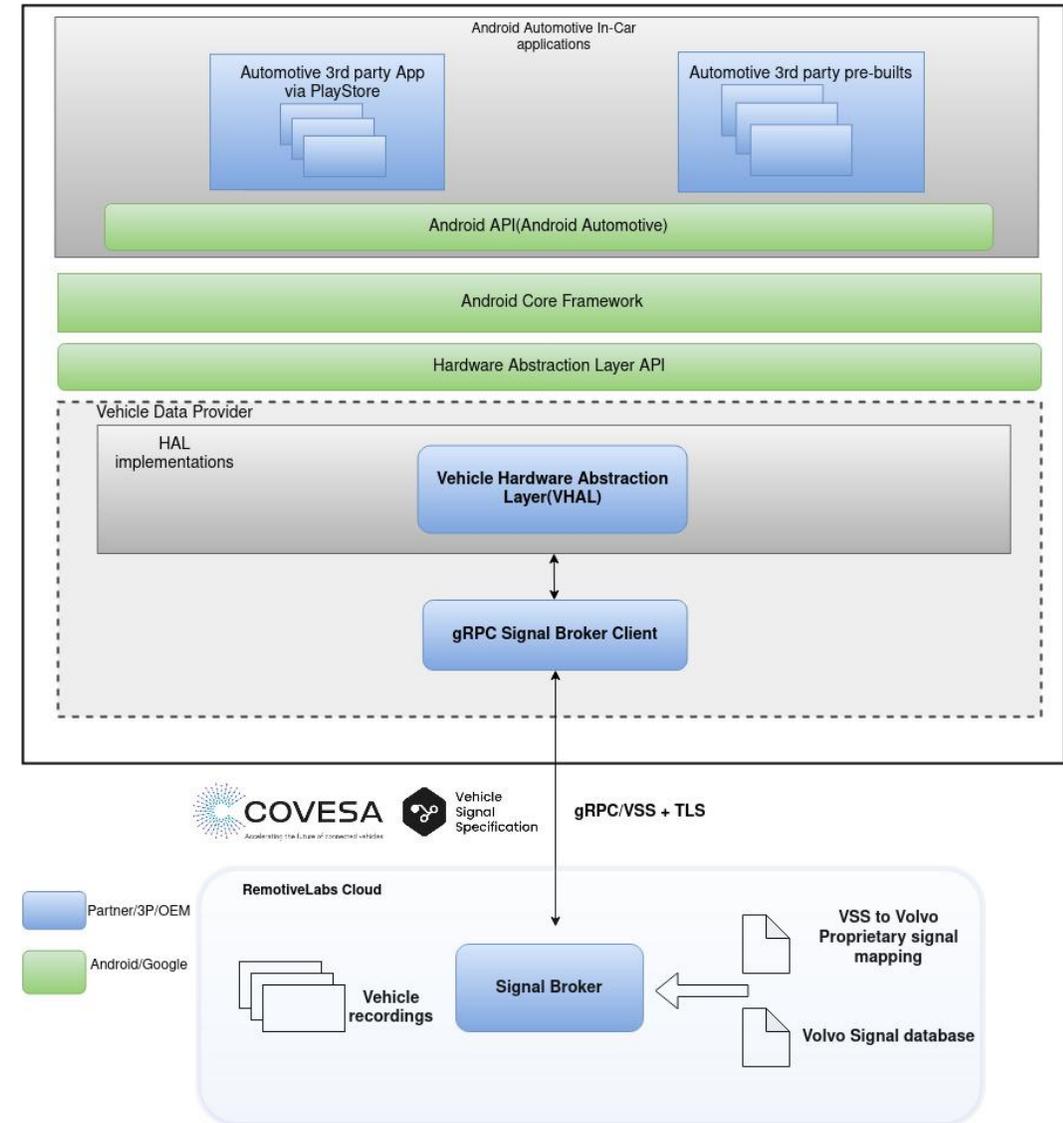
Share signals according to VSS

- No issue with different naming conventions
- OEMs choose exactly what to share
- Collaborate, innovate & get stuff done!



AAOS with Vehicle drive playback

- Android Automotive Library used
 - android.car
- Android SDK version/API level
 - Android SnowCone (S)
 - API level : 32
- Android Virtual Device (AVD) details
 - AVD created from Vanilla AOSP-12 with custom VHAL adaptations that uses VSS over gRPC
- HIDL based Vehicle HAL server
- Vehicle Properties used
 - PERF_VEHICLE_SPEED_DISPLAY
 - INFO_MAKE
 - INFO_MODEL
 - INFO_MODELYEAR
 - INFO_VIN
 - TURN_SIGNAL_STATE



Conclusion

- **Collaborate** - use standardised signal names VSS so it gets easier to work together
- **Innovate** - everybody that needs should have access to data to try ideas
- **Get stuff done** - enable partners to do application development

Try out the RemotievLabs platform at <https://demo.remotivelabs.com/>

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