RVI – V2X Board

Technical Purpose

Send data from any vehicle

over the air

to the outside world

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The user's story

A small company creates a HUD that non-intrusively covers the entire windshield, and wants to showcase their technology in a realistic environment.

Using their screen, a V2XBoard, a Raspberry Pi, and RVI, they build a HUD with an integrated media player, nav system, and gauge cluster.

The company lends the demo to potential investors, letting them use it in their own car, while remotely monitoring and updating the software and graphics.

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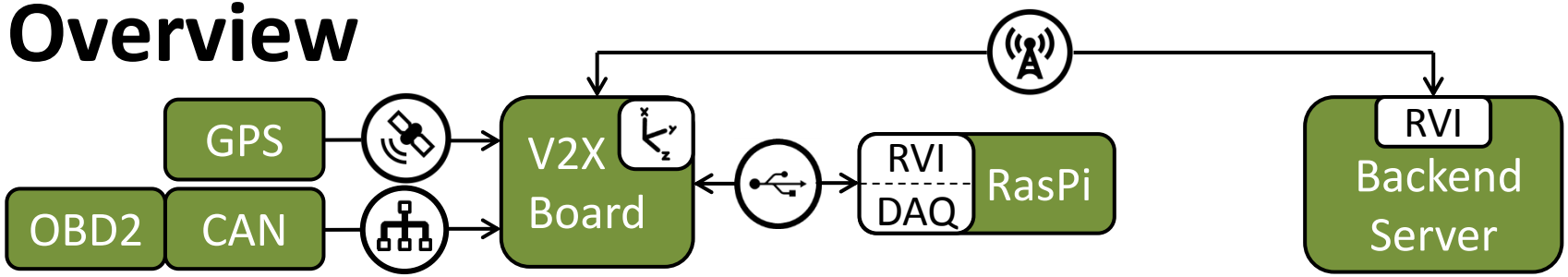
Strategic Purpose

Bring the creativity of the startup community to the OEMs by providing a consumer-grade development platform closely linked to the automotive eco system

Overview



V2X Board [OSS Hardware by JLR]
Integrates GPS, CAN, OBD-II, 2G/3G, and accelerometer data into a single USB connection

Raspberry Pi
Data Acquisition from V2X board. V2X board M2M modem used to communicate with backend

Backend Server
Receives and analyses reports transmitted from RasPi / V2X board combination

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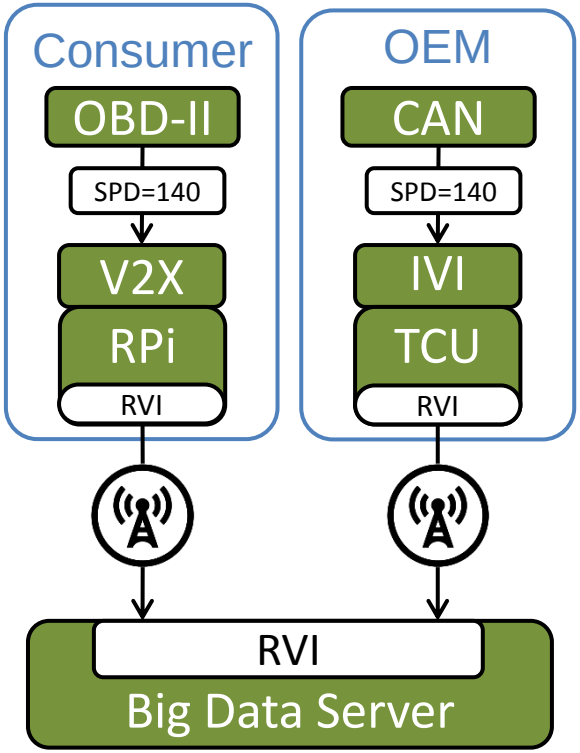
Comparing two stacks

Consumer

- Speed retrieved by V2X board from OBD-2
- V2X board forwards speed to RasPi
- RasPi forwards speed to RVI
- RVI uses V2X modem to forward to big data
- Big data server processes data



OEM

- Speed retrieved by IVI from CAN bus
- IVI forwards speed to Telematics Control Unit
- TCU forwards data to RVI
- RVI uses TCU modem to forward to big data
- Big data server processes data

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Feature Benefits

2G/3G Modem	• Provides communication to the outside world
GPS	• Provides positioning for on-board apps
Accelerometer	• Aids navigation and situational awareness
Single USB connection	• Clean data pipe and power between V2X and Raspberry Pi
Power Management	• V2X board can wake up Raspberry Pi at a specific time, on OBD-II activation, or on a received SMS
Open Source and Hardware	• All hardware design and associated software is open source licensed

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Package content

V2X Board with SIM	• Turn-key system with mobile subscription
RasPi RVI	• Specific RVI configured to use M2M modem of V2X board
Python Libraries	• RasPi libraries enabling python-based RVI services to interact with V2X board
Sample RasPi Service	• Sample service to read OBD-II data and export it, real time, to the backend server
Backend Server Account	• Pre-provisioned account to receive V2X-originated data
Sample Android app	• Android app to retrieve and display real-time V2X data from backend server

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Thank You

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