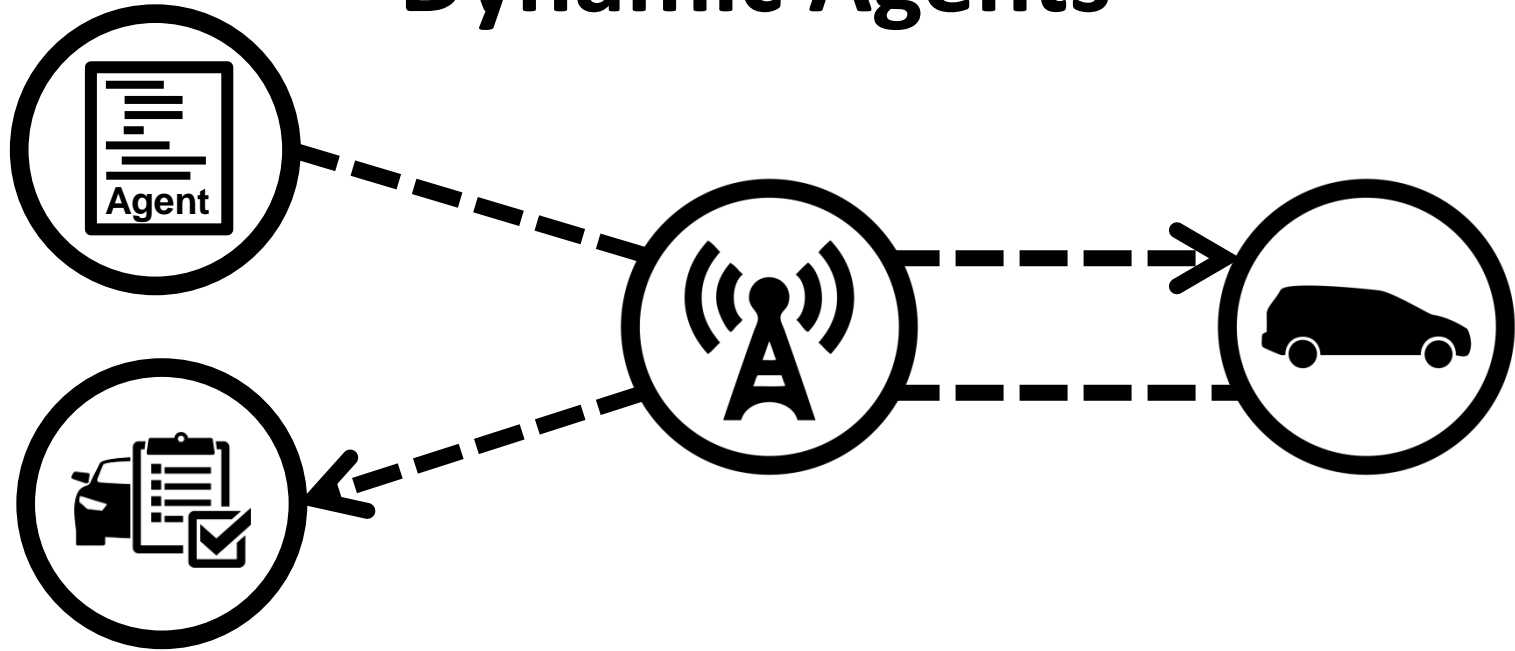# RVI – Big Data
Dynamic Agents

Purpose

Deploy remote probes
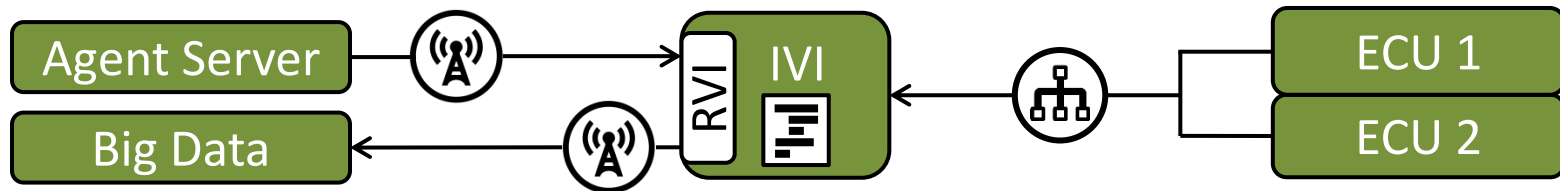
to monitor vehicles

and report results

The user's story

A young entrepreneur comes up with an idea of letting people monitor their shared cars to make sure they are not abused.

By purchasing the V2XBoard and downloading the RVI – Dynamic Agent starter pack, she can develop her app using her own car as a test platform.

The entrepreneur demonstrates the finished application to an TaaS-oriented OEM who can bring it to production quickly since they both use the same connectivity stack.

Overview – OEM solution

Agent Server [Cloud]
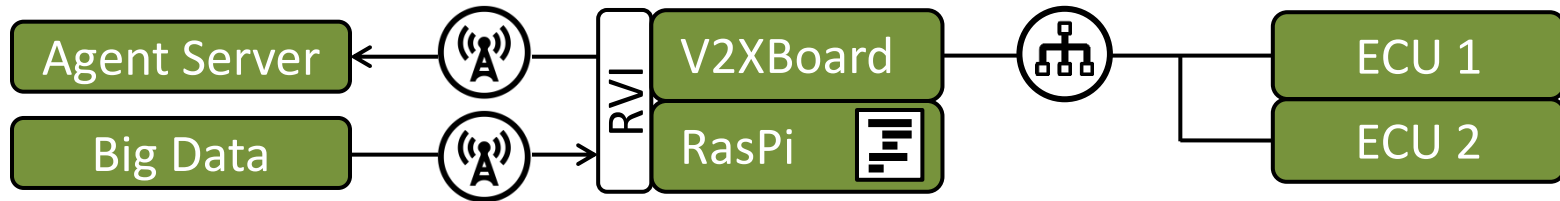Distributes dynamic agents over the air, using RVI, to vehicle TCUs

IVI [Head Unit]
Executes dynamic agents in background to monitor ECU data streams

Big Data [Cloud]
Receives and analyses reports transmitted from dynamic agents through RVI

Overview – Entrepreneur solution

Agent Server [Cloud]
Distributes dynamic agents over the air, using RVI, to vehicle TCUs

Raspberry Pi / V2XBoard
Runs RVI and agent. V2XBoard for OBD2/CAN integration and M2M communication
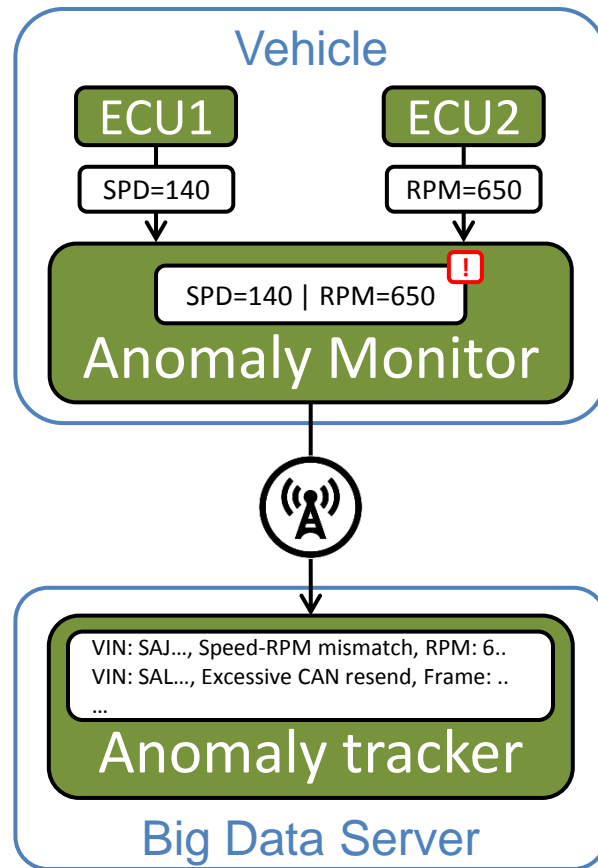
Big Data [Cloud]
Receives and analyses reports transmitted from dynamic agents through RVI

Use case: Health Monitor

Anomaly monitor agent reads data from vehicle buses

Any anomalous data detected by the agent is reported to the big data server

Big data server profiles all incoming data to generate failure trends and analysis

Vehicle

ECU1

ECU2

SPD=140

RPM=650

SPD=140 | RPM=650 !

Anomaly Monitor

VIN: SAJ…, Speed-RPM mismatch, RPM: 6..
VIN: SAL…, Excessive CAN resend, Frame: ..
…

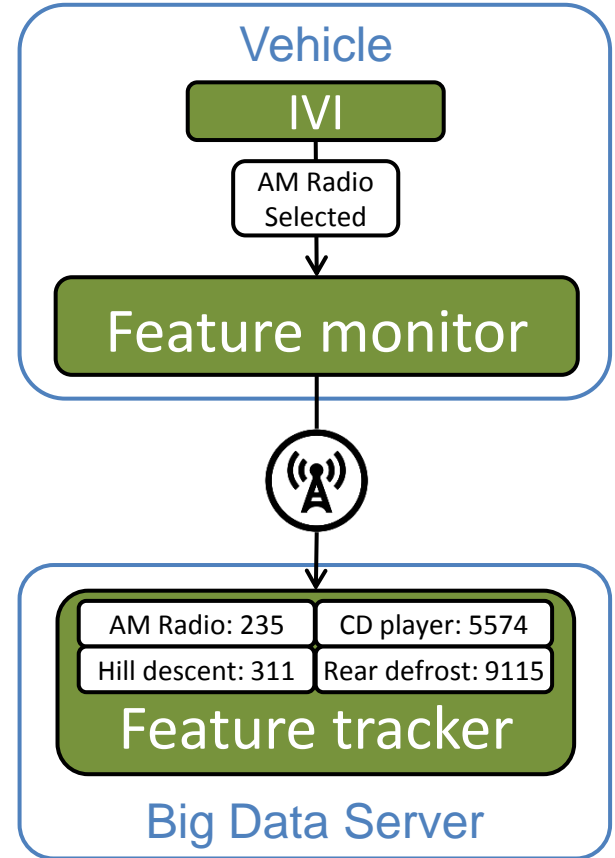Anomaly tracker

Big Data Server

GENIVI

Use case: Feature usage

Feature monitor records all in-cabin feature usage

Periodic reports are sent by the feature monitor to the big data server

Feature tracker compiles report of fleet-wide feature usage

Vehicle

IVI

AM Radio Selected

Feature monitor

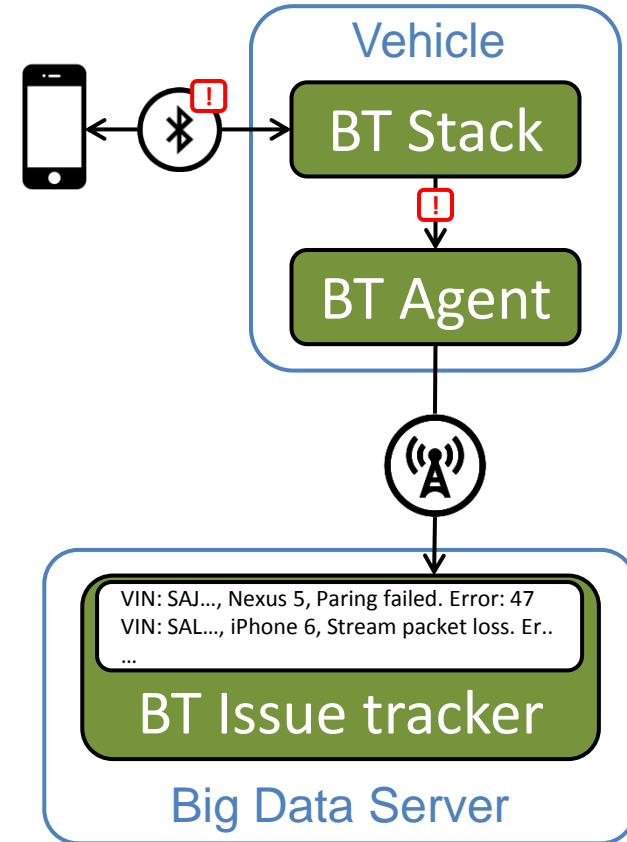| AM Radio: 235 | CD player: 5574 |
| Hill descent: 311 | Rear defrost: 9115 |

Feature tracker

Big Data Server

Use case: BT issue tracker

Bluetooth issue agent monitors pairings, streaming, and other possible failure points in the IVI BT stack

Any BT error is logged with circumstances and equipment ID

Error reports are transmitted to backend server for further analysis and bug fixes

Vehicle

BT Stack

BT Agent

Big Data Server

VIN: SAJ…, Nexus 5, Paring failed. Error: 47
VIN: SAL…, iPhone 6, Stream packet loss. Er..
…

BT Issue tracker

Thank You

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