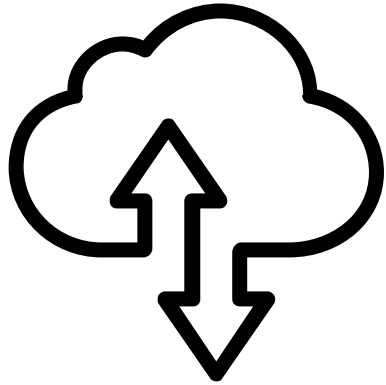


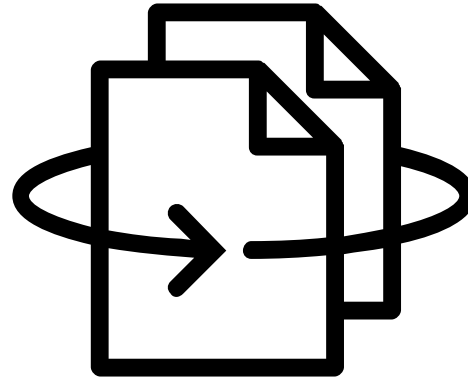
Efficient Implementation of Over-The-Air Applications

Vector Connectivity Symposium – Stuttgart, 2019-04-04

Automotive OTA – Use Cases



Software Update



Data Collection

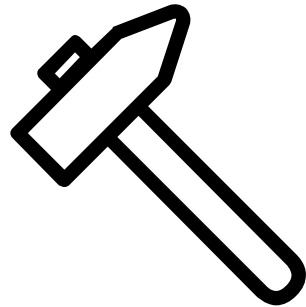


Live Diagnostics

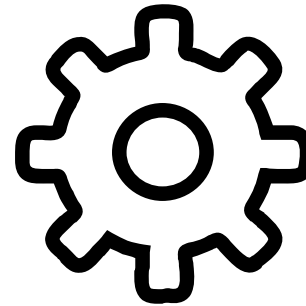
Automotive OTA – Success Factors



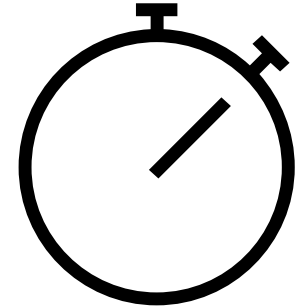
Security
&
Privacy



Robustness

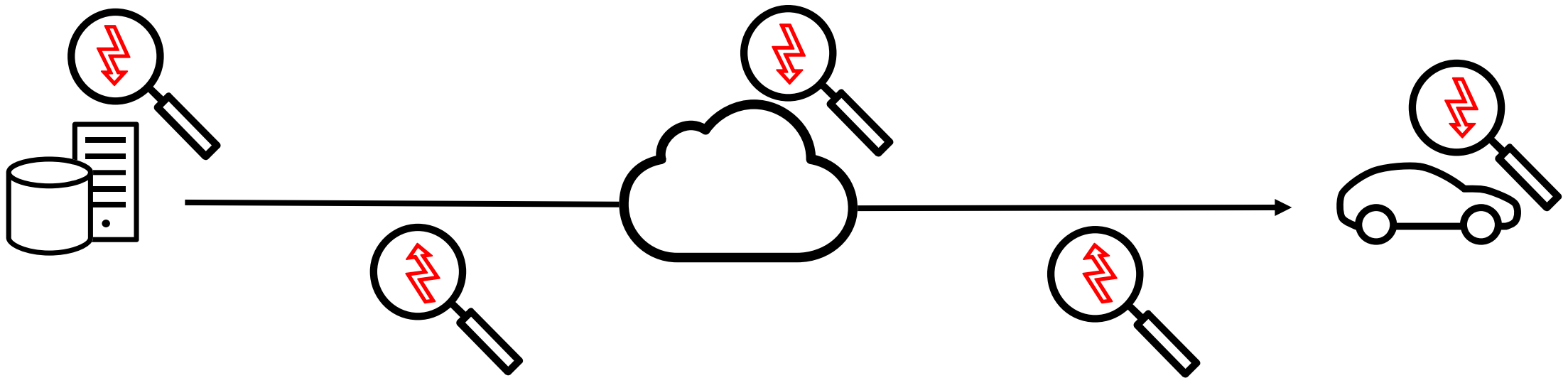


Efficiency

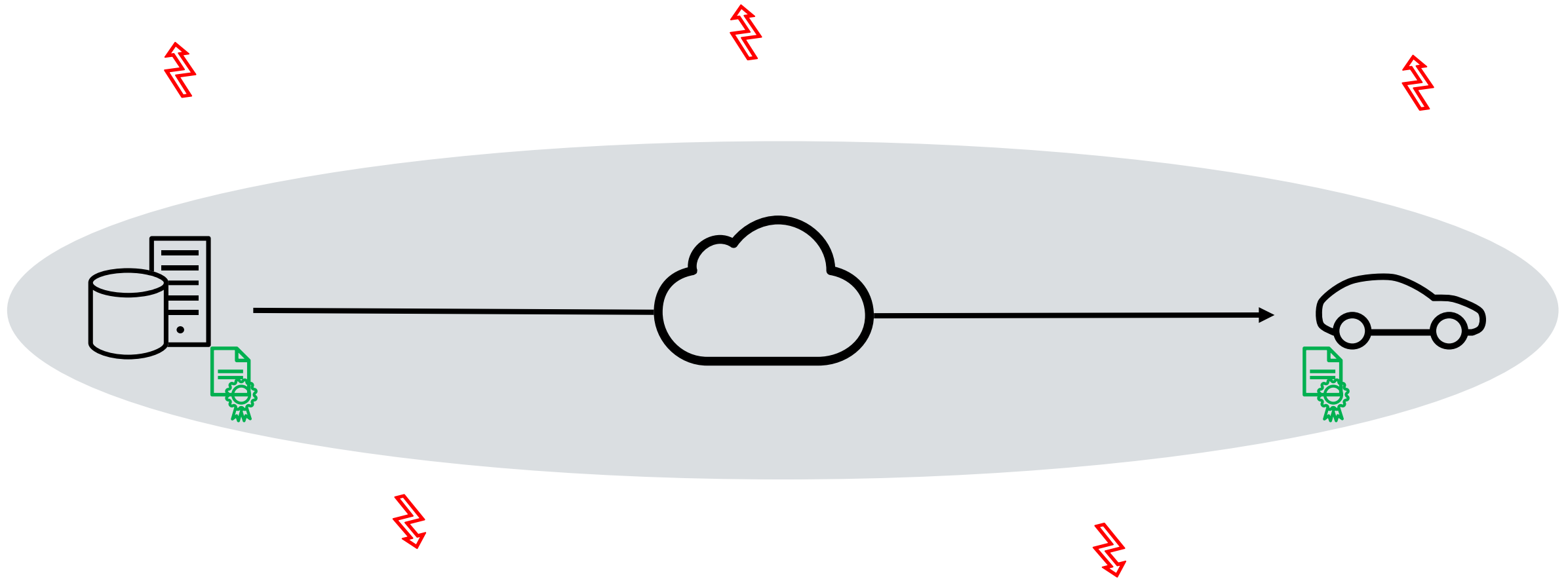


Responsiveness

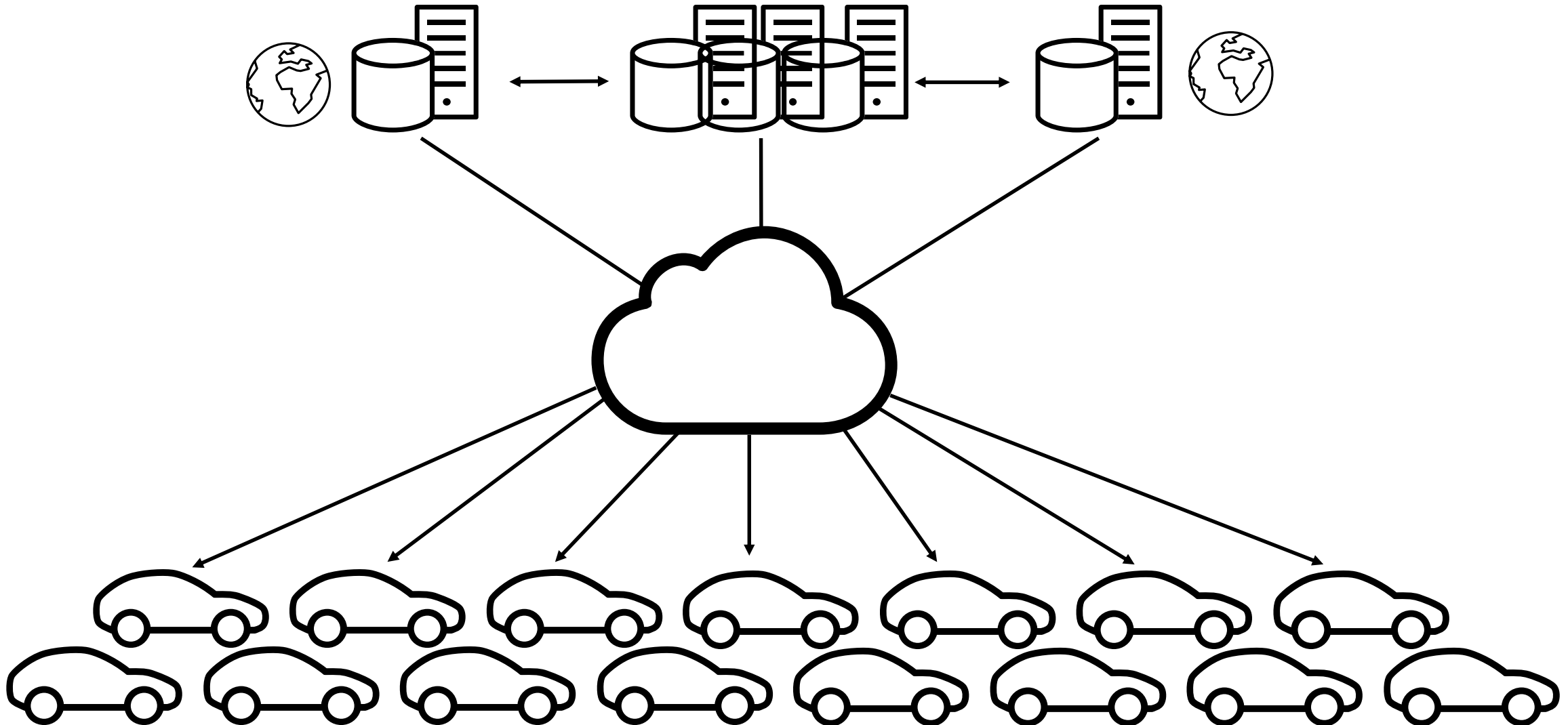
Automotive OTA – Security



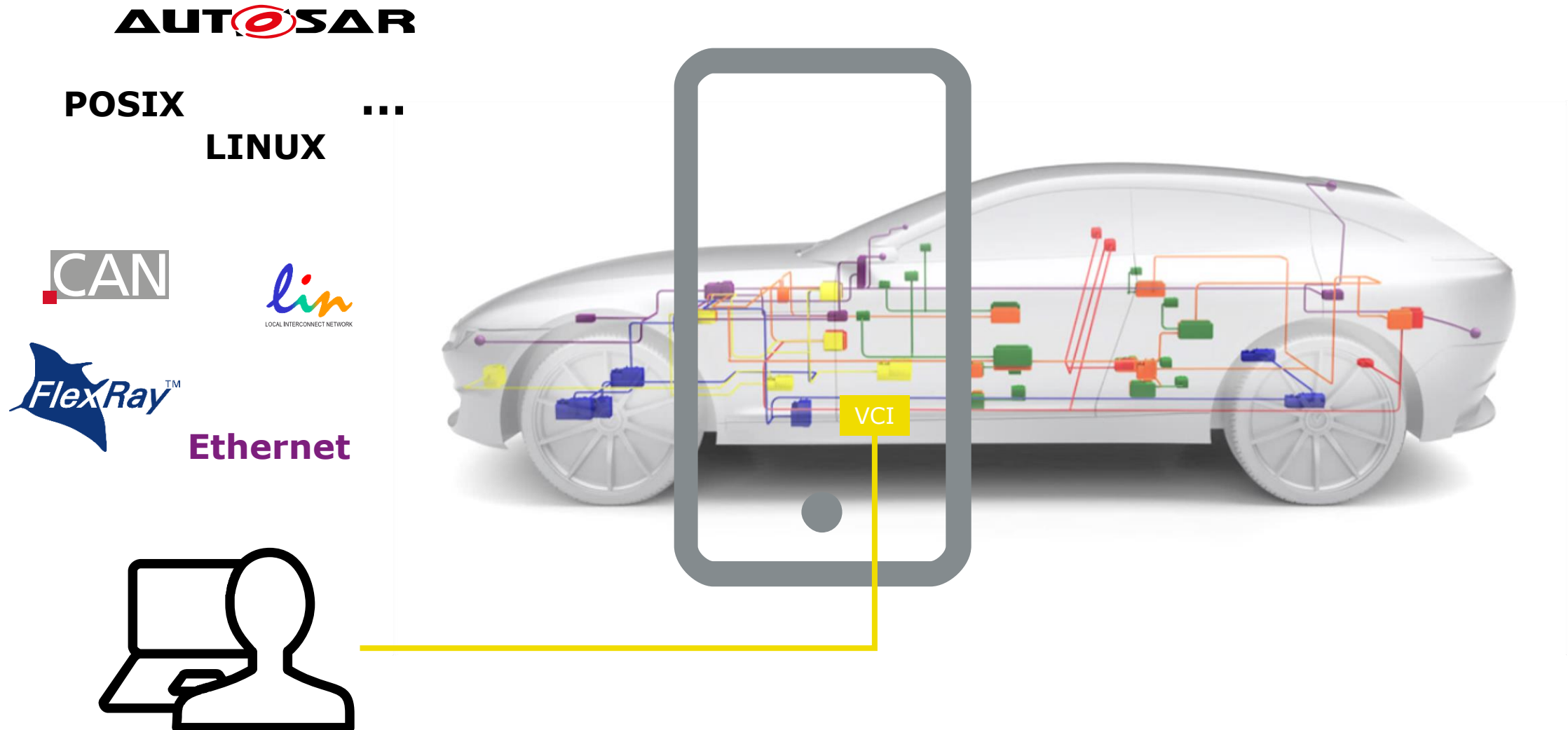
Automotive OTA – Security



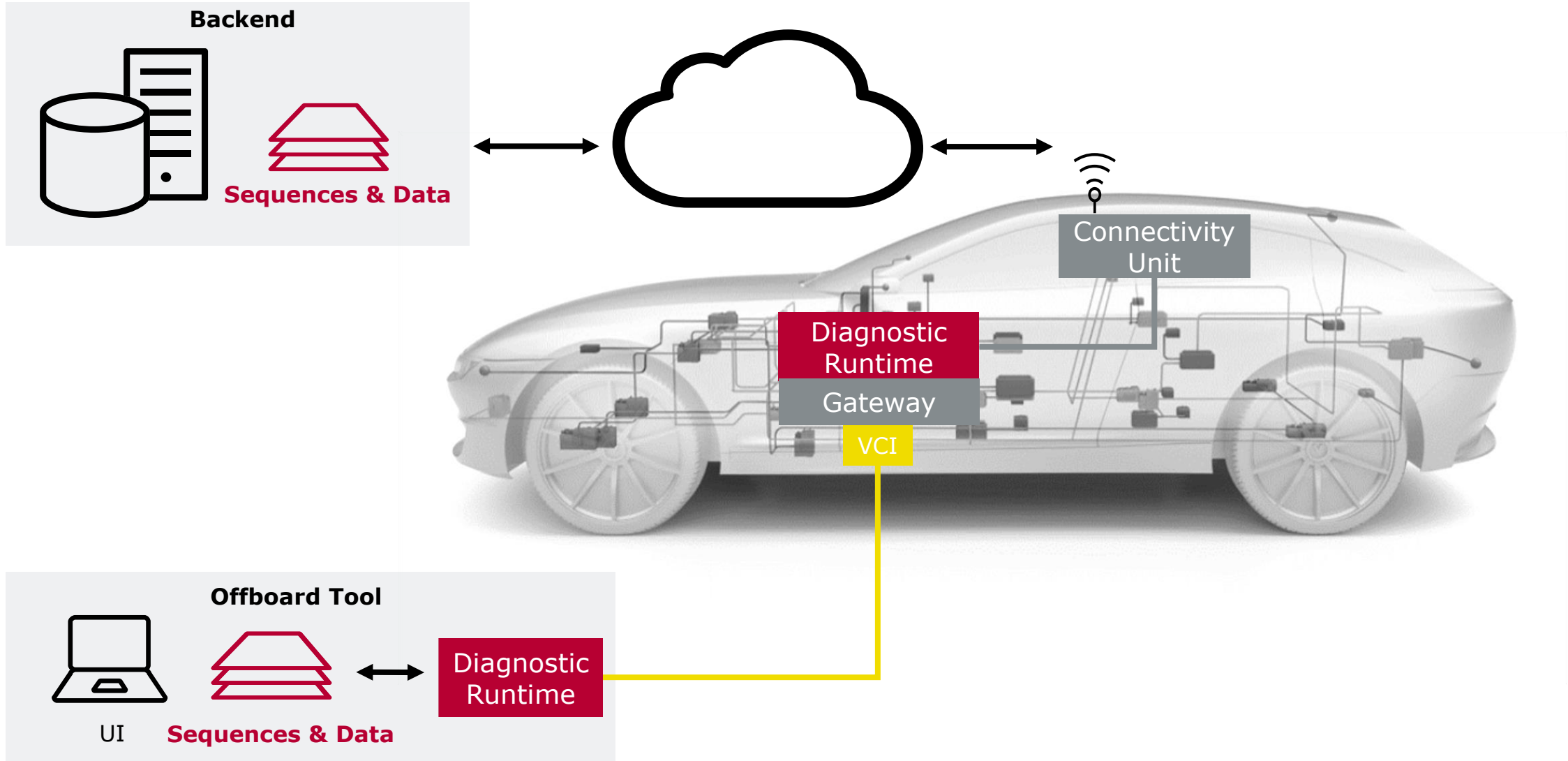
Automotive OTA – Backend Scalability



Automotive OTA – Complexity

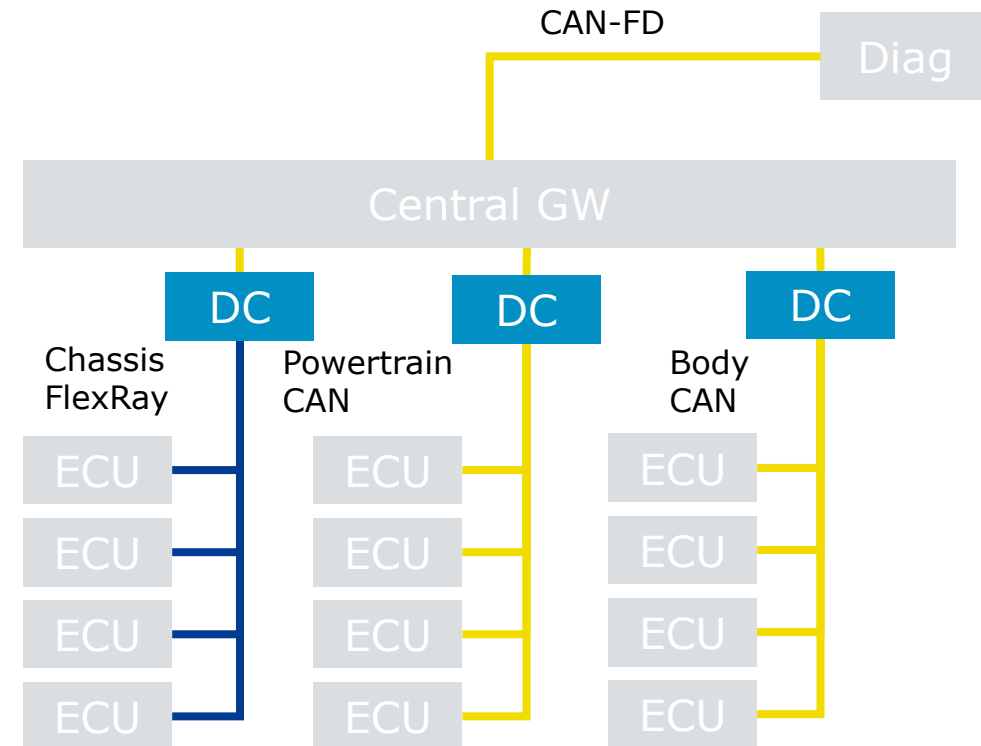


Automotive Components – Reuse Reduces Test Effort



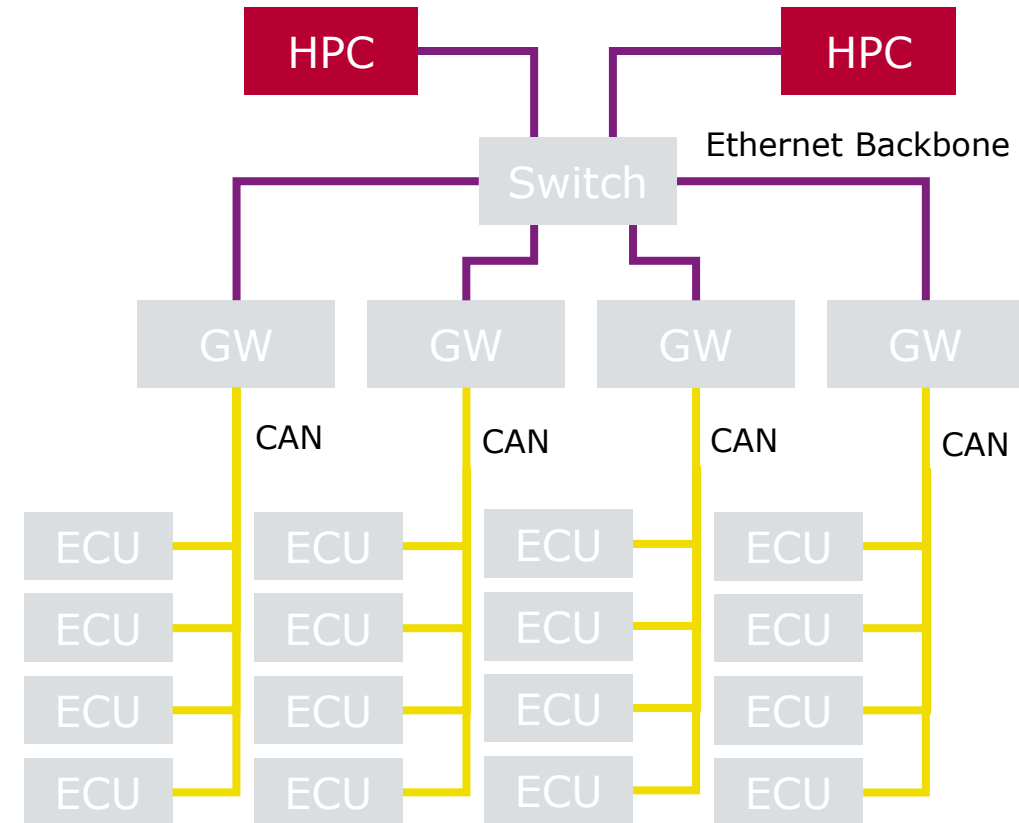
Domain Oriented Vehicle Network Topology

- ▶ Multiple Domain Controllers
- ▶ Functions assigned to distinct ECUs
- ▶ Embedded C-Code
- ▶ Static configuration at development time

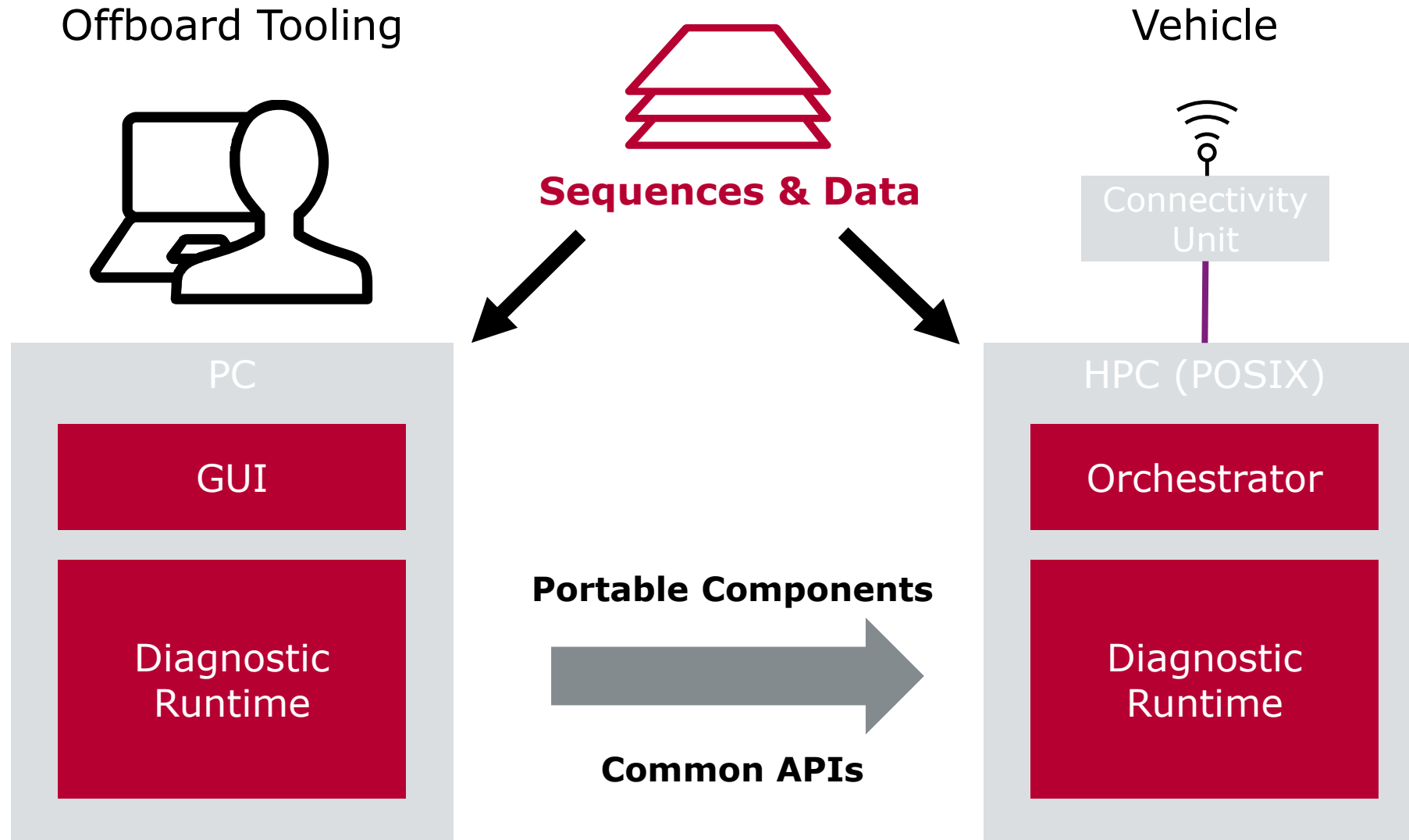


Backbone Vehicle Network Topology

- ▶ Few High Performance Computing Platforms (HPC)
 - ▶ POSIX OS
- ▶ Functions centralized on HPC
- ▶ Middleware and applications developed in C++
- ▶ ECUs for Sensors and Actors
- ▶ Service Oriented Architecture

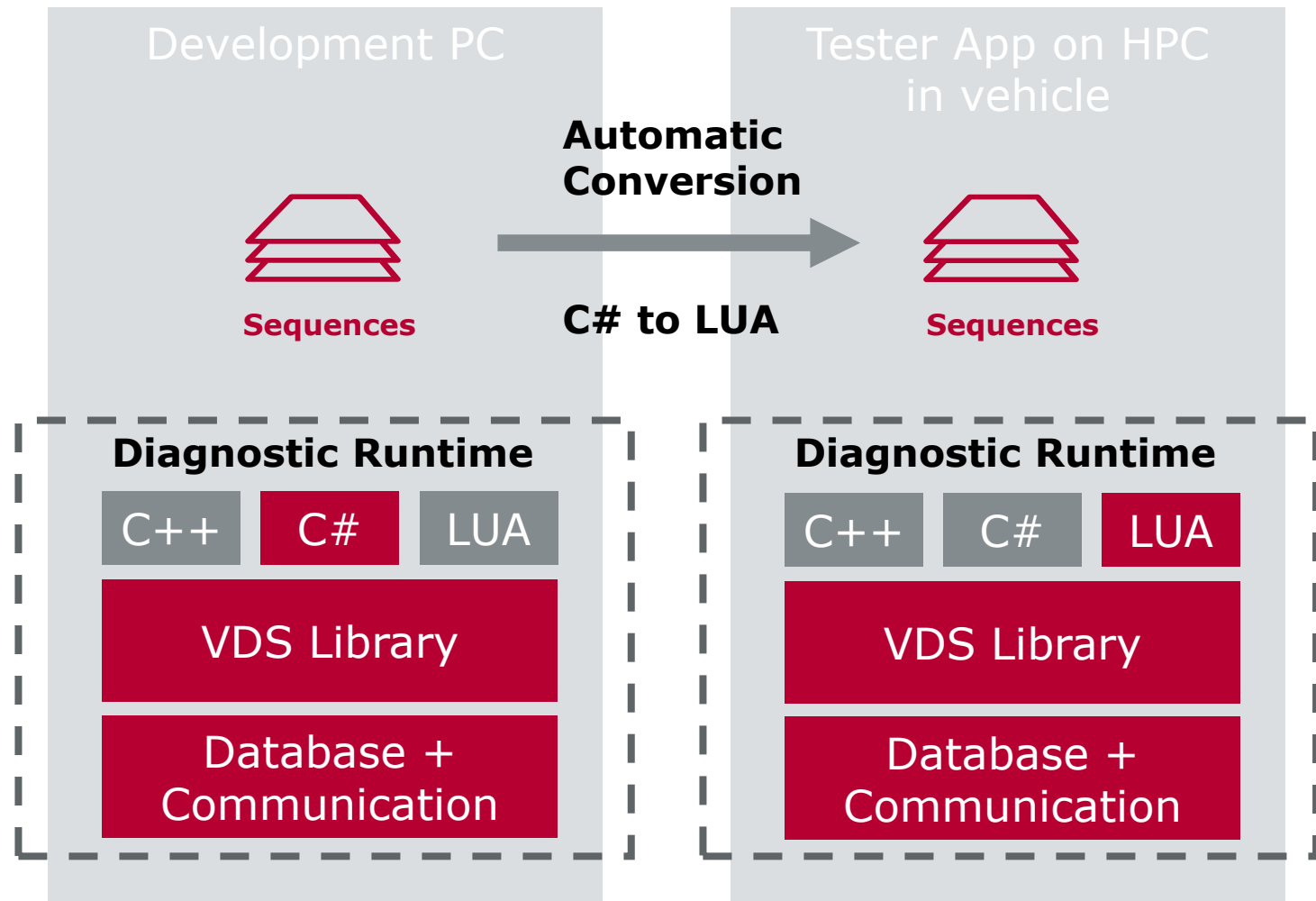


Reuse of Components and Data

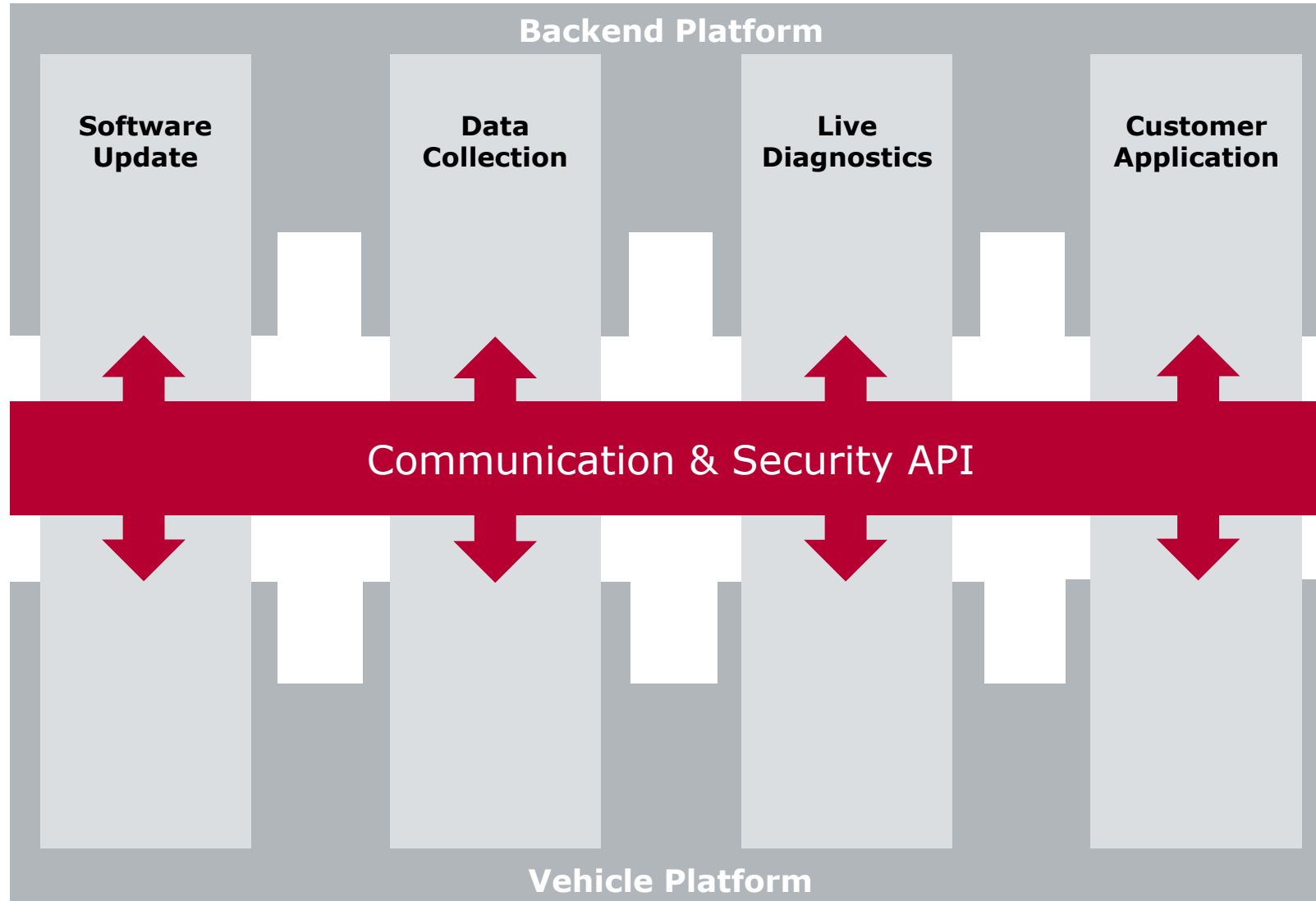


Professional Development of Diagnostic Sequences

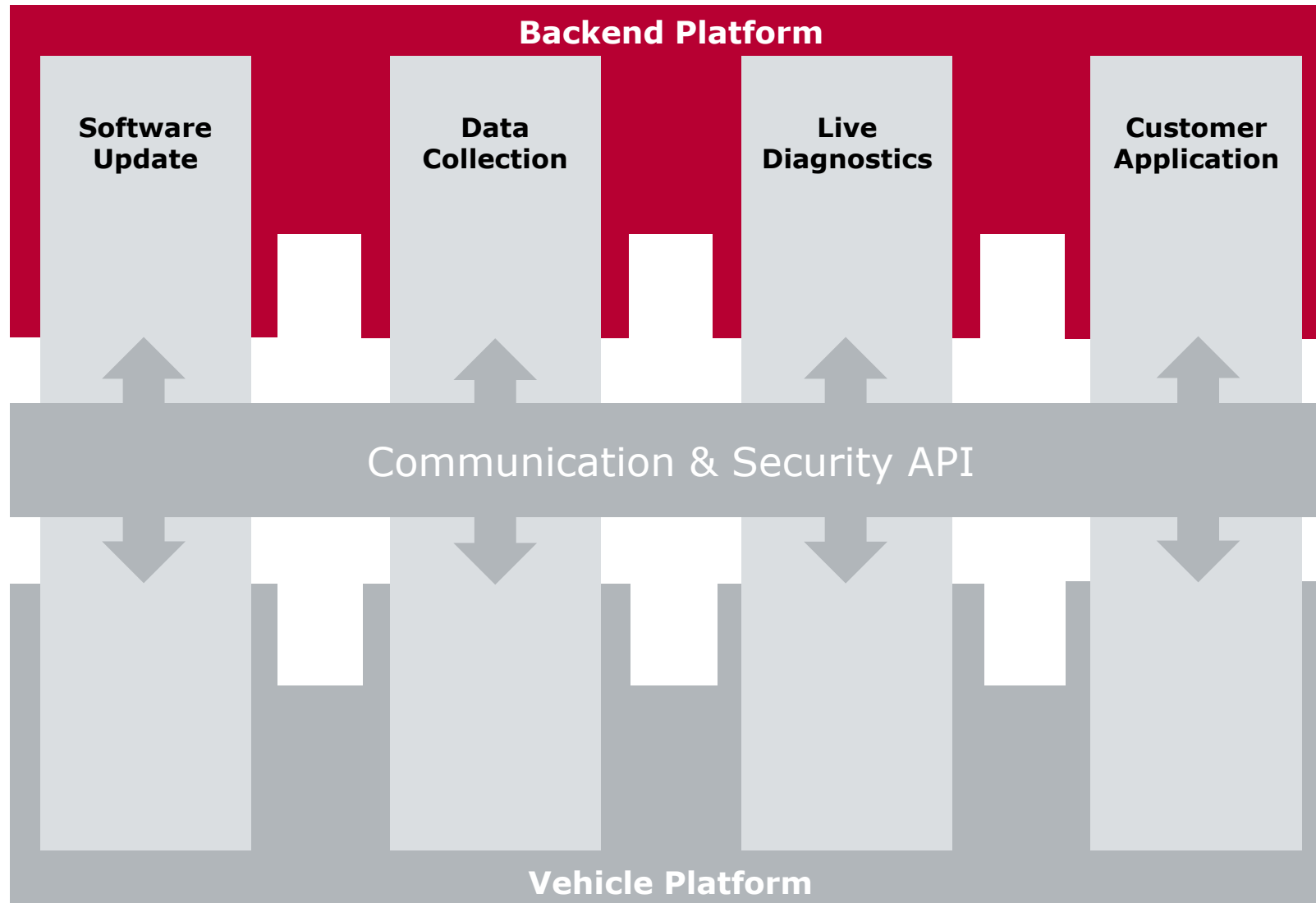
- ▶ Development of diagnostic sequences in C# using a professional IDE on PC
- ▶ Offering features like IntelliSense, Code Analyzers, Debugging, Unit Tests and Mocking Framework
- ▶ Automatic conversion to LUA
- ▶ Resource efficient interpreter for in vehicle use
- ▶ Foundation is the VDS library that offers the same API on each platform with appropriate language bindings



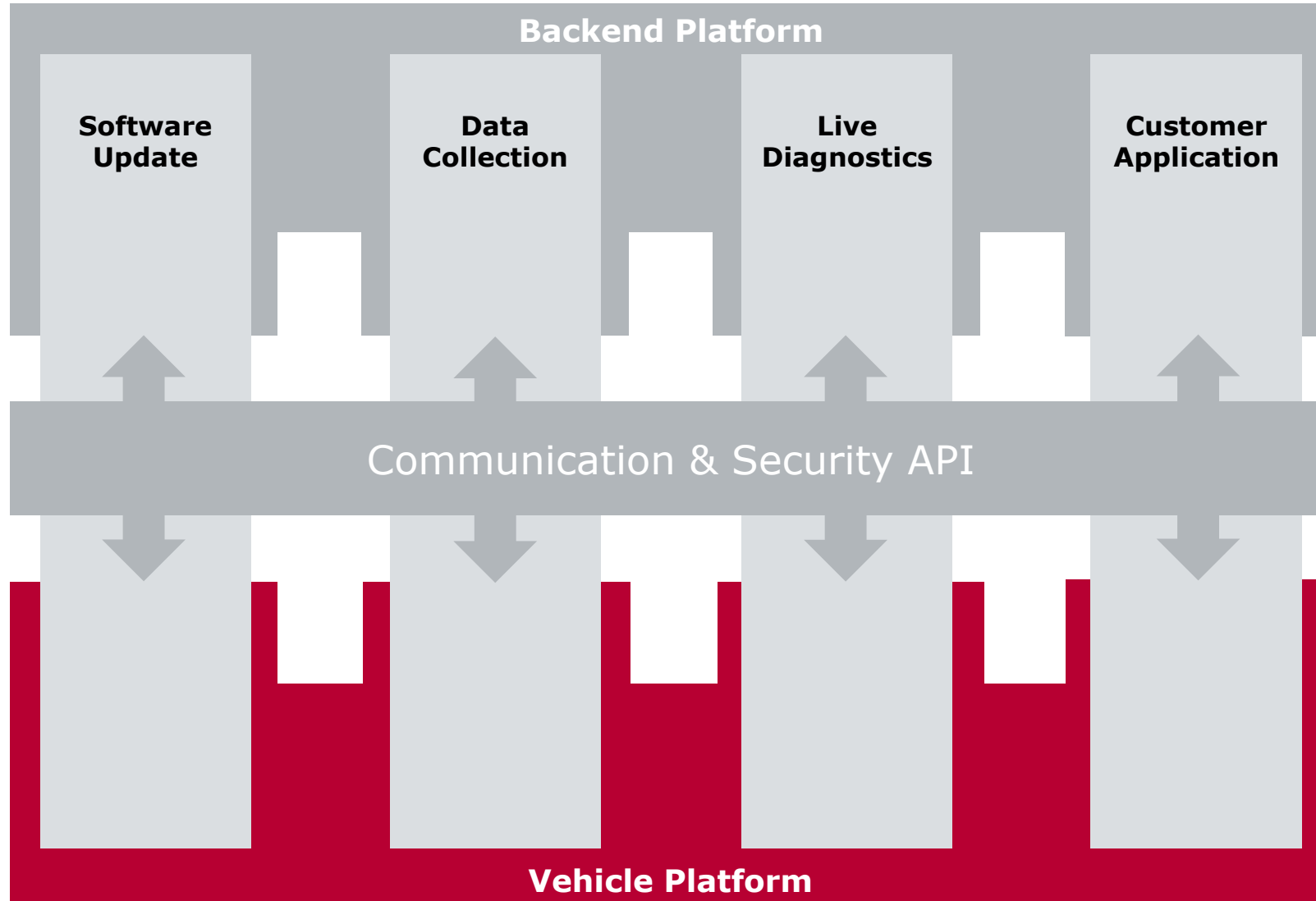
OTA Framework – Architecture



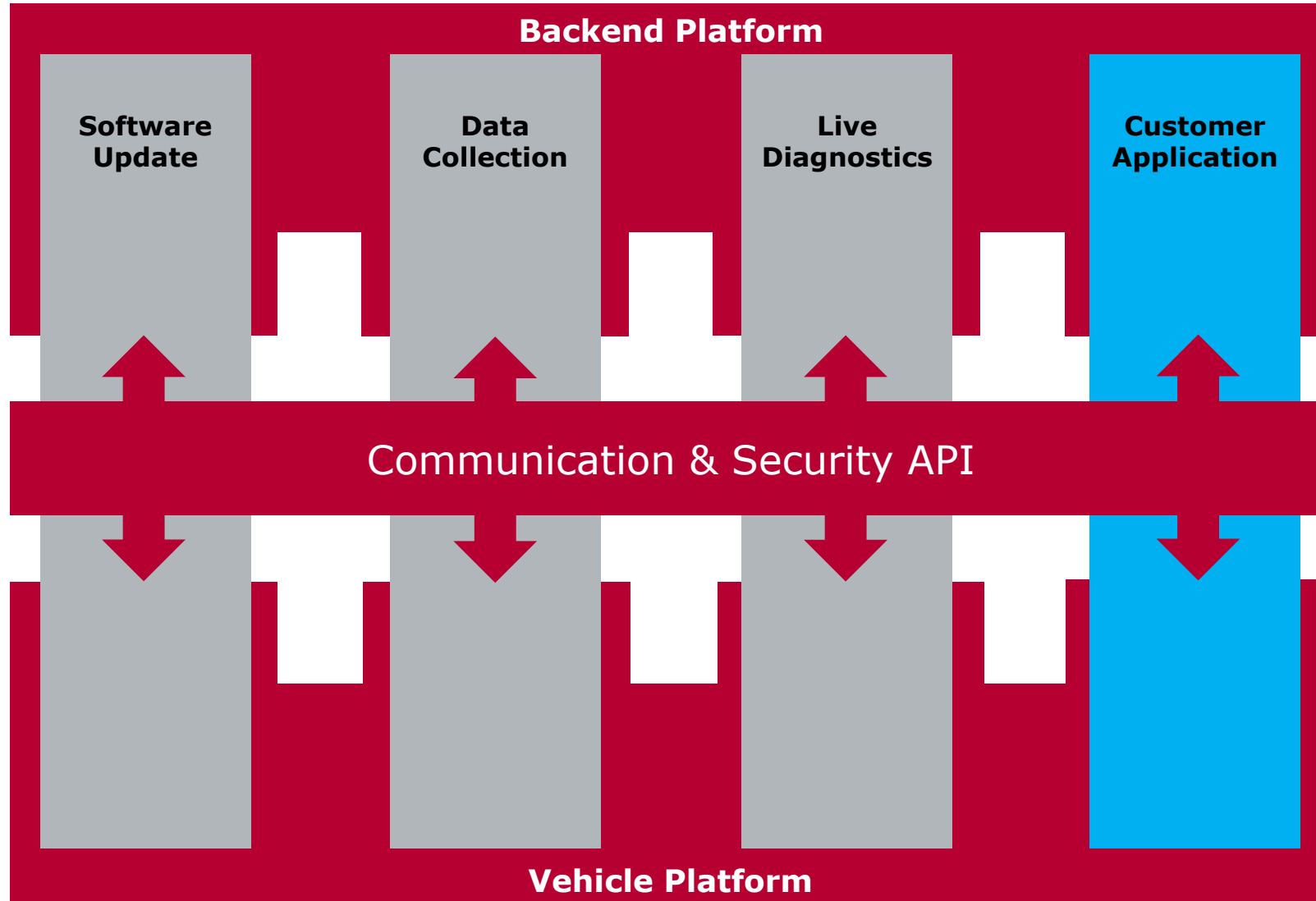
OTA Framework – Architecture



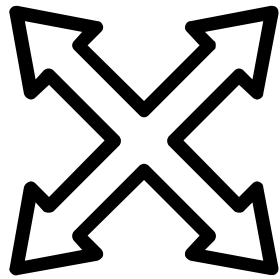
OTA Framework – Architecture



vConnect – The Automotive OTA Solution



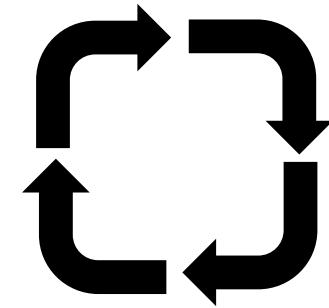
vConnect



Open



Secure



Holistic

We look forward to your OTA projects!