Key to SDV Transition: The Next Generation E&E Architecture

42dot

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Legacy System

Pleos 25

Legacy System Architecture

Structural characteristics of legacy vehicle system

- Single function throughout its entire lifetime.
- Multiple single-function ECUs work together
- Each ECU is optimized for both hardware and software.
- Most software is highly dependent on the hardware.

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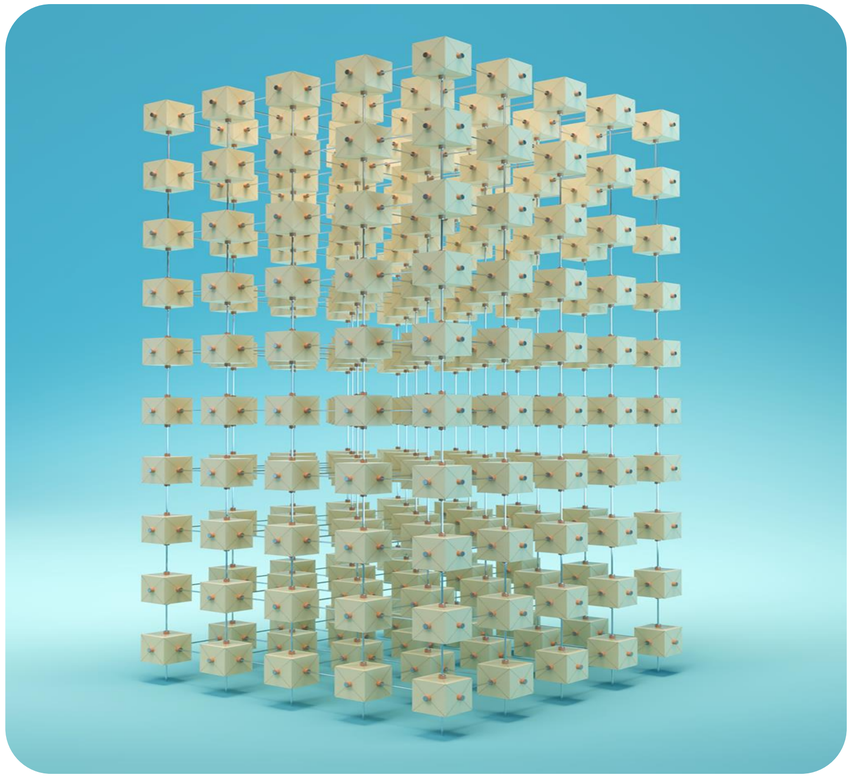
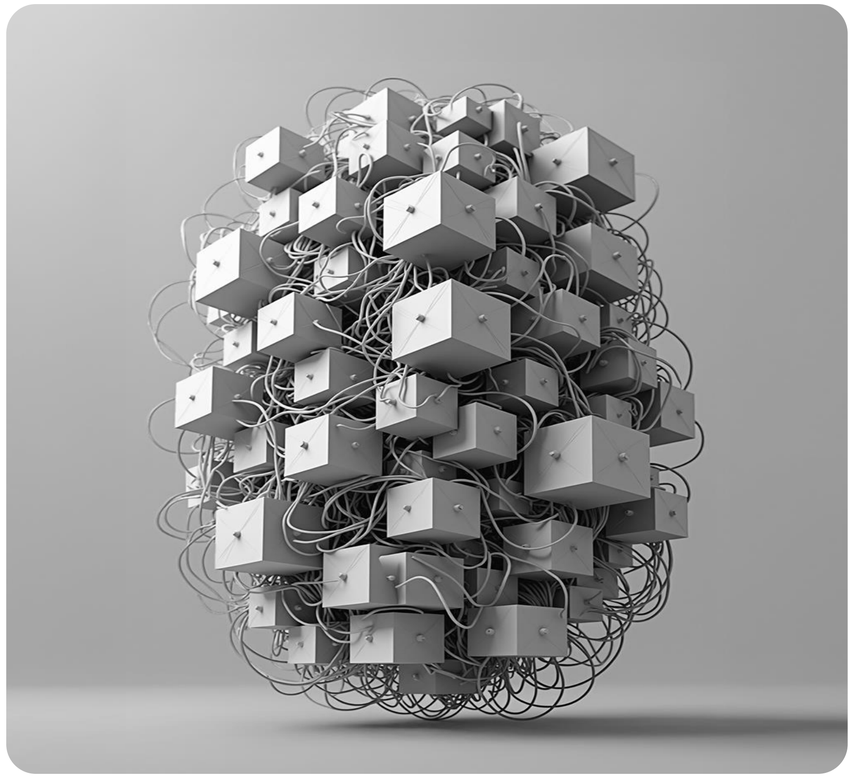
Legacy System's Characteristics

What is advantages and disadvantages of legacy system?

Advantages



Disadvantages



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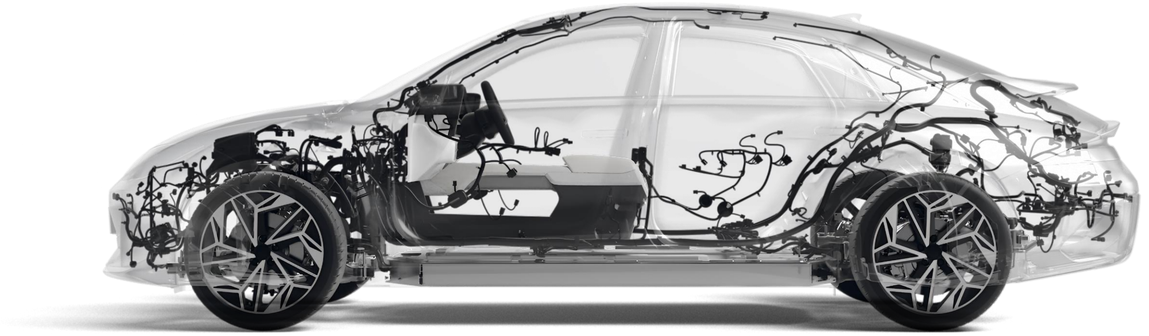
Our Approach

Pleos 25

What Is a Software-Defined Vehicle?

Continuously improved vehicle

From an electric & electronic perspective,



Hardware
(Hard to change)

Software
(Easy to change)

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Is a Software-Defined Vehicle (SDV) a Competitive Product?

Cost Competitiveness

- Minimize overall system cost
- Reduce duplicated hardware components
- Leverage locality

Software Oriented

- Transition from hardware-based feature upgrades to software-based updates
- Accelerate development time and reduce maintenance effort
- Consolidate distributed ECU functions

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How Can We Optimize & Simplify the Hardware?

From a hardware-as-resources perspective, overall system performance and efficiency can be significantly improved.

Resource Optimization

Resource Sharing

Utilize the Locality

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How Can We Transition to Software-Oriented Development?

Hardware and Software Decoupling

Centralized Architecture

High-performance Network

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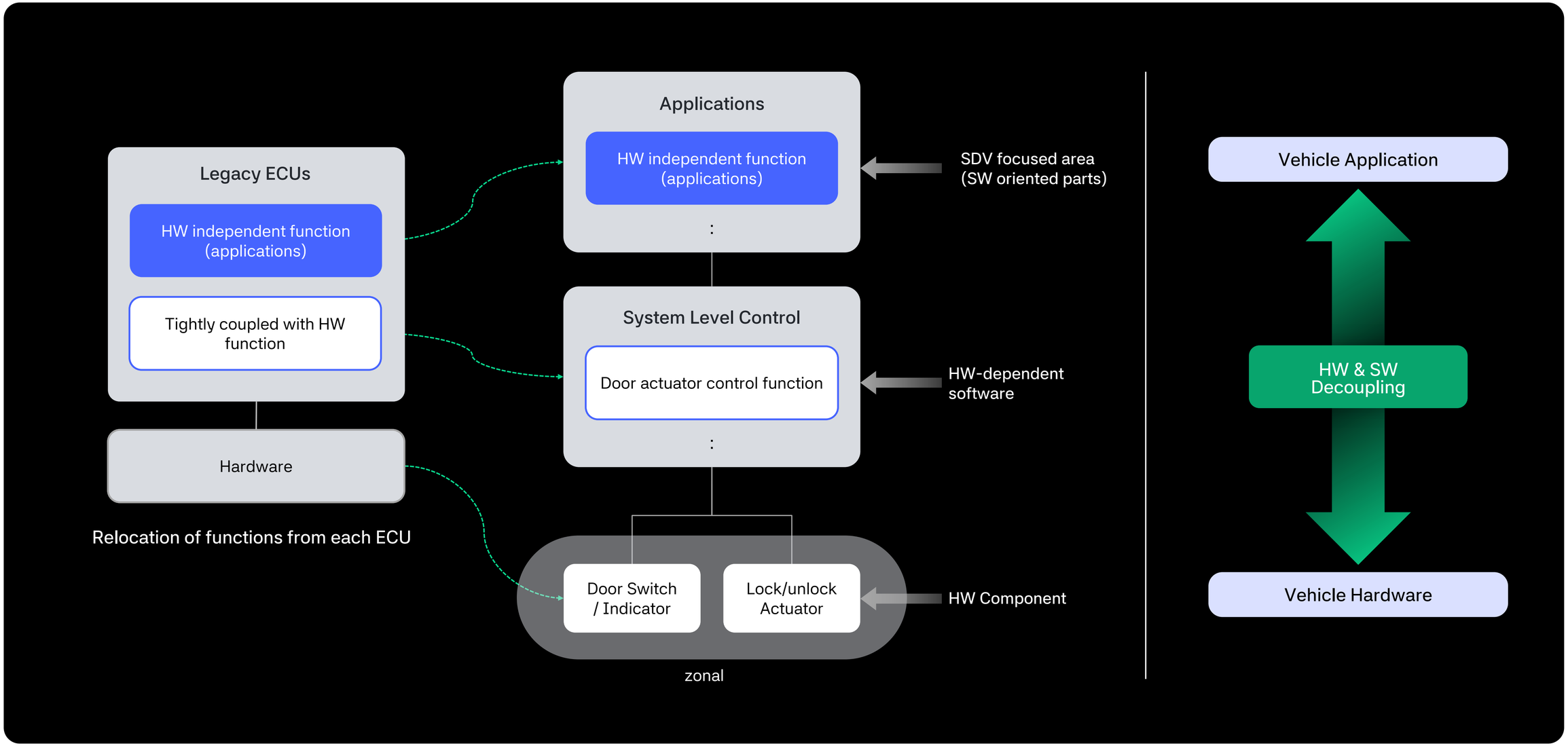
Overall Architecture Concept



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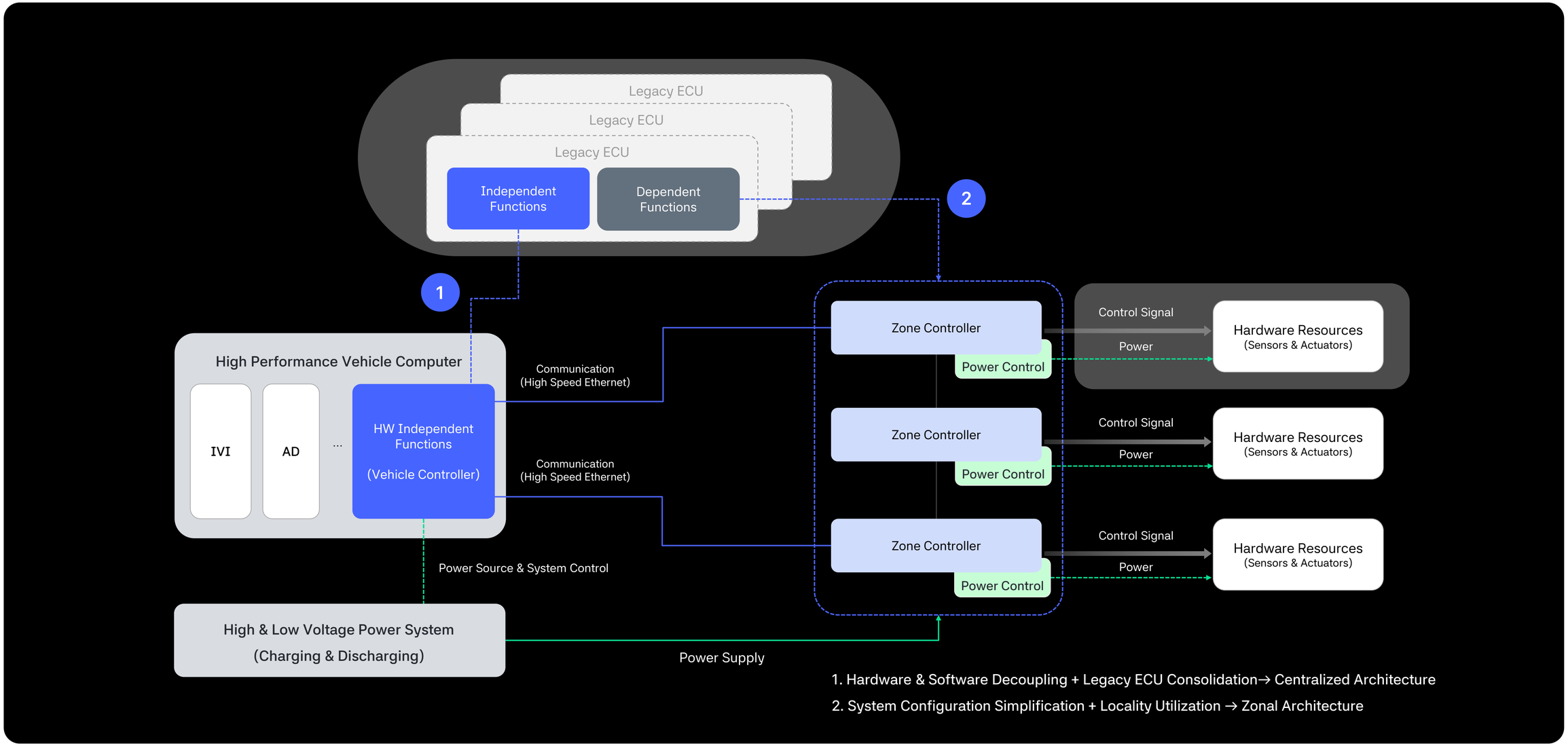
E&E Architecture Details

Concept



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Architecture Concept - Electronic Component Integration Concept

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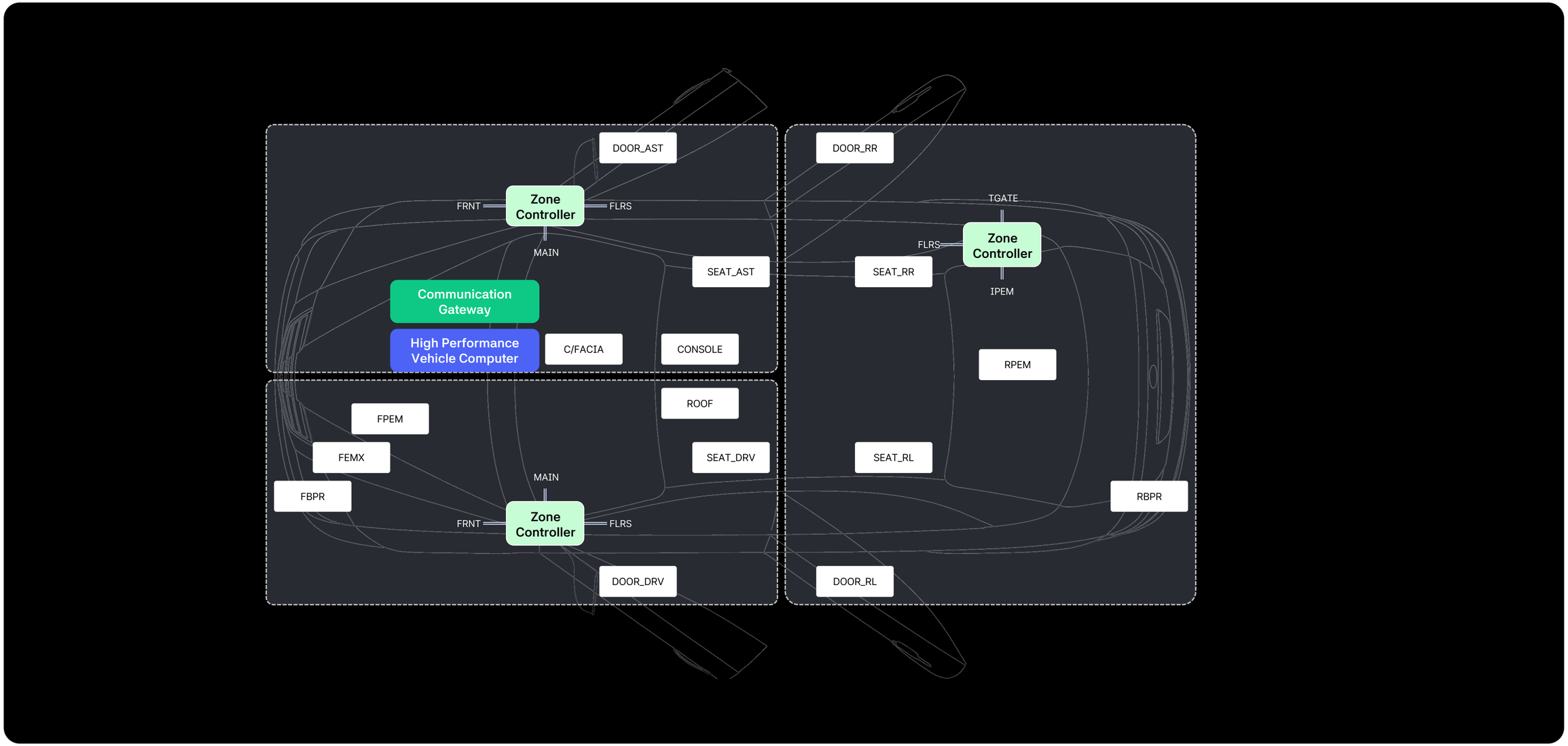
Architecture Concept - Zonal Architecture Concept



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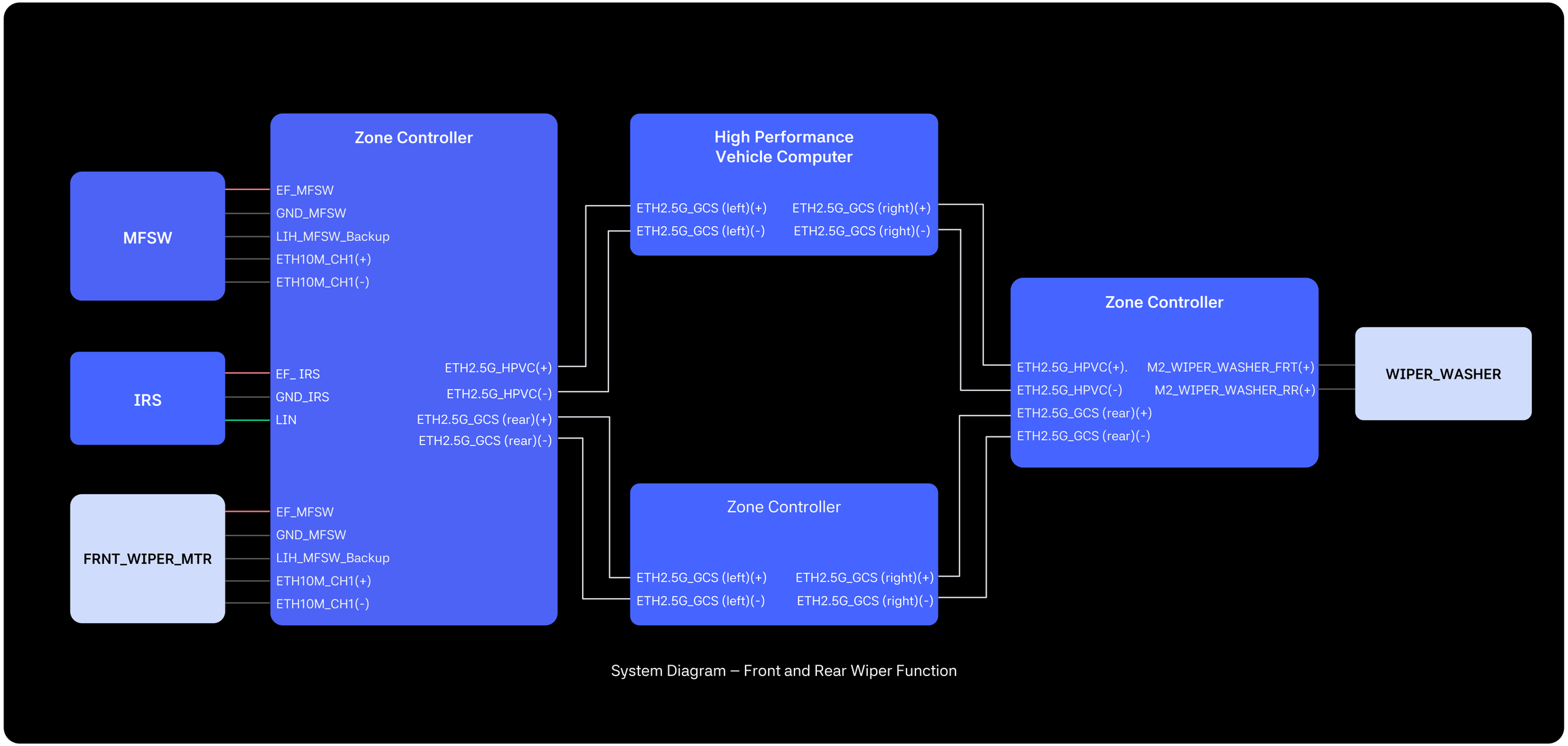
System Concept - System Block / Integrated ECU Block Diagram



System Diagram – Front and Rear Wiper Function

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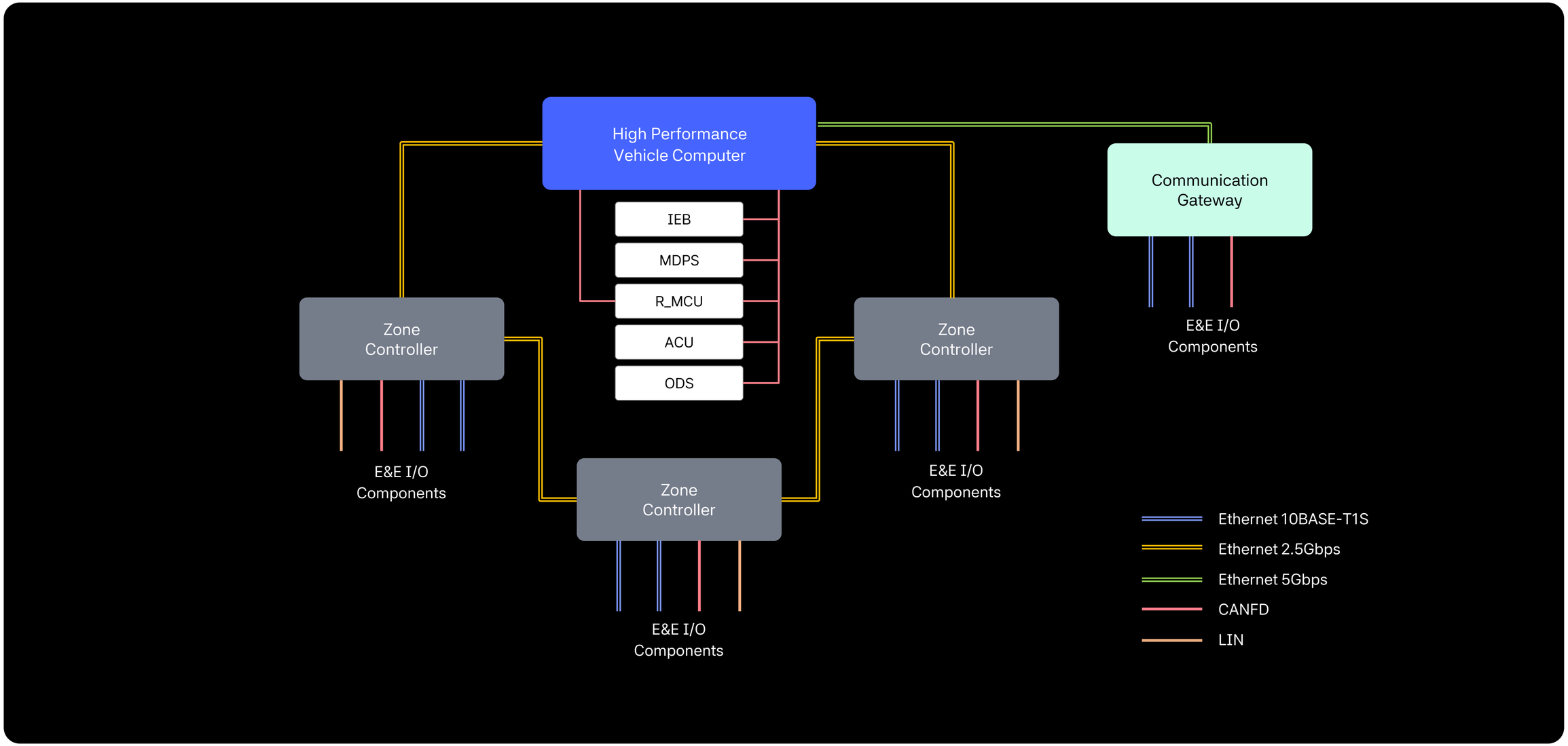
Communication - Communication Network Topology



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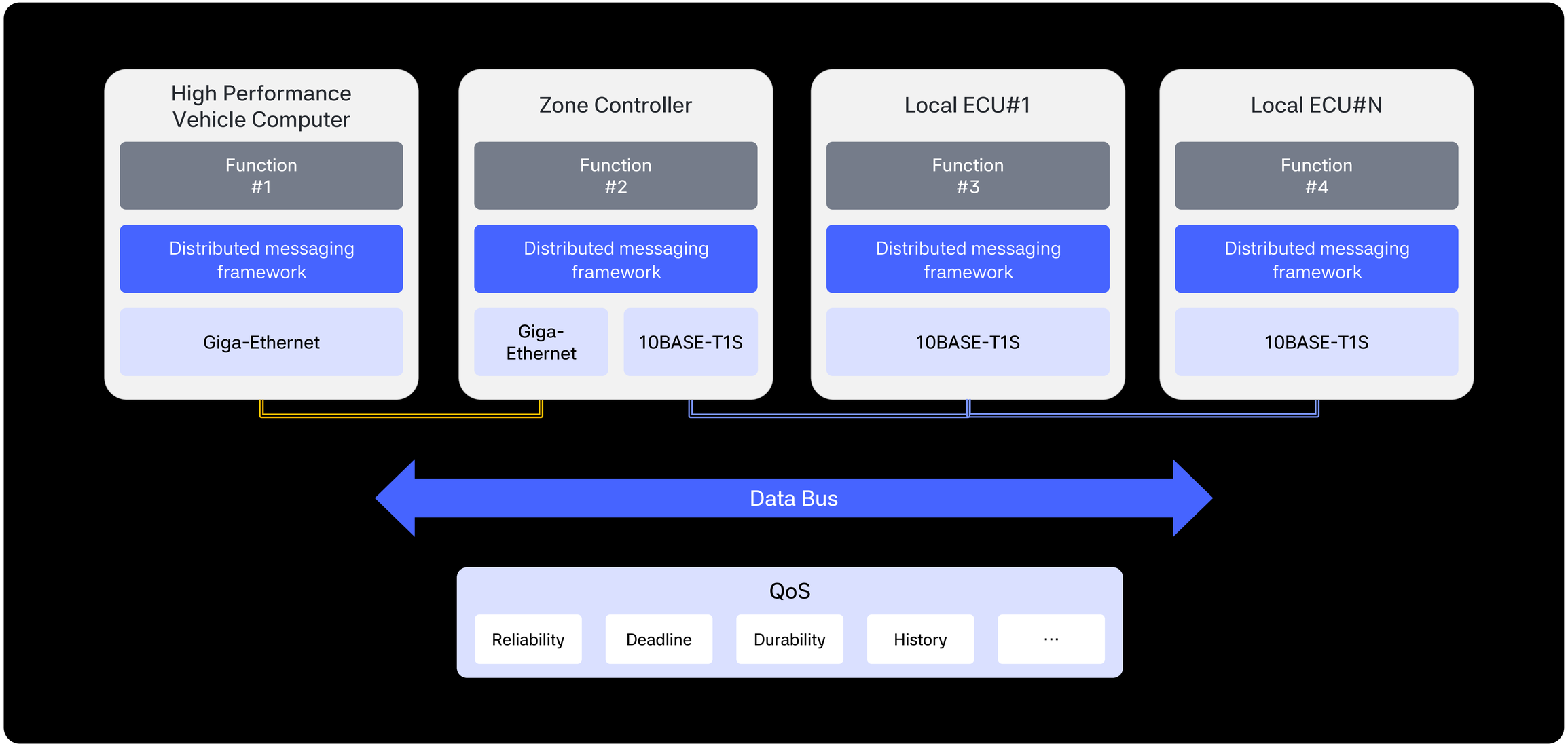
Communication - Communication Network Data



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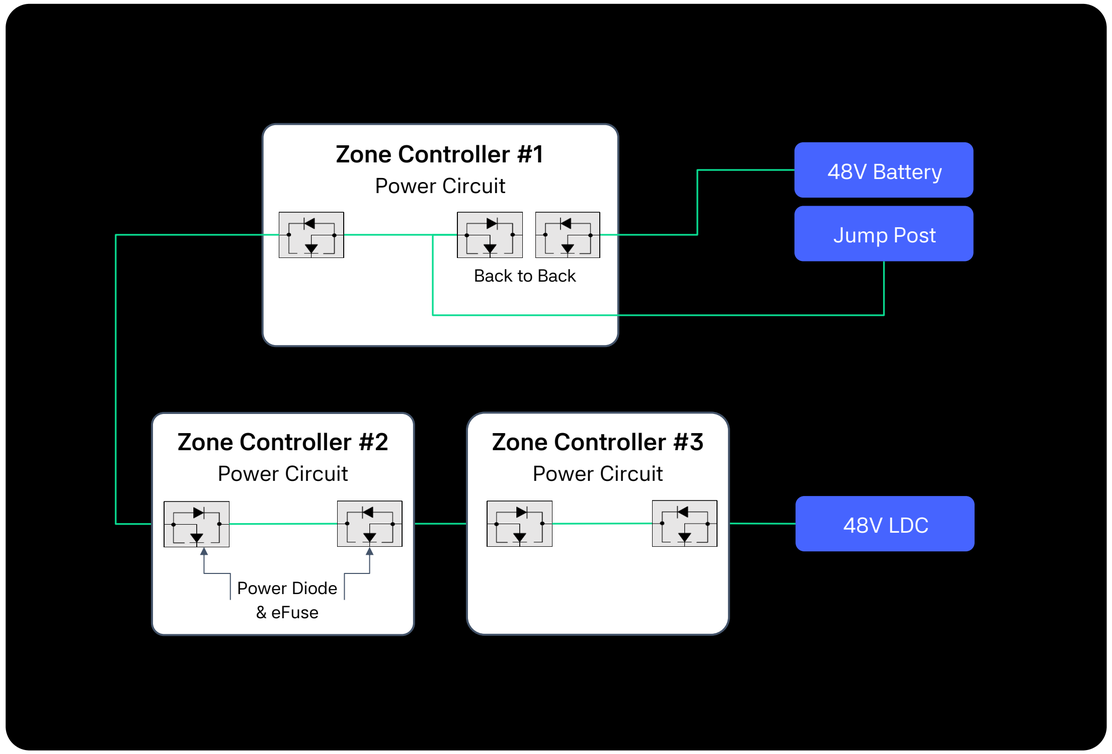
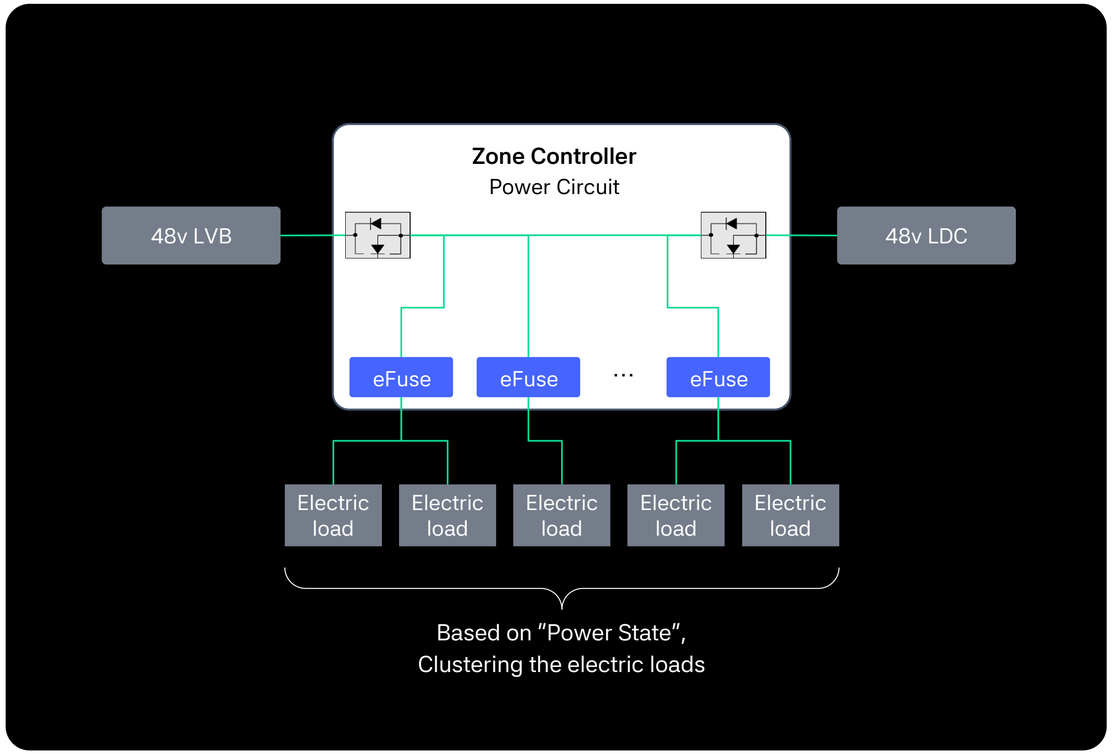
Power System

Power-net Backbone



Power Distribution Control



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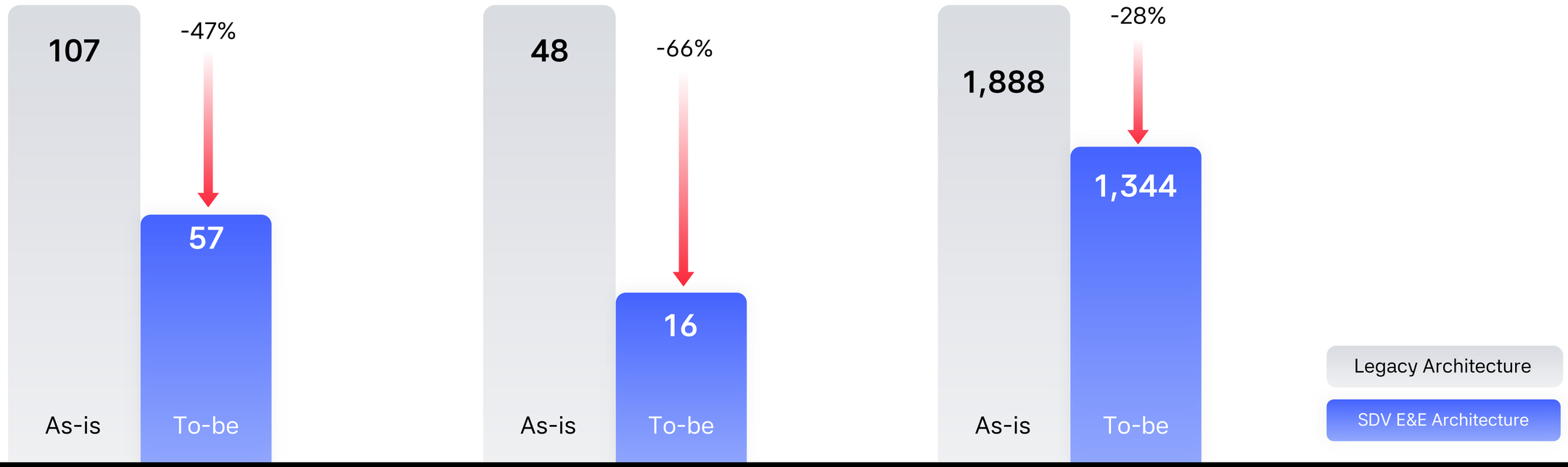
Expected Outcomes – Simplify the Vehicle



Electronic Components | **ECUs** | **Wiring Harness**

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Q&A