



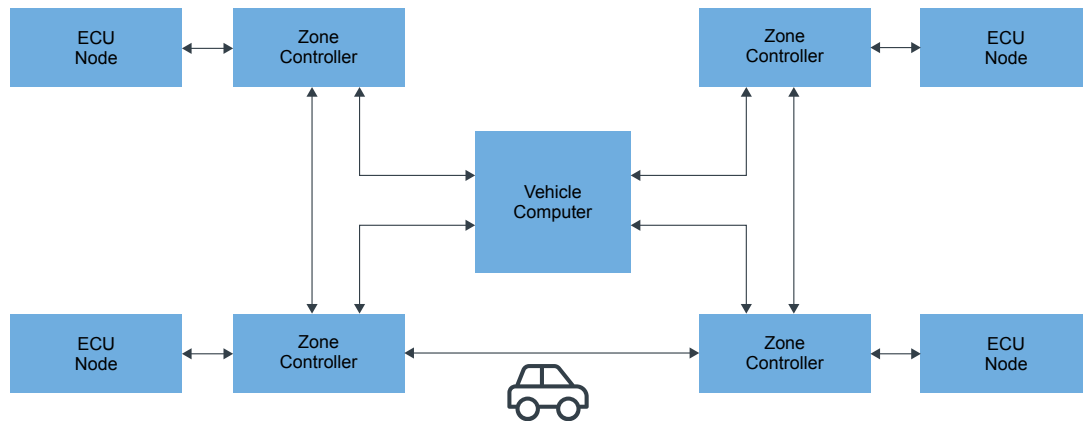
Automotive Zone Controller

Last Updated: Nov 16, 2023

Zonal architectures enable efficient power and data distribution around the vehicle, while improving wire cost, weight, and manufacturing. A key component in this architecture is the zone controller, it is responsible for connecting the high number of actuators and sensors to a central compute ECU and, depending on application distribution, can have a significant role in strategy within a zone.

OEMs are looking for more scalable and cost-efficient solutions to evolve the E/E architecture and meet future requirements for connected, electric, self-driving vehicles, as the number of services/ECUs within the vehicle grows. This evolution can come via logical distribution of functions onto less diverse software/hardware platforms, and through physical changes to a zonal-based network.

Zonal Architecture Block Diagram



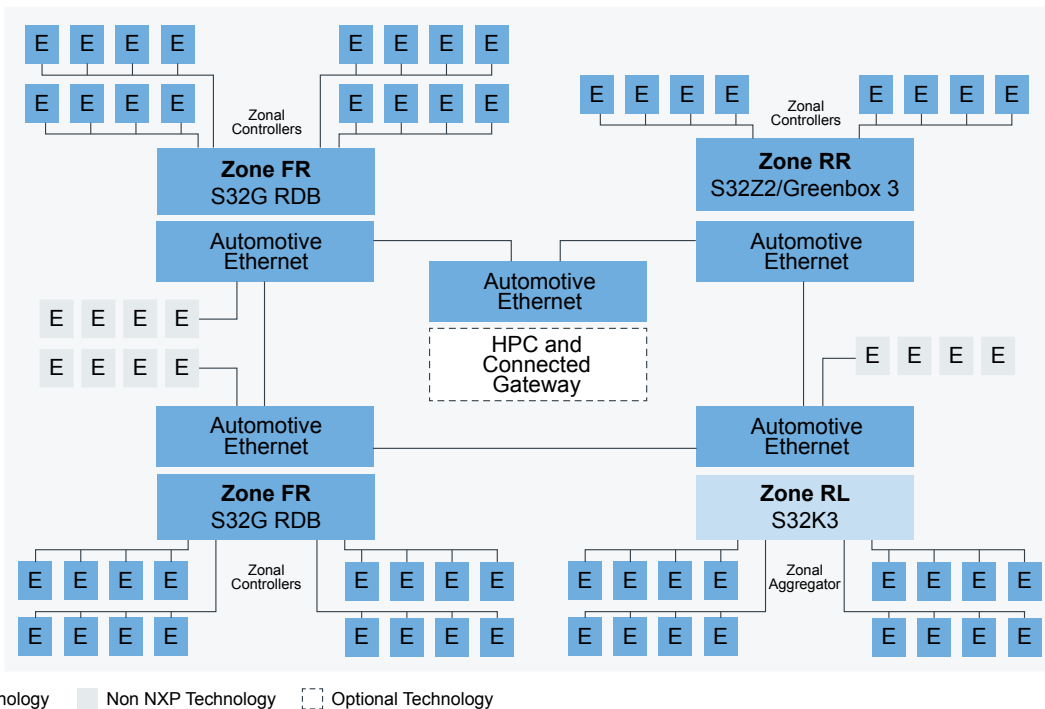
■ NXP Technology
 ■ Non NXP Technology
 Optional Technology

Recommended Products for Zonal Architecture

Vehicle Computer	<ul style="list-style-type: none"> • S32G3 Vehicle Networking Reference Design • S32G Vehicle Integration Platform (GoldVIP) • GoldBox 3 Vehicle Networking Development Platform • VR5510: Multi-Channel (9) PMIC for S32G Processor – 8 High Power, 1 Low Power, Fit for ASIL D Safety Level • PF53: 12 A / 8 A / 15 A Core Supply Regulator with AVP and Watchdog • TJA1120: TJA1120 Automotive Ethernet PHY 100BASE-T1, ASIL B and TC-10 • TJA1104: MACsec Enabled 100BASE-T1 Ethernet PHY
Microcontrollers (MCU)	<ul style="list-style-type: none"> • S32K3 Microcontrollers for Automotive General Purpose
Zone Controller	<ul style="list-style-type: none"> • S32K3 Microcontrollers for Automotive General Purpose • S32Z2 Safe and Secure High-Performance Real-Time Processors • S32E2: S32E2 Safe and Secure High-Performance Real-Time Processors with Actuation Support

	<ul style="list-style-type: none"> • S32G3 Processors for Vehicle Networking • S32G2 Processors for Vehicle Networking • VR5510: Multi-Channel (9) PMIC for S32G Processor – 8 High Power, 1 Low Power, Fit for ASIL D Safety Level • PF53: 12 A / 8 A / 15 A Core Supply Regulator with AVP and Watchdog • FS26: Safety System Basis Chip with Low Power Fit for ASIL D • PF5030: Multi-Channel PMIC for Automotive Applications • SJA1110: Multi-Gig Safe and Secure TSN Ethernet Switch with Integrated 100BASE-T1 PHYs • FS86: Safety System Basis Chip For Domain Controller, Fit For ASIL B and D • TJA1120: TJA1120 Automotive Ethernet PHY 100BASE-T1, ASIL B and TC-10 • TJA1104: MACsec Enabled 100BASE-T1 Ethernet PHY
ECU Node	<ul style="list-style-type: none"> • S32M2 Integrated Solution for 12V Motor Control • FS24: Safety Mini CAN FD SBC for Automotive Applications Fit for ASIL-B • FS23: Safety System Basis Chip (SBC) Family with Power Management, CAN and LIN • S32K3 Microcontrollers for Automotive General Purpose • S32K1 Microcontrollers for Automotive General Purpose • FS26: Safety System Basis Chip with Low Power Fit for ASIL D • TJA1463: CAN Signal Improvement Capability Transceiver with Sleep Mode • TJA1103: ASIL B Compliant 100BASE-T1 Ethernet PHY • TJA1104: MACsec Enabled 100BASE-T1 Ethernet PHY

Zone Control POC Block Diagram



Recommended Products for Zone Control POC

Zone FR	<ul style="list-style-type: none"> • S32G2 Processors for Vehicle Networking • S32G3 Processors for Vehicle Networking • VR5510: Multi-Channel (9) PMIC for S32G Processor – 8 High Power, 1 Low Power, Fit for ASIL D Safety Level • PF53: 12 A / 8 A / 15 A Core Supply Regulator with AVP and Watchdog
Zone RR	<ul style="list-style-type: none"> • S32Z2 Safe and Secure High-Performance Real-Time Processors • FS86: Safety System Basis Chip For Domain Controller, Fit For ASIL B and D • PF5030: Multi-Channel PMIC for Automotive Applications
Zone RL	<ul style="list-style-type: none"> • S32K3 Microcontrollers for Automotive General Purpose • FS26: Safety System Basis Chip with Low Power Fit for ASIL D
Automotive Ethernet	<ul style="list-style-type: none"> • TJA1120: TJA1120 Automotive Ethernet PHY 1000BASE-T1, ASIL B and TC-10 • TJA1104: MACsec Enabled 100BASE-T1 Ethernet PHY

View our complete solution for [Automotive Zone Controller](#).

Note: The information on this document is subject to change without notice.

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