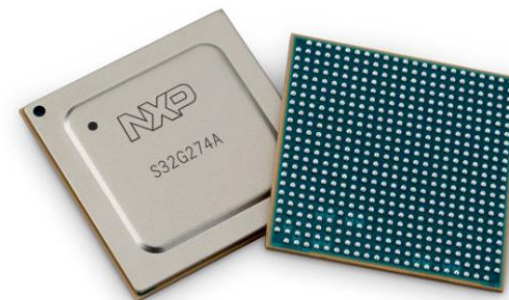


Introducing the S32G Vehicle Network Processor

January 6, 2019

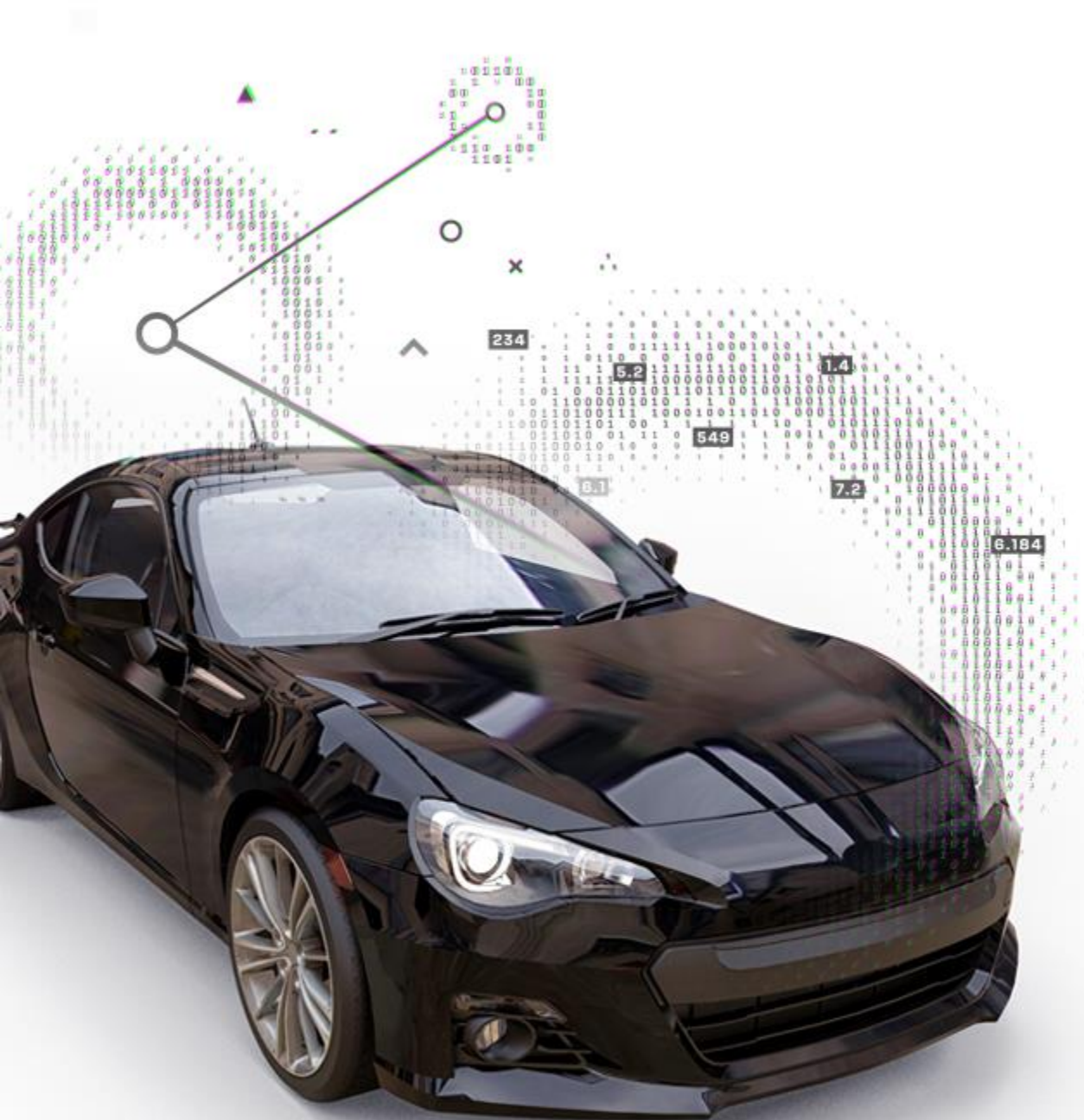


SECURE CONNECTIONS
FOR A SMARTER WORLD



PUBLIC

VEHICLE BIG DATA OPPORTUNITIES

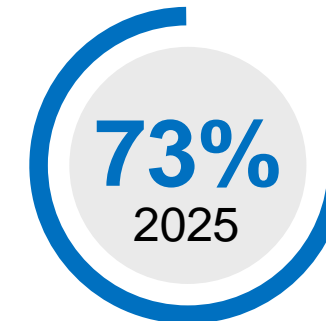
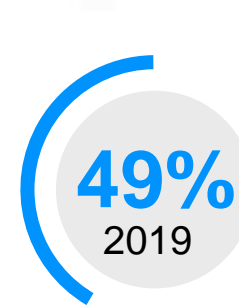


44
MILLION
CONNECTED
VEHICLES

Shipped in 2019*

4+
TERABYTES
VEHICLE
DATA

Generated per hour**



CONNECTED
VEHICLE PENETRATION

Represents global data

Sources: *Strategy Analytics, 2019; **ABI Research, 2018 – L5 Autonomous Vehicle

Vehicle Data Unlocks New Opportunities and Experiences

New Revenue Streams

Service subscription model, insurance revenue

New Business Opportunities

Usage-based insurance, Mobility-as-a-Service

Enhanced Safety and Security

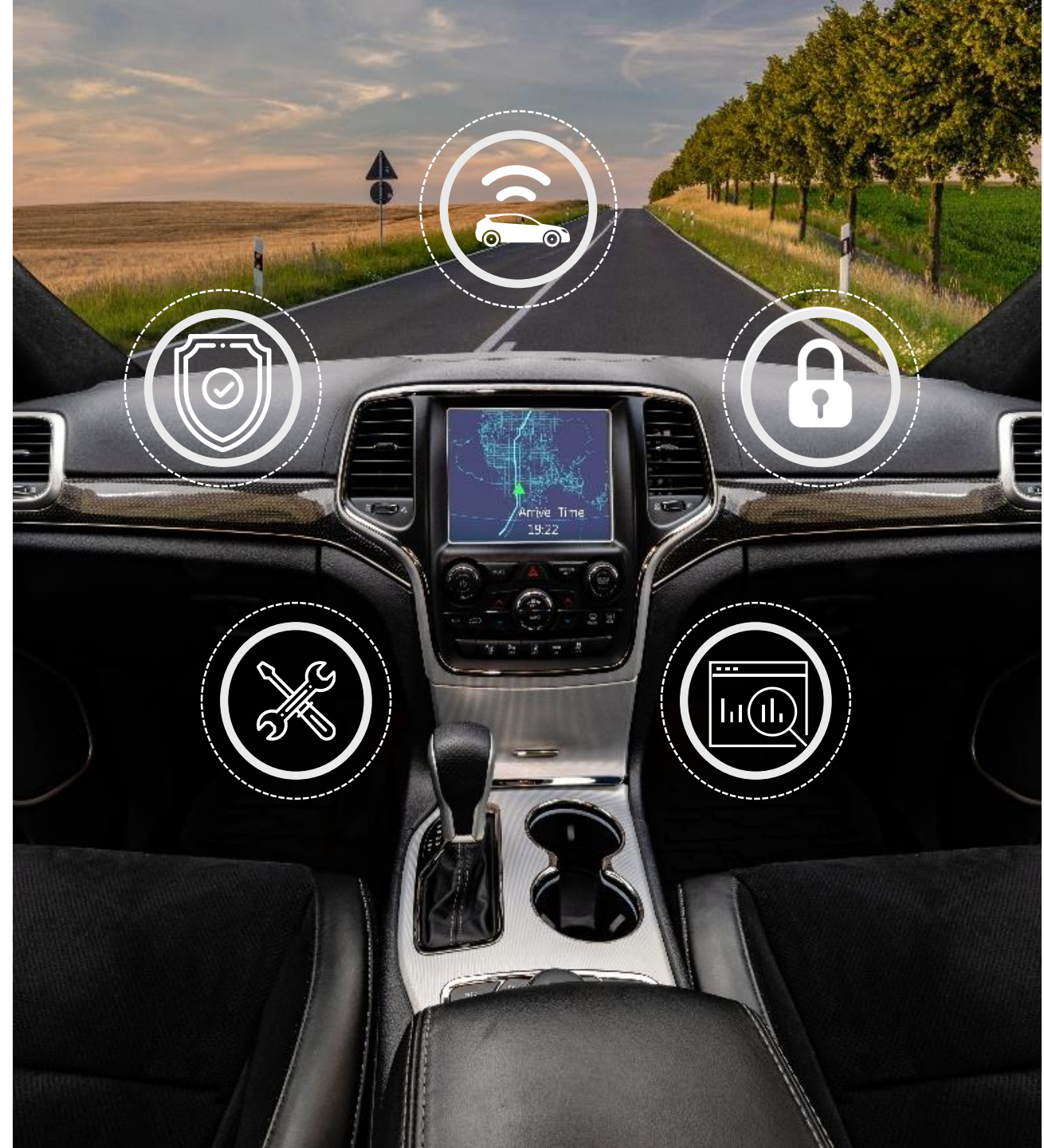
Fault, crash and intrusion detection and prevention

Improved User Experiences

Personalization and post-sale feature upgrades

Reduced Costs

Predictive maintenance and fleet management



New Data-Driven Services Require New Capabilities

End-to-end security
between vehicle and
cloud with PKI* support



*PKI: Public Key Infrastructure

Gigabit Ethernet, Packet
Acceleration, Time
Sensitive Networking



Edge Data Analytics
and Storage



Higher Level of
Functional Safety



Service-oriented Gateway

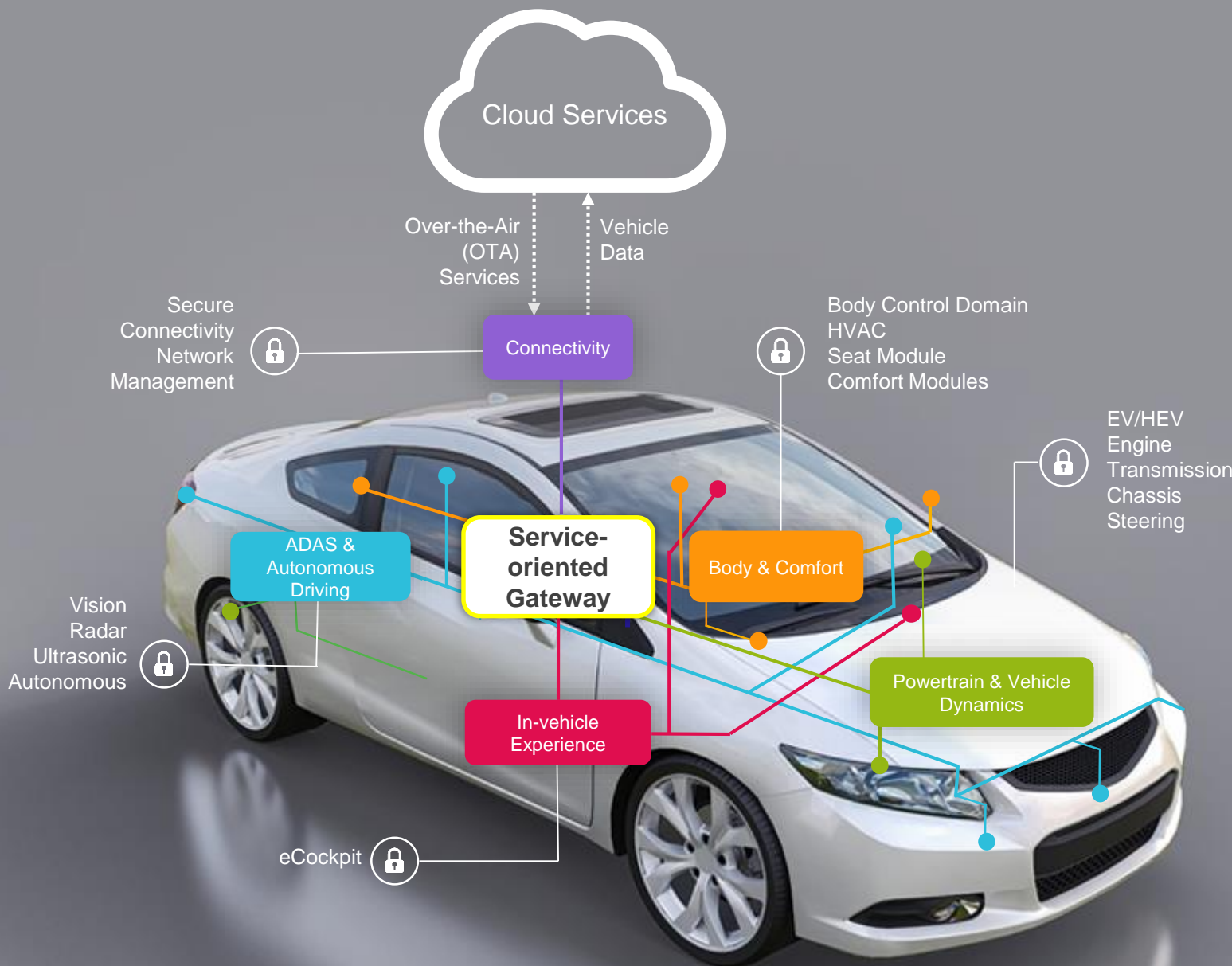
Secure central access to connected vehicle data

A new class of gateway based on Service-oriented Architecture (SoA)

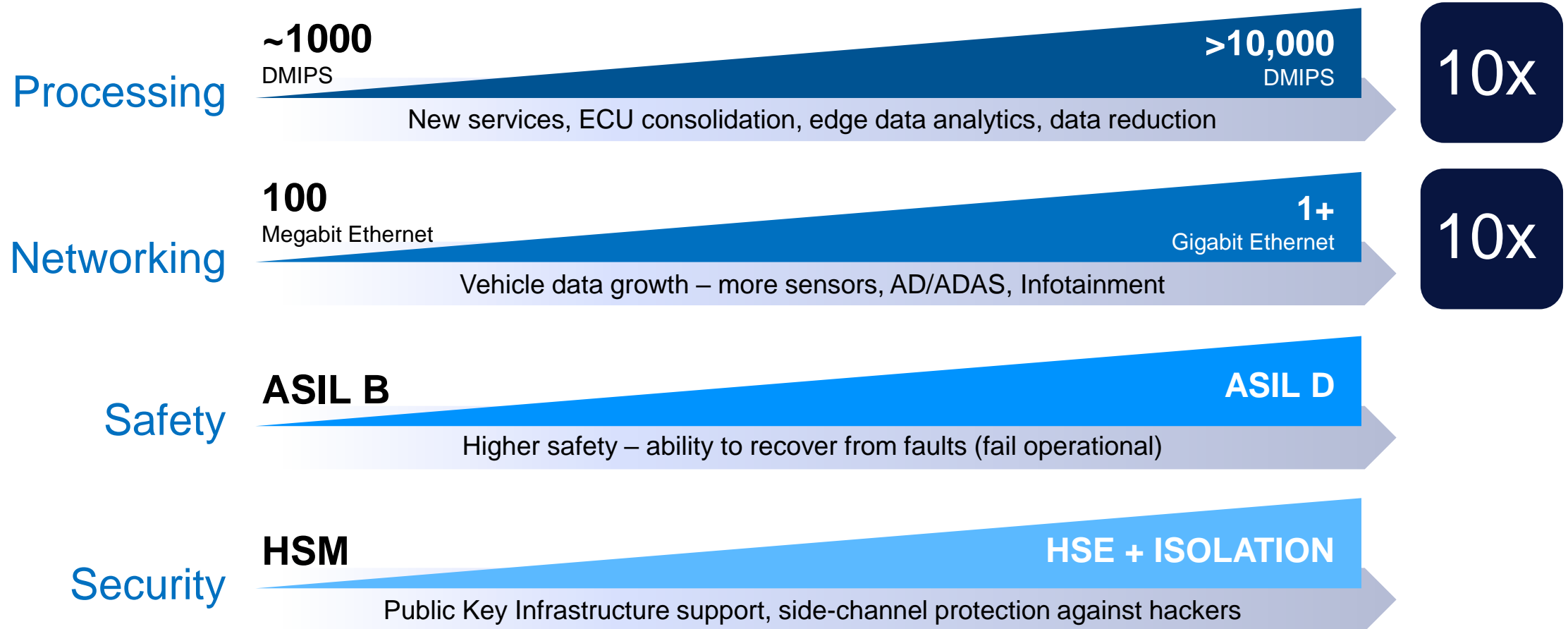
Lowers cost to develop, deploy, and integrate software

Supports rapid deployment of new services through OTA updates

Requires higher performance processing and networking



Service-oriented Gateways Require ~10x* Processing and Networking Performance



* 10x relative to automotive gateway microcontrollers in vehicles today

Introducing the S32G

NXP Unlocks the Full Potential of Vehicle Data with S32G Automotive Network Processors

Enables new service-oriented gateways to rapidly deploy new services and upgradable features in future cars

Supports shift toward domain-based vehicle architectures that require 10x increase in processing and networking

Helps reduce software complexity with its modern multicore architecture with hardware acceleration

In keeping with NXP's long-term automotive reputation, S32G delivers new levels of functional safety and security



NXP

S32G

S32G is a New Type of Automotive Processor: Vehicle Network Processor



Processing

- Lockstep Microcontrollers
- Cluster Lockstep Microprocessors
- Automotive Networks Acceleration
- Ethernet Packet Acceleration



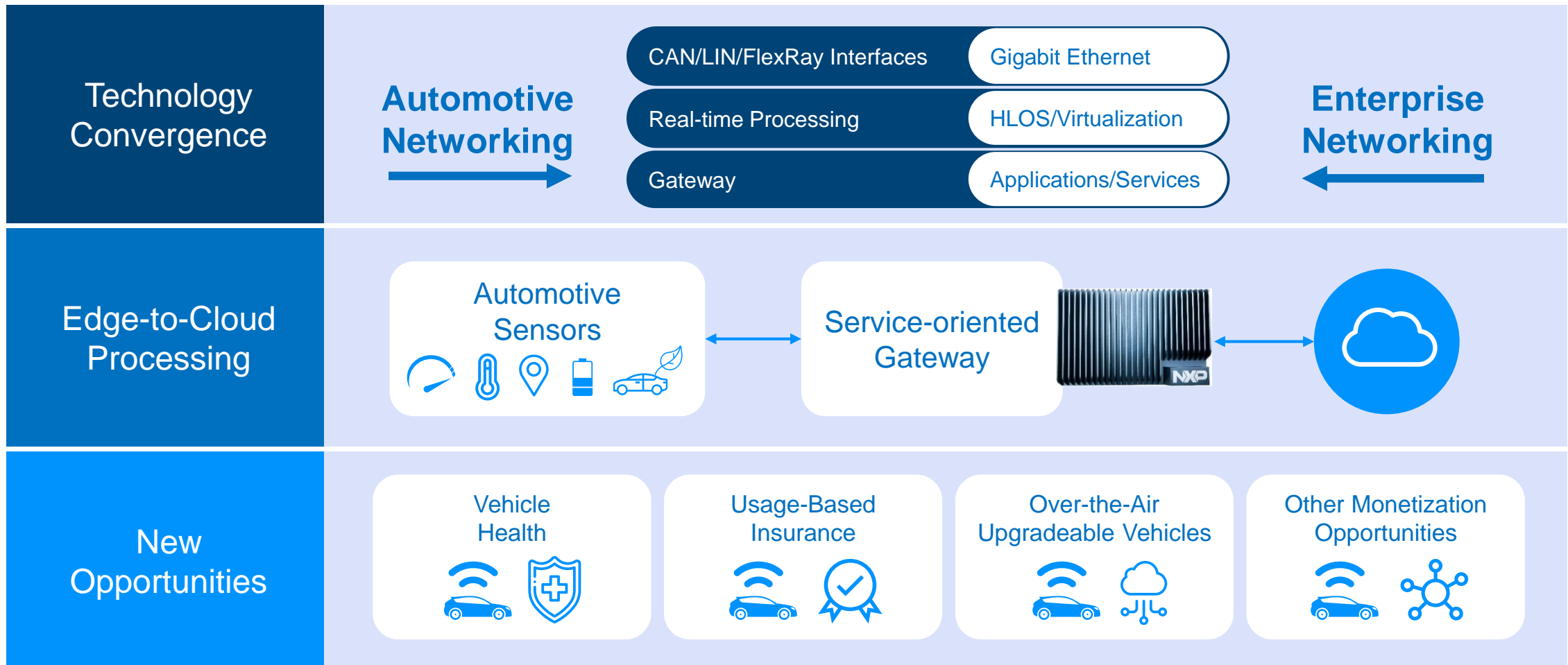
Networking

- 20 x CAN/CAN FD Interfaces
- 4 x Gigabit Ethernet Interfaces
- PCI Express Gen 3 Interfaces

Safety & Security

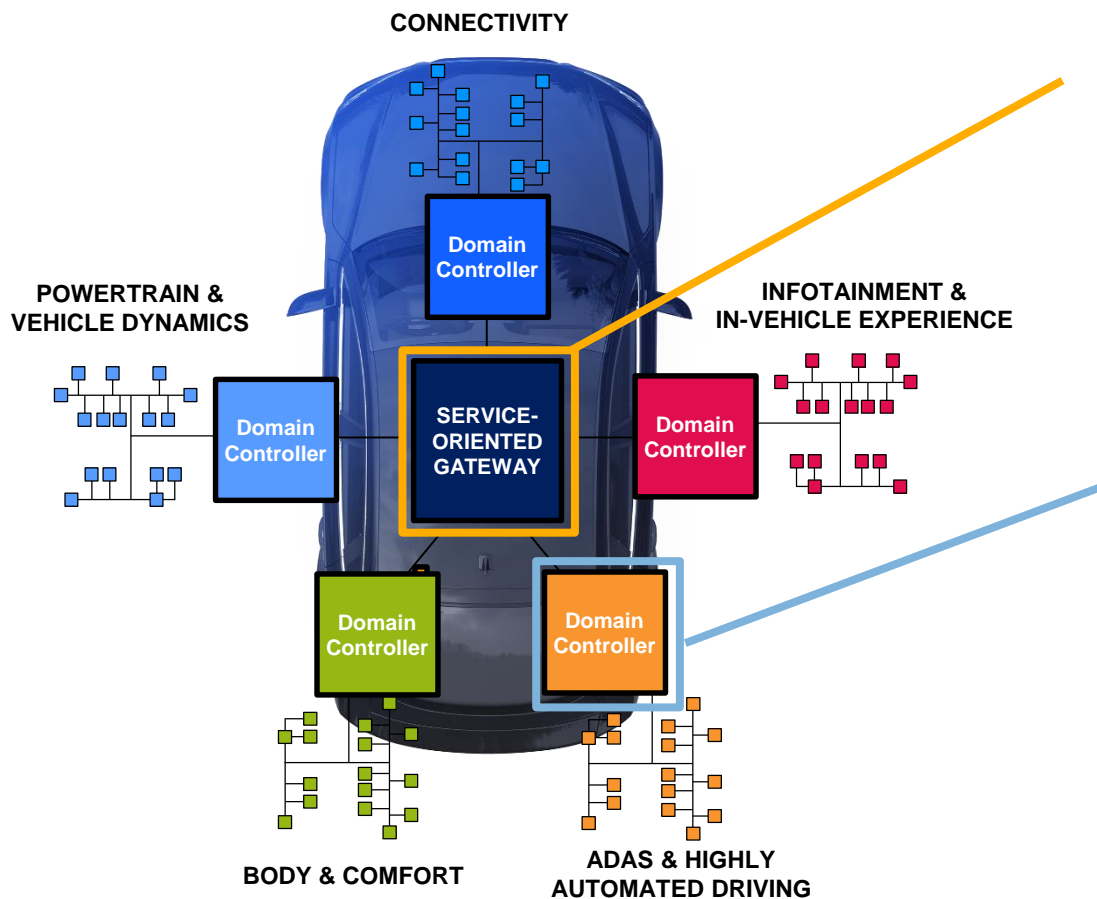
- ASIL D Functional Safety Support
- Advanced Hardware Security Engine

S32G: Bringing Together Automotive and IT Worlds to Enable Disruptive Opportunities



The Versatile Uses of the S32G Vehicle Network Processor

DOMAIN VEHICLE ARCHITECTURES

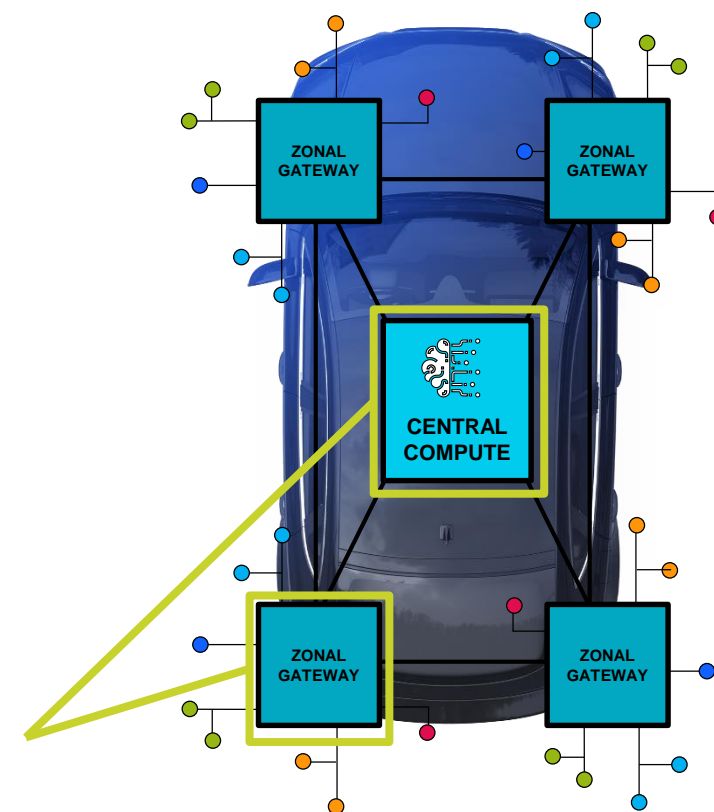


Service-oriented
Gateway

Domain Controller /
ADAS Safety
Controller

Zonal Compute /
Gateways

ZONAL VEHICLE ARCHITECTURES



Summary

The S32G processor allows carmakers to unlock the value of vehicle data, enabling new revenue streams

S32G delivers advanced levels of performance, security, ASIL D safety and system integration

S32G enables edge-to-cloud processing as well as ECU consolidation to simplify vehicle architectures



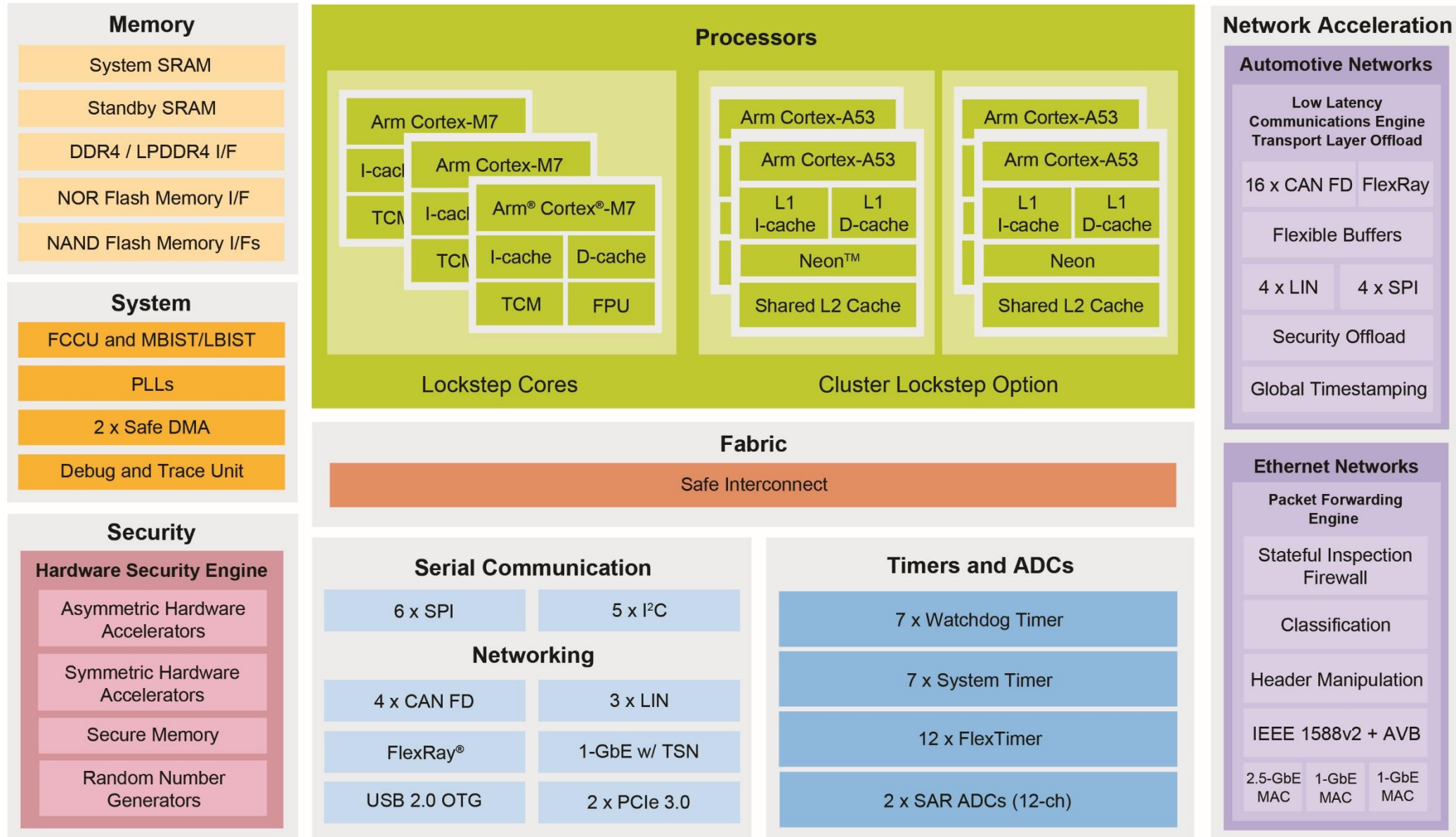
NXP

S32G

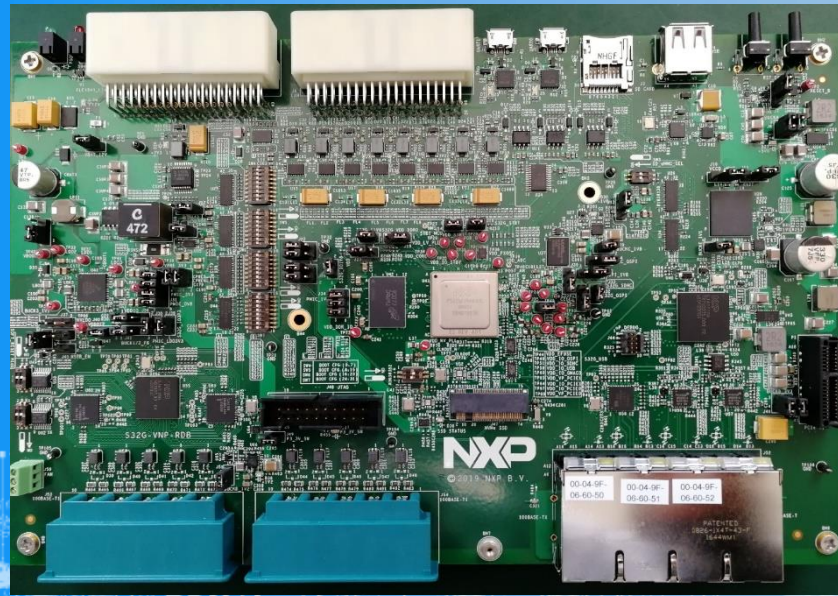


SECURE CONNECTIONS
FOR A SMARTER WORLD

S32G274A Vehicle Network Processor High-level Block Diagram



- ✓ S32G Reference Design Board (RDB)
- ✓ Software Enablement
- ✓ Demonstrations



Carmakers

Proof of concept
Benchmarking
Vehicle data insights
New services deployment

Application Developers

Innovation platform
Software development
Test and validation
Demo showcase

Cloud & Service Providers

Symbiotic compute
Over-the-Air (OTA) updates
Machine learning deployment
Edge service deployment

Accelerating Transformation Across the Automotive Ecosystem