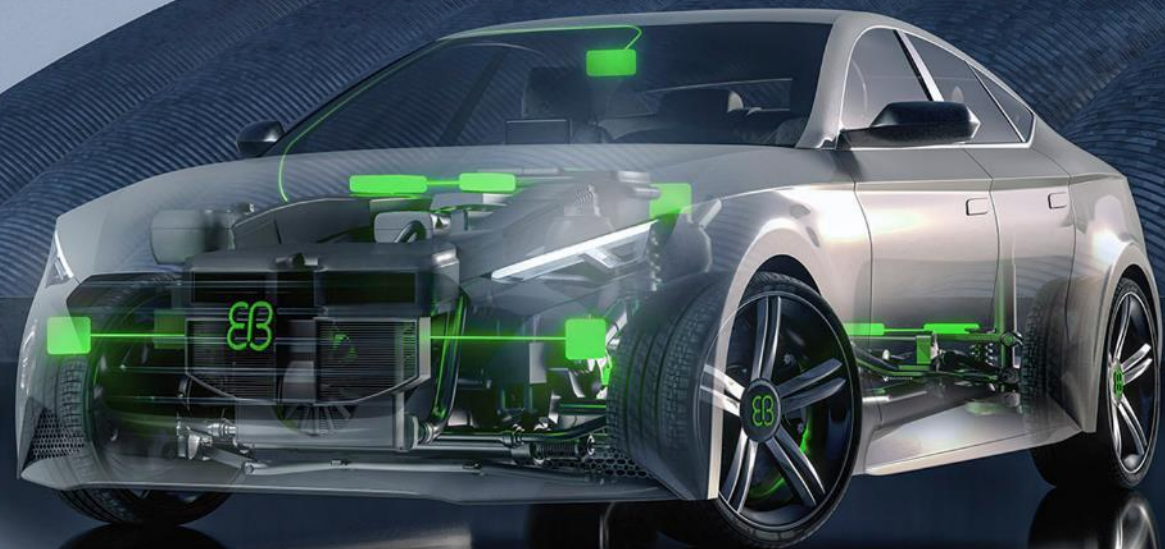


Elektrobit's Classic and Adaptive AUTOSAR products

Jerry Gao, Sales Manager, Elektrobit (EB)
30 May 2019, Shanghai



Elektrobit



In cooperation with
STMicroelectronics

Agenda

- I. Market overview and trends
- II. Classic and Adaptive AUTOSAR software from EB
- III. Detailed overview of EB tresos product line
- IV. Detailed overview of EB corbos product line



Market overview and trends

Trends



Automated driving



e-Mobility



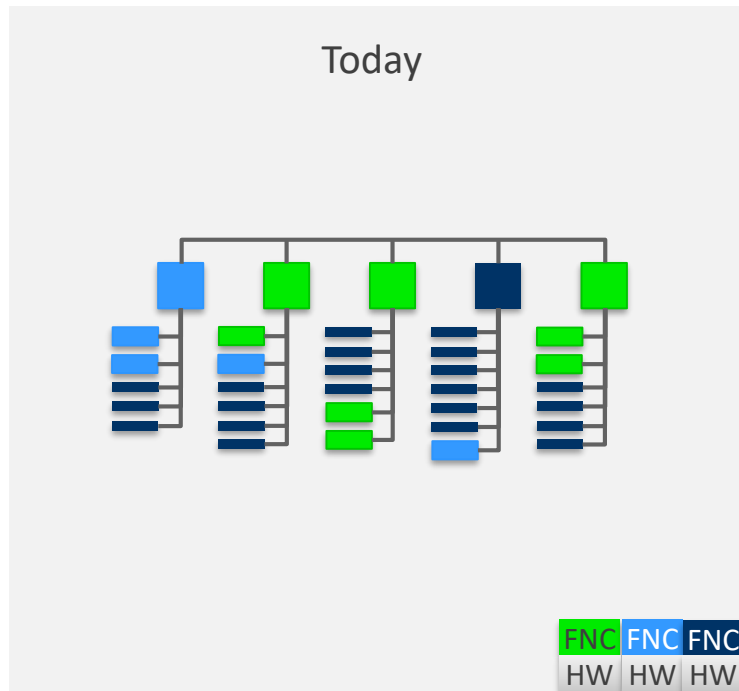
Mobility services

Industry needs

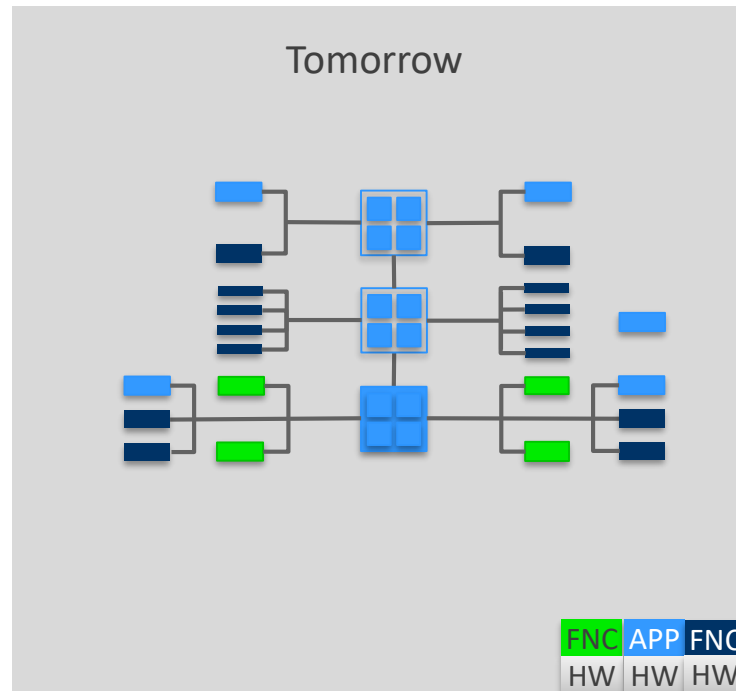
- Safety
- Security
- Quality products
- Sophisticated equipment
- Energy efficiency
- Convenient, up to date technology

Evolution of vehicle network architecture

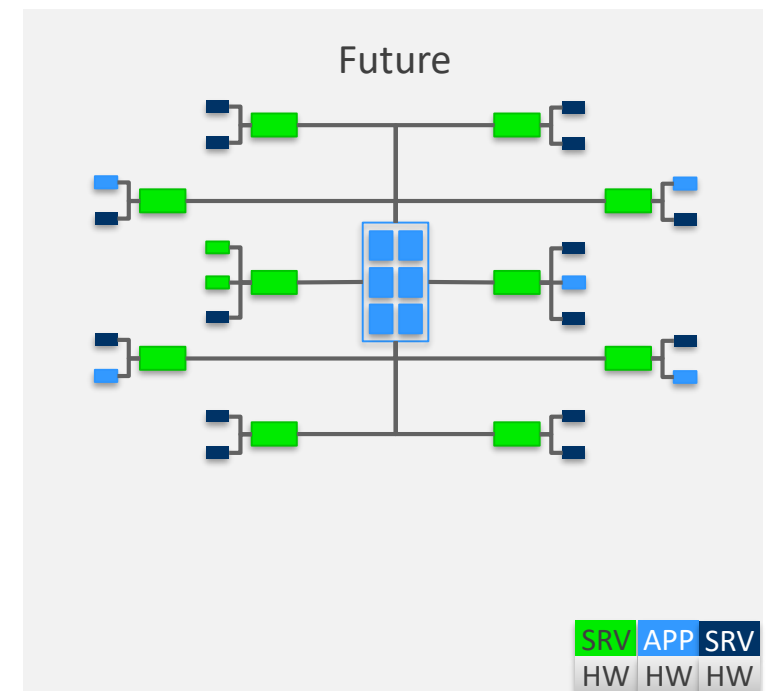
Domain architecture



Centralized architecture

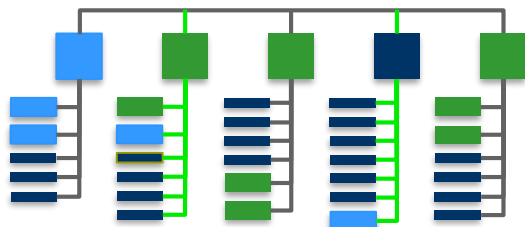


Future architecture

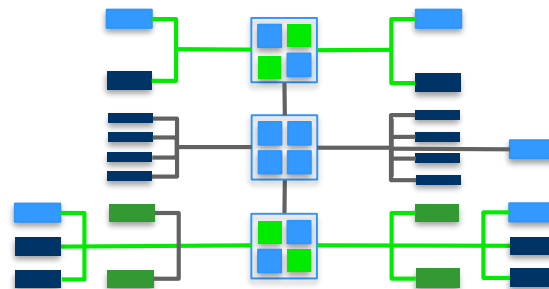


Classic and Adaptive AUTOSAR software from EB

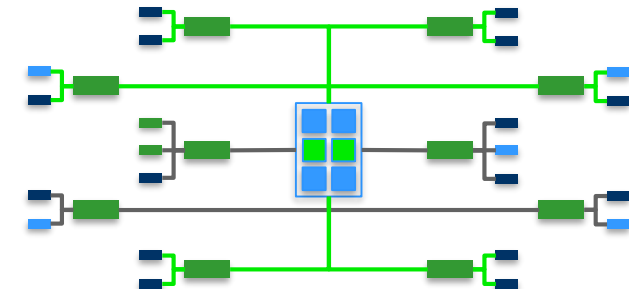
Evolution of vehicle network architectures



Domain architecture



Centralized architecture



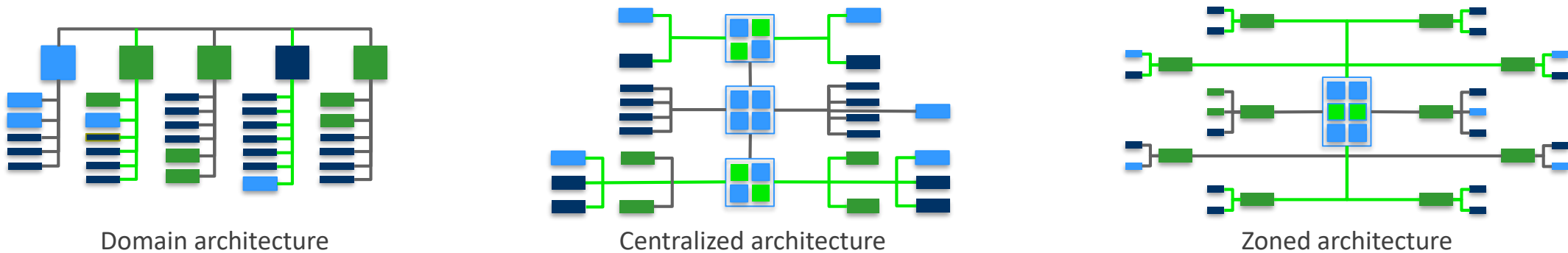
Zoned architecture

Classic AUTOSAR

Adaptive AUTOSAR

Classic and Adaptive AUTOSAR software from EB

Evolution of vehicle network architectures



Classic AUTOSAR

Adaptive AUTOSAR

EB tresos – Industry leading implementation of classic AUTOSAR basic software

Perfect solution for your next ECU project

Highlights

- Efficient and scalable AUTOSAR-compliant and OSEK/VDX-compliant products for ECUs
- Full AUTOSAR support with one basic software stack, and one tool environment
- Safe and ready for series production
- Single-/multi-core operating systems
- Tailor-made products, services and support

Benefits

- Highest safety levels
- Time and cost savings through reusable software functions
- Safe, and reliable mass production ready software



Cross-OEM products

EB tresos product line

- Efficient and scalable AUTOSAR-compliant and OSEK/VDX-compliant products for ECUs
- Basic software (BSW) and runtime environment (RTE)
- Single-/multi-core operating systems
- Functional safety and security solutions
- Network protocols, e.g. Ethernet



OEM-specific products

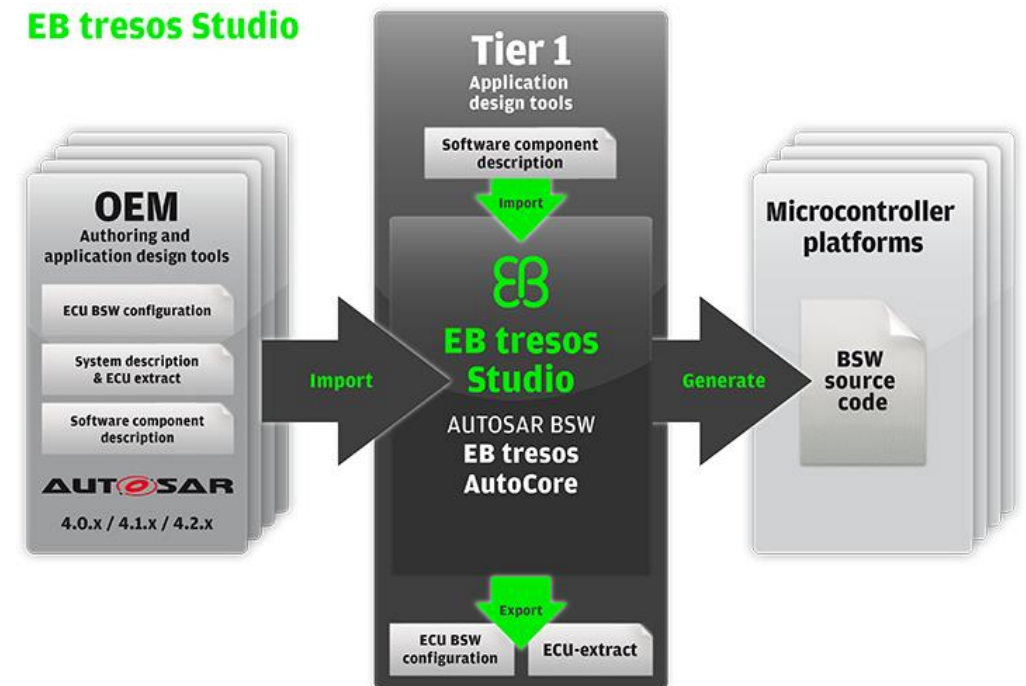
Solution excellence

- Implementing car manufacturers' software requirements that are not covered by AUTOSAR
- Exchanging AUTOSAR basic software modules with OEM specific modules, e.g.
 - Diagnostics
 - Security
 - Communication stack
- Products which extend our AUTOSAR BSW, e.g.
 - Software Components (SWCs)
 - Complex Device Drivers (CDDs)



Strong partner ecosystem

- EB tresos Studio is the industry-standard tool for microcontroller abstraction layer (MCAL) development by semiconductor suppliers.
- We are integrating the MCALs of the majority of hardware vendors, so that it can be configured with our tool.
- Partnership with STM:
 - Integrates EB tresos ACG8 on SPC58XC (Chorus 4M) and SPC584B (Chorus 2M)
 - STM is using EB tresos Studio for their AUTOSAR MCAL development



Automotive Ethernet – Increasing data transfer

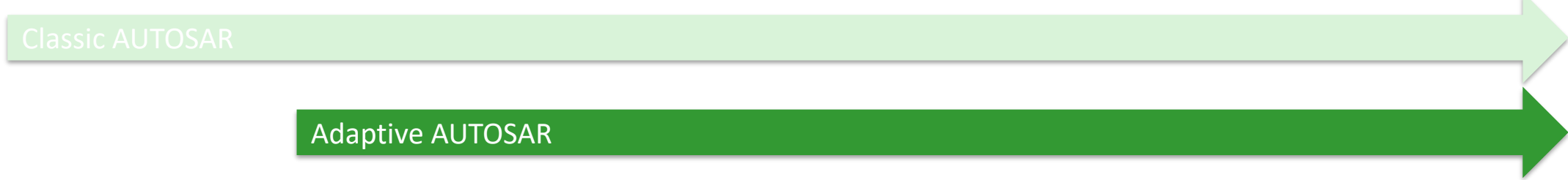
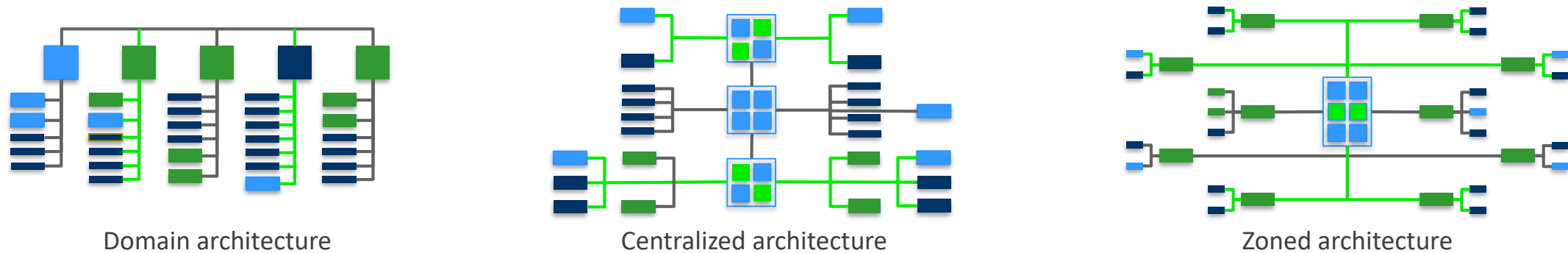
High bandwidth to support increasing data transfer

- Solutions for all use cases from CAN and LIN to FlexRay, CAN FD, and IP/Ethernet
- Providing a high quality level for implementation, ensured by extensive Ethernet conformance tests
- Transmission rates delivery is 100 times higher than CAN
- Embedded in the AUTOSAR-based EB tresos AutoCore product family



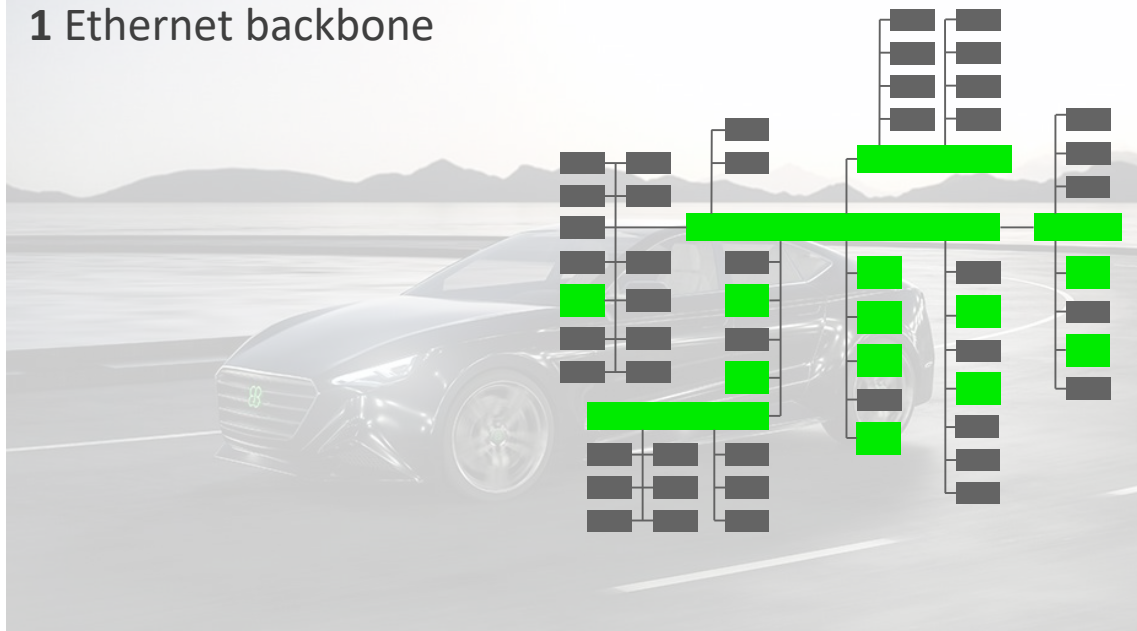
Classic and Adaptive AUTOSAR software from EB

Evolution of vehicle network architectures



Infrastructure architectures with HPC are clean and simple

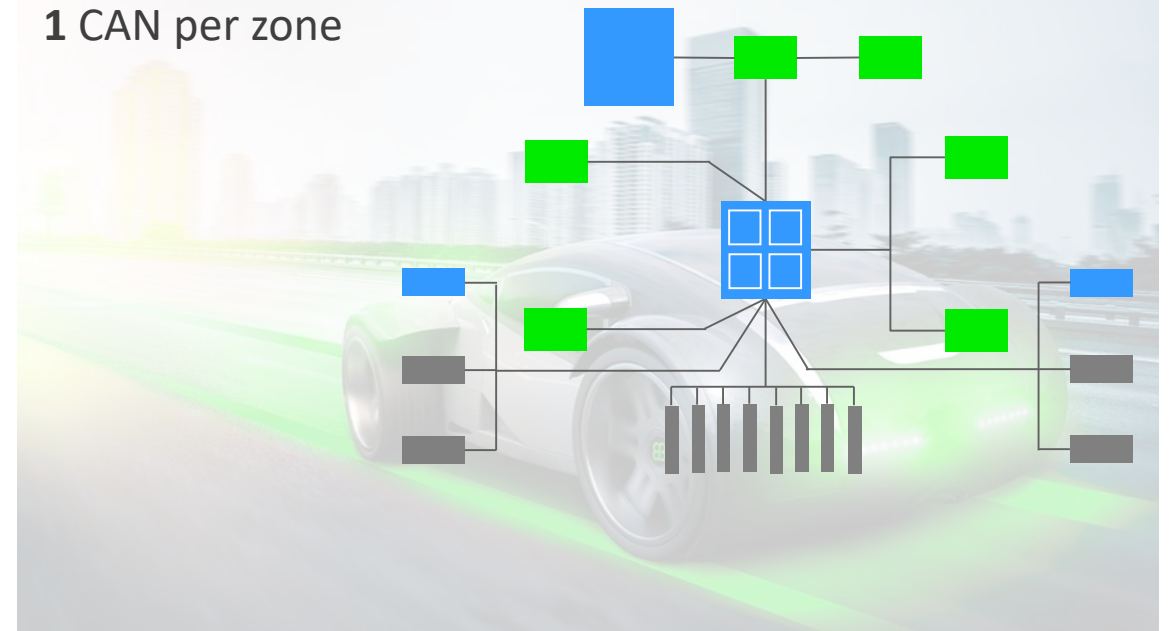
- 80-100** ECUs
- 6** CAN-Bus
- 2** FlexRay
- 1** Ethernet backbone



Classic ECU

Performance/Safety ECU

- 4** High-performance ECUs
- 60** Sensor/Actuator ECUs
- 1** Ethernet backbone
- 1** CAN per zone



Sensor/Actuator

High-performance controller

EB corbos – Where safety meets performance

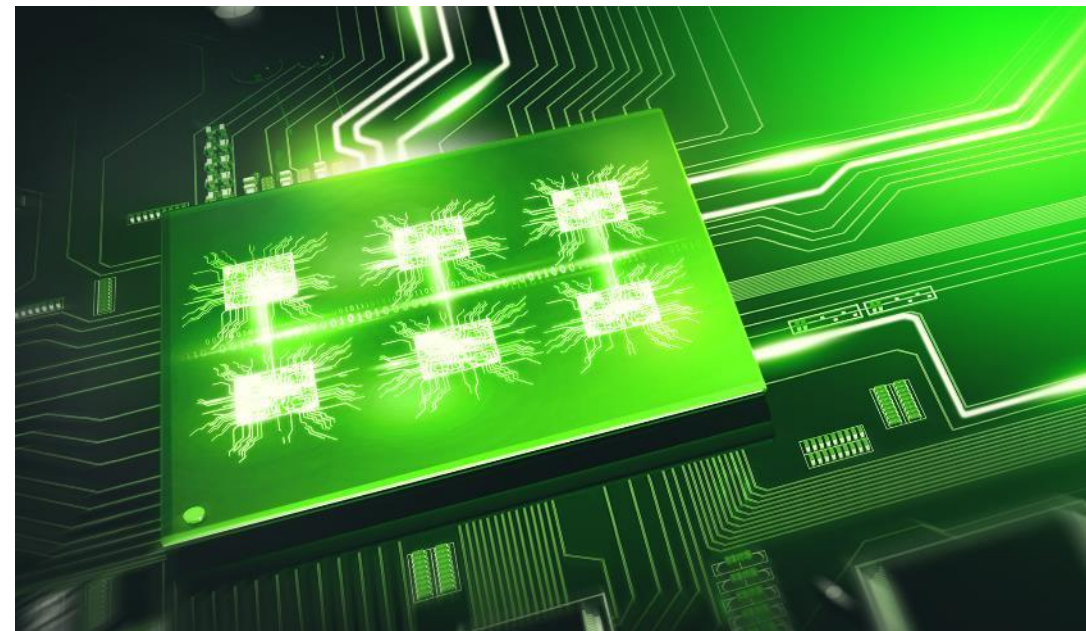
Bringing Adaptive AUTOSAR on the road

Highlights

- Provides run-time environment, software update capability, and embedded security
- Is based on the portable operating system interface (POSIX)
- Has several operating systems running on one processor
- Provides hardware virtualization
- Provides separation between virtual machines on different CPU cores
- Has in-kernel safety-monitoring for critical parts

Benefits

- Guarantees highest safety levels for automated driving
- Reduces system complexity
- Saves time and cost through re-usable software functions
- Adds functions easily, fast, and securely over the air
- Integrates connected and automated driving applications easily through a standardized software framework
- Saves physical space by integrating multiple systems on one device
- Optimizes resource utilization



EB corbos

A product line bringing Adaptive AUTOSAR on the road

EB corbos AdaptiveCore

Adaptive platform for safe and secure applications

EB corbos Hypervisor

Micro-kernel based hypervisor to run multiple (different) operating systems on one single CPU

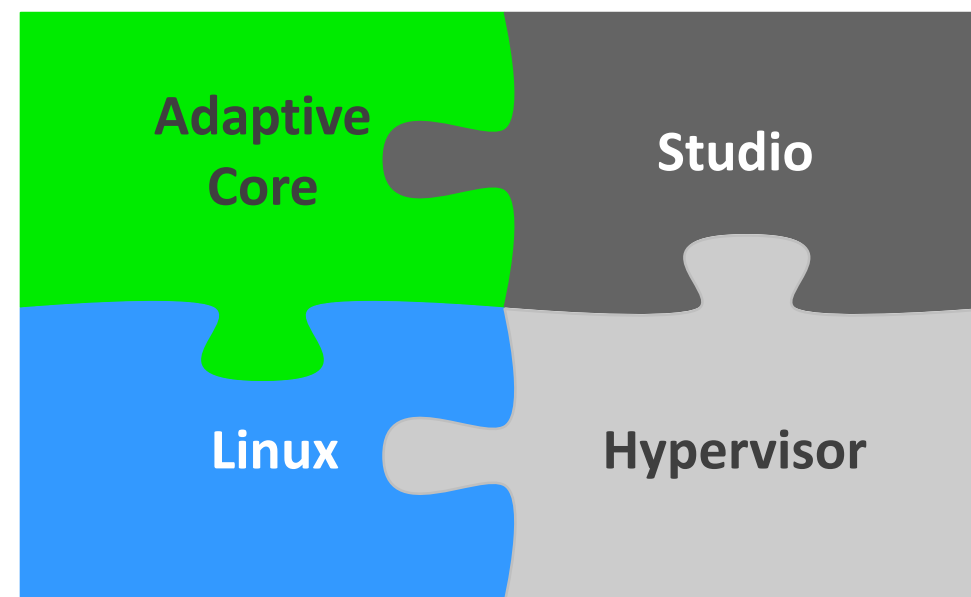
EB corbos Linux

Container based Linux distribution

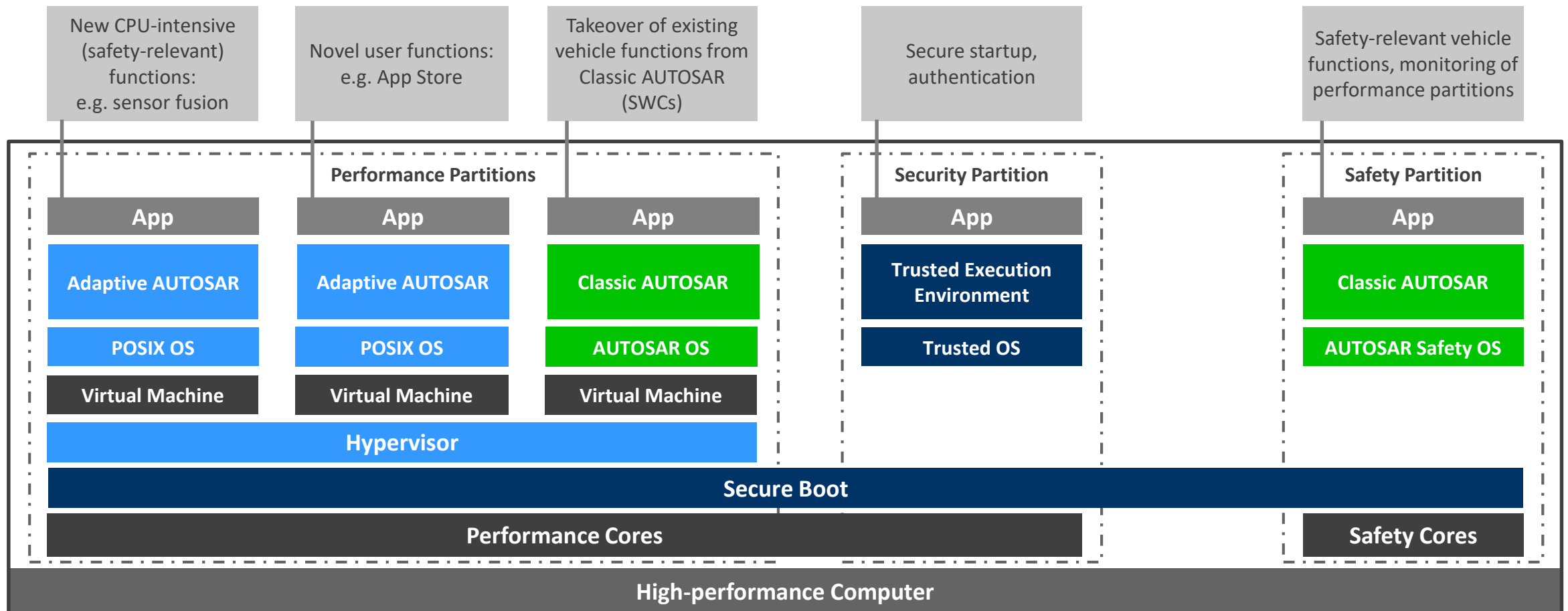
EB corbos Studio

Integrated development environment for EB corbos products

EB corbos



EB corbos – The architecture behind the product



Software infrastructure for high performance controller

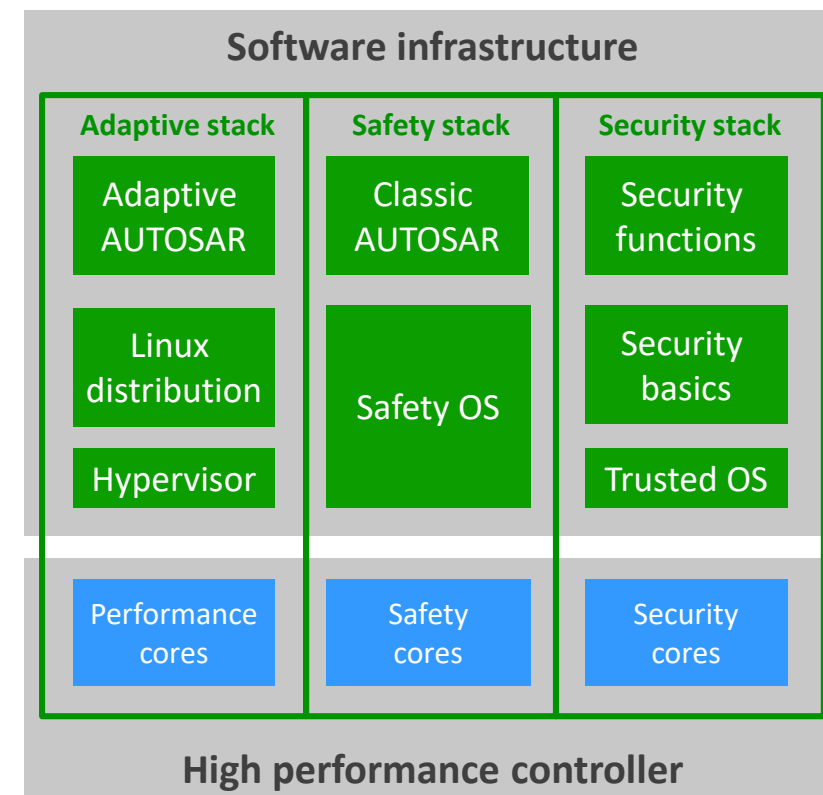
Mastering the complexity of high performance controllers with EB corbos

Highlights

- Applicable for all domains: infotainment, highly automated driving, etc.
- Modular architecture, flexible configuration of building blocks
- Possibility to add new functions through updates
- Hardware agnostic (ARM, Intel, NVIDIA, etc.)
- First company to launch complete Adaptive AUTOSAR based software stack (EB corbos)

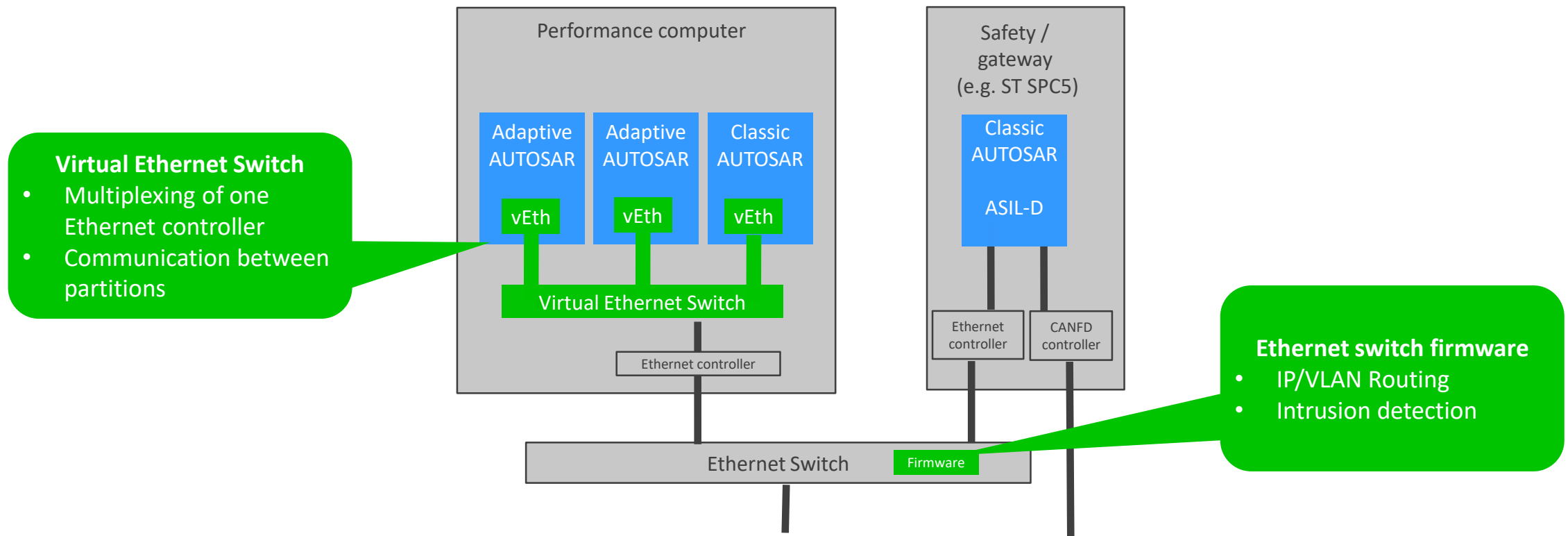
Benefits

- One-stop-shop for safe and secure high performance computing
- Pre-integrated software modules save time and costs
- Prepared for operations of software infrastructure for 10+ years



EB-specific extensions for high-performance computer

High-performance computer (HPC)



Get in touch!



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