



Continental

Future Vehicle System Architecture ASAM General Assembly | Stuttgart March 08, 2017 Olaf Locks, Corporate System and Technology, Gerd Winkler, Division Powertrain

www.continental-corporation.com

Corporate Systems & Technology

Continental Corporation Technology within Continental

Chassis & Safety	Powertrain	Interior	Tires	ContiTech
Vehicle Dynamics	Engine Systems	Instrumentation &	PLT, Original Equipment	Air Spring Systems
Hydraulic Brake Systems	Transmission	Driver HMI	PLT, Repl. Business,	Benecke-Kaliko Group
Passive Safety & Sensorics	Hybrid Electric Vehicle	Infotainment & Connectivity	EMEA	Compounding Technology
Advanced Driver Assistance Systems (ADAS)	Sensors & Actuators Fuel & Exhaust Management	Intelligent Transportation Systems	PLT, Repl. Business,	Conveyor Belt Group
			PLT, Repl. Business, Asia Pacific	Elastomer Coatings
		Commercial Vehicles & Aftermarket		Fluid Technology
			Commercial Vehicle Tires	Power Transmission Group
			Two Wheel Tires	Vibration Control
Systems & Technology	Technology & Innovation	Systems & Technology	Research & Development	ContiTech Engineering
Corporate Systems & Technology				
Cross Divisional Systems & Technology				



Vehicle System Architecture - ASAM General Assembly 2017 Public

Consideration of Megatrends & Opportunities Future Architectures are Enabler for Both

MEGATRENDS

OPPORTUNITIES





Vehicle System Architecture - ASAM General Assembly 2017 Public

Vehicle System Architecture Architecture Vision





Vehicle System Architecture - ASAM General Assembly 2017 Public

Vehicle System Architecture Enabling and Challenging



Vehicle System Architecture System orientation and its impacts

Key Drivers and Challenges



Impact on:

- customers and suppliers relation
- organizations
- processes
- business
 models
- and more

- > Requires a change in
- > Combined in a system approach
- System oriented architecture enables Cost efficient solutions in time

Orientation

With the know-how of the organization Cost efficient solutions in time



Vehicle System Architecture

Next step after domain architecture

- > Redundant central computing devices
- Decoupling and consolidating functions
- Abstracting legacy components and network segments
- > Service-oriented architecture replacing CAN matrix
- Central gateways for external communication
- Cloud and online-service orientation
- Increased system interdependency
- Reduction in variants and complexity







Vehicle System Architecture - ASAM General Assembly 2017 Public

🛈 ntinental 🏂

Vehicle System Architecture Method – From Use Case to Deployment



Ontinental 🅉

- Use case description
- Feature definition: System context diagram
- Interfaces between (Sub-) systems
- Functional architecture of a system
- Mapping of functional blocks to SW (variant dependant technical realization)
- Deployment of functional blocks to HW (variant dependant technical realization)
- Description of application SW components – entry point of AUTOSAR methodology
- Deployment SW component to system component processing unit

Vehicle System Architecture - ASAM General Assembly 2017 Public

5

6

8

Vehicle System Architecture Use case analysis - Example



Impact analysis of architectural concepts



Vehicle System Architecture - ASAM General Assembly 2017 Public

Vehicle System Architecture

🗿 ntinental 🏂

Our vision of a cooperative architecture development



Vehicle System Architecture - ASAM General Assembly 2017 Public

Vehicle System Architecture

Our vision of a cooperative architecture development



Joined architecture development enabled by standardized meta data formats

🔞 ntinental 🏂

Vehicle System Architecture - ASAM General Assembly 2017 Public

Vehicle System Architecture In Vehicle Network – Where Are We



Drivers / Demand:

- > Technology Progress
- Evolution
- Revolutions

Local Constraints:

- > Reuse
- Legacy

Key Enabler

- Systematic Architecture Development
- > Convergence of Domains

\rightarrow Standardization

🙆 ntinental 🏂

Vehicle System Architecture - ASAM General Assembly 2017 Public

Continental - Vehicle System Architecture Let us drive technology leadership together



A strong team with Customers and Suppliers



Vehicle System Architecture - ASAM General Assembly 2017 Public