

Central Platform ECU for Advanced Driver Assistance Systems

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Ensuring Reliable Networks **TTTech**



Piloted Driving

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Reliability

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Robustness

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A photograph of an offshore wind farm at sunset. The sky is a deep blue, and the sun is low on the horizon, creating a bright reflection on the water. The wind turbines are silhouetted against the sky and water. The water is dark blue with a shimmering reflection of the sun.

High-Availability

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A detailed view of the Orion spacecraft in space, showing the service module and the crew module. The spacecraft is white with various instruments and antennas. The Earth's atmosphere is visible in the background.

High-Performance

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Safety



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Fail-Operational

Electronic Robustness for a More Electric and Connected World



Autonomous & Near Autonomous Operations

\$1.9 Trillion

Economic impact of near autonomous cars by 2025



Real-Time Internet of Things



25+ Billion

Embedded and intelligent systems by 2020



Every 2nd

Embedded device will be safety relevant by 2020



Safety & Reliability

Autonomous Operations revolutionise the industry

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Piloted driving is one of the top three areas of innovation in the automotive industry

1. Electrification



2. Connectivity



3. Piloted driving and parking



Source: Audi

Audi Vorsprung durch Technik 

From Assistance to Autonomous Operation



The market introduction of driver assistance systems will follow an evolutionary approach for both assisted and piloted functionalities



Parking systems Parking assist TopView	Driving systems Adaptive Cruise Control Active lane keeping	Active safety PreCrash functions
Information and warning Traffic sign recognition NightVision Lane change assist	Light functions High beam assist	Matrix Beam

Future assistance functions



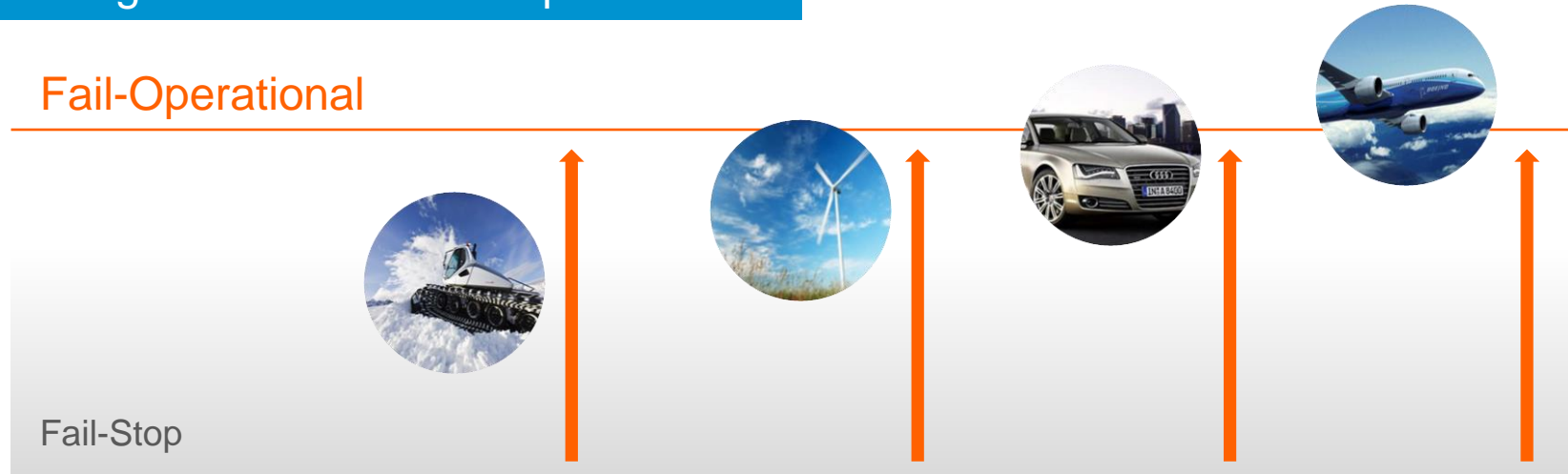
Audi Vorsprung durch Technik

Source: Audi

Advanced Driver Assistance Systems require Safety

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Strong trend towards fail-operational



Autonomous Operations demand for a safe platform

- High-Performance Processing
- Safety up to ASIL D according to ISO26262
- Scalability platform – from entry level ADAS to automated driving
- Integration of application software from several sources

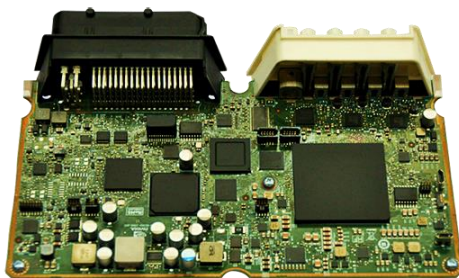
zFAS – High-Performance ECU



Audi and TTTech presented a prototype of the zFAS platform ECU for piloted driving at the CES in Las Vegas



Audi and TTTech Showcase Key-Enabling Technologies for the Piloted Car

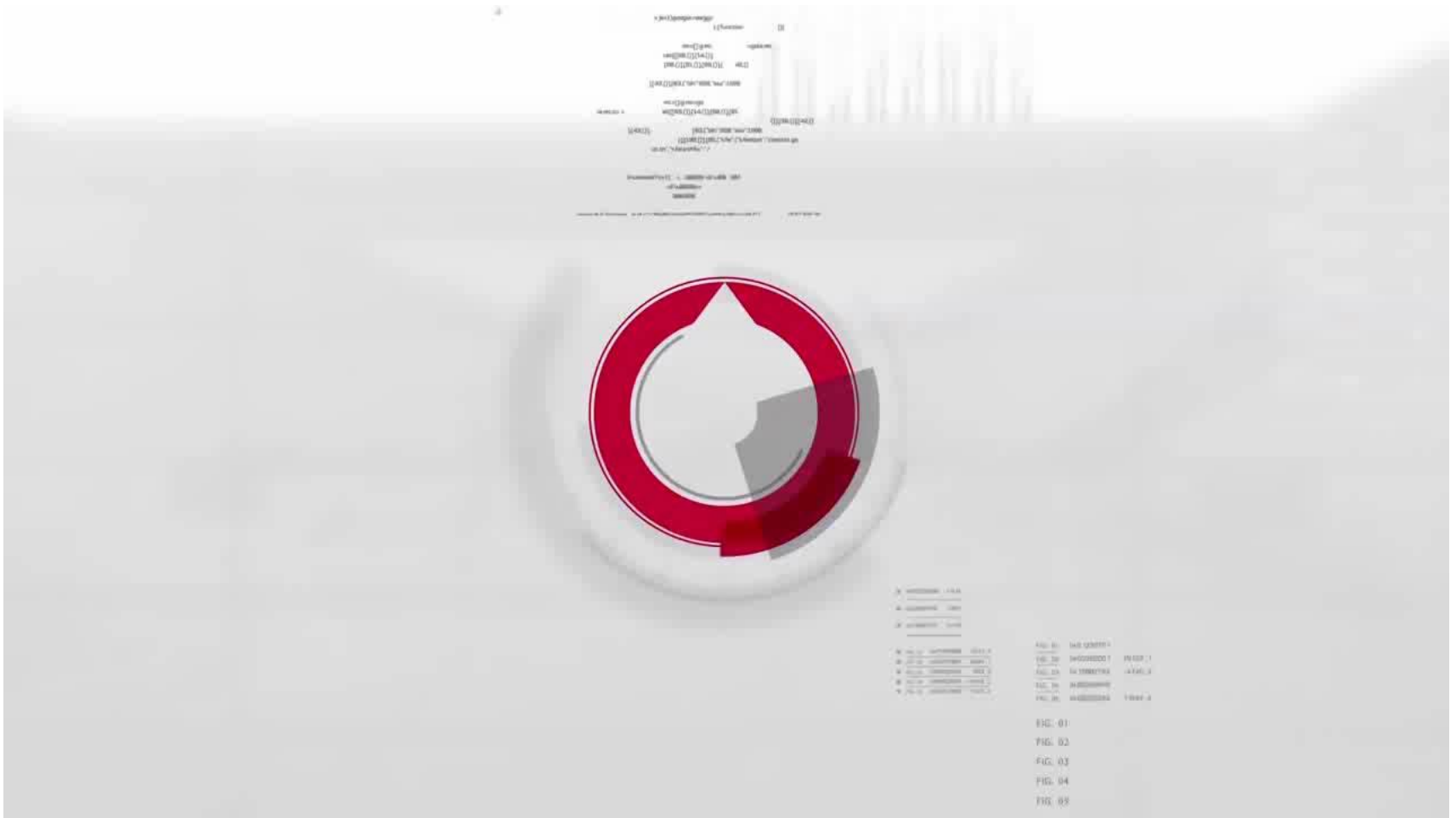


“ Our goal is leadership in piloted parking and piloted driving. For this purpose TTTech and Audi are developing a highly advanced high-performance central electronic control unit. ”

Ricky Hudi, Head of Electronics, AUDI AG

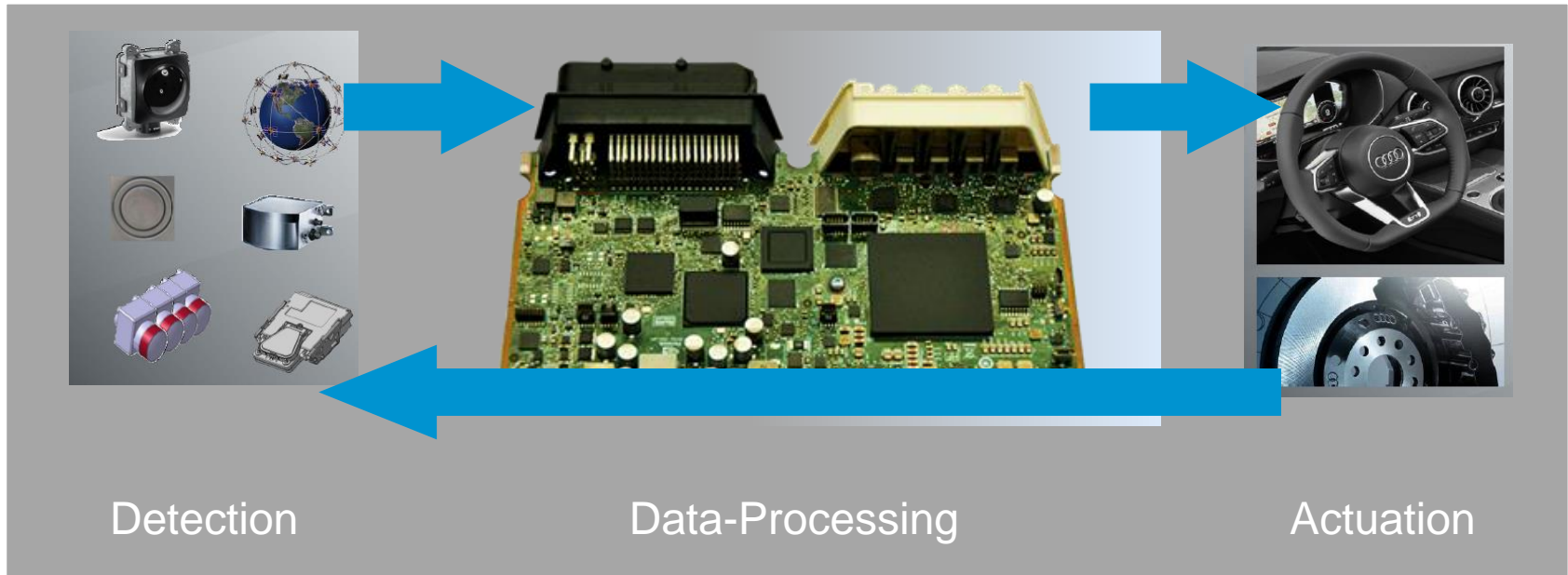
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Piloted Driving Experience



High Performance Computing

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- A large number of sensors and redundant sensor technologies ensure the surroundings are reliably identified
- The central ADAS-ECU processes an enormous amount of input data and several different application software modules and generates input for safe actuation of steering and braking systems



Central Platform Electronic Control Unit for Advanced Driver Assistance

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