



ZF premieres Vehicle Motion Control high-performance computing platform

- **ZF introduces its next high-performance central computer – the Vehicle Motion Domain Controller**
- **Coordinates chassis and vehicle functions from a single unit and integrates vehicle body control functions without the need of additional ECUs**
- **New addition to ZF’s family of supercomputers joining the ProAI**

Las Vegas, NV. At CES 2022, ZF introduces its next high-performance computing platform – the Vehicle Motion Domain (VMD) Controller. The VMD Controller is a central computer adaptable for all types of chassis platforms, vehicle motion and body functions, next generation software defined cars and future domain and zone E/E architectures.

A car's ride and handling characteristics are largely defined by its chassis. Wheel guidance, damping, suspension, steering and brakes help determine the character of a vehicle and the trend toward the electrification and software control of these systems continues to accelerate.

“Carefully coordinated driving dynamics are essential to enhanced safety and comfort for both piloted and autonomous driving. Customers today are choosing among a broader spectrum of technologies that require more sensing from integrated chassis sensors as well as other vehicle systems. Meeting the increased requirements of these increasingly sophisticated systems that include redundant circuits need higher powered computing solutions,” says André Engelke, head of the Vehicle Motion Control system House.



“That’s why we have developed the VMD controller, which we believe is currently the most flexible, scalable and powerful chassis domain high performance computer available,” Engelke emphasized.

The high-performance controller is designed to integrate vehicle functions across domains including body and power management and supports standalone functionality while reducing complexity by using a single controller for intelligent vehicle motion control. The VMD Controller serves the software defined vehicle trend with real time functions and applications with a high-performance threshold of 55,000 DMIPS (draystone million instructions per second).

ZF also places great emphasis on open systems that allow mobility customers to adjust components according to their needs. For a higher level of automation, the VMD high-performance controller can be connected to ZF ProAI, ZF’s high performance computing platform for ADAS/AD applications, in an integrated system approach.

“The design and architecture of the new version of the ZF VMD Controller is, of course, based on this open and modular approach: The board can operate ZF’s own application and safety software – or that of other developers or third-party suppliers,” Engelke said.

ZF high-performance supercomputers designed for a dynamic future

The intelligence of future vehicles are likely to be controlled by a few extremely powerful central computers such as the VMD and the ProAI controllers. They run the computationally intensive software functions that control critical vehicle domains and help enable functions for automated driving, electric mobility, vehicle motion control and integrated safety. High-performance computers and intelligent software functions are key enablers for the software-defined vehicles of the future and can help bring safe and smart mobility experiences to contemporary consumers.



With the latest generation of the ZF ProAI supercomputer, ZF presents the next level of the most flexible, scalable, and powerful automotive-grade supercomputer in the world. With a 66 percent increase in computing power, the new ZF ProAI consumes up to 70 percent less power. The core of new E/E vehicle architectures is formed by high-performance computers which can be used either as central, domain or zone controllers.

“Our ProAI is designed to cover a wide range of possible application fields for virtually all vehicle types and for all envisaged stages of automated or autonomous driving,” explains Torsten Gollewski, Executive Vice President Autonomous Mobility Systems at ZF. “And as we add new specialized controllers like the VMD we can help the industry meet the demands of new vehicle architectures and advanced functions that will enhance next generation mobility.”

Captions

Image 1: World premiere at CES: ZF presents its next high-performance computing platform - the Vehicle Motion Domain (VMD) Controller. It is designed to integrate vehicle functions in different domains and supports stand-alone functions in a single unit.

Image 2: Integration of various functions in a single box: The ZF VMD controller is a central computer suitable for all types of chassis platforms.

Image 3: Up to 100 different ECUs can be found in today's vehicles. Their integration into vehicle architecture's is complex and the software is tied to the respective ECU. ZF's VMD controller can combine all chassis functions in one device.

Image 4: ZF's VMD controller combines an open and modular platform with excellent performance for comprehensive vehicle motion control.



Image 5: *André Engelke is Head of the Vehicle Motion Control System House at ZF.*

Image 6: *Torsten Gollewski is Head of Autonomous Mobility Systems at ZF.*

Image 7: *Currently the most flexible and powerful supercomputer for the automotive industry: ZF has received several major orders for the latest generation of ZF ProAI. Series production is scheduled to start in 2024.*

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About ZF

ZF is a global technology company supplying systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. ZF allows vehicles to see, think and act. In the four technology domains of Vehicle Motion Control, Integrated Safety, Automated Driving, and Electric Mobility, ZF offers comprehensive product and software solutions for established vehicle manufacturers and newly emerging transport and mobility service providers. ZF electrifies a wide range of vehicle types. With its products, the company contributes to reducing emissions, protecting the climate and enhancing safe mobility.

In fiscal year 2020 ZF reported sales of €32.6 billion. The company employs more than 150,000 associates at approximately 270 locations in 42 countries.

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