Preview ATZelektronik 09.2024

COVER STORY | SIMULATION | TEST

Consistent use of virtual test equipment through to homologation verification
Highly complex and safety-critical vehicle functions, for example for automated driving, require considerable development and validation effort. This article presents systems and processes with which the complete development of new functions up to homologation in the vehicle can be carried out using virtual tools. The approach offers the potential for considerable time and cost benefits. dSpace

Sensor cluster simulation for sensor fusion tests in real time
The trend towards automated driving is leading to ever more extensive and complex sensor arrangements in vehicles. Testing driving functions exclusively in real road traffic is no longer practicable. This is due to the increasing effort required for data acquisition in the real world and the introduction of functions in several markets with different requirements. The article describes efficient solutions for the development of perception modules and the testing of driver assistance systems and automated driving functions. IPG Automotive

Simulation-based identification of limit values for chassis development
Today, information on safety limits is mainly obtained through limit tests and investigations at vehicle level on proving grounds. An approach is presented for a closed tool chain that includes simulations to define safety targets in order to shorten this process. This leads to an optimised understanding and accelerates the process of deriving further requirements. IAV

IN FOCUS

Hybridisation of the battery using the supercapacitor function
Hybrid batteries combine the energy storage of a capacitor and a battery in one system or module. Concepts in which both storage principles are integrated into one component are particularly compact. Skeleton will go into series production with a first product generation of the so-called Superbattery in 2024. However, the potential applications in the automotive sector are limited.

HANSEN REPORT

As a source for technology and business trends in the global automotive electronics industry, Paul Hansen highlights current industry topics within the framework of ATZelectronics resp. ATZelectronics worldwide, Paul Hansen highlights current industry topics.

DEVELOPMENT | EMV

Development and simulation of EMC for fuel cell vehicles
Electromagnetic compatibility also plays an important role in fuel cells. The article highlights the challenges, methods and technologies that played a decisive role during the development process of the Fuel Cell Technology Demonstrator Truck. AVL

EMBEDDED COMPUTING

Computer for driving dynamics control of chassis functions
Cubix is a control platform for all chassis functions. The control software networks and coordinates the active and semi-active actuators of the chassis and drive with a control algorithm. The scalable system has a modular design and can therefore be customised to the requirements of any car manufacturer. ZF

ELECTROMECHANICS

Connectors enable data transfer in real time
Reliable and efficient communication between the sensors and the control system is crucial for the safety and performance of an autonomous vehicle. The board-to-board connectors ensure a stable connection and data transfer within the vehicle. eps

GUEST COMMENTARY

Murdoch Fitzgerald, Vice President Global Engineering & Design Services

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