

ECU

360° environmental sensing

ZF TRW has won two business awards with North American and European vehicle manufacturers for its second generation Safety Domain ECU (SDE 2). The central controller will launch in Europe and the US starting in 2018.



(Photo: ZF TRW)

THE SDE ACTS AS A CENTRAL INTEGRATION HUB – processing millions of bytes of data from environmental sensors of the vehicle's state and surroundings. By interfacing with the steering, braking, and drivetrain systems, a multitude of functions can be enabled while reducing the number of control units and simplifying the vehicle's electronic architecture.

Dr. Hans-Gerd Krekels, director of Active Safety Engineering and Automated Driving at ZF TRW commented: "Data processing is at the core of automated driving and as vehicles feature more automated functions, increasing amounts of information about the vehicle's surroundings need to be evaluated within fractions of a second. This requires a high performance control unit."

For its SDE 2, the company has increased functional safety by fulfilling the highest Automotive Safety Integrity Level – (ASIL D) requirements, which actively monitor braking and steering systems and actuate selected functions when necessary. Compared to the previous generation, the central control unit can also integrate more data from vehicle dynamics arbitration systems and sensors – including radar and camera – to help enable 360° environmental sensing.

The product has an open architecture to integrate software control algorithms from both suppliers and third parties including vehicle manufacturers, using Autosar 4.0 and beyond as a basis. This gives vehicle manufacturers the potential to work with multiple suppliers and utilize the same algorithm across a number of vehicle platforms to deliver a more consistent driving experience independent of the hardware. The SDE 2 has a multi-core microprocessor that in addition to interfacing with CAN or Flexray, can support Ethernet communication.

Krekels concluded: "Our SDE system holds major strategic importance as we embark on the journey toward automated driving. Over the last two years, demand has risen quickly in the premium segment but we expect that by 2020 the technology will also enter the mass volume vehicle market segment."

The first-generation SDE has been in series production with a European vehicle manufacturer since the end of 2013. In addition to the awards mentioned above, ZF TRW has also won a development contract with a European OEM to jointly develop a central control unit equipped to meet the requirements of 2020 and beyond.

About the company

ZF is a manufacturer of driveline and chassis technology as well as active and passive safety technology. The company, which acquired TRW Automotive on May 15, 2015, is now represented at about 230 locations in some 40 countries. The two companies, which were still independent in 2014, achieved a sales figure exceeding €30 billion with 134 000 employees.