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CES world premiere: Bosch unites infotainment and driver assistance functions on one chip

Bosch sees great market potential for vehicle computers

- World premiere at CES: Bosch demonstrates integrated functions from previously separate vehicle domains on a system on chip
- Dr. Markus Heyn, member of the board of management at Robert Bosch GmbH: “Central vehicle computers are the heart of software-defined cars.”
- Great potential: Bosch expects a market volume of 32 billion euros by 2030 for vehicle computers for infotainment and driver assistance alone
- Hardware-independent: central vehicle computers from Bosch can use chips from different manufacturers according to customer wishes

Stuttgart – The trend toward software-defined mobility goes hand in hand with a centralized vehicle and electric/electronic (E/E) architecture. While numerous electronic control units usually control different functions in the car today, in the future just a few central vehicle computers will unite multiple system functions from previously separate domains. To do this, new computers with a powerful processor, known as a system on chip (SoC), are necessary. As an innovation and technology leader, Bosch is leading the charge and, at CES® 2024 in Las Vegas, will be the world’s first automotive supplier to demonstrate the fusion of infotainment and driver assistance functions in a software-intensive central computer on a single SoC. “We want to reduce the complexity of the electronics systems in cars and make them as secure as possible at the same time. With this demonstration of our new vehicle computer platform at CES, we are taking an important step in exactly this direction. Our goal in the medium term is to bring even more automated driving functions to the road, including to the compact and mid-sized car segments,” says Dr. Markus Heyn, member of the board of management at Robert Bosch GmbH and chairman of Bosch Mobility.

Robert Bosch Kft.
1103 Budapest,
Gyömrői út 104.
www.bosch.hu/en

Press information:
Mónika Hack
PR Manager
Bosch Group in Hungary

E-mail: monika.hack3@hu.bosch.com
Phone: +36 70 510 5516
www.boschmediaservice.hu/en

At the core of the new vehicle computer from Bosch – called the cockpit & ADAS integration platform – is a single SoC, which processes a variety of functions from the two domains of infotainment and driver assistance simultaneously. This includes, for example, automated parking and lane detection, paired with smart, personalized navigation and voice assistance. Advantages for vehicle manufacturers: less space and cabling required, meaning lower costs. “Central vehicle computers are the heart of software-defined cars. In the future, they will control all the domains in modern vehicles and reduce the currently high number of individual control units,” says Heyn. Overall, Bosch is already doing good business with vehicle computers: in 2026, the company expects sales revenue of three billion euros just for vehicle computers for infotainment and driver assistance.

Modular system principle for maximum scalability

For its central vehicle computers, Bosch uses a modular system principle. Together with stand-alone software solutions such as video perception for surround sensing, vehicle manufacturers can modularly and scalably assemble their individual solutions in combination with hardware components. Software-intensive central computers play a decisive role here, since they enable manufacturers to implement driving and assistance features. Software integration is in strong demand here. Bosch brings integrative expertise and enables software components from various sources to be combined.

Bosch knowledge in all vehicle domains as a competitive advantage

Nearly every vehicle maker in the world is currently investing massively in software-defined vehicles. Bosch predicts that the market for automotive software will reach a volume of around 200 billion euros by 2030. In the field of vehicle computers for infotainment and driver assistance systems, the company expects a market volume of 32 billion euros in 2030. Bosch’s advantage is its extensive knowledge in all vehicle domains. This means that the company is an expert not just for software but also for hardware, and develops and manufactures key components of modern vehicles, such as for drives, brakes, steering, infotainment, and automated driving, under one roof.

Bosch’s approach allows maximum flexibility

Bosch pursues what is known as a multi-SoC approach. The company’s new vehicle computers are designed so that the required SoCs can come from different manufacturers. Therefore, depending on the customer’s wishes, Bosch can use exactly the SoC that is requested. “Our software runs on chips from different chip manufacturers. This allows software and hardware to be decoupled from each other,” says Heyn. Bosch is one of the few companies that can develop a centralized electronic architecture from start to finish and has mastered the interplay of automotive electronics, software, and the cloud. New features, such as for driver assistance, are simply and easily sent to the car through over-the-air updates. This provides drivers with a personalized digital driving experience –

even long after purchasing the car.

More information:

Mónika Hack

+36 70 510 5516

Basic information:

Mobility is the largest Bosch Group business sector. It generated sales of 52.6 billion euros in 2022, and thus contributed almost 60 percent of total sales. This makes the Bosch Group one of the leading automotive suppliers. The Mobility business sector pursues a vision of mobility that is safe, sustainable, and exciting. For its customers, the outcome is integrated mobility solutions. The business sector's main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 421,000 associates worldwide (as of December 31, 2022). The company generated sales of 88.2 billion euros in 2022. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 470 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 136 locations across the globe, Bosch employs some 85,500 associates in research and development, of which nearly 44,000 are software engineers.

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