



Bosch pools development activities for universal vehicle software in one unit

Aim is a leading position in vehicle operating systems

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- ▶ Dr. Stefan Hartung: “Software development is a longstanding core competence at Bosch. Every year, we put more than 200 million control units running our own software into vehicles worldwide.”
- ▶ Development of application-independent software for cars and the cloud to be pooled under the umbrella of ETAS GmbH.
- ▶ Solutions for software-defined vehicles are to be made available to manufacturers and other suppliers more quickly, securely, and efficiently in the future.

Stuttgart, Germany – Bosch is taking further strategic steps toward a leading position in the software-dominated future of mobility. In the future, under the umbrella of its subsidiary ETAS GmbH, the company will develop and sell basic vehicle software, middleware, cloud services, and development tools for universal application. A total of 2,300 experts from different development areas of Bosch and ETAS are to be brought together there as of mid-2022. “Software development is a longstanding core competence at Bosch. Every year, we put more than 200 million control units running our own software into vehicles worldwide. With this new set-up, we want to become the leading provider of application-independent vehicle software,” says Dr. Stefan Hartung, chairman of the Mobility Solutions business sector of Robert Bosch GmbH.

A year ago, Bosch established its Cross-Domain Computing Solutions division, a powerful unit for application-specific vehicle software with specific hardware for numerous vehicle areas such as driver assistance and infotainment. Now the company is bringing together its portfolio of application-independent software for vehicles and the cloud at ETAS. The resulting central platform will allow it to develop automotive software more quickly and efficiently together with its partners. “Our universal software foundation is essential for the digitalization of modern, software-defined vehicles,” Stefan Hartung says. Bosch will combine its

universal software platform with expertise in the development of innovative software functions. “Thereby we are creating a USP and a significant competitive advantage for Bosch,” says Dr. Markus Heyn, member of the Bosch board of management of Bosch. In the future, ETAS will offer this universal platform and the accompanying development environment to both automotive manufacturers and other suppliers.

Software gaining in prominence for automakers

Up to now, the rule was that vehicles were delivered as a finished product. In the future, though, a car’s software will be continuously improved and expanded – throughout its service life. This will give drivers a customized digital driving experience, and also form the basis for new business models for manufacturers. This development is just beginning. Experts predict that the market for automotive software will be worth billions in the next few years. Bosch expects double-digit annual growth until 2030. The organizational realignment Bosch is now planning for its application-independent automotive software units under the roof of its subsidiary ETAS bears witness to this transformation. “In the future development of vehicle operating systems, we want to position ourselves even better in the global market,” says Heyn. “With this move, we are providing existing and new customers with an integrated, horizontal, cross-domain platform that will allow them to achieve the aim of software-defined vehicles,” adds Christoph Hartung, the chairman of the board of management of ETAS GmbH. The partnership between Bosch and Microsoft that began in February will also be continued in the new organization. This partnership aims to develop a comprehensive software platform for seamless connectivity between cars and the cloud, making it quicker and easier to develop vehicle software throughout the car’s lifetime, as well as to download it to the control units and vehicle computers via the cloud.

Universal and open portfolio for basic software and middleware

Whether for electrically adjusting the seat, recharging the vehicle, deploying the airbag, or listening to the radio – software is already an integral part of almost every function in modern vehicles. It consists of different layers that build on each other. One layer comprises software modules that vehicle manufacturers use to create individual driving experiences – from the powertrain to infotainment and assistance systems. This is where the individual brands differ, sometimes enormously. Other layers, by contrast, such as the basic software for the control units and what is known as middleware, offer manufacturers almost no scope for USPs. These software components regulate the basic tasks performed by control units and vehicle computers – tasks that the driver doesn’t notice. For example, they manage processor performance and memory space, and they determine how control units communicate with each other or with the cloud to exchange

data. Once developed, this software can be used on almost any ECU – regardless of where it is installed in the car and regardless of the vehicle model. This setup is familiar from smartphones, where a wide variety of apps use a central operating system. “Our new set-up will allow us to satisfy new requirements – both of the market and our customers – even better. Together with our partners, we are enabling existing and new customers to take a completely new approach to automotive software development,” Christoph Hartung says. In the future, open source software and the associated ecosystems will also play an increasingly important role. Vehicle manufacturers and automotive suppliers will thus be able to place software at the center of development even more effectively in the future.

Application-independent software from a single source

ETAS was founded in 1994 as a wholly owned subsidiary of Robert Bosch GmbH and employs some 1,500 associates in 12 countries. A further 800 Bosch associates will join them in mid-2022. Even today, the two companies are closely and successfully working together. This collaboration will be further intensified in a joint unit. The employee representatives responsible are currently involved in working out the details of the future organization.

Press photograph: 0d867109, 9558b295, f704e9ff, f9295be1, cfa55926

Contact persons for press inquiries:

Robert Bosch GmbH

Annett Fischer,

Phone: +49 711 811-6286

Twitter: @Annett__Fischer

ETAS GmbH

Anja Krahel,

Phone: +49 711 3423 2240

E-mail: Anja.Krahel@etas.com

Bosch at CES 2022:

- **PRESS CONFERENCE: Tuesday, January 4, 2022**, from 8:00 to 8:45 a.m. local time (17:00–17:45 CET) with Dr. Tanja Rückert, Bosch CDO, and Mike Mansuetti, president of Bosch in North America, in Ballroom H, Mandalay Bay Hotel, Las Vegas **South Convention Center, Level 2**, as well as **livestreamed** on the [Bosch Media Service](#).
- **BOOTH: January 5–8, 2022**, in the Central Hall, booth #16103
- **ELECTRIC BIKE TEST TRACK: January 5–8, 2022**, at the eMobility Experience, LVCC, West Hall, West Plaza
- **FOLLOW** the Bosch CES 2022 highlights on Twitter: **#BoschCES**

- **PANELS WITH BOSCH EXPERTS:**

Friday, January 7, 2022, 10:00 a.m., Venetian Hotel (local time)

Building a Resilient Smart Home session with Dr. Carla Kriwet, CEO at BSH Hausgeräte GmbH

Mobility Solutions is the largest Bosch Group business sector. In 2020, its sales came to 42.1 billion euros, or 59 percent of total group sales. This makes the Bosch Group one of the leading automotive suppliers. The Mobility Solutions business sector pursues a vision of mobility that is safe, sustainable, and exciting, and combines the group's expertise in the domains of personalization, automation, electrification, and connectivity. 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 395,000 associates worldwide (as of December 31, 2020). The company generated sales of 71.5 billion euros in 2020. 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 deliver innovations 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 440 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 129 locations across the globe, Bosch employs some 73,000 associates in research and development, of which nearly 34,000 are software engineers.

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