BOSCH AND ETAS

Expanding and focusing software expertise

Mid of 2022, Bosch will develop and sell basic vehicle software, middleware, cloud services, and development tools under the umbrella of its Etas subsidiary.

Bosch is going to expand and to focus its software expertise in the Etas daughter company (Source: Bosch/Etas)

Bosch has a long history in software development. The enterprise invests a total of more than four billion euros every year in its software expertise; around three billion of which goes to the mobility business. To shape the software-defined future of mobility, Bosch will also be pooling development activities for application-independent software in one unit as of mid-2022. The Etas subsidiary will be the home of basic vehicle software, middleware, cloud services, and development tools for universal application. A total of 2300 experts from different development areas of Bosch and Etas will be brought together. This includes also experts developing CAN communication software. CAN XL is designed to be integrated seamlessly into TCP environments with cybersecurity functions, an expertise of Etas since some years.

"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," said Dr. Stefan Hartung, chairman of the Mobility Solutions business sector of Robert Bosch GmbH. About one 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, unique selling proposition, and a significant competitive advantage for Bosch," said Dr. Markus Heyn, board of management member at 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 Etas subsidiary, bears witness to this transformation. "In the future development of vehicle operating systems, we want to position ourselves even better in the global market," said 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," added Christoph Hartung, the chairman of the Etas board of management. The partnership between Bosch and Microsoft that began in February last year will be continued. 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. Competitors are already looking to standardize internationally basic software for automotive. Especially, Chinese software giants like to submit their software solutions for ISO standardization with the support of the Chinese standardization body.

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 (electronic control unit) – 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 stated. In the future, open-source software and the associated ecosystems will also play an increasingly important role, asserts Hartung. 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 and employs some 1500 associates in 12 countries. A further 800 Bosch associates will join them in mid-2022. Even today, the two companies are working closely and successfully together. This collaboration will be further intensified in the joint unit. The employee representatives responsible are currently involved in working out the details of the future organization.

Basic software for road vehicles including those for standardized communication systems do not offer manufacturers USP advantages, this is also valid for CAN-based protocol stacks (Source: Bosch/Etas)

Bosch digitalizes systematically its core business, which covers not just automotive, but also products used at home and at work or in the hospital – not to forget the pedelecs, which use embedded CAN networks (Source: Bosch/Etas)

Bosch is the market-leading Tier-1 supplier for the automotive industry. Nevertheless, the company has some other business. At CES 2022, the enterprise showed how it can improve the everyday lives of people from all walks of life with smart and connected solutions – on the road, at home and at work, in the hospital, or even in the orbit. At the same time, the company is tapping into new areas of business through software, services, and licenses. But, licensing IP cores for CAN XL is still a business of the mother company. "We are systematically digitalizing our core business to increase the benefits for our customers. Going forward, we aim turn the sale of every digital product into services-based revenue as well," said Tanja Rueckert, the Bosch Group's chief digital officer, at CES in Las Vegas. To achieve this goal, Bosch is focusing on the connection of IoT with AI – in other words, it is linking the internet of things (IoT) with artificial intelligence (AI).

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