



EB and AUTOSAR A unique success story

10th
ANNIVERSARY



Dr. Jochen Schoof,
Vice President ECU Software & Tools

AUTOSAR is celebrating its 10th anniversary. What have EB and AUTOSAR achieved so far?

Dr. Jochen Schoof: Elektrobit (EB) is one of the founding members of the AUTOSAR consortium and a premium partner. We have been involved in the development of basic software and tools for the automotive industry for over 15 years now. And we focus on the consistent partitioning of software into hardware-dependent and hardware-independent components. AUTOSAR was developed on the basis of this principle and it was presented to the public for the first time at the “Elektronik im Kraftfahrzeug” event in Baden Baden in 2003. You could say that AUTOSAR is in our blood and we’re convinced it’s the answer to the challenges that the automotive sector faces.

What were the milestones in AUTOSAR development at EB?

Dr. Jochen Schoof: As early as the end of 2005 we were ready to deliver the first complete software stack to several customers. In 2005/2006, we and our partners Hella, VW and NEC built the first AUTOSAR demonstrator. We replaced the ECU in a VW Passat with a newer version and thereby had our first proof of interoperability. Today, interoperability is a mandatory OEM requirement.

We are very proud of our pioneering role in AUTOSAR 4. In 2011, we launched a software stack that was closely tied to the schedules of OEMs that had opted for this version. Now our EB tresos AutoCore based on AUTOSAR 4 has passed the interoperability tests that were created for Version 3.1/3.2 and is therefore verified as downward compatible.

What are the challenges currently associated with AUTOSAR?

Dr. Jochen Schoof: As a member of the AUTOSAR working groups, we contribute intensively to the further development of the standard. Two trends are particularly evident which will vastly increase the complexity of ECU architectures. Firstly, the number of mostly safety-relevant functions is increasing – for example, functions that permit autonomous driving. On the other hand, the number of control devices in the vehicle needs to be reduced. This is only possible if several functions run on one ECU.



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Our functional safety and multicore solutions will ensure that we can cope with the challenges, and their series production has already begun. However, combining them into an AUTOSAR-conform Multicore Safety Solution, for example, is more than the sum of its parts and would necessitate complex networking of both areas. This doesn't just pose new challenges to the basic software, but also to the relating configuration tool. Our EB tresos Studio development tool configures the basic software and is also used by many semiconductor manufacturers such as Freescale or Texas Instruments for the development of their MCAL modules. They then supply the tool together with the modules to the users. Together with our partners we take a "one tool for one basic software stack"-approach so that we can offer our customers a flexible choice of MCAL modules. EB tresos Studio also provides open interfaces for application software development tools from manufacturers such as MathWorks, dSpace, IBM or Dassault.

What's next for AUTOSAR and what will you be focusing on in future?

Dr. Jochen Schoof: The current ECUs still contain OEM-specific extensions. In 2015, the first control devices with fully AUTOSAR-compliant basic software are scheduled for series production. Although they will also include OEM-specific components, these will be part of the AUTOSAR standard. In the mid-term, this means that the AUTOSAR specifications will become more comprehensive and permit several variants for individual tasks. However, this is just an interim step on the way to full implementation of AUTOSAR objectives. In the long term, it will only be possible to counteract the increasing pressure of costs with more consistent standardization. Supporting this development towards a standard solution, which certainly won't always be easy, is therefore one of the most important tasks facing the AUTOSAR partners.

