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Press Release

Fail-safe software for networked vehicles

- Functional safety fundamental to automotive embedded software
- ETAS offers comprehensive solutions to ensure safety even in complex, networked electronic systems
- Expert consulting delivers quality from the outset

Stuttgart, February 25, 2014 – Functional safety has always been one of the most important factors in the development of automotive embedded software. Functional safety can only be achieved through a combination of reliable tools, secure processes, and expert knowledge. With its years of experience in the field, ETAS can cater to all these areas with a comprehensive range of automotive embedded software solutions that brings together tools and expert consulting.

The functional safety of an embedded system depends on reliable basic software. Over a period of more than 20 years, the ETAS RTA real-time operating system has proved its worth in more than a billion ECUs—without a single error in operation. What's more, its speed and efficient use of resources has made it into one of the leading systems, capable of implementing AUTOSAR 4.x safety concepts at the operating system and basic software level. Clear and easy to use, ASCET model-based software development offers the possibility of early validation so that errors can be flagged very early on in development. The integrated code generator is also certified by TÜV in accordance with the ISO 26262 and IEC 61508 standard.

Not only should tests and validations be conducted at the earliest possible opportunity, it is also important that they reflect real-life conditions—an area in which the ETAS INTECRIO integration platform and the virtual ECU ETAS EVE excel. When testing is limited only to functionality, there is the danger of overlooking a vital aspect: how the system behaves when things go wrong. For instance, what happens if the start-up process is disrupted? What if there is a loose contact during braking?

Here, too, faults must be rooted out at the earliest opportunity. This is where ETAS EHOOKS comes in, an extremely helpful tool that lets you insert bypass hooks into software that has already been compiled. With EHOOKS you can run white-box tests in which you introduce specific errors to see how the system reacts, or you can look deep into the functioning of the software. This gives testing an enormous breadth of scope, which ultimately translates into more safety.

Safety must be considered from every angle

For some time now, ETAS has been offering services that go beyond individual tools and tool support. The ongoing expansion of ETAS expert consulting activities enables users to make better use of ETAS and third-party tools, efficiently assuring the functional safety of software across the product's entire lifecycle—even in increasingly complex systems. When it comes to safety, you can't just look at a part of the picture—the safety chain is only as strong as its weakest link.

Caption: Components of functional safety

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ETAS provides innovative solutions for the development of embedded systems for the automotive industry and other sectors of the embedded industry.

As a systems provider, ETAS supplies a multifaceted portfolio that covers the range from integrated tools and tool solutions to engineering services, consulting, training, and support. Security solutions in the area of embedded systems are offered by the ETAS subsidiary ESCRYPT.

Established in 1994, ETAS GmbH is a 100-percent subsidiary of the Bosch Group, with international subsidiaries and sales offices in 13 countries in Europe, North and South America, and Asia.

For more information, please visit www.etas.com