

# “Open Source” AUTOSAR

## ETAS RTA Solutions and ISOLAR product family deliver the promise of AUTOSAR

The AUTOSAR development partnership started more than ten years ago with the promise to manage the increasing electrical/electronic complexity in different domains. The objective was to lower the cost of standardized basic software, support safety, maintainability, and exchangeability while enabling more powerful tool chains to be constructed through standardized interfaces.

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**RTA Basic Software** from ETAS provides a comprehensive AUTOSAR platform for ECU software – built from a class-leading, in-house developed operating system and runtime environment combined with professionally supported, community open source COMASSO modules\*. The ISOLAR product family provides powerful tools to configure AUTOSAR software architectures and to implement and test AUTOSAR software, respectively ECUs.

### ETAS RTA Basic Software and RTA Solutions

ETAS has 20 years of experience in developing and deploying series production platform software. The engineering team has a deep understanding of the necessary quality, reliability, safety, and efficiency demands to provide the necessary foundation for successful embedded application development. As a premium member of the AUTOSAR development partnership, ETAS supports the introduction and exploitation of the AUTOSAR standard in software development processes with the platform software necessary to ensure success. However, the ETAS approach to basic software goes beyond just compliance and contribution to

open standards. As a founding partner in the COMASSO association, ETAS takes a uniquely open approach to deliver basic software. COMASSO is an association committed to the success of AUTOSAR Basic Software through open, shared implementations, available with significant cost advantages compared with competing commercial products. COMASSO was born out of the observation that the existence of various AUTOSAR Basic Software implementations without competitively relevant differentiation was causing high integration effort in case of software exchange and reuse. The initiative aims to reduce this high integration effort by supporting a common implementation of the AUTOSAR standard. ETAS does both: Contribute to COMASSO and provide customers with professional support and engineering services to ensure project success with RTA Basic Software powered by COMASSO. This includes providing the necessary documentation to show the COMASSO modules can be exploited in the most demanding of applications, including safety-critical applications requiring ASIL-D ISO 26262 compliance.

### One of the smallest and fastest AUTOSAR operating systems available

In addition to the RTA BSW modules, powered by COMASSO, ETAS also offers two crucial AUTOSAR modules on a commercial basis: RTA-OS and RTA-RTE. RTA-OS is one of the smallest and fastest AUTOSAR operating systems available. The operating system led the way in supporting multi-core processors, is MISRA-C compliant and certified by TÜV SÜD to the ISO 26262 standard for automotive safety-critical applications. RTA-OS supports a wide range of microcontrollers and is continuously being ported to new microcontrollers. RTA-RTE, an AUTOSAR Runtime Environment, is the key component in delivering the vision of the AUTOSAR standard. It provides support for both – the contract phase and generation phase. The generation phase is highly optimized and can be tuned to minimize either memory usage or CPU usage depending on the needs of your application. RTA-RTE is certified by TÜV SÜD to the ISO 26262 standard for automotive safety-critical applications and the generated RTE code is MISRA-C compliant.

**AUTOSAR** (AUTomotive Open System ARchitecture) is a partnership between automotive manufacturers, suppliers, as well as vendors of tools, semiconductors, and basic software. Since 2003 AUTOSAR has been working on the development of an open, standardized software architecture for automotive electronic control units (ECUs). The AUTOSAR standard describes the software architecture, application interfaces, and a methodology. The AUTOSAR-layered software architecture enables the development of independent software components. These can be used in vehicles of different manufacturers and in electronic components of different suppliers that can span multiple product generations. The current AUTOSAR release 4.1 Revision 1 provides enhanced features for new technologies such as multi-core processors, Ethernet/TCP/IP communication mechanisms, and others.

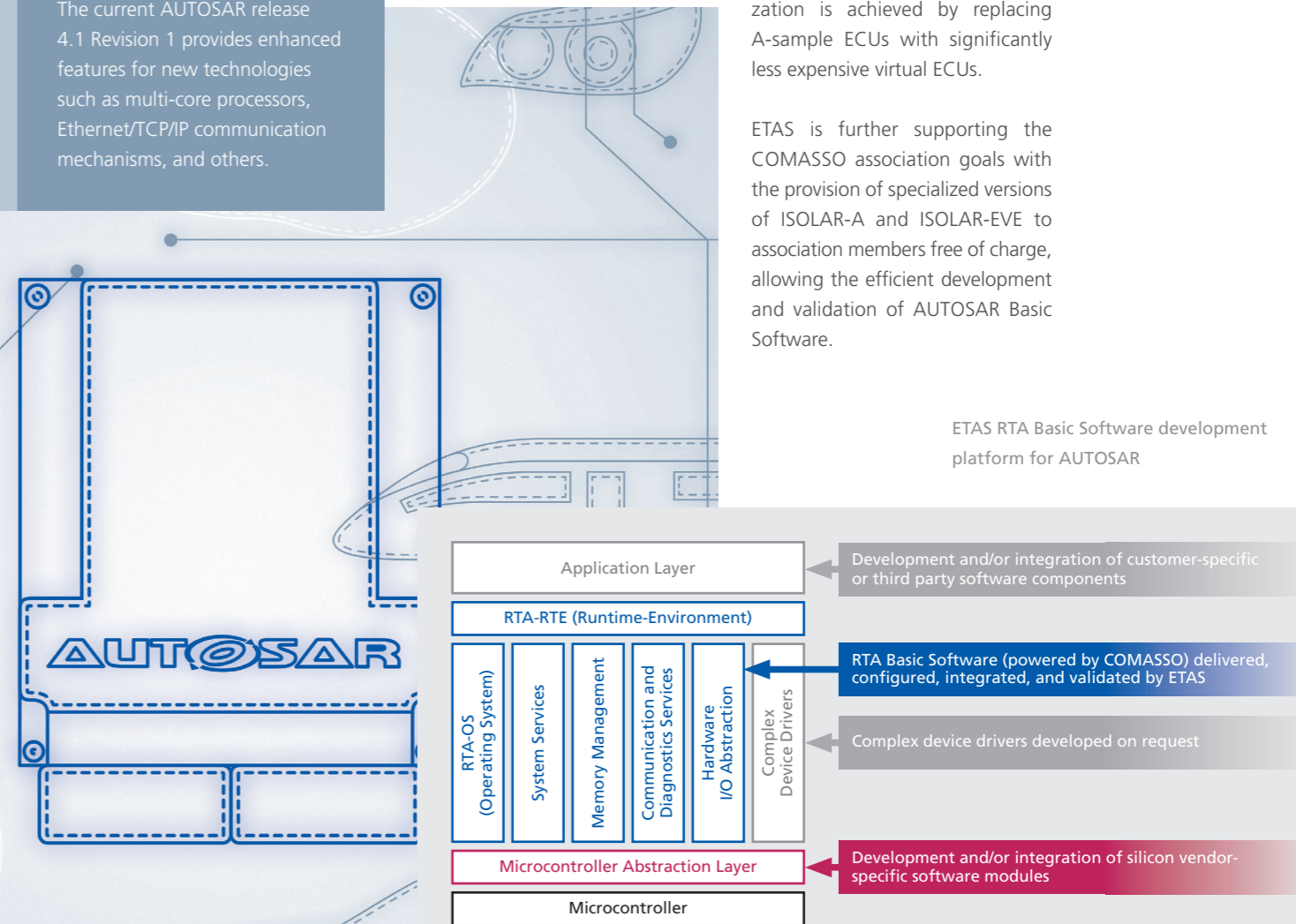
The RTA Basic Software is just one element of the complete RTA Solutions portfolio from ETAS. Others are RTA Engineering Services to deliver high-quality and cost-effective customer-specific embedded software through a global team of embedded software specialists as well as RTA Consulting Services to provide expert support for optimizing the development processes and overcome the technical challenges of tomorrow’s ECU architectures. Today RTA Solutions are powering more than 1 billion ECUs on the road!

### ETAS ISOLAR product family

ISOLAR-A provides a comprehensive AUTOSAR architecture, authoring, and basic software configuration environment. It allows integration into customer-specific tools by using the Eclipse platform and open source AUTOSAR Tools Platform (ARTOP). ISOLAR-A supports legacy systems by converting formats such as DBC, LDF, FIBEX, and ODX to AUTOSAR. ISOLAR-EVE features a virtual AUTOSAR ECU for Windows PCs and ETAS RTPCs with Linux. It enables creation and validation of AUTOSAR software. Cost optimization is achieved by replacing A-sample ECUs with significantly less expensive virtual ECUs.

ETAS is further supporting the COMASSO association goals with the provision of specialized versions of ISOLAR-A and ISOLAR-EVE to association members free of charge, allowing the efficient development and validation of AUTOSAR Basic Software.

ETAS RTA Basic Software development platform for AUTOSAR



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