

# AUTOSAR solutions from ETAS

Tools, basic software, and services




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## At a glance

- AUTOSAR solutions for developing, testing, validating, and calibrating embedded software
  - Training and consulting
  - Project management
  - Change management
  - Support with configurations
  - Proven millions of times over in volume production
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### AUTOSAR - an established standard for embedded software

AUTOSAR (AUTomotive Open System ARchitecture) is a worldwide development partnership of major automakers and suppliers as well as tool and software producers from the automotive industry. The goal of the partnership is to establish and develop global standards encompassing a common software architecture, application

interfaces, and methodologies for developing embedded software for electronic control units (ECUs) in motor vehicles. The AUTOSAR standard "Classic Platform" is already well established in many areas. The new AUTOSAR standard "Adaptive Platform" addresses in particular the requirements in the area of autonomous driving.

ETAS is a premium member of the AUTOSAR development partnership. Website: [www.autosar.org](http://www.autosar.org)


### AUTOSAR solutions from ETAS

ETAS tools and services provide assistance in a range of tasks relating to model-based development and validation, and they assist with the measurement and calibration of AUTOSAR ECU software. All ETAS AUTOSAR solutions have an open architecture, making it easy to integrate them in existing development environments. Based on its expertise in embedded software, ETAS offers professional services for integrating and configuring application software and basic software, including hardware-specific MCALs from third-party vendors and customized complex driver developments.



## AUTOSAR tools from ETAS

### ISOLAR-A

 ETAS ISOLAR-A is a tool for designing AUTOSAR architectures. ISOLAR-A helps users develop application software, define ECU and communication network systems, and map software onto subsystems and individual ECUs.


Users benefit from consistent tool support across a wide range of standard workflows. ISOLAR-A supports the continued use of legacy data, such as DBC, LDF and ODX files, and can easily be adapted to customer-specific requirements, for example by using scripting and adaptable workflow views.

ISOLAR-A provides comprehensive support for the Classic Platform, and its support for the Adaptive Platform is growing continuously.

Through the use of Eclipse technology and the Artop platform, ISOLAR-A supports data exchange with other tools, is open for plug-in expansions, and can be integrated in existing development environments.

Website: [www.etas.com/isolara](http://www.etas.com/isolara)

### ISOLAR-B

 ETAS ISOLAR-B is a tool for configuring, generating, and integrating AUTOSAR-compliant basic software.


ISOLAR-B enables users to automatically configure the basic software to meet the application software requirements. It allows them to easily customize the configurations with ECU-specific settings and to validate AUTOSAR conformity. ISOLAR-B also offers a model-oriented, easy-to-grasp approach for comparing incremental changes and for easily integrating these changes in projects.

ISOLAR-B creates basic software configurations based on the information that is imported and entered. These configurations are sent to RTA-BSW generators to generate C code.

ISOLAR-A and ISOLAR-B share a common database, ensuring fast data exchange and high productivity.

Website: [www.etas.com/isolarb](http://www.etas.com/isolarb)

### ISOLAR-EVE

 ETAS ISOLAR-EVE is a tool for generating virtual ECUs that can be used for testing AUTOSAR software on a PC. It works by importing AUTOSAR configurations (AUTOSAR XML files and ECU program code) into ISOLAR-EVE and configuring them to run on a PC.

The hardware-related software components – i.e. the Microcontroller Abstraction Layer (MCAL) and operating system software – are generated for the PC-based simulation.

ISOLAR-EVE then uses these components to generate executable programs for the PC. Since the virtual environment also encompasses the basic software, the resulting virtual ECUs offer excellent simulation of how their real-life counterparts would behave.

Virtual ECUs increase the flexibility of the development process significantly, since they enable software testing to take place long before the target hardware is available. They support a wide variety of interfaces and simplify debugging. There is no limit to how many times virtual ECUs can be replicated, so they can be made available to multiple developers at the same time. That enables the software to be tested, validated and verified at the earliest possible stage.

Website: [www.etas.com/isolareve](http://www.etas.com/isolareve)

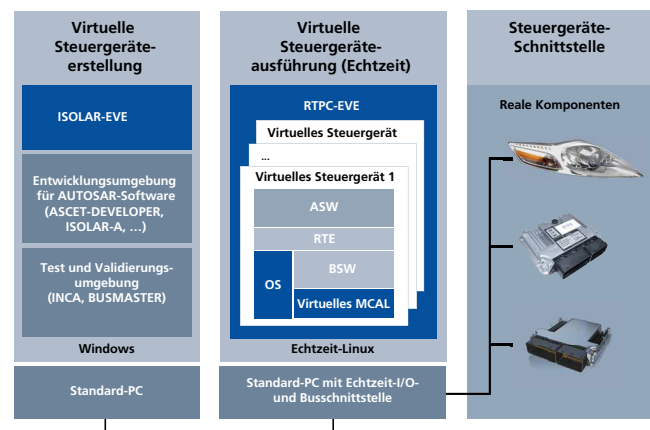


Figure 1: Virtual ECUs when using ISOLAR-EVE

## ASCET-DEVELOPER



ETAS ASCET-DEVELOPER is a tool for developing application software for embedded systems.

ETAS ASCET-DEVELOPER makes it easy to specify the functional behavior of software components using textual or graphical notation.

The text-based ASCET-DEVELOPER notation – Embedded Software Development Language, or ESDL – offers a simple way for developers to model and program functions without having to worry about the shortcomings of C. Since ASCET-DEVELOPER points out errors already during the programming process, they can be rectified by the developer immediately.

ASCET-DEVELOPER generates the C code for the software components and the corresponding ARXML description file from a single source. This ensures that the code and the ARXML file are always in step with each other – an effective way of preventing the costly repetition of tests due to incompatibilities.

Website: [www.etas.com/ascet\\_developer](http://www.etas.com/ascet_developer)

## AUTOSAR basic software from ETAS

### RTA-BSW



ETAS RTA-BSW is a high-quality, production-ready basic software collection that provides complete AUTOSAR R4.x middleware for advanced automotive ECUs. Easy to configure, integrate, and test, it supports the deployment of applications on real ECU hardware as well as on virtual targets.

RTA-BSW offers a software stack, a runtime environment, and configuration tools based on ETAS' more than 20 years of experience in developing and deploying platform software. RTA-BSW is already on the road in more than 1.5 billion ECUs worldwide – with

zero post-production issues. RTA-BSW basic software is suitable for use in safety-related ECU projects up to a safety level of ASIL D and can be integrated in embedded security components from ESCRYPT.

Website: <https://www.etas.com/rta-bsw>

### RTA-BSW Starter Kit

The ETAS RTA-BSW Starter Kit is a ready-to-use, complete AUTOSAR reference application for users who need an AUTOSAR application capable of running on real or virtual target systems.

The Starter Kit provides all the software tools and evaluation licenses that are required to create the reference application. To ensure users make the most of the Starter Kit and are properly prepared for future steps with AUTOSAR, the package also includes on-site training.

### Excellent integration in tool chains

The ETAS AUTOSAR tools use the Eclipse platform. They can be used independently as well as integrated in existing Eclipse-based tool environments and can exchange data with other tools. The AUTOSAR tools and AUTOSAR basic software from ETAS are tailored to the existing extensive range of prototyping, testing, and calibration tools. They are supported by the ETAS software products SCODE (System CO DEsign), INTECRIO (prototyping software), EHOOKS (tool for software hook insertion), INCA (tools for measurement, ECU calibration, and diagnostics), and LABCAR (HiL systems) as well as by ETAS prototyping solutions.

ETAS also offers the flexibility to adapt ETAS tools to customer-specific requirements. Please refer to the back page of this brochure for further information on the available services.

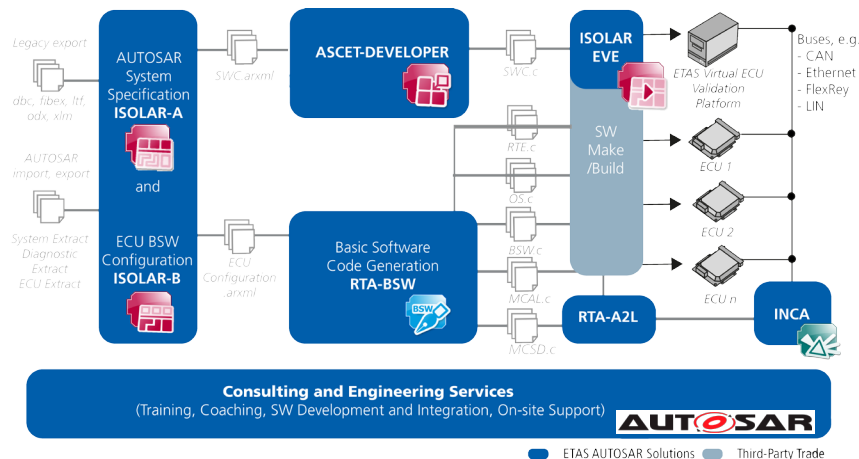


Figure 2: AUTOSAR solutions from ETAS

### AUTOSAR services from ETAS

Rounding off the AUTOSAR product portfolio, ETAS offers a wide range of AUTOSAR services for the two AUTOSAR standards "Classic Platform" and "Adaptive Platform":

- Technical training and coaching
- Project management
- Development of production-ready AUTOSAR basic software
- Support in the various areas of functional safety
- Support with customization and solution set-up services
- Development services for customer-specific tools
- Preparation and maintenance of customer infrastructure that is required in order to use the development tools
- Adaptation of tools and integration in the customer's tool chain
- Support in migrating to AUTOSAR or between AUTOSAR versions
- Prototyping, implementing, integrating, and testing embedded software



Figure 4: Training at ETAS

On request, we can also work with the engineering departments of OEMs and Tier 1 companies, such as Bosch and Ford, enabling us to draw on an even greater pool of resources and expertise.

All our services can be provided at ETAS premises or on site at any of your facilities worldwide.

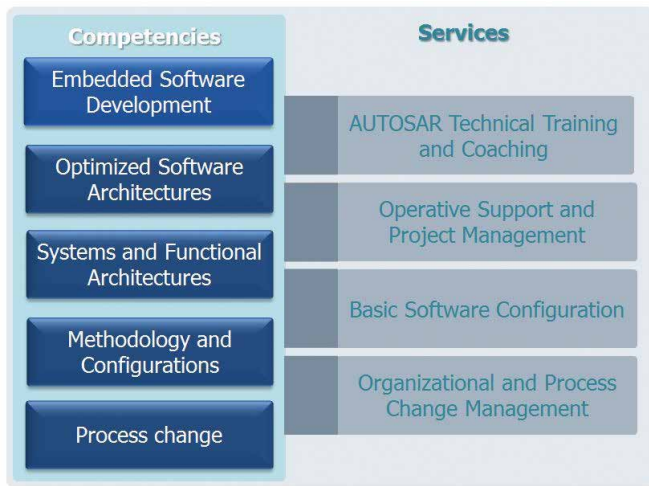


Figure 3: AUTOSAR services from ETAS



For more information, please contact your ETAS representative or send an email to [sales@etas.com](mailto:sales@etas.com).