

AUTOSAR Training Classes

Learn about the AUTOSAR Methodology and enhance and deepen your knowledge in special areas of AUTOSAR ECU development

AUTOSAR Basic Training

The AUTOSAR Basic Training aims for a solid theoretical basis as well as tool and MICROSAR BSW hands-on experience.

In module one you will learn all about the AUTOSAR methodology, the technical concepts as well as the operation of the RTE and the basic software components. Theory and practice are combined in the second module. All important subject areas concerning ECU development are covered in sound theory units. Using a general example you will realize these topics with the help of Vector's configuration and generation tools.

The third module focuses on the specific features of the AUTOSAR realization for vehicle manufacturers (OEMs). The respective workflows, specific modules and concepts are introduced and explained. After this training you will be able to realize your projects according to the AUTOSAR standard.

Module 1: AUTOSAR Fundamentals

Duration: 1 Day

Prerequisites: Knowledge about software development for automotive systems

Content:

- > Introduction to AUTOSAR
- > AUTOSAR RTE (Runtime Environment)
- > AUTOSAR BSW (Basic Software)
- > Methodology of AUTOSAR
- > AUTOSAR in Practice
- > Implications and Migration

Module 2: AUTOSAR 4 in Practice

Duration: 3 Days

Prerequisites: AUTOSAR Fundamentals

Content:

- > Operating System
- > Software Components
- > Input and Output
- > Communication
- > State Management and System Services
- > Bus Systems
- > Nonvolatile Memory Access
- > Diagnostics

Module 3: Supplier-Specific Content

Duration: 1 Day per Variant

Prerequisites per Variant: AUTOSAR workshop or good AUTOSAR knowledge, certification as a supplier for the respective OEM.

Variant 1: Daimler SLP11

- > Overview and Introduction
- > New Communication Concepts
- > Configuring the SLP11 stack
- > Postbuild Concepts
- > SLP11 Network Management
- > SLP11 Diagnostics
- > SLP11 Security Concepts
- > Time S

Variant 2: VAG MSR4

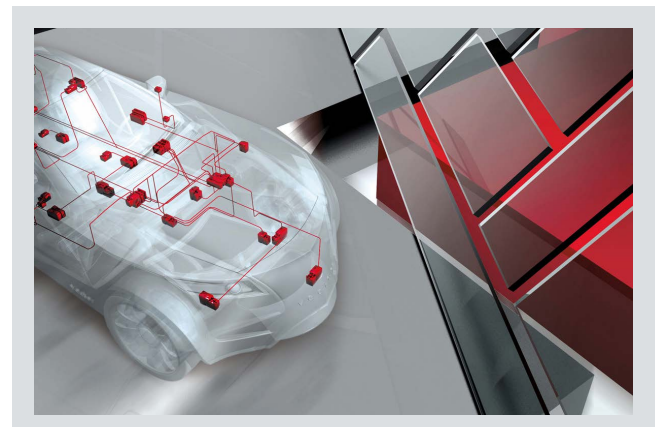
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Variant 3: BMW BAC 4

- > Overview and Introduction
- > BMW Software Logistic
- > BMW Partial Network (PNC)
- > Configuring the BAC 4 Stack
- > Feedback/Open Discussion

Variant 4: GM Global B

- > Overview and Introduction
- > GM specific functions
- > Configuring the GM Global B Stack
- > Feedback/Open Discussion



AUTOSAR Advanced Training

You already know the basic tool usage and the general AUTOSAR concepts, and you need to know more in special areas? In this training you learn how to use MICROSAR software and tools in order to satisfy your project requirements.

Each event focuses on one topic. That way you can build your training according to your personal needs. Individual events do not build on one another and can be booked independently. You can only visit those parts relevant for you.

MICROSAR Ethernet - with hands-on exercises!

Duration: 2 Days

Prerequisites: Participation in the training program "AUTOSAR 4 in Practice" or a good AUTOSAR knowledge.

Content:

- > Overview and Introduction
- > Basics of Ethernet and TCP/IP
- > Ethernet in the AUTOSAR Software Architecture
- > Overview of Automotive Protocols and Use Cases
- > Diagnostics over IP (DoIP)
- > SOME/IP and Service Discovery (SD)
- > Universal Calibration Protocol (XCP)
- > Time-Sensitive Networking (TSN) and AVB Use Cases
- > Exercise: Diagnostics over IP (DoIP)
- > Exercise: SOME/IP - Service Discovery (SD)
- > Exercise: PDU Multiplexing

MICROSAR Safe

Duration: 1 Day

Prerequisites: AUTOSAR Workshop or good knowledge of AUTOSAR and ISO26262

Content:

- > Overview of the concepts used in MICROSAR Safe, such as Freedom from interference, Mixed-ASIL-Systems
 - > Measures and Mechanisms for Functional Safety at Software Level
 - > Memory protection and safe context switch (Safe Context Operating System)
 - > Flow control of safety-related Software Components (Safe Watchdog)
 - > Safe Communication between ECUs
 - > MICROSAR Safe at Application Level
- Alternatively the third module will give an introduction to MICROSAR Safe – Vector's solution for ECUs with safety-related functions. MICROSAR Safe enables the freedom from interference for safety related software parts with different ASIL levels and for non-safety-related software parts (QM software) within the same ECU (Mixed-ASIL-Systems).

MICROSAR Memory

Duration: 1 Day

Prerequisites: Participation in the training program "AUTOSAR 4 in Practice" or a good AUTOSAR knowledge

Content:

- > Principles of NV memory
- > Memory Handling
- > NvBlock Software Components
- > MICROSAR MEM FEE concept
- > Error recovery
- > Configuration
- > Debugging and Production Error Reporting

MICROSAR Multicore

Duration: 1 Day

Prerequisites: Participation in the training program "AUTOSAR 4 in Practice" or a good AUTOSAR knowledge

Content:

- > Introduction into the mathematics of multicore processing
- > Deadlocks and their prevention
- > Use cases for multicore processors
- > AUTOSAR multicore processor concept
- > Design and Optimization

Benefits

- > You get detailed class documentation
- > You receive a certificate confirming your participation in our training course
- > Snacks during breaks and lunch are included with the course

Registration and Information

You can register online, via E-mail, Fax or regular mail. Registrations are accepted in the order in which they are received. If your reservation has been made successfully, we will return a confirmation of your registration.

If you have any questions or wish to register by phone, please contact Ms. Heller or Ms. Wituski:

- > Phone: +49 711 80670-5770
- > Fax: +49 711 80670-333
- > E-mail: academy@de.vector.com

Our website always offers the latest information on workshops, contents and scheduled dates.

www.vector-academy.com