

# Adaptive MICROSAR

Dynamic Software Platform for High-Performance ECUs according to AUTOSAR Adaptive

## What is Adaptive MICROSAR?

Adaptive MICROSAR is the Vector solution for vehicles with an E/E architecture based on the AUTOSAR Adaptive Platform. It provides the AUTOSAR Runtime for Adaptive Applications (ARA) and comprises an efficient development environment integrated in Eclipse. Adaptive MICROSAR targets high performance ECUs such as in-vehicle application servers, ADAS ECUs and infotainment systems. Vector provides you with a complete safety solution up to ASIL D, ranging from the hypervisor, the POSIX operating system to the ARA.

### Overview of Advantages

#### Adaptive Platform

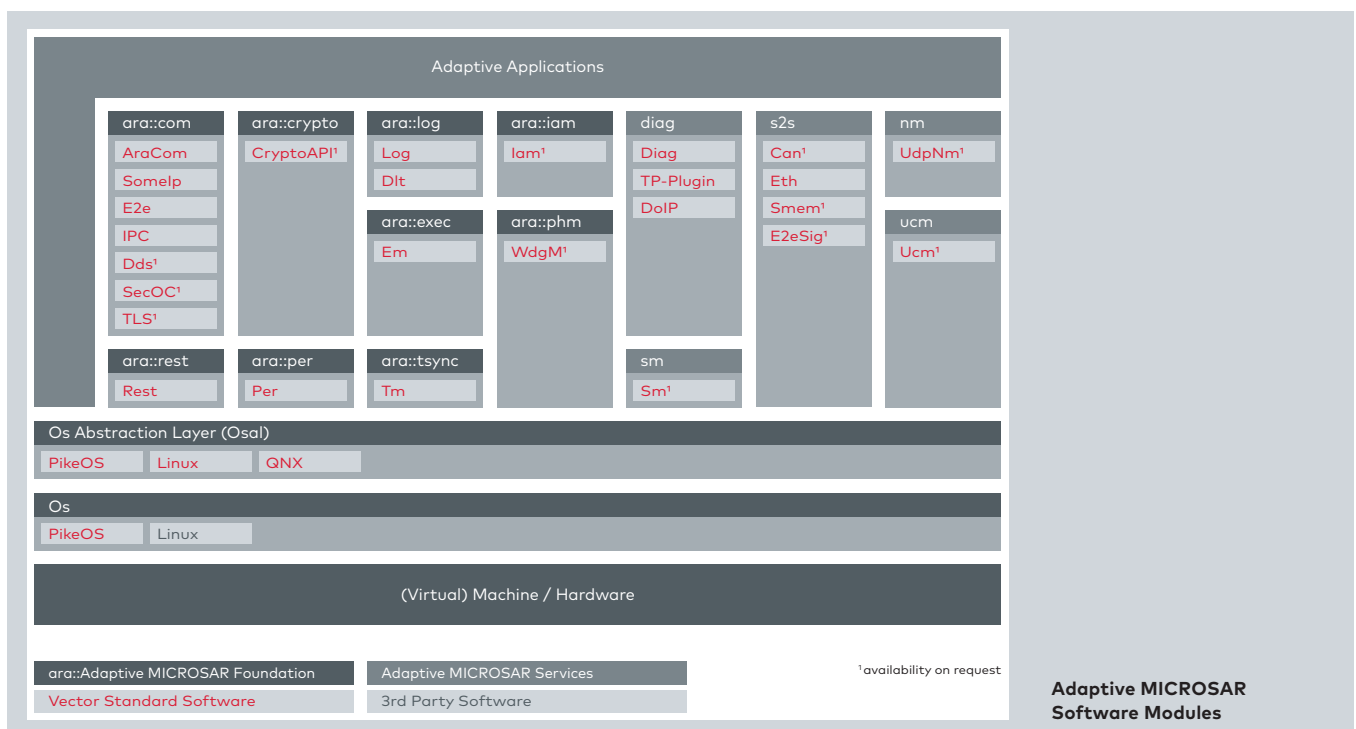
- > Ready for series-production
- > Always up to date by continuous provision of software updates
- > Support of various POSIX-based operating systems
- > Development for safety-relevant applications up to ASIL D
- > Safety optimized C++ STL library
- > Quick start-up by included example projects

#### Advanced Configuration with DaVinci Adaptive IDE

- > Fully integrated in Eclipse development environment
- > Domain-specific language (DSL) editor for simple creation of AUTOSAR manifests (ARXML)
- > Inherent syntax checks and auto completion for faster development
- > "Leaflets" provide integrated guidance
- > Assistance for challenging configuration tasks
- > Comprehensive workflow from authoring to validation, generation and debugging
- > Available for Windows and Linux

#### Complete System Setup

- > Delivery of safe hypervisor, safe operating system and safe Adaptive MICROSAR pre-integrated based on PikeOS
- > Optimized solution from a single source
- > Microkernel-based hard real-time operating system
- > Automotive Safety Case according to ISO 26262 up to ASIL D
- > Fast booting
- > Security measures against unauthorized access



## Application Areas

- > High-performance ECUs for ADAS, multimedia and connectivity applications
- > Complex safety-relevant systems for highly automated driving
- > C++ development of AUTOSAR Adaptive applications
- > Vehicle independent software development (App-Store)

## Adaptive MICROSAR

Adaptive MICROSAR developed by Vector includes production-ready software of the following clusters:

- > Communication (ara::com)
- > Execution Management (ara::exec)
- > Diagnostics (ara::diag)
- > Persistency (ara::per)
- > Logging and Tracing (ara::log)
- > RESTful Services (ara::rest)
- > Update and Configuration Management (ara::ucm)

In addition to the AUTOSAR standard, several useful extensions are already available:

- > Certifiable up to ASIL D for your safety-relevant projects
- > Complete SOME/IP binding including E2E protection
- > IPC binding for intra-machine communication for better performance and a simplified configuration
- > Live checks of your TCP connections
- > UDP Frame buffering to reduce network overhead
- > Configuration of Quality of Service priority in IP header
- > Optional static Service Discovery for a faster start-up

- > Fully preconfigured development environment as a virtual machine
- > XCP support for measurement and calibration

## Continuous Development and Release Planning

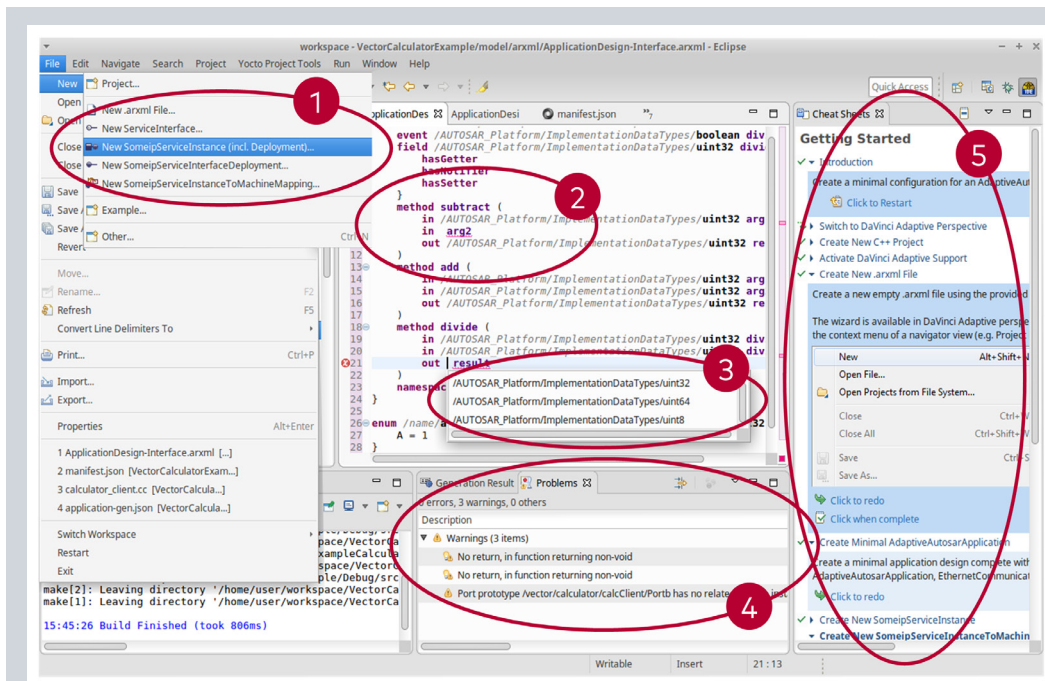
The AUTOSAR Adaptive Platform is still in evolution and continuously introduces new features. Stay up to date with your development using the Continuous Development Package from Vector. For the start of production of your ECU project Vector provides a dedicated delivery branch to maintain a stable software version.

- > **Q1 / 2018:** Development Release
- > **Q4 / 2018:** Production Release (QM)
- > **Q4 / 2019:** Production Release (ASIL)

## Further Tool Support

- > **PREeVision:** Vehicle-wide authoring of AUTOSAR Adaptive services
- > **CANoe:** Comfortably stimulate service-clients and simulate service-providers
- > **CANape:** Measurement and calibration within your Adaptive applications
- > **CANdelaStudio:** Diagnostic authoring with DEXT export
- > **VectorCAST/C++:** A highly automated unit and integration test solution to validate your Adaptive Platform projects

More information: [www.vector.com/adaptive](http://www.vector.com/adaptive)



The DaVinci Adaptive IDE offers optimal assistance for challenging configuration tasks

1. Assistance for various tasks such as creation of SOME/IP deployment
2. Easy to understand DSL to represent ARXML models with linting support
3. Auto completion for references and model elements
4. Automatic background validation of the AUTOSAR model enables direct feedback and resolution suggestions
5. "Leaflets" guide you through the process of service creation