

MICROSAR Multi-core Advanced Course

Agenda VectorAcademy

Delivery Format:	This Course is offered in Classroom or Remote Format
Duration:	Classroom: 1 day Remote: 6 hours
Target Group:	ECU developers, Software Architects
Prerequisites:	Participation in "AUTOSAR Classic Platform Basic Course" or a good knowledge about AUTOSAR Classic Platform
Goal:	Obtain an overview on the usage of Multi-core processors in an AUTOSAR based ECU, get insight into the configuration of the MICROSAR basic software and learn how to achieve an optimized multi-core processor configuration.

1. Theory about Multi-core and Concurrency

- > Motivation to use Multi-core ECUs
- > Law of Amdahl and Gustafson (Theory and Speed-up)
- > Parallel Environment and the arising Side-Effect

2. AUTOSAR Multi-core Concepts

- > General AUTOSAR Concepts Applied to Multi-core
- > Feature of Operating System (OS) and RTE for Multi-core
- > MICROSAR Optimizations for OS and RTE

3. Multi-core Basic Software Integration

- > Start-up and Shut-down Phase in Multi-core
- > MICROASR BswSplit Feature
- > BSW Proxies and Satellite Modules in MICROSAR

4. System Design Patterns for Multi-core Applications

- > The Multi-core Cookbook – Software Design Recommendations
- > Design Patterns for Parallelization
- > Evaluation of Application Design Supported by Tools