

# MICROSAR Multi-core Advanced Course

Agenda VectorAcademy

<b>Delivery Format:</b>	This Course is offered in Classroom <b>or</b> Remote Format
<b>Duration:</b>	Classroom: 1 day Remote: 6 hours
<b>Target Group:</b>	ECU developers, Software Architects
<b>Prerequisites:</b>	Participation in "AUTOSAR Classic Platform Basic Course" or a good knowledge about AUTOSAR Classic Platform
<b>Goal:</b>	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