Armv8-R Workshop: 32-Bit Cortex® Microcontroller Core for Real-Time Applications in Automobiles, the Industry and Embedded Systems - Face to face training

Objectives

You know the architecture, features and advantages of the Armv8-R (real-time) core architecture.

You learn how to choose and make efficient use of the right microcontrollers with the respective cores.

You can write software in C and Assembler and utilize safety and security mechanisms - the perfect start for designing Cortex® v8-R based systems.

YOUR BENEFIT:

Efficient and compact jump-start into the overall topic

Practical tips on multicore, safety and security

Download of exercises

Extensive training documentation helps you apply and reproduce what you learned.

Participants

Hardware and software architects, hardware and software developers, test engineers

Requirements

ANSI-C knowledge; experience in microcontroller/microprocessor system programming and architecture

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Content

Overview Arm®v8 Real Time Profile

Cortex® R52 Processor Architecture

Instruction Sets

Synchronization and Barriers
  - Exclusive monitors

Writing C for Arm

Exceptions and Handling
  - Exception levels
  - Interrupts and aborts
  - Interrupt controller architectures
  - Routing and trapping
  - Nesting and returning

Timer
  - Generic timer
  - Performance monitor unit

Internal Connectivity and Memory
 - Bus interfaces
 - Tightly coupled memory and caches
 - Performance aspects

Memory Protection Unit
 - Purpose and use cases
 - Regions and attributes

Safety Aspects
 - Register protection
 - Indirect memory access
 - Dual core lockstep
 - ECC
 - Error reporting

Debug and Tracing

Virtualization
 - Use cases
 - Hypervisor
 - Temporal and spatial separation
 - Identification
 - Asynchronous stimuli

Exercises

FACE-TO-FACE TRAINING

Date	Price *	Duration
10.11.2026 – 13.11.2026	3.000,00 €	4 days

* Price per attendee, in Euro plus VAT

Training code: E-ARMV8R

Live Online - English

Duration
4 days

Face-To-Face - German

Date	Duration
10.11. – 13.11.2026	4 days

Live Online - German

Duration
4 days

Coaching

Our coaching services offer a major advantage: our specialists introduce their expertise and experience directly in your solution process, thus contributing to the success of your projects.

We will be happy to provide you with further information or submit a quotation tailored to your requirements.