

## **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**

<b>Date</b>	<b>Price *</b>	<b>Duration</b>
28.10.2025 – 31.10.2025	3.000,00 €	4 days

\* Price per attendee, in Euro plus VAT

Training code: E-ARMV8R

**Live Online - English**

<b>Date</b>	<b>Duration</b>
17.03. – 20.03.2026	4 days

**Face-To-Face - German**

<b>Date</b>	<b>Duration</b>
28.10. – 31.10.2025	4 days

**Live Online - German**

<b>Date</b>	<b>Duration</b>
01.07. – 04.07.2025	4 days
17.03. – 20.03.2026	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.