

## Microcontroller/ Microprocessor Basics

### Objectives

You learn about the function and operation of microcontrollers and microprocessors.

### Participants

Hardware developers, software developers

### Requirements

None.

## Microcontroller/ Microprocessor Basics

### Content

**8, 16 and 32 Bit Microcontroller Applications**

**Comparison: Microprocessors vs. Microcontrollers**

**Microcontroller Set-up**

**Function and Operation**

- CPU set-up and pipeline
- CPU working register
- Basic instruction set of a microcontroller
- Stack - function and access

**Memory Access to RAM (Data Memory) /ROM (Program Memory)**

**Address Space/ Program Model**

- Von Neumann architecture
- Harvard architecture

**Basics: Microcontroller Programming**

- Assembler
- Comparison: microcontroller-C vs. ANSI-C
- Function of a linker/locator

**Basic On-chip Periphery**

- Input/output - ports
- Timer - capture/compare
- Synchronous/asynchronous serial interface

**Interrupt Controller**

**Function**

- Interrupt vectors and service routines

**Hands-on Exercise**

- Using a microcontroller

### Trainings

Price *	Duration
-	4 days

Training code: E- $\mu$ C-BASIC

\* Price per attendee, in Euro plus VAT

### **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.