

## **AURIX™ TC2xx Workshop: 32-Bit Multicore Microcontroller Family - Live Online Training**

### **Ziele - Ihr Nutzen**

You know the architecture, basic on-chip peripherals and features (especially of the multicore architecture and safety extensions) of the AURIX™ device family.

You are able to program low-level drivers for this hardware, adapt them and test them with a debugger.

You can moreover generate interrupt and trap routines.

### **YOUR BENEFIT:**

Efficient and compact jump-start into the overall topic

Practical tips on multicore and safety

Tips on how to create an efficient software architecture

Exercises on USB stick or as download.

### **Teilnehmer**

Hardware and software architects, hardware and software developers, test engineers // IMPORTANT NOTE: A valid NDA with the chip vendor is a pre-requirement to attend the course.

### **Voraussetzungen**

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

## **Live Online Training**

\* Preis je Teilnehmer, in Euro zzgl. USt.

Anmeldecode: LE-AURIX

### **Präsenz-Training - Englisch**

#### **Dauer**

5 Tage

### **Live-Online - Deutsch**

#### **Dauer**

5 Tage

### **Präsenz-Training - Deutsch**

#### **Dauer**

5 Tage

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### **Inhalt**

#### **Infineon AURIX™ Architecture: Overview**

##### **AURIX™ Multicore**

- CPU, pipelines, register sets, floating point unit FPU, DSP extension
- Memory model, local and global memory units
- On-chip bus systems: 64-bit XBAR, 32-bit system peripheral bus SPB
- TRAP handling

##### **Ports (Pin Definition and Port Functions)**

##### **Protection System**

##### **Multicore Interrupt Processing: Interrupt Router**

##### **Direct Memory Access Controller DMA**

##### **On-Chip AURIX™ Peripherals**

##### **Timer**

- System timer module STM
- Generic timer module GTM
- Capture and compare unit CCU6

##### **Communication Interfaces**

- UART/LIN, QSPI, I2C, MSC, HSSL & HSCT
- Overview: MultiCAN, Ethernet, FlexRay®

##### **Sensor Interfaces**

- Single edge nibble transmission SENT
- Peripheral sensor interface PSI5

##### **Analog-to-Digital Converter**

- Versatile analog-digital converter VADC
- Delta-sigma analog-digital converter DSADC

##### **System Control Unit SCU**

- Clock control
- Reset system
- Power management
- External request unit ERU
- Start-up process
- Watchdog timer WDT

##### **Safety**

##### **On-chip Debug System OCDS**

##### **Overview: Emulation Device & Calibration**

##### **Exercises**

- Exercises are performed with an Infineon AURIX™ board, covering the following aspects: interrupt controller, DMA controller, multicore start-up, initialization of peripherals.

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**ADAS specific blocks are not covered**