As of 31.07.2025

AURIX™ TC3xx Workshop: 32-Bit Multicore Microcontroller Family (Aurix-2G Second Generation) - Face-to-Face Training

Objectives

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

You get to apply low-level drivers for this hardware, adapt examples as required and test them with a debugger.

Numerous exercises make this training a practice-oriented software workshop.

YOUR BENEFIT:

Efficient and compact jump-start into the overall topic

Practical tips on multicore and safety

Download of exercises

Participants

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 Aurix-2G training course.

Requirements

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

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Content

Infineon AURIX™ 2G Architecture

- Multicore architectural blocks
- Interconnectivity
- Consequences for software architectures

CPU Subsystem

- Multicore instruction set extensions
- Registers files and context switching
- Memory protection unit (software monitoring)

Internal Connectivity

- Crossbar and peripheral bus
- CPU clustering
- Performance aspects for software

Memory

- Memory map
- Configuration options
- Cache and software handling
- Types
- Hierarchy
- Test

Infineon Low-Level Drivers: Overview
- Configuration structures
- Application programming interface
- Library distribution
- Frameworks and demos

Ports

Exceptions and Handling
- Traps (hardware and software)
- Interrupts (hardware and software)
- Vector tables
- Broadcast software interrupts (core synchronization)
- External interrupts

Direct Memory Access Controller DMA
- Move engines
- Triggering (hardware and software)
- Advanced features (software relaxation)

Timer
- System timer (STM)
- General purpose timer 12 (GPT12)
- Capture compare unit (CCU)
- Watchdog timer (WDT)
- Temporal protection timer (TPS, exception timer)
- Generic timer module (GTM) - overview

Safety and Security
- Safety measures
- Safety management unit (SMU)
- Protection mechanisms
- IO monitoring
- Hardware security module (HSM) - implementation overview

Multicore Aspects
- Startup and boot
- Low power options
- Communication and synchronization
- Intrinsics usage in C/C++
- Tool aspects (compiler, linker)
- Debugging (AMP, SMP)

System Control
- Reset: sources, types and consequences
- Boot: software configuration and modes
- Clocking
- Emergency stop requests

Power Management System (PMS)
- Supply generation options
- Embedded voltage regulators
- Standby and wakeup
- Die temperature sensor

Synchronous and Asynchronous Standard Peripherals
- Micro second channel (MSC)
- Serial peripheral interface (QSPI)
- Inter IC interface (I2C)
- UART (ASCLIN)

Sensor Interfaces
- SENT
- PSI5
- PSI5-S

Analog To Digital Converter

- EVADC
- EDSADC
- Enhanced features offloading software

Automotive Interfaces: Overview

- LIN
- CAN
- FlexRay®

High Speed Serial Link Interface (HSSL)

Ethernet: Overview/Demo

Debug

- Interfaces
- Tracing
- Multicore aspects

Exercises

- Numerous exercises will be conducted on an Infineon AURIX™ board, covering the following aspects: use of low-level drivers, protection mechanisms, interrupt controller, DMA controller, system timer, port, multicore aspects, monitoring, performance measurement etc.

IMPORTANT NOTE: A valid NDA with the chip vendor is a pre-requirement to attend the Aurix-2G training course.

Please note that the Aurix-2G training does not explicitly cover ADAS specific blocks. If required, please contact our service office prior to the training, phone +49 (0)89 450617-71.

FACE-TO-FACE TRAINING

Date	Price *	Duration
22.09.2025 – 26.09.2025	3.500,00 €	5 days
26.01.2026 – 30.01.2026	3.500,00 €	5 days

* Price per attendee, in Euro plus VAT

Training code: E-AURIX2G

Live Online - English

Date	Duration
17.11. – 21.11.2025	5 days

Face-To-Face - German

Date	Duration
26.01. – 30.01.2026	5 days

Live Online - German

Date	Duration
22.09. – 26.09.2025	5 days
17.11. – 21.11.2025	5 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.