

## Workshop Compact ZYNQ UltraScale+ MPSoC for SW Designers

This 3-day course will enable the software developer to get the best possible start on software development for the ZYNQ UltraScale+ MPSoC family.

This first explains the Zynq MPSoC architecture and then the XILINX Software Development Kit (SDK) with multiple methods of the XILINX MPSoC embedded design design.

Symmetric and asymmetric OS support, Open-source Linux kernel and rootfs build using Yocto and/or PetaLinux, FreeRTOS usage for the real-time processing unit, Hypervisor architecture and Software Support and at least mechanisms of individual boot configurations are shown and elaborated in exercises.

Debugging in simulation supported by QEMU or debugging on hardware targets – both are important integral parts of methodology.

While multiple processors in the UltraScale+ MPSoC architecture are typically not running simultaneously in full performance mode, the power management of resources is software programmable and so enables power reduction in the run-time system.

### Applicable technologies

XILINX ZYNQ UltraScale+ MPSoC & RFSOC

### Requirements

Good understanding of digital embedded systems  
Basic knowledge of the programming language C

### Duration and Costs:

Duration: 3 days

Cost: € 2.100 net per person, including detailed training material, drinks in the breaks and lunch

## Agenda

- ZYNQ UltraScale+ MPSoC Processing Units
- ARM TrustZone Technology
- ZYNQ UltraScale+ MPSoC HW-SW Virtualization
- The XILINX SDK Tool
- Introduction to QEMU
- Bare-Metal Application Development and Debugging
- Linux Application Development and Debugging
- Deploying OpenAMP in a Heterogeneous System
- Symmetric Multi-Processing Linux
- PetaLinux and Yocto
- Open Source Library-PetaLinux Tools
- Understanding Device Drivers
- ZYNQ UltraScale+ MPSoC FreeRTOS
- ZYNQ UltraScale+ MPSoC Software Stack
- ZYNQ UltraScale+ MPSoC PMU Development and Debugging
- ZYNQ UltraScale+ MPSoC Power Management
- ZYNQ UltraScale+ MPSoC Boot and Configuration

**Accompanying exercises allow a practice-oriented training.**