

Workshop

Embedded Systems Software Design

This workshop's target audience are developers of embedded software using controllers based on FPGAs inside XILINX chips.

The specific of an FPGA based solution is an extra dimension of flexibility: Having an already existing board, not only the peripherals but even the processor itself can be adapted. Thus, a perfect mix between computation power, real time capability, number and kind of interfaces, moving functionality from soft- to hardware and lots more can be implemented at any time. This way, a flexible platform is available that can evolve to match changing external conditions such as e.g. modular bringing into service, debug/product release or new specification revisions.

Parallel computing allows the software programmer to untangle code sections or to speed up timing critical segments with dedicated hardware accelerators in order to work towards real time systems. Additionally, inside one FPGA device multiple controllers can work simultaneously.

Participants gain skills allowing them to create relevant projects on their own, to analyse and modify them, create project libraries and manage them up to the configuration of the target hardware. The third day is reserved for hands on exercises and can be booked optionally.

Building embedded hardware platforms is covered in the workshop "Embedded Systems Design".

Applicable technologies

XILINX FPGAs

Requirements

Fundamental micro controller knowledge

Duration and Cost

Duration: 2 or 3 days 3rd Optional day: Practical Exercises

Cost: € 1.350, – net per person for 2 days,

Cost: € 1.900, – net per person for 3 days,

Including detailed training material drinks in the breaks and lunch.

Agenda

Processors, Peripherals, and Tools

Software Platform Development

Writing Code in the XILINX Environment

Software Development Using SDK

Address Management

Software Interrupts

Software Platform Download and Boot

Application Debugging

Application Profiling

Writing a Custom Device Driver

Advanced Services and Operating Systems

Project Management with the XILINX Design Tools

Optional third day

Exercises based on PC and FPGA board

- Basic System Implementation
- Application Development
- Software Interrupts
- Debugging
- SDK Profiling
- Writing a Device Driver
- File Systems