

PowerWorkshop

Professional Embedded Systems Designs

The 5-day PLC2 PowerWorkshop “Embedded Systems Professional” is a combination of the PLC2 workshops “Embedded Systems Design” and “Embedded Systems Software Design”. After a comprehensive introduction to the MicroBlaze and PowerPC controllers as well as the XILINX EDK design flow, you will learn to develop embedded systems. In particular, this workshop includes numerous practical exercises and is aimed at developers who already have basic experience of the XILINX design system. Major topics include custom peripheral development, device driver use and user application debugging and integration. Practical implementation tips and best practices are also provided throughout to enable you to make good design decisions and keep your design cycles to a minimum.

You will get best practical information to start developing your Embedded FPGA project.

Applicable technologies

XILINX FPGAs

Requirements

Basic knowledge of XILINX FPGA Design Flow would be an advantage

Some HDL experience

Duration and Cost

Duration: 5 days

Cost: € 2.900, – net per person, including detailed training material, drinks in the breaks and lunch.

Agenda

Embedded Processor Design

- Embedded Overview
- EDK Processes and Management
- Hardware Design Environment

Hardware Design

- Buses: Arbiter, Master, Slave
- Bus Details: PLB, AXI, DCR, LMB, FSL
- Memory Controller
- IP Delivery

Architecture and Configurations

- MicroBlaze Processors
- PowerPC Processors
- Interrupt Systems

Creating User IP Peripherals

- Peripheral File Formats
- XPS Directory Structure
- Peripheral Wizard
- IPIF Templates

System HDL Simulation

- Simulation Libraries
- Bus Functional Model (BFM)
- ISE Testbench with Processors

Software Platform Development

- Writing Code in the XILINX Environment

Software Development Using SDK

- Address Management
- Software Interrupts
- Software Platform Download and Boot

Software Verification Using SDK

- Application Debugging
- Application Profiling

Creating Custom Device Drivers

Advanced Services and Operating Systems

Embedded Projekt Management

- Tool Integration
- Peripheral Integration

Demo boards used in the labs:

Spartan-6 FPGA SP605, Virtex-5 FPGA ML507, or
Virtex-6 FPGA ML605 board