

PowerWorkshop

Professional Embedded Systems Development

The 5-day PLC2 PowerWorkshop “Embedded Systems Professional” is a combination of the PLC2 workshops “Embedded Systems Development” and “Advanced Embedded Systems Development”. 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.

Applicable technologies

XILINX FPGAs

Requirements

Basic knowledge of XILINX FPGA Design Flow would be an advantage

Duration and Cost

Duration: 5 days

Cost: € 2900, – net per person, including detailed training material, drinks in the breaks and lunch.

Agenda

ISE: The FPGA Project Navigator Tool

- Design Flow in ISE
- Creating Modules
- Partitioning

EDK: The Embedded Development Kit

- Design Flow in EDK
- Tools and Features
- Project Management

The uController in XILINX FPGAs

- PicoBlaze
- MicroBlaze
- PowerPC

Hardware Design in EDK

- Buses: Arbiter, Master, Slave
- Buses: PLB, OPB, DCR, OCM, LMB
- IP Delivery

Software Development

- GNU based Tool Support
- Device Drivers
- Libraries
- Boot Initialization

Interrupt Systems

- Processor Interrupts
- Interrupt Controllers
- Interrupt Handlers
- Interrupt Initialization

Software Debug

- GDB Functionality
- XMD Functionality
- Third Party Debugger

Address Management

- Memory Management
- Object File Sections
- Linker Scripts

Creating User IP Peripherals

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

Creating Software Drivers

- Driver Concept in XPS
- Make files and TCL files
- S/W Driver Creation

Hardware and Software Simulation

- SimGen and Simulation Libraries
- EDK: H/W + S/W Co-Simulation
- ISE: Overall System Co-Simulation

Bus Functional Model Simulation

- CoreConnect Models from IBM
- Concepts of BFM Projects
- Creating the Script File