XILINX

XPERTS
XILINX Program for Engineering Resources from Third Parties

PLC2
PROGRAMMABLE LOGIC COMPETENCE CENTER

Workshop Embedded Systems Design

XILINX FPGAs provide a new level of system design capabilities through soft MicroBlaze processors, hard PowerPC processors, AXI interconnect, and silicon-efficient architectural resources. This course brings experienced FPGA designers up to speed on developing embedded systems using the Embedded Development Kit (EDK). The features and capabilities of the XILINX MicroBlaze soft processor and the PowerPC 440 processor are also included in the lectures and labs. The hands-on labs provide experience with the development, debugging, and simulation of an embedded system. While this course provides more details in the hardware development of the embedded system PLC2 provides an alternative workshop "Embedded Systems Software Design" with focus on the Software development. Attendees will gain skills how to integrate user peripherals and using the new XILINX-supplied AXI standard.

Applicable technologies

XILINX FPGAs

Requirements

Basic knowledge of embedded systems

Some HDL experience

Duration and Cost

Duration: 3 days

Cost: € 1.900, – 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
- IP Delivery

Architecture and Configurations
- MicroBlaze Processors
- PowerPC Processors
- Interrupt Systems

Software Design Flow
- GNU Tool Chain
- clipse SDK

Creating User IP Peripherals
- Peripheral File Formats
- XPS Directory Structure
- Peripheral Wizzard
- IPIF Templates

Hardware Peripheral Simulation
- Simulation Libraries
- Bus Functional Model (BFM)

Embedded Projekt Management
- Tool Integration
- Peripheral Integration

Labs
- Hardware Construction with the Base System Builder
- Adding and Downloading Software
- Adding IP to a Hardware Design
- Building Custom IP for an Embedded System
- BFM Simulation
- Integrating a Custom Peripheral

Demo board which will be used for the labs: Spartan-6 FPGA SP605, Virtex-5 FPGA ML507, or Virtex-6 FPGA ML605 board