

Workshop

FPGA-Embedded μ C for S/W Engineers

The workshop is aimed at software engineers who want to program XILINX FPGA based μ Controller. The peculiarity of the FPGA solution lies in a new dimension of flexibility where hardware processor as well as periphery is available in existing hardware card. The need for power, real time capability, and number of interfaces, shift or change of software function in hardware can be changed subsequently. This property creates flexible platform to changing conditions like modular commissioning, debug/product release or new specification enhancement. The parallel processing in FPGA allows the software developer to meet the conditions of time critical applications and guaranty the real time application design with FPGA. There is also possibility of multi-controller on single FPGA chip. While this course includes many of the topics presented in the courses Embedded Systems Development and Advanced Features and Techniques of

Embedded Systems Development, the focus is on software development concepts and practices rather than Hardware development.

Applicable technologies

XILINX FPGAs

Requirements

Basic knowledge of microcontrollers

Duration and Cost

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

Cost: € 1300, – net per person for 2 days,

Cost: € 1850, – net per person for 3 days,

Including detailed training material drinks in the breaks and lunch.

Agenda

Overview XILINX FPGA Technology

- FPGAs, CPLDs, ASICs
- The Virtex FPGA Family
- The Spartan FPGA Family

μ Controller - System on Chip

- Hard-IP and Soft-IP Controller
- PowerPC Core
- MicroBlaze, PicoBlaze
- Peripherals

Software Tools

- Hardware Flow
- Software Flow
- ISE Software
- XPS Software
- Eclipse IDE

Generation of hardware

- PowerPC configuration
- Peripherals configuration
- H / W interfaces to configure
- External memory
- User peripherals

Board Support Package

- standalone (GNU)
- supported RTOS
- driver concept
- XILINX Libraries

Generation of Software

- libraries generation
- C-creation project
- storage management
- S / W driver structure

Processing Project

- version management
- hardware / software teams
- Merge B / W + H / W

User peripherals

- hardware compilation
- S / W driver creation

Verified communication

- debugging
- simulation