



EMB01: Essential Embedded Systems Design with Xilinx FPGA

EMB01: Esencial Sistemas Embebidos en FPGA de Xilinx

Language: The classes are in Spanish, but working material is in English (available also in English at In-Company).

Who Should Attend? Engineers who are interested in developing embedded systems with the Xilinx Zynq All Programmable SoC or MicroBlaze soft processor core using the Embedded Development Flow from Xilinx

Duration: 16 h (2 days, 8 h/day).

Prerequisites: FPGA design experience; Knowledge from “Essentials of FPGA Design course (FPG01)” or equivalent. Basic understanding of C programming; Fundamental microprocessors understanding; Some HDL modeling experience.

Introduction: This course update you on developing embedded systems using the Vivado® Design Suite. Features and capabilities of both the Zynq® All Programmable System on a Chip (AP-SoC) and the MicroBlaze™ soft processor are covered in lectures and labs. Additionally general embedded concepts, tools, and techniques are studied. The hands-on labs provide you with experience designing, expanding, and modifying an embedded system, including adding and simulating a custom AXI-based peripheral using bus functional model (BFM) simulation.

Skills Gained: After completing this training, you will know how to:

- Understand the key concepts to build a embedded system in a FPGA.
- Describe the various tools that encompass a Xilinx embedded design
- Rapidly architect an embedded system containing a MicroBlaze™ or Cortex™-A9

processor by using the Vivado IP Integrator and Customization Wizard

- Develop software applications using the Eclipse-based Software Development Kit (SDK)
- Create and integrate an IP-based processing system component in the Vivado Design Suite
- Design and add a custom AXI interface-based peripheral to the embedded processing system
- Simulate a custom AXI interface-based peripheral using a bus functional model (BFM)
- Understand different ways to optimize system performance in FPGA based embedded developments.

Material: Each student will have a computer with the development tools (Vivado 2017.x), documentation, repository whit exercises (and solutions) and a FPGA development board for exercises that require it.

Related Courses:

EMB02: Advanced Features and Techniques of Embedded Systems Design

FPGA01: Diseño FPGA de Xilinx usando Vivado Design Suite 1 (Vivado Fundamental)

FPGA02: Diseño FPGA de Xilinx usando Vivado Design Suite 2 (Vivado Avanzado II)

FPGA03: Diseño FPGA de Xilinx usando Vivado Design Suite 3 (Vivado Avanzado III)

FPGA04: Diseño FPGA de Xilinx usando Vivado Design Suite 4 (Vivado Avanzado IV)

Other Xilinx Technologies courses:

EMLX1: Linux en FPGAs de Xilinx: Diseño Linux Empotrado con PetaLinux



- CONN1: Conectividad en Xilinx FPGA: Designing with Serial Transceivers
- VRLG01: Designing with Verilog. Logical Synthesis and Simulation for Xilinx FPGA design
- EMB11: Zynq UltraScale+ MPSoC para arquitectos de sistemas
- HLS01: Síntesis de alto nivel para FPGAs de Xilinx con Vivado-HLS
- SDS01: Diseño de sistemas empotrados con Xilinx SDSoc

Dates, location and registration:

Please visit www.electraining.org

Price:

EMB01: 970 € Includes cafes and lunches

Course Packs and Discounts:

EMB01 + EMB02: 1560 € (-20%)

- FPGA03 + FPG0A4: 1520 € (-21%)
- FPGA02 + FPGA03 + FPGA04: 2160 € (-25%)
- FPGA01 + FPGA02 + FPGA03 + FPGA04: 2680 € (-28%)
- VHDL01 + FPGA01 + FPGA02 + FPGA03 + FPGA04: 3300 € (-30%)
- HLSI + SDSI: 1550€ (-20%)
- HLSI + SDSI coming from Xilinx Embedded Courses (EM01 or EM02): 1445€ (-25%)
- HLSI o SDSI coming from Xilinx Courses (EMB01, EMB02, FPGA1, FPGA2, FPGA3 or FPGA4): 790€ (-18%)

Additional discounts:

- Previous ElectraTraining course 5%
- Prior Xilinx technology course in last year: 10%
- Several participant from the same company.
- It is possible to use Xilinx Training Credits.