PLC2 Connectivity

Designing with Ethernet MAC Controllers

Online Live

Workshop

Applicable Technologies	Requirements	Contact
Xilinx® FPGA, SoCs, MPSoCs, RFSoCs, and ACAPs	Basic knowledge of Xilinx® design tool flow Basic knowledge of FPGA technology and in VHDL	Michael Schwarz P. +49 7664 91313-15 E. info@plc2.de

Fee (net per person)	Inclusive	Duration
OL € 1,300	Training material	2 days
WO € 1,700	Plus beverages during breaks Lunch	2 days

Workshop

The Ethernet protocol is used in a variety of applications. Xilinx® offers various software and embedded hardware implementations for this, which require comprehensive knowledge for quick and effective use.
The two-day PLC2 course »Designing with Ethernet MAC Controllers« trains designers in the practical use of these Xilinx® specific Ethernet solutions. Starting with the basics of the Ethernet standard, the workshop covers protocol description and the OSI layer model. It describes the application of Xilinx® specific Ethernet solutions and reinforces this with exercises. Participants learn the hardware design and software development skills they need for successful implementation.

To complete the workshop, an example will be implemented and tested in real hardware communication with the computer using a Xilinx® FPGA evaluation board.

Due to accompanying exercises, the course offers in-depth and practice-oriented training. Attendees of the online live course will do the practical exercises in the afternoon on their own.

Agenda

01. Ethernet basics
02. Network protocols
03. Ethernet frames
04. MAC: Media Access Control
05. Network protocols
06. Ethernet hardware
07. Physical layer
08. Ethernet interfaces
09. Flow control
10. Management interface
11. Xilinx® EMAC solutions
12. 10/100 EMAC solutions
13. TEMAC
14. 10GE/25GE/40GE MAC
15. Integrated IP: 100G Ethernet MACs

Exercises

01. Analyzing Ethernet frames
02. VLAN and Jumbo frames
03. Implementation
04. EMAC peripheral in loopback mode
05. TEMAC peripheral in loopback mode
06. Analyzing 10GE/25GE/40GE MAC frames