Chair for Integrated Systems
TUM Department of Electrical and Computer Engineering
Technical University of Munich

TUM

Forschungspraxis

Porting of an MPSoC Demonstrator System onto a New FPGA-Board

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Enabled by ever decreasing structure sizes, modern System on Chips (SoC) integrate a large amount of different processing elements, making them Multi-Processor System on Chips (MPSoC). In the scope of the ARAMiS II research project a demonstrator system for an MPSoC with a fail-operational and hard real-time capable hybrid NoC for safety critical applications has been developed.
This demonstrator system must now be ported onto a new FPGA-board which is more suited for the implemented hardware.

Goal

The goal of this work is to port an existing implementation of an MPSoC demonstrator system onto a new FPGA-board and make all the necessary hardware adjustments. The final result should be a fully functional demonstrator system.

Prerequisites

To successfully complete this project, you should already have the following skills and experiences:

- Good programming skills in a hardware description language i.e. VHDL or (System)Verilog
- At least basic knowledge of the functionality of FPGAs
- Ideally, knowledge of Xilinx Vivado
- Self-motivated and structured work style

Learning Objectives

By completing this project, you will be able to:

- Create new FPGA projects and designs
- Embed existing IP cores into your designs
- Work with hardware modules implemented in SystemVerilog
- Document your work in form of a scientific report and a presentation

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