

SUCCESS STORY

# FPGA Emulation for ARM Based Processor

For a US-based Semiconductor Major





## INTRODUCTION

A US-based chip maker that designs ARM-based server class processors approached Ignitarium's semiconductor team for an FPGA Emulation setup for ARM-based processor on a Xilinx Virtex™ VU19P FPGA.

SERVICE IN FOCUS

## FPGA services



### Industry

Semiconductor



### Scope

Ignitarium undertook complete ownership of the FPGA emulation program in a Fixed Price Model

## THE CHALLENGE

- FPGA porting of ARMv8 based dual core processor SOC
- FPGA porting and testing of security and power management system
- Partitioning and Time Division Multiplexing Design Implementation
- DDR4 Integration
- Very high utilization of above 80% on both FPGAs
- Porting Linux on the processors and running standard applications on the ported solution





## IGNITARIUM'S SOLUTION

- Partitioned the complex design to fit in two different FPGAs on S2C platform
- Integrated MIG IP for DDR4 interfacing
- TDM design for data transfer across FPGA due to I/O pin limitation. Designed an auto calibration logic to ensure proper sampling of data on the receiver board
- Hardware Bring up with dual VU19P logic system and external peripheral connections
- Use of JTAG and OpenOCD for verification of different modules like I2C, UART, DDR4
- Brought up Linux and enabled Office application on the FPGA-based system

## BUSINESS IMPACT



Single-house execution for FPGA and Embedded services



Created an acceleration platform for the customer for future emulation activities

**Looking to transform your product?**

Drop us a line to get in touch with our experts.