



White Paper

Customized FPGA board for ASIC Prototyping A novel approach with Predesigned Blocks and Modular FPGA

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Introduction

Readily available off-the-shelf FPGA boards for ASIC prototyping brought significant advantages for SoC designers, yet there are many inherent challenges. A designer may have many reasonably priced off-the-shelf product options available, but finding an optimal fit with the exact interfaces required is still time consuming. Alternate is to either pay for the redundant interfaces, which are not required in the design or for the daughter cards to extended capabilities. More so high speed daughter cards take up costly design cycles and resources and there is the challenge of free I/Os.

The designer may choose to get the board developed best suited to his FPGA capacity and interface needs. But the time and efforts involved in getting a custom board developed from scratch, is not a cost efficient model for a single project requirement.

Design changes at the later stage will make the situation more dismal for the designer. It will need more time and extra cost for the project. If during the course of a project's schedule, design changes creep in requiring higher gate counts and need for a higher capacity FPGA arises, the designer will have no choice but to reinvest huge amount of time, cost and efforts from the scratch.

Aizyc has come up with a novel approach to address all these issues through their COSMOS Platform. The COSMOS platform will reduce the development time for the customized board by as much as 40%. It will reduce the efforts involved, hence the cost. It will add the flexibility to adopt the late design changes, with no major impact on the project schedule and the budget.

COSMOS – Custom ASIC Emulation Platform

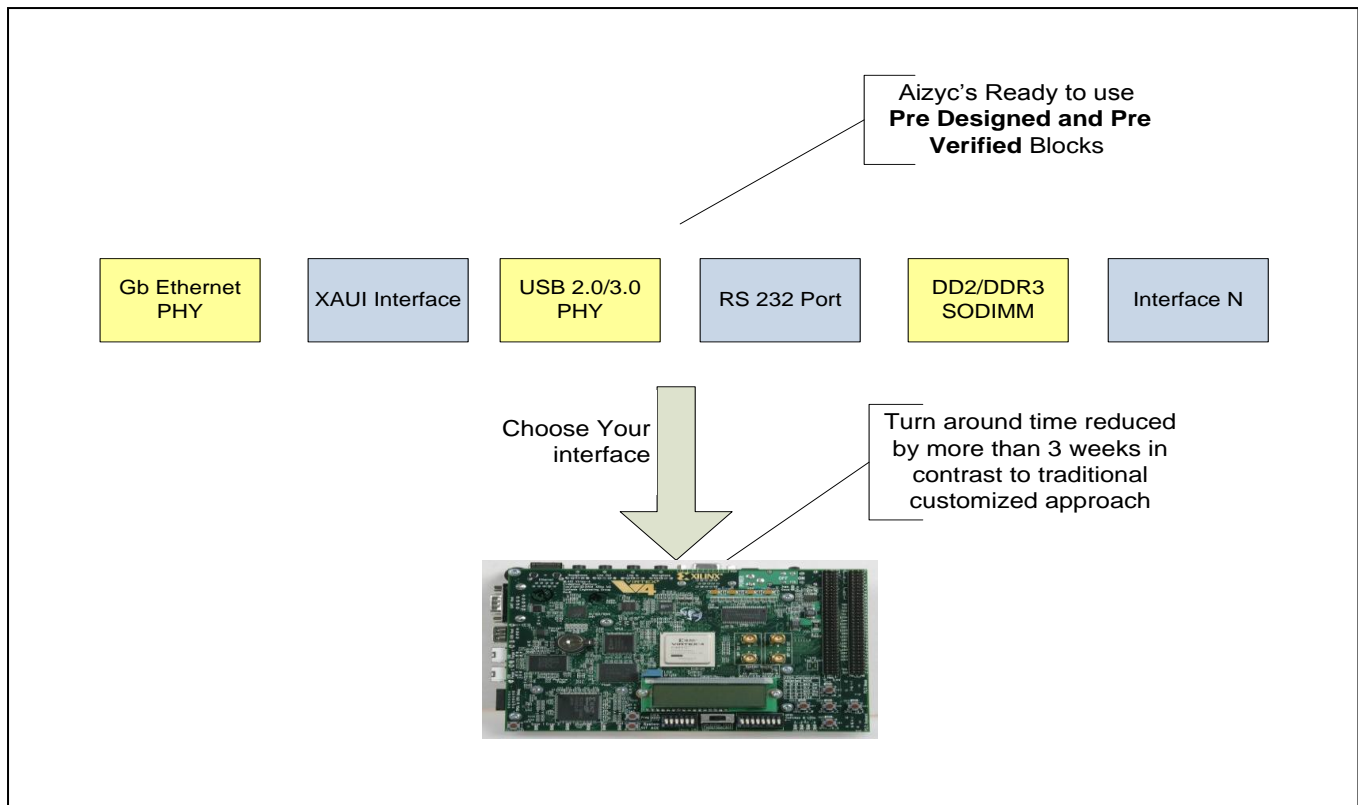
Aizyc's Engineering team realized that all SoCs share almost two-third interfaces in common. Still, for a new validation platform, all the efforts get duplicated. Aizyc's team advises COSMOS platform to enhance the reusability of schematic and layout blocks for all the common interfaces.

The COSMOS ASIC Emulation Platform from Aizyc Technology aims to address the needs of ASIC design teams who wish to have a full custom FPGA platform to suit their emulation needs rather than depend on or get tied to fixed off-the-shelf options available.

Aizyc has in-house pre-designed blocks for most commonly used interfaces. These pre-built blocks will be used while developing a FPGA prototyping platform as per the client's specific requirement. Designers can simply choose the blocks they would like on the board and Aizyc will build the board to that specification using the extensive library of pre-built and pre-laid out interface options

The COSMOS platform is built in much less time than a full custom board.

COSMOS will also reduce the time spent in the testing phase as these blocks are already verified.



COSMOS Advantage

With all pre-designed blocks available in-house, the designer will have the flexibility to choose the interfaces of his choice. This will eliminate the need for a daughter card and the expenses involved in it. Also, designer will not end up paying for the extra interfaces on the off-the-shelf board, which actually he does not need.

Aizyc will reuse its already designed blocks to create a FPGA based prototyping board. The designer will also have the flexibility to choose FPGA best suited for his requirement.

COSMOS will reduce the time involved in development of a customized platform up to 40%. Since these blocks are also pre verified, time and efforts involved during the Test phase, will also be significantly reduced.

- No Daughter card Required
- Less Time and Efforts required in comparison to other built-to-order customized platform
- Reduced Efforts in Testing due to pre-verified blocks
- Switching flexibility to higher capacity FPGA even at later stage of design cycle
- Valuable dollars and man-hours saved in spite of design changes.