

One Size Does Not Fit All:

Development System Products & Strategies

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One design tool configuration cannot meet the needs of all programmable logic designers. Overall, today's designers are looking for top-down, language-driven design support that enables system-level integration within their programmable logic design methodologies. However, user requirements and expectations vary considerably, dependent on their design methodologies, cost considerations and time-to-market pressures.

Xilinx is addressing the needs of the low-, mid- and high-density classes of designers with three XACTstep™ software solutions: the Foundation Series™, Alliance Series™ and System Level Integration (SLI)™ options. Thus, Xilinx users can choose between a complete, tightly integrated design system supporting industry-leading HDLs, schematic capture and simulation (the Foundation Series), or the integration of Xilinx implementation tools into their chosen EDA environment, leveraging defacto industry standards (the Alliance Series). Additionally, comprehensive system-level design is supported by SLI options, such as LogiCore™ modules, that enable users to achieve high density and performance while greatly reducing time-to-market. These products are available today.

Foundation Series

Designers of low-density FPGAs and CPLDs, the largest group of users, typically are cost-sensitive and prefer easy-to-use, push-button, integrated software solutions that support both schematic and language-based entry methods. Intolerant of delays, defects or risks, these users desire a complete, "shrink-wrapped" solution. The Foundation Series solutions provide the technological "foundation" upon which support for higher-density Xilinx devices can be built.

Xilinx is the first programmable logic vendor to offer a low-cost, shrink-wrapped solution that integrates schematic entry, HDL synthesis and gate-level simulation for both CPLDs and FPGAs. The goal of the Foundation Series solution is to provide an environment where the user can open the box, install the software, get up-to-speed quickly and complete designs successfully without assistance — although support is readily available if needed. From a single environment, users have access to HDL synthesis (VHDL and ABEL initially), schematic entry, gate simulation and core implementation tools, making PLD development simple and easy without compromising design flexibility or performance. The Xilinx continuum of software functionality and device technology enables users to expand their Foundation Series system capabilities with the changing demands of their design requirements.

Alliance Series and the Alliance Program

The mainstream segment of programmable logic, encompassing mid-range density users (10K to 15K gates), is the fastest growing segment in the programmable logic market. With decreasing market windows and increasing technology demands, main-

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“The upcoming upgrade to the XACTstep software platform incorporates our next-generation core software.”

stream designers have critical business issues to solve. To remain competitive in today's marketplace, they have developed their own design methodologies employing tools and technology provided by EDA vendors. They prefer to leverage their previous investments and experiences by using the appropriate combination of tools from their EDA and programmable logic suppliers. Therefore, it is critical that their programmable logic design solutions are tightly-integrated with their established methodologies and support industry standards. The Alliance Series, based on the industry's most powerful set of third-party EDA integration

solutions and partnerships, provides the benefits of an “open system”. Alliance Series products support industry standard design interfaces, such as EDIF, VHDL, Verilog and LPM, and allow designers to create and verify designs in their chosen third-party EDA environment.

Through the Xilinx Alliance Program, integrated design solutions for the design of Xilinx devices are available from a broad array of third-party EDA suppliers. The Alliance Program is structured to assure that Xilinx users have access to the widest variety of high-quality third-party tools, certified to work with Xilinx products. Currently, the Xilinx Alliance Program includes more than 100 partners, representing over 160 products, who have been selected for their contribution to Xilinx development and their responsiveness to customer needs. The Alliance Program supports these partners with technical information and assistance on an ongoing basis and, in turn, the partners provide Xilinx with input regarding product interfaces and directions.

System Level Integration (SLI)

High-density users, typically the early adopters, require leading-edge technology to help solve their very large, complex and performance-driven design problems. These users focus on advanced functionality and need the newest, most advanced technologies. As pro-

grammable logic devices increase in density, designing at the gate level is no longer a realistic approach.

SLI tools go far beyond just delivering support for higher-gate-count designs. Xilinx SLI options facilitate the design of system-level functions in high-density, high-performance programmable logic devices. Intended as “add-ons” to the Alliance and Foundation Series products, current SLI tools include the LogiCore modules. LogiCore modules are fully-verified, drop-in system level modules, such as target and initiator PCI bus interfaces. These tools can dramatically shorten design cycles and facilitate complex, system-level integration within programmable logic devices.

Next Generation Core Software Platform

The upcoming upgrade to the XACTstep software platform incorporates our next-generation core software environment, leveraging the industry-leading technologies from the merger between Xilinx and NeoCAD. This new core technology includes timing-driven optimization, mapping, FPGA placement and routing and CPLD fitting algorithms; it will be the software platform for all existing and future Xilinx IC product development and support. This new release will still incorporate many aspects of the popular XACTstep version 6 software environment, providing users with an easy migration path and protecting previous tool and training investments.

In summary, upcoming releases of the XACTstep product series are being developed to include the latest technological advancements, including enhanced SLI product offerings, value-added EDA technologies and additional Xilinx device support.. These advancements will deliver increased ease-of-use benefits for rapid design implementation flows, enhanced integration and high-quality results. In addition, Xilinx integrated educational tools will round out the technologies being delivered.

Future programmable logic design solutions from Xilinx will place more emphasis on making users of programmable logic better overall system designers, as well as ensuring rapid design implementation into Xilinx silicon. ♦