Software-to-FPGA Workstation Accelerates Intel® Core™ 2 Duo Processor Applications by 80X with Under 100 Watts of Power

Development system includes hardware platform, C-to-FPGA compiler and reference applications

Kirkland, WA – October 16, 2008 – Pico Computing, Inc. and Impulse Accelerated Technologies, Inc. today announced a desktop workstation for software application developers researching FPGA-based algorithm acceleration. With over 1.2 million programmable logic elements that can be programmed from C, the Acceleration Station™ P-300L development system allows performance-critical algorithms to be customized, refactored and automatically optimized and compiled to create parallel FPGA hardware. Using this approach, software developers can create hybrid software/hardware applications in which critical code loops and sequential subroutines are converted into parallel, pipelined equivalents providing extreme levels of performance and throughput.

"Software research teams are increasingly looking for solutions to simplify the development of hardware-accelerated applications," said David Pellerin, Impulse CTO. "We believe that offering a complete development system with ready-to-run examples and all required tools provides a necessary platform for software-to-FPGA programming and deployment."

The Pico Computing EX-300 card that is included in the Acceleration Station is a multiple-FPGA card with a PCI Express interface. This card is capable of supporting massive levels of parallel processing in a desktop workstation form-factor. Developers of highly parallel applications such as Monte Carlo simulations and pattern matching algorithms can benefit from larger numbers of FPGAs, and large numbers of hardware multipliers. The 16 dedicated Xilinx Spartan 3 devices used in the EX-300 represent a cost effective yet powerful mini-cluster, providing a very high level of hardware acceleration for compute-intensive, scalable algorithms.

"The EX-300, coupled with the Impulse C compiler and software-side APIs, is surprising easy to use," said Dr. Robert Trout, Founder of Pico Computing. "Our users are able to bring the system up and begin programming the 16 FPGAs using C-language in a very short time. We see tremendous potential in this system for advanced reconfigurable computing research."

The Acceleration Station P-300L is intended for software teams wanting to easily research and develop FPGA-accelerated algorithms and systems. Candidate applications for this workstation include image processing, national security, scientific, financial and many others.

The Acceleration Station P-300L includes:

- Pico Computing EX-300 accelerator card featuring:
    - 16 Xilinx Spartan™ XC3S5000 FPGAs
    - 1.2 million FPGA logic cells available for user applications
    - 1,664 dedicated parallel multipliers
    - Direct loading of FPGA bitmaps from the host computer
- Dell chassis with Intel Core 2 Duo™ processor, 2GB SDRAM and 250MB hard drive
- Linux operating system and all required FPGA card drivers (Windows operating system configurations will be available in Q1 of 2009)
- C-compatible API for host-to-FPGA communications
- Impulse CoDeveloper™ C-to-FPGA compiler and interactive optimizer
- All required Xilinx® FPGA development software
- Multiple template applications including scientific, financial and life sciences

- 2 hours of web-based FPGA training
- 4 hours of first algorithm engineering support

Price – The ready-to run Linux-based Acceleration Station P-300L includes all required Impulse, Pico Computing and Xilinx tools and starts at $24,000 dollars.

Availability – The Acceleration Station P-300L ships on November 1, 2008. Pico Computing will demonstrate the Acceleration Station at the International Conference for High Performance Computing 2008 (SC08) November 15 - 21, 2008 in Austin, Texas.

About Pico Computing

Pico Computing has taken FPGA computing to a whole new level by making small form factor FPGA platforms widely available. These form factors provide software engineers with plug-and-play options to experiment with and deploy hardware based acceleration for their algorithms. Applications can be designed and developed in a laptop/desktop, then deployed as a stand-alone embedded device or as a hardware accelerator to achieve high performance computing - all on the same platform. Pico has made harnessing the parallel computing power of the FPGA easy with their line of deployable development platforms. mhur@picocomputing.com

About Impulse

Impulse is the market leader in software-to-FPGA solutions for embedded and high performance computing. Impulse provides C-to-FPGA programming solutions for a wide variety of embedded and high performance computing platforms. Impulse solutions allow application developers to combine traditional workstation and embedded processors with application-optimized, software programmable FPGA coprocessors. The Impulse C compiler and libraries support rapid design iteration and algorithm refactoring, providing visibility and control to software programmers targeting hardware-accelerated systems. Impulse also provides customized FPGA libraries, reference applications and FPGA training services. david.buechner@impulseC.com