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CONTACT: Brian Durwood
Impulse Accelerated Technologies, Inc.
(425) 605-9543
brian.durwood@ImpulseC.com

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Impulse Adds Support for Floating Point in C-to-FPGA Tools

Impulse C compiler enables hardware-acceleration of embedded floating point applications in Xilinx FPGAs

Kirkland, WA – March 30, 2006 – Impulse Accelerated Technologies™ today announced support for Xilinx floating point libraries in its Impulse C™ software-to-hardware compiler. Through the use of advanced compiler and optimizer techniques, the Impulse compiler is capable of scheduling and generating highly parallel, pipelined floating point hardware from standard C statements and standard "float" and "double" data types.

"The extended dynamic range and precision offered by floating-point arithmetic can be a requirement for many applications," stated David Pellerin, CTO of Impulse. "These applications include signal processing algorithms for graphics, advanced wireless communications, instrumentation, industrial control, audio and medical imaging applications, as well as for FPGA-based supercomputing. Our support for Xilinx floating point cores represents our commitment to software application developers wanting to take advantage of FPGAs for algorithm acceleration."

Using Impulse C, software programmers are now able to generate Xilinx floating-point hardware from standard C-language statements. Both single and double-precision floating-point is supported, through the automatic inference of Xilinx IEEE-754 standard compliant floating-point IP libraries.

According to Steve Lass, director of Software Product Marketing at Xilinx. "By adding direct support for Xilinx floating-point libraries to its C-to-FPGA tools, Impulse continues to demonstrate its strong commitment to making FPGAs accessible to software application developers at all levels."

Pricing & Availability

Impulse CoDeveloper™ for Xilinx is available now, with perpetual license prices starting at $4695. A Starter Kit is available based on the Xilinx Virtex-4 platform that includes a one year license of the Impulse C software, the Prentice Hall textbook *Practical FPGA Programming in C*, a Nu Horizons FX-12 development board, Xilinx Embedded Development Kit, and two hours

of factory consultation, priced at $2,995. Visit www.ImpulseC.com/xilinx for additional information.

About Impulse

Founded in 2002, Impulse provides design tools that enable true software programming of FPGA devices using the C language. The Impulse C tools allow FPGA algorithms to be developed and debugged using popular C/C++ development environments, including Microsoft Visual Studio™ and GCC-based tools. The Impulse C software-to-hardware compiler translates C-language processes to low-level FPGA-hardware, while optimizing the generated logic and identifying opportunities for parallelism. The compiler analyzes untimed C code and collapses multiple C statements and operations into single-clock instruction stages, and is capable of unrolling loops and generating loop pipelines to exploit the extreme levels of parallelism possible in an FPGA. The integrated Application Monitor™ generates debugging visualizations for highly-parallel, multi-process applications, helping system designers identify dataflow bottlenecks and other areas for acceleration.

The Impulse C tools can be used in combination with existing, HDL-based FPGA tools, or can be used as a primary method of design entry. For applications involving embedded MicroBlaze™ or PowerPC™ processor cores, the Impulse C compiler is capable of automatically generating the required hardware/software communication channels using the fast simplex link (FSL), Auxiliary Processor Unit (APU) controller, and other Xilinx interfaces. The Impulse compiler generates outputs that are fully compatible with the latest Xilinx devices, including Virtex™-4 Platform FPGAs, as well as the Xilinx Integrated Software Environment (ISE™) and Platform Studio tool suites.

Embedded software application developers and scientific application programmers can use Impulse C to quickly and easily create FPGA application accelerators, without the need to understand low-level FPGA hardware or have any prior hardware design experience. Using these tools, software programmers today are describing, partitioning, optimizing and compiling their applications for use with the most advanced FPGA-based platforms. These platforms range from relatively simple, single-chip FPGA prototyping and reference boards to high-end cluster computing systems such as the Cray XD1™ FPGA-accelerated supercomputer.