Inside Out Article

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MicroBlaze

Programmable Logic from the INSIDE OUT

New MicroBlaze High-performance Processor

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The extreme density and performance of the Virtex™ and Virtex-II Platform FPGAs from Xilin the unprecedented ability to build complete, very complex systems on a single, reprogramı device. To make full use of this power you need high performance cores to help you impler processors and peripherals that form the heart of most systems. This week, Jim Burnham, MicroBlaze Product Marketing Manager at Xilinx, discusses the new MicroBlaze™ soft proc offers the highest performance in a very small space.

Q: What is MicroBlaze? MicroBlaze is a flexible soft core that implements a true 32-bit RIS processor running at 125 MHz, with separate (Harvard-style) instruction and data busses r full speed. It requires only 800-900 logic cells, and achieves 70 Dhrystone MIPS — over thr the performance and half the size of our competition's best efforts. We have benchmarked competition's processor and have measured only 22 Dhrystone MIPS, in the best case. As Xilinx EmPower!™ processing strategy, the MicroBlaze peripherals are fully compatible wit complement the Xilinx embedded PowerPC™ hard core, and they use the IBM PowerPC CoreConnect™ bus.

Q: What peripherals are available? MicroBlaze is currently deployed through a beta progra leading networking and telecommunications equipment manufacturers. As part of this prog has already delivered CoreConnect-enabled peripherals including an Arbiter and a UART. development are: a 10/100 Ethernet MAC, SPI and ATM Utopia level-2 interfaces; as well as standard set of peripherals including timer/counters, UARTs, interrupt controllers, GPIOs, e flash memory interfaces, and SRAM memory interfaces. All of these peripherals will be fully parameterizable, so you can easily adapt them to your specific requirements.

Q: What development tools are available? Xilinx will offer a MicroBlaze development kit (le $500) that includes the soft processor and peripherals. In addition, the kit will contain a cor of GNU-based software tools, including a compiler, assembler, and debugger. Variations c will include a Virtex-II development board and FPGA design software.

Q: What applications are possible with the MicroBlaze core? Because of its compact size use of the CoreConnect interface, you can build intelligent processor systems that contain over one hundred MicroBlaze processors on a Virtex-II FPGA. Imagine a networking applica one or more embedded PowerPC processors dispatching tasks to dozens of MicroBlaze p each performing a specific function as on-chip slave peripherals. This enables you to have control over your performance, power, cost, and design environment.

For more information on the MIcroBlaze soft core, see: MicroBlaze.