

Multimedia to Shine at Microprocessor Forum

x86, RISC, Embedded Processors Supplemented by Multimedia Chips

by Michael Slater

Entering its eighth year, the Microprocessor Forum will feature presentations on more than 20 new high-performance microprocessors on October 10–11. Processors for multimedia will play a far bigger role at this year's Forum, and an entirely new class of multifunction multimedia peripheral processors will debut. The multimedia devices and technologies presented will result in dramatic improvements in the capabilities of mainstream PCs.

Much-watched startup MicroUnity Systems Engineering will reveal the design of its "mediaprocessor," a chip claimed to be so fast that it can handle broadband demodulation functions as well as video decompression and user interface tasks. MicroUnity has defied conventional wisdom by building its own fab and is rumored to have a BiCMOS process capable of running at clock rates in excess of 1 GHz.

Three companies—Chromatic, Philips, and IBM—will unveil multimedia support chips designed to complement x86 microprocessors. These chips promise to bring higher-quality audio and video to mainstream PCs in the coming year.

To minimize costs, multimedia capabilities are going into host processors as well. Cyrix will preview a new 586-class microprocessor designed to enable consumer multimedia PCs, while Intel will detail the capabilities of its native signal processing approach. Rounding out this group, Sun will explain the visual instruction set extensions in UltraSparc and how they dramatically improve its multimedia capabilities.

During the introduction to this session and the panel discussion that concludes it, we'll compare and contrast the divergent approaches to delivering multimedia performance and shed light on the range of options facing system designers today.

Design Insights into x86 Processors

With the next generation of high-performance x86 microprocessor designs already disclosed, we've asked each vendor's chief architect to give the attendees additional insight into how design tradeoffs were made, what alternatives were considered, and the reasoning that led to the final designs. The session will highlight the strategies chosen by Intel's P6 team as well as by the designers of Cyrix's M1 and AMD's K5. In addition, another major next-generation x86 microprocessor will be revealed—but we aren't allowed to disclose the iden-

tity of the presenter until the Forum.

Following the technical presentations, well-known market analyst Aaron Goldberg of Computer Intelligence InfoCorp will share his data and insight on how the marketplace is responding to the new processors.

RISCs Advance Another Notch

Four of the five major RISC architectures will debut next-generation designs at the Forum. (MIPS Technologies has withdrawn its presentation.) In most cases, these designs are based on extensions of existing cores, as vendors seek to get more leverage from the advanced cores disclosed last year.

The PowerPC partners will disclose the next generation of PowerPC designs, improving the family's performance position. In the SPARC camp, enhanced HyperSparc and UltraSparc designs will debut. HP will disclose a new, highly integrated design, while Digital will reveal the next step in Alpha's evolution—maintaining its position as the fastest microprocessor on earth.

Embedded Processors Proliferate

For the second year in a row, we have a bumper crop of new embedded microprocessors. The action in embedded processors has moved away from traditional control-oriented applications and now focuses on PC peripherals, data communications, and consumer electronics. The new chips include PowerPC devices from both Motorola and IBM, new members of Intel's 960 family and Hitachi's SuperH family, and a new high-performance DSP from Motorola. Also included are disclosures of the first StrongARM design from Digital, giving ARM a powerful new partner and Digital an architecture for more cost-sensitive applications. Finally, LSI Logic will disclose a high-performance MIPS core for integrating into ASICs.

A View to the Future

For our concluding panel, we've assembled a group of leading system architects to share their visions of what system designs must do to deliver the performance potential of the very fast processors that will soon be upon us. We hope to see you there! ♦

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