

■ StrongArm Team Transmutes Into Alchemy

Rich Witek and Grep Hoepfner, the former Digital wizards largely responsible for the design of StrongArm, have formed Alchemy Microprocessor Design Group. Alchemy will be spun off from Cadence, the design-tools firm that scooped up Witek, Hoepfner, and other Digital refugees after Intel's acquisition of the company in 1998. Phil Pompa, late of Motorola, is the group's VP of marketing.

As its first official move, Alchemy has signed a MIPS license agreement. The newly minted MIPS licensee's stated goal is to design and sell low-power (under 500 mW), highly integrated processors for digital consumer systems. Specific targets for Alchemy's wizardry are cellular telephones and Windows CE-based systems in the portable, palm-sized, and AutoPC form factors.

Alchemy will be a fabless chip company, independent of Cadence, designing its own parts and selling them under its own name. Because Alchemy is a MIPS licensee, the company does not have to use a licensed foundry for its chips. The first integrated Alchemy devices are expected "in 18 months," according to the company.

If Alchemy's dark arts can transmute the MIPS architecture into ultralow-power microprocessors as was done with ARM, vendors of standard-issue CPUs will have much to be concerned about. Three years after its debut, the SA-110 still leads the industry in performance per watt. Witek and crew have a proven capacity for ignoring convention, turning their skills to circuit-design tricks and tweaks that extract the most performance (with the least energy) from an architecture. The "StrongMIPS" chips will certainly compete head-to-head with the group's previous progeny, StrongArm, which is now in the capable hands of Intel's former i960 design group. By late 2000, the world may have at least two very competitive processor families for high-end portable systems. —J.T

■ NEC V850E Checked In to TI's ASIC Library

NEC's little-known V850 family (see MPR 3/30/98, p. 8) will make the move to 0.18-micron processing this year and will also gain a second licensee. Texas Instruments will be only the second company, after Lucent, to license the 32-bit processor from NEC.

TI will initially build V850 devices in its 0.21-micron process, with a 0.18-micron version coming late this year. The company suggested that disk drives are the major market opportunity for the new core, supplementing TI's own DSP cores, which are already popular among disk-drive makers. The availability of an additional second source for the core may make the V850 architecture more attractive to the makers of such high-volume, low-margin equipment.

At the same time, NEC has announced plans to upgrade its own ASIC library with a 0.25-micron version of the V850E core. Currently, NEC's ASIC customers can get the

Cahners Buys MDR

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V850E in the 0.35-micron process, where it reaches a top speed of just 66 MHz. The 0.25-micron 2.5-V version should achieve 100-MHz clock rates, according to NEC. Availability is scheduled for June. —J.T.

■ Japanese Go ShBoom

Patriot Scientific (www.ptsc.com), the San Diego-based developer of the PSC1000 (née ShBoom) microprocessor, has licensed that design to Japan's Venture SystemLSI Assist Center. VSAC is a government-funded body formed to assist Japanese technology startups. In return for a one-time licensing fee to Patriot, VSAC can distribute the PSC1000A core to its members. As with Sun's recent deal (see MPR 3/8/99, p. 5), royalties are due only when—or if—chips reach production.

The PSC1000A (see MPR 4/15/96, p. 1) is a stack-based processor originally designed for aeronautic applications. Patriot found that Java compatibility has more cachet than Forth compatibility and recast its part as a "Java-ready" chip. Since the PSC1000 announcement in 1996, Patriot has upgraded the part to 100 MHz and developed a soft version of the core. The chip has had some success but has been overshadowed by Sun's PicoJava developments (for those who are interested in Java performance) or more mainstream 32-bit microprocessors (for those who are not). —J.T.

■ Dallas Semi Adds A/D, PWM to 8051

Dallas Semiconductor's (www.dalsemi.com) new DS87C550 chip brings analog-to-digital conversion and pulse-width modulation (PWM) to 8051-compatible processors. Like Taco Bell, Dallas has built a successful business by mixing three or four simple ingredients in seemingly endless combinations. With the A/D and PWM, the 87C550 lends itself to instrumentation and consumer electronics. It's also relatively fast, at 33 MHz, with lower per-instruction clock counts than most 8051 devices. —J.T. ☐