Analysis: Is Altera building a MIPS-based CPU core?

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SAN FRANCISCO—Altera Corp. isn't talking about its plans for the 32-bit architecture it licensed Tuesday (Oct. 6) from MIPS Technologies Inc., leaving analysts to speculate that the company may be planning to market its own MIPS-based CPU core.

Altera (San Jose, Calif.) declined an interview request, saying the company had no comment beyond what was contained in a news release about the deal issued by MIPS Tuesday morning. MIPS said Altera had licensed the company's MIPS32 architecture, but the financial details of the agreement were not disclosed.

Altera already offers several 32-bit embedded processor cores, including the company's homegrown Nios II processor, the Cortex M1 from ARM Holdings plc and the V1 ColdFire processor from Freescale Semiconductor Inc., according to information available from Altera's website.

Joseph Byrne, senior analyst for The Linley Group, told *EE Times* that since Altera is licensing the architecture from MIPS rather than a specific core, it leads him to believe that the company may be planning to build its own MIPS-based processor core.

"That very well could be," said Rich Wawrzyniak, a senior analyst with Semico Research Corp. Like Byrne, Wawrzyniak said he had no specific knowledge of Altera's plans for the MIPS architecture.

Wawrzyniak, who said there could be other reasons for Altera's silence, said if Altera is developing a MIPS-based core he suspects that MIPS is charging the company a significant amoung for the rights to license the architecture.

Gary Mobley, a sell-side analyst from Noble Financial Capital Markets, said in a research note that Altera would develop custom processor cores based on the MIPS architecture. Within a year or two, Altera should make these MIPS-based cores broadly available on Stratix and Cyclone products, Mobley said.

Byrne said how soon Altera could make available a homegrown MIPS core depends on how far along development is now—whether the work is just beginning or whether the companies chose to announce the licensing deal after the process is already well underway.

According to Mobley, MIPS and Altera signed the license agreement over a year ago, but it took time for MIPS to get Altera's approval to announce the deal. Mobley said the license revenue has already been recognized by MIPS, but that royalties from Altera could become material down the road.

Byrne said Altera has a lot of experience in developing its own processor cores and that the MIPS architecture is pretty straightforward.

"Generally, if you are doing a soft core for an FPGA, it makes a lot of sense to start from the ground up," Byrne said, noting that FPGAs have different gates and timing constraints than ASICs.

Altera's interest in offering a MIPS-based core is likely based on customer requests, probably from the communications space where MIPS is popular, according to Byrne. He said the licensing deal is a plus for both companies.

Mobley said Altera likey chose the MIPS architecture over ARM because the MIPS architecture is most similar to Altera's existing Nios cores.

A spokesperson for Altera's rival, Xilinx Inc., declined to comment on the Altera-MIPS deal, citing company policy against commenting on competitors' announcements.