

IBM intros 45-nm SOI foundry offering, maintains SOI competitive benefits to bulk CMOS

By Suzanne Deffree, Managing Editor, News -- 11/10/2008

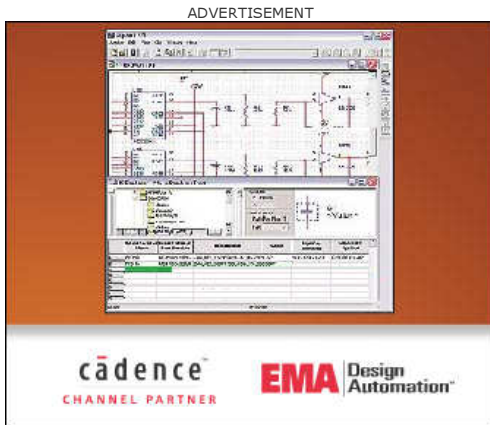
Electronic News

Maintaining that SOI offers significant performance improvements and power reductions when compared to bulk CMOS technology, **IBM** today claimed the semiconductor industry's first 45-nm SOI (silicon-on-insulator) foundry offering.

The Armonk, NY-based company made its announcement with support from **ARM**, which will provide a physical IP library, including standard cell, memory, and I/O libraries, for IBM's 45-nm SOI foundry work.

While some industry players have argued against SOI because of its higher cost when compared to bulk CMOS, IBM has been encouraging SOI since the 1990s when it first began commercially shipping the technology in its server products. Today's announcement follows the introduction of IBM's 45-nm Cu-45 ASIC SOI offering to customers a year ago. The Cu-45 saw IBM break tradition and **step away from bulk CMOS for the high-speed version of the ASIC**, while keeping with CMOS for the standard and low-power versions of the technology.

"As semiconductor vendors continue in the race toward higher speeds and lower operating power, an alternative to traditional bulk CMOS technology is critical to the continued evolution of the industry," said Joanne Itow, managing director at Semico Research Corp, in a statement. "To date, two major barriers have inhibited the broad adoption of SOI as this alternative - foundry capacity and IP library availability."



IBM said its testing has shown the potential for 45-nm SOI to offer up to a 30% performance improvement or a 40% power reduction when compared to bulk CMOS technology.

IBM has had significant SOI wins in the gaming console processor market, where its SOI technology is currently used by the three major gaming providers, Microsoft, Nintendo, and Sony. The company believes that a key to SOI's expansion beyond high-end applications is the generation-to-generation decline in the cost differential between SOI and bulk CMOS technologies. As that continues, IBM expects opportunities for SOI will expand into a broader range of consumer electronics, including digital TVs and high-end mobile applications.

"45 nm is our sixth generation of SOI technology and is a key driver in many collaborative designs with clients – including networking, storage, gaming, and other consumer applications," said Mark Ireland, VP of IBM's semiconductor platforms group, in a statement. "Today's announcement is a progression of this deep experience, providing a world-class resource for the industry to build on this proven, next-generation technology."

In addition to ARM, IBM's announcement saw support from the **SOI Industry Consortium**, in which the company **participates at the board level**.

"This announcement from IBM ... will continue to proliferate the adoption of SOI technology beyond the traditional high-end segment," said Horacio Mendez, executive director of the SOI Industry Consortium, in a statement.