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FH MONDAY

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TSMC Goes Photon to Cloud

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Xilinx Details SoC-like FPGAs

SAN JOSE, Calif. — Xilinx released the first details of its next-generation Everest architecture, now called Versal. It shows the microprocessor landscape is blurring as CPUs, GPUs and FPGAs morph into increasingly similar SoC-like devices.

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Intel Promises to Boost 14nm Production

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TALK TO US

Arm Targets Next-Level Autonomy Safety

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Photomask Optimism Burns Bright

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TSMC Goes Photon To Cloud

SAN JOSE, Calif. — TSMC taped out its first chip in a process making limited use of extreme ultraviolet lithography and will start risk production in April on a 5-nm node with full EUV. Separately, the foundry forged partnerships with four partners to support online services for back-end chip design.

The foundry's update showed that area and power gains continue in its leading-edge nodes, but chip speeds are no longer advancing at their historic rate. To compensate, TSMC gave an update on a half-dozen packaging techniques that it is developing to speed connections between chips.

Backers say that cloud-based services will shorten the time and extend the reach of chip design tools, helping expand a semiconductor industry facing the slowdown of Moore's Law. However, they note that cloud design is still in an early phase that typically requires setting up and optimizing custom sites.

Xilinx Details SoC-Like FPGAs

SAN JOSE, Calif. — Xilinx released the first details of its next-generation Everest architecture, now called Versal. It shows the microprocessor landscape is blurring as CPUs, GPUs and FPGAs morph into increasingly similar SoC-like devices.

Versal shrinks the size of a central FPGA block to make room for more ARM, DSP, inference and I/O blocks. It comes as Intel and AMD make room for beefier GPUs in their x86 chips and Nvidia adds specialty cores for jobs like deep learning on its GPUs.

Xilinx positioned Versal as the start of a broad new family of standard products. They aim to outperform CPUs and GPUs on a wide range of data center, telecom, automotive and edge applications and increasingly support programming in high-level languages such as C and Python.

Intel Promises To Boost 14nm Production

SAN FRANCISCO — Seeking to allay fears of revenue shortfall amid tight supply, Intel said Friday that the company believes it has the supply to meet its full-year sales target of $69.5 billion. The company also reiterated plans to increase its capital spending for the year to a record $15 billion and to be in volume production of 10nm chips next year.

In an open letter published on Intel's website Friday, Bob Swann, Intel's interim CEO, said the company increased capital spending includes an additional $1 billion to be spent on increasing 14nm capacity at Intel Fabs in Oregon, Arizona, Ireland and Israel. Swann said the increased spending and other efficiencies is increasing Intel's supply to respond to customer demand.

The strength of the PC market — which Intel now expects to grow for the first time since 2011 — has put pressure on the company's network of fabs, Swann said. Intel is prioritizing the production of Xeon and Core processors to serve the high-performance computing segments of the market, Swann said.

Arm Targets Next-Level Autonomy Safety

TOKYO — Arm unveiled Wednesday a new program called "Arm Safety Ready" for its ecosystem partners, and an upgraded processing core called Cortex-A76AE — integrated with split-lock safety features — for SoC designers. Both respond directly to the clamor for greater safety in the era of Advanced Driver Assistance Systems (ADAS) and autonomous driving.

Asked about the biggest challenges facing the automotive industry today, Lakshmi Mandyam, vice president of the embedded and automotive business at Arm, told EE Times in a phone interview: "a simpler and easier way to implement safety," and "a scalable platform requirement."

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Two recent surveys showed great optimism for the continued growth of the mask-making sector and the new technologies needed to maintain that growth.

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SEMI reported the overall mask market increased to $3.75 billion in 2017, up 4.1% CAGR over three years, the highest rate of growth for the photomask market in at least ten years. Two new surveys conducted by the eBeam Initiative predicts this growth trend will continue through 2020.