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TALK TO US

eFPGA LUTs Will Outship FPGA LUTs Later This Decade

FPGAs have become a strategic technology. It used to be a "poor man's ASIC" and provided a customized IC for lower-volume applications. While it is still used this way in many systems, it has also become strategically important to two very big, high-growth applications:

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Bosch Ups Investments In Reutlingen, Dresden Fabs

Addressing persistent chip shortages, Bosch announced plans to invest an additional $296 million to expand its semiconductor manufacturing capacity. The investment follows the German company's previously pledged investments aimed at current expansion efforts as demand increases for its MEMS and other devices.

The company first unveiled its investment plans in October 2021, announcing it would spend more than $472 million during 2022 to expand fabs in Dresden and Reutlingen, Germany, as well as in Penang, Malaysia. Of that total, Bosch earmarked $59 million for its Reutlingen facility that currently produces 6– and 8–inch wafers. It's Dresden fab currently produces 12–inch wafers.

Google AI Boosts Plasma Control for Fusion Energy

Google has applied AI in an effort to manage plasma within a nuclear fusion reactor. DeepMind Technologies, Google's British AI subsidiary, used its machine learning expertise to manage a tokamak, a circular nuclear fusion reactor, in partnership with EPFL's Swiss Plasma Center (École Polytechnique Fédérale de Lausanne). The findings, published in the journal Nature, may provide new avenues for developing fusion as a sustainable energy source.

Among the primary challenges for achieving nuclear fusion is containing plasma in a tokamak reactor while preventing it from colliding with its boundaries. To avoid this, researchers at the Swiss Plasma Center used computer simulators to test alternative control systems.

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Still, reports market tracker Knometa Research, about half of China's IC wafer capacity is controlled by overseas companies, most notably foundry giants Taiwan Semiconductor Manufacturing Co. (TSMC), United Microelectronics Corp. (UMC) of Taiwan, Samsung and memory specialist SK Hynix.

Lower construction and operating costs account for most of China's recent wafer fag gains, increasing 1 percentage point in each of the last two years. China accounted for just 9 percent of global wafer capacity in 2011, Knometa said.

eFPGA LUTs Will Outship FPGA LUTs Later This Decade

FPGAs have become a strategic technology. It used to be a "poor man's ASIC" and provided a customized IC for lower-volume applications. While it is still used this way in many systems, it has also become strategically important to two very big, high-growth applications:

Cloud data centers: networking, storage and security

Communications systems: base stations and 5G, etc.

In fact, FPGAs are so strategic for the data center that it caused Intel to buy Altera and more recently AMD to buy Xilinx. This is because processor workloads in many cases are shifting to FPGAs.

Data centers use FPGAs in volume to provide the parallel programmability a processor cannot achieve (one customer calls it "programmability at the speed of hardware"). These FPGAs are paired with dedicated function ICs such as NICs (network interface chips) and network switch chips. Each data center has different workloads and needs so a standard product for all doesn't work, and each data center has the volumes and capital to optimize for their needs.

Synaptics Targets France for Wireless R&D Center

Wireless chip specialist Synaptics is establishing a research and development center at the Sophia Antipolis campus in southern France that will focus on both software hardware developments relating to short-range wireless connectivity.

The development will significantly expand the California-based company's increasing foray into the Internet of Things (IoT) segment, as well as its presence in Europe. "Over the past two years, we have shifted our focus from the extremely crowded business of devices for biometric interface IP for PCs, such as trackpads and fingerprint sensors, such that today about 60% of our revenues come from the IoT sector and 20% from mobile wireless applications, the reverse of what we saw two and half years ago," Michael Hurlston, CEO of Synaptics told EE Times Europe.