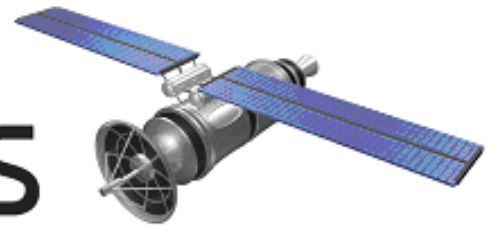


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EUV in Final Push into Fabs

ANTWERP, Belgium — A 20-year struggle to launch a next-generation lithography tool has entered its final phase as engineers race to unravel a rat's nest of related issues.

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ANTWERP, Belgium — A startup led by one of the pioneers of flash memory worked with the Imec research institute to design the smallest SRAM cells to date.

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Samsung Plans 3nm Gate-All-Around FETs in 2021

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TI Puts CMOS mmWave Radar in Production

MADISON, Wis. — The limitations of automotive radar systems are well-known. Traditional radar lacks resolution and can't distinguish nearby objects. Radars are also known to sound false alarms and they consistently fail to process information fast enough to be helpful on the highway.

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ARM Aims Cortex A76 at High-Performance Laptops

Arm announced a new mobile CPU core that it said can deliver performance within 10% of Intel's latest Skylake chips. Analysts praised the architecture's leap forward but said that they doubt Arm will take a significant share of today's x86-based notebooks

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Future Horizons Ltd, • 44 Bethel Road • Sevenoaks • Kent TN13 3UE • England

Tel: +44 1732 740440 • Fax: +44 1732 740442

e-mail: mail@futurehorizons.com • <http://www.futurehorizons.com/>

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EUV In Final Push Into Fabs

ANTWERP, Belgium — A 20-year struggle to launch a next-generation lithography tool has entered its final phase as engineers race to unravel a rat's nest of related issues. Despite complex problems and short deadlines to bring extreme ultraviolet (EUV) steppers into high-volume manufacturing, experts remain upbeat.

The good news is that many shoulders are pushing the wheel ahead. "In the past, one company would take a lead with a new semiconductor technology, but now all the logic guys are jumping in, biting the bullet, and taking the risks," said An Steegen, executive vice president of technology and systems at Imec.

Startup, Imec Shrink SRAM Cells

ANTWERP, Belgium — A startup led by one of the pioneers of flash memory worked with the Imec research institute to design the smallest SRAM cells to date. The 0.0205-mm² and 0.0184-mm² 6T-SRAM cells use a vertical gate-all-around transistor being developed by Unisantis as a building block for tomorrow's leading-edge chips.

The work was one of a handful of announcements at the opening day of the Imec Technology Forum. Other news here includes work on more accurate indoor location over Bluetooth, a dense lab-on-a-chip, and a camera-free approach to eye tracking, all developed solely by Imec.

Samsung Plans 3nm Gate-All-Around FETs In 2021

SANTA CLARA, Calif. — Samsung Electronics laid out plans to bring to mass production in 2021 the architectural successor to FinFETs, gate-all-around (GAA) transistors, at the 3nm node. The South Korean giant also reaffirmed plans to begin 7nm production using extreme ultraviolet (EUV) lithography in the second half of this year at its annual foundry technology forum here Tuesday (May 22).

GAA technology has been under development since the early 2000s by Samsung and other firms. GAA transistors are field-effect transistors (FET) that feature a gate on all four sides of the channel to overcome the physical scaling and performance limitations of FinFETs, including supply voltage.

TI Puts CMOS mmWave Radar In Production

MADISON, Wis. — The limitations of automotive radar systems are well-known. Traditional radar lacks resolution and can't distinguish nearby objects. Radars are also known to sound false alarms and they consistently fail to process information fast enough to be helpful on the highway.

However, automotive experts also recognize the redeeming virtues of radar technology, most notably its ability to work in all weather conditions. They believe that radars can team with vision sensors as the critical sensing technologies going into highly automated vehicles.

Knowing both its drawbacks and advantages, a bigger question is where radar goes from here.

Texas Instruments hopes to answer this question with millimeter-wave radar chips built on standard in-house RF CMOS technology. Introduced a year ago, TI's radar chips offer "less than 5-cm resolution accuracy, range detection to hundreds of meters, and velocity of up to 300 km/h," according to the company.

ARM Aims Cortex A76 At High-Performance Laptops

AUSTIN, Texas — Arm announced a new mobile CPU core that it said can deliver performance within 10% of Intel's latest Skylake chips. Analysts praised the architecture's leap forward but said that they doubt Arm will take a significant share of today's x86-based notebooks.

The Cortex-A76 arrives in tandem with new Mali G76 GPU and V76 video cores. All three are expected to appear in premium smartphone SoCs before the end of the year.

The A76 marks a full redesign for mobile systems, packing up to 2-Mbytes L2 cache, 4-Mbytes L3, and running at more than 3 GHz in a 7-nm node. It aims to deliver 90% of the Specint2006 performance of an Intel mobile Skylake chip with one-fourth the area and half the power — or roughly the same performance in thermally constrained systems.

"We're looking to close the gap with Intel ... this marks the first step in a new family, and it's the biggest leap we've taken in our roadmap," said Mike Filippo, an Arm fellow and lead architect for the A76.