# FutureHorizons

The Global Semiconductor Industry Analysts

## **FH MONDAY**

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### ST And Air Liquide Look To Pioneer in IIoT

STMicroelectronics will help Air Liquide to implement industrial internet of things (IIoT) solutions for operational activities such as asset tracking and management, predictive maintenance, and cybersecurity.

The two invoked "digital transformation," a buzzword that encapsulates the implementation of technologies like the IoT to enable operational improvements in a wide variety of different processes. Industrial automation is one such outcome of digital transformation. The challenge for many organizations is in the practical knowledge of how to implement such systems.

Air Liquide has been supplying ST with industrial gases and materials for over 30 years; the company is one of ST's top 10 suppliers. In this partnership, ST will develop the technology solution while Air Liquide effectively provides the testing ground within its global operations and network. Since Air Liquide is a very large industrial company, it provides an ideal environment to illustrate the needs of large industrial OEMs in all key areas of the supply chain.

#### Intel Targets 2021 For 7 nm

SAN FRANCISCO — After a long delay, Intel will start shipping its first 10-nm processors in June, consistent with the schedule the company has been communicating since last year, executives said.

Intel also plans to begin shipping 7-nm processors in 2021, executives told analysts at the company's annual investor day. The 7-nm process technology will mark Intel's first use of extreme ultraviolet (EUV) lithography.

Murthy Renduchintala, Intel's chief engineering officer and president of the company's Technology, Systems Architecture and Client Group, reiterated that Intel's first 10-nm processors to ship will be its Ice Lake notebook PC processors. Renduchintala added that Intel plans to launch several 10-nm products in 2019 and 2020

#### **TI Widens Dominance Of Analog IC Market**

SAN FRANCISCO — Texas Instruments further distanced itself from rivals in the analog IC market last year, holding nearly twice the market share of its closest competitor, Analog Devices Inc. (ADI).

TI's analog chip sales grew by \$900 million to reach \$10.8 billion in 2018, giving the company 18% of the total analog IC market, according to the firm. ADI, meanwhile, increased its analog IC sales by 7% to reach \$5.5 billion last year, good for 9% of the market.

TI's analog IC sales came in at more than 10 times that of the 10th ranked vendor last year, Renesas Electronics.

Its dominance of the analog market has grown substantially in recent years, in part because of TI's target markets. The company's primary analog markets — industrial applications (36% of TI's 2018 analog revenue), personal electronics (23% of analog revenue), and automotive (20% of analog revenue) — are highly profitable areas that TI's management believes afford the company the best opportunities for future growth.

#### **Tensilica's New DSP Targets SLAM**

Vision and AI applications in smartphones are evolving as rambunctiously as AI in drones, AR/VR (augmented & virtual reality), robotics and surveillance markets.

System designers are no longer just talking about adding face detection or face recognition. They've been there and done that. Increasingly listed as "must-have" new features in vision and AI apps are depth sensing, image stitching, de-warping, eye-tracking, HDR (high-dynamic range) processing and simultaneous localization and mapping (SLAM).

Against this backdrop of ever-expanding vision and AI applications, Cadence Design Systems, Inc., this week rolled out its Q7, a new member of its Tensilica Vision DSP product family.

#### Samsung Plans Aggressive Rollout of Next-Gen Transistors

SANTA CLARA, Calif. — Samsung's foundry division offered an update to its process technology roadmap Tuesday, including the first process design kit for its forthcoming 3-nm gate-all-around (GAA) technology. Company executives also provided some details about advanced 3D packaging technologies and introduced a new cloud-based design environment.

Samsung plans to begin risk production of one of two 3-nm GAA processes that it plans to offer by the second half of next year, with mass production expected in 2021. The company plans to begin risk production of the next 3-nm GAA process in 2021, with mass production expected in 2022.

Last month, Samsung began volume production on its 7-nm FinFET process, the first to make use of next-generation extreme ultraviolet (EUV) lithography. While the company plans to roll out derivative 6-, 5- and 4-nm processes with FinFETs over the next two to three years, Samsung considers 3 nm to be its next major process technology node and the first that will use GAA 3D multibridge-channel FETs, which feature gate material surrounding the channel region on all sides.

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