FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Industry News By Company

Cadence Expands Deal With Samsung On 3D-IC Design

Cadence Design Systems Inc. has expanded its collaboration with Samsung Foundry to accelerate the use of 3D-IC design.

As part of the deal, the reference flow featuring Cadence Integrity 3D-IC platform will help to create next generation hyperscale computing, mobile, automotive and artificial intelligence (AI) applications.

The power, performance and area (PPA) of the 3D-IC can be impacted when chips are stacked in a 3D-iC configuration instead of in a 2D configuration due to the presence of large 3D structures such as TSVs, which connect the stacked chips.

Cadence's Integrity 3D-IC platform lets users create multiple TSV insertion scenarios and device an optimal 3D structure placement on a die with reduced wirelength penalties while boosting PPA and productivity, Cadence said.

Additionally, the platform allows users to design, plan, implement and sign off from a single cockpit.

Globalfoundries Receives $30 Gan Semiconductor Contract

Globalfoundries has received a $30 million federal funding award for the development and production of next-generation gallium nitride (GaN) on silicon semiconductors.

.The GaN semiconductors will be manufactured at GF's Essex Junction, Vermont, facility. The fab, which is located near Burlington, was one of the first major semiconductor manufacturing sites in the U.S. and manufactures more than 600,000 wafers per year.

GaN semiconductors have significant heat and power levels that allow them to be used in applications such as 5G and 6G smartphones, RF wireless infrastructure, electric vehicles, power grids, solar energy and other technologies.

Infineon Delivers Next-Generation CIRRENT™ Saas Offering To Optimize Product Development With Intelligent Data

At OktoberTech™ 2022, Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) is bringing digitalization to the edge-from-the-cloud. Today, the company announced the next generation of its Software as a Service (SaaS) offering, Infineon's CIRRENT™ IoT Network Intelligence (INI) – a cloud SaaS offering that helps IoT developers quickly and cost-effectively gather information about their products to increase reliability, improve product performance, and reduce support cost.

Product and development teams use the service to identify, monitor and solve customer and product problems faster. The CIRRENT Agent embedded software can be deployed in new products or rolled out over-the-air to existing fleets, and then devices report data into the CIRRENT Cloud. Development teams can use the online console with new

artificial intelligence and machine learning capabilities to analyze product data and get new insights into product performance in the field.

"The Internet of Things enables unprecedented visibility into products in the field, but too many IoT product companies lack both the data and tools to look at the data," said Rob Conant, Vice President of Software and Ecosystem, Infineon. "Infineon's CIRRENT INI gives developers the ability to quickly gather data on their products in the field with dashboards and tools that provide actionable insights to solve problems and help drive strategic product development. This is just one example of Infineon's digitalization efforts to help our customers make better products."

IQE Signs VCSEL Deal With Asian Consumer Electronics Leader

Wafer supplier IQE plc (Cardiff, Wales) has said it has signed a multi-year supply agreement with a global consumer electronics leader based in Asia.

The deal with the unnamed customer includes the development of VCSEL (vertical-cavity surface emitting laser) technology for 3D sensing applications. This includes joint R&D for next-generation sensing and use cases.

VCSEL arrays are used for for dot projectors and flood illuminators for facial recognition to unlock smartphones and are in use for this purpose by Apple. Meanwhile Samsung has face-identification based on the user-facing camera.

Americo Lemos, CEO of IQE, commented: "This agreement marks the start of a long-term strategic relationship between two industry leaders. At IQE we have demonstrated our ability to deliver unparalleled levels of innovation, scale and quality over the history of our VCSEL production. To secure this partnership with a consumer electronics company of this calibre reaffirms our position as the leading global vendor of VCSEL products to the semiconductor industry."

Magment In US Development Deal For Magnetic Concrete

German developer of magnetic concrete Magment has signed a joint development deal for the dynamic wireless charging of electric vehicles with Heritage Environmental Technologies in the US.

The Heritage group is a major asphalt producer and is an investor in Magment since 2019. The deal will see the materials and technology ready for the market in 2023, says Mauricio Esguerra, founder and CEO of Magment.

Magnetizable asphalts with recycled magnetic materials will enable high-efficient and cost-effective construction of electrified roads that will supply energy to future vehicles rather than using copper coils with or without magnetic ground pads, he says. This will expand the company's portfolio of patented magnetizable road materials.

Renesas Completes Steradian Acquisition

Renesas Electronics Corp. has completed the acquisition of Steradian Semiconductors Private Ltd, a fabless semiconductor company providing 4D imaging radar solutions.

Headquartered in Bengaluru, India, Steradian is a start-up founded in 2016 and provides radar solutions that enable highly accurate object recognition and power efficiency in a small chip. Radar is a vital technology for ADAS, which uses a complex combination of various sensors in vehicles to detect objects. Renesas plans to capitalize on the high growth opportunities the automotive radar market offers, by expanding its automotive product portfolio with Steradian's radar technology and extending its reach in the radar market.

The resulting automotive radar solutions will combine the new automotive radar products, Renesas' ADAS SoCs (System-on-Chips) for processing radar signals, power management ICs (PMICs), and timing products together with software for object recognition. Together, these solutions will simplify the design of automotive radar systems and contribute to faster product development.

Industry News & Trends

Intel To Continue Manufacturing Its Own Chips

To fuel its so-called IDM 2.0 strategy, Intel Corp. will shift to an internal foundry model that will see the company continue to build its own semiconductors, maybe even expand the use of its own manufacturing.

The move is part of Intel CEO Pat Gelsinger's multiyear plan called IDM 2.0 where the company transforms back to a manufacturing powerhouse with a scheduled five process nodes to be completed in four years. If Intel hits this goal, it could very well compete with the likes of foundry leader Taiwan Semiconductor Manufacturing Co. (TSMC) and chip giant Samsung Electronics — considered to be the leaders in semiconductor manufacturing currently.

First, to scale Intel's manufacturing to be a key competitive advantage in the supply chain. This means continuing to manufacture most of its products internally. Intel is also developing a 7 nm process node driven by extreme ultraviolet (EUV) lithography. Additionally, the company seeks to reach lower process nodes quickly to catch up with TSMC and Samsung.

Secondly, Intel will build on its existing relationships with third-party foundries, which manufacture communications, connectivity, graphics and chipsets for Intel.

Third will be to expand its intel foundry services (IFS). Already, Intel has signed up Amazon, Qualcomm and MediaTek to its IFS and will continue to pursue U.S.- and European-based fabless companies to bring further competition to the semiconductor manufacturing space. As part of IFS, Intel acquired Tower Semiconductor to boost its portfolio of chip manufacturing for areas such as automotive electronic components that use more mature process nodes.

Delta Demonstrates 400 Kw Solid State Transformer-Based Extreme Fast EV Charger

Delta Electronics (Americas) Ltd., (Delta Americas), a subsidiary of Delta Electronics Inc. and provider of smart energy-saving solutions, demonstrated a next-generation silicon carbide (SiC) metal oxide-semiconductor field-effect transistor (MOSFET) solid state transformer (SST)-based 400 kW extreme fast electric vehicle (EV) charger to its U.S. Department of Energy (DOE) grant program partners. These include General Motors (GM), DTE Energy, NextEnergy, Virginia Tech's Center for Power Electronics Systems (CPES), and the American Center for Mobility. At the event, key representatives from the partners shared their vision on how Delta's extreme fast EV charging solution, which facilitates industry-leading charging current up to 500 A, is expected to accelerate the adoption of e-mobility across North America. The demonstration event featured GM's all-electric super truck, the GMC HUMMER EV.

Kelvin Huang, president of Delta Americas, said, “Collaborating with GM, DTE Energy, NextEnergy, the American Center for Mobility, CPES and the DOE has been a privilege. By combining our joint prowess in energy management, e-mobility and R&D, we are building the EV charging infrastructure of the future.Source: Delta Electronics (Americas) Ltd.

Source: Delta Electronics (Americas) Ltd.

Guided by its corporate mission, ‘To provide innovative, clean and energy-efficient solutions for a better tomorrow’, Delta continuously develops ground-breaking technologies and fosters long-lasting relationships with partners to help achieve mankind’s sustainability goals. This is how Delta, a member of the RE100 and EV100 initiatives, has been uniquely able to deliver more than 1.5 million EV chargers worldwide over the past decade.”

eInfochips and Taoglas Partner to Accelerate Global Wireless Innovation

eInfochips, an Arrow Electronics company, and Taoglas have teamed up to offer RF design services to customers needing to incorporate wireless connectivity into their products.

Rising demand for universal connectivity has accelerated cellular and RF integration in wired and offline devices, creating new engineering and compliance challenges. This collaboration offers a comprehensive set of RF services that help customers navigate the IoT development complexity of antenna design, calibration, tuning, testing and pre-certifications.

Taoglas has also established a new facility adjacent to eInfochips’ design center in Ahmedabad, providing customers access to 43 years of collective technical expertise in advanced wireless product engineering, test, and antenna and RF design between the two firms.

Synopsys, Ansys and Keysight Develop mmWave Reference Flow for TSMC Process Technology

Next-generation wireless communications systems must meet a range of requirements, including higher bandwidth, lower latency, better coverage and support for the proliferation of connected devices. High millimeter wave (mmWave) frequencies, the drive towards miniaturization and increasing design complexity are all creating new challenges for RFIC designers. At the same time, the market’s older generation mmWave design solutions were not developed to address the needs of today’s 5G/6G SoC designs and mmWave subsystem designs.

In line with this, Keysight Technologies Inc., Synopsys Inc., and Ansys have developed a new mmWave design reference flow for Taiwan Semiconductor Manufacturing Co. Ltd’s (TSMC) 16nm FinFET Compact (16FFC) technology. The flow takes full advantage of the process’ ability to maximize die cost scaling by simultaneously incorporating optical shrink and process simplification.

Pete Warden's Startup Puts AI in the Sensor

Pete Warden, the former Google engineer widely seen as one of the founding fathers of the tinyML movement, recently quit Google and formed a startup to develop AI-enabled sensor modules. Useful Sensors hopes to bring AI capabilities to sensors for consumer electronics and home appliances.

TinyML refers to AI or machine learning (ML) running in resource-constrained environments, typically microcontrollers. Warden, formerly the technical lead on the TensorFlow Mobile team at Google, previously founded Jetpac, an early AI startup acquired by Google in 2014. He also published a textbook on tinyML.

By founding Useful Sensors, Warden intends to accelerate the addition of AI-enabled features to home appliances, including everything from light switches to TVs.

East European News & Trends

Russian Prosthetic Hands Can "Feel"

A Moscow-based young company called Motorika has developed what they claim is a sensing prosthetic hand and earlier this year announced plans to start limited production two years from now. Their partners in the effort are Skoltech (Skolkovo Institute of Science and Technology) and the Vladivostok-based Far Eastern Federal University.

Research is still under way for the best possible performance of the hand that is said to soon be able to "feel" as it touches something.

The product is expected to fit both adults and teenage kids as young as eight years old, said Motorika founder and CEO Ilya Chekh.

3D Printers Might Soon Use Wax As Filaments

A research team at the Samara Polytechnic University (SamPU) in Russia's Lower Volga region has developed a brand new type of wax filaments for 3D printing.

Wax filaments are in extremely short supply in the market, compared to polymeric ones which are so easy now to come by, SamPU senior engineer Anton Barinov emphasized. "They [wax filaments] are very expensive, and only a handful of companies manufacture them," he added.

Nanofibers Found To Be Able To Stave Off COVID-19 And Make Water Clean

A group of Krasnodar State University alumni in Russia's Black Sea region has developed efficacious nanosized filaments to be used in medical masks and in disposable filters for respirators.

The team started by experimenting with kerosene soot particles which are the size of the coronavirus. Also, the conventional fabric typically used in medical masks was checked for saturability, and compared with the new nanosized filaments. The new fibers were reported to be more helpful in keeping off the coronavirus than the conventional ones.

World Economic Round Up

The global economy is approaching a recession as economists once again cut growth forecasts for key economies while central banks keep raising interest rates to bring down persistently high inflation. One bright spot is that most major economies already in a recession or heading into one are starting with relatively low unemployment compared with previous downturns. Indeed, the latest poll expects the smallest gap between growth rates and joblessness in at least four decades.

The latest economic news by country to include USA, Europe, UK, Japan, China, Asia Pacific and India can be found each month in our Semiconductor Monthly Report.

Industry Events 2022

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – March 2023
- Industry Forecast Briefing, London – January 2023

To book your place on any of our events please contact us on:

Telephone: +44 1732 740440
Email: mail@futurehorizons.com

Download Future Horizons Full Events Calendar Here

Industry Events

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP
MONDAY March 2023
AND
INDUSTRY FORECAST BRIEFING
TUESDAY January 2023

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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