

# FutureHorizons



The Global Semiconductor Industry Analysts

## **Future Horizons Newsletter**

**November 2021**

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## **Industry News By Company**

### **[U.K. Should Emulate Israel For Semiconductor Startups To Succeed](#)**

This week, some of the most successful senior executives from the U.K. semiconductor industry gathered at the birthplace of modern computing, the Bletchley Park National Museum of Computing, to discuss how to crack the code to chip startup innovation in the country.

It was rather like a re-run of Captain Ridley's shooting party, managing partner of the incubator Silicon Catalyst, co-host of the gathering this week with the National Microelectronics Institute (NMI). The two organizations announced a collaboration just a couple of weeks ago to work on creating the right environment for more U.K. semiconductor startups to be more successful globally.

The gathering this week was aimed at bringing together in a room those who can potentially help make that happen, discuss what are the challenges and the possible solutions. There were successful chip and EDA industry veterans like Jalal Bagherli, Simon Davidmann, and Stan Boland, as well as other influencers in the ecosystem such as John Goodacre and Neil Dickens, plus of course various startup founders, as well as government representation on semiconductor industry policy.

### **[Arm Neoverse: Powering the Next-Generation of High-Performance Computing](#)**

India's digital economy is in a stage of exciting growth. With over a billion mobile phones in use in the country and around 700 million internet subscribers, the opportunities for an ecosystem powered by digitalization are endless.

In fact, India now is one of the leaders in data consumption and generation worldwide. The outbreak of the COVID-19 pandemic in 2020 further accelerated the adoption of cloud computing in the country as enterprises sent employees to work from home and schools turned to online education. Add to this the demand for online services brought about by video streaming and gaming as people get to stay at home amid lockdowns and movement control orders, social media platforms, as well as increasing e-commerce activities.

All of these trends are fueling the growth of the country's data center infrastructure industry. According to JLL India, India's data center industry is expected to reach 1,007 MW by 2023, more than double its existing capacity of 447 MW.

### **[Infineon Partners With MeitY To Strengthen Startup Ecosystem In India](#)**

In order to promote technology innovation, start-ups and creation of intellectual property, MeitY Start-up Hub (MSH), an initiative of the Ministry of Electronics & IT (MeitY), has entered into a Memorandum of Understanding (MoU) with Infineon Technologies India. The collaboration aims to foster the development of incubation centers, Centers of Excellences (CoEs) and start-ups in India particularly in the field of Electronics and IT.

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Infineon Technologies is a renowned semiconductor company and counted amongst the top 10 semiconductor company globally. In India, Infineon has wide presence and outreach with large R&D and Sales teams developing leading edge semiconductors and software for Automotive, Power, IoT & Security markets and providing sales and technical support to local customers.

The collaboration of MSH and Infineon shall assist in “capability building” of the MSH startups by providing them access to new products and solutions, development trends, network base, mentorship and technical guidance with a goal to strengthen the local competence of the startups. The joint efforts focus on creating a vibrant start-up ecosystem in India by creating a strong economy built on the twin engines of innovation and technological advancement thus promoting the growth and sustainability of start-ups in the country.

### **Infineon Enables Highly Integrated USB Type-C Charger Unification**

Munich, Germany – 25 October, 2021 – Using energy responsibly is the essential factor for innovations in the field of energy efficiency towards a greener planet. Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY), the market leader for power semiconductors, is continuously investing and innovating in futureproof semiconductor technologies and solutions, enabling environmentally friendly applications as well as performance and ease of design.

The EZ-PD™ BCR (Barrel Connector Replacement) is a highly integrated USB-C controller, together with the USB-C connector, it replaces barrel connectors, custom connectors or legacy USB connectors in electronic devices. The EZ-PD BCR solution supports the USB Power Delivery (PD) standard that interoperates with all USB-C power adapters without the need of firmware development.

The recently published Revised Radio Equipment Directive from the European Commission proposes to standardize charging ports for most electronic devices with an aim to reduce e-waste from retired, incompatible chargers. The proposal calls for USB-C as the common charging port and it allows consumers to charge their devices with the same USB-C charger, regardless of the device brand. A common charging standard harmonizes fast charging technology and prevents product producers unjustifiably limiting the charging speed when using a charger from a different brand.

### **MixComm Acquired by Sivers Semiconductors**

The recent acquisition of startup MixComm by Sivers Semiconductors would allow the Swedish chipmaker to expand its portfolio to deliver 5G millimeter-wave devices while obtaining radio frequency/beam-forming circuits along with silicon germanium and RF-SOI technology.

Among those listed in the EE Times Silicon 100 startups to watch in 2021, MixComm said the deal with Sivers is worth between \$135 million and \$155 million, depending on achieving commercial milestones. That represents a more than 10-fold return on \$116 million investment by early backer Kairos Ventures.

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Functioning 5G networks are only now being deployed as promoters trumpet the next generation of wireless technology. We'll separate the hype from engineering reality in our upcoming 5G/6G Special Project.

The IP portfolio acquired to Sivers also includes a range of mmWave use cases, including unlicensed 5G, license 5G infrastructure, fixed wireless access and satellite communications. The deal also enables the combination to apply MixComm's antenna-in-package technology to more mmWave applications.

### **Synopsys And Dassault Systèmes Collaborating On Holistic Lighting Design Platform**

Synopsys Inc. and Dassault Systèmes are partnering to integrate Synopsys optical design solutions into the Dassault Systèmes 3DEXPERIENCE platform to facilitate the development of safer, smarter vehicles. By integrating complete optical systems design tools with world-leading virtual twin experience and product lifecycle management software, designers gain access to the industry's first holistic design portfolio for automotive lighting.

Designers using Synopsys optical software on the 3DEXPERIENCE platform will benefit from a multidisciplinary development process that empowers them to define, simulate and validate driving experiences. The integration allows the development of safer vehicles and enables distinctive illumination styling – all while accelerating delivery to market. Designers will also benefit from the 3DEXPERIENCE platform's collaborative virtual environment, which connects product teams to help them interact and innovate together.

“Lighting is becoming more and more intelligent and a key component of active safety and ADAS. Its development cost has significantly increased. Our extended partnership with Synopsys complements our existing offerings to provide a first-of-its-kind solution for vehicle manufacturers and suppliers to define, test and experience lighting and sensors for intelligent driving systems from functional requirements to manufacturing within the 3DEXPERIENCE platform,” said Olivier Sappin, CEO, CATIA, Dassault Systèmes.

## **Industry News & Trends**

### **[China's Robotaxis Hit the Road](#)**

China continues to lead in the development of robotaxis. This post will explore the status of robotaxis in China. A future column will focus on robotaxi trends in U.S. and other regions.

It is important to examine the general strategy and playbook of Chinese robotaxi companies before considering individual firms.

The vast majority of robotaxi operations use safety drivers. Driverless robotaxis trials have emerged in the last year and will grow. Driverless robotaxis have teleoperation-based remote operation as a backup for a safety driver.

Robotaxi operations remain free to the public in most cities. The earliest robotaxi operators are starting to charge fees as the experience grows.

Chinese robotaxi operators use fixed (or variable) pick-up and drop-off points for a given area. For instance, WeRide had 200 spots in Guangzhou in November 2020 in an area covering 144 square kilometers. Using a limited number of pickup and drop-off points is a big advantage. The routes for any trip can be determined for any ride, avoiding the most difficult traffic scenarios.

Many Chinese operators are including 5G-based C-V2X systems. This is useful operational strategy and will become a major safety advantage as C-V2X communications are used by a growing portion of the cars-in-use in China.

### **[Universities, DENSO Develop Biosensor to Detect COVID-19](#)**

Tokai University, Toyohashi University of Technology, Chubu University, and Denso Corp., with support from the Japan Agency for Medical Research and Development (AMED), have succeeded in developing a biosensor based on a new mechanism and detecting SARS-CoV-2. The group will accelerate the development toward practical application to contribute to early diagnosis of infectious diseases, which is a key factor in limiting virus' spread.

To prevent the medical system from being overwhelmed due to viral infectious diseases, it is essential to prevent the spread of viruses by early diagnosis and isolation. At present, PCR tests and antigen tests are used for the diagnosis of SARS-CoV-2. However, these tests cannot evaluate "virus infectivity," which indicates the power of the detected virus to infect. PCR tests are characterized by its high virus detection sensitivity, but effort of sample pretreatment process imposes a high workload on medical professionals. Meanwhile, antigen tests are simple, but the detection accuracy varies. There has been growing demand for a high-sensitivity and simple detection method to evaluate viral infectiousness.

## **ASVDP Boosts Startups to Use 5G AIoT Applications in Cities, Suburbs, and Rural Areas in Taiwan**

After continuous evolution over the years, the Internet of Things (IoT) has evolved from an emerging concept to a ubiquitous and popular technology. With the introduction of artificial intelligence (AI) and 5G, it has further expanded its application landscape, bringing safety and convenience to people's daily life, promoting the digital transformation and upgrading of various industrial and commercial activities, and spawning countless innovative services and products. According to the estimates by Statista, a market research organization, the global IoT market will reach approximately US\$389 billion in 2020, and this figure is expected to exceed US\$1 trillion in 2023.

Optimistic about the development prospects of Taiwanese companies in the IoT field, the National Development Council (NDC) of Executive Yuan, the Ministry of Economic Affairs, and the Ministry of Science and Technology have jointly promoted the Asia Silicon Valley Development Plan (hereinafter referred to as ASVDP) to perform two main tasks: to "promote the innovation and R&D of the IoT industry" and to "upgrade the innovation and entrepreneurship ecosystem". So far, the implementation has achieved fruitful results.

## **TSMC Details The Benefits of Its N3 Node**

TSMC, now chugging along with its N5 process node, said it will have its evolutionary N4 node ramped up to volume production this year. The N3 node, which will provide more of a technological leap than N4, is planned to go into volume production in the second half of 2022. N3 will indeed offer customers the kind of performance improvements they might hope for from a major node jump, though the speed improvement will be at the low-end of TSMC's projected aspirations from last year; the company also just missed its target for density improvement.

The announcements were made at a TSMC house event, the 2021 Online OIP Ecosystem Forum.

The foundry also highlighted the participation of its EDA partners in helping to support the N3 node, to assure eager chip designers that the tools to design and test ICs for N3 will be ready and available. Synopsys jumped the gun; it announced its tools for supporting N3 a full week before TSMC's event. Cadence subsequently had its quarterly earnings call and mentioned its products supporting N3 only after being chided by an analyst for not responding immediately to Synopsys. Siemens waited until the opening day of TSMC's conference to announce its N3 tools.

## **East European News & Trends**

### **Smart Turnstiles Bar Access To Public Places For The COVID-19 Afflicted**

A St. Petersburg company called O.Vision has developed its own method of inhibiting COVID-19 pandemic escalation: turnstiles that can recognize faces and measure body temperature.

The O.Gate has been showcased as a new contactless biometric device for access control. It can be installed on any turnstile and is reported to be able to recognize the face of a person within 0.2 sec; the person doesn't even have to stop or slow down to be recognized at all.

### **New Software Makes Your House Really Smart**

Promis and Effective Technologies, two IT companies based in Nizhny Novgorod, in the mid-Volga area, have developed an advanced software system called DomExpert. From a single IT platform the product can control all smart devices, metering instruments and surveillance systems installed in a residential building.

In this project, smart instruments that gauge the consumption of thermal and electrical energy, water, etc., automatically send data out to a special software-hardware complex. Fully processed, the data is then forwarded to a local public utilities management center.

Apartments in a building equipped with the system have smart electrical sockets that can be de-energized remotely, and also HVAC systems that enable the owner to remotely control, for example, air temperature in his apartment before he comes home.

### **Technology To Convert Sunlight Into Hydrogen**

The Institute of Catalysis in Novosibirsk is working on new technology enabling sunlight-assisted hydrogen production. Hydrogen is considered one of the most promising and eco-friendly energy sources.

The photocatalyst the Siberian chemists are developing is a mixture of cadmium sulfide and manganese. This is the key trigger in the reaction, the team said. All the catalyst requires to start acting is sunlight. A series of chemical transformations then follows to produce hydrogen.

### **New Solution For Oil & Gas Comes From West Urals**

Russian scientists at Perm Polytechnic University (PPU) in the West Urals have developed new software that would enable improved resource management in oil and gas production. In this effort they partnered with colleagues from Germany's Köln University of Applied Sciences.

At the heart of the project are digital twins for waterfloods at an oil field, a measure that would help use water resources more wisely and minimize or fully prevent the pollution of a local geological environment. By smartening up water consumption an oil producer could cut electricity consumption substantially while keeping production at levels required.



### **With Computer Vision, Sales In Stores Get Smarter**

A Russian start-up called Intelligence Retail employs computer vision in merchandising.

Intelligence Retail uses computer vision to help companies step up the efficiency of shelf utilization in stores. Its software scans assortments, prices and other relevant information in real time. It reportedly takes the service 10 seconds to generate an e-report on one retail section audit with an image recognition accuracy of as high as 99%.

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## **World Economic Round Up**

The International Monetary Fund (IMF) is now less optimistic about the global economy for 2021, but still sees reasonable growth over the medium term. In its World Economic Outlook the Fund said it expects global Gross Domestic Product (GDP) to grow by 5.9% percent this year, 0.1 percentage point lower than its July estimate. For 2022, the IMF has kept its global growth projection at 4.9 percent. The revised outlook for this year comes amid supply chain issues in advanced economies and a worsening health situation in emerging countries. The outlook for the low-income developing country group has darkened considerably due to worsening pandemic dynamics.

*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 2020

### Future Horizons Events

- [Silicon Chip Industry Training Seminar](#) – London – March 2022
- [Industry Forecast Briefing](#), London – 11 January 2022

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

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[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 2022**

**AND**

**INDUSTRY FORECAST BRIEFING**

**TUESDAY 11 |January 2022**

**BOTH BEING HELD AT**

**HOLIDAY INN KENSINGTON FORUM, LONDON**

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