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TALK TO US

Underwater WiFi and 4G LTE in the Air

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AIoT Chip Slashes Power Consumption for Person Detection

A proof-of-concept chip from French research institutes CEA-Leti and LIST, presented at VLSI Symposium 2020, incorporates a low-power IoT node and an AI accelerator and demonstrates ultra-fast wake up time with a 15,000X peak-to-idle power consumption reduction. The node delivers up to 1.3 tera operations per second per Watt (TOPS/W) or 36 GOPS for machine learning tasks.

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Trusted DoD Fabs GloFlo, SkyWater Join Forces

As the revival of U.S. chip manufacturing gathers momentum, pure-play technology foundry SkyWater Technology and GlobalFoundries will collaborate to extend domestic IC manufacturing capabilities sought by the Defense Department.

A memorandum of understanding between the GlobalFoundries, a long-time chip supplier to the U.S. military, and the U.S.-owned and Minnesota-based trusted foundry includes cross-licensing provisions and the prospect of a "wide spectrum" of specific IC projects.

The agreement along with parallel efforts could eventually help repatriate diminished chip capabilities such as test and assembly as well as advanced IC packaging, said SkyWater President Thomas Sonderman.

NI Acquires OptimalPlus, Doubling Down On IC Market

National Instruments rebranded last week. Like IBM and KFC before it, it will now be known by just its initials — which is the way a lot of people refer to NI anyway. The renaming caps a string of changes at the company. Late last year National Instruments partnered with Cadence. Though former president Eric Starkloff was promoted from president to CEO last year, he didn't take over until February, upon the departure of former CEO Alex Davern. And then at the beginning of this month, the company purchased OptimalPlus, a data analytics software company.

Ordinarily this much activity and a name change comes with a change in strategy. Starkloff says that's not the case — just the opposite in fact. "We've always been software-oriented. The world has moved in our direction," he said.

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Arrow will be an active partner in SIA's initiatives, focusing on technology innovation and global supply chain effectiveness, along with encouraging the related policies and regulations to foster global competitiveness.

"SIA is a powerful voice in and for the industry, and it has clearly proven that it knows how to get things done," said Michael J. Long, chairman, president and chief executive officer of Arrow, "The industry is stronger because of SIA's impact, and we are excited to team with this powerful association as we work to guide innovation forward."

Underwater WiFi and 4G LTE in the Air: No Escape from the Network

Want 4G services at 10,000 feet in the air? Or how about sending images in real-time while you are scuba diving? We seem to be getting there slowly, with two recent announcements, though at the moment they are still for specialized use.

For air-to-ground communications, UK-based mobile network operator EE and Nokia said they are going to build the world's first 4G LTE air-to-ground connectivity network for emergency services. And for underwater WiFi, a research team from KAUST (King Abdullah University of Science and Technology) has built a prototype 'Aqua-Fi' underwater wireless internet service using LEDs or lasers.

AIoT Chip Slashes Power Consumption for Person Detection

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The chip, named SamurAI, was tested in an occupancy detection system with off-the-shelf components including a PIR sensor, 224×224 pixel black and white camera, FeRAM and a low power radio. The daily average system power consumption was 105µW, with SamurAI consuming 26% of that budget. The system used the PIR sensor with a 5s interval during room occupation 8 hours per day, the camera at 1 frame per second and the radio 10x per day.

SamurAI System

SamurAI uses two on-chip sub-systems: a low-power clockless event-driven wake-up controller which can start up in 207 ns, and an on-demand subsystem comprising a RISC-V CPU with deep sleep mode plus PNeuro AI accelerator and cryptography accelerators.