

# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

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### 3D Chip Stacks Eye Data Centers

A microprocessor research project cancelled by Oracle gives a glimpse into the future of high-end chip design at a time when traditional scaling is slowing down.

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### MIPI Goes Beyond Mobile, Camera

The specification originally designed to connect a mobile-phone camera to a host processor has come a long way. After earning universal respect within the mobile ecosystem, this successful spec is moving decisively beyond mobile.

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### Israeli's Valens Semi Snags \$60 Million in Funding

Israel's Valens Semiconductor, inventor of HDBaseT connectivity technology for transmitting content, said Thursday (April 6) it secured \$60 million in venture funding from new and existing investors.

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### TALK TO US



### Rambus, Microsoft Heat Up With Cold DRAM

A community of computer scientists striving to respond to soaring system demand for real-time data processing has just received some good news.

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### EVENTS

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– 12 June 2017 – London UK

#### [Industry Forecast Briefing](#)

– 19 September 2017 – London UK

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### Smart Semi Fiber Does It All

A semiconducting-core optical-fiber may be able to perform the costly electrical-to-optical-to-electrical conversion passively within itself, rather than depending on expensive electronic-to-optical converters at the transmission end and expensive optical-to-electronic converters at the receivers end.

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### **3D Chip Stacks Eye Data Centers**

SAN JOSE, Calif. — A microprocessor research project cancelled by Oracle gives a glimpse into the future of high-end chip design at a time when traditional scaling is slowing down. The proposed Sparc CPU aimed to use chip-stacking techniques still in development to get advantages increasingly hard to squeeze out of silicon process technologies.

The researcher behind the concept was part of a layoff in Oracle's hardware group earlier this year. But his ideas live on at a new consulting firm already working with one Silicon Valley semiconductor company.

"The more I look into this, the more I am convinced it is the way to go," said Don Draper, former senior principal engineer at Oracle who now heads ProPrincipia, a three-person company that he formed.

### **MIPI Goes Beyond Mobile, Camera**

MADISON, Wis. -- The specification originally designed to connect a mobile-phone camera to a host processor has come a long way. After earning universal respect within the mobile ecosystem, this successful spec is moving decisively beyond mobile.

The MIPI Alliance just last week unveiled MIPI CSI-2 v2.0. The new spec, according to the industry group, can now respond to complex imaging needs of IoT, wearables, AR/VR, drones and automotive systems.

We recently caught up with Haran Thanigasalam, Intel senior platform architect and MIPI Alliance Camera Workgroup Chairman via phone, asked him to break it down for us.

### **Israeli's Valens Semi Snags \$60 Million In Funding**

**SAN FRANCISCO**—Israel's Valens Semiconductor, inventor of HDBaseT connectivity technology for transmitting content, said Thursday (April 6) it secured \$60 million in venture funding from new and existing investors.

The funding round was led by Israel Growth Partners, and included the participation of new investors Delphi, Samsung's Catalyst Fund, Goldman Sachs and MediaTek, Valens said through a statement. The company said it would use the funding to speed up time to market, develop additional products per market demands and support customers with design and development projects.

Valens has raised about \$100 million through several rounds of funding since its founding in 2006. The company emerged in 2009 to promote HDBaseT as one several wired alternatives to the high definition multimedia interface (HDMI). Valens eventually co-founded the HDBaseT Alliance with Samsung Electronics, Sony Pictures Entertainment and LG Electronics.

### **Rambus, Microsoft Heat Up With Cold DRAM**

Rambus revealed Monday (April 17) that the company, in collaboration with Microsoft researchers, will have an early prototype of cryogenic memory in a month, and a more complete one by the end of the year. The new technologies will be essential to data centers, "currently the fastest growing consumer of memory" in the industry, Craig Hampel, chief scientist at Rambus, told EE Times.

The new memory subsystems will be able to operate below minus-180 °C or minus-292.00 °F or 93.15 kelvin. This will substantially reduce energy consumption and improve the overall performance of a bank of computers deployed in the cloud for massive data processing, he explained.

### **Smart Semi Fiber Does It All**

LAKE WALES, Fla. -- A semiconducting-core optical-fiber may be able to perform the costly electrical-to-optical-to-electrical conversion passively within itself, rather than depending on expensive electronic-to-optical converters at the transmission end and expensive optical-to-electronic converters at the receivers end.

The invention combines an amorphous silicon core inside a 1.7-micron inner-diameter glass capillary capped at each end with a progression to single-crystal silicon, thus combining the inexpensive amorphous silicon-germanium for the long-run with short runs of single-crystal silicon at its ends. The research is being performed at Penn State (University Park) by Venkatraman Gopalan, professor of materials science and engineering, John Badding, professor of chemistry, physics, and materials science and engineering, along with Xiaoyu Ji, doctoral candidate in materials science and engineering.