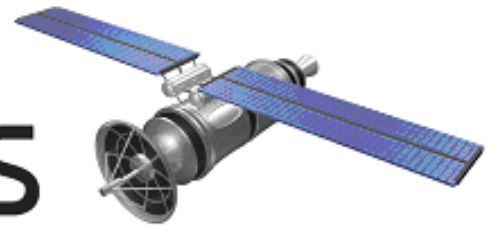


# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

7<sup>th</sup> November 2016

### Movidius to Push AI at Edge of Network

Movidius, a leading embedded computer-vision processor company, soon to be acquired by Intel Corp., has agreed with China's Hikvision to penetrate artificial intelligence (AI) deeper into surveillance cameras.

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### TSMC, GF/Samsung Battle at 7nm

TSMC will go head-to-head with the partnership of IBM, Globalfoundries and Samsung to publicly detail rival 7nm processes at a technical conference in December.

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### Intel, Qualcomm Head for Car Clash

As Qualcomm, after its NXP takeover, becomes a \$35 billion behemoth and morphs into the world's largest automotive chip vendor, expect rivalry between Qualcomm vs. Intel to escalate.

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### TALK TO US



### Samsung, Bosch Bet on AI Chip Startup

Graphcore Ltd. (Bristol, England), a startup developing a processor for machine learning, has completed a \$30 million Series-A round of funding led by Robert Bosch Ventures and Samsung Catalyst Fund.

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– 14 November 2016 – London UK

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### ARM rolls out chip cores for low-power VR apps

Chip designer ARM has launched two chip cores that address the demand for more immersive and interactive visual content—via virtual and augmented reality—on mobile devices.

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## **Movidius to Push AI at Edge of Network**

Movidius, a leading embedded computer-vision processor company, soon to be acquired by Intel Corp., has agreed with China's Hikvision to penetrate artificial intelligence (AI) deeper into surveillance cameras.

The deal put Movidius in a direct contact with Hikvision (pronounced high-K vision), a Chinese company not only known as a major factor globally in the surveillance market, but also for its expertise in advanced visual analytics.

In a phone interview with EE Times, Movidius CEO, Remi El-Ouazzane, said, "Deploying Artificial Intelligence at the edge [of the network] is becoming a massive trend."

## **TSMC, GF/Samsung Battle at 7nm**

TSMC will go head-to-head with the partnership of IBM, Globalfoundries and Samsung to publicly detail rival 7nm processes at a technical conference in December. The trio's process will use extreme ultraviolet lithography to achieve impressive gains, but TSMC likely will get to market first due to challenges getting EUV into production.

Using EUV, GF and Samsung claim they will deliver "the tightest contacted polysilicon pitch (44/48nm) and metallization pitch (36nm) ever reported for FinFETs," in an abstract for the International Electron Devices Meeting (IEDM).

## **Intel, Qualcomm Head for Car Clash**

MADISON, Wis. – As Qualcomm, after its NXP takeover, becomes a \$35 billion behemoth and morphs into the world's largest automotive chip vendor, expect rivalry between Qualcomm vs. Intel to escalate.

This time, the two giants will lock horns not over the smartphone chip market in which Qualcomm remains runaway winner, but in a fast-moving new world of highly automated vehicles.

Although Intel doesn't even appear among the top 10 automotive semiconductor suppliers, the CPU processor giant has been preparing in recent months for the highly anticipated era of autonomous driving.

## **Samsung, Bosch Bet on AI Chip Startup**

Graphcore Ltd. (Bristol, England), a startup developing a processor for machine learning, has completed a \$30 million Series-A round of funding led by Robert Bosch Ventures and Samsung Catalyst Fund.

The unusually large Series A has been put together by a notable team of investor that also included Amadeus Capital Partners, C4 Ventures, Draper Esprit plc, Foundation Capital and Pitango Venture Capital. Other technology companies besides Samsung were involved in the funding Graphcore said, without revealing names.

Nigel Toon, co-founder and CEO, said the money will allow Graphcore to "execute at scale" and that the investors bring contacts and market insights that will help Graphcore understand and solve real-world challenges.

## **ARM Rolls Out Chip Cores For Low-Power VR Apps**

Chip designer ARM has launched two chip cores that address the demand for more immersive and interactive visual content—via virtual and augmented reality—on mobile devices.

The company's Mali-V61 multi-standard video processor enables real-time 4K120 video performance. The live streaming advantages of the Mali-V61 are enabled by a 50% bit-rate saving over previous generation codecs to enable efficient transmission of high definition content. The Mali-V61 also scales from 1080p60 on a single core, up to 4K120 on multiple cores.

Inclusion of VP9 encode in the Mali-V61 enables the ecosystem to future-proof silicon and devices, as VP9 encode is soon expected to be a requirement in Android and Google apps. The Mali-V61 VPU also features high quality HEVC and VP9 encode in a single scalable IP block.

Meanwhile, the Mali-G51 graphics processing unit (GPU) is based on ARM's new Bifrost architecture which has been updated to include a redesigned texturing unit with double the throughput.