

# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

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### 5G, PC Sire Two-Headed Snapdragon

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### ST Tech Improves Driver Monitoring

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### Wave Rides AI-Enabled MIPS IP Licensing

If you think Wave Computing (Campbell, Calif.) is just another startup building AI systems for servers and workstations used by data scientists, think again.

In 2019, Wave is planting its banner in the licensing business.

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### TALK TO US



### Canadian Startups Tap Xerox Advanced Materials Expertise

TORONTO — Silicon Valley is synonymous with developing cutting-edge materials for technology products, but it's not the only region in North America for companies looking to build an innovative product with a significant hardware element.

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### EVENTS

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– 12 Nov 2018 – London UK

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### Wi-Fi, Cellular Face Off at 6 GHz

The race is on to see whether Wi-Fi or cellular will be first to gain widespread penetration in the 6-GHz band, and 650 Group believes this is Wi-Fi's race to lose. At the end of October, the FCC released a Notice of Proposed Rule Making, suggesting it open the 6-GHz band (5.925-7.125 GHz) for unlicensed use.

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## **5G, PC Sire Two-Headed Snapdragon**

Qualcomm announced a new SoC for flagship smartphones and its first Snapdragon variant for its ongoing drive into Windows PCs. The 7nm chips demonstrate remarkable engineering execution at a time of unprecedented business, market and technology challenges.

The Snapdragon 855, along with its X50 modem, position the company to dominate the first wave of 5G devices. However, the initial wave could be a small one given gradual network buildouts, and its expansion into Windows devices has so far gained negligible traction.

Long term, the company faces a slowing smartphone market where it has lost a top customer due to patent disputes with Apple. After mergers with Broadcom and NXP were blocked, its road into the Internet of Things and automotive markets remains cloudy. And it sacrificed its hopes to stake out a beachhead in the data center to cost cuts appeasing shareholders.

## **ST Tech Improves Driver Monitoring**

STMicroelectronics has introduced two new automotive global shutter image sensors for automotive in-cabin driver monitoring enabling high dynamic range and low noise where crosstalk is minimized even at near-infrared illumination.

ST's new VG5661 and VG5761 are intended for high-end computer vision applications in automotive and industrial machine vision, with in-pixel linear high dynamic range. In automotive, they enhance monitoring of vehicle occupants by capturing the scene as illuminated from the camera, eliminating unpredictable external effects such as sunlight or street lighting. Their image quality sharpens the responses of driver-monitoring systems, especially under near-infrared illumination close to 940 nm, and enables new features such as assessing driver attention, passenger comfort, or child behavior.

## **Wave Rides AI-Enabled MIPS IP Licensing**

If you think Wave Computing (Campbell, Calif.) is just another startup building AI systems for servers and workstations used by data scientists, think again. In 2019, Wave is planting its banner in the licensing business.

Wave is launching a fully-fledged licensing business that combines the company's AI technologies with IPs from MIPS Technologies, acquired by Wave in June.

In the first concrete sign of this development, Wave announced Monday the appointment of Art Swift as president of its MIPS licensing business.

Swift is known in the industry for occupying a host of executive positions at high-tech companies and open source foundations. He has been vice president at Esperanto Technologies, president and CEO at Transmeta, vice-chair of the RISC-V Foundation's Marketing Committee and president of the prpl Foundation. Swift, moreover, is no stranger to MIPS. He was vice president of marketing and business development at MIPS Technologies from 2008 to 2011.

## **Canadian Startups Tap Xerox Advanced Materials Expertise**

TORONTO — Silicon Valley is synonymous with developing cutting-edge materials for technology products, but it's not the only region in North America for companies looking to build an innovative product with a significant hardware element.

Toronto-area startup AOMS Technologies has tapped into the advanced materials knowledge and expertise of the Xerox Research Centre of Canada (XRCC) to move its integrated industrial Internet of Things (IIoT) platform from the research stage to product commercialization.

In a telephone interview with EE Times, CEO Hamid Alemohammad said that AOMS' success would not be possible without the XRCC. It began its relationship with Xerox in 2015 as part of an incubator for hardware-focused companies — most other incubators in Southern Ontario, such as those in Toronto and Waterloo, tend to be software-focused.

## **Wi-Fi, Cellular Face Off at 6 GHz**

The race is on to see whether Wi-Fi or cellular will be first to gain widespread penetration in the 6-GHz band, and 650 Group believes this is Wi-Fi's race to lose. At the end of October, the FCC released a Notice of Proposed Rule Making, suggesting it open the 6-GHz band (5.925-7.125 GHz) for unlicensed use. The plan aims to solve a well-known problem. Interference is already rampant in existing Wi-Fi and LTE bands, limiting growth. The industry needs more bandwidth for Wi-Fi, LTE, and in the near future for 5G.

In a recent white paper, the Wi-Fi Alliance said due to growth in Wi-Fi devices, connection speeds and traffic volumes Wi-Fi's needs will exceed its capacity in the current 5-GHz band by 2020. It called for a gigahertz of additional spectrum in various world regions to support expected growth with bands wide enough to support 160-MHz channels.