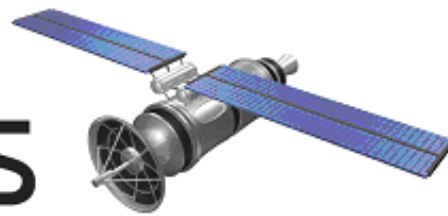


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The Global Semiconductor Industry Analysts



FH MONDAY

19 September 2016

GF Debuts 7nm, Embedded MRAM

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SGI Supercomputes Ireland

Only cruinn (Irish for accurate) weather predictions is the goal of SGI (Silicon Graphics Inc., Mountain View Calif.) collaboration for spot-on climate modeling with the Irish Centre for High-End Computing (ICHEC) at the National University of Ireland (Galway).

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Touch Standard Rides I3C Link

The MIPI Alliance has started work on a standard interface for touch screens using its emerging I3C interconnect announced earlier this year. MIPI Touch, described at a developer's conference here, aims to simplify work for engineers who currently support a handful of proprietary approaches.

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TALK TO US



Chip Process War Heats Up

Although volumes are still small, fully depleted silicon-on-insulator could grow rapidly in the wake of Globalfoundries' plans for a 12nm process. Whether Samsung or a new fab coming up in Shanghai will adopt FD-SOI will be a big factor, said veteran market watcher Handel Jones of International Business Strategies.

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5G Cellular 'Still in Early Stages'

It's still early days for 5G cellular, according to a Qorvo engineer attending the 3GPP meetings where the standard is being hammered out. Despite talk about trials and commercial offerings as early as next year, standards will not be complete until late in 2019 making true 5G offerings unlikely before 2020.

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GF Debuts 7nm, Embedded MRAM

Globalfoundries announced plans for a 7nm FinFET process that can deliver chips with up to 30% more performance or 60% less power consumption than its current 14nm node. The process will be in production in late 2018, delivering gate pitches as small as 30nm initially using only today's optical lithography.

Separately, the company will support a new embedded MRAM in sub-Gbit densities starting in 2018 for chips made in its 22nm fully depleted silicon-on-insulator (FD-SOI) process. The memory technology, licensed from Everspin Technologies, will provide faster write speeds as well as lower power consumption and die size than current variants of embedded flash.

SGI Supercomputes Ireland

Only cruinn (Irish for accurate) weather predictions is the goal of SGI (Silicon Graphics Inc., Mountain View Calif.) collaboration for spot-on climate modeling with the Irish Centre for High-End Computing (ICHEC) at the National University of Ireland (Galway). Using SGI supercomputers, ICHEC aims at no less than saving lives, increasing crop yields and boosting the world economy using never-before revealed super-accurate techniques derived from Ireland's new-found wealth.

"As part of SGI's quest to push the boundaries in production supercomputing, we focus on key challenges our customers face," said Gabriel Broner, vice president and general manager, high performance computing at SGI.

Touch Standard Rides I3C Link

The MIPI Alliance has started work on a standard interface for touch screens using its emerging I3C interconnect announced earlier this year. MIPI Touch, described at a developer's conference here, aims to simplify work for engineers who currently support a handful of proprietary approaches.

The interface includes a standard command set for relaying messages between the application processor and other touch components. It aims to replace a variety of approaches using I2C and SPI links the group claims are not well optimized for mobile systems.

Chip Process War Heats Up

Although volumes are still small, fully depleted silicon-on-insulator could grow rapidly in the wake of Globalfoundries' plans for a 12nm process. Whether Samsung or a new fab coming up in Shanghai will adopt FD-SOI will be a big factor, said veteran market watcher Handel Jones of International Business Strategies.

Ironically in a semiconductor industry traditionally focused on the next big thing, the aging 28nm node is likely to be the biggest process off all through 2025, according to the current IBS forecast.

The FinFET processes adopted by top chip makers Intel, Samsung and TSMC provide the highest performance and lowest power consumption. However in a 14nm equivalent, FD-SOI supports 16.8% lower cost per gate than FinFETs, Jones said. It also provides about 25% lower design cost and risk of needing a re-spin, he added.

5G Cellular 'Still in Early Stages'

It's still early days for 5G cellular, according to a Qorvo engineer attending the 3GPP meetings where the standard is being hammered out. Despite talk about trials and commercials offerings as early as next year, standards will not be complete until late in 2019 making true 5G offerings unlikely before 2020.

The 3GPP broke the task of defining 5G into two parts. By September 2018 it aims to release a first phase aimed at enhanced broadband services below 6 GHz with some support for new low latency communications.

The group is considering a May 2018 preliminary release of that first phase to make sure it is on track.