ARM and GLOBALFOUNDRIES to Optimize Next-Generation ARM Mobile Processors for 28nm-SLP Process Technology

June 3, 2013

New ARM POP technology provides core-hardening acceleration for Cortex-A12 and Cortex-A7 processors

Milpitas, Calif., and Cambridge, UK, June 3, 2013 – In conjunction with the launch of the ARM® Cortex®-A12 processor, ARM and GLOBALFOUNDRIES today announced new power, performance and cost-optimized POP™ technology offerings for the ARM Cortex-A12 and Cortex-A7 processors for GF 28nm-SLP High-K Metal Gate (HKMG) process technology. The Cortex-A12 processor was introduced by ARM today as part of a suite of IP targeting the rapidly growing market for mid-range mobile devices.

The companies will combine ARM's next-generation mobile processor and POP IP with GF 28nm-SLP HKMG process solution, enabling a new level of system performance and power efficiency with the optimum economics necessary to serve the mid-range mobile device market. The new initiative builds on the existing robust ARM Artisan® physical IP platform and POP IP for the Cortex-A9 processor already available on GF 28nm-SLP, signifying another milestone in the multi-year collaboration between ARM and GF.

Central to this increase in functionality for mid-range mobile devices is the new ARM Cortex-A12 processor. The Cortex-A12 processor provides a 40 percent performance uplift and direct upgrade path from the incredibly successful Cortex-A9 processor, while matching the energy efficiency of its predecessor. The Cortex-A12 processor provides best-in-class efficiency as a standalone solution, but additionally supports the innovative big. LITTLE™ processing technology with the Cortex-A7 processor, bringing this energy-efficient technology to the mid-range. GF 28nm-SLP process technology and associated ARM POP IP for the Cortex-A12 processor enables up to 70 percent higher performance (measured single-thread performance) and up to 2x better power efficiency in comparison to a Cortex-A9 processor using 40nm process technology. Designers can achieve even higher performance by trading off for lower power efficiency, depending on their application needs. Click here for more information on the Cortex-A12 processor.

The newest POP technology enables customers to accelerate core-hardening of Cortex-A12 and Cortex-A7 processors on GF 28nm-SLP HKMG process. POP IP for Cortex processors has successfully enabled ARM-based SoCs with more than 30 different licenses since being introduced over three years ago. POP IP is composed of three elements necessary to achieve an optimized ARM processor implementation: core-specific tuned Artisan physical IP logic libraries and memory instances, comprehensive benchmarking reports, and implementation knowledge that detail the methodology used to achieve the result, to enable the end customer to achieve the same implementation quickly and at low risk.

"With 580 million mid-range smartphones and tablets forecast to be sold in 2015, consumers are increasingly looking for the right combination of performance, low power and cost effectiveness,"? said Dr. Dipesh Patel, executive vice president and general manager, Physical IP Division at ARM. "With the Cortex-A12 processor and suite of IP announced today, ARM is delivering an optimized system solution leveraging the most innovative technologies available for this market. The POP IP solution on GF 28nm-SLP helps designers balance the performance, power and cost tradeoffs to achieve their targets for this growing market."?

GF 28nm-SLP technology is ideally suited for the next generation of smart mobile devices, enabling designs with faster processing speeds, smaller feature sizes, lower standby power and longer battery life. The technology is based on GF's "Gate First" approach to High-K Metal Gate (HKMG), which has been in volume production for more than two years. The technology offers a combination of performance, power efficiency and cost that is ideally suited for the mid-range mobile market.

"GF is committed to a deep relationship with ARM to enable best-in-class solutions for our mutual customers. Our collaboration on the ARM Cortex-A12 processor implementation is a direct result of this focus and collaboration,"? said Mike Noonen, executive vice president of Marketing, Sales, Design and Quality at GF.

GF's next-generation 14nm-XM FinFET technology is expected to bring another dimension of enhanced power, performance and area for ARM mobile processors. A Cortex-A9 processor implemented on 14nm-XM technology, using 9-track libraries, is projected to enable a greater than 60 percent increase in frequency at constant power, or a decrease of more than 60 percent in power consumption at constant performance, when compared to implementation on 28nm-SLP technology using 12-track libraries. Similar results are expected for Cortex-A12 processor implementations. Click here for more details on GF's 14nm-XM FinFet technology.

For further discussions about GF process technologies or ARM IP offerings please visit the companies' respective exhibits at the Design Automation Conference (DAC), June 3-5, 2013 in Austin, Texas. ARM is located in booth 931, and GF can be found at booth 1314.

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GF is the world's first full-service semiconductor foundry with a truly global footprint. Launched in March 2009, the company has quickly achieved scale as the second largest foundry in the world, providing a unique combination of advanced technology and manufacturing to more than 160 customers. With operations in Singapore, Germany and the United States, GF is the only foundry that offers the flexibility and security of manufacturing centers spanning three continents. The company's three 300mm fabs and five 200mm fabs provide the full range of process technologies from mid-range to the leading edge. This global manufacturing footprint is supported by major facilities for research, development and design enablement located near hubs of semiconductor activity in the United States, Europe and Asia. GF is owned by the Advanced Technology Investment Company (ATIC). For more information, visit http://www.globalfoundries.com.