# GLOBALFOUNDRIES Joins IMEC to Develop Innovative RF Solutions for Internet of Things Applications

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*Cooperation will focus on critical R&D for mobile and wireless sensor networks*

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- Collaboration to address critical challenges in radio architecture design in multiband, multimode mobile radios and ultra-low power (ULP) wireless devices.
- Cooperation on critical digital-intensive RF architectures and analog circuits for mobile communications and IoT sensor nodes.
- Research will leverage GLOBALFOUNDRIES CMOS technology platforms optimized to boost RF performance of IC's.

GF, a leading provider of advanced semiconductor manufacturing technology, today announced a partnership with imec, a leading nanoelectronics research center, for joint research on future radio architectures and designs for highly integrated mobile devices and IoT applications.

A key challenge for next-generation mobile devices is controlling the cost and footprint of the radio and antenna interface circuitry, which contain all of the components that process a cellular signal across the various supported frequency bands. Today, a typical mobile device must support up to 28 bands for worldwide 2G, 3G, 4G, LTE network connectivity, and more complex carrier aggregation schemes and additional frequency bands are expected for future generations. These challenges are driving the need for an agile radio that integrates many of the separate components into one piece of silicon, including power amplifiers, antenna switches, and tuners and provides a solution which is both flexible and low cost.

GF will closely collaborate with technical experts from imec to investigate low-power and compact high-performance agile radio solutions that will enable a broad range of radio architecture design--targeting improvements in area, performance and power consumption. GF will also partner with imec to develop innovative ultra-low power IC design solutions leveraging GF's CMOS technology to address the demanding requirements of tomorrow's IoT devices. Ultimately, the partnership aims to build a technology and design infrastructure that will enable future RF architectures while minimizing critical interface requirements for radio power consumption and performance.

"This collaboration expands our relationship with imec, and we're eager to leverage their R&D expertise in RF technology to accelerate time-to-volume of designs and deliver leading-edge RF technology to our customers," said Peter Rabbeni, director RF Segment Marketing at GF. "This relationship further reflects our commitment to find RF design implementations that will efficiently extend the range of wireless communication applications without increasing the form factor or cost."

"There are advanced chip technology challenges the industry needs to address to enable a higher level of integration and lower power consumption for future wireless communication," said Harmke de Groot, senior director Perceptive Systems for the Internet of Things. "Imec is pleased to welcome GF as a partner in ultra-low power wireless design. Leveraging imec's advanced IC technology knowhow and system design experience, and GF's CMOS technology, we will accelerate the investigation and develop new approaches."

**ABOUT IMEC**

Imec performs world-leading research in nanoelectronics and photovoltaics. Imec leverages its scientific knowledge with the innovative power of its global partnerships in ICT, healthcare and energy. Imec delivers industry-relevant technology solutions. In a unique high-tech environment, its international top talent is committed to providing the building blocks for a better life in a sustainable society. Imec is headquartered in Leuven, Belgium, and has offices in the Netherlands, Taiwan, US, China, India and Japan. Its staff of over 2,080 people includes more than 670 industrial residents and guest researchers. In 2013, imec's revenue (P&L) totaled 332 million euro. Further information on imec can be found at www.imec.be. Stay up to date about what's happening at imec with the monthly imec magazine, available for tablets and smartphones (as an app for iOS and Android), or via the website www.imec.be/imecmagazine.

Imec is a registered trademark for the activities of IMEC International (a legal entity set up under Belgian law as a "stichting van openbaar nut"), imec Belgium (IMEC vzw supported by the Flemish Government), imec the Netherlands (Stichting IMEC Nederland, part of Holst Centre which is supported by the Dutch Government), imec Taiwan (IMEC Taiwan Co.) and imec China (IMEC Microelectronics (Shanghai) Co. Ltd.) and imec India (Imec India Private Limited).

**ABOUT GF**

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 mainstream 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 Mubadala Development Company. For more information, visit http://www.globalfoundries.com.

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