SAMSUNG

Samsung and Verizon Announce First 5G Customer Trials Set to Begin in Q2 2017

Both companies will start delivering end-to-end 5G fixed wireless service to pilot customers in five cities

Ridgefield Park, N.J. – February 22, 2017 – Samsung Electronics America, Inc. and Verizon today announced they have completed deployment of 5G systems in five U.S. cities in preparation to begin customer trials of 5G technology. The customer trials, beginning in April, will deliver fixed wireless access to customers through 5G connectivity in order to gauge user experiences, evaluate the performance of 5G technologies, and help streamline the delivery of mmWave 5G across various environments.

The 5G trials involve innovative network systems, including the use of 28GHz millimeter wave spectrum and advanced beam-forming antenna technology. Samsung's 5G Access Units, installed throughout a city's business and residential neighborhoods, will link radio signals to a virtualized core network that is set up within Verizon's data centers. Samsung's next-generation core solution is software-driven and designed on a scalable platform to accommodate operator needs.

In pre-commercial testing started from early December last year, the 5G system demonstrated multi-gigabit throughputs at radio distances of up to 1,500 feet (500 meters) across each of the different environments selected for the customer trials. The Samsung 5G system is designed to be upgradable to support 3GPP standards for New Radio and Next-Generation Core, once available.

Samsung and Verizon 5G customer trials will begin in New Jersey, Massachusetts, Texas and Washington, D.C., with a fifth location in Michigan starting trials later in Q2 2017. The locations represent varying terrain, neighborhood layouts and population density. Joint trials will incorporate Samsung's precommercial 5G solution featuring a CPE(Customer Premise Equipment), window antenna as well as its 5G radio and core solutions. Verizon will include fixed wireless network service that provides wireless Internet access and Voice over IP (VoIP) calling.

"We are excited to deliver the first end-to-end 5G connectivity in the United States with Verizon," stated Youngky Kim, President and Head of Networks Business at Samsung Electronics. "This represents a major leap forward in offering 5G fixed wireless access to consumers. The 5G challenges we will address, and the customer feedback we receive will help lay the foundation for future business models and customer applications."

"We are pleased about the progress made with partners like Samsung on advancing 5G technology commercially," said Roger Gurnani, Executive Vice President and Chief Information and Technology Architect, Verizon. "Delivering 5G to these pilot customers are an important step in assessing the business model and customer experience for delivering wireless broadband via 5G. Samsung's early and extensive development in 5G has been very valuable in contributing to Verizon's 5G Technology Forum progress."

<u>Samsung network</u> equipment and devices offer a pathway to meeting ever-growing consumer demand for data in an emerging 5G world. 5G technology is expected to drive the next wave of mobile

application development and the Internet of Things (IoT), connecting billions of devices and accelerating low latency gigabit speeds for richer experiences. Samsung holds a host of essential patents related to the new 5G standards. In its continued commitment to 5G technology, Samsung recently announced the commercial readiness of its 5G integrated chipset, which will enable operators like Verizon to deploy high-efficiency, low cost radios in a compact form factor and overcome high-band spectrum challenges.

For further details on the consumer trials, see Verizon's announcement, also issued today here.

About Samsung Electronics Co., Ltd.

Samsung Electronics Co., Ltd. inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, cameras, digital appliances, medical equipment, network systems, and semiconductor and LED solutions. For the latest news, please visit Samsung Newsroom at http://news.samsung.com.

About Samsung Electronics America, Inc.

Headquartered in Ridgefield Park, N.J., Samsung Electronics America, Inc. (SEA), is a recognized innovative leader in consumer electronics, mobile devices and enterprise solutions. A wholly owned subsidiary of Samsung Electronics Co., Ltd., SEA is pushing beyond the limits of today's technology and providing consumers and organizations with a portfolio of groundbreaking products in appliances, home entertainment, Internet of Things, mobile computing, smartphones, virtual reality, wireless infrastructure and wearables, in addition to offering leading content and services related to mobile payments, 360-degree VR video, customer support and more. Samsung is a pioneering leader in smartphones and HDTVs in the U.S. and one of America's fastest growing home appliance brands. To discover more about Samsung, please visit www.samsung.com. For the latest Samsung news, please visit news.samsung.com/us and follow us @SamsungNewsUS.

About Verizon

Verizon Communications Inc. (NYSE, Nasdaq: VZ) employs a diverse workforce of 177,700 and generated nearly \$132 billion in 2015 revenues. Verizon operates America's most reliable wireless network, with more than 112 million retail connections nationwide. Headquartered in New York, the company also provides communications and entertainment services over America's most advanced fiber-optic network, and delivers integrated business solutions to customers worldwide.

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