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STMicroelectronics Extends Amazon FreeRTOS Support with Bluetooth®, Ethernet, LTE Cat-M / NB-IoT Starter Kits

Amazon FreeRTOS availability for STM32 platform promotes highest quality and security for IoT nodes

Geneva, December 6, 2018 -- STMicroelectronics (NYSE:STM), a global semiconductor leader serving customers across the spectrum of electronics applications, announced at AWS re:Invent 2018 extended support for Amazon FreeRTOS with new starter kits for the STM32, one of the industry's most popular family of 32-bit Arm® Cortex®-M microcontrollers.

ST is leveraging AWS to boost designers' efforts to create easily connectable Internet of Things (IoT) nodes with the combination of ST's semiconductor building blocks and Amazon FreeRTOS, an operating system for microcontrollers that makes small, low-power edge devices easy to program, deploy, secure, connect, and manage. Based on the FreeRTOS kernel, Amazon FreeRTOS is a popular open-source operating system for microcontrollers that has been extended with software libraries that make it easy to securely connect your small, low-power devices to AWS cloud services like AWS IoT Core or to more powerful edge devices running AWS IoT Greengrass.

The B-L475E-IOT01A Discovery kit provides out-of-the box support for Amazon FreeRTOS and enables a variety of applications by using Wi-Fi, multiway sensing, and an Ultra-Low-Power ARM Cortex-M4 core-based STM32L475. Now, the same kit supports LTE Cat-M/NB-IoT connectivity using an X-Nucleo Expansion Board hosting an LTE Modem and ST SIM Card, coupled via the Arduino Uno V3 connector present on the board.

For LTE Cat-M / NB-IoT network, ST is providing a cellular driver library (initially published in ST's expansion package X-CUBE-CELLULAR) that allows embedded developers who are not cellular experts to easily and rapidly create new applications. It is architected to abstract the AT commands from a variety of modems with a BSP-like API. The board includes a state machine to manage the connection, exchange data and manage the errors such as connection loss that are critical for cellular networks. It also includes GSMA TS34/35 subset that is required for cellular certification.

The same kit, upgraded to Bluetooth Low Energy (BLE) 4.2 with SPBTLE-1S, implements an IoT Node that connects to the cloud through the AWS Smartphone and Tablet app acting as Gateway and showcases ST preview support for Amazon FreeRTOS for BLE (announced recently in Beta).

Wired connectivity is enabled on NUCLEO-H743ZI, STM32 Nucleo-144 board powered by the high-performance ARM® Cortex®-M7 core-based STM32H743 MCU with support for Ethernet and expandable through an Arduino connector.

ST is also now offering support for the newly introduced AWS IoT Device Tester, a service aimed to assure full compliancy of its solutions to the AWS Device Qualification Program. AWS IoT Device Tester allows ST and AWS shared customers to save time by reducing test-infrastructure and test-suite development, and give them peace of mind that Amazon FreeRTOS will work as designed on their STM32 microcontroller solution.

“With pre-built security and connectivity libraries, Amazon FreeRTOS was designed to provide a turnkey solution to develop cloud-connected devices using STM32 microcontrollers,” said Tony Keirouz, VP IoT Strategy, Ecosystem and Partnerships, STMicroelectronics. *“With all the new connectivity options our aim is to jumpstart any IoT design using the combination of AWS node-to-cloud vertical solutions and the broad portfolio of ST’s IoT solutions and products including sensors, processing, security, connectivity, and power.”*

STM32 is a registered and/or unregistered trademark of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere. In particular, STM32 is registered in the US Patent and Trademark Office.

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ST is a global semiconductor leader delivering intelligent and energy-efficient products and solutions that power the electronics at the heart of everyday life. ST’s products are found everywhere today, and together with our customers, we are enabling smarter driving and smarter factories, cities and homes, along with the next generation of mobile and Internet of Things devices.

By getting more from technology to get more from life, ST stands for life.augmented.

In 2017, the Company’s net revenues were \$8.35 billion, serving more than 100,000 customers worldwide. Further information can be found at www.st.com.

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