LoRa Alliance™ Enhances LoRaWAN™ Protocol with New Specifications to Support Firmware Updates Over the Air

LoRa Alliance Reports Rapid Growth in Deployments and Device Certification over Past 6 Months; Japan is a Key Market for LPWAN Networks

TOKYO – October 25, 2018 – The LoRa Alliance™, the global association of companies backing the open LoRaWAN™ protocol for the Internet of Things (IoT) low-power wide-area networks (LPWANs), today announced public availability of three new specifications. Together, the new specifications support and standardize firmware updates over the air (FUOTA), a capability unique to LoRaWAN among low power wide area networks (LPWANs).

These major enhancements to the protocol are accompanied by significant growth in deployments and certification, with an increase of more than 50% in the number of LoRaWAN Certified[CM] products compared to this time last year. Additionally, the number of public LoRaWAN networks is quickly approaching 100 globally.

"Continued development of standard specifications for the LoRaWAN protocol is key to enabling interoperability between end-device providers and network providers," said Donna Moore, CEO & Chairwoman of the LoRa Alliance. "The new specifications showcase how our members collaborate to continuously advance LoRaWAN. The rapid uptick of LoRaWAN Certified products validates that the market stands behind the need for IoT devices that deliver a proof of quality."

The LoRa Alliance has a rapidly growing ecosystem in Japan with members actively deploying LoRaWAN networks and solutions. Recent examples include NEC providing LoRaWAN network servers for remote liquefied petroleum gas meter reading and SenseWay deploying a LoRaWAN network on the Kashiwanoha Campus to acquire and visualize the city's environmental information to build a true smart city.

The LoRa Alliance is hosting its Q4 Members' Meeting in Tokyo this week, with its LoRaWAN Live showcase taking place today, October 25, in the Hilton, Tokyo 2, Shinjuku, Tokyo, 160-0023. LoRaWAN Live will feature presentations and demonstrations from our large member ecosystem covering the latest technology and key use case and deployment stories. Japanese member company and event sponsor, M2B Communications, will deliver a keynote titled "LoRaWAN and disaster prevention," during the morning session. The Marketplace will feature demos from the following companies: Actility, Daliworks, Kiwi Technology, LoRa Alliance, M2B Communications, Macnica, Manthink, Multitech, Murata, RedwoodComm, Semtech, SenseWay, STMicroelectronics, Tektelic, Viloc and Yokogawa Electric.

About the New LoRaWAN Specifications
The three new specifications include:

- LoRaWAN Application Layer Clock Synchronization Specification v1.0.0
- LoRaWAN Remote Multicast Setup Specification v1.0.0
- LoRaWAN Fragmented Data Block Transport Specification v1.0.0

These specifications were developed to allow the LoRa Alliance ecosystem to perform FUOTA in a standardized way. The ability to update devices remotely is critical for the IoT, where many sensors are in remote or difficult locations to reach but may require updating. Making FUOTA part of the specification contributes towards future-proofing LoRaWAN and ensuring that LoRaWAN devices will continue to operate over long lifetimes.

Together, the new specifications enable FUOTA, however, three separate specifications have been issued because each can be used independently. For example, remote multicast setup protocol can be used standalone to send messages to a group of end-devices; fragmentation can be used on its own to send a large file to a single end-device (unicast); and time synchronization also can be used as a standalone capability.

As is true for the LoRaWAN protocol as a whole, security was a strong focus of this development effort and is addressed in the Multicast and Fragmentation specifications. For

multicast, the protocol has a means to securely deliver a cryptographic key to the group of end devices. This key exchange is described with its security implication. In fragmentation, a section is dedicated to file integrity and authentication recommendations.

About LoRa Alliance
The LoRa Alliance is an open, nonprofit association that has become one of the largest and fastest-growing alliances in the technology sector since its inception in 2015. Its members closely collaborate and share expertise to develop and promote the LoRaWAN protocol as the leading open global standard for secure, carrier-grade IoT LPWAN connectivity. With the technical flexibility to address a broad range of IoT applications, both static and mobile, and a LoRaWAN certification program to guarantee interoperability, the LoRaWAN protocol has been deployed by major mobile network operators globally, and connectivity is available in over 100 countries, with continual expansion. www.loraalliance.org

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