TECH OFFER

Efficient LoRa WAN protocol for mission critical IoT applications

KEY INFORMATION

TECHNOLOGY CATEGORY:
Infocomm - Wireless Technology

TECHNOLOGY READINESS LEVEL (TRL): TRL9
COUNTRY: SINGAPORE
ID NUMBER: TO174952

OVERVIEW

An improvised LoRaWAN has been developed to enhance data transmission efficiency between LoRa trackers and LoRaWAN gateways addressing the prevalent issue of mid-air data loss due to collisions. This improved protocol enhances the data transmission rate from its current range of 10-30% to 65%. This substantial improvement leads to power savings for IoT end nodes, particularly those powered by batteries, by eliminating the need for data re-transmission. Moreover, the improved protocol also significantly increases gateway capacity, thereby reducing the capital expenditure associated with IT infrastructure.

TECHNOLOGY FEATURES & SPECIFICATIONS

The technology enables LPWAN technology specifically LoRaWAN devices to operate for mission critical IoT applications. This protocol ensures robustness of data communication by low cost devices (e.g., LoRaWAN device suites). The stability in data delivery opens up the possibilities for extended applications for data monitoring to mission critical applications. The protocol uses

existing hardware with a firmware update which can easily be adopted by device manufacturers, system integrators and application users directly.

POTENTIAL APPLICATIONS

A robust data delivery method extends the ubiquity of IoT technologies and enables a wide range of applications such as Smart Cities, Smart Building, Assets & Human Tracking, Agritech, Environmental Monitoring, Logistics and Supply Chain, Smart Metering, etc. It enhanced real-time data collection, analysis, and communication between interconnected devices, leading to increased efficiency, automation, and improved decision-making.

UNIQUE VALUE PROPOSITION

Data reliability and Quality of data transmission for mission critical applications.

- Enable power savings for IoT end nodes which are batteries powered
- Improve data reliability, eliminating the need for data re-transmission
- Increases LoRaWAN gateway capacity, thereby reducing the capital expenditure associated with IT infrastructure