

ABSTRACT

LoRa (Long-Range) technology has low power consumption and has broad communication access of more than 2 km that supports the development of the Internet of Things (IoT) which is based on WSN that consuming high power.

The consideration of writing this Final Project is based on the result from the meeting of public consultation LPPM RPM by ASIOTI has leased the agreement on the frequency range of LPWA in Indonesia is 920 - 923 MHz.

However, several challenges to develop LoRa, include the lack of widespread use of LoRa technology in areas that have urban characteristics. The LoRa operational frequency band does unlicensed and is dependent on regulation of the state, so probability of interference most likely can happen. LoRa technology also has limitations in data transmission speeds in the range of 0.3 -50 kbps. LoRa can not send data directly to the server, so it must go through a gateway. So we should build gateways for support IoT device communication.

Therefore, in this Final Project discusses the analysis and simulate LoRa network planning in Bandung based on RAK831 gateway device specifications, that is suitable to become a sample for LoRa planning that supports Internet of Things technology using LPWA planning software with the result 100 units gateway based on capacity planning calculations and analysis parameters with the value of Spreading Factor 7, Coding Rate 4/5, Bandwidth at 125 kHz, and the highest bit rate at 5,47 kbps.

Keywords: LoRa, *spreading factor, coding rate, bit rate, capacity. Coverage.*