ABSTRACT

This research discusses Long Range (LoRa) technology for monitoring Fishing platform monitoring. This technology is very relevant to be used as an information tool in marine waters because LoRa is a wireless technology with a wide range and low power consumption. This research aims to develop and implement a monitoring system for fishing nets. The research method includes hardware design and system development. The development carried out is the development of point to point communication into multipoint to point. Tests were conducted to validate system performance and measure LoRa communication signal quality. There are 3 categories of signal quality in this research. Good signal quality is at device Tx1 with a distance of 689 m, with an average Received Signal Strength Indicator (RSSI) value of -102 dB, Signal-to-Noise Ratio (SNR) 8.33 dBm, Time On Air (ToA) 4 s, and a delay of 28 s. Poor signal quality is at device Tx2 with a distance of 689 m, with an average value of -102 dB, Signal-to-Noise Ratio (SNR) 8.33 dBm. The bad signal category is on device Tx2 with a distance of 1.27 km with an average value of RSSI -110 dB, SNR 0.928 dBm, ToA 6 s, and delay 30 s. The very bad signal category is on device Tx3 with an RSSI value of -113 dB, SNR -9.23 dBm, ToA 16 s, and delay 44 s, with a distance of 2.09 km. The parameter values are influenced by the increasing distance, the height of the antenna parallel to the dock and the signal attenuation in seawater, so that the signal received by the Rx device becomes weaker due to signal interference. The decrease in RSSI and SNR parameter values leads to an increase in the ToA value. With the increase in ToA value, the total delay value increases. The increase in total delay value is also caused by unstable internet signal quality.

Keywords: *Fishing platform monitoring, LoRa, Device Rx, Device Tx1, Device Tx2, Device Tx1.*