

## **ABSTRACT**

This research explores the development of a marine fauna detection tool using the LoRa (Long Range) system and sonar which aims to overcome the complexity of manually analyzing the presence of fish. Fishermen take marine resources to sell. However, fishermen's catches are not always optimal due to limited equipment.

In diverse marine environmental conditions, this system utilizes sound waves to detect the location of marine fauna. Sonar reflects sound waves when it encounters objects below the water's surface, providing useful information for fishermen and researchers. LoRa enables real-time collection of fauna detection data at lower costs, thereby speeding up decision making and increasing catches at sea.

In this research, the system was prepared using LoRa Aurora V2, which has two components in one device, namely a microcontroller and LoRa which does not require reconfiguration. Based on testing, this system has a GPS accuracy level of 4.1 meters, a sonar error rate of 2,96 % in the pool and 5.14 % in the sea, an average RSSI of -112.11 dBm and an average SNR of - 9.59 dB. With this research, it is hoped that it can contribute to solving the problems of fishermen at sea so that they can be more efficient and effective in searching for fauna at sea.

**Keyword:** LoRa Aurora V2, microcontroller GPS, RSSI, SNR