

## **ABSTRACT**

*Tsunamis occur due to shifts in the earth's plates or tectonic earthquakes. In addition, tsunamis can occur due to landslides on the seabed with large volumes of material. Indonesia already has its own tsunami detector, but it can only detect vibrations, so if an underwater landslide occurs, the tool cannot detect it. This research was made using the BNO055 sensor which can read from the accelerometer, gyroscope, and magnetometer. LoRa is used to send sensor data to the gateway which will then be stored on the Antares server. Tests by measuring the value of the position or angle by the sensor, the value of acceleration and LoRa capability. In position testing, the accuracy value is 99.21%. The wave results are obtained from the acceleration results using Fast Fourier Transform analysis to determine the frequency of the waves. The faster the height waves obtained, the higher and the resulting waves are closer together. In the LoRa test, at a distance of 950 m, the packet loss value is 60%, while at a distance of 200 m it is 0%. So, the further away from the gateway, the more data that is vulnerable to be received. The effective distance for outdoor delivery is within 550 m from the gateway.*

*Keywords: Tsunami, Frequency, Wave Height.*