

## ABSTRACT

Indonesia is the largest archipelagic country in the world and has a very large sea area. With this sea area, the threat of natural disasters from the sea is higher. The threat of sea disasters is certainly very troubling for fishermen and coastal communities. The sea disaster threats would be worried for fishermen and seaside communities. Therefore, tools are needed to monitor and detect tidal conditions in the sea.

The tools used to monitor and detect the state of the tide in the sea requires a relatively high cost and difficult maintenance. If we want to monitor the condition of all of Indonesia's marine areas, we have to use a lot of tools, so that it would cost quite a lot. The solution to these problems is to use a tool that is simple yet effective, to cut costs and maintenance will become easier.

In making a simple tide detector, the BNO055 sensor is used to detect sea water waves. This sensor is a combination of three sensors, the accelerometer, gyroscope and magnetometer. Meanwhile, the microcontroller used is a NodeMCU which has a Wi-Fi module installed which can later be used for the process of sending data to the server. The data obtained by the sensor will be sent to the Antares server via the Wi-Fi module on the NodeMCU microcontroller so that the device can be monitored. After testing, the percentage error value was 34.2947% for the wave height parameter, 4.2897% for the water temperature parameter, and 1.5978% for the wave direction parameter.

**Key Word:** BNO055, NodeMCU, Sea Wave, Tidal Wave.