

ABSTRACT

One of the largest island countries in the world is Indonesia which has 17,499 islands and with a total area of about 7.81 million km². Of the entire area of Indonesia, there are 3.25 million km² is the ocean and 2.55 million km² is the Exclusive Economic Zone, and only about 2.01 million km² is land. With the vastness of the sea area that Indonesia has, Indonesia has a huge marine and fisheries potential. To take the wealth of the sea, sea waves are very influential because safety will be very threatened if the waves or ocean waves are very high. There are tools to measure wave height, vibration and detect the occurrence of tsunamis caused by underwater earthquakes, namely Buoy. But this technology is still quite expensive and the treatment is difficult.

In order to reduce the relatively expensive costs and facilitate such maintenance, IoT-based high-wave ocean meter is made. The device uses ultrasonic sensors for systems placed on docks with an accuracy percentage of 93.9617%. The Adafruit BNO055 sensor used to measure the height of the wave has an accuracy percentage of 73.06% and can read almost any vibration with a small to relatively large force. Supported by sending data to ThingSpeak servers that use Sim800l modules with GSM technology, which is quite fast, which is the average delivery takes 17.78867 seconds.

Keywords: Arduino Uno, Ocean Waves, IoT, Tsunami