

ABSTRACT

Tidal flooding is a natural disaster that often occurs in Indonesia. Tidal flooding is an event of the overflow of sea water which then inundates the surrounding land. Many factors can affect the occurrence of tidal floods including global warming, land subsidence, regional topography, abrasion, and high tides.

The system built in this final project can monitor tidal/seawater flooding by utilizing the Internet of Things (IoT) concept. The system is built with a Node MCU microcontroller which will be connected to an ultrasonic sensor, the system will be connected to a Wifi modem which will serve as a liaison between system with a telegram monitoring application. In this final project the author only focuses on the manufacture, design, and testing of the telegram and alarm applications that are used to monitor tidal flooding/sea water.

To determine the performance of the system that has been designed, it is necessary to test the system, test the system using sea level scenarios which are divided into three types of status, namely safe, moderate, and dangerous. The safe status is when the sea level increases which ranges from 10 cm - 20 cm, the moderate status of sea level rises between 20.1 cm - 30 cm, and the danger status of sea water rises ranges from 30.1 cm - 100 cm. The results of the Quality of Service test in this final project got an average delay of 189.06 ms, an average throughput of 669.3 bps, a packet loss of 0.009%, a response time test of 1.3 seconds, an average safe test the average water increase is 8.64 cm, the medium category is the average water increase is 14.88 cm, and the medium category is the average water rise is 37.59 cm.

Keywords: *Tidal flood, Internet of Things, microcontroller, sensors, monitoring*