

ABSTRACT

Indonesian region is an earthquake-prone area with types of earthquakes such as tectonic earthquakes and volcanic earthquakes. The earthquake cannot be predicted. This causes an earthquake to occur suddenly in the area affected by the impact of the earthquake. Many victims who cannot save themselves because they are trapped in a place or lack of notification of the earthquake information. Where earthquake detection technology still uses human power as an operator. The most important thing in the earthquake disaster is the speed of information received by the community from the earthquake detection system, considering that the earthquake disaster occurred very quickly.

This Final Project will design and implement earthquake detection devices based on vibration and accelerometer sensors. Where the sensor readings from the device will be compared with readings from the Modified Mercalli Intensity (MMI) scale. Where the vibrations that occur around the area will be forwarded to the satellite network. The design of this system is composed of vibration sensor, accelerometer sensor and Arduino Uno microcontroller. Vibration sensor is used to find out how much vibration occurs in the area around which has an ADC output and is converted into voltage.

Parameters of monitoring the movement / vibration are included in the calculation data. This system will determine the type of earthquake strength according to the power read by the 801S sensor. After testing and analysis, the accuracy value of the 801S sensor is above 90% with a small error value. The difference in the value of the sensor readings with the Multimeter readings is almost close.

Keywords: *Vibration sensor 801S, Richter scale, MMI scale, Earthquake.*