

ABSTRACT

Landslide disaster is a sign of natural disasters that usually occur when rainfall is high on the slopes of mountains, mountains, and upstream rivers. Landslides are also caused by soil erosion, deforestation, and strong vibrations caused by shifting of the Earth's plates. Therefore, it is necessary to build an avalanche disaster monitoring system. By prioritizing the value of ground slope sensor data and vibration sensor data, landslide disaster monitoring is made to provide information about landslide warnings by showing sensor value data from LoRa transmitter to LoRa receiver using LoRa as a gateway, and Arduino.

The creation of monitoring this landslide disaster to minimize fatalities to be aware of landslide disasters. The workings of this system begins with sending sensor data values from LoRa transmitter to LoRa receiver recorded on the Arduino series, then LoRa receiver to retrieve sensor data on the Arduino series. The ADXL345 sensor, contained in the LoRa transmitter system, serves to detect the value of ground vibration and the slope value of the soil. Then LoRa transmitter sends data to LoRa receiver. After that the LoRa receiver sends an SMS notification to the recipient number through the SIM module 800L and simultaneously stores the ground vibration value data and the slope value of the ground to the Firebase database, and the realtime data already stored in Firebase is displayed on the landslide disaster monitoring website. Based on testing on this landslide disaster monitoring system, LoRa transmitter successfully sends data to LoRa receiver with a response time of 1 to 5 seconds(s).

Keywords: *Arduino, Disaster, Monitoring, Landslide, LoRa, SMS*