

ABSTRACT

Landslide disaster is a natural phenomenon that arises one of them due to ground movement. In an effort to prevent landslides, the early warning system can estimate the possibility of landslides, one of the factors causing landslides, namely changes in the elevation angle on the ground. In knowing the movement of the ground seen from the parameters of acceleration changes, gyroscopes so that the system will be made using the IMU BNO055 sensor with the Lora communication module and monitored via Antares which can measure changes in slope. Testing by measuring the slope angle value by the sensor. In testing the angle obtained an accuracy value of 93.70%. The results of the slope angle are obtained from the calculation of the slope the ground from the acceleration and gyroscope values. In testing ground movement, the sensor can detect the presence of ground movement as well as seen by the varying graphical differences and the sensor responds to movement before major movements occur. In the Lora test, data collection of 75 data for 24 hours obtained a Packet Loss of 1.33% with an RSSI value of -98.37 dBm and an SNR of -9.84 dB. This indicates poor signal reception and high noise levels, but only a small amount of unsend data.

Keywords : Landslide, Slope Angle, Movement of the ground