ABSTRACT

Landslides are one of the natural disasters that often occur in Indonesia. This disaster usually occurs in mountainous areas, hills, steep slopes, and cliffs. Not infrequently landslides also occur on riverbanks whose position is on sloping or steep land. Therefore, it is necessary to create a system for early detection of riverside landslides. The slope of the land, the shift of the ground, which is the main cause of landslides.

To measure these parameters, an Internet of things (IoT) based system is used which is connected to sensors. In this study, the value of the ADXL345 sensor measures the value of slope and ground vibration based on LoRa. In this case, the ADXL345 value is used to analyze the results of the sensor detection with two final decisions, namely safe, and a warning that can be seen on the website data history and GSM module, then sends a notification in the form of a warning SMS to the recipient's GSM number. The ADXL345 vibration sensor successfully reads the Richter scale value. The ADXL345 tilt sensor successfully reads the degree value, and has an average error value of 0.236%. And based on testing on this system the LoRa transmitter can send data to the LoRa receiver with a response time of 1 until 5 seconds.

Keywords: *ADXL345, IoT, Landslide, LoRa.*