

## **ABSTRACT**

Indonesia is a country that is in an area prone to natural disasters, one of the natural disasters that often occur in Indonesia is landslides. Landslide is a process of movement that leads to a mass of land and moves to a lower place.

To anticipate the impact of a landslide disaster, an early warning tool and system is needed and information is conveyed to shift land with high accuracy. Draw-wire displacement sensors are devices that are able to measure distances using highly flexible steel wires or with cables, this sensor can be used as a land shift detector. Sensors in landslide-prone areas are connected by long-distance communication called LoRa (Long Range). LoRa is a long-distance communication transceiver. TTGO LoRa32 is a microcontroller that has integrated LoRa, this microcontroller configuration can be done via Arduino IDE using the ESP32 Dev Module card type.

A pole-shaped prototype that is attached to the ground at the top and bottom of the slope. The results of measuring land shift are entered into the database. Draw-wire Displacement Sensors made have an average error accuracy of 0.36 mm. The distance that can be reached by the LoRa in LOS conditions is as far as 200 meters.

Keywords : landslide, draw-wire displacement, LoRa, Internet of Things