

ABSTRACT

A technology known as radio telemetry allows the transmission of data or information over radio channels without the need for a physical connection. Motion detection devices for surveillance. The purpose of this research is to create and implement a motion detection radio telemetry system that uses Long Range (LoRa) technology.

LoRa is a long-range wireless communication technology that allows sending data over considerable distances without using much power. By using LoRa technology, this system can be placed in areas that are difficult to reach by cellular networks. Some of the critical components of the designed system include motion detection sensors, microcontrollers that function as data processing engines, and LoRa modules that function as data transmission media.

The motion detection sensor detects movement around the target. The sensor sends data to the microcontroller for processing after detecting motion. The microcontroller then processes the data from the sensor and sends it through the LoRa module to the receiving node connected to the network. Both nodes and microcontrollers can serve as data collection centers and provide notifications if suspicious movement is detected.

Motion Detection Radio Telemetry Systems using LoRa managed to achieve satisfactory range while using power efficiently during tests. This research shows that LoRa technology can help improve monitoring and surveillance in various places, especially in remote or difficult to access places.

Keywords: radio telemetry, motion detector, LoRa, microcontroller, long-range, low power consumption, monitoring.