ABSTRACT

Forests are a habitat for various animal and plant species in it. One type of forest in Indonesia is a protected forest. One of the functions of protected forests is as a habitat for endangered flora and fauna. Therefore, this research was conducted with the aim of monitoring the security system in protected forests in Indonesia to increase the security of protected forests against the potential for illegal logging. Therefore, one of the objectives of this research is to improve the security of protected forests that are vulnerable to people. irresponsible people who have the potential to carry out hunting and illegal logging in forest areas. By making a protected forest security tool based on the Internet of Things using RF radio communication and Wi-Fi using Arduino Nano V3 as a sensor reading data sender, NodeMcu ESP8266 as a Gateway to receive sensor reading data, NRF24L01 PA+LNA Module as a transceiver and receiver of data from Arduino nano to Gateway ESP8266, Radar Doppler sensor RCWL-0516 as a motion detection sensor that enters protected forest areas. The way this system works is that the RCWL-0516 sensor will read a movement that enters the forest. Then from the reading results, it will be sent to the NodeMCU as a Gateway at the forest guard post as a notification of the occurrence of illegal infiltration of protected forests using NRF24L01 PA+LNA as the transmission medium. Then the results of the temperature, humidity, and object detection data entering the forest will be sent to the Thingspeak database which can later be read via the Thingspeak web. The results sent to the receiver are two data results. The first is the results of temperature and humidity readings that are read by the DHT11 sensor. The second is the result of motion detection readings that are read by the RCWL-0516 sensor. The results displayed on Thingspeak are in the form of diagrams.

Keywords : *Arduino Nano V3, NodeMCU ESP8266, Sensor, Thingspeak.*