ABSTRACT

Tea plant (Camellia Sinensis (L.)) is and export commodity for the plantation sector in Indonesia. Tea comes from sub-tropical region, so it is suitable to be planted in mountainous areas or highland with a temperature 13 – 15 celcius. The factor that greatly affect the growth of tea plants is climate change that occurs in Indonesia region. So, the author designed a tool to automatically collect weather data in the plantation area.

In this final project, the author design an Internet of Things based wireless communication system for automatically weather station for tea plantation. This system uses three sensors, that is a wind speed sensor, a rainfall sensor, a soil moisture sensor, and a temperature and humidity sensor. In this system it is divided into 2 parts, the first part is the sensors connected to the microcontroller and the NRF24L01 as a transmitter, then in the second part is the receiving side to receive data with NRF24L01 which is used as a receiver, then the data is sent to the database for analization. In addition, the authors also evaluate the Quality of Service of the monitoring system.

This system gets an error rate value from the DHT22 sensor for temperature has an error percentage 0.9% for air humidity 4.6% then for wind speed sensor is 18.5% and for soil moisture sensor is 5.9% The system made to get Quality of Service results in the Line-of-Sight state is better than the non-Line of Sight state.

Keyword: *Internet of Things, Quality of Service, NRF24L01*