ABSTRACT

Agriculture is a field that plays an important role for humans. The agricultural sector has many opportunities in technological development with the hope that farmers will get farming convenience and quality yields, for example a smart agriculture system that uses several sensors including soil moisture sensors, NPK or Soil Fertility sensors, Electrical Conductivity sensors, temperature and humidity sensors, air pressure, light sensor, rainfall sensor, wind direction sensor, and wind speed.

Smart Agriculture or a smart farming system is a technology that can increase the productivity of agriculture or plantations. Smart agriculture uses a platform that is connected to technological devices such as mobile phones to collect information on soil nutrient status, air humidity, weather conditions, and so on. So this final project will be divided into three parts, namely the sensor node, IoT platform and gateway sections. The gateway becomes a bridge between the process of sending data from sensor nodes which is then converted and stored first before being sent to the IoT Platform section.

The gateway system design in this final project uses the LoRa AS923 SX1276 communication module which can carry out a two-way communication concept, where the gateway system will send and receive data generated by each node. The AS923 SX1276 LoRa module is used because it has a frequency range of 915-923 Mhz.

Keywords: Smart Agriculture, Sensor, Gateway, IoT Platform, AS923 LoRa SX1276