**Low Cost and Robust Field-Deployable**

**Environmental Sensor for Smart Agriculture**

**Alternative title: Efficient LORA based data transmit in rural areas.**

**Aim:**

Aim of this project is low cost LORA based data transmitting system in rural areas for agricultural maintained.

**Introduction:**

 This paper is proposed efficient data transmit system by using LORA and Arduino controller. In rural areas even now they are not aware of internet connections and technology’s in that type of areas LORA plays a vital role. In this temperature ,humidity , ph level, water level, data’s are taken by the arduino nano and then LORA switched ON to transmit the data from transmitter node to other receiver node it is possible by the LORA. In the receiver side arduino uno receives transmitted data and then switched on the LORA present in the receiver side then receiver LORA sends a data to the nodemcu. Nodemcu send the data to the cloud and then data transmit to the mobile app. By this system it is possible to notice the agriculture field status by using LORA.

**Existing system:**

In this existing system is developed low-cost and robust environmental sensors and their network in order to monitor illuminance, temperature, humidity, pressure, and concentration of carbon dioxide around crops. The sensors installed in the artificial light greenhouse and two research fields in Akita prefecture works for 24 months with solar panels and super capacitors.

**Proposed system:**

 In this proposed system temperature ,humidity , ph level, water level, data’s are taken by the arduino nano and then LORA switched ON to transmit the data from transmitter node to other receiver node it is possible by the LORA. In the receiver side arduino uno receives transmitted data and then switched on the LORA present in the receiver side then receiver LORA sends a data to the nodemcu. Nodemcu send the data to the cloud and then data transmit to the mobile app.

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**Block diagram:**

Transmitter

Receiver

Arduino

 nano

 Arduino

 uno

Nodemcu

Temperature

Humidity

Ph Sensor

Mobile App

Water level

LORA

LORA

**Block diagram description:**

Above the bloc diagram is containing Arduino Uno controller, water level sensor, ph sensor, Temperature sensor, Humidity Sensor, LORA, Arduino Uno, Arduino Nano, Nodemcu, Mobile app. Sensors are used for detect the current data, controllers are used to collect the data from the sensors, LORAs are used to send the data from transmitter to the receiver and nodemcu is used to transmit the gathering data to the cloud and then to the mobile app. system temperature ,humidity , ph level, water level, data’s are taken by the arduino nano and then LORA switched ON to transmit the data from transmitter node to other receiver node it is possible by the LORA. In the receiver side arduino uno receives transmitted data and then switched on the LORA present in the receiver side then receiver LORA sends a data to the nodemcu. Nodemcu send the data to the cloud and then data transmit to the mobile app.

**Requirements:**

**Hardware Requirements:**

* Arduino Uno
* Arduino Nano
* Water level sensor
* PH sensor
* Temperature sensor
* Humidity sensor
* Nodemcu -1
* LORA – 2

**Software Requirements:**

* Arduino IDE
* C++ language

**Conclusion:**

This final chapter of the report revisits the data transmit to the user using LORA. User can able to notice the agriculture field status while user in the cities sides. Data can send from rural areas to cities side with help of LORA.