

## ABSTRACT

Flood disasters in this era are very often faced by the community. At this time, flood monitoring technology is needed that can help information quickly. One of the technologies that can be implemented in early flood monitoring is Internet of Things technology. Therefore, the author conducted a study to implement the Internet of Thing in a river which later could be useful for informing news about conditions on time. The flood monitoring system is an early flood detection tool that uses several sensors for its detection devices such as ultrasonik, rainfall and temperature sensors. So that people can gather information in real time using the LoRa module. This device was designed because there are still many issues that come to be less accurate and on target. This system is intended for the community to make it easier to get flood information and residents are able to better prepare themselves if there are things that are unexpected.

LoRa itself is a wireless communication system for IoT that offers long distance and low power communication. LoRa can be used for various IoT applications, for example for smart cities where LoRa can support sensors interacting directly. The LoRa that will be used is a LoRa dragino which works at a frequency of 915 MHZ, this LoRa has the ability to transmit data with a maximum distance of 2 km.

Changes in SF (Spreading factor) parameters, and distance greatly affect the results, RSSI (Received Signal Strength Indicator) and SNR (Signal Noise Ratio). The results of the tests carried out show that the average SF that has the best RSSI value is SF 9 and shows that the SNR value becomes better when the Spreading factor is higher and the farther the test distance between the transmitter and receiver is, the SNR value will be worse.

**Keywords:** LoRa, sensor components, monitoring the condition of the Citarum River.