

## **ABSTRACT**

Water is an important source of life for humans, all human activities basically need water. Therefore good water quality is very important to support human life. The purpose of this research is to create an innovation in the form of river water quality monitoring tools which will be connected by sensors such as pH sensors to measure acidity, turbidity sensors to measure turbidity levels and TDS sensors to measure the amount of dissolved solids. The purpose of this tools is to prevent bad effect from the polluted river water.

This river water monitoring tool named Monriv is able to provide river water quality data with paramaters that has been choosen and then this data can be processed using a fuzzy algorith to determine the river water quality. The water quality in this research are divided into 4 categories such as: Excellent categories, Good categories, Medium categories and bad categories. After the data processed. The data will be sent to Antares through the LoRa network communication. The function of LoRa in this research to communicate the data to Antares. Antares will be a cloud or database to store the data from Monriv tool and finally the data will be displayed in application in Android. In this tool the measurement accuracy of the temperature sensor is 98.69 %, the TDS sensor is 89.69 %, and the pH sensor is 99.39 %. The average value of RSSI Citarum River Sector 6 is -111,576 dB, RSSI Citarum Sector 21 is -112,855 dBm. The average SNR value for the Citarum River Sector 6 is -6.46 dB and the Citarum Sector 21 river is -12.85851 dBm.

**Keywords :** Water Quality, LoRa, Antares, Android, Water Quality Sensor.