ABSTRACT

With the rainy season coming, there are a lot of rivers that couldn't uphold the rain that they overflowed and cause flood. Often, for people that live around areas that is lower thanriver mouth, they incapable of saving their possession and their self. An early detection in form of communication media to monitor the river's water level is needed so that public can access it to anticipate. Things like public radio makes it easier for people to listen to the radio while monitoring river's water level around them.

In this Final Project, the early detection system is designed using HC-SR04 ultrasonic sensor, ATMega 328P-PU, NRF24L01 module, 2x16 LCD, and implementation bootloader an Arduino Uno. The HC-SR04 ultrasonic sensor act as the water level detector, which the collected data will be sent to mikrokontroler circuit with ATMega 328P-PU to be processed, with bootloader Arduino Uno as ISP.Water level data will be sent with NRF24L01 module. This early detection system implanted on three different spots, the system works simultaneously that is node 1 will send data to node 2, then merged data from node 1 and 2 will be sent to node 3, and sensor 3 will send all data to the next node and also will be displayed on LCD.

HC-SR04 ultrasonic sensor has an error tolerance value in testing the liquid by 1.73%, while the solid object by 0.59%. NRF24L01 has maximum delivery distance of 30 meter, and sending data from node 1 to 2 requires average response 0.16 second, the node 2 to 3 average response is 0.35 second. The LCD display on the node 3 is used to see the water's high from both the previous node and data node 3 itself. The conclusion is the early detection can sending all datas to the next node that will be processed and send them again to local peoples.

***Key Word** : HC-SR04 Ultrasonic Sensor, ATmega 328P-PU, Arduino Uno, NRF24L01 module.*