

## **ABSTRACT**

*The need for clear water will continue to increase as the population grows. On the other hand, we found so many rivers functions as the resource of clear water for people who live nearby got polluted. To make the river clean again, the data that conduct periodically need to be done so the progress and evaluation of the program went well. Until now data collecting is done manually by volunteers that go to the field and take the sample for further investigation.*

*On this final task, writers design a drone that can collect the quality of river water data and send it directly to the observation station. Using an automatic landing and waypoint system on the drone, data collecting will be done much easier than before. The hope is that with the convenience provided when using this drone data collection will be carried out more frequently so that the development of the river water cleaning program can be evaluated properly. In addition, with this tool, it is hoped that the location where the river got polluted will be easier to find, so that it can be followed up immediately.*

*The drone can carry a maximum of 800 grams of payload for carrying the sensor devices. In tests that were carried out with a height of 3 meters and a velocity of 0,2 m/s the drone experienced an average deviation of 0,0000227% in degrees of latitude and 0,0000033% in degrees of longitude. In other tests, drones experienced an average deviation of 0,00000448% in degrees of latitude and 0,00000341% in degrees of longitude. The biggest deviation if we convert the number into meters, it exceeds 4,5 meters.*

**Key Word:** UAV, drone, waypoint, landing, river water quality monitoring.