ABSTRACT

RC Boat or Boat Remote Control is a miniature boat that can perform physical tasks with human control. With the RC Boat that can move above the surface of the water it is expected to help people in monitoring the waters that have a field that is difficult to reach by humans, or areas that are quite dangerous for humans when approaching them. RC Boat that is unmanned and can be controlled via the controller application, so that it can move easily with a fairly remote control distance.

RC Boat is a solution to monitor water areas. By using Raspberry Pi as a microprocessor to process control data, image data and location data. With the installation of cameras and GPS on RC Boat so that it can monitor in real time, and display the results of monitoring in the form of images and locations to control applications that have been created and installed on the smartphone.

In this final project RC Boat is used with dimensions of 51.2 cm x 21.8 cm x 14.4 cm which can monitor the waters using the camera to take pictures or photos of the conditions around the area. This boat can be controlled over long distances as long as it is within the reach of the 4G network through the control application created. Monitoring results and RC Boat locations will appear on the application. The monitoring and control flow uses firebase as a database for storing control data, monitoring photo data, and latitude and longitude data. Delay of sending control data sent from application to RC Boat is 1.84 seconds, sending delay of photo data sent from Raspberry Pi to application is 5.68 seconds, and delay value of sending location data from GPS to application 4.57. The results of photos sent from Raspberry Pi with an average usuge data of 4064,716 Kb.

Keywords: *Firebase*, application, Boat control, monitoring