

ABSTRACT

At this time the development of autonomous systems is growing rapidly one of which is already used on the type USV (Unmanned Surface Vehicle). One type of USV is roboboat. Roboboat can be implemented for monitoring the water area is not reasonable man, aerial mapping, carrying cargo and water monitoring. But there are still shortcomings in terms of monitoring the water area is unreachable by humans in this case generally roboboat still controlled by a pilot using a remote control so that a pilot must standby to determine the movement of roboboat.

Therefore, they invented a system that allows roboboat to move with menggunakan autonomous navigation system that uses algorithms waypoint. So roboboat can move in autonomous with automatically controlled using a PC (Personal Computer) as the user interface where communication using a wireless module RF 433 MHz, without using the remote control and can follow the path that has been created with the help of a GPS (Global Positioning System) has been integrated in roboboat. The GPS device will capture signal NMEA from the GPS satellites that generate the coordinates latitude and longitude the location of the GPS device is located.

An autonomous system that is contained in roboboat can reach the destination point automatically. In automatic mode roboboat drove at a constant speed of 2 m / s with an estimated maximum distance reached 3600 meters .And the results of several experiments are then selected two best results of the data including the first mission is a straight line along the 15 meters have an average error of 1 , 35 meters and the second mission is winding lanes with a total distance of 135 meters has an average error of 1.725 meters.

Key Word : : Roboboat, GPS, RF 433MHz, autonomous, waypoint