ABSTRACT

Autonomous Surface Vehicle (ASV) is a robotic vehicle that can operate on the water surface. With automatic control technology, RC boats are expected to help or replace the role of humans in carrying out their tasks.

In this final project, 2D and 3D boat designs will be designed using SolidWorks and maxsurf modeler software. Simulation of boat planning will be carried out using maxsurf stability and maxsurf resistance software. The inside of the boat is designed to contain various driving components such as RaspberryPi, Arduino UNO, Thruster T060 (Motor), ESC, and battery. The data obtained by the components will be transferred to a laptop via Wi-Fi with a frequency of 2.4GHz. The material used on the boat is plywood with a thickness of 2 mm, which is coated with resin.

The results of this boat design catamaran hull get the most superior results in terms of resistance to waves and wind. The stability of the catamaran hull contained in the data produced good results. The physical design of the catamaran hull successfully floats on the surface of the water and is able to load the driving components inside. From the results of wireshark software analysis, the accuracy for the average system delay is 0.20407 ms.

Keywords: *ASV, SolidWorks, Maxsurf, AutoCAD, RC Boat, Design, Catamaran*