

Abstract

Autonomous Surface Vehicle (ASV) is an unmanned vehicle that operates above the water surface. ASV is very useful to simplify human work, because ASV can reach narrow or dangerous places in waters such as the sea, rivers, lakes, etc. that cannot be reached by humans. ASV that can run without user control because it is controlled by a platform called Ardupilot or commonly called APM (Ardupilot Mega). To run ASV autonomously using Ardupilot, users can give commands in the form of route points (waypoints) that must be running by ASV so that ASV can move from the start point to the goal point. Beside using ordinary waypoints, route planning can also be used using waypoints generated using A*. This research will focus on implementing A* and waypoints for route planning and visualization of results using Mission Planner. Both methods were tested using 2 test scenarios, testing using 2 waypoints and using 6 waypoints. The results from both tests show that the waypoints method without A* has better performance with less mileage and errors than the waypoints method with A*. However, the waypoints method with A* also has the advantage of being able to do obstacle avoidance with the test results showing that obstacle avoidance using waypoints with A* convergence faster than waypoints without A*.

Keywords: ASV, ardupilot, waypoint, a*