ABSTRACT

NAVIGATION SYSTEM ON UNMANNED SURFACE VEHICLE TO MONITOR WATER AREA CONDITION

By

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Water area, especially river, has an important role for human life. To prevent the damage to that area, it is better if we do the monitoring and measurement periodically to some of parameters that can give a sign or early warning against abnormality that occurs in this area, so we can accurately and quickly anticipate.

From this idea, we created an Unmanned Surface Vehicle that is intended to facilitate monitoring process in water area. USV that we are use is electric USV equipped with APM 2.5 firmware ardurover as an autopilot system. Autopilot system on USV covered with Auto mode, Manual mode, Guided mode and Hold mode. Before USV take the mission, every sensors in this USV are being tested. Then USV can take the water area mission by making 6 mission with different waypoints location, so that USV can go towards desired waypoints.

Average error radius obtained from missions is 2.2 meter every waypoints. This USV also equipped with FPV system so that monitoring process can easily done by looking at the camera mounted on the USV.

Keywords: Water Area, Roboboat, Unmanned Surface Vehicle (USV), APM 2.5, FPV System