

## **ABSTRACT**

*Operation of drones or drones on two systems, namely using remote control and automous (auto pilot). Previously, the automatic control system had to use waypoints which served as routes for the drone journey. To determine the coordinates using a software called Mission Planner. Where in this Mission Planner, the coordinate points that we have set will be stored and the data will be sent to the flight controller of the drone vehicle, which will then fly according to the coordinate points that have been made in Mission Planner. In this research, an application transition has been made that has the same function as a mission planner, namely a simulation of determining the waypoint (coordinate point) of the flight path of a drone vehicle. The difference with our mission planner is that we can create a waypoint via a smartphone (android), while the mission planner can only be accessed via a PC (laptop). Replacing telemetry drone communication by using 4G network communication. Another advantage of this application transition is that the determination of waypoints (coordinate points) can be done via a smartphone, no longer using a PC (laptop). For interconnections, the application can be connected to the 4G network so that it no longer uses two telemetry connected on smartphones and drones. For the flying height itself, it uses a height of 3 meters and 5 meters with a distance ranging from 46 meters to 162 meters with various waypoint tests (7 waypoints, 10 waypoints, and 14 waypoints). The comparison of the difference between using telemetry and 4G networks is not much different, telemetry is with an error difference of 0.111 meters while the 4G network has an error difference of 0.157 meters.*

**Keywords:** *Remote control, drone, auto pilot, waypoint, mission planner, telemetry.*