ABSTRACT

UAV is a form of robot-driven construction purposes based on the principles of aerodynamics with a motor and propeller propulsion generally as pusher and puller rides. And generally influenced by the motion of a vehicle rudder, ailerons and elevators as a trigger movement of a vehicle to be able to fly well. One UAV development in addition to the field of defense and agricultural use as well as the media mapping and monitoring..

Devices commonly used include UAV flight controller, esc, brushless motors, servo motors, transmitter and receiver rc, and ground segment as a vehicle control center. UAV can be controlled by two control modes namely manual control and automatic control. In the automatic control UAV operated following the waypoint that has been inserted before and have been uploaded into the flight ardupilot controller. In the UAV flight control sensor are used as a stabilizer navigation and vehicle position among the sensor is a gyro, accelerometer, magnetometer, barometer, digital compass.

In this final project sky observer UAV integrated with autopilot control mode using 3DR pixhawk as a flight controller. Autopilot controls can make use of more efficient and low battery, it is evidenced by the results of the comparison battery voltase value when manual mode is used when the autopilot mode 16 volt and 13,59 volt. Rated autopilot for GPS errors are also low because the value of HDOP in 1- 2 and its good stable and still far below Nsat. The movement of pitch and roll well as the suitability of the expected motion and real motion carried.

Keywords**: **UAV,autopilot,control,aerial mappin