ABSTRACT

Unmanned Aerial Vehcile (UAV) is an unmanned aircraft that has many functions, one of which can be used to photograph, record, monitor and cover an object from the air using a camera mounted on the aircraft. To carry out this monitoring, a data transfer line is needed that connects the ground station to the UAV, so it is necessary to design a controller. The controller designed using PID consists of three types of combined settings, namely P control (Proportional), I control (Integral) and D control (Derivative).

PID (Propositional, Integral, and Derivative) is a control that can minimize errors caused by a mismatch of the specified slope degree (set value) and the degree of inclination when the quadcopter flies (present value). Parameters Kp, Kd, Ki which are components of PID must have the appropriate value in order to produce optimal output. The propeller prototype was designed and developed using a PID controller. The stability of the quadqopter flight is influenced by the control ability in maintaining the degree of inclination. The value of the degree of slope is obtained from the IMU (inertial measurement unit) sensor.

Unnamed Aerial Vechile (UAV) propeller type using the Proportional Integral Derivative (PID) Controller method. In this study, a system has been created to stabilize the propeller on the UAV with a relatively small error state.

In this study, the PID control method was found to have not succeeded in stabilizing the propeller on the UAV, because the mechanics made on the final project tool that had been made contained differences in size. With values P=10, I=0, and D=0 are the pid values that are close to the UAV being oscillating but still not working. The application of the PID control method on the UAV can be used. The PID control system applied to the propeller type unmanned vehicle has not worked well because the sensor that detects the slope always gives a different value from the percentage error value on the sensor with a value of 6% on the Y axis, and 3% on the X axis.

Keywords: *UAV, propeller, proportional integral derivativ*