

ABSTRACT

N219 aircraft is an aircraft that is being developed by PT Dirgantara Indonesia. This aircraft uses 2 flight steering control systems, namely the Primary Control System and the Secondary Control System. The author takes focus on the Secondary Control System on the flaps of N219 aircraft.

Flaps is a moving surface that hinges on the rear edge of an aircraft's wing which serves to increase lift and can increase the drag force of the aircraft during takeoff and landing. When the aircraft takeoff or landing, the flaps will open an angle between 0 – 40 degrees depending on the lift and drag required by the aircraft. On N219 aircraft, this aircraft flaps is still controlled manually by the pilot. To open a flap, pilots often use their own feelings to be able to determine when or not the flap can open at a certain speed. The plane crashes due to human error during takeoff where the flaps is late or too fast is issued, which causes the aircraft to lack lift and make the plane crash. This encourages the research of this final project, to control aircraft flaps automatically based on the aircraft speed at takeoff. And also this aircraft has been equipped with Autopilot.

In this final project, to control N219 flaps aircraft automatically, the design of the system uses a microcontroller as the brain to process data from sensors and use the Fuzzy Logic method and the input is based on the aircraft speed, acceleration , and airspeed. This trial will be applied to the prototype.

Keywords: *Settings the flaps angle of N219 aircraft automatically at takeoff, Fuzzy Logic Control, Airspeed, GPS.*