

ABSTRACT

In today's era technology is developing very fast and we are required to continue to be ready to keep up with technological developments. Because technological advances also determine the progress of a country. Like Airplanes, there are already many aircraft that have super-advanced technology. Hypersonic flight is an aircraft that has a speed exceeding a supersonic aircraft and of course the aircraft is not easy to control. The aircraft is also one of the types of aircraft being developed at this time. On the plane path there are 2 possible paths, namely a straight line and an orbital. So it is necessary to develop Hypersonic aircraft control on a straight line path. Therefore, in this final project, we will discuss Hypersonic Flight Control (HFC) on a straight line from a hypersonic flight aircraft.

To control the movement of Hypersonic Flight using the Vector Field system method on a straight line path. The Vector Field method is a method used to form the path to be used and control the aircraft so that it can follow the desired path. Hypersonic Flight Control (HFC) will focus more on simulation and system modeling. The application used to assist the simulation is using MATLAB and also FlightGear, both are connected to each other. MATLAB is used here for programming and calculations to control hypersonic flight. FlightGear is used to simulate aircraft that have been programmed in MATLAB. So, in this final project, the focus is on using FlightGear combined with a program in MATLAB to simulate Hypersonic Flight Control (HFC) on a straight line path.

With the simulation results using FlightGear, it is hoped that it can assist in the development of Hypersonic Aircraft technology that is in accordance with its original state.

Keyword: *Hypersonic Flight Control (HFC), Vector Field, Straight Line Path, FlightGear.*