

ABSTRACT

Flight planning is one of the essential factors of the airline operation. The selection of routes will determine the economical value of the flight, and will decrease the operating cost of the flight. The research will develop a search engine program that uses dynamic flight parameters that considers fusion SWIM data including weather data and NOTAM to produce the most optimum route for the 2D flight planning. The Dijkstra's pathfinding is implemented in Python programming to produce the flight plan. The study uses the optimum route produced by program and compares it to possible alternate routes to see the optimization of the optimum route. The result shows how optimum the route generated compared to the alternate routes in 3 different case studies. Adding a Restricted airspace parameter will result in a new flight plan that avoids the restricted airspace and using the wind speed parameter, the resulting route from the program might vary depending on the speed of the wind from the data.

Keywords: Flight planning, 2D flight planning, weather data, NOTAM, Dijkstra's pathfinding algorithm, python program, optimum route, SWIM, restricted airspace, wind speed