

## ABSTRACT

The unavailability of the Automatic Dependent Surveillance – Broadcast (ADS-B) system in many areas and seas around the world can lead to unreliable and inaccurate surveillance, of course such problems will endanger the aircraft being monitored because it may not be supervised by the aviation control agency. such as Air Traffic Control (ATC), the ADS-B surveillance system is implemented in aircraft surveillance with high confidence in terms of reliability and security in air traffic control centres or ATC around the world, but in Papuan airspace there are many ADS- B on flights that do not provide complete flight data like usual ADS-B services, where records are not available in the form of altitude, airspeed, rate and reporting facility data, while what is recorded is only coordinate data, course or track of aircraft,

In this study, the author analysed the performance of the aircraft surveillance system using an Automatic Dependent Surveillance - Broadcast (ADS-B) based surveillance system using flight data recorded by the ADS-B system such as coordinates, speed, altitude and reporting facility from the actual recording. airplane. The author used 5 samples flight data from several routes in the airspace of Papuan with 4 different aircrafts from Indonesian airlines. The data will be analysed to determine the performance of the ADS-B system and predict the solution description of the identified problems.

From the performance analysis that has been carried out, there is 2 airport on the island of Papua that can provide ADS-B surveillance services, namely Sentani Jayapura International Airport and Monokwari Airport. Whereas in Papua there are 22 airports starting domestic, international, and pioneer airport, 20 other airports do not have ADS-B system supervision, so it is necessary to add at least 3 ADS-B ground stations such as at Mopah or Merauke International Airport, Timika Airport in Central Papua and Babo Airport in West Papua so that all flights in Papua's airspace can be monitored by the ADS-B system.

**Keywords: ADS-B, Satellite, Transponder, Buoy.**