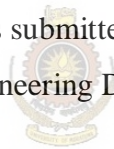# AIRCRAFT LOCATING SYSTEM

R.J. Pathirage

This thesis was submitted in partial fulfillment of the requirement for the Degree of Master of Engineering Degree In Electronics and Tele Communication Engineering

Department of Electronics and Tele Communication Engineering

University of Moratuwa

Srilanka

APRIL 2008

92952

# ABSTRACT

This research project is to design and develop a Centre for the Aircraft data locating system utilizing Air Craft Instruments and GPS with existing voice network belongs to Sri Lanka Air Force.

Currently, Air Traffic Controllers of the Sri Lanka Air Force do not have an automated system (our own system) to monitor the air craft movements within their field of range. Hence, implementation of our (SLAF) owns system was a long felt need .Availability of separate IFF radar systems will be a solution; however it will be an expensive option for the government of Sri Lanka at this juncture. The main reason is that it is not only the Radar, but the entire fleet of the Sri Lanka Air Force Air Craft that are required to be equipped with IFF transponders.

Hence this project is to develop a dynamic solution which is effective, efficient and affordable in the present context. The outcome of the research would provide an aircraft location on a corresponding ground map in a viewing terminal available in front of the Air Traffic Controller. This timely information to the air traffic controller will be useful to establish a proper accurate air traffic controlling. Also, this will be a good source for the Sri Lanka Air Force to track whether the air craft movements are in accordance with the flight plans.

This project consists of three main subsystems such as Onboard processing sub system. Onboard sensor subsystem and Ground Monitoring Station. In here Sensor information of the air craft have been gathered by using On board sensor subsystems and gathered information have been processed and taken decisions by using onboard processing subsystem. Finally all the gathered information have been transferred to the Ground Monitoring Station by using existing secure voice communication network available at Sri Lanka Air Force. It provides a very user friendly display provisioning Air Craft speed. Height and Location.