



International Civil Aviation Organization

**FIFTH MEETING OF THE SOUTHEAST ASIA
SUB-REGIONAL ADS-B IMPLEMENTATION
WORKING GROUP (SEA ADS-B WG/5)**



Jakarta, Indonesia, 21 – 22 January 2010

Agenda Item 5: Review of sub-regional implementation plan

- Near-term implementation plan, including operational plan

ADS-B FILTER FOR DATA SHARING PROGRAMME IN INDONESIA

(Presented by Indonesia)

SUMMARY

Indonesia has been developed ADS-B Filter to manage and control the exchange of ADS-B data between Indonesia and our neighbors

1. BACKGROUND

1.1 Indonesia has decided to develop a ADS-B Filter based on server to manage and control the exchange of ADS-B data between Indonesia and our neighbors. The system is called “Indonesia ADS-B Filter”.

1.2 The first implementation of this Filter will be the gateway from the Eastern Part of Indonesia to Australia. This simulation is expected by both countries to be done as soon as possible. The simulation has been conducted in Canberra between DGCA Indonesia and ASA Australia, December 18th 2009.

1.3 During the simulation between Indonesia and Australia, some technical parameters has been discussed and agreed. In this event DGCA Indonesia provided the sample data from two Ground Stations Merauke (Sensis) and Saumlaki (Thales), and ASA Australia provided the sample data from two Ground Stations Thursday Island (Thales) and Gove (Thales). In general, this simulation was a success, whereby some data format incompatibility was detected and can be resolved.

2. TECHNICAL ADS-B FILTER SPECIFICATION

2.1 Data Format Adaptation : The Filter is easy to be integrated with ATC system and have capability to convert Asterix21 version 0.23 to version 0.26, and vice versa.

2.2 Configurability Filter Rules : Filter Rules by Asterix 21 field(s): SAC/SIC, Target Address, Position Accuracy, Target Identification, Geometric Altitude, Flight Level, Ground Speed, Mode 3/A Address, Signal Amplitude.

2.3 Data Rate and Duplication Control : Data Rate Control and Data Duplication Control help bandwidth usage optimization.

2.4 Enhanced Logging System : Data filtration process logged per step in specified log File.

2.5 Web Based Configuration for all ADS-B Filter system.

2.6 Highly Reliable System : System is redundant in: Application, Operating System, Network and Infrastructure, Physical Server, and Electricity Source.

3. INDONESIA ADS-B FILTER SIMULATION

2.1 In December 2009, the simulation between Indonesia and Australia as shown in Figure 1, has been conducted successfully in ASA office in Canberra, Australia.

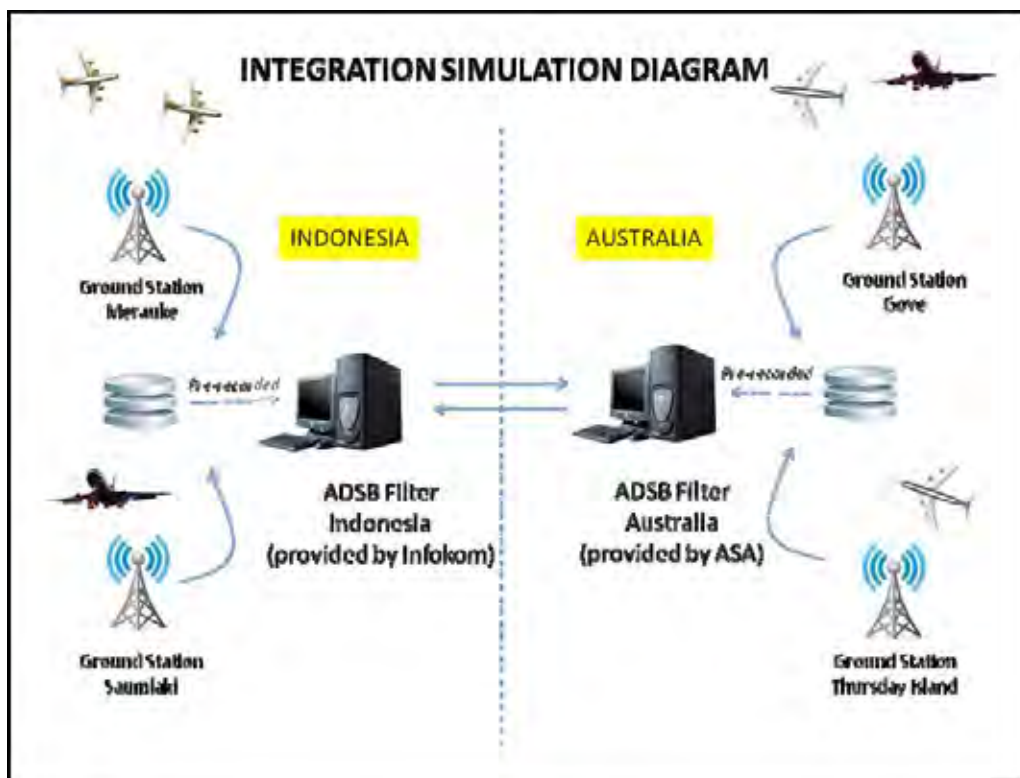


Figure 1. Simulation of ADS-B Data Exchange between Indonesia and Australia

2.1.2 The ADS-B data from Ground Stations: Merauke and Saumlaki were first recorded and replayed back using the Laptop. This data is sent to Indonesian ADSB-Filter. If the data passes the criteria then the filter will send this data to Australia ADSB-Filter, if not, then this data will be dropped.

2.1.3 The Indonesian ADSB-Filter is basically functioning as a gateway to the foreign ADSB Networks. ADS-B messages from Indonesia is filtered via ADSB-Network before sending it to the foreign ADS-B network, and at the same time it also blocks unwanted ADS-B messages from the foreign ADS-B network before entering Indonesian ADSB-Network. The ADS-B Filter can filter the data in both ways.

2.1.4 Based on Draft Data Sharing Agreement of Indonesia and Australia, some criteria will be applied, such as Asterix21 field (SIC/SAC, FOM, Altitude, Latlong, etc), Geographical criteria (distance from FIR, route, etc).

2.1.5 Based on the simulation in RCMS, the filter can process and display site monitor address of Indonesia (saumlaki and Merauke) and Australia (Thursday Island and Goove), as shown in Figure 2.



Figure 2. Display on Indonesian RCMS

2.1.6 Indonesia ADS-B Filter has been successfully tested to integrate to ATC system in MAATS Makassar (Eurocat-X Thales).

3. SCHEDULE

3.1 The first phase development of Indonesia ADS-B Filter has been completed in December 2009 and can be upgradeable.

4. CONCLUSION

4.1 The meeting is invited to note the potential benefits of Indonesia ADS-B Filter to support ADS-B Data Sharing Agreement.
