

International Civil Aviation Organization



**AUTOMATIC DEPENDENT
SURVEILLANCE – BROADCAST SEMINAR
AND FOURTEENTH MEETING OF
AUTOMATIC DEPENDENT
SURVEILLANCE – BROADCAST (ADS-B)
STUDY AND IMPLEMENTATION TASK
FORCE (ADS-B SITF/14)**



Christchurch, New Zealand, 14 – 17 April 2015

Agenda Item 4: Review States' activities and interregional issues on implementation of List of ADS-B and multilateration

**ADS-B IMPLEMENTATION STATUS IN INDONESIA AND
DATA SHARING BETWEEN INDONESIA, AUSTRALIA AND SINGAPORE**

(Presented by Indonesia)

SUMMARY

This paper presents the information of the status of data sharing between Indonesia, Australia and Singapore and ADS-B Implementation progress in Indonesia.

1. INTRODUCTION

1.1 Directorate General of Civil Aviation - Indonesia had installed 30 ADS-B Ground Stations with Dual System at Sorong, Biak, Timika, Merauke, Ambon, Saumlaki, Alor, Kupang, Galela, Manado, Kendari, Tarakan, Palu, Balikpapan, Banjarmasin Malino, Surabaya, Kintamani, Waingapu, Pangkalan Bun, Semarang, Banda Aceh, Medan, Pekanbaru, Matak, Natuna, Pontianak, Palembang, Jakarta, Cilacap, and 1 ADS-B Ground Station with single system for Test Bed purpose.

1.2 The 21 ADS-B Ground Stations in the Eastern part of Indonesia had been integrated with ATC system in Makassar Automated Air Traffic Control System (MAATS) in Makassar Center and 9 ADS-B Ground Stations in the Western part of Indonesia had been integrated with Jakarta Automated Air Traffic Control System (JAATS) in Jakarta Centre.

1.3 The Test-Bed system at DGCA Headquarters Office in Jakarta was able to monitor and control the ADS-B Data from 30 ADS-B Ground Stations that installed in Western and Eastern part of Indonesia.

1.4 On September 24, 2008, the DGCA issued a Circular Letter number AU.6104/DKP.1989/2008 regarding implementation of Automatic Dependent Surveillance (ADS) in Indonesia Flight Information Region. The Circular stated that in order to follow the letter ICAO Regional Office number : T.8/10/21 : APO43/08 (CNS) dated 2 April 2008 and DGCA planned to implement ADS-B Out throughout the Indonesian airspace in stages.

1.5 On 22-23 May 2014, (1st) Indonesia ADS-B Task Force was conducted, discussed mandate and relative issue regarding the implementation, the Task Force established the mandate date and Indonesia ADS-B Implementation team.

1.6 On 24 July 2014, Directorate of Air Navigation – DGCA Indonesia published AIRAC AIP Supplement Nr. 10/14 for Automatic Dependent Surveillance Broadcast (ADS-B) Implementation in Indonesia for Situational Awareness (Tier-2) and effective from 18 September 2014 at 19.00 UTC until 25 June 2015.

1.7 On 4 February 2015, Directorate of Airworthiness and Aircraft Operations – DGCA Indonesia issued circular letter to Indonesian Airlines regarding the minimum standard for ADS-B equipment that has to comply with (minimum) DO-260, and also requesting the airlines to collect the transponder and GNSS receiver model and part number, in order to confirm to the acceptable configuration refer to CASA AC 20-45(1).

1.8 On 9-10 April 2015, (2nd) Indonesia ADS-B Task Force was conducted, to updating the status of ADS-B implementation, Concept of operations, and discussing the preparation for issuing new AIP (ADS-B for ATS Surveillance Separation implementation).

2. DISCUSSION

2.1 ADS-B data sharing update

ADS-B data sharing or ADS-B data collaboration is one of the main functions of the ADS-B Implementation. The implementation of ADS-B mutual data sharing with neighboring countries will improve safety, capacity, efficiency for national and international flight services, because ATC officers in adjacent countries can see the position of the aircraft that will enter their FIR, making it easier for ATC to control the area of their FIR boundary.

Australia, Singapore and Indonesia are one of the leading countries in the world for the implementation of ADS-B data sharing. So far, Indonesia has been implementing the recommendations of ICAO to conduct ADS-B data sharing with neighboring countries (Australia and Singapore).

Background activity of ADS-B Data Sharing in Indonesia are as follows:

- ☞ In August 2004, the results of the APANPIRG/15 meeting in Conclusion 15/26 decided to encourage neighboring countries to perform ADS-B data collaboration and to build mechanisms and infrastructure needed to achieve that goal.
- ☞ In ICAO ADS-B SITF/7 meeting in Chengdu-China in April 2008, SEA Subregional ADS-B Implementation Working Group 2nd (Bali), 3rd (Malaysia) and 4th (Australia), Indonesia, Australia, Singapore, and Vietnam agreed to conduct ADS-B data collaboration in the area of adjacent airspace boundaries.
- ☞ ADS-B locations in collaboration between Indonesia and Australia as signed are Merauke, Saumlaki, Kupang, Kintamani, Waingapu, Alor, Semarang, and Timika while Australian locations are Thursday Island, Gove, Broome, and Doongan.
- ☞ ADS-B locations in collaboration between Indonesia and Singapore are Natuna and Matak, while Singapore ADS-B transmits data from Singapore.
- ☞ Indonesia had been installed and commissioned VHF Radio Facilities in Matak and Natuna would provide to Singapore for DCPC Services.

History of LOA Agreement	
DGCA Indonesia and Air Services Australia	DGCA Indonesia and CAA Singapore
1. 20 September 2010 first signing of LOA	1. 22 December 2010 first signing of LOA
2. 18 June 2014 Amendment Agreement No.1	2. 27 May 2013 Amendment Agreement No.1
	3. 16 April 2014 Amendment Agreement No.2

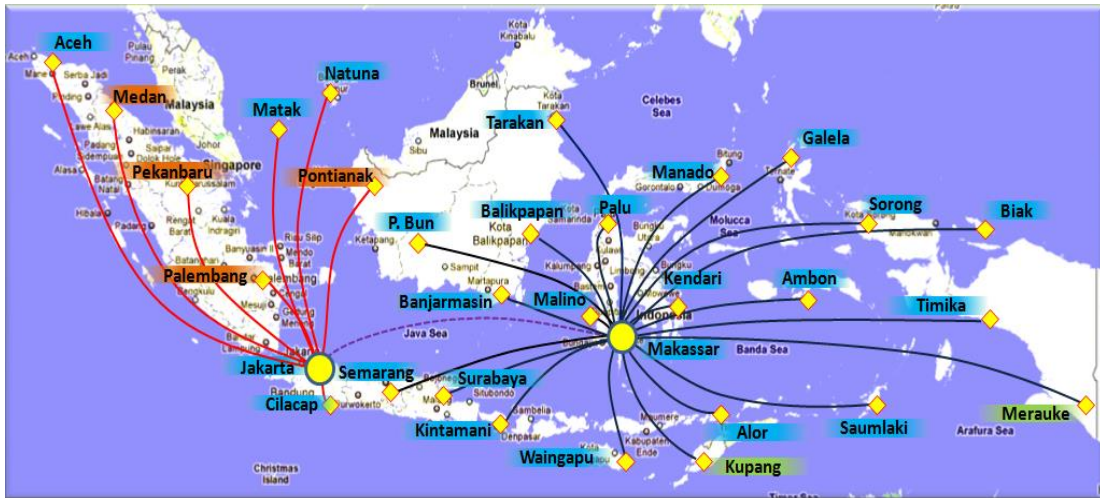


Figure 1. ADS-B Integration in Indonesia

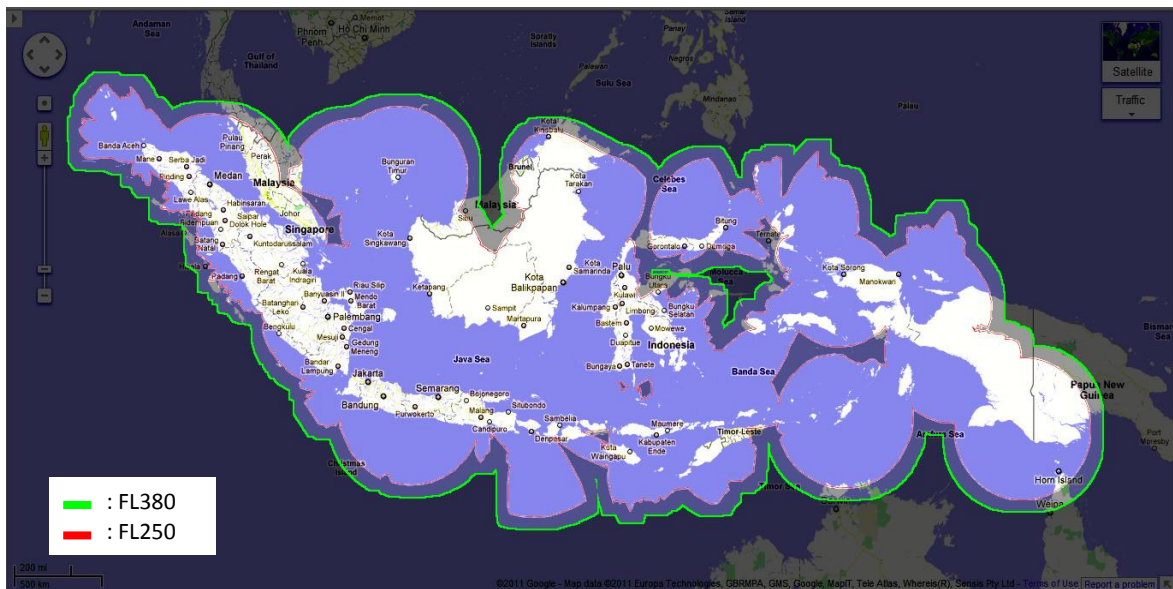


Figure 2. ADS-B Coverage Simulation in Indonesia

2.2 ADS-B Implementation status and A/C data

2.2.1 Areas of ADS-B implementation are in Jakarta FIR and Ujung Pandang FIR, Class A Airspace from F290 up to F460 within ADS-B coverage affected to Indonesia and visiting foreign registered aircraft transmitting ADS-B information.

2.2.2 If an aircraft carries ADS-B transmitting equipment in Indonesian airspace, the equipment must comply with an approved ADS-B equipment configuration. An approved ADS-B equipment configuration is an equipment configuration that complies with one of the following standards:

- (1) FAA Advisory Circular No 20-165A; or
- (2) EASA AMC 20-24; or
- (3) meets the conditions for approval set out in Appendix XI of Australian Civil Aviation Order No 20.18; or
- (4) *Other alternative equipment configuration system accepted by DGCA.*

2.2.3 Indonesia A/C data as follow;

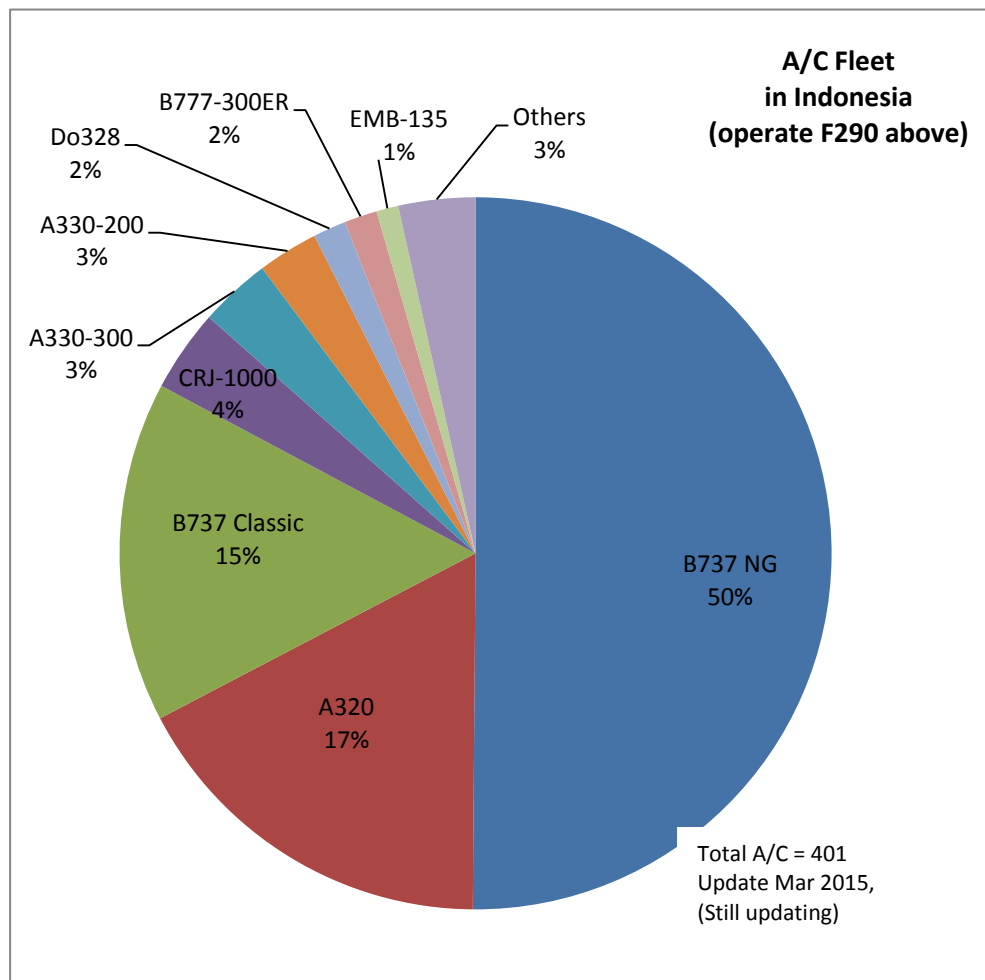


Figure 3. A/C fleet in Indonesia

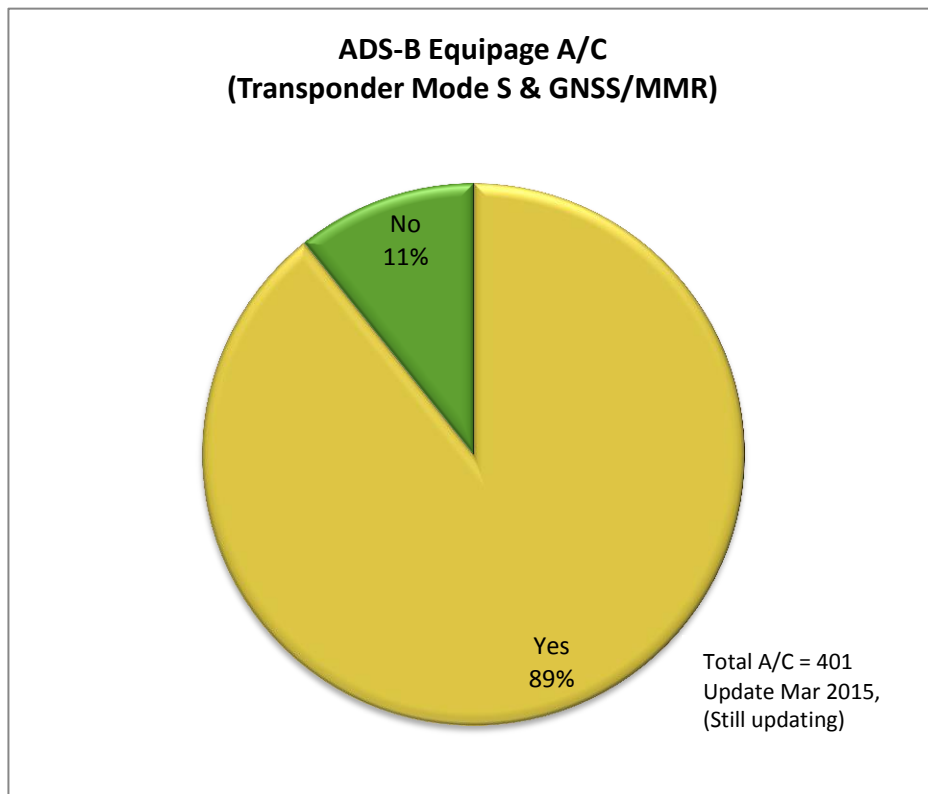


Figure 4. ADS-B Equipage A/C

2.2.4 The Airlines who operate non-ADSB equipage aircraft may request an exemption to DGCA with estimation time maximum 25 June 2017 (2 years from implementation date) if acceptable.

2.2.5 Permanent exemption for State A/C, SAR operations, Medical evacuation, and Humanitarian operations.

2.2.6 Any issues and problems related to ADS-B operations (“Bad data”) will be reported to DGCA, the airlines, and others stakeholders as appropriate.

2.2.7 DGCA Indonesia will publish AIRAC AIP Supplement on ADS-B Implementation Tier-1 effective on 25 June 2015, mandate.

3. CONCLUSION

3.1. ADS-B data sharing between Indonesia, Australia, and Singapore works properly.

3.2. There are possibilities on ADS-B data sharing between Indonesia and Papua New Guinea, Philippine, Malaysia, Timor Leste, Brunei Darussalam, and India.

3.3. ADS-B program in Indonesia will full implemented for ATS surveillance separation from F290 up to F460 on 25 June 2015.

3.4. Any support and review from others states regulators and stakeholders will be needed to keep this ADS-B program successfully.

3.5. The Directorate of Airworthiness and Aircraft Operations (in collaboration with Directorate of Navigation and ATC) will updating all the ADS-B capable – non capable A/C with all their issues.

4. ACTION BY THE MEETING

4.1 The meeting is invited to:

- a) Note the information contained in this paper; and
- b) Discuss any relevant matters as appropriate.
