



International Civil Aviation Organization

**FIFTEENTH MEETING OF THE ADS-B STUDY AND IMPLEMENTATION
TASK FORCE (ADS-B SITF/15)**

Bangkok, Thailand, 18 - 20 April 2016

**Agenda Item 4 : Review States activities and interregional issues on implementation of
ADS-B and multilateralism**

**ADS-B IMPLEMENTATION IN INDONESIA
FOR ATS SURVEILLANCE SEPARATION (TIER-1)**

(Presented by Indonesia)

SUMMARY

This paper presents the information of the status of ADS-B Implementation Tier-1 in Indonesian FIR.

1. INTRODUCTION

1.1 On September 24, 2008, the DGCA issued a Circular Letter number AU.6104/DKP.1989/2008 regarding implementation of Automatic Dependent Surveillance (ADS) in the Indonesia 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 planed by DGCA to implement ADS-B throughout the Indonesian airspace in stages.

1.2 According to the AIRAC AIP Supplement Number 10/14 dated 24 July 2014 regarding to the implementation of ADS-B in Indonesia for situation awareness (Tier-2), Indonesia will implement ADS-B for ATS surveillance separation (Tier-1).

1.3 AIRAC AIP Supplement Number 08/15 dated 30 April 2015 regarding to ADS-B Implementation in Indonesia for ATS surveillance separation (Tier-1).

2. ADS-B IMPLEMENTATION

2.1 Implementation of ADS-B in Indonesia for surveillance separation have effectived on 25 June 2015 at 19.00 UTC.

2.2 Area of ADS-B implementation for ATS surveillance separation is in Jakarta FIR and Ujung Pandang FIR, Class A Airspace, between FL290 to FL460 within ADS-B coverage.

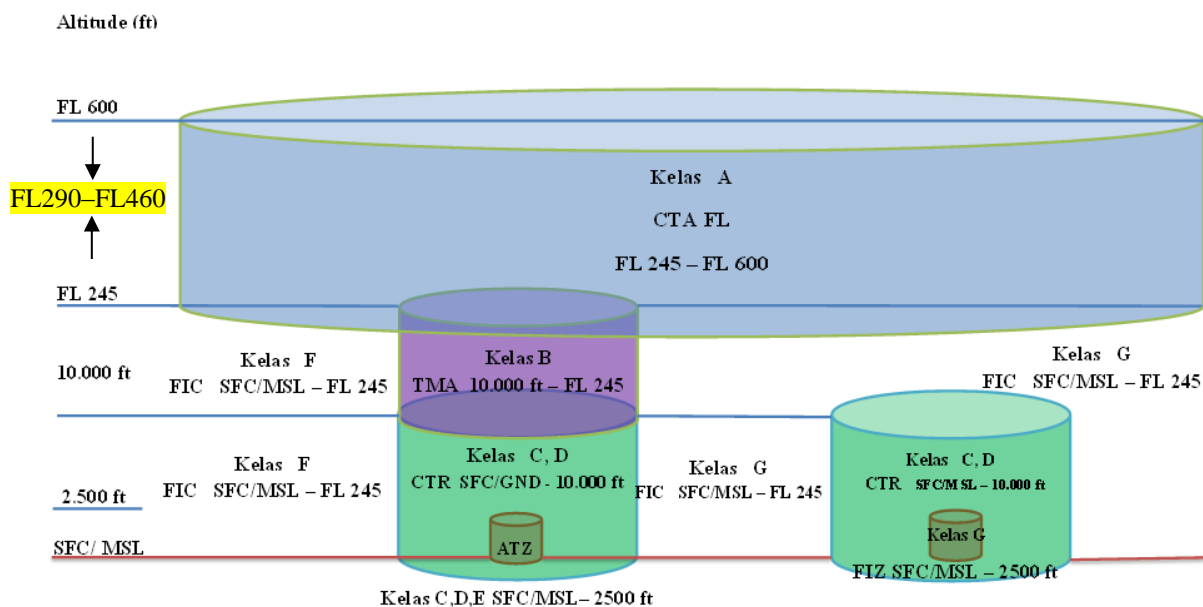


Figure 1. Indonesia Airspace

3. AIRCRAFT EQUIPAGE FOR ADS-B OUT

3.1 Any aircraft flying within Jakarta FIR and Ujung Pandang FIR which is ADS-B equipped must meet the requirements in FAA TSO-C166b, or CASA AUS ATSCO-C100a, or other standards acceptable by DGCA.

3.2 Until 31st December 2017, carriage of ADS-B equipment for flights between FL290 and FL460 is optional. However with ADS-B only surveillance coverage, priority will be given to aircraft which are ADS-B equipped over non-equipped aircraft.

3.3 From 1st January 2018, all aircraft flying within Jakarta FIR and Ujung Pandang FIR at or above FL290 must carry serviceable ADS-B transmitting equipment (Mode S Transponder and GNSS source position) that meet the performance standards described paragraph 3.1.

3.4 If an aircraft carrier ADS-B transmitting equipage which does not comply with the requirements of paragraph 3.1, the aircraft ADS-B equipage shall :

3.4.1 Deactivated; or

3.4.2 Set to transmit only a value of zero for the Navigation Uncertainty Category (NUCp) or Navigation Integrity Category (NIC) or Navigation Accuracy Category (NAC) or Source Integrity Limit (SIL).

Note :

- The requirement is met if the ADS-B transmitting equipment has a cockpit control that enables the pilot turn the ADS-B transmissions on and off without disabling the ATC transponder;
- Deactivation of the ADS-B transmission must not affect the continued operation of the Mode S transponder responses to interrogations; and
- It is considered equivalent to deactivation if NUCp or NIC or NAC or SIL is set

to continually transmit only a value of zero.

4. FLIGHT PLANNING

4.1 Aircraft operators complying with the requirements stipulated in paragraph 3.1 are to indicate the appropriate ADS-B designator in Item 10 of the ICAO flight plan :

- i. **E** – Transponder – Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability;
or
- ii. **L** – Transponder – Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability;

Together with :

- i. **B1** ADS-B with dedicated 1090 MHz ADS-B “OUT” capability;
or
- ii. **B2** ADS-B with dedicated 1090 MHz ADS-B “OUT” and “IN” capability;

4.2 Aircraft Identification (ACID) not exceeding 7 characters must be accurately indicated in Item 7 of the ICAO flight plan and replicated exactly when set in the aircraft avionics (for transmission as Flight ID) as follows either :

- i. The three-letter ICAO designator of the aircraft operator followed by the flight number (e.g. GIA234, QFA235, SIA236), when radiotelephony call sign consists of the associated ICAO telephony designator for the aircraft operator followed by the flight number (e.g. INDONESIA 234, QANTAS 235, SINGAPORE 236).
- ii. The aircraft registration (e.g. PKABC, VHABC, 9V234) when the radiotelephony call sign consists of the aircraft registration.

Important : ACID entered should not have any leading zeros unless it is part of the flight number as indicated in Item 7 of the ICAO flight plan. Hyphens, dashes or spaces are NOT to be used.

5. ATC-PILOT PHRASEOLOGY

No	Circumstances	Phraseologies
1	To request the capability of the ADS-B equipment	a) ADVISE ADS-B CAPABILITY; *b) ADS-B TRANSMITTER (datalink); *c) ADS-B RECEIVER (datalink); *d) NEGATIVE ADS-B *) Denotes pilot transmission.
2	To request reselection of aircraft identification	RE-ENTER ADS-B AIRCRAFT IDENTIFICATION
3	To request the operation of the IDENT feature	TRANSMIT ADS-B IDENT
4	To request transmission of pressure-altitude	TRANSMIT ADS-B ALTITUDE
5	To request termination of transponder and / or ADS-B transmitter operation	a) STOP SQUAWK [TRANSMIT ADS-B ONLY]; b) STOP ADS-B TRANSMISSION [SQUAWK (code) ONLY]
6	To request termination of pressure-altitude transmission because of faulty operation	STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, or reason)]
7	Confirmation of ADS-B operations	ADS-B TRANSMISSION NOT RECEIVED, CONFIRM ADS-B OPERATIONAL
8	To inform an aircraft that its ADS-B transmitter appears to be inoperative or malfunctioning	ADS-B TRANSMITTER APPEARS TO BE INOPERATIVE / MALFUNCTION CHANGE TO ALTERNATE TRANSPONDER
	ATS ADS-B surveillance system ground equipment un-serviceability	ADS-B OUT OF SERVICE (appropriate information as necessary)

6. CONTINGENCY

6.1 ATC shall terminate the Surveillance separation and immediately provide the Procedural separation for aircraft if the radar and/or ADS-B contact is lost from an ATC air situation display.

6.2 The pilot-in-command, upon awareness of an onboard ADS-B equipment failure, must inform ATC as soon as possible. ATC would then provide the necessary clearance to ensure separation with other flights operating in the delineated airspace.

7. ACTION BY THE MEETING

7.1 The meeting is invited to discuss any possibilities and any relevant matters as appropriate.

ATTACHMENT

NUMBER OF ADS-B EQUIPPED AIRCRAFT RECEIVED BY ADS-B GROUNDSTATION IN INDONESIA (MONITORING IN FEBRUARY 5th TO 13th 2016)

1. DOMESTIC AIRCRAFT

No.	Airlines	Number of Aircraft
1.	Batik Air Indonesia	32
2.	Citilink Garuda Indonesia	35
3.	Garuda Indonesia	116
4.	Indonesia Air Transport	1
5.	Indonesia AirAsia	24
6.	Kalstar Aviation	2
7.	Lion Mentari Airlines	92
8.	NAM Air	1
9.	Sriwijaya Air	14
10.	Wings Air	25
	TOTAL	342

2. INTERNATIONAL AIRCRAFT

No.	Airlines	Number of Aircraft
1.	Aeroflot Russian Airlines	4
2.	Aerologic	3
3.	Air Alsie	2
4.	Air Astana	2
5.	Air China	45
6.	Air France	5
7.	Air Hong Kong	7
8.	Air India Express	3
9.	Air India Limited	13
10.	Air Mauritius	5
11.	Air Montgomery	1
12.	Air New Zealand	8
13.	Air Niugini	8
14.	AirAsia	73
15.	AirAsia X	19
16.	AirBridge Cargo	4
17.	Airnorth	7
18.	All Nippon Airways	34
19.	Asia Atlantic Airlines	1
20.	Asiana Airlines	17
21.	Bangkok Airways	5
22.	Biman Bangladesh Airlines	3
23.	British Airways	13
24.	Care Flight	4

25.	Cargolux	4
26.	Cathay Pacific	72
27.	Cebu Pacific	35
28.	China Airlines	36
29.	China Cargo Airlines	1
30.	China Eastern Airlines	45
31.	China Southern Airlines	77
32.	Condor Flugdienst	2
33.	Delta Air Lines	5
34.	Dragonair, Hong Kong Dragon Airlines	6
35.	Druk Air	2
36.	Eagle Express Air Charter	1
37.	Eastar Jet	2
38.	Edelweiss Air	1
39.	Egyptair	2
40.	Emirates Airline	91
41.	Ethiopian Airlines	2
42.	Etihad Airways	30
43.	Eurowings	1
44.	EVA Air	23
45.	Federal Express	17
46.	Finnair	8
47.	Force Aerienne Francaise	1
48.	Gazpromavia	1
49.	Hainan Airlines	1
50.	Hi Fly	1
51.	Hong Kong Airlines	15
52.	IndiGo Airlines	4
53.	Japan Airlines	16
54.	Jet Airways	13
55.	Jetstar Airways	29
56.	Jetstar Asia Airways	18
57.	Katekavia	4
58.	KLM	14
59.	Korean Air	40
60.	Kuwait Airways	2
61.	Lao Airlines	1
62.	Lucky Air	1
63.	Lufthansa	8
64.	Luxaviation	1
65.	Mahan Air	4
66.	Malaysia Airlines	69
67.	Malindo Airways	16
68.	Mandarin Air	1
69.	Mihin Lanka	3
70.	Myanma Airways	1
71.	Myanmar Airways International	2
72.	MyTravel Airways	3
73.	National Jet Express	1
74.	Nippon Cargo Airlines	2
75.	Nok Air	3
76.	Nordwind Airlines	2
77.	Oman Air	6

78.	Ontario Ministry of Health	3
79.	Pacific Airlines	7
80.	Philippine Airlines	24
81.	Polar Air Cargo	4
82.	Qantas	38
83.	Qatar Airways	50
84.	RAF Barkston Heath	1
85.	Regional Express	5
86.	Royal Australian Air Force	1
87.	Royal Brunei Airlines	11
88.	Royal Jordanian	2
89.	Royal Malaysian Air Force	1
90.	Saudi Arabian Airline	19
91.	Scoot	11
92.	Servicos De Alquiler	1
93.	Shanghai Airlines	6
94.	Shenzhen Airlines	2
95.	Sichuan Airlines	4
96.	SilkAir	26
97.	Singapore Airlines	94
98.	Singapore Airlines Cargo	8
99.	South African Airways	8
100.	Spring Airlines	3
101.	SriLankan Airlines	9
102.	Star Up	1
103.	Surveillance Australia	8
104.	Swiss Air-Ambulance	1
105.	Swiss International Air Lines	5
106.	Tag Aviation UK	1
107.	Thai AirAsia	26
108.	Thai Airways International	40
109.	Thai Lion Mentari	7
110.	Thai Smile Airways	3
111.	Thomson Airways	4
112.	Tigerair Singapore	23
113.	Tigerair Taiwan	3
114.	TNT Airways	1
115.	Transavia Holland	1
116.	Turkish Airlines	16
117.	United Airlines	10
118.	United Parcel Service	6
119.	Uzbekistan Airways	2
120.	Vietjet Air	7
121.	Vietnam Airlines	40
122.	Virgin Australia Airlines	25
123.	Vistajet	6
124.	Xiamen Airlines	52
125.	Zest Airways	3
	TOTAL	1661