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AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) IMPLEMENTATION IN INDONESIA

1. INTRODUCTION

- 1.1. Regarding to the implementation of ADS-B in Indonesia, ADS-B for ATS surveillance separation (Tier-1) was implemented on 25 June 2015 in Jakarta FIR and Ujung Pandang FIR, this AIP SUPP expands the area of ADS-B implementation in Indonesia.
- 1.2. This AIP Supplement revise AIP VOL I AMDT 52 dated 28 APR 16 Page ENR 1.8 – 35 through ENR 1.8 – 38, and NOTAM A1168/17.

2. IMPLEMENTATION

- 2.1. The expansion of ADS-B implementation area in Jakarta FIR and Ujung Pandang FIR started from 20 July 2017 at 1900UTC.
- 2.2. The implementation of ADS-B in Indonesia will be applied in Class A, B, C, D, E and G airspace within ADS-B coverage, according to each type of the implementation, as follows:
 - 2.2.1. ADS-B implementation for ATS surveillance separation (Tier 1) is applied in Class A airspace, between FL245 to FL600;
 - 2.2.2. ADS-B implementation for ATS surveillance separation (Tier 1) is applied in particular of Class B, C, D and E airspace, between SFC to FL245, in Air Traffic Service Airspace as mentioned in Paragraph 2.3;
 - 2.2.3. ADS-B implementation for Position reporting for traffic advisory service / flight information services (Tier 3) is applied in Class G airspace, between SFC to FL245, in Air Traffic Service Airspace

as mentioned in Paragraph 2.4;

- 2.2.4. ADS-B implementation for Position reporting for traffic advisory service / flight information services (Tier 3) is applied in Aerodrome Traffic Zone (ATZ), in Air Traffic Service Airspace as mentioned in Paragraph 2.5;
- 2.3. Air Traffic Service Airspace which implement ADS-B as ATS surveillance separation are as follows:
 - 2.3.1. Bali TMA East, TMA West and CTR;
 - 2.3.2. Jakarta CTA North, CTA East, TMA East, TMA West, Arrival North and Arrival East.
 - 2.3.3. Pontianak TMA and CTR;
 - 2.3.4. Pekanbaru TMA and CTR;
 - 2.3.5. Surabaya West TMA, East TMA and CTR;
 - 2.3.6. Ujung Pandang TMA and CTR;
 - 2.3.7. Yogyakarta Military Control Airspace (MCA).

Note:

The dimension (Lateral limit and Vertical limit) of each airspace is in accordance with AIP Indonesia Vol. 1 ENR 2 Air Traffic Airspace.

- 2.4. Air Traffic Service Airspace which implement ADS-B as Position reporting for traffic advisory service / flight information services are as follows:
 - 2.4.1. Bali FSS
 - 2.4.2. Jakarta FSS
 - 2.4.3. Pontianak FSS
 - 2.4.4. Ujung Pandang FSS
- 2.5. Aerodrome Traffic Zone (ATZ) which implement ADS-B as Position reporting for traffic advisory service / flight information services are as follows:
 - 2.5.1. Ngurah Rai ATZ;

- 2.5.2. Soekarno-Hatta ATZ.
- 2.5.3. Supadio ATZ;
- 2.5.4. Sultan Syarif Kasim II ATZ;
- 2.5.5. Juanda ATZ;
- 2.5.6. Hasanuddin ATZ;
- 2.5.7. Adisutjipto ATZ.

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 performance standards described in Paragraph 3.4 below.
- 3.2. Until 31st December 2017 at 2359UTC, carriage of ADS-B equipment for flights between SFC and FL600 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. Starting from 1st January 2018 at 0000UTC, 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 in Paragraph 3.4 below. Whilst aircraft flying below FL290, the carriage of ADS-B equipment is remain optional.
- 3.4. Within the Jakarta FIR and Ujung Pandang FIR, ADS-B transmitting equipment must be certificated as meeting:
 - European Aviation Safety Agency - Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHZ Extended Squitter (AMC 20-24), or
 - European Aviation Safety Agency - Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance (CS-ACNS), or

- Federal Aviation Administration – Advisory Circular No: 20-165A (or later versions) Airworthiness Approval of Automatic Dependent Surveillance – Broadcast (ADS-B) Out Systems, or
- the equipment configuration standards in Appendix XI of Civil Aviation Order 20.18 of the Civil Aviation Safety Authority of Australia.

If an aircraft carries ADS-B transmitting equipage which does not comply with the requirements of paragraph 3.4, 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 to turn the ADS-B transmissions on and off without disabling the ATC transponder.
- Deactivation of the ADS-B transmissions must not affect the continued operation of the Mode S transponder responses to interrogations.
- 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 3.4 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 ADS-B Out capability OR
 - ii. **L** – Transponder — Mode S, including aircraft identification, pressure-altitude, ADS-B Out and enhanced surveillance

capability

together with :

- i. **B1** ADS-B “out” capability using 1090MHz extended squitter
- Or**
- ii. **B2** ADS-B “out” and “in” capability using 1090MHz extended squitter

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, QFA234, SIA234), 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 234, SINGAPORE 234).
- or
- 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	Identification of aircraft	IDENTIFIED <i>[position]</i>
2	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
3	To request the operation of the IDENT feature	SQUAWK IDENT, <i>or</i> TRANSMIT ADS-B IDENT
4	To request reselection of aircraft identification	RE-ENTER [ADS-B or MODE S] AIRCRAFT IDENTIFICATION, <i>or</i> RE-ENTER FLIGHT IDENTIFICATION
5	To request transmission of pressure-altitude	TRANSMIT ADS-B ALTITUDE
6	To request termination of pressure-altitude transmission because of faulty operation	STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, <i>or</i> reason)]
7	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] <i>*note:</i> <i>A pilot should respond with UNABLE then the controller should consider alternative solutions to the problem that do not remove the safety defences of the other surveillance technologies. This might include manual changes to flight data, coordination with other controllers and/or change of assigned codes or callsigns.</i>
8	Termination of ADS-B service	IDENTIFICATION TERMINATED
9	ATS ADS-B surveillance system ground equipment degradation	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. CHANGES AND CANCELLATION

- 7.1. Any changes of the information content on this AIRAC AIP Supplement will be notified through NOTAM or superseded by other AIP Supplement.
- 7.2. This AIRAC AIP Supplement will be cancelled when all information are incorporated into AIP and will be notified through AIP Amendment.

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