



*International Civil Aviation Organization*

**NINETEENTH MEETING OF THE COMMUNICATIONS/NAVIGATION  
AND SURVEILLANCE SUB-GROUP (CNS SG/19) OF APANPIRG**

Bangkok, Thailand, 20 – 24 July 2015

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**Agenda Item 6: Surveillance**

**2) Review Surveillance Strategy**

**SURVEILLANCE STRATEGY FOR THE ASIA/PACIFIC REGION**

(Presented by the Secretariat)

**SUMMARY**

This paper presents the Surveillance Strategy for the Asia/Pacific Region adopted by APANPIRG/24 and latest amendments were recommended by ADS-B SITF/12 meeting in 2013.

**1. Introduction**

1.1 The CNS SG/(CNS SG/17) held at the ICAO Asia and Pacific Regional Office, Bangkok, Thailand in May 2013 reviewed and endorsed the proposed changes by ADS-B SITF/12 meeting to the regional Surveillance Strategy for Asia and Pacific Regions (Draft Conclusion 17/20). The revised surveillance strategy was adopted by APANPIRG/24 in June 2013 through Conclusions 24/47:

**Conclusion 24/47 – Surveillance Strategy for the Asia/Pacific Region**

That, the revised surveillance strategy for the Asia/Pacific Region provided in **Appendix J** to the Report on Agenda Item 3.4 be adopted.

1.2 The ADS-B SITF/13 and ADS-B SITF/14 meeting did not review strategy as time constraints.

**2. Action by the Meeting**

3.1 The meeting is invited to review **Attachment A** – the revised Surveillance Strategy for Asia and Pacific Regions and identify the need for any further updates.

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## **REVISED SURVEILLANCE STRATEGY FOR THE ASIA/PACIFIC REGION**

### **Considering that:**

1. States are implementing CNS/ATM systems to gain safety, efficiency and environmental benefits, and have endorsed the move toward satellite and data link technologies;
2. The future air traffic environment will require increased use of aircraft-derived surveillance information for the implementation of a seamless automated air traffic flow management system;
3. The 11th Air Navigation Conference endorsed the use of ADS-B as an enabler of the global air traffic management concept and encouraged States to support cost-effective early implementation of ADS-B applications;
4. The 12th Air Navigation Conference endorsed the ICAO Aviation System Block Upgrades (ASBU) Framework with Modules specifying effective use of ADS-B/MLAT and associated communication technologies in bridging surveillance gaps and its role in supporting future trajectory-based ATM operating concepts. Cooperation between States is the key to achieve harmonized ATM system operations;
5. APANPIRG has decided to use the 1090MHz Extended Squitter data link for ADS-B air-ground and air-air applications in the Asia/Pacific Region, noting that in the longer term an additional link type may be required;
6. SSR and ADS-C will continue to meet many critical surveillance needs for the foreseeable future;
7. SARPs, PANS and guidance material for the use of ADS-B have been developed;
8. ADS-B avionics and ground systems are available;
9. Multilateration is a technology that can supplement SSR, ADS-B and SMR; and
10. ADS-B IN applications and equipment are now available in commercial airliners and ICAO ASBUs include ADS-B IN applications in Block 0 and Block 1.

### **THE SURVEILLANCE STRATEGY FOR THE ASIA/PACIFIC REGION IS TO:**

1. Minimise the reliance upon pilot position reporting, particularly voice position reporting, for surveillance of aircraft;
2. Maximise the use of ADS-B on major air routes and in terminal areas, giving consideration to the mandatory carriage of ADS-B Out as specified in Note 1 and use of ADS-B for ATC separation service;
3. Reduce the dependence on Primary Radar for area surveillance;

4. Provide maximum contiguous ATS surveillance coverage of air routes using 1090MHz Extended Squitter ADS-B and Mode S SSR based on operational requirements;
5. Make full use of SSR Mode S capabilities where radar surveillance is used and reduce reliance on 4-digit octal codes;
6. Make use of ADS-C where technical constraint or cost benefit analysis does not support the use of ADS-B, SSR or Multilateration;
7. Make use of Multilateration for surface, terminal and area surveillance where appropriate;
8. Closely monitor ADS-B avionics developments such as Version 2 ES (*DO260B*) implementation and Spaced Based ADS-B application programs. At an appropriate time (circa 2016) APAC should review progress and consider development of transition plans where cost/benefit studies indicate positive advantages for the region; and
9. Carefully monitor ADS-B IN development and cost benefits to ensure that ASIA/PAC States are able to take advantage of ADS-B IN benefits when appropriate, through procedures, rules and ATC automation capabilities.

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**Note 1:**

- a) *Version 0 ES as specified in Annex 10, Volume IV, Chapter 3, Paragraph 3.1.2.8.6 (up to and including Amendment 82 to Annex 10) and Chapter 2 of Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to DO260) to be used till at least 2020.*
- b) *Version 1 ES as specified in Chapter 3 of Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to DO260A);*
- c) *Version 2 ES (including provisions for new set of 1 090 MHz extended squitter (ES) messages and traffic information service – broadcast (TIS-B) being developed by the Aeronautical Surveillance Panel (ASP) and scheduled to be incorporated in Annex 10 Vol. IV - Surveillance and Collision Avoidance System as part of Amendment 86 with target applicable date in November 2013. (Equivalent to DO260B and EUROCAE ED-102A which were issued in December 2009).*