



*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

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**Agenda Item 6:      Review TOR of ADS-B SITF and works accomplished by the Task Force**

**REVIEW ADS-B SITF TOR AND WORKS DONE BY THE TASK FORCE**

(Presented by Secretariat)

**SUMMARY**

This paper presents the TOR of the Task Force for review and ADS-B related Conclusions and Decisions adopted by APANPIRG in the past 13 years. The paper identifies some outstanding tasks for the new Surveillance Implementation Coordination Group (SURICG). The paper also recalls the achievements made by Task Force through Conclusions and Decisions adopted by APANPIRG.

**1.      INTRODUCTION**

1.1              APANPIRG in 2002 identified ADS-B implementation in the ASIA/PAC Region as one of the key priorities through the following Conclusion:

**13/41 - Inclusion of ADS-B on the list of Key Priorities of the CNS/ATM  
Implementation in the Asia/Pacific Region**

That, a task on ADS-B be included on the list of Key Priorities of the CNS/ATM Implementation in the Asia/Pacific Region.

1.2              Based on the proposal and support expressed by several States for the establishment of the ADS-B Study and Implementation Task Force, the APANPIRG/13 meeting adopted Conclusion 13/19 regarding establishment of the ADS-B Study and Implementation Task Force - a multidisciplinary Task Force be established with the Term of Reference provided in Appendix G to the APANPIRG/13 report on Agenda Item 2.2.

1.3              Since its establishment, the Task Force met 15 times in the past 13 years:

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| •    ADS-B SITF/1 | 24-26 March 2003, Brisbane, Australia      |
| •    ADS-B SITF/2 | 22-26 March 2004, Bangkok, Thailand        |
| •    ADS-B SITF/3 | 21-25 March 2005, Bangkok, Thailand        |
| •    ADS-B SITF/4 | 24-28 October 2005, Nadi, Fiji             |
| •    ADS-B SITF/5 | 3-7 April 2006, New Delhi, India           |
| •    ADS-B SITF/6 | 23-27 April 2007, Seoul, Republic of Korea |

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|-----------------|---|
| • ADS-B SITF/7  | 7-11 April 2008, Chengdu, China               |
| • ADS-B SITF/8  | 18-22 May 2009, Ha Noi, Viet Nam              |
| • ADS-B SITF/9  | 18 – 19 August 2010, Jakarta, Indonesia       |
| • ADS-B SITF/10 | 26-29 April 2011, Singapore                   |
| • ADS-B SITF/11 | 24-27 April 2012, Jeju, Republic of Korea     |
| • ADS-B SITF/12 | 15 – 18 April 2013, Kolkata, India            |
| • ADS-B SITF/13 | 22 – 25 April 2014, Hong Kong, China          |
| • ADS-B SITF/14 | 14 – 17 April 2015, Christchurch, New Zealand |
| • ADS-B SITF/15 | 18-20 April 2016, Bangkok, Thailand           |

### **ADS-B Seminars**

1.4 It should be highlighted that in most cases, an ADS-B Seminar was conducted in conjunction with these Task Force meetings and hosted by the Administrations/States. At these seminars, speakers from States/Administrations, operators, service providers and industries provided required information and updates on the development of ADS-B. Clarifications were provided and common understanding was achieved. Such ADS-B Seminars were well received by the participants and they have promoted better understanding of the various aspects of ADS-B implementation.

## **2. DISCUSSIONS**

2.1 The TOR of the ADS-B was updated by APANPIRG during past 13 years. The latest TOR of the Task Force is provided in **Attachment 1** for review by the meeting. It may be recalled that the TOR had been reviewed at 13<sup>th</sup> and 14<sup>th</sup> meetings of the Task Force. The purpose for this meeting to review the TOR is to identify any outstanding tasks left.

2.2 It may recall that a number of guidance materials in particular for the AIGD had been developed by the Task Force and then adopted by APANPIRG from time to time to assist States in the planning and implementation of ADS-B. This meeting is expected to discuss any outstanding issues/tasks.

2.3 The 14<sup>th</sup> Task Force meeting considered that there was a need for further work on at least the following topics:

- ASBUs relating to ADS-B IN
- Implementation of Space Based ADS-B
- ASBU B0-NET using ADS-B
- Use of lower cost, lower performance ADS-B systems (TSO199)

2.4 The need for guidance on Mode S SSR planning and implementation was also identified at the last meeting, as the region was not taking advantage of the technology that was available to improve safety and efficiency outcomes and to protect the 1090 MHz spectrum.

2.5 This meeting is expected to progress the outstanding action items where possible, and to arrange for the transfer of action items for the SURICG that would potentially carry action items forward and conduct the work that was necessary in the study and implementation of broader surveillance technologies including ADS-B (including ADS-B IN and Space-Based), and SSR Mode S and Multilateration applications.

2.6 It was noted that SEA/BOB ADS-B WG had a reporting path through ADS-B SITF, but was formed by APANPIRG.

2.7 The relevant Conclusion and Decision adopted by APANIRG in the past few years are also consolidated in Attachment 2 to this paper. This table indicates the contribution by the Task Force to the ADS-B planning and implementation in the APAC Region.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to note the information provided in this paper and the achievements of the Task Force highlighted in the **Attachment 2**.

3.2 The meeting is also invited to further identify any outstanding issues and develop recommendations for any follow-up actions to be considered by the SURICG.

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**THE REVISED TERMS OF REFERENCE OF  
ADS-B STUDY AND IMPLEMENTATION TASK FORCE**

- Compare currently available technologies with respect to concept of operations, relative costing, technical and operational performance and maturity of alternative technology/solutions (primary, secondary radar including Mode-S, ADS-B, multilateration, ADS-C);
- Develop an implementation plan for near term ADS-B applications in the Asia Pacific Region including implementation target dates taking into account:
  - available equipment standards
  - readiness of airspace users and ATS providers
  - identifying sub-regional areas (FIRs) where there is a positive cost/benefit for near-term implementation of ADS-B OUT
  - developing a standardised and systematic task-list approach to ADS-B OUT implementation; and
  - holding educational seminars and provide guidance material to educate States and airspace users on what is required to implement ADS-B IN & OUT.
- Study and identify applicable multilateration applications in the Asia and Pacific Region considering:
  - Concept of use/operation
  - Required site and network architecture
  - Expected surveillance coverage
  - Cost of system
  - Recommended separation minimums; and
  - If multilateration can be successfully integrated into an ADS-B OUT-system for air traffic control.
- Coordinate ADS-B implementation plan and concept of operations with other ICAO regions where ADS-B implementation is going on and with relevant external bodies such as EUROCONTROL, EUROCAE, RTCA and Industry.

Note: *The Task Force, while undertaking the tasks, should take into account of the work being undertaken by SAS, AS Panels with a view to avoid any duplication.*

*The Task Force should report to the APANPIRG, through the CNS Sub-group and provide briefing to the ATM- Sub-group.*

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## APANPIRG Conclusions/Decisions – ADS-B

### APANPIRG Conclusions/Decisions on ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
<b>C 26/44</b>  <b>A &amp; B</b>	<b>ADS-B OUT Forward Fit Equipage</b>	That, States/Administrations in APAC Region be strongly encouraged to mandate that registered aircraft with a maximum certified take-off mass exceeding 5 700 kg or having a maximum cruising true airspeed capability greater than 250 knots, with a date of manufacture on or after 8 June 2018 (two years after the European forward fitment mandate is effective) be equipped with ADS-B avionics compliant with Version 2 ES (equivalent to RTCA DO260B) or later version.
<b>C 26/43</b>  <b>A &amp; B</b>	<b>Guidelines for Airworthiness Approval for ADS-B Avionics Equipage</b>	That, States be advised to use the guidelines provided in <b>Appendix I</b> to WP/9 for Airworthiness Approval for ADS-B OUT Avionics Equipage. <i>Note: This Conclusion supersedes APANPIRG Conclusion 21/40</i>
<b>C 26/42</b>  <b>A &amp; B</b>	<b>Template for Promulgation of ADS-B Avionics Equipage Requirements</b>	That, based on APANPIRG Conclusion 20/54, States intending to implement ADS-B based surveillance service for a defined airspace and having not published regulations be urged to promulgate mandating rules for ADS-B Avionics Equipage Requirements as soon as possible using the following template:  On and after dd/mm/yyyy, if an aircraft operates on airways (insert routes).....at or above FLXXX.....(or in defined airspace boundaries ..... at or above FLXXX):  the aircraft must carry serviceable 1090 MHz ES ADS-B transmitting equipment that has been certificated as meeting EASA AMC 20-24, or FAA AC No. 20-165A – Airworthiness Approval of ADS-B, or meets the equipment configuration standards in Appendix XI of Civil Aviation Order 20.18 of the Civil Aviation Safety Authority of Australia.  <i>Note: This Conclusion supersedes APANPIRG Conclusion 21/39 (i.e. removes any requirement for operations approval)</i>

APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
<b>C 26/41</b>  <b>A &amp; B</b>	<b>Approval and Monitoring Requirements for Operation using ADS-B</b>	That, States: a) do not require operational approval for the operational use of ADS-B OUT by ATC; b) note that operational approval may be required for ADS-B IN applications where there is a safety case; c) monitor ADS-B transmissions from aircraft and take action to ensure compliance with Regional Supplementary Procedure MID/ASIA Section 5.5; and d) provide capabilities to either: - reject ADS-B data from aircraft which are known to transmit misleading ADS-B data until corrective actions have been successfully conducted; or - implement procedures to ensure that such aircraft are safely managed.
<b>C 26/40</b>  <b>A &amp; B</b>	<b>Amendment to ADS-B Implementation and Operations Guidance Document (AIGD)</b>	That, the consolidated amendment to the AIGD provided in <b>Appendix H</b> to WP/9 is adopted.
<b>C 25/42</b>  <b>A &amp; B</b>	<b>Regulations for Compliance of ADS-B Transmissions</b>	That, States be urged to implement regulations to give effect to Regional Supplementary Procedure Serial APAC-S12/10 – MID/Asia 5-3 to ensure that all aircraft transmitting ADS-B are compliant with the standards.

APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
<p style="text-align: center;"><b>C 25/41</b></p> <p style="text-align: center;"><b>A &amp; B</b></p>	<p><b>Flight Plan Item 10 ADS-B Indicators</b></p>	<p>That, ICAO be invited to consider to amend relevant contents in Doc 4444 PANS/ATM Appendix 2 (A2-7) and Appendix 3 (A3-13) as shown below:</p> <ul style="list-style-type: none"> <li>○ E Transponder — Mode S, including aircraft identification, pressure-altitude and <del>extended squitter</del> (ADS-B out) capability</li> <li>○ L Transponder — Mode S, including aircraft identification, pressure-altitude, <del>extended squitter</del> (ADS-B out) and enhanced surveillance capability</li> <li>○ B1 ADS-B with dedicated 1 090 MHz ADS-B “out” capability using 1 090MHz <del>extended squitter</del>.</li> <li>○ B2 ADS-B with dedicated 1 090 MHz ADS-B “out” and “in” capability using 1 090MHz <del>extended squitter</del>.</li> </ul> <p>- In this recommended amendment, there was duplication of indication of ADS-B carriage for aircraft where the Mode S transponder was the transmission device.</p> <p>- This recommendation would be unlikely to require significant changes to ATM systems; the descriptors were unchanged but their interpretation was clarified. Some adaptation changes could be required where ANSPs were currently using the descriptors as triggers for system processing such as controller HMI indications.</p> <p>- Changes to flight planning systems would be required in cases where the text associated with each descriptor was provided for pilot reference and to individual States’ AIP where ICAO DOC 4444 flight planning requirements were repeated.</p>
<p style="text-align: center;"><b>C 25/40</b></p> <p style="text-align: center;"><b>A &amp; B</b></p>	<p><b>Revised ADS-B Implementation and Guidance Document</b></p>	<p>That, the revised ADS-B Implementation and Guidance Document (AIGD) provided in APANPIRG/25/WP09, Appendix T (including T2) be adopted.</p>

APANPIRG Conclusions/Decisions – ADS-B

<b>Conclusion/ Decision No --- Strategic Objective*</b>	<b>Title of Conclusion/Decision</b>	<b>Text of Conclusion/Decision</b>
<b>D 24/1</b>  <b>A &amp; C</b>	<b>Regional Priorities and Targets for Air Navigation</b>	That APANPIRG  a) establish, consistent with Recommendations 6/1 and 6/12 of the AN-Conf/12, priorities and targets for air navigation by May 2014;  b) utilize specific interface groups, where required, for addressing the harmonization of air navigation plans in adjacent areas of APANPIRG; and  c) coordinate with APAC-RASG to ensure consistency of action and avoid overlap.
<b>C 24/2</b> <b>A &amp; C</b>	<b>Establishing Regional Priorities and Targets</b>	That, following the PIRG- RASG Global Coordination meeting held in March 2013 APANPIRG/24 invited the Chairpersons of ATM, RASMAG, CNS, and MET sub groups to establish regional priorities and targets for the APAC Region in alignment with the GANP and APAC Seamless ATM Plan by December 2013 in order to facilitate submission to ICAO by May 2014
<b>C 24/4</b> <b>A &amp; C</b>	<b>Follow-up to AN-Conf/12 Recommendations by States and International Organizations</b>	That, the States and International Organizations, on the basis of analysis contained in the Appendix A to Report on Agenda Item 2, takes follow-up action as appropriate on the applicable recommendations of the AN-Conf/12
<b>C 24/23</b>  <b>A &amp; C</b>	<b>Asia/Pacific SAR Contact List</b>	That, States should be urged to provide contact details of SAR managers or senior SAR staff who may respond in a timely manner to aeronautical non-emergency and administrative SAR matters to the Asia/Pacific Regional Office, for incorporation into an Asia/Pacific SAR Contact List.
<b>C 24/42</b> <b>A &amp; C</b>	<b>Timeframe for Data-sharing in the Bay of Bengal Sub-region</b>	That, States concerned be urged to consider the timeframe established for data-sharing in the Bay of Bengal Sub-region as provided in Appendix H to the Report on Agenda Item 3.4.



APANPIRG Conclusions/Decisions – ADS-B

<b>Conclusion/ Decision No --- Strategic Objective*</b>	<b>Title of Conclusion/Decision</b>	<b>Text of Conclusion/Decision</b>
<b>C 24/43 A &amp; C</b>	<b>Processing altitude information in ADS-B Message</b>	That, States/Administrations implementing ADS-B based surveillance services be urged to be fully aware of the safety implications and difference between geometric and barometric altitude. Geometric altitude information shall not be displayed on ATC displays used for the provision of air traffic services. States may choose to use geometric altitude in ATM systems for other purposes.
<b>C 24/44 A &amp; C</b>	<b>Amendment to ADS-B Implementation and Operation Guidance Document (AIGD)</b>	That, the revised AIGD provided in Appendix I to the Report on Agenda Item 3.4 be adopted.
<b>C 24/45 A &amp; C</b>	<b>Exchange ADS-B performance monitoring result</b>	That, States be encouraged to exchange findings/result of their ADS-B performance monitoring including experience gained in conducting the required performance monitoring.
<b>C 24/46 A &amp; C</b>	<b>Need for adequate Logistics and Spares Support for ADS-B service</b>	That, States consider making maintenance arrangements including requirements for spares pool and/or maintenance contract for all ADS-B system acquisitions and existing systems already in operation if these arrangements do not yet exist.
<b>C 24/47 A &amp; C</b>	<b>Surveillance Strategy for the Asia/Pacific Region</b>	That, the revised surveillance strategy for the Asia/Pacific Region provided in Appendix J to the Report on Agenda Item 3.4 be adopted.
<b>D 23/30</b>	<b>Revised Terms of Reference and Subject/Tasks List of ADS-B Study and Implementation Task Force</b>	That, the revised Terms of Reference and updated Subject/Tasks List of ADS-B Study and Implementation Task Force provided in <b>Appendices F</b> and <b>Appendix G</b> to the Report on agenda item 3.4 be adopted.

APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
<b>C 23/31</b>	<b>Guidance Materials on ASTERIX Category 21 Messages &amp; Advice to Military Authorities regarding Sharing of ADS-B Data</b>	That, the following ADS-B implementation guidance materials be adopted:  a) generation, processing and sharing of ASTERIX Category 21 ADS-B Messages provided in <b>Appendix H</b> to the Report on agenda item 3.4; and  b) advice to military authorities regarding sharing of ADS-B data provided in <b>Appendix I</b> to the Report on agenda item 3.4.
<b>C 23/32</b>	<b>Amendment to ADS-B Implementation Guidance Document (AIGD)</b>	That, the AIGD be amended to include a sample template on harmonization framework for ADS-B implementation as provided in <b>Appendix J</b> to the Report on agenda item 3.4.
<b>C 23/33</b>	<b>Database of Blacklist Airframe broadcasting misleading ADS-B Data</b>	That,  a) Australia be requested to establish and maintain a Database of Blacklist airframe broadcasting misleading ADS-B data for sharing with other Administrations in the Asia/Pacific Region; and  b) States implementing ADS-B based surveillance service be encouraged to provide the identified occurrences of airframe broadcasting misleading data to Australia for entry into the ADS-B Blacklist Database.
<b>C 23/34</b>	<b>Sharing of ADS-B data to support ATC operations and safety monitoring</b>	That, States be urged to provide ADS-B data for sharing to support ATC operations and safety monitoring.
<b>C 23/35</b>	<b>Surveillance Strategy for the Asia/Pacific Region</b>	That, the revised surveillance strategy for the Asia/Pacific Region provided in the <b>Appendix K</b> to the Report on agenda item 3.4 be adopted.

APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
<b>C 22/8</b>  <b>A &amp;C</b>	<b>ADS-B Airspace Mandate</b>	That, States intending to implement ADS-B based surveillance services may designate portions of airspace within their area of responsibility: a) mandate the carriage and use of ADS-B equipment; or b) provide priority for access to such airspace for aircraft with operative ADS-B as equipment over those aircraft not operating ADS-B equipment.
<b>C 22/31</b>  <b>A &amp;C</b>	<b>Development of Guidance Material on ADS-B</b>	That, the following regional guidance materials on ADS-B implementation be adopted and published on the APAC Website.  a) Guidance Material on Building a safety case for the delivery of an ADS-B separation service provided in <b>Appendix J</b> to the report on Agenda Item 3.4 ;  b) the revised Sample Agreement for Data Sharing contained in <b>Appendix K</b> ;  c) Amendments to the ADS-B Implementation Guidance Document (AIGD) as shown in the <b>Appendix L</b> consequential to amendment to the Flight Plan and <b>Appendix M</b> on the reliability and availability for ADS-B ground system.
<b>C 22/32</b>  <b>A &amp;C</b>	<b>Coordination for VHF for sharing Voice Communication Capability</b>	That,  a) States be urged to support provision of VHF radio voice air/ground communication infrastructure for use by adjacent States; and  b) States sharing ADS-B data and providing VHF Voice air-ground communication infrastructure to adjacent States should co-ordinate with ICAO Regional Office and their national Telecommunication Regulatory Authority for assignment of specific VHF radio frequencies to be used by the adjacent States.

APANPIRG Conclusions/Decisions – ADS-B

<b>Conclusion/ Decision No --- Strategic Objective*</b>	<b>Title of Conclusion/Decision</b>	<b>Text of Conclusion/Decision</b>
<b>C 22/33  A &amp;C</b>	<b>Support DO260B Compliant Avionics</b>	That, States providing ADS-B based surveillance services be urged to upgrade their ADS-B ground stations in time (2012-2015) to receive DO260B standard transmissions in addition to those aircraft transmitting ADS-B data compliant with DO260 and DO260A.
<b>D 22/34  A &amp;C</b>	<b>Name and Terms of Cooperation of ADS-B Implementation WG</b>	That, Recognizing the need to expedite ADS-B implementation and surveillance data sharing in the Bay of Bengal area, the South East Asia Sub-regional ADS-B Implementation Working Group be renamed as “South East Asia and Bay of Bengal Sub-regional ADS-B Implementation Working Group”. Revised Terms of Cooperation and work programme based on the existing one for the SEA Sub-regional ADS-B Implementation Working Group be further developed by the new Working Group.
<b>C 22/35  A &amp;C</b>	<b>Expedite ADS-B implementation project in South China Sea area</b>	That, States concerned with ADS-B implementation in the South China Sea area be urged to expedite required actions and coordination to achieve the implementation.
<b>C 22/36  A &amp;C</b>	<b>Amendment to Regional Supplementary Procedures on ADS-B</b>	That, the Regional Supplementary Procedure Doc7030 MID/ASIA Chapter 5 be amended in accordance with the established procedure to include regional requirements on ADS-B as provided in the Appendix N to the report on Agenda Item 3.4.
<b>C 21/38</b>	<b>Guidance Material on Processing and Display of ADS-B Tracks on Air Traffic Controller Positions</b>	That, the Processing and Display of ADS-B Tracks on Air Traffic Controller positions provided in Appendix O to the Report on Agenda Item 3.4 be adopted.

APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
C 21/39	<b>Template for promulgation of ADS-B Avionics Equipage Requirements</b>	<p>That, based on APANPIRG Conclusion 20/54, States intending to implement ADS-B based surveillance service for a defined airspace and having not published regulations be urged to promulgate mandating rule for ADS-B Avionics Equipage Requirements as soon as possible using the following template:</p> <p><i>On and after dd/mm/yyyy, if an aircraft operates on airways (insert routes).....at or above FLXXX.....(or in defined airspace boundaries ..... at or above FLXXX):</i></p> <p><i>a) the aircraft must carry serviceable ADS-B transmitting equipment that has been certificated as meeting EASA AMC 20-24, or meets the equipment configuration standards in Appendix XI of Civil Aviation Order 20.18 of the Civil Aviation Safety Authority of Australia; and</i></p> <p><i>b) the aircraft operator must have the relevant operational approval from the State of Registry.</i></p>
C 21/40	<b>Guidelines for Airworthiness and Operational Approval for ADS-B Avionics Equipage</b>	<p>That, States be advised to use the guidelines provided in Appendix P to the Report on Agenda Item 3.4 for Airworthiness and Operational Approval for ADS-B Out Avionics Equipage.</p>

APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
C 21/42	<b>Rule on Misleading ADS-B Transmissions</b>	<p>That, States where ADS-B may be used, even voluntarily, promulgate rule for ADS-B Avionics Equipage Requirements consider publishing additional provisions for misleading ADS-B transmission as follows:</p> <p><i>After &lt;insert earliest date that ADS-B may be used for any relevant operational purpose&gt; if an aircraft carries ADS-B transmitting equipment which does not comply with</i></p> <p><i>a) EASA AMC 20-24, or</i>  <i>b) the equipment configuration standards in Appendix XI of Civil Aviation Order 20.18 of the Civil Aviation Safety Authority of Australia.</i></p> <p><i>the aircraft must not fly unless the equipment is:</i></p> <p><i>(a) deactivated; or</i>  <i>(b) set to transmit only a value of zero for the NUCp or NIC. Note:</i>  <i>1. It is considered equivalent to deactivation if NUCp or NIC is set to continually transmit only a value of zero.</i></p> <p><i>2. Regulators should take appropriate action to ensure that such regulations are complied with.</i></p> <p><i>3. ATC systems should discard ADS-B data when NUC or NIC=0</i></p>
D 20/47	<b>Guidance material for flight inspection/validation of ADS-B ground stations</b>	<p>That, ADS-B SITF be tasked to study the need for developing guidance material for flight inspection/validation of ADS-B ground stations.</p>

APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
C 20/52	Table CNS 4A and Table CNS 4B	That, the FASID Table CNS 4A and Table CNS 4B be replaced with updated Tables provided in <b>Appendix Q</b> and <b>Appendix R</b> to the Report on Agenda Item 3.4 in accordance with the established procedure.
C 20/53	Revised Guidelines for Development of ADS-B Implementation Plan by States	That, the revised guidelines for Development of ADS-B Implementation Plan by States provided in <b>Appendix S</b> to the Report on Agenda Item 3.4 be adopted.
C 20/54	Regional ADS-B Equipage Requirement	<p>That, States be urged to issue ADS-B authorizations for the interim period 2010-2020 (or until requirements can be harmonized globally) in Non-Radar Areas (NRA) airspace based on:</p> <ul style="list-style-type: none"> <li>– AMC20-24 certification or</li> <li>– Approval by CASA Australia or</li> <li>– The requirements of the CASA Civil Aviation Order 20.18 Amendment (No. 1) 2009 and Advisory Circular AC21-45</li> </ul> <p><i>Note: States that have not yet published regulations should implement necessary regulations that recognize that any one of the above requirements is acceptable and not specify an individual requirement.</i></p>
C 20/55	Forward Fitment Requirements for SA Aware and FDE functionality	That, ICAO recommends States concerned to adopt forward fitment requirements which include SA aware and FDE functionality as soon as reasonable.

## APANPIRG Conclusions/Decisions – ADS-B

Conclusion/ Decision No --- Strategic Objective*	Title of Conclusion/Decision	Text of Conclusion/Decision
<b>19/37</b>	<b>Revised Mandate Regional ADS-B OIT Implementation</b>	<p>States intending to implement ADS-B based surveillance service. Be urged to</p> <p>a) determine ADS-B OUT equipage mandates based upon the ability to provide ADS-B OUT separation services;</p> <p>b) expedite the implementation of ADS-B OUT in accordance with the Regional Air Navigation Plan and the provision of separation service based on ADS-B OUT;</p> <p>c) publish their equipage mandates as soon as possible, with a target publication date of no later than 2010 so that operators can plan ahead their forward purchasing and retrofit.</p> <p>d) choose a date after mid-2012 on which the ADS-B out equipage mandate will become effective in airspace served b) ADS- B ground stations with sufficient transition period to enable fleet equipage.</p> <p><i>Note. The implementation would require aircraft equipped with avionics compliant with either</i></p> <p>1) version 0 as specified in Annex 10, Volume II Chapter 1, Paragraph 3.1.1.8.6 (up to and including Amendment 8 to Annex 10) and Chapter 1 of the Technical Provisions for Mode S Services and blended Squitter (CAO Doc 98-1) (Equivalent to D0160) to be used till at least 1020 or</p> <p>2) Version 1 ES as specified in Chapter 3 of the Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to D0260A)</p>
<b>18/32</b>	<b>The guidance material on comparison of various surveillance technologies</b>	That, the guidance material on comparison of various surveillance technologies (GMST) provided in the Appendix H to the Report on Agenda Item 3.3 be adopted.
<b>18/33</b>	<b>The Second Amendment to the AIGD</b>	That, the ADS-B Implementation and Operations Guidance Document (AIGD) be amended as shown in the <b>Appendix I</b> to the Report on Agenda Item 3.3.



## APANPIRG Conclusions/Decisions – ADS-B

<b>Conclusion/ Decision No --- Strategic Objective*</b>	<b>Title of Conclusion/Decision</b>	<b>Text of Conclusion/Decision</b>
<b>18/34</b>	<b>Guidelines on performance parameters for using ADS-B managed service</b>	That, States consider the performance parameters contained in Appendix J to the Report on the Agenda Item 3.3 as service performance guidelines while finalizing acquisition of an ADS-B managed service agreement with a service provider
<b>18/35</b>	<b>Mandate Regional ADS-B Out implementation</b>	That, States planning to deliver ADS-B based ATS services, implement requirements for ADS-B Out avionics equipage for aircraft operating in their airspace with a target date of 2010  Note: The implementation would require aircraft equipped with avionics compliant with either  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 draft Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to DO260) to be used till at least 2020.  or  b) Version 1 ES as specified in Chapter 3 of draft Technical Provisions for Mode S Services and Extended Squitter (ICAO Doc 9871) (Equivalent to DO260A)
<b>18/36</b>	<b>Concept of Use for Multilateration</b>	That, the Concept of Use of Multilateration provided in Appendix K to the Report on Agenda Item 3.3 be adopted as Version 1 for use as regional guidance material.
<b>18/37</b>	<b>Establishment of a sub-regional ADS-B implementation Working Group in the South-East Asia area (SEA ADS-B WG)</b>	That, a South-East Asia Sub-regional ADS-B Implementation Working Group be established by the end 2007 to develop the terms of cooperation and an implementation plan for near-term ADS-B applications in the sub-region.
<b>17/49</b>	<b>Use of ADS-B 1 090 MHz Extended Squitter for automatic air-reporting</b>	That, ICAO be invited to develop the necessary SARPs and guidance material to facilitate the implementation of ADS-B 1 090 MHz extended squitter for automatic air-reporting.

## APANPIRG Conclusions/Decisions – ADS-B

<b>Conclusion/ Decision No --- Strategic Objective*</b>	<b>Title of Conclusion/Decision</b>	<b>Text of Conclusion/Decision</b>
<b>16/55</b>	<b>Amendment to the Regional Plan for the CNS/ATM System to include ADS-B</b>	That the ASIA/PAC Regional Plan for the New CNS/ATM System be amended to include ADS-B element for the surveillance systems as indicated in the Appendix C to the Report on Agenda Item 3.
<b>15/25</b>	<b>Airlines plan for the deployment of ADS-B</b>	That, IATA be requested to conduct a survey of its member airlines' plan for the deployment of ADS-B in the Asia/Pacific region and provide result to the ADS-B Task Force Working Group to be held on 14-15 October 2004.
<b>15/26</b>	<b>Exchange of ADS-B surveillance data with neighbours</b>	That, States be encouraged to share ADS-B surveillance data with neighbouring States and to develop mechanisms to achieve this as ADS-B ground infrastructure requirements are being identified during the design phase.
<b>14/20</b>	<b>Near term ADS-B datalink selection</b>	That, Mode S Extended Squitter (1090 ES) be used as the data link for ADS-B radar like services in the ASIA/PAC Region in the near term.
<b>14/22</b>	<b>Needs for development of ICAO SARPs for ADS-B</b>	That, in view of the progress made by States with operational trials for the implementation of ADS-B, ICAO be requested to give priority to: <ul style="list-style-type: none"> <li>a) the inclusion of positional source data accuracy and integrity requirements for ADS-B services in the appropriate standards; and</li> <li>b) development of separation standards for ADS-B surveillance.</li> </ul>