



*International Civil Aviation Organization*

**THE NINTH MEETING OF AUTOMATIC  
DEPENDENT SURVEILLANCE – BROADCAST  
(ADS-B) STUDY AND IMPLEMENTATION TASK  
FORCE (ADS-B SITF/9)**



Jakarta, Indonesia, 18 -19 August 2010

---

**Agenda Item 4: Review the Terms of Reference and Subject/Tasks List**

**REVIEW TERMS OF REFERENCE AND TASK LIST OF ADS-B STUDY AND  
IMPLEMENTATION TASK FORCE**

(Presented by Secretariat)

**SUMMARY**

This paper presents the decision made by APANPIRG/20 adopting the updated subject and tasks list of ADS-B SITF and the Terms of Reference (TOR) adopted by APANPIRG/18 for review by the meeting.

**1. Introduction**

1.1 The ADS-B Study and Implementation Task Force of APANPIRG (ADS-B SITF) review its Terms of Reference (TOR) and subject and tasks list at each meeting.

**2. Discussion**

2.1 In light of the progress achieved by the ADS-B Study and Implementation Task Force, the APANPIRG/18 meeting adopted a revised Terms of Reference. It was emphasized that the exchange of information on lessons learnt and experiences gained during the trial and implementation of ADS-B should be further encouraged.

2.2 The ADS-B SITF/8, CNS/MEG SG/13 and APANPIRG/20 meeting did not identify the need to revise the TOR of the ADS-B Study and Implementation Task Force.

2.3 The ADS-B SITF/8 in 2009 updated the list of subject and tasks for the Task Force and The APANPIRG/20 held in September 2009 adopted the updated Subject/Tasks List for the ADS-B Study and Implementation Task Force under Decision 20/50 as recommended by the CNS/MET SG/13.

**3. Action Required by the Meeting**

3.1 The meeting is invited to review the TOR of ADS-B Study and Implementation Task Force adopted by APANPIRG/18 as provided in the Attachment A and the updated list of subject/tasks adopted by APANPIRG/19 as provided in the Attachment B to this paper.

3.2 The meeting is also invited to propose amendment and update to the TOR and the Subject/Task List if necessary.

-----

APANPIRG/19  
Appendix G to the Report on Agenda Item 3.3

---

**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 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/MET Sub-group and provide briefing to the ATM/AIS/SAR Sub-group.*

-----

**UPDATED ADS-B SUBJECT/TASKS LIST**

| <b>No.</b> | <b>Subject/Tasks List</b>  | <b>Associated with Strategic Objective</b> | <b>Associated GPI</b>                     | <b>Deliverables</b>                                     | <b>Target Date</b>  | <b>Action to be taken and led by</b>             |
|------------|--|--|---|---|---------------------|--|
| 1          | Conduct study and present a paper on a study for the use of ADS-B technology in airspace in the North Asia.  | D. Efficiency                              | GPI01/02/05/06/07/09/14/16/17/21/22       | Report of study for the use of ADS-B in North Asia area | Completed (04/2008) | IATA   |
| 2          | Report Organizational Policy on ADS-B data sharing with neighbors.   | A. Safety<br>D. Efficiency                 | GPI01/02/05/06/07/09/10/11/14/16/17/21/22 | Status report   | Completed (04/2008) | All Members                                      |
| 3          | Each State report on the number of airframes fitted and transmitting with good NUC/NIC.  | D. Efficiency                              | GPI01/05/06/09/14/16/17/21/22             | Report on statistics conducted                          | 10/2009             | All Members with Ground Stations                 |
| 4          | Develop draft comparison of surveillance technologies document including required site and network architecture, expected surveillance coverage, cost of system. | D. Efficiency                              | GPI01/02/05/06/07/09/14/16/17/21/22       | A regional guidance material for implementation         | Completed (4/2007)  | Greg Dunstone                                    |
| 5          | Develop draft update to AIGD to incorporate multilateralation.   | D. Efficiency                              | GPI01/05/06/09/14/16/17/21/22             | The second amendment to the AIGD                        | Completed (4/2007)  | Nick King, Chainan Chaisompong & Howard Anderson |
| 6          | Provide a paper with an update on available equipment standards: (ARINC, Eurocae, RTCA, ICAO, TSO)   | D. Efficiency                              | GPI01/05/06/09/14/16/17/21/22             | An information document for implementation              | 10/2009             | USA- seek updates from Home                      |
| 7          | Develop a table detailing readiness of Airspace users & ATS providers.   | D. Efficiency                              | GPI01/05/06/09/14/16/17/21/22             | Report of a survey conducted                            | Completed (4/2007)  | Singapore  |
| 8          | Provide details of potential areas (FIRs) that where there is a positive cost/benefit for near term implementation of ADS-B Out                                  | D. Efficiency                              | GPI01/05/06/09/14/16/17/21/22             | Report of result of studies                             | Completed (4/2008)  | All -Corner meetings                             |

| No. | Subject/Tasks List  | Associated with Strategic Objective | Associated GPI                | Deliverables   | Target Date                            | Action to be taken and led by                     |
|-----|---|-------------------------------------|-------------------------------|--|--|---|
| 9   | Develop a paper on how Probability of detection should be reported for ADS-B so that it can be compared to radar probability of detection                       | D. Efficiency                       | GPI01/05/06/09/14/16/17/21/22 | Guidance material for implementation                                     | Completed (4/2008)                     |   |
| 10  | Develop guidelines on how ADS-B equipage should be reported in future, especially the definition of "equipped".   | D. Efficiency                       | GPI01/05/06/09/14/16/17/21/22 | Guidelines for implementation  | Completed (4/2008)                     | Greg Dunstone                                     |
| 11  | Develop outline of the performance criteria and identify issues to be considered when introducing ADS-B into an Air Traffic Control multi-sensor fusion process | D. Efficiency                       | GPI01/05/06/09/14/16/17/21/22 | Guidance material for implementation                                     | Completed (4/2008)                     | Rick Castaldo, Greg Dunstone Michel G. Procoudine |
| 12  | Develop brief guidance paper on security issues associated with ADS-B   | D. Efficiency                       | GPI01/05/06/09/14/16/17/21/22 | Guidance material for implementation                                     | Completed (4/2008)                     | Patrick Souchu, Greg Dunstone, Mike Gahan         |
| 13  | Exam the feasibility of the use of ADS-B for height monitoring  | A. Safety                           | GPI01/05/06/09/14/16/17/21/22 | Result of feasibility study - Advice on ADS-B capability to RVSM Groups. | Completed the advice material (4/2008) | TBD   |
| 14  | Guidance material on how to build safety case for delivery of separation services.  | Safety                              | GPI01/05/06/09/14/16/17/21/22 | Guidance material for implementation                                     | Apr-10                                 | Australia   |
| 15  | Guidance material on display of ADS_B tracks on displays.   | D. Efficiency                       | GPI01/05/06/09/14/16/17/21/22 | Guidelines for implementation  | Apr-10                                 | Australia   |
| 16  | Sample mandate material defining ADS-B avionics including the positional data source including task by 45th DGCA Conference.                                    | A. Safety                           | GPI01/05/06/09/14/16/17/21/22 | Guidance material for implementation                                     | Apr-10                                 | Australia   |
| 17  | Guidance on legal liability issues for ADS-B data sharing.  | A.Safety                            | GPI01/05/06/09/14/16/17/21/22 | Guidance material for implementation                                     | Apr-10                                 | U.S.A.  |
| 18  | Develop and implement regional collaboration project for ADS-B Out operational use including data sharing in SEA and report on implementation progress          | D. Efficiency                       | GPI01/05/06/09/14/16/17/21/22 | Sub-regional ADS-B collaboration project has been .                      | Jul-08/ Dec-10                         | SEA WG  |

| No. | Subject/Tasks List  | Associated with Strategic Objective | Associated GPI                    | Deliverables  | Target Date           | Action to be taken and led by |
|-----|---|-------------------------------------|-----------------------------------|---|-----------------------|-------------------------------|
| 19  | Develop and implement regional collaboration project for ADS-B out operational use including data sharing in South Pacific and report on implementation progress      | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Develop and implement sub-regional ADS-B collaboration project. | Apr-09/<br>Dec-11     | South Pacific States          |
| 20  | Develop common compliance procedures for regulatory surveillance of ADS-B avionics installations and operation.   | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Sample document   | Completed<br>(5/2009) | Australia                     |
| 21  | Study application of ADS-B and multilat for precision runway monitoring.  | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Guidance material for implementation                            | Apr-10                | All Members                   |
| 22  | Perform data collection and data analysis of ADS-B messages to examine GPS performance in different geographic areas.   | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Report of data collected and analyzed - continuous              | Apr-10                | All Members                   |
| 23  | Provide feedback to the proposed amendment to sample service agreement for datasharing  | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Comments  | April-10              | All Members                   |
| 24  | Develop and implement regional collaboration project for ADS-B out operational use including data sharing in Bay of Bengal area and report on implementation progress | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Develop and implement sub-regional ADS-B collaboration project. | Apr-09/<br>Dec-11     | Bay of Bengal States          |
| 25  | Working Paper for CNS/MET/SG/13 on the need for global harmonized equipage requirements for ADS-B surveillance service in NRA   | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Working Paper   | June-09               | member from USA               |
| 26  | Provide feedback to the proposed amendment and template for datasharing based on experience gained by Indonesia and Signapore (Appendix H to the report)              | D. Efficiency                       | GPI01/05/06/09/<br>14/16/17/21/22 | Comments  | April-10              | All Members                   |