



*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

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**Agenda Item 7:** Development of Asia/Pacific Regional ADS-B implementation plan and sub-regional based ADS-B implementation plan

**UPDATE ON THE IMPLEMENTATION OF ADS-B OPERATIONS IN  
THE SOUTH CHINA SEA AREA**

(Presented by Indonesia and Singapore)

**SUMMARY**

This paper updates the Task Force on the implementation plan of the South China Sea ADS-B Project.

**1. Background**

1.1 In July 2008 at the SEA ADS-B WG/3 meeting, Indonesia, Singapore and Vietnam reported that they have agreed on an ADS-B collaboration project over the South China Sea area.

1.2 Indonesia, Singapore and Vietnam have been working on the installation of the ADS-B ground stations and VHF radio stations. Discussions were also held between the parties concerned on the ADS-B data sharing and the use of the VHF radio facilities at the other party's premises.

1.3 In May 2009 at the ADS-B SITF/8 meeting, CANSO presented a cost benefit study of the project which showed a strong business case arising from improved flight efficiency and reduced delays.

**2. Concept of Operations and key milestones**

2.1 ADS-B operations will be implemented in the Singapore FIR in 2 phases. In Phase I, ADS-B operations will apply on ATS routes L642 and M771 while the remaining ATS routes in the Singapore FIR will be in Phase II. The ADS-B operations will be exclusive and applicable between FL310 and FL410. Aircraft intending to operate in ADS-B airspace will need to be ADS-B equipped and certified accordingly.

2.2 Application of ADS-B separation will be in accordance with ICAO PANS-ATM. Singapore ACC will work with Ho Chi Minh ACC on an agreement on ATC in-trial separation, coordination and transfer of ADS-B equipped aircraft. Aim is to complete this by 2H 2010.

2.3 An AIP Supplement on aircraft equipage mandate will be issued in 2H2010. A period of monitoring on the performance of the ADS-B surveillance to be followed by an operational trial will be conducted in 2011. Prior to implementation of ADS-B operations on L642 and M771, a safety assessment will be conducted in 2H2010 for the ADS-B operations in the Singapore FIR.

2.4 As shown in Annex A, there will be 6 months of ADS-B monitoring beginning 1H2011 followed by operational trial (without priority) in 2H2011. Priority for suitably equipped aircraft will start in 2H2012. Full implementation of ADS-B operations in exclusive airspace will be implemented only in 1H 2014 as IATA has advised that there should be a 3-4 year lead time from issue of equipage mandate (2H2010) to implementation of exclusive operations.

### **3. Tasks List**

3.1 Annex A shows the tasks and the proposed milestones that will be carried out by parties concerned for the implementation of ADS-B operations.

### **4. Report of the implementation plan**

4.1 A similar working paper was presented at the SEA ADS-B WG/5 held in January 2010 at Jakarta. It was jointly put up by Indonesia and Singapore, and was circulated to Viet Nam for inputs and comments, with an intention to present it as a three-party joint paper. However, Viet Nam was not represented at the meeting and had not given its comments by the time of presentation. Hence we planned to seek Viet Nam's comments on the timeline and milestones in this meeting.

4.2 Indonesia and Singapore have been working closely and visited each other on several occasions for the discussion on the ADS-B data and VHF radio facilities sharing agreement. The discussion has reached the final stage and both parties plan to have the agreement signed by the end of August 2010.

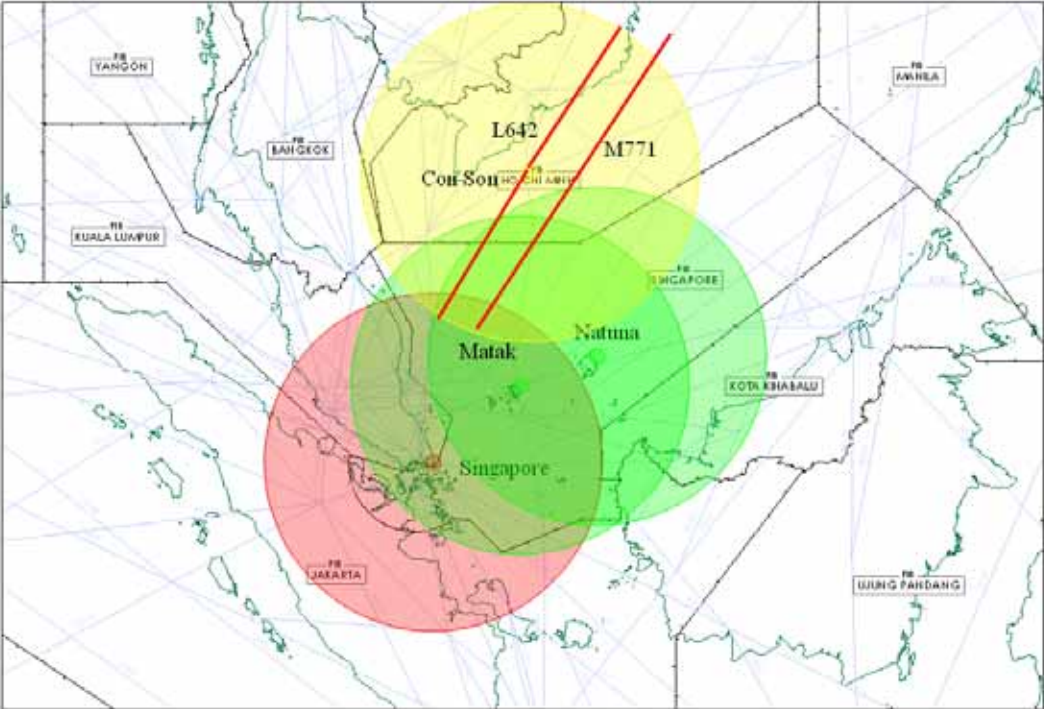
### **5. Action by the Meeting**

5.1 The meeting is invited to note the progress of the project and the cooperation between the parties.

5.2 The meeting is also invited to support the tasks and proposed milestones as shown in Annex A.

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SINGAPORE AND ADJACENT FLIGHT INFORMATION REGIONS



## **Annex A**

### Tasks and Proposed Milestones

- A Installation of ADS-B ground stations
- i) Natuna and Matak - completed
  - ii) Singapore - completed
  - iii) Con Son - 2H 2010
- B Installation of VHF stations and links
- i) Natuna and Matak - 2H 2010 (for 1 frequency) and 1H2011 (for 2 frequencies)
  - ii) Conson - 2H 2010
- C Signing of ADS-B data and VHF radio facility sharing agreement
- i) Between Indonesia and Singapore - 2H 2010
  - ii) Between Vietnam and Singapore - 2H 2010
- D Conduct of Safety Assessment - 2H 2010
- E Signing of LOA between Ho Chi Minh and Singapore ACCs - 2H 2010
- F Issue AIP Supplement on aircraft equipage mandate - 2H 2010
- G Integration with Singapore ATC system - 2H 2011
- H Conduct of ADS-B monitoring - 1H 2011
- I Operational trial without priority - 2H 2011
- J Priority for suitably-equipped aircraft and Phase II - 2H 2012
- K Implementation of ADS-B operations - 1H 2014