



International Civil Aviation Organization

**THE TENTH MEETING OF AUTOMATIC
DEPENDENT SURVEILLANCE –
BROADCAST (ADS-B) STUDY AND
IMPLEMENTATION TASK FORCE
(ADS-B SITF/10)**



Singapore, 26 -29 April 2011

**Agenda Item 6: Reviews States' activities and interregional issues on trial and
implementation of ADS-B and Multilateration**

ADS-B DEVELOPMENT PROGRESS IN KOREA

(Presented by Republic of Korea)

SUMMARY

Korea is in progress on developing ADS-B system led by the Government (MLTM, The Ministry of Land, Transport, Maritime Affairs). This document presents ADS-B development status and future utilization plan.

1. Introduction

1.1 With a continuous increase in air traffic world-wide, it demands an improved air traffic management, safety and agility on aircraft safety control, take-off and landing operation. ADS-B system has been a promising solution to meet those goals. While sharing aircraft flight information, it serves as a surveillance system for both pilot and airport operator to improve the air traffic condition and safety control. Korea is on the move to develop ADS-B system with their own skill to reduce importing foreign-made system and maintenance cost. It could also provide agility to a faster upgrade and better control airspace. We also expect that it could provide a better market entry on avionics field.

2. ADS-B Development Progress in Korea

2.1 Korean MLTM(The Ministry of Land, Transport, Maritime Affairs) included ADS-B development on Aviation policy basic plan (2010~2014). The purpose of ADS-B on its plan is to cope with overseas avionics market change and to acquire eligible level of technical skills on avionics field and the status of permanent member of ICAO in the international community to secure the right skills. The basic plans for the purpose of aviation policy (2010-2014) were included in the ADS-B development to respond to changes in the international aviation market.

2.2 The scope of ADS-B development that MLTM sets for the plan is as follows. It includes ADS-B integration and operation, 1090ES Ground Station (GBT), UAT Aircraft-equipment /Ground stations, ADS-B monitoring equipment with ADS-B/TIS-B/FIS-B server and ADS-B operational compliance verification tool (AVS). The ADS-B development will be completed before end of 2014, and annual plans are as follows. During first two year of development stage, the goal is to complete the system requirements and operating environment analysis and design documentation and further to complete ADS-B system and subsystem design with ADS-B implementation. During 3rd and last year of the stage, the goal is to build verification test procedures and to perform verification test on ADS-B systems, subsystems.

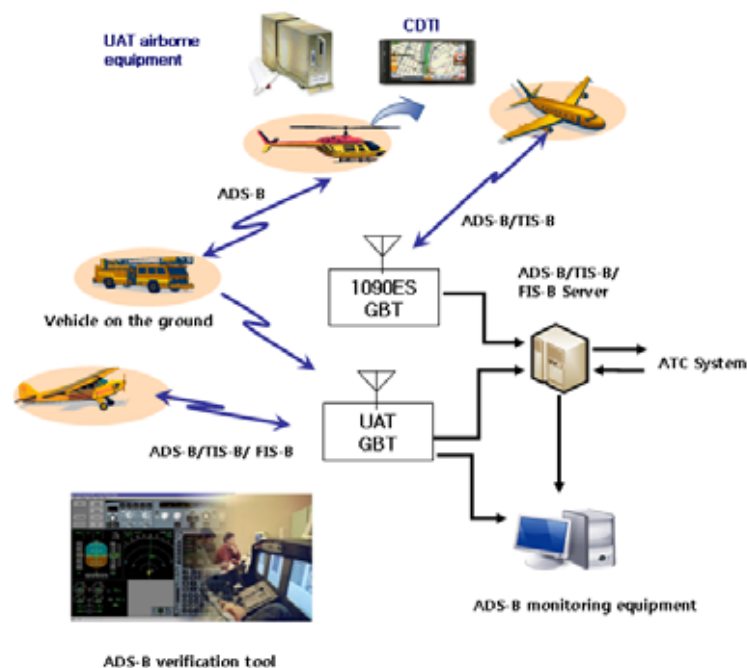


Fig 1. ADS-B System development overview

ADS-B system development

2.3 ADS-B ground station supports the multi-link surveillance including 1090ES transceiver and UAT transceiver respectively. Monitoring equipment provides remote access and control function to Ground station equipment. ADS-B server receives the surveillance data sent from multiple GBTs, and checks validation of information whether to send to ATC systems. TIS-B server receives the radar data sent from the ATC systems to distribute to ADS-B GBTs. FIS-B server distributes weather and airport information to UAT GBTs. ADS-B ground-station supports active/standby-type dual operation of UAT and 1090ES. All ADS-B system under development is compliant to ICAO/RTCA standard.

Verification test

2.4 Verification test includes developing of AVS to verify the functional/performance requirement of previously discussed ADS-B equipment and performing evaluation test. The test covers evaluation plan/procedure set-up, system integration/function test, testbed set-up. It also covers performing verification test, interoperability test of multiple equipments.

Operation test

2.5 Operation tests focus on ADS-B applications with conventional radar system (ADS-B-RAD) and performance in situation awareness in airport surface movement (ATSA-SURF). The purpose of the test is to verify operation management in ground and air surveillance field. The test covers operational safety assessment (OSA), operational performance assessment (OPA) and evaluation test on interoperability.

3. Future Utilization Plan

3.1 ADS-B is expected to improve efficiency in ground-movement within airport and between airport. It is also expected to increase rate of airport operations. Moreover ADS-B equipment will create a good revenue on aviation market, while reducing deployment and maintenance costs compared to expensive radar systems or CNS systems.
