



International Civil Aviation Organization

**THE FOURTH MEETING OF ADS-B STUDY AND
IMPLEMENTATION TASK FORCE (ADS-B SITF/4)**

Nadi, Fiji, 26-28 October 2005

Agenda Item 13: Discuss issues observed during the trial and implementation of ADS-B

**USE OF AUTOMATIC DEPENDENT
SURVEILLANCE – BROADCAST (ADS-B) DOWN LINKED
DATA FOR AIRCRAFT RADAR RETURNS AND
FLIGHT DATA CORRELATION**

(Presented by Thailand)

SUMMARY

This working paper highlights the capability of Automatic Dependent Surveillance- Broadcast (ADS-B) and proposes the use of its down linked parameters for direct correlation with flight plan data.

1. BACKGROUND

1.1 At the Sixteenth Meeting of the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/16), the Meeting was presented with a paper that highlighted the constraints on the automation system from the lack of unambiguous correlation between the filed flight plan and SSR Mode A returns, and proposed the use of Aircraft Identification (Flight ID) as an additional unique 'key' for correlation. Noting the importance of the unique 'key' and its role in the development of a seamless automated Air Traffic Flow Management Systems in the future, the Meeting agreed to task CNS/MET and ATM/AIS/SAR Sub-groups to further study this issue and formulated the following decision:-

Decision 16/60 - Correlation of Aircraft Identification

That, ATM/AIS/SAR and CNS/MET Sub-groups study the use of "aircraft identification" as an unique 'key' for correlation between flight plan data and surveillance information, considering operational and technical aspects for implementation. The result of study be presented for consideration by APANPIRG/17.

1.2 This working paper highlights the capability of Automatic Dependent Surveillance-Broadcast (ADS-B) and proposes the use of its down linked parameters for direct correlation with flight plan data.

2. DISCUSSION

2.1 Correlation between the surveillance information of an aircraft and its flight plan data is achieved through the use of re-useable discrete Mode A codes as assigned by the air traffic controller. However, there is a risk that one code could be assigned to two or more aircraft simultaneously. This leads

to incorrect correlation between the surveillance information down linked from the aircraft and its flight plan data resulting loss of situation awareness of the aircraft. Additional unique 'key' common to both the flight plan data and surveillance information could be used to alleviate the problem.

2.2 Aircraft with ADS-B capable transponder will periodically transmits aircraft parameters air to air and air to ground where it is used by other applications. This incorporates aircraft identification as one of the main down linked data, as stipulated in Annex 10, Volume IV, Chapter 2, Paragraph 2.1.5.2 (Attachment 1). The use of aircraft identification down linked by ADS-B could be used for direct correlation with flight plan data in addition to SSR Mode S.

3. Action by the Meeting

3.1 The meeting is invited to:

- a) Bring to the attention of ATM/AIS/SAR and CNS/MET Sub-Group the capability of ADS-B in providing aircraft identification for direct correlation with flight plan data: and
- b) To include for consideration the use of ADS-B as an additional surveillance system, in addition to SSR Mode S, for the implementation of the above procedures.
