



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 6: Review States' activities on implementation of ADS-B

ADS-B REGULATORY ACTIVITY IN AUSTRALIA

(Presented by Nick King)

SUMMARY

This paper provides an overview of regulatory activity being undertaken in Australia in support of ADS-B trial and implementation projects.

1. INTRODUCTION

1.1 Australia has made considerable progress in the introduction of ADS-B in recent years. As Task Force participants would be aware from past papers, the use of ADS-B for ground-based and aircraft-based surveillance is a key enabler of a number of strategies in The Australian Air Traffic Management Strategic Plan. A large number of stakeholders have been involved in this work, and are coordinating their efforts through ASTRA, the Australian Strategic ATM Group.

1.2 The Civil Aviation Safety Authority (CASA) is a member of ASTRA and has been working with other stakeholders to ensure regulatory issues for trial and implementation activities are addressed in a timely manner. This paper provides an overview of the regulatory activity being undertaken by CASA on ADS-B.

2. BURNETT BASIN OPERATIONAL TRIAL

2.1 Airservices Australia has been conducting an operational trial of ADS-B in airspace around the Burnett Basin, Queensland. The purpose of the trial is to gain knowledge and experience in ADS-B technology and involves a single ADS-B ground station at a site near Bundaberg, integration of ADS-B functions into Australia's air traffic management system and the participation of a number of aircraft equipped with suitable ADS-B OUT avionics.

2.2 CASA has been providing regulatory oversight of the trial since its inception and, on 5 December 2004, approved the use of a 5 NM minimum horizontal separation distance between ADS-B OUT equipped trial aircraft. The trial is expected to continue into 2006, and expansion of the trial to include A320 and B737 aircraft is now being considered.

3. UPPER AIRSPACE PROJECT (UAP)

3.1 Based on the success of the Burnett Basin Trial in terms of improved safety and operational efficiency, Airservices Australia has commenced deploying 28 ADS-B ground stations to provide almost uninterrupted continental ADS-B coverage above FL300, as well as significant coverage at

lower levels. The new ground stations will be progressively deployed over 2005 and 2006, with the first UAP equipment scheduled for installation at Bundaberg in July 2005.

3.2 Commissioning of the UAP network is expected to take place in 2006, which will require an operational approval from CASA by means of a re-issue of Airservices Australia's CASR Part 171 (Aeronautical telecommunications service and radio-navigation service providers) Operational Certificate.

3.3 Operational (non-trial) use of ADS-B to provide separation services will require promulgation of a separation standard under CASR Part 172 (Air traffic service providers). Amendment to the Part 172 Manual of Standards and AIP reflecting the amendments proposed by OPLINKP to ICAO documentation is now being progressed. Public consultation on the regulatory changes is expected to take place in November 2005.

3.4 ADS-B standards for aircraft and pilots will also be required to support operational use in 2006. CASA initiated public consultation on these issues in December 2004 and the process is continuing in parallel with the development of additional standards to support the ATLAS project. To date, CASA has issued two Australian Technical Standard Orders (ATSOs) for the certification of ADS-B avionics. ATSO-C1004 is a standard for Mode A/C transponders capable of transmitting ADS-B 1090ES messages, while ATSO-C1005 is a standard for the certification of a stand-alone (non-transponder) ADS-B 1090ES transmitter. Copies of the two ATSOs are available at <http://www.casa.gov.au/avreg/aircraft/ATSO.htm>.

4. AUSTRALIAN TRANSITION TO SATELLITE TECHNOLOGY (ATLAS)

4.1 The Australian ATM Strategic Plan also includes the use of ADS-B at lower levels and ATLAS, formerly known as the Lower Airspace Project (LAP), has been proposed to provide even greater ADS-B coverage in areas currently not served by radar, as well as replacing the current enroute network of secondary surveillance radars at the end of their service life (in 2009) with ADS-B ground stations. ATLAS relies on a wide fitment of ADS-B OUT avionics to ensure a level of surveillance equal to or better than that currently achieved with transponders in radar coverage.

4.2 In support of the UAP and ATLAS, CASA issued a discussion paper (DP) addressing the carriage and use of ADS-B in December 2004. The DP was intended to seek industry comment on various options that CASA could adopt in initiating regulatory changes. The paper sets out four main regulatory options, and identifies that informal consultation to date suggested that a phased implementation of carriage requirements may prove most suitable. The DP is available at http://rrp.casa.gov.au/download/04_dp.asp.

4.3 The response period closed in February 2005 and a joint CASA/Industry project team evaluated the responses in preparation for drafting operational rules. Almost all responses welcomed the introduction of ADS-B to the Australian ATM system and there was strong support expressed for a staged implementation of regulatory requirements for the carriage of ADS-B OUT avionics.

4.4 In September 2005, CASA published a Summary of Responses (SOR) that presented CASA's evaluation of the comments received on the DP, together with the consequent disposition. CASA is now preparing draft rules for the carriage and use of ADS-B for further consultation with the aviation community. A copy of the SOR is available at http://rrp.casa.gov.au/sor/sor0410as_v3.pdf

5. IN-TRAIL CLIMB TRIAL

5.1 Airservices Australia and NASA are planning a joint trial of ADS-B for In-Trail Climb (ITC) procedures in oceanic airspace beyond the coverage of radar or ADS-B ground stations. This is a procedure by which an ADS-B IN aircraft can climb through the altitude of higher traffic with a separation less than could be offered by ATC using procedural separation methods. The ITC procedure is based on an existing procedure that uses TCAS displays for surveillance, but overcomes some of the main limitations associated with the TCAS technology.

5.2 At this stage CASA involvement is limited to oversight, but it is expected that regulatory action will be required as the project progresses.

6. ACTION BY THE TASK FORCE

6.1 Participants are invited to note the progress of ADS-B regulatory activity in Australia.
