



International Civil Aviation Organisation
Sixth Meeting of CNS/MET Sub-Group of APANPIRG
Bangkok, Thailand, 15 – 19 July 2002

Agenda Item 7: Surveillance: Automatic Dependent Surveillance (ADS) developments

**INITIAL ADS-B GROUND STATION
PROGRESS REPORT**

(Presented by Australia)

SUMMARY

This paper provides a progress report on the ADS-B ground station deployment in Bundaberg Queensland Australia and demonstrates expected range performance

1. BACKGROUND

1.1 Airservices Australia is deploying an operational ADS-B system in Queensland Australia. The objective is to provide radar like radar separation services using ADS-B in airspace which currently is not served by radar.

2. OPERATIONAL TRIAL PROGRESS TO DATE

2.1 At the end of June 2002 the status of the deployment is

a) the ADS-B ground station was installed and site acceptance completed. The system is installed on an existing communications tower. The system is fully duplicated including two DME antennas installed on the same tower. Some photographs are attached. Some initial coverage tests have been conducted (see below).

b) the software changes to the ATC automation system to fully integrate ADS-B data have been developed. The software has passed through factory test and is scheduled for site tests in the next two months

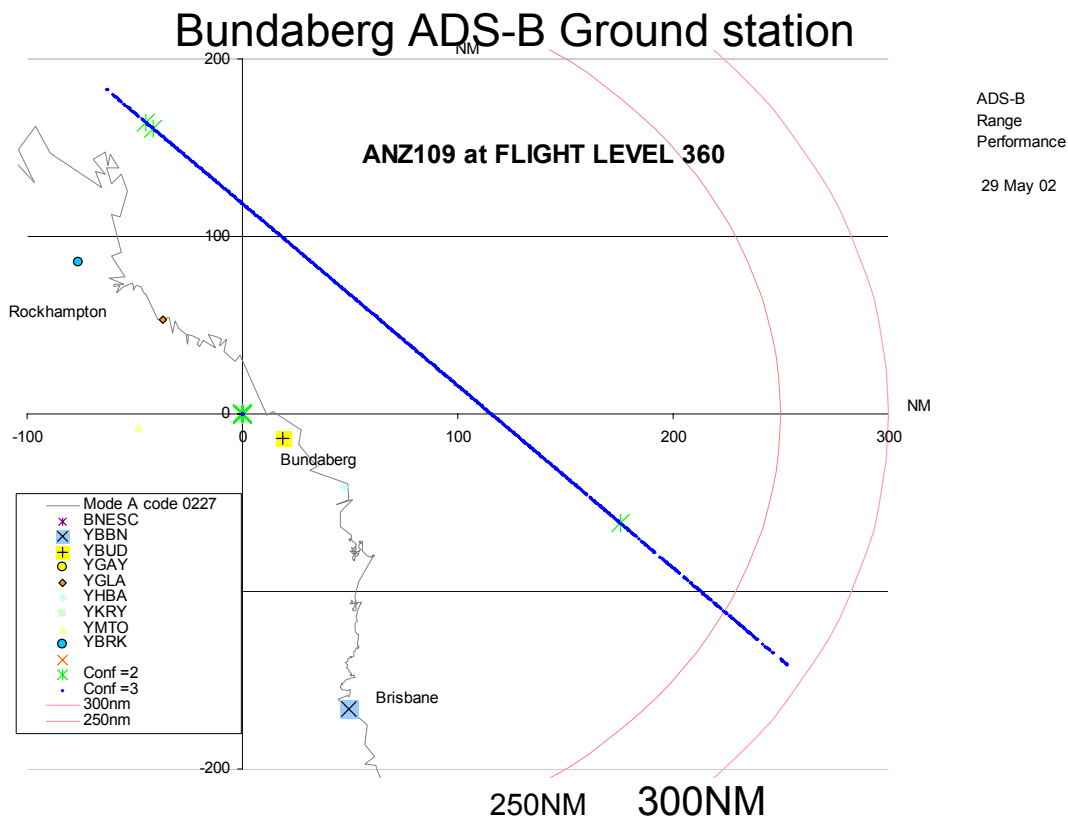
c) the avionics is being submitted for FAA TSO in October. Installation in aircraft will occur shortly thereafter.

3. INITIAL TESTING

3.1 Preliminary testing of the coverage of the site has been conducted by detecting Mode S short (acquisition) squitter messages (DF11) from overflights. The DF11 message downlinks the aircraft 24bit address. This can be matched with the known position of the aircraft. The observed performance can be expected to be very similar to the performance when ADS-B (DF17) messages are downlinked. The following graph shows that DF11 messages were correctly decoded from an Air New Zealand aircraft some 290 NM from the ground station. The aircraft was at FL360.

4. RECOMMENDATIONS

4.1 It is recommended that states note the initial trial results from Bundaberg. The range performance of this Mode S extended squitter ground station in particular can be noted. This technology offers the possibility of ATC radar like surveillance at significantly lower cost.



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Appendix A: Ground station site photos



Antenna for Receiver 2

Antenna for Receiver 1

