

ADS-B 1090ES Operation Approval

Flight Standards Department, CAAC

CONTENTS

- Information Bulletin IB-FS-2008-002

ADS-B: flight operation

- Advisory Circular

AC-91-FS/AA-2010-14 (operation parts)

- Future works



IB-FS-2008-002

- Released in Sep. 2008
- Focusing ADS-B concept, theory and development information
- Purpose
 - Introduce the benefits of ADS-B for flight operation
 - Fulfill the requirements for some certain foreign area
 - Call for the preparation in advance
 - Regulation warm-up



IB contant

- 1.General
- 2.Basic Theory
- 3.Usage (OUT/IN)
- 4.Airbore equipage

(1090ES/UAT/VDL4)

- 5.Development situation

Att. 1. Abbreviations

Att.2 Related technical standards

Att. 3 Operation requirements in Australia



Technical Standards

Data link:

1090ES

UAT

VDL4

Application :

OUT

NRA

RAD

APT

IN

TIS-B

FIS-B

M&S



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3. Definitions

□ b. ADS-B OUT

OUT is the basic function of onboard ADS-B equipment, which shall have adequate surveillance data provision capability, ADS-B message processing (encoding and generation) capabilities, and ADS-B message transmission capabilities.

ADS-B OUT system is automatic since it functions **without intervention from the flight crew** as long as the necessary avionics are in place, connected and functioning.



□ c. ADS-B IN

ADS-B IN. ADS-B IN refers to the ability to receive and display ADS-B messages and broadcast services, both from the ground and directly from other aircraft so as to provide operational support for the crew.

A typical application of ADS-B IN is the Cockpit Display of Traffic Information (CDTI) via which the crew knows the operation status of other aircrafts so as to improve their air traffic situation awareness.



4. Reference Documents

- a. CTSO-C166b
- b. Canada AC700-009
- c. EASA AMC 20-24
- d. RTCA DO-260/EUROCAE ED-102
- e. RTCA DO-260A
- f. RTCA DO-260B



ATC issues

- The AC supports 5NM separation in Non Radar Airspace

- 6 . Assumptions & Att.1 ATS Environment
 - position quality indicators
 - the procedures contained in the ICAO Doc 4444 PANS-ATM.
 - traffic density
 - Direct VHF Controller-Pilot Communication
 - Abnormal /Emergency procedures

- Separation minimum/ Flight Plan/ Radio communication



Operation and maintenance

- 9. Operational considerations
 - 9.1 Operational Safety
 - 9.2 Operation Manual
 - 9.3 Training

- 10. Maintenance



11. Operation Approval

□ 11.1 Application documents

- a. Evidence showing that the airworthiness approval has been obtained for onboard equipment
- b. Minimum Equipment List.
- c. Operation Manual.
- d. Training program.
- e. Maintenance program.

□ 11.2 Method of approval

operators under CCAR91: letter of authorization
operators under CCAR 121 and 135:
operation specifications (A0081)



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Future works

- Timetable for Out Mandate
- Trial for In
- CAAC ADS-B Roadmap



Thank you

