

# 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)

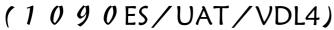
☐ Future works

#### 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

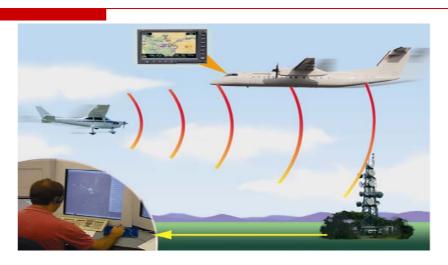
#### **IB** contant

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





- Att. 1. Abbreviations
- Att.2 Related technical standards
- Att. 3 Operation requirements in Australia



#### **Technical Standards**

```
Data link:
                   Application:
1090ES
                   OUT
UAT
                       NRA
VDL4
                       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

6/17/2010

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
- $\square$  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

