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REPUBLIC OF SEYCHELLES
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AIC

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IMPLEMENTATION OF ADS-B-NRA WITHIN SEYCHELLES FLIGHT INFORMATION REGION (FIR)

1. INTRODUCTION

- 1.1 The Seychelles Civil Aviation Authority (SCAA) has commenced a major programme of upgrading and modernising Air Navigation Services. The Seychelles FIR is non radar airspace (NRA), the plan is to implement surveillance services throughout the FIR using a combination of space-based and ground based ADS-B.

2. PURPOSE

- 2.1 The purpose of this AIC is to inform air operators and the aviation industry about the SCAA plans to introduce ADS-B for the provision of surveillance services within the Seychelles FIR.
- 2.2 The AIC also offers guidance on the Mode S 1090 MHz Extended Squitter (ES) and the ADS-B mandate.

3. INTRODUCTION OF ADS-B

- 3.1 An ADS-B capable aircraft uses GPS to determine its position and by means of Mode S 1090 ES broadcasts that position at rapid intervals combined with identity, altitude, velocity and other data to ADS-B ground stations and/or Space-based sensors which receive and distribute the data to ATM automation systems.
- 3.2 The processed data is displayed at the air traffic controller work position (CWP) enabling the provision of a surveillance service.

4. OBJECTIVE

- 4.1 The objective is to ensure that aircraft are fitted with appropriate avionics which will provide for improvement of the safety and efficiency of ATM by introduction of modern electronic surveillance technology in accordance with timelines specified in **paragraph 9** below.

5. APPLICABILITY

5.1 This AIC shall apply to aircraft operating within the territory of Seychelles, and in the Seychelles FIR unless exempted under **paragraph 10.** below.

6. SYSTEM DESCRIPTION

6.1 The basic concept of ADS-B involves the broadcasting of surveillance information from aircraft via a data link.

6.2 To support the ADS-B-NRA application, the overall ADS-B avionics system, herein referred to as “ADS-B System”, needs to provide the following functions:

- Adequate surveillance data provision capability;
- ADS-B message processing (encoding and generation);
- ADS-B message transmission (Mode S 1090 MHz ES airborne surveillance data-link);

6.3 Whereas the latter two functions are incorporated in the Mode S 1090 MHz ES ADS-B transmit system, the surveillance data provision is realised through various on-board surveillance data sources (e.g. horizontal position source, barometric altimetry, ATC transponder control panel).

6.4 The horizontal position accuracy and integrity requirements of the ADS-B-NRA application are associated with quality indicators which form part of the air-to-ground ADS-B message.

7. FUNCTIONAL CRITERIA

7.1 In line with ED-126, the ADS-B System needs to meet the following surveillance data transmission requirements, as a minimum:

- A unique ICAO 24 bit aircraft address (contained within each ADS-B message transmission);
- Horizontal Position (latitude and longitude);
- Horizontal Position Quality Indicator(s) (position integrity for both ED-102/DO-260A/B based ADS-B transmit systems, as well as accuracy for DO-260A/B based ADS-B transmit systems);
- Barometric Altitude;
- Aircraft Identification;
- Special Position Identification (SPI);
- Emergency Status and Emergency Indicator;
- Version Number (in aircraft operational status message, if avionics are DO-260A/B compliant).

8. AIRWORTHINESS CONSIDERATIONS

- 8.1 For the purposes of the ADS-B-NRA application, the ADS-B System installed in the aircraft needs to be designed to deliver data that satisfy the airborne domain requirements to meet the requirements of the Seychelles Civil Aviation (Safety) Regulations, 2017, Part 3 regulation 8, and EASA Acceptable Means of Compliance (AMC) 20-24.

9. APPLICABLE DATES

- New aircraft that will be incorporated on Seychelles register after the publication date of this AIC must be suitably equipped.
- Aircraft already on Seychelles register at the time that this AIC is published and all foreign registered aircraft operating within the Seychelles FIR shall be equipped by the 07th June 2020.

10. EXEMPTION TO THE MANDATE

10.1 This AIC shall not apply to:

- a) State aircraft as referred to in Article 3(b) of the Chicago Convention i.e. aircraft used in military, customs and police services;
- b) foot-launched flying machines (including powered paragliders and hang gliders);
- c) captive balloons; kites; parachutes (including parascending parachutes);
- d) aircraft with a MTOW of less than 500 kg, used for noncommercial purposes, or that are used for local flight instruction in uncontrolled airspace.

11. REFERENCES

Radio Technical Commission for Aeronautics (RTCA) DO-303—*Safety, Performance and Interoperability Requirements Document for the ADS-B Non-Radar Airspace (NRA) Application*;

EUROCAE ED-26—*MPS for Airborne Altitude Measurements and Coding Systems*;

EUROCAE ED-126—*Safety, Performance and Interoperability Requirements Documents for ADS-B-NRA Application*;

European Aviation Safety Agency (EASA) Acceptable Means of Compliance (AMC) 20 Amendment 3, Annex II (AMC 20-24)—*Certification Considerations for the Enhanced Air Traffic System in Non-Radar Areas Using ADS-B Surveillance (ADS-B-NRA) Application*
http://www.easa.europa.eu/ws_prod/g/rq_certspecs.php#AMC-20

Additional information on the PBN requirements and approval is available from the following SEYCHELLES CIVIL AVIATION AUTHORITY offices.

- (a) **PBN requirements**
Air Traffic Management Division
Seychelles Civil Aviation Authority
Seychelles international Airport
Anse De Genets
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- (b) **Operational/Airworthiness approval for Seychelles Registered Aircraft**
Safety Regulation Division
Seychelles Civil Aviation Authority
Seychelles international Airport
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12. Cancellation.

This AIC replaces AIC 01/2017



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