



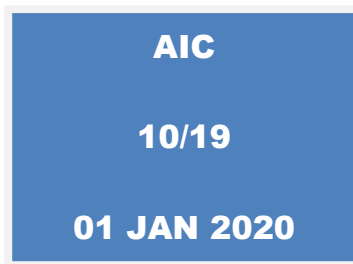
## IMPLEMENTATION OF SPACE BASED AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST (ADS-B SPACE BASED) IN THE CURAÇAO (TNCF) FIR

### 1. INTRODUCTION

- 1.1 The modernization of Air Traffic Services within the Curaçao FIR is in progress. As part of the modernization program, Dutch Caribbean ANSP (DC-ANSP) plans to introduce Automatic Dependent Surveillance-Broadcast (ADS-B) space based ATS surveillance services within the Curaçao (TNCF) FIR.
- 1.2 DC-ANSP intends to commence the application of the ADS-B space based ATS surveillance services on or soon after November 15, 2019 for a specific part of the TNCF airspace. DC-ANSP intends to implement the ADS-B space based ATS surveillance services for the entire TNCF FIR according to table 1.
- 1.3 The purpose of this AIC is to inform aircraft operators and users of the TNCF airspace on the implementation of the ADS-B space based ATS surveillance, so all can be equipped in time for the use of ADS-B OUT according to the Curaçao Civil Aviation Authority (CCAA) Mandate (AIC07/19).

### 2. INTRODUCTION OF ADS-B SPACE BASED

- 2.1 ADS-B is a surveillance technique that relies on aircraft broadcasting their identity, precise GPS position and other information derived from on-board systems. ADS-B is automated because no work is required from the pilot or Air Traffic Controller (ATC). It is dependent on on-board avionics to provide surveillance information to other parties. The data is broadcast every half a second from the aircraft and can be received without a service contract. It is a key component of an overall equipment system that will move air traffic control (ATC) from a conventional radar based system to a satellite-derived aircraft position system.
- 2.2 The ADS-B transmission on 1090 MHz Extended Squitter data link will be used for the provision of Air Traffic Services within certain specific airspaces of TNCF.
- 2.3 The ADS-B OUT implementation is aimed to extend the ATS surveillance services for Category R and Category S en-route airspace, presently not covered by conventional surveillance services and providing redundancy where radar surveillance is already available.



### 3. REQUIREMENTS FOR USERS IN THE TNCF FIR

3.1 The ADS-B space based surveillance service in the TNCF airspace will be introduced in a phased manner as follows:

3.1.1 Phase 1: January 1<sup>st</sup> 2020

The surveillance of RVSM Airspace in the Northwest area of the TNCF FIR (including all TNCF airspace west of and including airway UM525) not covered by radar surveillance will be implemented. This area is bounded by lines joining points  
135310N/0732000W;142000N/0740000W;160000N/0740000W;170000N/0730000W;  
170000N/0714000W;160000N/0714000W;160000N/0704500W to point of origin.

3.1.2 Phase 2: January 1<sup>st</sup> 2021

The surveillance of RVSM Airspace in the remainder of the TNCF FIR will be implemented.

3.1.3 Phase 3: January 1<sup>st</sup> 2023

The surveillance of Curaçao TMA, CTR Hato, CTR Flamingo, HATO ATZ, Flamingo ATZ, and airspace encompassing the remainder of the TNCF FIR outside the Curaçao TMA will be implemented.

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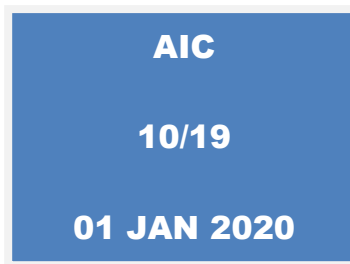
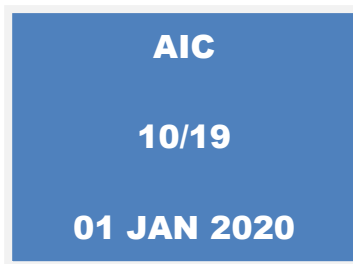


Table 1: Implementation planning

Implementation	Airspace Classification	Altitude	Date Requested for Transponder Requirement
Phase 1	RVSM Airspace in Northwest Portion of Curaçao FIR (all airspace west of and including airway UM525)	Flight Level 290 and Above	January 2020
Phase 2	RVSM Airspace in remainder of the Curaçao FIR	Flight Level 290 and Above	January 2021
Phase 3	Curaçao TMA	Class A Flight Level 195 and above Class E 2500 ft. - Flight Level 195	January 2023
Phase 3	CTR Hato CTR Flamingo Hato ATZ Flamingo ATZ	Class C 2000 ft. - Flight Level 65 Class D Surface - 2000 ft. Within 10 NM Radius Class B Surface - 2000 ft. Within 5 NM Radius Class B Surface - 2500 ft.	January 2023
Phase 3	Outside the Curaçao TMA (Airspace encompassing the remainder of the Curaçao FIR outside the Curaçao TMA)	Class A Flight Level 195 and above Class E 2500 ft. - Flight Level 195 Class G MSL - 2500 ft.	January 2023



## 4. AIRCRAFT OPERATOR APPROVAL

4.1 The ADS-B equipment must be of an approved type meeting the specifications of ICAO Annex 10 (Volume IV) or that has been certified according to following standards:

- 4.1.1 EASA AMC 20-24 or latest;
- 4.1.2 FAA AC No.20-165B – Airworthiness Approval of ADS-B or latest;
- 4.1.3 Curaçao Civil Aviation Authority standard, CCAA standard AIC07/19

4.2 Aircraft operators must have the relevant ADS-B operational approval from the State of Registry.

## 5. FLIGHT PLANNING REQUIREMENTS

5.1 ATS systems use Field 10 (Equipment) of the standard ICAO flight plan to identify an aircraft's data link and navigation capabilities. An appropriate ADS-B designator shall be entered in item 10b (surveillance equipment and capabilities) of the ICAO flight plan:

- 5.1.1 B1: ADS-B with dedicated 1090 MHz ADS-B "out" capability or
- 5.1.2 B2: ADS-B with dedicated 1090 MHz ADS-B "out" and "in" capability.

5.2 The aircraft address (24 Bit Code) in hexadecimal format must be entered in item 18 (other information) of the ICAO flight plan as per the following example:

- 5.2.1 CODE/7C432B.

5.3 The aircraft identification (ACID), not exceeding 7 characters must be accurately indicated in item 7 (aircraft identification) of the ICAO flight plan and replicated exactly when set in the aircraft avionics for transmission as the Flight ID as follows:

- 5.3.1 The three-letter ICAO designator of the aircraft operator followed by the flight identification number (e.g. AVA123, CMP456) when in radiotelephony the call sign used consists of the associated ICAO telephony designator for the aircraft operator followed by the flight number (e.g. AVIANCA ONE TWO THREE, COPA FOUR FIVE SIX)

OR

- 5.3.2 The registration marking of the aircraft (e.g. PJDVD, HK1156) when the radiotelephony call sign consists of the aircraft registration.

*Note: No zeros, dashes or spaces are to be added when aircraft identification is less than 7 characters. This AIC is issued for the advance notification and compliance of aircraft operators.*

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Under the authority of the government of  
Curaçao, Aruba, St. Maarten and The Netherlands

**AIC**

**10/19**

**01 JAN 2020**

*Any questions and/or remarks, please contact the DC-ANSP AIS department Curaçao as soon as possible via above mentioned email address ([aipaim@dc-ansp.org](mailto:aipaim@dc-ansp.org)).*