



International Civil Aviation Organization

North American, Central American and Caribbean Office

**Twenty First Meeting of Directors of Civil Aviation of the Eastern Caribbean
(21st E/CAR DCA)**

Tortola, British Virgin Islands 11 to 14 February 2008

E/CAR DCA/21 - WP/11

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Agenda Item 3: Air Navigation Issues
3.6 Other Air Navigation Issues

**AUTOMATED DEPENDENT SURVEILLANCE – BROADCAST (ADS-B) DATA COLLECTION
EFFORTS IN THE EASTERN CARIBBEAN (E-CAR) REGION**

(Presented by the United States of America)

SUMMARY

The United States (U.S.) Federal Aviation Administration (FAA) has awarded a national contract to deploy Automatic Dependent Surveillance – Broadcast (ADS-B). At the newly formed GREPECAS ATM/CNS Subgroup – CNS Committee, Surveillance Task Force in June 2007, several members of the Caribbean/South American (CAR/SAM) region of the International Civil Aviation Organization expressed an interest in conducting ADS-B data collection in the region. To determine the feasibility of using ADS-B as a surveillance tool in the CAR/SAM, which includes the Eastern Caribbean (E-CAR), it is necessary to collect data to validate the quality of the ADS-B messages currently being broadcast and to identify the airframes that are ADS-B equipped. This paper outlines what is necessary to initiate this data collection effort in the E-CAR region.

1 INTRODUCTION

1.1. The National Airspace System (NAS) of the U.S. is under stress from increasing demand for air transportation that threatens to outpace the capacity of existing surveillance infrastructure.

1.2. In order to address this problem and design a viable platform for future air traffic needs, the FAA, in cooperation with the U.S. Departments of Commerce, Defense, Homeland Security, and the National Aeronautics and Space Administration, launched an effort to align their resources to develop the Next Generation of Air Transportation System, or NextGen.

2 DISCUSSION

2.1 An essential component of the NextGen integrated plan is a surveillance system that can increase safety, capacity, and efficiency of air travel. ADS-B technology has been identified as the surveillance solution that can meet these needs by providing critical flight information simultaneously to pilots and air traffic controllers. ADS-B transmits air traffic and flight information to aircraft, vehicles, and ground stations to improve situational awareness and provide unprecedented levels of service inside the cockpit and to air traffic control facilities.

2.2 The U.S. ADS-B program will be deploying communications, weather, and ADS-B stations on oil platforms in the Gulf of Mexico, beginning this year. Aircraft that fly between the CAR/SAM region and the U.S. already have some ADS-B capable equipment on board the aircraft that meets existing specifications. In addition, helicopters operating offshore will have the capability to receive instrument flight rules (IFR) surveillance services. The United States wishes to identify these airframes in preparation for an ADS-B service in the Gulf of Mexico.

2.3 ADS-B is a low-cost surveillance system with increased accuracy and faster update rate. ADS-B can provide the air navigation service providers with tools to increase capacity, specifically where legacy en route separation is used today. Finally, there are air-to-air applications that can provide increased surface situational awareness and safety benefits.

2.4 At the first meeting of the GREPECAS ATM/CNS Subgroup – CNS Committee, Surveillance Task Force in June 2007, several members of the CAR/SAM region of the International Civil Aviation Organization expressed an interest in conducting an ADS-B data collection effort in the region. To determine the feasibility of using ADS-B as a surveillance tool in the CAR/SAM, which includes E-CAR, it is necessary to collect data to validate the quality of the ADS-B messages currently being broadcast. Although some aircraft may have ADS-B capable equipment installed, there are unknown configurations of Global Positioning System (GPS) and Flight Management System equipment that may or may not support ADS-B separation services.

2.5 This paper outlines a process for ECAR, along with other CAR/SAM States to follow if they would like to participate in the data collection efforts.

3 **PROCESS**

3.1 The E-CAR State makes an official request via memorandum, e-mail, or fax to:
Federal Aviation Administration
Office of International Aviation, AWH-10
800 Independence Ave. S.W.
Washington D.C.
(202) 267-5032 Fax

3.2 The FAA and the E-CAR State develop a bilateral agreement that both parties sign.

3.3 Timeline established in accordance to terms of bilateral agreement.

3.4 Activities commence.

4 **ROLES AND RESPONSIBILITIES**

4.1 The United States FAA will:

- Following request from a Civil Aviation Authority, negotiate and enter into a bilateral agreement;
- Provide a long-term loan of necessary ground stations to host nations; and
- Provide technical assistance in data reduction and analysis.

4.2 The interested CAR/SAM CAA will:

- Establish a bilateral agreement with the United States;
- Provide infrastructure necessary to install ground stations in suitable geographic locations; the infrastructure will include telecommunications, power, and equipment shelters;
- Collect and record ADS-B messages from aircraft transitioning, departing, or landing at various airports; and
- Participate in data reduction and analysis.

5 **CONCLUSION**

5.1 The FAA sees many benefits from using ADS-B, a key component of the Next Generation of Aviation Systems. In addition to establishing partnerships with E-CAR States, the FAA looks forward to providing the necessary equipment, on a long term loan basis, as well as the technical expertise to begin the process of analyzing data from the Eastern Caribbean region.

6 **RECOMMENDATION**

6.1 Interested E-CAR States should contact the FAA Office of International Aviation, Western Hemisphere Division via letter, fax, or e-mail to express interest in participating in the data collection effort. Additionally, interested E-CAR States should also identify point of contact information to begin discussions necessary to enter into a bilateral agreement with the FAA.

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