International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

ADS-B/LEG — WP/03
24/11/18

Automatic Dependent Surveillance – Broadcast (ADS-B) Implementation and Regulation Meeting for the NAM/CAR/SAM Regions (ADS-B/LEG)

Mexico City, Mexico, 26 to 30 November 2018

Agenda Item 2: Surveillance NAM/CAR Task Force

Review and update of activities for the implementation of ADS-B, installed ADS-B equipment, availability of infrastructure and capacity of ADS/B data processing and integration systems by the NAM/CAR/SAM States

(Presented by the Secretariat)

EXECUTIVE SUMMARY	
During NAM/CAR and SAM Regional Offices meetings the ADS-B implementation has been discussed, particularly sharing radar data as good practice not only to support the implementation of automatized protocols but to reduce the occurrence of Large height deviations (LHD).	
Action:	Suggested actions are presented in Section 4.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency
References:	• NAM/CAR/SAM Automatic Dependent Surveillance – Broadcast (ADS-B) Implementation Meeting/Workshop (ADS-B/IMP), Lima, Peru, 13-16 November 2017. • Eighteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/18), Punta Cana, Dominican Republic, 9-14 April 2018. • Second Meeting of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) Aeronautical Information Management (AIM) Implementation Task Force Meeting (AIM/TF/2), Miami, United States, 20 August 2018

1. Introduction

1.1 Since November 2017, a series of activities have been carried out in the NAM/CAR region, SAM region included, with the objective to develop ADS-B implementation, that the States advance in the realization of agreements between them to share radar data, and encourage the decrease in the occurrence of Large height deviation (LHD) identified by the GREPECAS Scrutiny Working Group (GTE).

1.2 OACI has presented several times the benefits to carry out the aforementioned practices. The meeting in Lima in 2017 presented the benefits of the ADS-B implementation. Sharing surveillance data also boosts safety and supports the implementation of automated AIDC and NAM / ICD protocols, automatic exchange protocols between ATC centres.

1.3 In the meetings listed above, decisions/conclusions have been reached that require actions from States that that, in one way or another, take time to complete.

1.4 ICAO is aware that carrying out these activities demands additional working hours from the responsible specialists in the States, but there is a State and Regional benefit with the execution of these activities. In addition to the commitment from the States at the time the decision was made.

2. Scope

2.1 As part of the invitation to the NAM/CAR/SAM Automatic Dependent Surveillance – Broadcast (ADS-B) Implementation Meeting/Workshop (ADS-B/IMP), Lima, Peru, 13-16 November 2017, States where requested to complete and share with ICAO information of their surveillance infrastructure, with the objective to update regional infrastructure to support PBN implementation, separation reductions between operations and support ICAO in the development of an assessment application of the surveillance coverage (radar, ADS-B, MLAT, among others).

2.2 The States have indicated the need to have aircraft equipment data regarding the avionics required for the use of the ADS-B in accordance with the different interrogation protocols, for which they recommended consulting the possibility of having the statistical data of the fleet to the FAA, NAV Canada, IATA and AIREON. In this regard, ICAO coordinated with the different organizations and AIREON indicated that if the States provide a list of the operations they have (identification of the aircraft and information of their operation) they could provide this information.

2.3 During the ANI / WG meeting last August, the NAM / CAR Working Group that addresses operational surveillance issues identified some needs that should be taken into account in the implementation of the ADS-B, such as safety-based planning and efficiency, capacity based on the needs of users, airspace and air navigation services, following global / regional objectives, taking into account the requirements of all interested parties and ensure harmonization and standardization.

2.4 In this sense, it is necessary for the States to identify the following factors in the ADS-B implementation process:

1. Stakeholders.
2. Operational benefits
3. Risk analysis
4. National, regional and global requirements
5. Interconnection factors.
6. Share data with adjacent FIRs
7. Others own of its operations.

2.5 The Task Force that addresses the NAM / CAR surveillance issues concluded that requirement-based planning ensures the selection of appropriate technologies, and that all interested parties, including the regulator, understand and agree on the performance required for communications and ATS surveillance systems and avionics on board.

2.6 The Task Force also identified the need for the regulator to change the wording of the ATS regulations to allow the use of both ADS-B and radar. The regulator must certify aircraft and operators. The technician and maintenance personnel of the operators and ANSP must learn new systems and procedures. Coordination and operational agreements with neighbouring ANSPs may need to be updated. Considering the experiences shared in the meeting, participants concluded that States should develop legislation / regulations on the use of ADS-B in each State.

3. Discussion

3.1 The implementation of the ADS-B brings many operational benefits. However, the implementation requires a huge coordination of the States, the development of projects and their tasks that involve all and above all that operational benefits of these implementations are obtained.

3.2 Having a robust surveillance infrastructure allows States to strengthen their operational safety, evaluate and improve their operations. Additionally, it promotes the achievement of regional goals.

3.3 Having a robust CNS infrastructure, supports other types of operational implementations, such as AIDC, PBN, ATFM, among others, and above all to regional goals such as reductions in longitudinal separations of operations and coordination between ATC.

3.4 The statistical data analyzed by the GREPECAS Scrutiny Working Group (GTE) have shown that the States that have implemented the AIDC and the RADAR data exchange have reduced the number of LHD events to practically zero. This is the case of the FIR's Havana and CENAMER, as well as Havana and Mérida.

4 Suggested actions

41. The meeting is invited to:

a) Indicate the date of sending the required information in this working paper to ICAO;
b) Identify the stakeholders of your State in the process of analyzing the implementation of the ADS-B;
c) Integrate into your analysis and according to the information provided at the ADS-B meeting (November 27 to 30, 2018), indicate or not the need to update the regulation of your State for the implementation of the ADS-B both by operations of its States or of other States that have adjacent operations;
d) d) Provide this information no later than November 29 in the final discussion of the Monitoring Task Force.

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