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

DISCUSSION PAPER

Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4)
Miami, United States, 21 – 24 August 2018

Agenda Item 4: **Follow-up, Performance Evaluation and Monitoring of the CAR Regional Performance Based Air Navigation Implementation Plan**
4.1 **Progress Reports of the Task Forces of the ANI WG**

SUMMARY OF THE SURVEILLANCE TASK FORCE WORKING SESSION

(Presented by the SURV/TF Rapporteur)

EXECUTIVE SUMMARY
The following paper provides a summary of recommendations identified by the Surveillance Task Force participants during the working session of the ANI/WG meeting.

Strategic Objectives:	• Safety
	• Air Navigation Capacity and Efficiency

1.   Introduction

1.1   Pursuant to the General Session presentations, the Surveillance Task Force Rapporteur met with task force participants to discuss a methodology for furthering the implementation of new technology systems in the region

1.2   The working session was attended by:

1.   Carlos Jimenez (Cuba, Surveillance TF Rapporteur)
2.   Bernard Gonsalves (AIREON)
3.   Doug Arbuckle (FAA)
4.   Alejandro Rodriguez (FAA)
5.   Roger Perez (COCESNA)
6.   Marco Vidal (IATA)
7.   Mayda Avila (ICAO NACC)

1.3   The working session provided a platform for the Task Force participants to continue discussions generated from the recommendations outlined in Working Paper 09 titled "ANI/WG Surveillance Task Force (SUR TF) Progress Report".

2   **Summary and Recommendations**

2.1   The Task Force participants discussed the need for States to reach a consensus on the desired operational needs of the region

2.2   Furthering the information identified in Working Paper 09, the Task Force understands the varying levels of Surveillance implementation in the region.

2.3   In order to further the implementation of new technologies in the region (e.g. ADS-B, WAM, etc.), the Task Force recommends that States:

1.   Fill out the ICAO requested information on existing Surveillance Implementation Infrastructure prior to October 19, 2018.

2.   ICAO to request Aireon, IATA, and other stakeholders to provide information on aircraft equipage status for the period of October 2018 to include future equipage plans for the Caribbean region.

3.   Member States in the region to provide information requested by the Surveillance Task Force Rapporteur in order to begin advancing the plan of implementing ADS-B at the upcoming November meeting in Mexico City.

4.   Request that the Chairman of the ANI/WG assign the appropriate Task Force with generating operational requirements for surveillance.

5.   Regional collaboration to advance the development of national regulations, policies, and guidance for the implementation and operation of new surveillance systems.

6.   Guarantee and commit to participating in the Surveillance Task Force Meeting in Mexico City on November 26, 2018.

7.   Guarantee and commit to sending appropriate personnel to participate in the upcoming ADS-B Workshop taking place in Mexico City on November 27-30, 2018.

2.4   In addition to the items identified in Section 2.3, the Task Force puts forth the following recommendations

2.4.1   All the participants identified and agreed on the benefits derived from ADS-B implementation in terms of surveillance coverage and operation, and cost reduction, compared with the implementation of conventional and Mode-S radar systems. However, most NACC States have considered maintaining the conventional surveillance solutions currently in use for the short and medium term

2.4.2   The NACC States that have implemented ADS-B or have plans to implement ADS-B in the short term are planning to use it as backup to radar surveillance or as an alternative for areas currently lacking radar coverage.

2.4.3   The participants felt the need to have data on aircraft equipage in terms of the avionics required for ADS-B, in accordance with the different interrogation protocols. Accordingly, the recommendation was to consult the possibility of obtaining fleet statistics from IATA and Aireon. In this sense, ICAO will discuss with IATA and Aireon the possibility of sharing this information with the States so as to have it available by the end of October 2018.

2.4.4   Taking into account the importance of consulting stakeholders and having comprehensive and strategic plans for ADS-B implementation, the Meeting recommended that ICAO lead, through its NAM/CAR working groups, an effort to develop a checklist of stakeholders, and obtain the necessary information to complete the ADS-B and Multilateration State Compliance Table. Upon completion, it will be integrated into a single regional version that will be available to NAM/CAR States. This would be completed by October 2018.

2.4.5   The meeting identified the need to advance the following:

1.   The meeting noted the importance of planning specific safety, efficiency, or capacity improvements based on the requirements of airspace users and air navigation service providers (ANSPs). Requirement-based planning ensures the selection of the appropriate technologies and that all stakeholders, including the regulator, understand and agree on the required performance for communication and ATS surveillance systems and on-board avionics.

2.   It was recommended that CAR States follow the Global Air Navigation Plan (GANP), its technological roadmaps, the ICAO ASBU methodology, and the NAM/CAR regional performance-based plans, taking them into account when developing their national air navigation plans.

3.   When implementing ADS-B, the States should consult and ensure the participation of all stakeholders as a priority to obtain the benefits of implementation.

4.   When implementing management projects, States should include in their feasibility and risk analyses the aeronautical infrastructure and operations with each of the adjacent FIRs, in order to ensure standard, harmonised and efficient coordination.

5.   In their strategic planning, States should define surveillance data requirements in order to define minimum technical/operational requirements to be met, and subsequently define the surveillance technology best suited to meet their needs (radar, ground-based ADS-B, space-based ADS-B, multilateration). This information would support the decision whether or not to eliminate radars and determine future investments in technology.

6.   It is recommended that, when conducting the risk analysis for selecting a new technology, States include the risk analysis of both its implementation and lack of implementation to ensure that projects to be executed include all risk factors when selecting new surveillance technologies.

7.   It is recommended that, based on the ATM operational concept of achieving seamless paths, and in order to meet the regional goals of ASBU Block 0, and taking into account the mandatory use of ADS-B in North America as of 1 January 2020, States make the necessary efforts to plan for the implementation of ADS-B and define whether mandatory actions should be established.

8.   In order to obtain the benefits of ADS-B technology, all aircraft in designated airspace should be equipped with the ADS-B OUT system. To this end, States should analyse whether a mandate would be required to ensure fleet uniformity.

9.   States should make sure that the investments contemplate current and future requirements as well as regional interoperability, minimizing the risk of having to make unexpected investments.

10.   The Task Force deemed it advisable for Caribbean States to study the possibility of co-locating ADS-B station(s) with existing radar surveillance systems that are reaching the end of their lifecycle, so that they can be used as backup to the latter. Likewise, to analyse the status of implementation of ADS-B in the aircraft fleet. At the end of the radar lifecycle, and based on the experience gained with ADS-B during this period, a more informed analysis can be made whether to continue with radar or replace it with ADS-B.

2.4.6   States should develop and maintain a plan to share information on surveillance systems with adjacent States in order to analyse the coverage and overlap of surveillance data to serve as backup in air traffic control coordination areas between FIRs.

2.4.7   In order to comply with Section 2.4.6, States should understand and leverage the full capabilities of their ATM Systems. Additionally, States should take into consideration the cross-border interface requirements.

2.4.8   Taking into account the importance of having common situational awareness information, which is obtained by sharing surveillance data, Caribbean States/Territories were urged to continue making efforts to implement surveillance data sharing.

2.4.9   The participants noted that the commitment of system providers (Thales, Indra, etc.) was required for the implementation of solutions that ensured compatibility and easy integration of ADS-B systems. In this sense, providers were requested, when implementing new projects in the Region, to assist States in ensuring standardisation, harmonisation and integration of systems.

2.4.10   The regulator may need to change the wording of ATS regulations to allow for the use of both ADS-B and radar. The regulator will need to certify aircraft and operators. The technical and maintenance personnel of operators and ANSPs will need to learn new systems and procedures. Coordination and operational arrangements with neighbouring ANSPs may need to be updated. Taking into account the experiences shared at the meeting, the participants concluded that States should start developing legislation/regulations on the use of ADS-B in each State.

3.   Suggested Actions

The Meeting is invited to:

a)   Request that the Secretariat evaluate the recommendations of the Surveillance TF detailed in this paper for inclusion in the conclusion of the ANI/WG Final Report; and

b)   States to take action on the recommendations

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