ADS-B/LEG — WP/02
24/10/18

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 |
| | 2.1   Review of previous conclusions, ADS-B implementation, Lima Peru, November 2017 |

ANI/WG SURVEILLANCE TASK FORCE (SUR TF) PROGRESS REPORT

(Presented by the SUR Task Force Rapporteur)

<table>
<tr><td colspan="2" align="center">EXECUTIVE SUMMARY</td></tr>
<tr><td colspan="2">This paper presents the progress of the AN/WG SURV Task Force.</td></tr>
<tr><td>Action:</td><td>Suggested Actions are presented in Section 4.</td></tr>
<tr><td><i>Strategic Objectives:</i></td><td>• Safety
• Air Navigation Capacity and Efficiency</td></tr>
<tr><td><i>References:</i></td><td>• NAM/CAR/SAM Automatic Dependent Surveillance – Broadcast (ADS-B) Implementation Meeting/Workshop (ADS-B/IMP), Lima, Peru, 13 to 16 November 2017
• Draft version of the Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4), Miami, United States, 21 – 24 August 2018</td></tr>
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1.   Introduction

1.1   The Surveillance Task Force, based on its modification for the inclusion of all surveillance systems in addition to the ADS-B Implementation that gave rise to it, works based on its new Terms of Reference (ToRs) and the update of its plan of action, in order to make more efficient implementation activities related to new surveillance systems combined with existing radar systems, to ensure the air navigation safety in our geographical Region.

1.2   The Task Force supports the trials and implementation activities of ADS-B and Multilateration, as well as updating and reporting their progress to the ANI/WG based on the regional air navigation plan (**see Attachment D**).

1.3   The Membership of the Group in shown in **Attachment C**.

2.   *Activities carried out by the ANI/EG SURV Task Force:*

2.1   Barbados informed that has recently installed a radar surveillance system. However, they are in the process of planning for the implementation of an MLAT with 7 stations of MLAT and 5 stations for surface movement.

2.2   COCESNA informed on the implementation of ADS-B technology in the Central America Region that includes the installation of ADS-B test receivers, installation of an ADS-B Station on the Island COCO to improve surveillance in the southern part of the Flight Information Region (FIR) of Central American, update of seven radars Mode S of RUTA with digital receiver plus ADS-B and the renewal of radars mono pulse of the States for TMA by systems Mode S + ADS-B.

2.3   Cuba concluded the installation of two MLAT systems at the Varadero and Havana Airports, which are in the process of certification by the National authority and progressing in the modernization of their automated system of the Area Control Center for the integration of all the signals coming from its combined surveillance sensors of SSR, ADS-B and MLAT, which guarantee surveillance coverage in the HAVANA FIR.

2.4   Jamaica indicated that the State is finalizing a process of renewal of its ATS system that within the project is the renewal of surveillance systems, but that the project does not include ADS-B.

2.5   Mexico indicated that the ADS-B implementation in Mexico is due to the need to increase the safety and efficiency of air/ground operations, redundancy coverage and to have surveillance in areas without radar coverage.

2.6   They expect to obtain benefits such as a more efficient airspace and the application of arrival and departure routes in Mexico's TMA for VFR flights with helicopters; improved warning systems both in flight, as land, reducing runway incursions, more efficient flight routes; especially in the Gulf of Mexico and remote areas, as well as reducing CO_2 emissions by decreasing fuel consumption.

2.7   Up to date, SENEAM has installed 10 ADS-B stations at the following sites:

- 5 in the Valley of Mexico City (Toluca Airport, *Cerro Peñón, Cerro Catedral, Cerro Gordo a*nd ATC TWR Control of Mexico):

  - 1 at the Radar station of Cerro Los Gallos, Aguascalientes (LGS).
  - 1 in the southeast of Mexico in Ciudad del Carmen (CME).
  - 2 in the northeast of Mexico at the Monterrey Terminal Airport (MTY) and at the radar station of the Cerro de Potosí (CPT).
  - 1 at the Radar station of Puerto Peñasco, Sonora (PPE), northwest of Mexico.
  - Currently there is a software update project for the surveillance processing system of the four Area Control Centres (ACCs).

2.8	The FAA ADS-B stations in Mérida (MID), Tampico (TAM) and Cancún (CUN) have been operational since February 2016, but have not been operated in the MID, MEX and MTY ACCs.

2.9	At the ACC of Mexico, Mérida, Monterrey and Mazatlán: ten ADS-B stations are installed and in the process of testing, projecting the collection and evaluation of data to begin the integration of data in Air Traffic Management (ATM) systems. Currently, work is being done on its review and update for the publication of the Regulations for the use of ADS-B in Mexico.

2.10	Panama informed that has installed two ADS B stations, which are already integrated with the radar information in the Panama ACC and the acquisition and installation of 2 new ADS B stations is foreseen.

2.11	Dominican Republic explained that a WAM system is under development through the Thales Company. Through the technical proposal provided by Thales, the representative of the Dominican Republic explained that the initial concept of preliminary location with respect to the implementation of the WAM system was integrated by the selection criteria for WAM sites; technical configuration data used for the simulations; theoretical background and basic design principles of WAM; results of the computer modelling of the proposed WAM system; a list and a map view of the proposed WAM sites, theoretical demonstration of WAM and WAM coverage through a series of precision coverage diagrams.

2.12	Trinidad and Tobago explained that the State is in the process of developing a project to update the ATM system, which includes new features, including ADS-B data management. Also, it was indicated that Trinidad and Tobago receives surveillance data from the Islands of Martinique and Guadeloupe; this is merged with radar data from Trinidad and Tobago and is used to provide surveillance coverage in the continental part of the FIR. Trinidad and Tobago also redistributes the data received from Guadeloupe and Martinique to the States within the FIR for improvement of the situational awareness

2.13	The need is identified that integrally as a region; a surveillance solution for oceanic airspaces is sought, which will allow obtaining operational improvements to surveillance and operational safety. Therefore, an Ad hoc group composed by Dominican Republic (leader), COCESNA and Trinidad and Tobago was created to carry out an evaluation of the feasibility of using the ADS-B satellite proposal presented by AIREON, as a possible solution to this problem. This group will have to contribute their conclusions in the upcoming meeting of the SUR Task Force to be held in September in Mexico.

2.14	**Attachment E** shows a table with the results of this developemnts.

**3.	Conclusions**

3.1	An important progress in the region for the implementation of the ADS-B is observed in compliance with the regional agreement for the operational implementation of this new surveillance system for 2020.

3.2	However, bearing in mind that some States are still not planning their implementation, it is necessary to keep the following conclusion of the NACC/WG/5 in force:

Conclusion/Decision	Actions	Responsible for Action	Deadline
PREPARATION OF STATES FOR THE IMPLEMENTATION OF ADS-B That, in order to enhance the regional efforts for implementing ADS-B, States/Territories in the NAM/CAR Regions:	a) take into account the proximity of the agreed implementation date of 2020 and the impact of this implementation for the successful accomplishment of the goals of several modules of the ASBU;	States/Territories in the NAM/CAR Region	December 2019
	b) accelerate the development and publication of national regulations for the use of ADS-B; and	States/Territories in the NAM/CAR Regions	December 2019
	c) adopt 1 January 2020 as ADS-B implementation date in their implementation plans to finalize operational implementation of ADS-B OUT.	States/Territories in the NAM/CAR Regions	December 2019

4. **Suggested actions:**

4.1 The Meeting is invited to:

a) Take note of the information presented in this paper;

b) recommend all participants to review the content of the **Attachment**s to this working paper;

c) take actions as deemed necessary in compliance with the regional agreements in force in terms of surveillance.

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APPENDIX A (in Spanish only)

RECOMENDACIONES RESULTADOS DE LA REUNIÓN/TALLER DE IMPLEMENTACIÓN ADS-B DE LIMA

Como resultado de la información presentada en la reunión/taller los participantes concluyeron y expusieron las siguientes recomendaciones:

Beneficios del ADS-B: Todos los participantes identificaron y estuvieron de acuerdo en los beneficios que la implementación del ADS-B proporciona en cuanto a cobertura de vigilancia y en la operación y la reducción de costos comparado con la implementación de los Sistemas radar convencionales y Modo-S. Sin embargo los Estados de las Regiones CAR/SAM en su gran mayoría han considerado mantener para corto y mediano plazo como medio primario las soluciones convencionales de vigilancia actualmente utilizadas.

Estado actual del uso del ADS-B: Los Estados de las Regiones CAR/SAM que han implantado ADS-B o tienen planificados implantar ADS B a corto plazo en su mayoría consideran el uso del mismo como respaldo a los datos de vigilancia radar o como una alternativa para las áreas en las que actualmente no tienen cobertura radar.

Necesidad de contar con datos de equipamiento de las aeronaves: los participantes indicaron la necesidad de contar con los datos de equipamiento de las aeronaves en cuanto a la aviónica requerida para el uso del ADS-B de acuerdo a los diferentes protocolos de interrogación, por lo cual recomendaron se consulte la posibilidad de contar con los datos estadísticos de la flota a la FAA, NAV Canadá, IATA y AIREON. En ese sentido OACI coordinara con la FAA, Nav Canada y AIREON la posibilidad de compartir esta información con los Estados para que la información pueda estar disponible a finales del primer trimestre del 2018.

Lista de actividades necesarias para implementar el ADS-B: Considerando la importancia de la consulta a las partes interesadas y la planificación completa y estratégica para realizar la implementación del ADSB, la reunión recomienda que la OACI a través de su grupos de trabajo en las regiones NAM/CAR/SAM desarrollen una lista de verificación de las partes interesadas y el bosquejo detallado de las actividades de implementación requeridas para ADS-B, para apoyar a los Estados a planificar de manera conjunta y coherente esta implementación. Cada una de las Oficinas OACI, tanto para la región NAM/CAR como para la región SAM, desarrollaran la actividad dentro de los grupos de trabajo correspondientes a su región, al finalizarse de forma regional se integrara en una sola versión que estará disponible para todos los Estados de la región NAM/CAR/SAM. Esta será desarrollada en el primer semestre del 2018.

Implementación ADS-B: La reunión identificó la necesidad de una visión de ADS-B a largo plazo que permita a los Estados incluir la actualización de los planes regionales y nacionales a corta, mediano y largo plazo, teniendo en cuenta los siguientes factores:

a. La reunión indicó la importancia de la planificación de mejoras específicas para seguridad operacional, eficiencia o capacidad que sea realizada en base en los requerimientos de los clientes del espacio aéreo y los Proveedores de Servicio de Navegación Aérea. (ANSP). Un enfoque de planificación con base en requerimientos asegura que se elegirán tecnologías adecuadas y que todas las partes interesadas, incluyendo al regulador, entenderán y acordarán el desempeño requerido para los sistemas de comunicación, sistemas ATS y aviónica de a bordo.

b. Se recomendó que los Estados de las regiones CAR/SAM deben seguir el Plan Mundial de Navegación Aérea (GANP), sus hojas de rutas tecnológicas y la metodología ASBU OACI, los planes regionales basados en performance de las Regiones NAM/CAR y SAM y considerarlo en la elaboración de los planes de navegación aérea nacionales.

c. Que los Estados tengan en cuenta que a la hora de implantar el ADS-B la consulta y participación de todas las partes interesadas es prioritaria para lograr los beneficios de implementación.

d. Los Estados deben asegurarse al momento de realizar los proyectos de gestión, integrar a su análisis de factibilidad y riesgos la infraestructura aeronáutica y operaciones con cada una de las FIR adyacentes con los cuales tienen operaciones en común, con el objetivo de asegurar que la estandarización, armonización y eficiencia de sus coordinaciones.

e. Que los Estados dentro de sus planes estratégicos definan los necesidades de datos de vigilancia (Velocidad, precisión, Pd, rutas/niveles, etc.) con el fin de obtener la requisitos técnicos/operacionales mínimos que deben cumplir para posteriormente definir la tecnología de vigilancia que más se adapte a solventar a sus necesidades (Radar, ADS-B en tierra, ADS-B Satelital, Multilateración). Esta información apoyaría a la decisión de eliminar o no los radares y de determinar las inversiones futuras en tecnología.

f. Se recomienda que los Estados incluyan dentro de sus análisis de riesgo al momento de elegir una nueva tecnología el análisis de riesgo de implementarla, como también el análisis de riesgo de no implementarla, con el objetivo de asegurar que los proyectos a ejecutarse incluyan todos los factores de riesgo presente al momento de elegir las nuevas tecnologías de vigilancia.

g. Se recomienda que los Estados en función de cumplir con el concepto operacional ATM de lograr trayectorias sin costuras y de igual modo de cumplir con las metas regionales del ASBU para el bloque 0, teniendo en cuenta el uso mandatorio del ADS-B en Norte América a partir del 01 de enero del 2020, todos deberían realizar los esfuerzos necesarios para definir la planificación del uso del ADS B y si para la implantación operacional se requeriría establecer acciones de tipo mandatario o no.

h. Con el fin de obtener los beneficios de la tecnología del ADS B , se requiere que todas las aeronaves en el espacio aéreo designado estén equipados con el sistema ADS-B OUT y, para esto, los Estados deberán analizar si se requerirá de un mandato, si se establece un mandato se garantizaría la uniformidad de la flota.

i. Los Estados deben asegurarse que las inversiones que realizaran en los próximos años contemplan sus necesidades actuales y futuras, minimizando el riesgo de tener que realizar nuevas inversiones a corto plazo que no estaban contempladas.

j. La reunión/taller consideró conveniente que los Estados de las Regiones CAR/SAM estudien la posibilidad de instalar una estación o estaciones ADS-B en emplazamiento donde existen sistemas de vigilancia radar que tengan una antigüedad cercana al final de su ciclo de vida con el fin de que el mismo sea utilizado inicialmente como respaldo al sistema radar y de análisis del estado de implantación del ADS B de la flota aérea. y que al final del ciclo de vida del radar con la experiencia obtenida con el ADS B en ese periodo poder analizar con mayor criterio el reemplazo al ADS B o continuar con el radar.

Para el Intercambio de datos la reunión recomienda: que cada Estado comparta la información de los sistemas de vigilancia con los Estados Adyacentes para para realizar estudios de cobertura y traslape de datos de vigilancia que les permita contar con información de respaldo en las áreas de coordinación de las operaciones de control de tráfico aéreo entre las FIR. Cada Estado que aún no ha remitido sus datos actualizados a OACI, acorde al adjunto C de la invitación, deben enviarlo a más tardar el 30 de enero del 2018.

Mejora de la conciencia situacional de la región: Considerando la importancia de disponer de una información de consciencia situacional común, la cual se logra con la compartición de datos de vigilancia, se instó a los Estados/Territorios de las regiones CAR/SAM de continuar los esfuerzos para completar estas compartición de datos tanto a nivel de radar como sistemas ADS-B.

Infraestructura ATS: Los Estados deben realizar un análisis de su infraestructura ATS y determinar si la misma tiene la capacidad de gestión ADS-B integrada directamente en el Sistema ATS sin la conversión de los protocolos de vigilancia, ofreciendo de esta manera al personal operativa una gestión optima de los datos de vigilancia.

Compromiso de la Proveedores de Sistemas y Equipos: Los participantes indicaron que se requiere el compromiso de la Proveedores de Sistemas (Thales, Indra, etc) para implementar soluciones que garanticen la compatibilidad al realizar conexiones entre ellos y permita la fácil integración de los Sistemas ADS-B. En ese sentido se solicitó a los proveedores que al momento de implementar nuevos proyectos en la región, apoyen a los Estados a que los requisitos de estandarización, armonización e integración de los Sistemas se cumplan.

Evaluación del ADS-B Satelital: los participantes indicaron la necesidad de realizar una evaluación integrada y cooperativa para determinar el correcto uso del ADS-B satelital. En ese sentido la Región SAM incluirá esta actividad dentro de las acciones a realizar por el grupo de trabajo que actualmente está validando el uso de la infraestructura de comunicaciones para este fin. La región NAM/CAR incluirá esta tarea dentro de las actividades del Grupo de Trabajo de Vigilancia de la región NAM/CAR, el cual realizara durante el primer segundo semestre del 2018.

Desarrollo de la regulación por parte del Estado para la implementación del ADS-B: El regulador puede necesitar cambiar la redacción en las regulaciones ATS para permitir el uso de la ADS-B como el del radar. El regulador necesitará certificar las aeronaves y a los explotadores. El personal técnico y de mantenimiento para los explotadores y ANSP necesitará aprender nuevos sistemas y procedimientos. La coordinación y arreglos operativos con los ANSP vecinos pueden necesitar ser actualizados. Tomando en cuenta las experiencias expuestas en la reunión, los participantes concluyeron que es necesario que los Estados comiencen los trabajos de creación de la legislación/regulación para el uso del ADS-B en cada uno de los Estados.

Reunión Regional: Los participantes concluyeron la necesidad de realizar una reunión regional NAM/CAR/SAM para el segundo semestre del 2018 que dé seguimiento a la implantación del ADS B en esta reunión se analizarían entre otros temas aspectos relacionados con los requerimientos de operación y de aeronavegabilidad para la implantación del ADS B y las lecciones aprendidas por los Estados que ya implementaron el ADS-B en las Regiones NAM/CAR/SAM.

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APPENDIX B
TASK FORCE FOR THE IMPLEMENTATION OF THE AERONAUTICAL SURVEILLANCE SYSTEMS (SUR-TF)

1.   Background

During the first meeting of the Air Navigation Implementation Working Group (ANI/WG), it was agreed to create a task force for the implementation of the systems of automatic dependent surveillance by broadcasting (ADS-B) which at the Fifth meeting of the Working Group of North, Central America and the Caribbean (NACC/WG/5), it was agreed to modify it and turn it into the Task Force for implementing Aeronautical Surveillance Systems (SUR-TF), in order to extend the group's actions to the activities of Implementation related to all current aeronautical surveillance technologies and futures of Air Navigation. This Task Force will have to support the trials and the implementation of these systems, as well as updating and notifying their progress to the ANI/WG based on the approved action plan.

2.   Responsibilities

The Task Force is responsible for:

1.   Management of the work programme for the implementation of surveillance systems
(SSR, Mode S, ADS-C, ADS-B, MLAT and WAM)

2.   Provide advice to States that wish to initiate operational trials of surveillance systems

3.   Guide States that have carried out trials to project their operational implementation

4.   Reach 100% of the region's FIR surveillance coverage in accordance with the approved PBN requirements

5.   Support the progress of the ASBU modules related t o the Surveillance systems (SURF, ASUR, FICE, ACAS, OPFL, TBO, CCO, CDO);

6.   Recommend goals for the implementation of surveillance systems based on the needs of Air Navigation Service Providers (ANSP) and Air space users, taking into account the metrics established in the ASBU modules related to these systems

7.   Periodically request information from States on plans, statistics and progress reports on the implementation of aeronautical surveillance systems;

8.   Request the region's training needs in surveillance systems and support the States in their implementation.

3.   Working methods

The Task Force:

1.   Present its work programme including activities in terms of objectives, responsibilities, deliverables and fulfilment times

2.   Avoid duplication of work within the ANI/WG and maintain close coordination among the other Task Forces to optimize the use of resources and available experiences

3.   Designate, if necessary, an Ad hoc Groups to work on specific tasks and activities, organize tasks and clearly defined activities

4.   Coordinate tasks to maximize efficiency and reduce costs through different media such as email, telephone and teleconferences, and convene face to face meetings at least once a year

5.   Notify the ANI/WG and the ICAO N A C C Regional Office, the progress report of the tasks assigned to the group

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APPENDIX C
ADS-B Task Force Membership (Please update)

No.	Members	email
1.	Kendrick Henderson Mason, Barbados	kendrick.mason@barbados.gov.bb
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APPENDIX D
SURV TF Working Plan

TASK NAME	DELIVERABLE	DATE START	DATE END	COMPLETED	RESPONSIBLE
Actividades del Grupo de Tarea		1/8/13	31/12/20		
1.Formación del ADS-B TF	Lista de participantes	1/8/13	1/8/13	100 %	Miembros del Grupo
2. Terms of reference of the Group (ToR)		1/8/13	1/8/13	Cuba (Rapporteur)	
2.1 Development of ToR	ToR Project	1/8/13	1/8/13	100%	Cuba (Rapporteur)
2.2 Approval of ToR	ToR Approved	1/8/13	1/8/13	100%	TF members
2.3 Review and update of the ToR	ToR Revised	26/5/17	29/9/17	TF members	
3. Working Plan		2/8/13	14/8/13	Cuba (Rapporteur)	
3.1 Elaboration of the plan of work	Draft of Working Plan	14/8/13	14/8/13	100%	Cuba (Rapporteur)
3.2 Approve work plan of the Task Group	Working Plan	30/10/13	30/10/14	100%	TF Members
3.3 Revising and updating the Working plan	TF Working Plan Updated	26/5/17	29/9/17	TF Members	
4.0 starting the execution of the Work plan		31/10/13	31/12/18	TF Members	
4.1 Develop survey on ADS-B	Draft of State Survey of the ADS-B in the States	1/11/13	29/11/14	100%	COCESNA
4.1.1 Send ICAO survey for distribution to the States of the region.	State Survey of implementation of ADS-B in States	2/12/13	2/12/14	100%	COCESNA
4.2 Sending of survey on the ADS-B implementation of Aircraft	State Survey of implementation of ADS-B in Aircraft	23/01/14	30/4/14	100%	IATA
4.2.1 Collecting information on the implementation of ADS-B at aircraft	Updating the State of Implementation of ADS-B at Aircraft	30/04/14	29/05/15	0%	IATA
5.0 Trials of ADS-B	Sending results to ICAO	8/2/13	5/20/18	states/territories In the region	
5.1 Developed of ADS-B Trials	Statistics Results of the Trials	8/2/13	5/20/18	25%	Cuba, Canada, United States, Mexico, Jamaica, T & T and COCESNA
5.2 To send the members of the Task Group the Trial Test Guide	Trial Test Guide	13/02/14	13/02/14	100%	Cuba (Rapporteur)
5.3 Initiating tests of ADS-B in states that still don't make it	Statistics Results of the Trials	30/10/14	29/5/18	75%	states/territories of the region that did not Collecting statistics
5.4 Collecting statistics from ADS-B Trials	Statistics of the Trials	30/10/13	29/5/18	10%	Cuba, México, Jamaica, T & T and COCESNA
5.5 Deliver results from the Compared to the ADS-B Statistics	Result of the Statistics	23/05/14	29/05/18	10%	Cuba
6.0 participate in meetings and Teleconferences of the group of Tasks of the ANIWG	Final Report or Minutes of the meeting	Permanent	TF Members		

7.0 development of the concept Regional operational for the ADS-B Implementation		23/5/14	30/09/15		TF Members
7.1 Creation of Adhoc Group for the shaping of the Proposal	Members of the group Adhoc	23/05/14	23/05/14	100%	TF Members
7.2 Elaboration of the concept Regional operational for the Implementation of ADS-B	Draft of Operational Concept	23/05/14	23/05/14	100%	Adhoc Group for the ConOps
7.3 Delivery of the concept Regional operational for the Implementation of ADS-B Regional.	Operational Concept	23/05/14	23/05/15	100%	Rapporteur of the group Adhoc
7.4 Review and update of the ConOps.	ConOps Updated	26/5/17	29/9/1718	Adhoc Group for ConOps	
8.0 Development of the Technical Requirements for Acquiring test equipment with ADS-B		23/05/14	23/05/15	100%	
8.1 Creation of Adhoc group to form the proposal	Members of the group Adhoc	23/5/14	23/5/15	100%	TF Members
8.2 Developing requirements Technicians to purchase equipment from ADS-B Trials	Draft of Requirements Technical	23/05/14	23/06/14	100%	Adhoc Group for Technical Requirements
8.3 Delivery Requirements Technicians for equipment ADS-B Trials	Requirements Regional technicians	27/04/15	29/04/15	100%	Rapporteur of the group Adhoc
9.0 Review Plan of implementation of new systems of Surveillance (ADS B, ADSC, CPDLC, MLAT and WAM)	Regional Plan of Implementation	29/5/15	31/12/18 29/09/18	TF Members	
9.1 Notifying the plans of Implementation.	National Plan of Implementation	29/5/17	31/7/17 29/09/18	TF Members	
9.2 Report on the state of Advancement of the Implementations	Update RPBANIP	31/7/17	31/12/18 29/09/18	TF Members	
9.3 Achieving implementation Operational of the new Surveillance systems	Publication in AIP	31/12/18	31/12/20	TF Members	
10.0 Support Implementation Of the data sharing of Surveillance.	Summary table of the State of Implementation	26/5/17	31/12/20	TF Members	
10.1 Elaboration and signature of the Letters of agreement tecnical-operacional.	Letters of Agreement and Action Plan	26/5/17	31/8/17	TF Members	
10.2 Coordination for the use MEVA for sharing.	Letters of application to the MEVA supplier	31/8/17	31/12/17	TF Members	
10.3 Effective implementation of Data sharing	Report of the Exchange	31/12/17	30/5/18	TF Members	
10.4 Analysis of ADS-B SAT use in NAM CAR region.	Ad Hoc Group Inform	26/09/17	29/11/18	Dominican Republic (L), COCESNA and Trinidad and Tobago	
11.0 Achieve 100% of the Surveillance Coverage Required by the PBN in each Region FIR.	Publication in AIP	26/5/17	31/12/19	TF Members	

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APPENDIX E
State Compliance Task Force SURV / Estado de cumplimiento del Grupo de Tareas SURV

No.	State/Estado	Installed ADS-B receivers that meet the technical requirements approved regional /Receptores ADS-B Instalados que cumplen con los requerimientos técnicos regionales aprobados	Representation automated radar system ready to use ADS-B data/Sistema automatizado de representacion radar listo para usar datos ADS-B	% Coverage of ADS-B FIR installed /% de cobertura ADS-B de la FIR instalada	ADS-B deployed operationally /ADS-B implementado operacionalmente	Date to begin the ADS-B implementation/Fecha para comenzar la implementación de ADS-B	Percentage of aircraft registered with ADS-B deployed/Porccentaje de aeronaves matriculadas con ADS-B implementado	Systems planned Multilateración (P) or implemented (I)/ Sistemas de Multilateracion Planeado (P) o implementado (I)	REMARKS/OBSERVACIONES
1.	Antigua and Barbuda	0	N		N	TBD			
2.	Aruba	0	N		N	TBD			
3.	Bahamas	0	N		N	TBD			
4.	Barbados	0	N		N	TBD		P	Planned 7 MLAT stations
5.	Belize	1 (2016)	N		N				
6.	Canada	Y (15)	Y	10%	Y	2018	~90% in areas where service is available	I	ADS-B operational since 2009. MLAT operational since 2009. Space-based ADS-B Operations planned for 2018.
7.	Costa Rica	1 (2016)	N		N				
8.	Cuba	6 (2010)	N	100%	N			P	ADS-B Operational planned for 2020
9.	Curacao	1(Note5)	Y		Y			I	Space-based ADS-B Operations planned for 2018

10.	Dominican Republic	0	Y	0	N	2019		P	
11.	El Salvador	N	Y		N				
12.	Grenada	0	N		N	TBD			
13.	Guatemala	0	N		N	TBD			
14.	Haiti	0	N		N	TBD			
15.	Honduras	0	N		N	TBD			
16.	Jamaica	0	N		N	TBD			Not planned
17.	Mexico	10	Y			2017			
18.	Nicaragua	N	Y		N				
19.	Panamá	2	Y		Y	2017		I	
20.	Saint Kitts and Nevis	0	N		N	TBD			
21.	Saint Lucia	0	N		N	TBD			
22.	Saint Vincent and the Grenadines	0	N		N	TBD			
23.	Trinidad and Tobago	0	Y	0%(note4)	N	TBD	TBD	P	

24.	United States	Over 600	Y	100% (note 3)	Y	Y	~15% of U.S. fleet is equipped with ADS-B Version 2	P/I	ADS-B operational. Wide-Area MLAT (WAM) operational in some in route locations and one terminal location. An additional terminal WAM location is planned.

Note 1 - the US already completed its "trial" phase and is now using ADS-B operationally.

Note 2 - the US ConOps for ADS-B was approved and adopted prior to the existence of the regional ConOps – the US believes that our ConOps is substantially compatible, but has not performed a formal comparison

Note 3 – this coverage percentage is applicable to all US "domestic" FIR airspace and US-managed airspace in the Gulf of Mexico – it does not include all US-managed oceanic FIR airspace

Note 4 - 1 Single installation supplied with ATM system and not operationalized.

Note5: Space-based ADS-B throw MEVA from AIREON host

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— A4 —

**Objetivos Regionales De Performance (RPO) incluidos en el Plan Regional de
Navegación Aérea relacionados al Grupo de Tarea ADS-B.**

No	Task description	Start End	Responsible	State
1.	Identify and implement additional ATM surveillance systems to improve the accuracy and coverage of information of the traffic situation (ADS-B, MLAT, etc.) and associated procedures.	2014-2018	States, Territories, Org. Intls.	Valid
2.	Use of A-SMGC in specific aerodromes, as required	2014-2018	States, Territories, Org. Intls.	Valid
3.	Training in the application and implementation of automated monitoring and automation systems technologies ATS	2014-2018	States, Territories, Org. Intls.	Valid
4.	Strengthening training infrastructure in the region and training programs related to monitoring systems and automation	2014-2018	States, Territories, Org. Intls.	Valid
5.	Implementation and Control System Advanced Surface Movement Guide (A-SMGCS) according to your needs	2014-2018	States, Territories, Org. Intls.	Valid

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Designación de los módulos del Grupo de Tarea ADS-B para el Bloque 0 de las ASBU Block 0

Category	Description	Name	Priority
desirable	B0-ASUR	initial ground surveillance capability	1
optional	B0-SURF	Operational safety and efficiency of surface operations (A-SMGCS Level 1-2)	2

Note 1 priority criteria:

1- Immediate implementation.
2. Recommended deployment

Essential: Modules that significantly interoperability, security and regularity.
Desirable: Modules which by their nature are recommended implemented simultaneously in the region.
Specific: Modules whose implementation is recommended in a specific operational environment of a country in the region.
Optional: Modules that have a specific operational requirement for a country of the region and bring additional benefits but does not necessarily have to be implemented

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