



ICAO

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WORKING PAPER

NACC/WG/5 — WP/15  
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**Fifth North American, Central American and Caribbean Working Group Meeting (NACC/WG/5)**  
Port of Spain, Trinidad and Tobago, 22-26 May 2017

**Agenda Item 3: Implementation on Air Navigation Matters**  
**3.3 ANI/WG Progress on AIM, ATM and CNS**

**PROGRESS REPORT ON ADS-B TASK FORCE WORK PROGRAMME**

(Presented by ADS-B Task Force Rapporteur)

<b>EXECUTIVE SUMMARY</b>	
In this Working Paper the progress of the task force of ADS-B ANI/WG is presented.	
<b>Action:</b>	Suggested actions are presented in Section 3.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• Implementation Meeting of the Automatic Dependent Surveillance - Broadcast (ADS-B / IMP) Task Force Working Group on Air Navigation Implementation for the NAM / CAR (ANI / WG), Mexico City, Mexico regions from 27 to April 29 2015</li><li>• State Letter EMX475, 20 May 2015, Automatic Dependent Surveillance – Broadcast (ADS-B) Implementation Meeting (ADS-B/IMP) of the ADS-B Implementation Task Force of the NAM/CAR Air Navigation Implementation Working Group (ANI/WG).</li><li>• WP/11 ANIWG3 PRELIMINARY PROGRESS REPORT BY ADS-B TASK FORCE.</li><li>• DP04 ANIWG3 WORK SESSION OF ADS-B TASK FORCE</li></ul>

**1. Introduction**

1.1 The Working Group of the Automatic dependent surveillance - broadcast (ADS-B) works since its creation at the First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1), to expedite the execution of the activities related to the implementation in our region, new systems of surveillance for air navigation.

1.2 As a result of compliance with the Work Plan and Membership adopted at its first meeting (**Appendix A**), have managed to advance in the course of these years, being completed the majority of the actions provided for in this plan, with which in the coming meeting of the task force planned for September 2017 the future operation of the Group shall review, and agree on a new action plan based on the current scenarios.

2. Activities undertaken by the Task Force of ADS-B ANI/WG (**Appendix B** presents State Compliance Task Force ADS-B ANI/WG):

- COCESNA informed on progress made in the implementation of ADS-B to continue its testing and end your station Cerro de Hula settings. He also commented on the test with the new integrated control center CENAMER data; statistics have been carried capabilities of aircraft equipped with ADS-B in the region, improving their Mode S radars and the inclusion of the ability of ADS-B to cover the entire continental area covered by the radar and northern part FIR by 2018, expanding the coverage of ADS-B, south of the Flight Information Region (FIR) which are not covered by radar (Ex. Isla El Coco), and plans to conduct feasibility studies of Multilateration (MLAT) systems with ADS-B capability to improve service coverage terminal ATC radar at airports
- Mexico reported the installation of 10 ADS-B stations at strategic locations to feed data ADS-B (DO-260 and DO-260A and Asterix Cat 21) for systems 4 Area Control (ACC) existing, with a view to improving surveillance for Air Traffic Control (ATC) in the Valley of Mexico (Terminal Area (TMA) operations and helicopters), ATC in Monterrey and Merida Airport Terminal Area, redundancy monitoring station Puerto Peñasco and Surveillance helicopters flying from / to the oil rig in the Gulf of Mexico.
- United States presented to the Task Force information on differences in the ADS-B avionics requirements for receiving ATC separation services across the globe, a status of ADS-B equipment in United States, observed ADS-B quality parameters of different GPS position sources, and information on United States ADS-B implementation experiences. At the request of Task Force participants, United States also shared a copy of FAA Order 8200.45, *“Automatic Dependent Surveillance-Broadcast (ADS-B) Flight Inspection”* and a copy of the *“Surveillance and Broadcast Services Program Concept of Operations”*.
- Canada informed the Meeting of their ADS-B operations, including its current network of ground-based surveillance, the safety study-regulatory, approvals for the provision of services through ADS-B Out, Aeronautical Information Publication (AIP) information related to ADS B, reports of anomalies and testing of NAV CANADA satellite link for ADS-B.
- Dominican Republic presented a brief overview of the current status of monitoring service in Santo Domingo Flight Information Region (FIR) and his plans for the evaluation and implementation of multilateration and ADS in selected airports. The plans seek to provide ADS-B surveillance in low coverage areas at lower levels with three ADS-B receivers, one for the TMA Cibao, a second receiver in Loma Hoz and a third receiver to complement the radar as a backup security, to meet the high traffic areas in the TMA Americas and Punta Cana.

- Cuba presents advances in testing a system of multilateration at Varadero international airport, with excellent results, both for use in the control movement of surface or surveillance, for which José Martí international airport of Havana has begun its implementation. Cuba plans in addition the update of the six stations receiving ADS-B to comply with DO-260 B transponder version and is expected to complete the modernization of the automated system of representation radar of the ACC by the end of 2018.
- Jamaica has an ADS - B receptor, but no data are being analyzed as it is currently in the planning process to improve its automation system and plans to summarize the data collection and statistical processing end of the year.
- Trinidad and Tobago presented its ADS-B trial plans, currently supported for only one equipment, which will require its extension to increase its coverage with additional receivers.

### **3. Suggested Actions**

The Meeting is invited to:

- a) take note of what is presented in this paper;
- b) review and approve the ADS-B Task Force report;
- c) take any other action as deemed appropriate

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## APPENDIX A

## a) ADS-B Task Force Work Programme Status

TASK NAME	DELIVERABLE	DATE START	DATE END	PERCENTAGE COMPLETED	RESPONSIBLE
Activities Task ADS- B		1/8/13	31/12/18		
1.0 Formation of ADS-B TF	Participant List	1/8/13	1/8/13	100 %	Group Members
2. Terms and references	present Terms of Reference of the Working Group	1/8/13	1/8/13	100 %	Cuba(Rapporteur)
3. Develop Work Plan	Work Plan	2/8/13	14/8/13	100%	Cuba (Rapporteur )
3.1 Provide to OACI the Work Plan		14/8/13	14/8/13	100%	Cuba(Rapporteur)
4.0 Approve Work Plan TF ADS-B		24/01/14	30/10/14	100%	Group Members
5.0 Begin implementation of the Work Plan		31/10/13	31/12/18		Group Members
5.1 Develop ADS-B survey	Survey on the state of ADS-B	23/01/14	14/02/14	100%	COCESNA
5.1.1 Send ICAO survey for distribution to the states of the region		18/02/14	18/02/14	100%	COCESNA
5.2 Surveying information on the implementation of ADS-B aircraft	survey on the status of ADS-B aircraft	23/01/14	30/4/14	100%	IATA
5.2.1 Collect Information on implementation of ADS-B aircraft	ICAO Current Status of ADS- B aircraft	30/04/14	29/05/15	100%	IATA
6.0 Implementation of ADS-B trials	Recommendations / testing improvements towards operational implementation	30/10/13	29/5/15		Group Members
6.1 ADS-B trials are underway	List of states that are making (Progress)	30/10/13	29/5/15	100%	United States, Cuba, México, Canadá, COCESNA, T and T, Dominican Republic, and Jamaica
6.2 Send to the members of the task group the Guide for testing	Guide for testing	13/02/14	13/02/14	100%	Relator
6.3 Begin to ADS-B trials in states that do not yet list of states that implemented and date (Progress)	Support for those who wish to trials	30/10/14	29/5/ 18	62%	States / Territories in the region that have not yet done
6.4 Sending quarterly reporting ICAO deficiencies in trials	Test results	30/10/13	29/5/ 18	24%	Cuba, México, Trinidad & Tobago y COCESNA
6.5 Deliver results of comparisons of statistics of ADS-B	results of comparisons of statistics of ADS-B	23/05/14	29/05/ 18	24%	Cuba, México, Trinidad & Tobago y COCESNA
7.0 Follow-up meeting and Teleconference to the development of ADS-B implementation	Final Report or Minute		At the end of each one	100%	ICAO NACC
8.0 Develop relevant operational requirements for the ADS-B implementation		15/11/13	30/04/14		Group Members
8.1 Creation of ad hoc group for the formation of the proposal	Op AdHoc Group members	23/05/14	23/05/14	100%	CONOPS AdHoc Group
8.2 Development the regional operational concept for the ADS-B implementation	CONOPS DRAFT	23/05/14	30/10/14	100%	CONOPS AdHoc Group
8.3 Deliver the regional operational concept for the ADS-B implement	CONOPS	27/04/15	15/05/15	100%	CONOPS AdHoc Group Rapporteur
9.0 Develop technical requirements to purchase equipment for ADS-B trials		23/05/14	15/05/15		Group Members
9.1 Creation of ad hoc group for the formation of the proposal	Op AdHoc Group members	23/05/14	23/05/14	100%	Create Spec AdHoc Group

TASK NAME	DELIVERABLE	DATE START	DATE END	PERCENTAGE COMPLETED	RESPONSIBLE
9.2 Development of technical requirements for ADS-B equipment	Technical requirements for ADS-B equipment DRAFT	30/06/14	08/05/15	100%	Spec AdHoc Group
9.3 Deliver technical requirements for ADS-B equipment	Technical requirements for ADS-B equipment	30/06/14	08/05/15	100%	Spec AdHoc Group Rapporteur
10.0 Collect information on operational implementation of ADS-B in places implemented.	State Compliance	31/10/13	31/12/18	62%	Group Members
10.1 Operational implementation of ADS-B	State Compliance	31/05/15	31/12/19	9.5%	States / Territories

**b) Membership of the Task Force of ADS-B**

No.	Members	e-mail
1.	Kendrick Henderson Mason, Barbados	kendrick.mason@barbados.gov.bb
2.	Jeff Crochane, Canada	cochraj@navcanada.ca;
3.	Carlos M. Jiménez Guerra (Rapporteur), Cuba	carlosm.jimenez@iacc.avianet.cu
4.	Fernando Naranjo Elizondo, Costa Rica	fer_nar_eli@hotmail.com
5.	Julio Mejia, Dominican Republic	jmejia@idac.gov.do
6.	Doug Arbuckle, United States	doug.arbuckle@faa.gov
7.	Bill Blake, United States	bill.a.blake@faa.gov
8.	Derrick Grant, Jamaica	derrick.grant@jcaa.gov.jm
9.	Scott Leis, United States	scott.leis@faa.gov
10.	Howard Greaves, Jamaica	Howard.Greaves@jcaa.gov.jm
11.	Orville Shaw, Jamaica	orville.shaw@jcaa.gov.jm
12.	Alberto Romero Flores, Mexico	aromerof@hotmail.com
13.	José Gil J., Mexico	jgiljim@sct.gob.mx
14.	José de Jesús Jiménez Medina, Mexico	disda@sct.gob.mx
15.	Warren Quirós Castillo, Costa Rica	<a href="mailto:navegacionaerea.cns@dgac.go.cr">navegacionaerea.cns@dgac.go.cr</a>
16.	Luis Miranda Muñoz, Costa Rica	lmiranda@dgac.go.cr
17.	Asdrubal Sanders Varela	asanders@dgac.go.cr
18.	Manrique Hidalgo, Costa Rica	mhidalgo@dgac.go.cr
19.	Uwe Cano, Nicaragua	uwenava90@hotmail.com
20.	Alexis Brathwaite, Trinidad and Tobago	abrathwaite@caa.gov.tt
21.	Kent Ramnarace-Singh, Trinidad and Tobago	krsingh@caa.gov.tt
22.	Cesar Nuñez, COCESNA	cesar.nunez@cocesna.org
23.	Wilmer J. Flores Zeitun, COCESNA	wilmer.flores@cocesna.org
24.	Javier Alejandro Vanegas, CANSO	javier.vanegas@canso.org
25.	Marco Vidal, IATA	vidalm@iata.org

**State Compliance Task Force ADS-B ANIWG/ Estado de cumplimiento del Grupo de Tareas ADS-B del ANIWG**

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/Porcentaje de aeronaves matriculadas con ADS-B implementado	Systems planned Multilateración (P) or implemented (I)/ Sistemas de Multilateración Planeado (P) o implementado (I)	REMARKS/OBSERVACIONES
1.	Antigua and Barbuda								
2.	Bahamas								
3.	Barbados								
4.	Belize	1 (2016)	N		N				
5.	Canada	Y (15)	Y	10%	Y	Y	~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.
6.	Costa Rica	1 (2016)	N		N				
7.	Cuba	6	N	100%	N				
8.	Dominican Republic	0	Y	0	N				

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9.	El Salvador	N	Y		N				
10.	Grenada								
11.	Guatemala	N	Y		N				
12.	Haiti								
13.	Honduras	N	N		N				
14.	Jamaica	1	N	30-40%	N (Trial)	2017/2018			
15.	Mexico	10	Y						
16.	Nicaragua	N	Y		N				
17.	Saint Kitts and Nevis								
18.	Saint Lucia								
19.	Saint Vincent and the Grenadines								

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/Porcentaje de aeronaves matriculadas con ADS-B implementado	Systems planned Multilateración (P) or implemented (I)/ Sistemas de Multilateración Planeado (P) o implementado (I)	REMARKS/OBSERVACIONES
20.	Trinidad and Tobago	0	Y	0%(note 4)	N	TBD	TBD	P	0
21.	United States	Over 600	Y	Over 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.

— END —