International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)

INFORMATION PAPER

GREPECAS/21 — IP/20 Rev.
13/11/2023

Twenty-first Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/21)
Santo Domingo, Dominican Republic, 15 to 17 November 2023

Agenda Item 3: Global and Regional Developments
3.3 CAR/SAM Air Navigation Services (ANS) Implementation Level

DEVELOPMENTS IN THE IMPLEMENTATION OF AUTOMATED PROTOCOLS

(Presented by the Secretariat)

EXECUTIVE SUMMARY

This information paper summarizes the implementation status of the AIDC/PAC automated protocols for both regions and NAM/ICD for the CAR and SAM regions.

Strategic Objectives:	• Air Navigation Capacity and Efficiency
Referencias:	• Twentieth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/20), November 2022 https://www.icao.int/NACC/Documents/Meetings/2022/GREPECAS20/GREPECAS • Sixth ATS Interfacility Data Communication (AIDC) and North American Interface Control Document (NAM/ICD) Implementation Follow-Up Meeting for the NAM/CAR Regions (AIDC/NAM/ICD/6), 04 August 2023. https://www.icao.int/NACC/Pages/meetings-2023-bada.aspx • Final report of the SAM/IG/29 Workshop/Meeting, May 2023. https://www.icao.int/SAM/Documents/2023-RLA06901-SAMIG29/SAMIG29%20InformeFINAL.pdf

1. Introduction

1.1 Within the framework of Projects C – Automation, the implementation of automated protocols is a priority for both regions: Air Traffic Services Inter-facility Data Communication (AIDC) for both regions and the North American Interface (NAM/ICD).

1.2 The implementation of both protocols has demonstrated a clear increase in operational safety, reducing Large Height Deviation (LHD) in the coordination regions where it has been implemented and increasing the efficiency of coordination between the control centres involved.

1.3 Communications, Navigation and Surveillance (CNS) Area presents the activities carried out jointly by both regions to support the implementation actions of the CAR and SAM States.

2. Implementation of automated channels

2.1 NAM/CAR REGION

2.1.1 Based on the Terms of Reference of the N orth American, Central American and Caribbean Working Group (NACC/WG) and with the objective of accelerating the implementation of automated channels in the CAR region, the Automation Task Force (NACC/WG/AIDC) is responsible for supporting, together with the ICAO NACC Regional Office, the progress of work on the implementation of automated protocols. In addition, this Task Force has integrated into its action plan the development of Flight and flow - Information for a Collaborative Environment (FF-ICE) and the Flight Information Exchange Model (FIXM) in the region.

2.1.2 The CAR region implements two types of automated protocols:

a) PAN AIDC/ICD between CAR States and CAR and SAM States; and
b) NAM/ICD between CAR States and the United States.

2.1.3 The work, documentation, and the results of the work of this group led by the Dominican Republic are found under the following link:

https://www.icao.int/NACC/Pages/regional-group-AIDC.aspx

2.1.4 The region has defined measuring the level of implementation based on the implemented protocol, and the channels to be placed in operation between the different Control Centres, in that sense the implementation is measured as follows:

a) PAN AIDC/ICD: 100% implemented when put into operation; and
b) NAM/ICD:
    a. Class I: 33% implementation;
    b. Class II: 66% implemented; and
    c. Class III: 100% implemented

2.1.5 The implementation of the NAM/ICD protocol entails a greater effort to implement the NAM/ICD. In the case of the Caribbean, there are States that have been working for years only with the implementation of Class I and a new investment is required in their control centres for the implementation of each subsequent Class.

2.1.6 In this regard, the NACC/WG/AIDC Group has recommended to the United States that its NAM/ICD protocol be standardized as much as possible to the PAN AIDC/ICD protocol with the objective to:

a) Reduce the financial costs to which CAR States that have this coordination with the United States are subject due to the costs of customizing the software to include the requirements of the NAM/ICD; and
b) Eliminate the double training, double development of procedures and double management of coordination to which controllers are subjected when working in

positions in which they must coordinate with NAM/ICD and PAN AIDC/ICD at the same time.

2.1.7 The regional implementation level is 61.77% and the Task Force has decided to focus annually on States in the process of implementation that are already ready to support, in this way, the remaining implementation.

2.1.8 In this regard, Cuba, Jamaica, the Central American States, and COCESNA are requested to expedite the implementation work of these communication channels with the objective of putting them into operation as soon as possible for the benefits that this implementation entails in terms of safety and efficiency.

2.1.9 The requirements for communication channels to integrate automation in a more secure manner have been integrated into the Caribbean Air Navigation Services Network (CANSNET) Project.

2.1.10 **Appendix A** includes implementation data and graphs for the CAR region.

3. SAM REGION

3.1 Activities related to AIDC implementation in the SAM Region are carried out by the ATM/AIDC Subgroup of the Interoperability Task Force (INTEROP TF).

3.2 The Interface Control Document (ICD) adopted as a reference for SAM States is the Pan Regional (NAT and APAC) Interface Control Document for ATS Interfacility Data Communications (PAN AIDC ICD), which can be accessed through the following link:

https://www.icao.int/SAM/Documents/2022-RLA06901-GTINTEROP3/3.%20PAN%20ICD%20NAT-APAC%20v1%200%20-%202014.pdf

3.3 The following SAM States have implemented operational AIDC connections:

Brazil (9 of 25 planned connections)

Center A	Center B
Amazon ACC	Brasilia ACC – 1
	Curitiba ACC – 2
	Recife ACC – 3
	Atlantic ACC – 4
Atlantic ACC	Amazon ACC – (4)
	Curitiba ACC – 5
	Recife ACC – 6
Brasilia ACC	Amazon ACC – (1)
	Curitiba ACC – 7
	Recife ACC – 8
Curitiba ACC	Amazon ACC – (2)
	Atlantic ACC – (5)
	Brasilia ACC – (7)
	Recife ACC – 9
Recife ACC	Amazon ACC– (3)
	Atlántico ACC – (6)

	Brasilia ACC – (8)
	Curitiba ACC – (9)

Chile (2 of 11planned connections)

Center A	Center B
Iquique ACC	Lima ACC – 1
Puerto Montt ACC	Punta Arenas ACC – 2
Punta Arenas ACC	Puerto Montt ACC – (2)

Colombia (4 of 13 planed connections)

Center A	Center B
Barranquilla ACC	Bogotá ACC – 1
	Panamá ACC – 2
ACC Bogotá	Barranquilla ACC – (1)
	Guayaquil ACC – 3
	Lima ACC – 4

Ecuador (3 of 3 planned connections)

Center A	Center B
Guayaquil ACC	Bogotá ACC – 1
	Lima ACC – 2
	CENAMER ACC – 3

Panama (2 of 6 planned connections)

Center A	Center B
Panama ACC	CENAMER ACC – 1
	Barranquilla ACC – 2

Peru (3 of 6 planned connections)

Center A	Center B
Lima ACC	Bogotá ACC – 1
	Iquique ACC – 2
	Guayaquil ACC – 3

3.4 During the pandemic (COVID-19), coordination work for the implementation of AIDC connections was greatly affected. Starting in 2023, an attempt was made to promote the establishment of communications, mainly between adjacent centres that use the same system (same manufacturer).

3.5 In this regard, support has been given to Brazil, Paraguay, and Venezuela with the objective of establishing communication between Amazon (Brazil) ACC – Maiquetía (Venezuela) ACC; as well as between Asunción (Paraguay) ACC – Curitiba (Brazil) ACC.

3.6 Likewise, we sought to advance with the AIDC operational establishment between control centres that use systems manufactured by different companies, such as Barranquilla (Colombia)ACC – ACC Maiquetía (Venezuela), and Lima ACC – Santiago ACC.

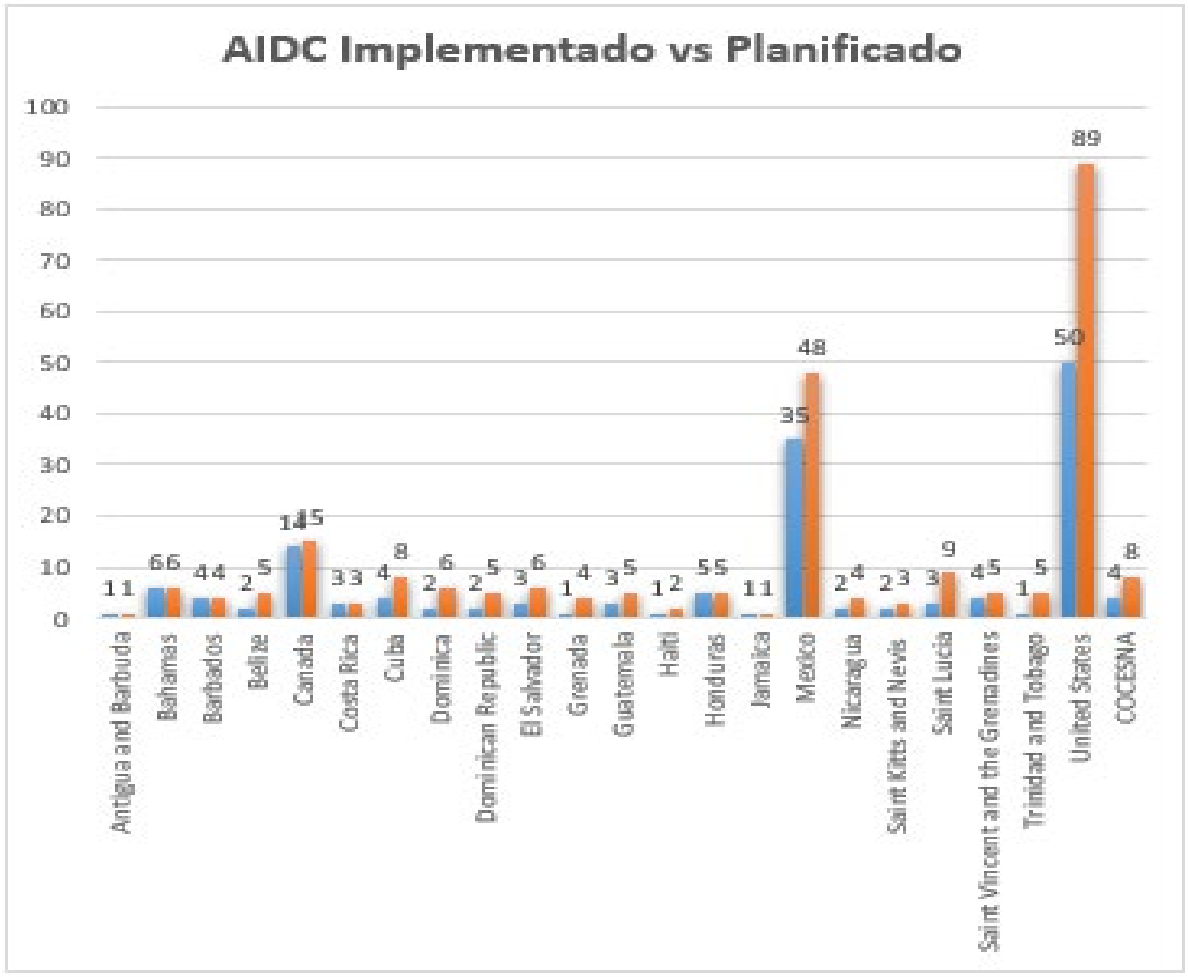
3.7 **Appendix B** presents data on AIDC implementation in the SAM Region.

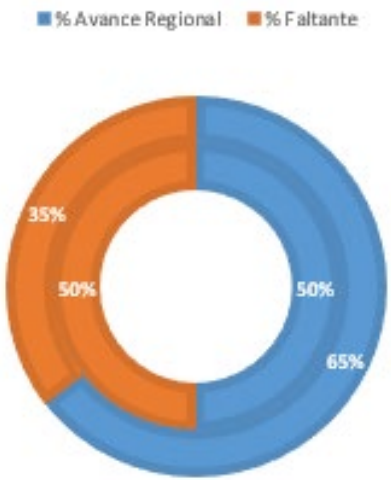
— — — — — — — — — — —

APPENDIX A / APÉNDICE A

IMPLEMENTATION OF AUTOMATED CHANNELS IN THE CAR REGION
IMPLEMENTACIÓN DE CANALES AUTOMATIZADOS EN LA REGIÓN CAR

State/Estado	Acronym	Implementado	Planificado	% Avance	% Avance Regional	% Faltante
Antigua and Barbuda	ATG	1	1	100%	4.35%	0.00%
Bahamas	BHS	6	6	100%	4.35%	0.00%
Barbados	BRB	4	4	100%	4.35%	0.00%
Belize	BLZ	2	5	40%	1.74%	2.61%
Canada	CAN	14	15	93.33%	4.06%	0.29%
Costa Rica	CRI	3	3	100%	4.35%	0.00%
Cuba	CUB	4	8	50%	2.17%	2.17%
Dominica	DMA	2	6	33.33%	1.45%	2.90%
Dominican Republic	DOM	2	5	40%	1.74%	2.61%
El Salvador	SLV	3	6	50%	2.17%	2.17%
Grenada	GRD	1	4	25%	1.09%	3.26%
Guatemala	GTM	3	5	60%	2.61%	1.74%
Haiti	HTI	1	2	50%	2.17%	2.17%
Honduras	HND	5	5	100%	4.35%	0.00%
Jamaica	JAM	1	1	100%	4.35%	0.00%
Mexico	MEX	35	48	72.92%	3.17%	1.18%
Nicaragua	NIC	2	4	50%	2.17%	2.17%
Saint Kitts and Nevis	KNA	2	3	66.67%	2.90%	1.45%
Saint Lucia	LCA	3	9	33.33%	1.45%	2.90%
Saint Vincent and the Grenadin	VCT	4	5	80%	3.48%	0.87%
Trinidad and Tobago	TTO	1	5	20%	0.87%	3.48%
United States	USA	50	89	56.18%	2.44%	1.91%
COCESNA	COCESNA	4	8	50.00%	2.17%	2.17%
Total					61.77%	33.88%


AIDC Implementado vs Planificado
100
90
80
70
60
50
40
30
20
10
0
1 1
6 6
4 4
2 5
14 15
3 3
4 8
2 6
2 5
3 6
1 4
3 5
1 2
5 5
1 1
35 48
2 4
2 3
3 9
4 5
1 5
50 89
4 8
Antigua and Barbuda
Bahamas
Barbados
Belize
Canada
Costa Rica
Cuba
Dominica
Dominican Republic
El Salvador
Grenada
Guatemala
Haiti
Honduras
Jamaica
Mexico
Nicaragua
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Trinidad and Tobago
United States
COCESNA

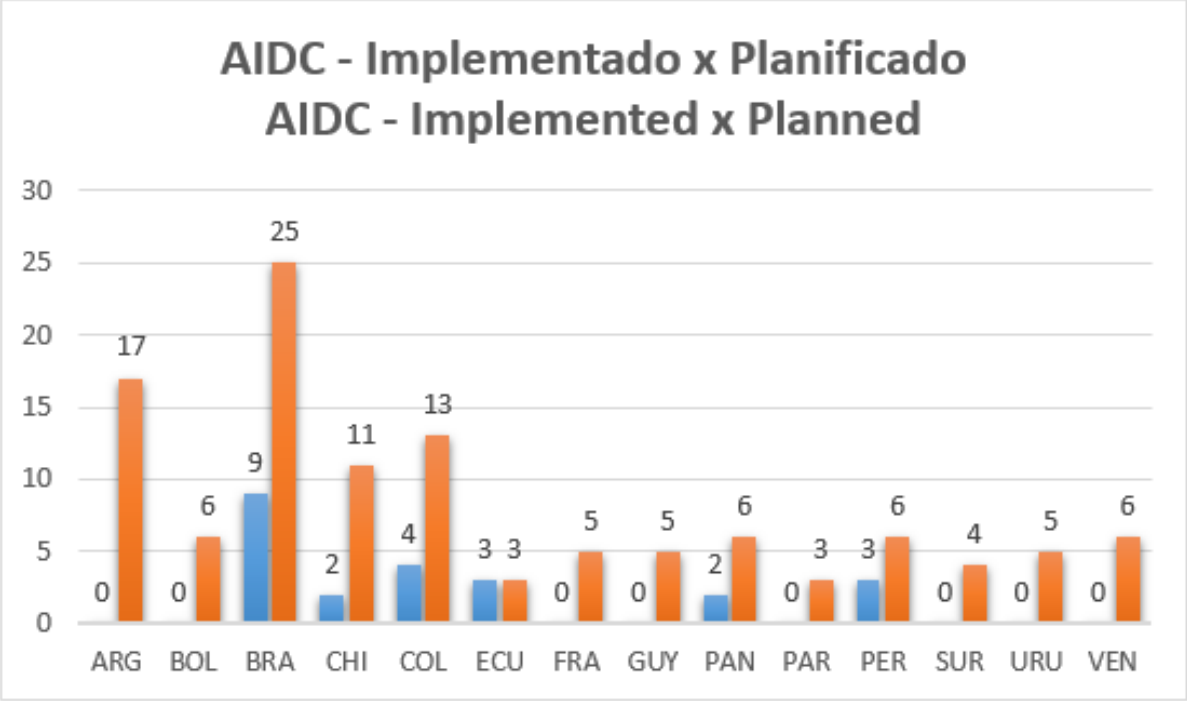

% Avance Regional
% Faltante
35%
50%
50%
65%

— — — — — — — — — — —

APPENDIX B / APÉNDICE B

IMPLEMENTACIÓN AIDC EN LA REGIÓN SAM
SAM REGION AIDC IMPLEMENTATION

Estado	Implementado	Planeado	% Avance	% Avance Regional	Faltante
ARG	0	17	0.00	0.00%	7.14%
BOL	0	6	0.00	0.00%	7.14%
BRA	9	25	36.00	2.57%	4.57%
CHI	2	11	18.18	1.30%	5.84%
COL	4	13	30.77	2.20%	4.94%
ECU	3	3	100.00	7.14%	0.00%
FRA	0	5	0.00	0.00%	7.14%
GUY	0	5	0.00	0.00%	7.14%
PAN	2	6	33.33	2.38%	4.76%
PAR	0	3	0.00	0.00%	7.14%
PER	3	6	50.00	3.57%	3.57%
SUR	0	4	0.00	0.00%	7.14%
URU	0	5	0.00	0.00%	7.14%
VEN	0	6	0.00	0.00%	7.14%
Total				19.16%	80.80%



— END —