International Civil Aviation Organization
South American Regional Office
Twenty Seventh Workshop/Meeting of the SAM Implementation Group SAM (SAM/IG/27) – Regional Project RLA/06/901
(Virtual, 31 May to 03 June 2022)

SAM/IG/27-WP/3.1
05/19/2022

Agenda
Item 3: **Report of activities and deliverables of the Interop TF and Subgroups**

ACTIVITIES EXECUTED BY THE ATM/AIDC SUBGROUP

(Presented by the Secretariat)

SUMMARY

This working paper presents the activities carried out by the ATM/AIDC Subgroup of the Interoperability Task Force (Interop TF), since the last Meeting of the SAM Region Implementation Group (SAM/IG) to date.

References:

- Final Report of SAM/IG/26 Meeting (Virtual, 20 to 23 September 2021); and
- Summary of Discussions of the INTEROP TF/3 Meeting (Virtual, 14 to 17 March 2022).

ICAO Strategic Objectives:	*A – Safety* *B – Air Navigation Capacity y Efficiency* *ASBU: AMET-B0/4 (IWXXM), ASUR-B0/1 (ADS-B), ASUR-B1/1 (SB ADS-B), COMI-B0/7 (AMHS) y FICE-B0/1 (AIDC)*

1. INTRODUCTION

1.1 The SAM Region Implementation Group (SAM/IG) has formed the Interoperability Task Force (Interop TF) to support and promote air navigation services modernization initiatives and ensure interoperability between automated systems used by AIM, ATM, ATFM, CNS and MET users, with a view to:

a) facilitate the exchange of information between the systems implemented by the States, reducing the time and problems of interconnection between the systems;
b) promote a coordinated and homogeneous transition to the new services and elements indicated in the GANP; and
c) encourage the multidisciplinary participation of air navigation services professionals in support of the SAM Region Implementation Group (SAM/IG) for the planning and execution of the interconnection works of the systems implemented in the South American Region.

1.2 The ATM/AIDC Subgroup is dedicated to promoting the implementation of the ATS Interfacility Data Communication (AIDC) between ATS centers, to advance with the automation of the aeronautical context.

2. ANALYSIS

2.1 ATM/AIDC SUBGROUP

2.1.1 During the WG INTEROP/3 Meeting (Virtual, March 14-17, 2022), participants noted that there were no new AIDC connections established in 2021, but it was possible to verify that there was some progress with the identification and solution of several aspects of interoperability between the systems of Brazil, Colombia, Peru and Venezuela.

2.1.2 Currently, the AIDC operational connections are:

Brazil (9 of 25)

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)
	ACC Brasilia – (7)
	ACC Recife – 9
Recife ACC	Amazon ACC – (3)
	Atlantic ACC – (6)
	Brasilia ACC – (8)
	Curitiba ACC – (9)

Chile (2 of 11)

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)

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

Ecuador (3 of 3)

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

Panamá (1 of 6)

Center A	Center B
Panamá ACC	CENAMER ACC – 1

Perú (3 of 6)

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

Situation in the SAM States

Argentina

2.1.3 At the moment, there are no AIDC links implemented and operational on the 17 projected links (6 national, 10 regional, 1 intraregional). As a result of the errors detected in the implementation of the AIDC, it continues to be suspended in the disabled ACCs until the inconveniences can be solved to achieve interconnections with the ACCs, prioritizing interconnection at the national level, and that once the situation is resolved, progress will be made in the international framework.

2.1.4 As a result of the errors detected in the implementation of the AIDC, the AIDC functionality in the area control centers continues to be suspended, until the inconveniences can be solved to achieve interconnections with the adjacent ACCs, prioritizing interconnection at the national level, and that once the situation is resolved, progress will be made in the international framework.

2.1.5 The AMHS system is currently being replaced, with the start of service expected in the first semester of this year. The Air Navigation Services Plan Period 2020-2024 presented by the air navigation service provider (EANA S.E) to the aeronautical authority (ANAC) contemplates the renewal of automated ATM systems.

Bolivia

2.1.6 Bolivia/NAABOL has scheduled the acquisition of a new version of the THALES system for the FIR La Paz (SLLF) in the course of this administrative management (2022). This new version must incorporate what is necessary for the implementation of the AIDC relegating the use of the AFTN, thus initiating the Bolivian State the route to automation harmonized with the Region.

Brazil

Amazon ACC – Lima ACC

2.1.7 Last tests carried out between 28/06 and 29/07/2021. A high rejection of ABI messages sent from ACC-AZ to Lima was observed. 94% of ABI messages generated by ACC-AZ received a logical rejection message (LRM) in response.

2.1.8 The Subdepartment of Operations (SDOP) analyzed the errors pointed out by the LRM produced by the Lima system and found that the content of the indicated FPL fields was not inconsistent. The result of the analysis was presented to those in charge of the Lima center, confirming error in the interpretation of the fields' contents by the Lima system.

2.1.9 In August 2021, Lima reported the problem for the analysis of the system provider, the company Indra. DECEA expects, from this moment, the correction of errors in the Indra system to later schedule new tests between the Manaus and Lima Centers.

Amazon ACC – Maiquetia ACC

2.1.10 Pre-operational tests carried out in the first half of February 2022. The transfers of control made between the two centers were, for the most part, successful.

2.1.11 The Amazon ACC, based on a report generated by SAGITARIO (Brazilian system), is in the process of analyzing the failures that occurred. The generated report will serve as a subsidy for any adjustments in the system configuration, in the operating procedures agreed with Maiquetía and for requests for correction of the software with the provider.

Curitiba ACC – Asuncion ACC

2.1.12 Initiated, by the Subdepartment of Operations of DECEA, the negotiations with the heads of the Asuncion Center, for the elaboration of the Memorandum of Understanding between the two centers, which will contain the parameters and norms for the realization of the pre-operational tests.

Atlantic ACC – Dakar ACC

2.1.13 Between 13 and 15/12/2021, the Atlantic ACC received representatives of the Dakar Center to discuss the implementation of the AIDC with Atlantic ACC. The meeting was also attended by representatives of the Operations and Technical Subdepartments of DECEA.

2.1.14 It was agreed, between the Centers, the preparation of some documents with the parameters and schedule of the tests to be carried out, as well as the future operation of the AIDC connection.

2.1.15 At the beginning of 2022, pre-operational tests began and, in the current phase, the errors obtained by both parties are being evaluated for subsequent correction and configuration adjustments.

Chile

2.1.16 The progress of the contract for the purchase and sale of the AIDC System for the Control Centers of Santiago and Oceánico version 3.0 ASIA/PAC has been reported:

- The implementation is awaiting continuity due to the restrictions decreed by the health authority due to the state of the COVID-19 pandemic;
- Estimation of a possible restart of work from June 2022 on.

Colombia

2.1.17 In Colombia, in the past year, there was not much progress due to some existing pendency on the part of the adjacent international centers. Information on the progress made in the implementation of AIDC is shared in a share point, accessible to all those involved in the issue in Colombia.

2.1.18 In February, pre-operational tests were carried out between Bogota ACC and CENAMER ACC that were successful. At the beginning of March, the operational tests were carried out, CENAMER personnel have requested to carry out the operational tests throughout the month of March, because there are only two flights (in the early morning) making it difficult to carry out the tests. It is being coordinated for the effective execution of these tests and it is estimated that, by the end of April, the connection will be officially operational.

2.1.19 The Barranquilla ACC – Kingston ACC connection is suspended due to administrative issues in Jamaica (version update), which is not allowed to continue with the process.

2.1.20 The Bogotá ACC – Panama ACC AIDC connection is pending an ATM (airspace structure) issue and in the pandemic period there was a reduction in the personnel available to carry out the tests.

2.1.21 The Barranquilla ACC – Maiquetia ACC connection is pending the update of the SAGITARIO system in Venezuela. After this connection is established, we will move to the Bogota ACC – Maiquetia ACC connection, which has a more complex airspace and greater traffic. The strategy is to work first with Barranquilla, to solve the issues of interoperability between the systems, and then move more quickly in the connection with Bogota.

2.1.22 With Brazil and Curaçao there was still no progress, but it is estimated that, with the advance of connections with Venezuela, it will be possible to progress more quickly the connection between Bogota –Amazon ACC once the center of Brazil uses the same system of Venezuela (Atech). The Secretary informed that the connection of the Barraquilla ACC –Curaçao ACC would be pending on the establishment of an AMHS (P1) interconnection between the COM AMHS Center of Caracas and the COM Curaçao Center, which may occur in 2023, if the proposal to install a REDDIG II node (MPLS) in Curaçao is accepted.

2.1.23 Colombia has requested support from the representatives of Ecuador, to share the experience obtained with the internal connections of APP centers with the ACC center. The representative of Ecuador informed that would be pleased to cooperate with this process.

Ecuador

2.1.24 Ecuador has established all the connections of the adjacent international centers and, likewise, two internal connections between APP centers with the ACC Guayaquil.

France (French Guyana)

2.1.25 France said that the Cayenne Center already has the AIDC functionality implemented and the priority is to establish the AIDC connection with Dakar, which uses a circuit of the AFISNET (satellite) network. Until the connection with Dakar is established, it will not be possible to move forward with the other FIRs.

Paraguay

2.1.26 Since September 2021, Paraguay is operating with the new SAGITARIO system as the main means of air traffic management of the Asuncion ACC. Subsequently, in December 2021, a software update was made (version 2.4.3.17), with the technical and operational part complying with the adaptation program for familiarization with the system. It is estimated that from the second semester on, the tests could begin between the Asuncion ACC – Curitiba ACC.

2.1.27 During the INTEROP TF/3 Meeting, the Secretariat encouraged the representatives of Brazil and Paraguay to begin coordination to address administrative aspects (focal points, review of agreements, schedule, etc.), prior to the conduct of the tests.

2.1.28 Another aspect highlighted by the Secretariat, to be considered by the SAM States, mainly among control centers that use the same system, would be the possibility of establishing the AIDC through end-to-end TCP/IP circuits between the systems, using the regional REDDIG II network. AIDC connections via aeronautical messaging (AMHS) would remain redundant.

Peru

2.1.29 In 2021, there was no establishment of new connections, but there were advances in the identification of some interoperability issues in the AIDC connection between Amazon ACC – Lima ACC. It is necessary a small correction in the Indra system of Lima, so as not to occur rejection of some ABI messages of the Amazon ACC, due to the order that comes the letters of the equipment listed in box 10. The situation has already been reported to Indra and the Lima personnel is waiting for a solution.

2.1.30 With regard to the connections of the ACC Lima with the ACC La Paz and ACC Santiago, the indication of Bolivia and Chile to start the process is awaited.

Suriname

2.1.31 The system in Paramaribo is new and has the ability to establish AIDC connections. However, there are still some administrative issues that are preventing progress with the establishment of AIDC connections.

Uruguay

2.1.32 The representative of Uruguay reported that work was being done on the implementation of the AMHS system of the COM Center in Montevideo, and then moving forward with the AIDC connections. By the second half of 2022, the new COM Center in Montevideo will already be fully implemented and it will be possible to begin coordination with Brazil, to establish the AIDC connections of the Montevideo ACC with the Atlantic and Curitiba ACCs.

Venezuela

2.1.33 Venezuela reported that the pandemic has greatly affected aeronautical activities, and with the work to establish AIDC connections, it was no different. However, it was sought to identify the interoperability issues and the delivery of the new version of the SAGITARIO system is awaited, as already indicated by the representative of Atech.

2.1.34 The representative of Atech reported that the corrections identified last year have already been implemented and the new SAGITARIO version will be installed in the ACCs of Brazil, Paraguay and Venezuela. This new version is not possible to be installed remotely, being necessary coordination with the States for the installation, due to the restrictions imposed by the pandemic.

3. SUGGESTED ACTION

3.1 The Meeting is invited to:

a) Take note of the activities carried out in the Subgroup ATM/AIDC; and

b) Analyze other considerations that the Meeting deems pertinent.

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