International Civil Aviation Organization
South American Office
Fifth Meeting of Air Navigation and Flight Safety Directors of the SAM Region (ANFS/5)
(Lima, Peru, 20 to 22 August 2018)

ANFS/5-WP/06
02/07/2018

Agenda Item 1: Follow-up to the implementation of air navigation priorities

FOLLOW-UP TO AIDC INTERCONNECTION

(Presented by the Secretariat)

SUMMARY

This working paper presents updated information on AIDC operation in the SAM Region since the fourth meeting of Air Navigation and Flight Safety Directors of the SAM Region.

References:

- Report of the Twenty-first workshop/meeting of the SAM implementation group (SAM/IG/21) (Lima, Peru, 21-25 May 2018);
- Report of the Meeting on AIDC Implementation in the NAM/CAR/SAM Regions (Lima, Peru, 16-20 April 2018);
- Report of the Third meeting on AIDC implementation (AIDC/3 - Lima, Peru, 24-26 April 2017);
- Report of the Twentieth workshop/meeting of the SAM implementation group (SAM/IG/20) (Lima, Peru, 16-20 October 2017); and
- Summary of the teleconferences to follow-up AIDC implementation (14/12/2017 and 26/01/2018).

ICAO strategic objectives:	*A – Safety* *C – Air navigation capacity and efficiency*

1. Background

1.1 The air traffic control centres of the SAM Region have had difficulties for proper coordination of air traffic, which has been identified as a major contributing factor to air traffic incidents, which could be significantly reduced through the interconnection of automated air traffic control systems.

1.2 In this sense and since 2009, a process was started in the SAM Region for the interconnection of ATM automated systems between adjacent ACCs, whose final objective was to:

- Allow for automatic transfer of flight plans between adjacent ATC centres through AIDC.
- Allow for the exchange of surveillance data (mainly radar) in areas of common interest.

1.3 In order to support the interconnection of automated systems, and with the support of regional projects RLA/98/003 and RLA/06/901, visits were made to SAM States to obtain information on the status of ATM automation in ACCs, and on the surveillance systems and their interfaces. As a result of these visits, the following documents were prepared, which can be found on the following website: https://www.icao.int/SAM/Pages/eDocumentsDisplay.aspx?area=CNS

- Interface Control Document (ICD) for ATS inter-facility data communication in the Caribbean and South American Regions (CAR/SAM AIDC ICD).
- System Interface Control Document (SICD).
- Initial plan for regional interconnection of automated systems in ACCs.
- Preliminary document on automated system requirements (SSS).
- Memorandum of understanding for the implementation of the interconnection of automated systems between two States that have adjacent ACCs.

1.4 Likewise, the Guide for AIDC implementation through the interconnection of automated centres was developed. The updated guide can also be found on the website indicated in paragraph 1.3 of this working paper.

1.5 Likewise, several courses and seminars were conducted. Courses were conducted on the use of ASTERIX protocols to support the implementation of radar data exchange, on-site courses were conducted in Chile, Colombia, Ecuador, Panama, Paraguay and Peru, as well as several surveillance and AIDC seminars.

1.6 In this regard, and as a result of the aforementioned activities, some SAM States prepared and signed memoranda of understanding (MoU) for the interconnection of automated systems. In relation to effective interconnection of automated systems, little progress has been made so far. There is only radar data exchange between Argentina-Uruguay, and radar exchange tests have been conducted between Venezuela-Brazil, Argentina-Chile and Argentina-Paraguay. Regarding the transfer of flight plan data through AIDC, this has been implemented operationally between the Brazilian ACCs, between some Chilean ACCs and pre-operationally in many States of the Region.

2. Discussion

2.1 To monitor AIDC performance, information is provided below on the status in each of SAM States with regard to AIDC implementation between adjacent ACCs, and follow-up to activities for mitigating flight plan errors and duplication/multiplicity:

AIDC implementation between adjacent ACCs in the SAM Region

Argentina

2.2 At national level, the AIDC between the Cordoba ACC and the Ezeiza ACC was in the pre-operational phase since 2015, and the letter of operational agreement between these ACCs had been amended to introduce the operational use of AIDC as primary means. AIDC training for the controllers of the ACCs of Comodoro Rivadavia, Mendoza and Resistencia had been completed in late September 2017.

2.3 AIDC is expected to be operational between all national ACCs by the second semester of 2018. AIDC is expected to be operational with adjacent regional ACCs by 2019.

Bolivia

2.4 ATM system automation is expected to be operational at the main ATS units of Bolivia by 2019. The automated ATM systems to be installed are Thales Topsky. Once automation is operational at ATS units, Bolivia will start coordinating with the ACCs of adjacent States for the conduction of AIDC tests.

Brazil

2.5 During the first quarter of 2018, the SAGITARIO system entered into operation at the Atlantico ACC. Likewise, the AIDC was implemented operationally between the Atlantico ACC and the Recife ACC and between the Atlantico ACC and the Amazonico ACC. Thus, Brazil has AIDC in place and in operation between all its national ACCs. AIDC is only pending implementation between the Atlantico ACC and the Curitiba ACC, which is foreseen for the first semester of 2018.

Chile

2.6 At national level, AIDC connection is operational between the Punta Arenas ACC and the Puerto Montt ACC, and between the Iquique ACC and the Antofagasta APP since mid-2017. Positive AIDC tests have been conducted between the Iquique ACC and the Cordoba ACC, which are expected to become operational during 2018-2019.

Colombia

2.7 AIDC interconnections implemented at national level (Bogota ACC – Barranquilla ACC) and at intra-regional level (Bogota ACC - Guayaquil ACC, Bogota ACC - Lima ACC and Bogota ACC – Panama ACC) are in the pre-operational phase since late 2015. The letters of operational agreement between the aforementioned ACCs were revised to include the use of AIDC as primary means. An amendment to the letter of operational agreement was signed in November 2016 between the Bogota ACC and the Lima ACC. These AIDC connections are scheduled to become operational by mid-2018.

Ecuador

2.8 At national level, AIDC between the Guayaquil ACC and the Quito APP became operational in February 2017, for which an amendment to the letter of operational agreement was signed on 1 February 2017 to introduce AIDC as primary means. Positive AIDC tests were conducted between the Guayaquil ACC and the Manta APP and Shell in late 2017, which are expected to become operational by the end of the first semester of 2018.

2.9 At regional level, the AIDC between the Guayaquil ACC and the Lima ACC and between the Guayaquil ACC and the Bogota ACC are in the pre-operational phase since August 2015. The letters of operational agreement between these ACCs were amended to introduce AIDC as primary means. They are expected to become operational by the end of the first semester of 2018.

2.10 Positive pre-operational tests have been conducted between the Guayaquil ACC and CENAMER during the first quarter of 2017, expecting it to enter the operational phase in 2018.

French Guiana (France)

2.11 The implementation of AIDC with the ACCs of adjacent States is foreseen for the period 2018-2019. In mid-2017, a new ATM automation system, which included AIDC, was installed in the Cayenne ACC.

Guyana

2.12 The implementation of AIDC with the ACCs of adjacent States is scheduled for 2019. To date, Guyana has no AIDC.

Panama

2.13 After Thales updated its software to the TopSky-ATS automated system in July 2017, congestion problems in the flight plan processor of the Panama ACC were solved.

2.14 Panama is migrating to full AMHS connection, since the TopSky-ATC system currently works through the AFTN. Once AMHS trials are completed, pre-operational tests with CENAMER, the Bogota ACC and the Kingston ACC are expected to start. Panama has started discussions with the parties responsible for AIDC in CENAMER, Bogota and Kingston in order to start establishing the respective letters of agreement between adjacent centres, contemplating AIDC as the primary means of flight coordination between adjacent ACCs.

2.15 It is expected that, by the last quarter of 2018, upon completion of the migration from AFTN to AMHS, the AIDC pre-operational phase will be resumed between CENAMER, Bogota and Barranquilla, and the operational phase will start on the second quarter of 2019.

Paraguay

2.16 The updating of the ATM automation system at the Asuncion ACC is still pending. The State is calling for bids for the procurement of a new ATM system. Taking into account the time the process will take, it is estimated that the ATM system will be available by the first quarter of 2019 to resume the tests that had been postponed.

Peru

2.17 The AIDC in the Lima ACC is in the pre-operational phase with the Guayaquil ACC and the Bogota ACC since August 2015. In this regard, the letter of operational agreement has been amended to include AIDC as the primary means of coordination. The upgrading of the automated ATM system of the Lima ACC was completed in late 2017, a process that started in March 2017. With this modernisation, it is expected that by the end of the first semester of 2018, the Lima ACC will have an operational AIDC with the Guayaquil ACC, the Bogota ACC, and the Iquique ACC.

Suriname

2.18 The implementation of AIDC with the ACCs of adjacent States is foreseen for 2019. So far, Suriname has no AIDC.

Uruguay

2.19 The implementation of AIDC with the ACCs of adjacent States is foreseen for the period 2018-2019.

Venezuela

2.20 The implementation of AIDC with the ACCs of adjacent States is foreseen for late 2019. So far, Venezuela has no AIDC. It is noted that the new ATM automation system bought from ATECH of Brazil

(Sagitario system) will become operational by the end of the first quarter of 2019. Once the automated system has been installed and commissioned, Venezuela will start implementation of AIDC interconnection with adjacent States.

Other considerations on the follow-up to the implementation of the AIDC interconnection

2.21 **Appendix A** presents the list of focal points for coordination of AIDC interconnection between adjacent ACCs.

2.22 The Declaration of Bogota contemplated the operational implementation of 15 AIDC interconnections in the period between 2014 and 2016. To date, nine interconnections are operational: eight internally in Brazil, and one in Chile. Between SAM States, there are four AIDC interconnections in the pre-operational phase, which are expected to become operational during the course of 2018.

Follow-up to actions to mitigate flight plan errors and duplication/multiplicity in the SAM Region

2.23 Regarding progress made in actions to mitigate flight plan errors and duplication/multiplicity, the following can be reported:

Follow-up to the implementation of automated systems for FPL 2012

2.24 Regarding progress made in the implementation of automated systems for FPL 2012, Bolivia has started the implementation of an ATM automation project at ATS units in La Paz, Cochabamba, Santa Cruz and Trinidad, called SIDACTA. The automated system to be installed at these ATS units is Thales TopSky-ATC, to be completed in 2019.

2.25 Likewise, the FDPs of the ACCs of Brasilia and Curitiba were already processing FPL 2012 automatically by the end of the first quarter of 2018, thus eliminating the converters in these centres. The remaining ACCs will be upgraded during the second semester of 2018.

2.26 Peru had also completed in late 2017 the upgrading of the automated system of the Lima ACC (INDRA AIRCON 2100), which, *inter alia*, resolved the limitations in the maximum number of characters in Box 10 of FPL 2012.

2.27 Finally, Venezuela informed that they were expecting to have a new automated system at the Maiquetía ACC by the end of the first quarter of 2019, thus eliminating the FPL2012 converter.

2.28 Based on the analysis of the status of implementation of automated systems in the SAM Region to comply with Amendment 1 to Edition 15 of Doc 4444 (FPL2012), progress made so far in the 27 ACCs of the SAM Region is as follows:

FPL 2012 processing capacity of FDPs of automated system	
Native support to FPL 2012 with smart templates for error detection	74%
Use of FPL 2012 converters	15%
Manual solutions	11%
FPL 2012 processing capacity in AMHS/AFTN terminals	
Native support to FPL 2012 with smart templates for error detection	67%
No capacity	33%

Analysis of flight plan errors and duplication in the SAM Region

2.29 Action taken to mitigate flight plan errors and duplication in SAM States is as follows:

Argentina

2.30 Single addresses to receive FPLs at each ACC of Argentina are to be implemented by late 2020, in compliance with Conclusion SAM/IG/19-2 - *Implementation of procedures to mitigate the duplication/multiplicity of scheduled commercial flight plans.*

Bolivia

2.31 At present, flight plans continue to be filed in physical format (paper). There are plans to implement a system for filing flight plans on-line, via Internet, and through a mobile application in cellular phones.

Brazil

2.32 By the end of 2018, all flight plans will be centralised at the CGNA (Air navigation management centre) through the SIGMA system (Integrated aircraft movement management system).

Chile

2.33 Chile has been in contact with the airlines in order to minimise errors in the generation of flight plans. The internal addressing structure is being reviewed to avoid flight plan multiplicity, and a study has been started for the creation of a national centre to receive flight plans.

Colombia

2.34 Meetings were held with aircraft operators (Avianca, LATAM, Spirit, Viva Colombia, Iberia) in October 2017 regarding procedures for filing flight plans at the international AIS offices rather than directly to the ACCs, in order to avoid flight plan duplication.

Ecuador

2.35 On 22 February 2018, a meeting was held with airline representatives to inform them of the forthcoming adoption of a single national address for receiving flight plans, which will become operational in August 2018.

Panama

2.36 Panama has completed the upgrading of the ATM automation system at the Panama ACC, and in the process of updating the ATC system database.

Paraguay

2.37 Duplicated flight plans continue to be received. Operational training on duplicated flight plans has been provided to the personnel in charge of repairing FPLs. Conversations have been held with some airline dispatchers operating in Paraguay regarding the delivery of duplicated FPLs, especially for flights leaving the airports of the country, where only those issued by the ARO offices were considered as

valid, and they informed that this issue would be reported to their base office. To date, duplicated FPLs continue to be received. Likewise, there are some cases of missing FPLs, especially for overflights.

Peru

2.38 Regarding procedures to mitigate the duplication/multiplicity of scheduled commercial flight plans in SAM States, Peru has already implemented them since late July 2017. In this regard, it has issued aeronautical information circular AIC/05/2017.

2.39 On 14 December 2017 at 15:00 hours, the Aeronautical Information Office received the representatives of JetBue, and the first letter of agreement was signed to transmit flight plans via AMHS at the single address SPIMZPZX, starting on 16 December 2017. So far, 7 letters of agreement had been signed with various airlines. Five additional letters of agreement were to be signed by June 2018 (Copa, AeroMéxico, United, American and Delta).

Venezuela

2.40 Venezuela has implemented, on a pre-operational basis, an IDS centralised automated system for handling flight plans that reduces filing errors. This system has been installed at the ARO office in Maiquetía. Compliance with Conclusion SAMIG/19-2 is expected by the first quarter of 2019.

Other States

2.41 Guyana, French Guiana, Suriname and Uruguay show no progress in the implementation of Conclusion SAMIG/19-2.

3 Suggested action

3.1 The Meeting is invited to:

a) take note of the information contained in this working paper;

b) analyse AIDC performance, the progress made in AIDC interconnection between adjacent ACCs in the SAM Region, the updating of focal points for AIDC interconnection coordination, as well as the action taken to mitigate the flight plan errors and duplication in the SAM Region described in Section 2 and in Appendix A; and

c) discuss any other matter it may deem appropriate.

- END -

APPENDIX A / APÉNDICE A

NATIONAL FOCAL POINTS IN SAM REGION / PUNTOS FOCALES NACIONALES EN REGIÓN SAM

IMPLEMENTATION OF INTERCONNECTION OF AUTOMATED SYSTEMS / IMPLANTACIÓN INTERCONEXIÓN SISTEMAS AUTOMATIZADOS

STATE/ ESTADO	ADMINISTRATION ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL/CORREO-E
ARGENTINA	EANA	Javier Schenk	Gerente CNS EANA	Cel (54911) 5848 6936	Jschenk@eana.com.ar
		Osvaldo Oscar Godoy	Jefe ANS Subregional Ezeiza	(5411) 4480 2309 Cel (54911) 2883 6444	ogodoy@eana.com.ar
		Daniel Coria	Coordinador Nacional sistema automatizados	Cel (54911) 3594 2686	dcoria@eana.com.ar
		Mario Correa	Jefe sistemas automatizados ATS	(5411) 4320 3955 Cel (54911) 5460 9199	mccorrea@eana.com.ar
	ANAC	Diego Agüero	Técnico automatización	(5411) 5941 3000 Ext.69-128 Cel (54911) 2258 7836	daguero@anac.gob.ar
BOLIVIA	DGAC	Jaime Yuri Álvarez Miranda	Jefe Unidad CNS	(5912) 2444450 Ext. 2651	jalvarez@dgac.gob.bo
BRAZIL/ BRASIL	DECEA	Luiz Antonio dos Santos	Asesor ATM	(5521) 2101 6088	luizantoniolas@decea.gov.br
		Murilo Loureiro	Asesor sistemas automatizados	(5521) 2101 6658	loureiromal@decea.gov.br
		Rochelly de Miranda Correa -	Especialista ATC – Subdepartamento de operações (SDOP)	(5521) 21016197	rochellyrmc@decea.gov.br

STATE/ ESTADO	ADMINISTRATION ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL/CORREO-E
COLOMBIA	UAEAC	Harlen Mejía	Jefe de Aeronavegación		harlen.mejia@aerocivil.gov.co
		Mauricio Ferrer	Especialista ATM sistemas automatizados		mauricio.ferrer@aerocivil.gov.co
		Pedro Alejandro Velasco	Jefe Grupo de Vigilancia Aeronáutica	(57) 31 7656 7203	pedro.velasco@aerocivil.gov.co
CHILE	DGAC	Pedro Pastrian	Especialista radar y sistemas automatizados	(562)2 836 4005 (56) 981571040	ppastrian@dgac.gob.cl
		Christian Vergara	Especialista comunicaciones	(562) 2836-4005 (56) 998886452	cvergara@dgac.gob.cl
		Gustavo Cáceres Moraga	Controlador Tránsito Aéreo Ofc. Operaciones ACCS	(56) 991581853 (562) 28364018	gcaceres@dgac.gob.cl
ECUADOR	DAC	Juan Poalasín	Controlador ACC Guayaquil Radar	(593) 2947400 ext 2130 (593) 998318034	juan.poalasin@aviacioncivil.gob.ec
		Jorge Zúñiga	Programación FDP y coordinaciones	(593) 2947400 ext 4520 +593 993067547	jorge.zuniga@aviacioncivil.gob.ec
		Eugenio Espinoza	Controlador ACC Guayaquil Radar	(593) 981269823	eugenio.espinoza@aviacioncivil.gob.ec
		Boris Argudo	Analista AIS	(593) 2947400 ext 2130	boris.argudo@aviacioncivil.gob.ec
GUYANA					
GUYANA FRANCESA / FRENCH GUIANA	Service de la Navigation Aérienne aux Antilles-Guyane (SNA-AG)	Michel Areno	Head French Guiana ACC	(594) 6944 55617	michel.areno@aviation-civile.gouv.fr

STATE/ ESTADO	ADMINISTRATION ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL/CORREO-E
PANAMA	Autoridad Aeronáutica Civil (AAC)	Mario Antonio Facey Howard	Especialista radar y sistemas automatizados	(507) 315 9852/65	mfacey@aeronautica.gob.pa
		Bernabé Rodríguez Martínez	Controlador de tránsito aéreo de Aérea Radar	(507) 315 9850/52 / 66610967	bernaber@aeronautica.gob.pa
		Euclides De La Cruz	Supervisor del Departamento de Vigilancia	(507) 315 9845	ecruz@aeronautica.gob.pa
		Moisés Mela	Controlador de tránsito aéreo Panama ACC	(507) 315 9850/52 (507) 662 94270	mmela@aeronautica.gob.pa
		Bernabé Rodríguez	Controlador de tránsito aéreo Panamá ACC	(507) 315 9850/52 (507) 666 10967	bernaber@aeronautica.gob.pa
		Arístides Villarreal	Gerente de estación de servicio de vuelo Tocumen	(507) 238 2603 (507) 621 81043	avillarreal@aeronautica.gob.pa
PARAGUAY	DINAC	Digno Nelson Cardozo González	Técnico Especialista en Radar y Sistemas Automatizados	(595) 217585016 Cel (595) 961779106	nechicar@gmail.com
		Diego Ramón Aldana Fernández	Supervisor ACC/APP	(595)21 752719 (59) 596169 2104	diegoaldana@gmail.com

STATE/ ESTADO	ADMINISTRATION ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL/CORREO-E
PERU/ PERÚ	CORPAC	Johnny Ávila	Jefe Área de sistemas de vigilancia aérea	(511) 230-1000 Ext.1267	javila@corpac.gob.pe
		Jorge Eduardo Merino Rodríguez	Especialista ATM Controlador de tránsito aéreo	(51 1) 230-1000 Ext 1158 (511) 5750886 (Centro de Control Lima) (511) 5750995 Cel (51) 99737407	jmerino@corpac.gob.pe jemr69@yahoo.com
		Jaime Arturo Contreras Benito	Coordinador operativo del Centro de Control	(511) 630 1154 Cel (51) 948 463 081	jcontreras@corpac.gob.pe
		Raul Anastacio Granda	Supervisor Comunicaciones AMHS-AFTN Área de Comunicaciones Fijas Aeronáuticas	(511) 230-1018	ranastacio@corpac.gob.pe
		Mario Matos Rivera	Especialista CNS	(511) 2301000 Ext.1211	mmatos@corpac.gob.pe
	DGAC	Sady Beaumont Valdez	Inspector de navegación aérea	(511) 6157880	sbeaumont@mtc.gob.pe
		Giuliano Guzman Vera	Inspector de navegación aérea	511 6157880	gguzman@mtc.gob.pe
		Sara Siles La Rosa	Inspector de navegación aérea	(511) 230 1168 / (511) 230 1169 Cel (51) 978 598 481	ssiles@mtc.gob.pe
SURINAM					
URUGUAY	DINACIA	Antonio Lupacchino	Especialista CNS sistemas automatizados	(598) 2604-0408 Ext.4520	alupacch@yahoo.com.ar
		Gustavo Turcatti	Jefe Departamento Operativo de Tránsito Aéreo	(598) 2604-0408 Ext.5111	blantur@gmail.com

STATE/ ESTADO	ADMINISTRATION ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL/CORREO-E
VENEZUELA	INAC	Jean Carlos Lozano Garcia	Controlador tránsito aéreo ACC Maiquetía	(58 416) 7226428	jclozgar@hotmail.com
		Wilfredo Omar Gil Sánchez..	CTA JEFE II	(58 414) 3475804	w.gil@inac.gob.ve, willjet66@gmail.com

----