AN & FS/3-WP/06
01/08/16

International Civil Aviation Organization
South American Regional Office
Third Meeting of Air Navigation and Safety Directors of the SAM Region
(Lima, Peru, 22 to 24 August 2016)

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

FOLLOW-UP TO THE IMPLEMENTATION OF AIDC INTERCONNECTION

(Presented by the Secretariat)

SUMMARY

This working paper presents the progress made in the implementation of AIDC interconnections in the SAM Region since the Fourteenth Meeting of Civil Aviation Authorities (RAAC/14).

References

- Second meeting of Air Navigation and Safety Directors - Lima, Peru, 14-16 September 2015
- Fourteenth meeting of Air Navigation Authorities (RAAC/14) – Santiago, Chile, 27, 28, and 30 October 2015
- Sixteenth workshop/meeting of the SAM Implementation Group (SAM/IG/16) - Lima, Peru, 19-23 October 2015
- First meeting for the implementation of AIDC (ATS interfacility data communication) in the SAM Region (Lima, Peru, 28-30 March 2016)
- Seventeenth workshop/meeting of the SAM Implementation Group (SAM/IG/17) - Lima, Peru, 9-13 May 2016
- Fourth meeting of the GREPECAS Programmes and Projects Review Committee (PPRC/3) - Lima, Peru, 12-14 July 2016
- Summary of AIDC teleconferences (January to July 2016)

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

1. Introduction

1.1 AIDC implementation and operation between adjacent ACCs has shown the following advantages and benefits from the point of view of safety and efficiency of air navigation:

- it significantly reduces the need for verbal coordination between ATS units;
- it reduces controller workload;
- it reduces read-back/hear-back errors during coordination;
- it reduces “controller-to-controller” coordination loop errors and language barrier issues;

- it mitigates LHDs, preventing mid-air collisions; and
- it supports performance-based air navigation initiatives and emerging automation technologies.

1.2 The interconnection of automated systems (ATS interfacility data communication - AIDC) is one of the air navigation priorities contemplated in the Declaration of Bogota. The goal in terms of the interconnection of automated systems is to have 15 interconnections implemented by the end of 2016.

2 Discussion

2.1 The following activities have been carried out since the RAAC/14 meeting to support AIDC implementation in SAM States:

- CAR/SAM seminar/workshop on the implementation of advanced surveillance and automation systems (Panama City, Panama, 22-25 September 2015).
- First meeting for the implementation of AIDC (ATS interfacility data communication) in the SAM Region (Lima, Peru, 28-30 March 2016).
- Monthly teleconferences with focal points between January and July 2016.

2.2 The list of SAM focal points for the coordination of AIDC implementation is shown in **Appendix A** to this working paper.

2.3 The first AIDC implementation meeting reviewed the *Guide for AIDC implementation through the interconnection of adjacent automated centres in the SAM Region,* including the following documents:

- Model procedure for conducting AIDC tests, prepared by Argentina with the support of Brazil and Panama
- Standard document on AIDC operation, prepared by Peru
- Updating of Chapter II *Technical aspects for AIDC implementation between adjacent automated systems* by Argentina

2.4 Regarding AIDC implementation activities carried out since the RAAC/14 meeting, worth mentioning are the operational AIDC between the Lima ACC and the Guayaquil ACC on 21 March 2016, the introduction of the required amendments to the letter of operational agreement between the two ACCs, and its respective signing.

2.5 The AIDC interconnections between the ACCs of Lima and Bogota, Guayaquil and Bogota, Bogota and Panama, and Ezeiza and Cordoba are in the pre-operational phase, and expected to become operational in the course of this year. The letters of operational agreement between the ACCs where AIDC is in the operational phase have been amended as appropriate, pending the signing thereof.

2.6 Successful AIDC tests have been conducted between the Lima ACC and the Iquique ACC, the Cordoba ACC and the Iquique ACC, and the Amazonico ACC and the Lima ACC. Likewise, Brazil reported that, taking into account the recent implementation of new automated systems at the Curitiba, Recife, Manaus, and Brasilia ACCs, AIDC implementation would be carried out according to the following schedule:

Curitiba – Recife	July 2016
Recife – Brasilia	June 2016
Curitiba – Brasilia	July 2016
Curitiba – Amazonica	July 2016
Amazonica – Brasilia	June 2016
Amazonica – Recife	2 May 2016 (implemented)

2.7 Accordingly, regarding AIDC interconnections in both the operational and pre-operational phase, a total of 6 interconnections have been implemented to date, accounting for 40% of all (15) AIDC implementations foreseen in the Declaration of Bogota. **Appendix B** to this working paper contains a table describing the status of implementation of AIDC interconnections in the SAM Region. The table also shows AIDC implementations for the period 2017-2019.

3 Suggested action

3.1 The Meeting is invited to:

a) take note of the information presented in this paper; and

b) analyse and comment on the activities for the implementation of AIDC interconnections mentioned in section 2 of this working paper and its respective appendices, and report on plans for attaining the AIDC implementation goal of the Declaration of Bogota.

- END -

APPENDIX A

NATIONAL FOCAL POINTS/PUNTOS FOCALES NACIONALES
IMPLEMENTATION OF INTERCONNECTION OF AUTOMATED SYSTEMS/IMPLANTACIÓN INTERCONEXIÓN SISTEMAS AUTOMATIZADOS

STATE/ ESTADO	ADMINISTRATION/ ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL
ARGENTINA	DGCTA	Rubén Silva	Especialista ATM sistemas automatizados		rubengsilva@hotmail.com
		Mario Correa	Jefe sistemas automatizados ATS	(54 11) 4317-6015	mario_correa@yahoo.com.ar
		Javier Vittor	Especialista CNS	(54 11) 4480-2362 (54 911) 6894-0692	javiervittor@gmail.com
	ANAC	Diego Agüero	Técnico automatización	(54911) 2258-7836 (5411) 5941-3000 Ext.69-128	daguero@anac.gob.ar
BOLIVIA					
BRAZIL/ BRASIL	DECEA	Alexander Santoro	Especialista CNS	(55 21) -2101-6620	santoroaas@decea.gov.br
		Murilo Loureiro	Asesor sistemas automatizados	55 (21) 2101-6658	murilo.loureiro@gmail.com
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) 317656-7203	pedro.velasco@aerocivil.gov.co
CHILE	DGAC	Pedro Pastrian	Especialista radar y sistemas automatizados	(56 2) 836-4005 (56 2) 644-8345	ppastrian@dgac.gob.cl
		Christian Vergara	Especialista comunicaciones	(56 2) 836-4005 (56 2) 644-8345	cvergara@dgac.gob.cl

STATE/ ESTADO	ADMINISTRATION/ ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL
		Gustavo Cáceres Moraga	Controlador Tránsito Aéreo Ofc. Operaciones ACCS	(56 2) 91581853 (56 2) 28364018	gcaceres@dgac.gob.cl
ECUADOR	DAC	Raul Avellan	Especialista CNS coordinador sistema AMHS	(593 4) 269-2829 (593 9) 9530-2735	raul.avellan@aviacioncivil.gob.ec
		Jorge Zúñiga	Programación FDP y coordinaciones		jorzu40@hotmail.com
GUYANA					
GUYANA FR./ FRENCH GUIANA	Service de la Navigation Aérienne aux Antilles-Guyane (SNA-AG)	Michel Areno	Head French Guiana ACC	(594) 694455617	michel.areno@aviation-civile.gouv.fr
PANAMA	Autoridad Aeronáutica Civil (AAC)	Mario Antonio Facey Howard	Especialista radar y sistemas automatizados	(507) 315-9852/65	mfacey@aeronautica.gob.pa
PARAGUAY	DINAC	David Torres	Jefe de Sección, Encargado del Sistema ATM ARCON210	(595) 9812-31575	dr.torres33@gmail.com
		Diego Ramón Aldana Fernández	Supervisor ACC/APP	(595) 21 645-707	diegoaldana@gmail.com
PERÚ	CORPAC	Johnny Ávila	Jefe equipos centro de control	(511) 230-1000 Anexo: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 Mobile: 51 99737407	jmerino@corpac.gob.pe jemr69@yahoo.com
		Gino Lago	Especialista ATM Controlador de Tránsito Aéreo	(51 1) 414-1000	glago@corpac.gob.pe

STATE/ ESTADO	ADMINISTRATION/ ADMINISTRACIÓN	NAME/ NOMBRE	POST/ CARGO	TELEPHONE/ TELEFONO	E-MAIL
		Raul Anastasio Granda	Supervisor Comunicaciones AMHS-AFTN Área de Comunicaciones Fijas Aeronáuticas	(511) 230-1018	ranastacio@corpac.gob.pe
SURINAM/ SURINAME					
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
VENEZUELA	INAC	Alfredo A. Dávila Alfonzo	Coordinador Área de Trabajo ATS	(58 212) 2774-439	a.davila@inac.gob.ve
		Francisco Antonio Ortiz	Gestión Operacional ATM		f.ortiz@inac.gob.ve

APPENDIX B

(AIDC) GROUND-GROUND DATA INTERCONNECTION LEVEL REQUIREMENTS IN THE SAM REGION

ARGENTINA						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels *				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
CORDOBA (AUT. INDRA AIRCON2100) (2007)	IQUIQUE	XI			X	Positive AIDC trials - March 2016 As a result of the trials, the transmission speed has to be incremented from 2400 to 9600 bit/seg AIDC foreseen to be operational on second half of 2016
	LA PAZ	XI			X	AIDC foreseen for period 2017-2019
	EZEIZA	XI			XI	AIDC in pre-operational phase since December 2015. Operational phase foreseen by second half of 2016
	MENDOZA	XI			X	AIDC pre-operational by the end of 2016
	RESISTENCIA	XI			X	AIDC pre-operational by the end of 2016
RESISTENCIA (AUT. INDRA AIRCON2100) (June 2016)	ASUNCION	XI			X	Positive AIDC trials were conducted in 2015 between Ezeiza and Asunción. Trials between Resistencia and Asunción will be conducted on mid-2016 AIDC foreseen to be operational on second half of 2016
	CORDOBA	XI			X	AIDC pre-operational by the end of 2016
	CURITIBA	XI			X	AIDC foreseen for second half of 2016
	EZEIZA	XI			X	AIDC pre-operational by the end of 2016
	MONTEVIDEO	XI			X	AIDC foreseen for second half of 2016
EZEIZA (AUT. INDRA AIRCON2100) (2007)	COMODORO RIVADAVIA	XI			X	AIDC pre-operational by the end of 2016
	MENDOZA	XI			X	AIDC pre-operational by the end of 2016
	PUERTO MONTT	XI			X	AIDC by end 2016

	CORDOBA	XI			XI	AIDC in pre-operational phase since December 2015. Operational phase foreseen by second half of 2016
	RESISTENCIA	XI			X	AIDC pre-operational by the end of 2016
	JOHANNESBURG	XI			X	AIDC TBD
	MONTEVIDEO	XI			X	AIDC foreseen for second half of 2016
MENDOZA (AUT INDRA AIRCON2100) (June 2016)	EZEIZA	XI			X	AIDC pre-operational by the end of 2016
	SANTIAGO	XI			X	AIDC foreseen for period 2017-2019
	CORDOBA	XI			X	AIDC pre-operational by the end of 2016
COMODORO RIVADAVIA (AUT INDRA AIRCON2100) (June 2016)	EZEIZA	XI			X	AIDC pre-operational by the end of 2016
	PUNTA ARENAS	XI			X	AIDC by the end of 2016
	PUERTO MONTT	XI			X	AIDC by the end of 2016

BRAZIL						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
AMAZÓNICO (MANAUS) AUTO. SAGITARIO ATECH	BRASILIA	XI			X	AIDC foreseen by second half of 2016
	BOGOTÁ	XI			X	AIDC foreseen for first semester 2019
	CAYENNE	XI			X	AIDC foreseen for period 2017-2019
	GEORGETOWN	XI			X	AIDC foreseen for period 2017-2019
	LA PAZ	XI			X	AIDC foreseen for period 2017-2019
	LIMA	XI			X	Positive trials have been conducted in March 2016 AIDC foreseen for second half of 2016
	MAIQUETIA	XI	X		X	AIDC foreseen for period 2017-2019
	PARAMARIBO	XI			X	AIDC foreseen for period 2017-2019
	RECIFE	XI			X	AIDC implemented since 2 May 2016
	CAYENNE	XI			X	AIDC foreseen for period 2017-2019
	ATLÂNTICO	XI			X	AIDC TBD

BRASILIA AUTO. SAGITARIO ATECH	AMAZÔNICO	XI			X	AIDC June 2016
	CURITIBA	XI			X	AIDC July 2016
	RECIFE	XI			X	AIDC June 2016
CURITIBA AUTO. SAGITARIO ATECH	ASUNCION	XI			X	AIDC foreseen for second half of 2016
	BRASÍLIA	XI			X	AIDC June 2016
	LA PAZ	XI			X	AIDC foreseen for period 2017-2019
	MONTEVIDEO	XI			X	AIDC foreseen for second half of 2016
	RESISTÊNCIA	XI			X	AIDC foreseen for second half of 2016
	ATLÂNTICO	XI			X	AIDC TBD
RECIFE AUTO. SAGITARIO ATECH	AMAZÔNICO	XI			X	AIDC Implemented on 2 May 2016
	BRASÍLIA	XI			X	AIDC June 2016
	ATLÂNTICO	XI			X	AIDC TBD
ATLÁNTICO AUTO. SAGITARIO ATECH	AMAZÔNICO	XI			X	AIDC TBD
	BRASÍLIA	XI			X	AIDC TBD
	CURITIBA	XI			X	AIDC TBD
	DAKAR	XI			X	AIDC TBD
	JOHANNESBURG	XI			X	AIDC TBD
	LUANDA	XI			X	AIDC TBD
	MONTEVIDEO	XI			X	AIDC foreseen for period 2017-2019
	RECIFE	XI			X	AIDC TBD
	CAYENNE	XI			X	AIDC foreseen for period 2017-2019

BOLIVIA						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
LA PAZ (MANUAL)	AMAZÔNICO	XI			X	AIDC foreseen for period 2017-2019
	ASUNCION	XI			X	AIDC foreseen for period 2017-2019
	CURITIBA	XI			X	AIDC foreseen for period 2017-2019
	CORDOBA	XI			X	AIDC foreseen for period 2017-2019
	LIMA	XI			X	AIDC foreseen for period 2017-2019
	IQUIQUE	XI			X	AIDC foreseen for period 2017-2019

CHILE						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
SANTIAGO (AUTO THALES TOPSKY)	IQUIQUE	XI			X	AIDC foreseen for period 2017-2019
	LIMA	XI			X	AIDC foreseen for period 2017-2019
	MENDOZA	XI			X	AIDC foreseen for period 2017-2019
	PUERTO MONTT	XI			X	AIDC foreseen for period 2017-2019
IQUIQUE (AUTO INDRA AIRCON 2100)	CORDOBA	XI			X	Positive AIDC trials - March 2016 AIDC foreseen to be operational on second half of 2016
	LA PAZ	XI			X	AIDC foreseen for period 2017-2019
	LIMA	XI			X	Positive AIDC trials conducted in February 2016 AIDC foreseen to be operational on second half of 2016
PUERTO MONTT (INDRA AUTOMATED)	SANTIAGO	XI			X	AIDC foreseen for period 2017-2019
	PUNTA ARENAS	XI			X	AIDC by the end of 2016
	EZEIZA	XI			X	AIDC by the end of 2016
	COMODORO RIVADAVIA	XI			X	AIDC by the end of 2016
PUNTA ARENAS (MANUAL)	PUERTO MONTT	XI			X	AIDC by the end of 2016
	COMODORO RIVADAVIA	XI			X	AIDC by the end of 2016

COLOMBIA						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
BOGOTÁ (AUTO INDRA AIRCON 2100)	AMAZÔNICO	XI			X	AIDC foreseen to be operational on second half of 2016
	CENAMER	XI			X	AIDC foreseen for period 2017-2019
	GUAYAQUIL	XI			XI	Positive AIDC trials conducted AIDC in pre-operational phase (August 2015)
	LIMA	XI			XI	Positive AIDC trials conducted AIDC operational since 30 May 2016 according to letter of operational agreement (August 2015)
	MAIQUETIA	XI			X	AIDC foreseen for period 2017-2019
	PANAMA	XI			X	Positive AIDC trials conducted AIDC foreseen to be operational by second half of 2016
	BARRANQUILLA	XI			XI	AIDC pre-operational (March 2016)
BARRANQUILLA (AUTO INDRA AIRCON 2100)	MAIQUETIA	XI			X	AIDC foreseen for period 2017-2019
	PANAMA	XI			X	Positive AIDC trials conducted AIDC foreseen to be operational by mid 2016
	BOGOTA	XI			XI	AIDC pre-operational (March 2016)
	KINGSTON	XI			X	AIDC TBD
	CURAÇAO	XI			X	AIDC TBD

ECUADOR						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
GUAYAQUIL AUTO INDRA AIRCON 2100	BOGOTA	XI			XI	Positive AIDC trials conducted AIDC pre-operational (August 2015)
	LIMA				XI	AIDC operational implementation (31 March 2016)
	CENAMER	XI			X	Positive AIDC trials conducted AIDC foreseen for period 2017-2019

FRENCH GUIANA						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
CAYENNE AUTO ADACEL AIDC not installed	AMAZÔNICO	XI			X	AIDC foreseen by first semester 2017
	PARAMARIBO	XI			X	AIDC foreseen for period 2017-2019
	PIARCO	XI			X	AIDC foreseen for period 2017-2019
	DAKAR	XI			X	AIDC foreseen by end 2016
	ATLANTICO	XI			X	AIDC foreseen by first semester 2017

GUYANA						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
GEORGETOWN AUTO INTELCAN AIDC not installed	AMAZONICO	XI			X	AIDC foreseen for period 2017-2019
	PIARCO	XI			X	AIDC foreseen for period 2017-2019
	MAIQUETIA	XI			X	AIDC foreseen for period 2017-2019
	PARAMARIBO	XI			X	AIDC foreseen for period 2017-2019
PANAMA						

ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
PANAMA (AUTO THALES)	BOGOTA	XI			X	Positive AIDC trials conducted AIDC foreseen to be operational by mid 2016
	BARRANQUILLA	XI			X	Positive AIDC trials conducted AIDC foreseen to be operational by mid 2016
	CENAMER	XI			X	Positive AIDC trials conducted AIDC foreseen to be operational by the end of second half of 2016

PARAGUAY						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
ASUNCION AUTO AIRCON 2100 INDRA	CURITIBA	XI			X	AIDC foreseen by second half of 2016
	LA PAZ	XI			X	AIDC foreseen for period 2017-2019
	RESISTÊNCIA	XI			X	Positive AIDC trials conducted in 2015 between Ezeiza and Asunción. Trials between Resistencia and Asunción will be conducted on mid 2016 AIDC foreseen to be operational on second half of 2016

PERU						
ACC	ACC ADJ	Flight plan Interconnection levels				Comments
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
LIMA AUTO AIRCON 2100 INDRA	AMAZONICO	XI			X	Positive trials conducted in March 2016 AIDC foreseen to be operational on second half of 2016
	BOGOTA	XI			XI	Positive AIDC trials conducted AIDC pre-operational phase (August 2015) 30 May
	SANTIAGO	XI			X	AIDC foreseen for period 2017-2019
	IQUIQUE	XI			X	Positive AIDC trials conducted in February 2016 AIDC foreseen to be operational on second half of 2016
	GUAYAQUIL	XI			XI	AIDC operational (31 March 2016)
	LA PAZ	XI			X	AIDC foreseen for period 2017-2019

SURINAME						
ACC	ACC ADJ	Flight plan Interconnection levels				Comments
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
PARAMARIBO (AUTO INTELCAN) AIDC not installed	AMAZÓNICO	XI			X	AIDC foreseen for period 2017-2019
	GEORGETOWN	XI			X	AIDC foreseen for period 2017-2019
	PIARCO	XI			X	AIDC foreseen for period 2017-2019
	CAYENNE	XI			X	AIDC foreseen for period 2017-2019

URUGUAY						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
MONTEVIDEO (AUTO INDRA AIRCON2100)	CURITIBA	XI			X	AIDC foreseen by second half of 2016
	EZEIZA	XI			X	AIDC foreseen by second half of 2016
	RESISTENCIA	XI			X	AIDC foreseen by second half of 2016
	ATLANTICO	XI			X	AIDC foreseen for period 2017-2019
	JOHANNESBURG	X			X	AIDC TBD

VENEZUELA						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
MAIQUETIA (AUTO ATECH X4000) AIDC not installed	AMAZONICO	XI	XI		X	AIDC foreseen for period 2017-2019
	BOGOTA	XI			X	AIDC foreseen for period 2017-2019
	BARRANQUILLA	XI			X	AIDC foreseen for period 2017-2019
	PIARCO	XI			X	AIDC TBD
	CAYENNE	XI			X	AIDC foreseen for period 2017-2019
	CURAZAO	XI			X	AIDC TBD
	SAN JUAN	XI			X	AIDC TBD

*** X PLANNED**
***XI IMPLEMENTED AND IN PRE-OPERATIONAL OR OPERATIONAL PHASE**