



**Agenda Item 3:            Communications, navigation and surveillance (CNS) (By CNS Working Group)**

**AIDC implementation in the SAM Region**  
 (Presented by the Secretariat)

<b>EXECUTIVE SUMMARY</b>	
This Working Paper presents information about AIDC implementation in the SAM Region and AIDC requirements between SAM and AFI region.	
<b>Action:</b>	Suggested Action is presented in Section 3.
<i>Strategic Objectives:</i>	Safety Air Navigation Capacity and Efficiency
<i>References:</i>	Document 8733 eANP Volume II (December 2015) Thirteenth meeting of Civil Aviation Authorities of the SAM Region (RAAC/13 Bogotá Colombia 4 -6 December 2013 First meeting of AIDC implementation (Lima Peru 28-30 March 2016) Seventeenth workshop/meeting of the SAM implementation group (SAMIG/17 Lima Peru 9 to 13 May 2016)

**1.                            Introduction**

1.1                        The interconnection of automated systems between adjacent ACCs is aimed at reducing the risk of aeronautical incidents generated by coordination activities between area control centres, while improving planning phases for an efficient control of flights to/from the corresponding flight information regions (FIRs).

1.2                        The implementation of AIDC (exchange of data communications between ATS facilities) between adjacent ACCs offers benefits such as a significant reduction of controller workload, reduced voice coordination, reduced controllers' coordination errors, reduced language barriers, and mitigation of LHDs, thus avoiding possible mid air collisions.

1.3                        In this moment in the SAM Region practically all the States counts in their ACC AIDC application , in this respect the expected goal is the implementation of AIDC interconnection through AFTN/AMHS circuits using the REDDIG II network.

1.4                        The thirteenth meeting of Civil Aviation Authorities of the SAM Region held in Bogota, Colombia, from 4 to 6 December 2013, convened for the period 2014-2016 the priority implementation of 10 area of Air Navigation which include the AIDC interconnection establishing in this respect the Bogotá Declaration .

**2                            Analysis**

2.1                        Taking into account the high incidence of coordination errors between ACCs on the

Pacific coast in the SAM Region, and taking into account that the implementation of AIDC message exchange between these centres would mitigate coordination errors, the SAM/IG (SAM implementation group) assigned the highest priority to AIDC implementation between the ACCs of Santiago-Lima, Lima-Guayaquil, Guayaquil-Bogota, Bogota-Lima, and Bogota-Panama.

2.2 In this regard, thanks to the support of SAM Regional project RLA/06/901 *Assistance in the implementation of a ATM regional system according to the ATM operational concept and the corresponding technological support for communications, navigation, and surveillance (CNS)* , a guideline implementation document for AIDC interconnection implementation , practical AIDC training in Chile, Ecuador, Panama Peru and Uruguay and AIDC interconnection trails were made.

2.3 As a result of the implementation of the AIDC activities above mentioned in this moment the SAM Region counts operational AIDC Furthermore, because of the positive results obtained in AIDC trials between the ACCs of Chile, Colombia, Ecuador , Panamá and Peru we have in an operational phase the AIDC between Peru and Ecuador (31 March 2016) and in pre operational phase the AIDC between Peru Colombia , Colombia Ecuador and Panamá Colombia since June 2015

2.4 For the AIDC operation the SAM Region considered a set minima of AIDC messages (11) , the list of messages are described in the in the *Guidance for AIDC implementation through the interconnection of automated centres in the Region* (<http://www.icao.int/SAM/eDocuments/AIDCv7TechnicalAspects%20rev2015.pdf>).

2.5 Brazil completed the implementation of the new automation system in all their ACCs (ATECH Sagitario) All these automation system implemented have the AIDC capacity. The implementation of AIDC interconnection between the Brazilian ACC and the main Regional ACC of SAM Region is expected to be in operation by the end of 2016 in order to comply with Bogota Declaration

2.6 The complete requirement of AIDC and their status of implementation at regional and interregional level is presented in the **Appendix** of this working paper . Between SAM and AFI Region the following AIDC requirement are considered :

- ACC Ezeiza ACC Johannesburg
- ACC Atlantico ACC Dakar
- ACC Atlantico ACC Luanda
- ACC Atlántico ACC Johannesburg
- ACC Cayenne ACC Dakar
- ACC Montevideo ACC Johannesburg

2.7 On this respect the meeting is invited to initiated a study the possible AIDC interconnection between SAM and AFI Region .

### **3. Action required**

3.1 The meeting is invited to take note of the information supplied , consider the experience of SAM Region in the implementation of AIDC and analyze the possibility to initiate the study of AIDC interconnection between SAM and AFI Region

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## APPENDIX

## (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 in mid 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 in 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)	COMODORO RIVADAVIA	XI			X	AIDC pre-operational by the end of 2016
	MENDOZA	XI			X	AIDC pre-operational by the

(2007)						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 for mid 2016
	RESISTENCIA	XI			X	AIDC pre-operational by the end of 2016
	<b>JOHANNESBURG</b>	<b>XI</b>			<b>X</b>	<b>AIDC TBD</b>
	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
	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
ATLÂNTICO 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
<b>CHILE</b>						
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 mid 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
<b>PANAMA</b>						
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

<b>PARAGUAY</b>						
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
	RESISTÈNCIA	XI			X	Positive AIDC trials conducted in 2015 between Ezeiza and Asunción. Trials between Resistencia and Asunción will be conducted in mid 2016  AIDC foreseen to be operational on second half of 2016

PERU						
ACC	ACC ADJ	Flight plan				Comments
		Interconnection levels				
		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				Comments
		Interconnection levels				
		1 4444 Manual	2 4444 Auto	3 (OLDI)	4 (AIDC)	
PARAMARIBO (AUTO INTELCAN)  AIDC installed  not	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