



International Civil Aviation Organization
South American Regional Office - Regional Project RLA/06/901
Support for the Implementation of a Regional ATM System Considering the ATM operational concept and the corresponding CNS Support Technology
First Meeting on AIDC implementation
(Lima, Peru, 28 to 30 March 2016)

Agenda Item 4: Review to the action plan for AIDC interconnection in the SAM Region

**PLAN OF ACTIVITES FOR THE AIDC INTERCONNECTION BETWEEN ADJACENT ACCs
IN THE SAM REGION**

(Working Paper presented by the Secretariat)

SUMMARY	
This working paper presents the updated plan of activities for the implementation of the AIDC interconnection between adjacent ACCs in the SAM Region.	
REFERENCES:	
<ul style="list-style-type: none">• Report of the Fourteenth workshop/meeting of the SAM Implementation Group (SAM/IG/14) (Lima, Peru, 10-14 November 2014).• Report of the Fifteenth workshop/meeting of the SAM Implementation Group (SAM/IG/15) (Lima, Peru, 11-15 May 2015).• Report of the Sixteenth workshop/meeting of the SAM Implementation Group (SAM/IG/16) (Lima, Peru, 19-23 October 2015).• Report of the Eight Coordination Committee Meeting of RLA/06/901 Project (RCC/8 Lima, Peru, 25 - 27 February 2015).• Report of the Ninth Coordination Committee Meeting of RLA/06/901 Project (RCC/9 Lima, Peru, 1 - 3 December 2015).	
ICAO strategic objectives:	<i>A – Safety</i> <i>C – Environmental protection and sustainable development of air transport</i>

1 Background

1.1 Taking into consideration the goals of the Declaration of Bogota regarding the implementation of the AIDC interconnection between adjacent AACs in the SAM Region, the SAM/IG/14 meeting analysed the 2015 plan of activities for the AIDC interconnection, proposed for its subsequent approval by the Eight Coordination Committee Meeting of RLA/06/901 Project (RCC/8), as well as the use of experts with experience in installation, operation and programming of AIDC databases, to support the technical completion of the exchange of AIDC messages between Santiago-Lima, Guayaquil-Lima, Bogota-Guayaquil, and the carry out of AIDC courses in those States. On this respect, the following conclusion was formulated: SAM/IG/14-16 - *Approval of the 2015 Plan of Activities for AIDC implementation.*

1.2 The Eight Coordination Committee Meeting of RLA/06/901 Project (RCC/8) analysed the Conclusion SAM/IG/14-16 - *Approval of the 2015 Plan of Activities for AIDC implementation, and approved it.*

1.3 In this sense, with the support of RLA/06/901 project, on 2015 the activities for the implementation of the AIDC began, (6 April-1 May) which consisted in the delivery of practical courses for air traffic controllers for the AIDC operation and programming of data bases of the automated systems ATS for the AIDC and the implementation of the interconnection between the following ACC AIDC began in this sense thanks to the support of project RLA/06/901 in 2015:

- Bogotá Lima
- Bogotá Guayaquil
- Guayaquil Lima
- Lima Santiago

1.4 At the same time the RCC/8 approve that the SAM/IG/15 and SAM/IG/16 implementation meetings take as a matter of priority the implementation of the AIDC interconnection assigning one of the two fellowships of each RLA/06/901 member States, to a technical or operational specialist from the ATM automation area. Further information on the activities carried out is presented in WP/04.

2 Analysis

2.1 The SAM/IG16 Meeting considered that during 2016 two meetings of AIDC implementation should be made aimed at operational staff experts in automation systems or focal points of the AIDC and thus, comply with the implantation of the AIDC interconnection stipulated in the Declaration of Bogota.

2.2 Meetings of the Group of experts AIDC in the SAM/IG meetings has failed to achieve its objective, given that few States have designated focal points of the AIDC or experts in automation systems, to attend the SAM/IG/15 and SAM/IG/16 meetings (especially in the last one), despite clear indications in the convening letters, of AIDC priority and to consider of one of the two fellowships to staff with experience in automation systems.

2.3 In view of this, the SAM/IG/16 meeting deemed convenient for 2016, two AIDC implementation meetings. The first meeting to be carry out from 28 to 30 March 2016 and the second from 26 to 28 September 2016, both in Lima, Peru. To ensure the participation of experts from the area in these events, it will be requested for the next meeting of coordination of project RLA/06/901 the RCC/9 the granting of a fellowship by the State.

2.4 Likewise, the SAM/IG/16 considered two practical courses on AIDC to be delivered in Asuncion, Paraguay and Curitiba Brazil on June 2016. The RCC/9 approved all the activities for the AIDC implementation for year 2016.

2.5 The SAM/IG/16 Meeting concurred with the AIDC implementation activities for the period 2017-2019 approved by the Second Meeting of the Air Navigation and Safety Directors, where by the end of 2019 all interconnections should be completed, if States that have not installed the AIDC yet, proceed accordingly. Up to date, Bolivia, Guyana, French Guiana, Suriname and Venezuela have no AIDC installed in their ACCs.

2.6 The AIDC interconnection implementation between adjacent ACC is considered in the ASB BO-FICE module Increased interoperability, efficiency and capacity through ground-ground integration, and the number of AIDC interconnections esteemed by the period 2017-2019 will be 12 intraregional (2 foreseen for 2014-2016) and 9 interregional distributed as follows: Colombia (3), Ecuador (1), Panama (1) and Venezuela (4). The distribution for the period 2017 - 2019 is presented as **Appendix A** to this working paper.

2.7 Taking into account the activities developed the activities planned and approved for 2016 and those foreseen for 2017-2019, the Secretariat updated the plan of activities for the implementation of the AIDC interconnection and is presented as **Appendix B**.

3 Suggested actions

3.1 The meeting is invited to:

- a) Note the information presented;
- b) analyse the content of Section 2 and Appendixes A and B, as well as approve the plan of activities for the implementation of the AIDC between adjacent AAC shown in Appendix B; and
- c) other considerations in this respect that the Meeting might deem necessary.

APPENDIX A

ACTIVITIES OF MODULE ASBU B0-FICE 2017-2019

(AIDC)

<i>B0 – FICE: Increased interoperability, efficiency and capacity through ground-ground integration</i>						
ELEMENTS	SCOPE	INDICATORS / METRICS	GOALS: %/ Date			STATUS
			2017	2018	2019	
AMHS implementation/ interconnection	All States	Indicator: % of AMHS systems interconnected Support metrics: Number of AMHS systems interconnected 13 AMHS systems interconnected by the end of 2019	5	5	3	26 AMHS interconnections will be implemented by the end of 2016
Implementation of AIDC interconnections between adjacent ACCs	All States	Indicator: % of interconnections implemented between adjacent ACCs Support metrics: Number of AIDC interconnections implemented between adjacent ACCs Implementation of 21AIDCs by the end of 2019	8	7	6	13 of the 15 AIDC interconnections foreseen, will be implemented by the end of 2016
Implementation of domestic IP networks	All States	Indicator: % of States that have implemented domestic IP networks Support metrics: Number of domestic IP networks implemented 7 States implemented by the end of 2019	3	2	2	

APPENDIX B

PLAN OF ACTIVITIES FOR THE IMPLEMENTATION OF THE AIDC INTERCONNECTION BETWEEN ADJACENTS ACCs

	Start	End	Responsible party	Status
1. Establishment of initial activities for completing the technical implementation of AIDC	10/10/2014	16/10/2014	ICAO	Completed
<p>1.1 Based on the results of AIDC tests conducted from February 2014 to June 2014, the technical documentation of the automated systems installed in the Region, and the SAM AIDC implementation guide, develop:</p> <p>1.1.1 Plan of activities to complete technical feasibility tests for AIDC interconnection between:</p> <p style="padding-left: 40px;">Santiago ACC - Lima ACC Guayaquil ACC - Lima ACC Bogota ACC - Guayaquil ACC</p> <p>1.1.2 Contents of AIDC course for ATS controllers and programmers of AIDC automated system databases, to be conducted in Chile, Colombia, Ecuador and Peru.</p>	10/10	16/10	ICAO	<p>The initial plan of activities for AIDC implementation is scheduled for 2015. The plan of activities contemplates the conduction of AIDC courses for air traffic controllers working at ACCs and the operational implementation of AIDC between adjacent ACCs.</p> <p>These activities will be conducted in Chile, Colombia, Ecuador and Peru.</p> <p>Interconnection tests between the Lima and Bogota ACCs were added to the list shown in paragraph 1.1.1.</p>
2. Review of activities at the SAM/IG/14 meeting	09/10	13/11	ICAO and SAM/IG	Completed
2.1 Submission of the plan of activities and contents of the AIDC course at the SAM/IG/14 meeting	09/10	13/11	ICAO	
2.2 Review and approval for submission at the Eighth Coordination Meeting of Project RLA/06/901	09/10	13/11	SAM/IG	

	Start	End	Responsible party	Status
3. Approval of activities by the RCC/8 meeting	25/02/15	27/02/15	RLA/06/901 member States	Completed
3.1 Submission of activities, with their respective cost, for approval.	25/02/15	27/02/15	RLA/06/901 member States	The RCC/8 meeting held in Lima on 25-27 February 2015 approved the activities for initial implementation of AIDC interconnection in Chile, Colombia, Ecuador and Peru.
4. Search and selection of experts	24/11/14	28/01/15	ICAO	Completed
4.1 Search and selection of 4 experts from SAM States participating in Project RLA/06/901, with experience in the installation, operation and programming of AIDC databases, to perform the activities listed in item 1.	24/11/14	28/01/15	ICAO	For the performance of the initial activities, three SAM experts with experience in database programming and operation of ACC automated systems were selected: Rubén Silva of Argentina, Mauricio Ferrer of Colombia, and Jorge Merino of Peru.
5. Missions to complete AIDC interconnection between States that started tests during the first semester of 2014	06/04/15	01/05/15	3 automation experts ICAO	Completed
5.1 Mission to Santiago de Chile	13/04/15	17/04/15	3 automation experts ICAO	Missions were conducted for training purposes and to complete tests for AIDC interconnection and operation Chile 6/4 to 10/4 2015 Peru 13/4 to 17/4 2015 Ecuador 20/4 to 24/4 2015 Colombia 27/4 to 1/5/2015 Completed Implementation of AIDC activities at the Santiago ACC

	Start	End	Responsible party	Status
				<ul style="list-style-type: none"> • AIDC practical course • AIDC interconnection tests between: <i>Santiago ACC and Lima ACC</i>
5.1.1 Complete AIDC technical implementation between the Santiago and Lima ACCs	13/04/15	17/04/15	3 automation experts ICAO	<p>Two-way communication was established in the AIDC interconnection tests between the Thales Topssky system of the Santiago ACC and the INDRA Aircon 2100 of the Lima ACC. For the operational interconnection, certain actions need to be taken as listed in Appendix B to this working paper.</p> <p>The practical course on AIDC and database programming was conducted, providing training to 16 controllers of the Santiago ACC and 2 aeronautical technicians.</p>
5.1.2 Conduct AIDC course for ATS personnel of the Santiago ACC	13/04/15	17/04/15		
5.2 Mission to Lima:	13/04/15	17/04/15	3 automation experts	<p>Completed</p> <p>Implementation of AIDC activities in the Lima ACC</p> <ul style="list-style-type: none"> • AIDC practical course • AIDC interconnection tests between: <p><i>Lima ACC - Santiago ACC</i> <i>Lima ACC - Guayaquil ACC</i> <i>Lima ACC - Bogota ACC</i></p>

	Start	End	Responsible party	Status
5.2.1 Conduct AIDC course for ATS personnel of the Lima ACC	13/04/15	17/04/15	3 Automation experts ICAO	The practical course on AIDC and database programming was conducted, providing training to 44 controllers of the Lima ACC.
5.2.2 Complete AIDC tests between the Lima ACC and the Guayaquil ACC	13/04/15	17/04/15		AIDC tests between the Lima and Guayaquil ACCs were successfully conducted.
5.2.3 Complete AIDC tests between the Lima ACC and the Bogota ACC	13/04/15	17/04/15		AIDC tests between the Lima and Bogota ACCs were successfully conducted.
5.3 Mission to Guayaquil	20/04/15	24/04/15	3 Automation experts of the SAM Region	Completed Implementation of AIDC activities at the Guayaquil ACC <ul style="list-style-type: none"> • Practical course on AIDC • AIDC interconnection tests and pre-operational implementation: Guayaquil ACC - Lima ACC Guayaquil ACC- Bogota ACC
5.3.1 Complete AIDC technical implementation between the Guayaquil ACC and the Lima ACC	20/04/15	24/04/15	3 automation experts of the SAM Region	AIDC technical interconnection was completed, currently in the pre-operational phase.
5.3.2 Complete AIDC technical implementation between the Guayaquil ACC and the Bogota ACC	20/04/15	24/04/15		AIDC technical interconnection was completed, currently in the pre-operational phase
5.3.2 Conduct AIDC course for ATS personnel of the Guayaquil ACC	20/04/15	24/04/15		The practical course on AIDC and database programming was conducted, providing training to 31 controllers of the

	Start	End	Responsible party	Status
				Guayaquil ACC.
5.4 <i>Mission to Bogota</i>	27/04/15	01/05/15	3 automation experts	Completed Implementation of AIDC activities in the Bogota ACC <ul style="list-style-type: none"> • Practical course on AIDC • AIDC interconnection tests and pre-operational implementation: <i>Guayaquil ACC - Lima ACC</i> <i>Guayaquil ACC - Bogota ACC</i>
5.4.1 Complete AIDC technical implementation between the Bogota ACC and the Guayaquil ACC	27/04/15	01/05/15	3 automation experts of the SAM Region	The AIDC technical interconnection was completed, currently in pre-operational phase
5.4.2 Complete AIDC technical implementation between the Bogota ACC and the Lima ACC	27/04/15	01/05/15		The AIDC technical interconnection was completed, currently in pre-operational phase
6. First meeting of the AIDC operational implementation working group during the SAMIG/15 meeting	11/05/15	15/05/15	RLA/06/90 member States	In progress As a result of AIDC technical implementation, the SAM/IG/15 established a group of activities to migrate from the pre-operational phase to the operational between the ACC Bogota, Guayaquil and Lima.
6.1 It is proposed that, as a matter of priority, the SAM/IG/15 meeting do the follow-up of AIDC implementation. Accordingly, the AIDC operational implementation working group will hold its first meeting.	11/05/15	15/05/15	RLA/06/901 member States	Additionally the AIDC messages to be used were defined.

	Start	End	Responsible party	Status
7. AIDC operational implementation	18/05/15	31/12/15	Involved States	
7.1 Definition of the parameters of the AIDC database for the to AID operational interconnection between Colombia, Ecuador and Peru	25/05/15	29/05/15	Involved States	Completed.
7.2 Amend letter of operational agreement to include the AIDC for the coordination between the ACC Lima with AAC Bogota, ACC Bogota with ACC Guayaquil and ACC Lima with ACC Guayaquil	15/06/15	31/03/16	Involved States	Valid. Only letter of operational agreement between the ACC Guayaquil and ACC Lima was amendent and signed. (October 2015). Pending final review and sign letter of operational agreement between ACC Lima and ACC Bogota, ACC Bogota and ACC Guayaquil.
7.3 Teleconferences to coordinate and follow-up the migration from the AIDC pre-operational phase to the operational for Colombia, Ecuador and Peru	June 2014	Monthly Tele-conferences at the beginning of each month until end 2016	Involved States ICAO	Valid. Teleconferences are been carried out on monthly basis since June 2014. On 2016 teleconferences were conducted on: 19 January 19 February 18 March
7.4 Complete courses for the ACC Lima and Guayaquil, Bogotá ATS staff as well as staff ARO/AIS	18/05/15	29/02/16	Involved States	Completed.
7.5 Preoperational and operational Implementation of AIDC Guayaquil ACC - Lima ACC Bogota ACC - Guayaquil ACC	18/05/15	31/07/16	States involved	Valid. Letter of operational agreement with corrections on AIDC between ACC Colombia, Ecuador, Panama

	Start	End	Responsible party	Status
<p>Lima ACC - Bogota ACC</p> <p>Lima ACC – Santiago ACC*</p>				<p>and Peru were amended (October 2015).</p> <p>Letter of operational agreement between AAC Lima and Guayaquil with the inclusion of AIDC was signed on 23 October 2015.</p> <p>Establishing of a pre-operational period completing the ATS staff training.</p> <p>Operational implementation. AIDC between ACC Lima - ACC Guayaquil in operational phase from August 3, 2015.</p> <p>The AIDC between the ACC Bogota and the ACC Lima and ACC Guayaquil is in pre-operational phase since May, 2015.</p> <p>* The AIDC operational implementation between the ACC Lima and ACC Santiago has postponed in view of the delay in the modernization of the ACC Santiago automated Center (2017).</p>

	Start	End	Responsible party	Status
8. Other AIDC implementations Bogota ACC - Panama ACC Ezeiza ACC - Montevideo ACC Resistencia ACC - Asunción ACC Curitiba ACC – Resistencia ACC Iquique ACC – Lima ACC Cordoba ACC – Iquique ACC Amazonico ACC – Bogota ACC Amazonico ACC – Lima ACC	18/05/15	31/12/16	States involved	
8.1 Definition of parameters of the AIDC database for the operational interconnection of the AIDC		29/07/16	States involved	Valid During AIDC/1 Meeting. (March 2016)
8.2 Amendment of letter of operational agreement to include the AIDC for coordination between ACCs.		31/10/16	States involved	Valid
8.3 Carry out teleconferences for coordination and follow-up to the migration from the AIDC pre-operational to operational fase		Monthly tele-conferences at the begining of each month until the end of 2016	States involved ICAO	Valid Teleconferences conducted 19 January 19 February 18 March
8.4 Practical courses addressed to the ATS AIS CNS personnel of the ACC involved, interconnection AIDC		30/11/16	States involved OACI	Valid AIDC Course (Panamá 22 -26 June) 2015 AIDC Course (Paraguay 6-10 June 2016).

	Start	End	Responsible party	Status
				AIDC Course (Curitiba 13 - 18 June 2016).
8.5 Conduction of AIDC interconnection test between adjacents ACCs		30/11/16	States involved	<p>Valid Successful AIDC interconnection tests between Bogota and Panama. (June 2015).</p> <p>AIDC tests Iquique ACC and Lima ACC were successfully conducted on December 2015.</p> <p>AIDC tests Iquique ACC and Cordoba ACC were made in February 2016 with positive results but the ABI message.</p> <p>AIDC test Brazil Peru had problems in ABI message.</p> <p>Tests Ezeiza ACC and Montevideo ACC (May 2016).</p> <p>Tests Asuncion ACC and Resistencia ACC (June 2016).</p> <p>Tests Curitiba ACC and Resistencia ACC (July 2016).</p> <p>Remaining test between adjacent ACCs (August 2016).</p>

	Start	End	Responsible party	Status
<p>8.6 Implantation of pre-operational and operational AIDC</p>		<p>31/12/16</p>	<p>States involved</p>	<p>Valid</p> <p>AIDC between Bogota ACC and Panama ACC is in pre-operational phase since October 2015. Operational phase foreseen by the second-half of 2016.</p> <p>AIDC between Ezeiza ACC and Montevideo ACC in pre-operational phase on June 2016. Operational phase foreseen by the third trimester of 2016.</p> <p>AIDC between Asuncion ACC and Resistencia ACC in pre-operational phase on July 2016. Operational phase foreseen by September 2016.</p> <p>AIDC between ACC Iquique and ACC Lima will be in pre-operational phase on June 2016 and operational on September 2016.</p> <p>Remaining interconnections Pre-operational: September 2016 operational: December 2016.</p>

	Start	End	Responsible party	Status
9. Workshop on implementation of ATM automation, ADS B, and multilateration	22/09/15	25/09/15	ICAO	Concluded NAN/CAR/SAM workshop held in Panama (22-25 September 2015). The implementation of inter-regional AIDC interconnections was analysed at the workshop.
10. Second meeting of the AIDC operational implementation working group during SAMIG/16	19/10/15	23/10/15	ICAO	Concluded
10.1 It is proposed, as a matter of priority, the SAM/IG/16 meeting do the follow-up of AIDC implementation. Accordingly, the second meeting of the AIDC operational implementation working group will be held.	19/10/15	23/10/15	ICAO	Concluded Follow-up was made on the operational implementation and programming of activities for operational implementation in 2016.
11. AIDC Implementation meetings	01/01/2017	31/12/2019	Involved States ICAO	Valid
11.1 Implementation of 12 AIDC interconnections at interregional level and 9 interconnections distributed as follows: Colombia (3), Ecuador (1), Panama (1) and Venezuela (4).	01/01/2017	31/12/2019	Involved States ICAO	Valid
12. Monitoring to the AIDC interconnection implementation	2015	2019	ICAO	
12.1 AIDC Implementation Meeting ✓ First AIDC Implementation Meeting ✓ Second AIDC Implementation Meeting	March 2016	September 2016	ICAO	Valid AIDC/1 (Lima, Peru, 28-30 March) AIDC/2 (Lima, Peru, 21-23 September)