



Agenda Item 4: Assessment of operational requirements to determine the implementation of improvements in communications, navigation and surveillance (CNS) capabilities for operations in route and terminal area

Follow-up to the Implementation of Project Activities under the Ground-Ground and Ground-Air Applications for SAM Region

(Presented by the Secretariat)

SUMMARY	
This working paper presents updated information on the status of implementation of the activities under Project <i>Ground-ground and air-ground ATN applications (D2)</i> of the Programme <i>Ground-ground/air-ground communication infrastructure</i> for the SAM Region.	
REFERENCE:	
Final Report of the Fourteenth Workshop/Meeting of the SAM Implementation Group (SAM/IG/14) Lima, Peru, 10 to 14 November 2014.	
<i>ICAO strategic objectives:</i>	<i>A – Safety</i> <i>B – Air navigation capacity and efficiency</i>

1 Introduction

1.1 The SAM/IG/14 Meeting analyzed activities corresponding to the project D2, and in this regard took note on the progress made on the implementation of AMHS, AIDC interconnections and ground-air data links.

1.2 With respect to the AMHS interconnection, the SAM/IG/14 Meeting was informed that in addition to the active interconnections (Peru - Colombia, Peru - Ecuador, Argentina - Paraguay and Guyana - Suriname), the greatest progress occurred in positive trials between *Brazil - Spain: Brazil - Peru: and Brazil - Argentina.*

1.3 The SAM/IG/14 Meeting considered the need to complete the trials for the AMHS interconnection between *Peru – Argentina* and *Brazil – Paraguay*; using the list of procedures used in AMHS trials made between Brazil and Spain, formulating in this respect Conclusion SAM/IG/14-13 *AMHS interconnection trials procedures.*

1.4 With reference to the progress in the implementation of the AIDC, the SAM/IG/14 Meeting was informed on the successful operational trials between Argentina-Paraguay (March 2014) through their AMHS development systems and with partially successful results of AIDC trials between Argentina–Chile, Chile-Peru, Colombia-Ecuador, Colombia-Panamá, Colombia-Peru and Ecuador-Peru (February– October 2014).

1.5 With concern to the activities regarding ground-air links, the SAM/IG/14 Meeting revised and approved the timetable of activities for the implementation of the ground-air data links aligned with the Performance Based Implementation Regional Plan (PBIP).

2 Analysis

2.1 From the SAM/IG/14 to date, the AMHS interconnections planned for late 2014, Brazil-Peru, Brazil-Argentina, Argentina-Peru and Brazil-Paraguay have failed to complete due to the works for the implementation of the new digital network REDDIG II.

2.2 The works for the implementation of the REDDIG II required from all member States to make the necessary local arrangements during the last quarter of 2014, as well as provide support during the installation period from January 2015 to mid-February 2015. Once the REDDIG II started its operation, the existing AMHS circuits presented problems which were resolved by the contractor after a period of nearly a month.

2.3 Thus the schedule of implementation of the AMHS interconnections was delayed. **Appendix A** to this working paper presents the new implementation timetable proposed. The Meeting is reminded of the commitment assumed by the States to meet the implementation of the AMHS interconnections by 2016 through the Declaration of Bogota.

2.4 With reference to the implementation of the AMHS circuit between Brazil and Spain through the CAFSAT network, Brazil is expected to inform the Meeting on the progress made in this regard. The Meeting is advised that at the beginning of March 2015, Chile signed a Memorandum of Understanding (MoU) for the interconnection of AMHS systems between Chile and Peru. In this sense those States are urged to comply with the implementation activities covered by the MoU.

2.5 Progress made in the implementation of the AIDC is detailed in WP/14 of this Meeting.

2.6 With regard to the implementation activities described in the timetable of activities for the ground-air data link presented as Appendix F to Agenda Item 6 of SAM/IG/14, the Meeting is invited to updating it.

2.7 Description of Project D2 with delivery dates updated is presented as **Appendix B** to this working paper.

3 Suggested action

The Meeting is invited to:

- a) Take note of the information contained in this working paper;
- b) review the aspects contained in section 2 of this working paper and suggest actions to fulfil the activities proposed in the section; and
- c) discuss any other related matter it may deem appropriate.

APPENDIX A

AMHS INTERCONNECTION REQUIREMENT AND DATE OF IMPLEMENTATION

STATE	AMHS INTERCONNECTION REQUIREMENT/	DATE OF IMPLEMENTATION/	REMARKS
Argentina	Bolivia	Mar 2016	
	Brazil	Dec 2015	Operational implementation pending.
	Chile	TBD	Reported by Chile delegate during SAM/IG/13 Meeting. It will be implemented under the considerations of the Declaration of Bogota (Dec 2016).
	Paraguay	Mar 2012	Implemented
	Peru	Jul 2015	
	Uruguay	Dec 2015	
Bolivia	Argentina	Mar 2016	
	Brazil	Apr 2016	
	Peru	May 2016	
Brazil	Argentina	Dec 2015	Operational implementation pending
	Bolivia	Apr 2016	
	Colombia	Dec 2015	
	Guyana	Mar 2016	
	French Guiana	TBD	AMHS implementation pending.
	Paraguay	Dec 2015	
	Peru	Jul 2015	
	Suriname	Mar 2016	
	Uruguay	Dic 2015	
Venezuela	Dic 2015	Reschedule date of implementation	
Chile	Argentina	TBD	Reported by Chile delegate during SAM/IG/13 Meeting. It will be implemented under the considerations of the Declaration of Bogota (Dec 2016).
	Peru	TBD	Reported by Chile delegate during SAM/IG/13 Meeting. It will be implemented under the considerations of the Declaration of Bogota (Dec 2016).
Colombia	Brazil	Dec 2015	
	Ecuador	Dic 2015	
	Panama	Dic 2015	
	Peru	Sep 2010	Implemented

STATE	AMHS INTERCONNECTION REQUIREMENT/	DATE OF IMPLEMENTATION/	REMARKS
	Venezuela	Jun 2016	
Ecuador	Colombia	Dec 2015	
	Peru	Jul 2012	Implemented
	Venezuela	May 2016	
French Guiana (France)	Brazil	TBD	AMHS implementation pending
	Venezuela	TBD	AMHS implementation pending
Guyana	Brazil	Mar 2016	
	Suriname	Jun 2011	Implemented
	Venezuela	Dec 2016	
Panama	Colombia	Dec 2015	
Paraguay	Argentina	Mar 2012	Implemented
	Brazil	Dec 2015	
Peru	Argentina	Jul 2015	
	Bolivia	May 2016	
	Brazil	Jul 2014	Operacional implementation pending.
	Chile	TBD	Reported by Chile delegate during SAM/IG/13 Meeting. It will be implemented under the considerations of the Declaration of Bogota (Dec 2016). Chile signed a MOU for the implementation of the AMHS interconnection with Peru.
	Colombia	Sep 2010	Implemented
	Ecuador	Jul 2012	Implemented
	Venezuela	Dec 2016	
Suriname	Brazil	Dec 2016	
	Guyana	Jun 2011	Implemented
	Venezuela	Jun 2016	
Uruguay	Argentina	Dec 2015	
	Brazil	Dec 2015	
Venezuela	Brazil	Dec 2015	
	Colombia	Jun 2016	
	Ecuador	May 2016	
	Guyana	Dec 2016	
	French Guiana	TBD	AMHS implementation pending.
	Peru	Jun 2016	
	Suriname	Jun 2016	

APPENDIX B

PROJECT DESCRIPTION (PD)		PD N° D2	
Programme	Project Title	Starting Date	Ending Date
Ground-ground and Air-ground Telecommunications Infrastructure (Programme Coordinator: Onofrio Smarrelli)	ATN Ground-ground and Air-ground Applications in the SAM Region <i>Project Coordinator: Gustavo Chiri (Argentina)</i> <i>Contributing experts: Javier Vittor (Argentina), Ruben Guillermo Silva (Argentina), Andres Jansen (Brazil), Murilo Loureiro (Brazil), Jorge Garcia (Perú) and Pedro Pastrian (Chile)</i>	May 2010	December 2016
Objective	Develop the implementation of ATN ground-ground and air-ground applications in the SAM Region		
Scope	Implementation of SAM ATN ground-ground and air-ground applications, including, at least: <ul style="list-style-type: none"> Operational integration of international AMHS connections in the SAM Region Operational integration of international AIDC connections in the SAM Region Guidelines for the implementation of ground-air data in the SAM Region Guideline for the implementation of AIDC 		
Metrics	<ul style="list-style-type: none"> Number of AMHS interconnections as per CAR/SAM FASID Table 1Bb Number of AIDC interconnections as per CAR/SAM FASID Table 1Bb Drafting of following guidelines: Guideline for the implementation of AIDC / Guideline for the implementation of ground-air data links in terminal, approach and aerodrome areas / DCL, DATIS and DVOLMET / CPDLC service through VDL in the SAM Region 		
Strategy	<ul style="list-style-type: none"> All tasks will be conducted by experts nominated by States and organizations of the SAM Region members of the project <i>ATN Ground-ground and Air-ground Applications in the SAM Region, and States of the SAM Region</i>, under management of the project coordinator, in coordination with the programme coordinator. Communications among Project members, as well as between the Project coordinator and programme coordinator, shall be carried out through teleconferences and the Internet. In addition, the programme coordinator, together with the project coordinator and the contributing experts, can convene at SAM/IG implementation meetings Once studies are completed, the results will be submitted to the ICAO programme coordinator as a final consolidated document for its analysis, review, approval and presentation at the GREPECAS PPRC 		
Goals	<ul style="list-style-type: none"> Complete the migration towards the implementation of AMHS interconnection through IP protocol by December 2015 Complete AIDC installation between adjacent FIRs by mid-2016 Complete the drafting of guideline material for the implementation of AIDC; for the installation of ground/air data links in terminal, approach and aerodrome areas; DCL, DATS and DVOLMET; CPDLC service through VDL in the SAM Region by December 2013. 		

Justification	<ul style="list-style-type: none">• The implementation of ground-ground and air-ground data communications infrastructure will contribute to the reduction of air traffic control incidents, increasing the capacity of the transition of information with regard to the currently analogue based applications• This project contributes to the implementation of the ASBU modules B0 FICE, B0 TBO, B0 AMET and B0 DATM and SAM PFF SAM CNS 01, CNS 02, ATM 05, ATM 06, MET 03, MET04 and AIM 02 of the <i>Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)</i>
Related Projects	<ul style="list-style-type: none">• Automation (systems interconnection)• ATFM• Improve ATM Situational Awareness

Project Deliverables	Relationship with Performance Based Regional Plan (PFF)	Responsible	Status of Implementation ¹	Delivery Date	Remarks
Review of the regional strategy for the implementation of ground-ground and air-ground applications in the SAM Region	PFF SAM CNS 01 CNS 02 B0 FICE B0 TBO	Omar Gouarnalusse (Argentina)		June 2012	An initial review of the strategy was presented at SAM/IG/8 meeting (Lima, Peru, 10-14 October 2011). In July 2012, the Project Coordinator presented a preliminary version of the Guide, which was reviewed by the Programme Coordinator and presented at SAM/IG/10 implementation meeting for its review and approval
Guideline for the implementation of AIDC	PFF SAM CNS 01 ATM 06 B0 FICE	Javier Vittor (Argentina) Ruben Guillermo Silva (Argentina)		April 2013	Completed The guideline was finalized and presented at SAM/IG/11 meeting (13-17 October 2013) and circulated to SAM States for review.
Guideline for the implementation ground-air data links in the SAM Region	PFF SAM CNS 02 ATM 06 B0 TBO	Andrés Jansen (Brazil)		October 2013	Completed The finalized guideline was presented and approved at SAM/IG/12 meeting

1

Gray: Activity has not started

Green: Activity has or will deliver planned milestone as scheduled

Yellow: Activity is behind schedule on milestone, but still within acceptable parameters to deliver milestone on time

Red: Activity has failed to deliver milestone on time, mitigation measures need to be identified and implemented

Project Deliverables	Relationship with Performance Based Regional Plan (PFF)	Responsible	Status of Implementation ¹	Delivery Date	Remarks
Operational integration of AMHS among States	PFF SAM CNS 01 ATM 05 ATM 06 MET 03 MET 04 AIM 02 B0 FICE B0 AMET B0 DATM	States / Project Coordinator / Programme Coordinator		December 2015	Of all the AMHS installed in the Region, the following are interconnected in AMHS (P1 Protocol) Argentina-Paraguay, Colombia-Peru, Guyana-Suriname and Ecuador-Peru. Successful operational trials have been carried out between Brazil-Argentina, Brazil-Peru and Brazil-Spain
Operational integration of AIDC service between adjacent ACCs	PFF SAM CNS 01 ATM 06 B0 FICE	States / Project Coordinator / Programme Coordinator		June 2016	AIDC successful operational trials have been conducted between Argentina-Paraguay through the AMHS circuit. In addition, partially successful tests have been carried out between Argentina-Chile, Chile-Peru, Colombia-Ecuador, Colombia-Panamá, Colombia-Peru and Ecuador-Peru (February- June 2014)
Monitor the implementation of ATN ground-ground and air-ground applications activities in the SAM Region		ICAO		March 2010- June 2016	
Resources necessary	Implementation of AIDC operational integration by the States of the Region				