



International Civil Aviation Organization

South American Regional 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/05

02/07/18

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

**FOLLOW-UP TO THE IMPLEMENTATION OF AMHS INTERCONNECTION AND
NATIONAL IP NETWORKS**

(Presented by the Secretariat)

SUMMARY

This working paper presents the status of implementation of AMHS interconnection and national IP networks in the SAM Region since the Fourth meeting of air navigation and safety directors of the SAM Region.

References

- Fourth meeting of air navigation and safety directors, Lima, Peru, 2-4 October 2017)
- Twentieth workshop/meeting of the SAM Implementation Group (SAM/IG/20) Lima, Peru, 21-25 May 2018).
- Summary of AMHS teleconferences held in 2018.

1 Introduction

1.1 The implementation of AMHS interconnections and the implementation of national IP networks are two air navigation implementation priorities contemplated in the Declaration of Bogota for the period 2014-2016.

1.2 All AMHS interconnections required for the SAM Region are listed in Table CNS II-1 of Volume II of the CAR/SAM Regional Air Navigation (Doc 8733 - eANP). For the 2014-2016 period, 26 AMHS interconnections were scheduled for implementation. Concerning the implementation of national IP networks, it was considered that 80% of SAM States should have them implemented by the end of 2016.

1.3 Significant progress has been made in the implementation of AMHS interconnections since the AN&FS/4 meeting. In this regard, special note should be taken of the operational implementation of AMHS interconnections between Brasilia–Ezeiza, Brasilia-Maiquetía, Maiquetía-Lima and Maiquetía-Bogotá.

2 Discussion

AMHS interconnections

2.1 Progress reported on, and actions defined for, the implementation of AMHS interconnections in each SAM State are described below.

Argentina

2.2 Software and hardware updating at all national user agent terminals of the AMHS system was completed in late January 2018. The AMHS connection between Ezeiza and Brasilia became operational on 5 April 2018. In accordance with the information provided by the States involved, migration of the following AMHS interconnections to the operational phase was scheduled for the end of the first semester of 2018:

Ezeiza MTA - Lima MTA
Ezeiza MTA - GATEWAY SITA
Ezeiza MTA - Montevideo MTA
Ezeiza MTA - Maiquetía MTA (extra plan)
Ezeiza MTA - Santiago MTA

Bolivia

2.3 Positive AMHS operational tests between the La Paz MTA and the Lima MTA were conducted in early June 2018, leaving pending the migration to the operational phase. The designation and registration of the external COM operator for the Eurocontrol AMC is still pending.

Brazil

2.4 Note is taken of the commissioning of the following AMHS interconnections:

Brasilia - Maiquetía (8 February 2018)
Brasilia - Ezeiza (5 April 2018)

2.5 Regarding the AMHS interconnection between the Brasilia MTA and the SITA Gateway, all tests have been carried out, only pending commissioning. For commissioning, the guidance document "*SITA transition planning*", prepared by the EURONTROL AMC, was reviewed at the SAM/IG/21 meeting. This guidance document provides planning information and advice to AMHS COM centres of the Region affected by the implementation of the SITA Gateway AMHS in the AMHS network. The SAM/IG/21 meeting adopted the action plan used in the MID Region, with some adjustments to meet the characteristics of the SAM Region. The action plan for the transition is contained in **Appendix A** to this working paper. In order to follow up the implementation of the AMHS interconnection between Brasilia MTA and the SITA Gateway, several teleconferences were held in June and July with all AMHS focal points of the SAM Region, representatives of the EUROCONTROL AMC and SITA. The AMHS interconnection between the Brasilia MTA and the SITA Gateway in Atlanta is expected to become operational on the AIRAC date of 19 July 2018.

2.6 SAM States must add to their AMHS address list the SITA AMHS addresses registered in the AMC. Accordingly, those States that have not yet designated the external COM operator for the AMC (Bolivia, Chile, Guyana, French Guiana, Suriname, and Uruguay) should do so as soon as possible in order to access the AMC. Given the importance for those States that have already installed an AMHS system to designate a focal point to act as external operator for the AMC, the SAM/IG/18 meeting formulated conclusion SAM/IG/18-2 ("Designation and registration of SAM candidates for Eurocontrol AMC").

2.7 On 28 June 2018, coordination activities were resumed for the implementation of the AMHS interconnection between the Brasilia MTA and the Atlanta MTA (FAA). It is expected that it will become operational by late August 2018. Said AMHS connection will be through the REDDIG II node of Bogotá, which provides the interconnection with the MEVA III network.

2.8 No progress was reported in coordination activities for AMHS implementation in the interconnection between the Brasilia MTA and the Dakar MTA. The interconnection between the Brasilia MTA and the Dakar MTA will be implemented through the AFISNET VSAT network, and is foreseen for the end of 2018.

Chile

2.9 AMHS operational implementation between the Santiago MTA and the Ezeiza MTA is still pending, and is foreseen for the first semester of 2018. The external COM operator for the Eurocontrol AMC has not been registered yet.

Colombia

2.10 Operational AMHS interconnection tests were successfully conducted between the Bogota MTA and the Panama MTA through the MEVAIII/REDDIG II interconnection. For the operational implementation of this circuit, administrative arrangements must be completed with the MEVA III service providers. The circuit goes through the MEVAIII/REDDIG II interconnection in Bogota.

Ecuador

2.11 The operational implementation between the Guayaquil MTA and the Bogota and Maiquetía MTAs is still pending, which is foreseen for the end of the second semester of 2018.

French Guiana

2.12 A new AMHS system (COMSOFT) became operational in January 2018, but AMHS tests with the corresponding SAM States will be conducted in October or November 2018. Prior to the implementation of AMHS interconnections, security equipment must be in place to prevent possible cyber attacks. The external COM operator for the Eurocontrol AMC has not been designated and registered yet.

Guyana

2.13 The reactivation of the AMHS circuit with Suriname is pending; it will take place once Suriname updates its AMHS system. The operational implementation of the AMHS interconnection between the Georgetown MTA and the Maiquetía and Port-of-Spain MTAs is foreseen for December 2018. The external COM operator for the Eurocontrol AMC has not been registered yet.

Panama

2.14 Positive operational tests between the Panama MTA and the Atlanta MTA were conducted in mid-February 2018 through MEVA III, and operational implementation is foreseen for the third quarter of 2018. Regarding the status of implementation of the AMHS interconnection between the Panama MTA and the Bogota MTA, see paragraph 2.10.

Paraguay

2.15 Positive IP connectivity tests have been carried out between the Asunción MTA and the Brasilia MTA. Operational tests are scheduled for August 2018.

Peru

2.16 Regarding activities to interconnect the Lima MTA and the La Paz MTA, see paragraph 2.3. Operational interconnection between the Lima MTA and the Ezeiza MTA is scheduled for the end of the first semester of 2018. Finally, the interconnection between the Lima MTA and the Atlanta MTA through the MEVA III REDDIG II interconnection is foreseen for December 2018. Peru and Brazil are the States with more AMHS operational connections in the SAM Region.

Suriname

2.17 The updating of the AMHS system of Suriname has not started yet, waiting for the aeronautical authority of Suriname to approve the process. Upon completion of this process (no date reported), the AMHS connection with Guyana will be reactivated and tests for AMHS interconnection between the Paramaribo MTA and the Brasilia MTA will be resumed. The external COM operator for the Eurocontrol AMC has not been designated and registered yet.

Uruguay

2.18 The AMHS operational interconnection between the Montevideo MTA and the Brasilia MTA is foreseen for the end of the first semester of 2018. The external COM operator for the Eurocontrol AMC has not been registered yet.

Venezuela

2.19 With the commissioning of the new AMHS system on 20 September 2017, the following AMHS interconnections were implemented:

Maiquetía MTA - Bogotá MTA (December 2017)
Maiquetía MTA - Lima MTA (December 2017)
Maiquetía MTA - Brasilia MTA (March 2018)

2.20 Positive tests have been conducted between the Maiquetía MTA and the Ezeiza MTA (CIPE development system) in May 2018, and the operational connection is scheduled for the first semester of 2018.

2.21 The operational interconnection between the Maiquetía MTA and the MTAs of Atlanta, Cayenne, Guayaquil, Georgetown, Madrid and Port-of-Spain is scheduled for the end of the second semester of 2018.

Other AMHS considerations

2.22 The Declaration of Bogota set the goal of implementing 26 AMHS interconnections by the end of 2016. To date, 20 AMHS interconnections have been implemented, 9 of which are in the operational phase, and 11 in the pre-operational phase, awaiting States to migrate to the operational phase during the second semester of 2018. Coordination has not started yet for the remaining interconnections (6), whose implementation is estimated for late 2018. It should be noted that 56% AMHS implementation has been achieved to date in the Region.

2.23 **Appendix B** to this working paper contains Table 1, which shows the status of implementation of the 26 regional interconnections contemplated in the Declaration of Bogota, and of the other connections with other Regions and with the SITA Type X Gateway.

2.24 It should be recalled that any AMHS addressing change made by a State must be reported to the EUROCONTROL ATS message management centre (AMC) according to the procedure

established in ICAO State letter AN 7/49.1-09/34 dated 14 April 2009. According to this procedure, this communication must be done to the AMC by an external operator designated by the State.

Implementation of national IP networks

2.25 Regarding the implementation of national IP networks, no progress has been made. To date, they have been installed in Argentina, Brazil, Colombia, Chile, Ecuador, Paraguay, Uruguay and Venezuela. This represents 62% of total implementation expected by the end of 2016. The implementation of national IP networks, by State, is shown in **Appendix C** to this working paper.

3 Suggested action

3.1 The Meeting is invited to:

- a) take note of the information presented herein; and
- b) review and discuss the activities for implementing the AMHS interconnections and national IP networks indicated in section 2 of this working paper and its respective appendices, and report on the plans for achieving this implementation goal.

- END -

APPENDIX A

TABLE 1 – ACTION PLAN FOR THE TRANSITION TO THE SITA TYPE X GATEWAY

No.	Action	Responsible party	Deadline	Remarks
1	Define an AIRAC date for the transition to the SITA Type X Gateway in the Region and advise AMC.	States/ SAM CNS Officer	18 Jun 2018	AIRAC dates: 19 Jul 16 Aug 13 Sep 11 Oct
2	States designate focal points (external operators) for the AMC.	States	22 Jun 2018	States still pending
3	Revalidate SITA AMHS user addresses published by the AMC.	States/ SAM CNS Officer	22 Jun 2018	Argentina Brazil Chile
4	Upload the validated information on SITA (AMHS) user addresses to the AMC database.	AMC	29 Jun 2018	Argentina Brazil Chile
5	Review the routing proposed by SITA through the Brasilia centre.	States/ SAM CNS Officer	29 Jun 2018	
6	Notify the intention of incorporating a new SITA Type X Gateway into the SAM Region.	AMC	2 Jul 2018	
7	Conduct tests by sending messages from AMHS users to SITA users and <i>vice versa</i> .	COM centres/ SITA centre/ SAM CNS Officer	3 Jul 2018	SITA users: C=XX/A=ICAO/P= SITA/O=AFTN/OU 1=SBGLIBED y C=XX/A=ICAO/P= SITA/O=AFTN/OU 1=KATLSITX
8	Complete the Planning Acknowledgement table (Appendix A to WP/13 of SAM/IG/21)	SAM CNS Officer	4 Jul 2018	

No.	Action	Responsible party	Deadline	Remarks
9	Send the Planning and Routing Table to the AMC operator, confirming transition readiness.	SAM CNS Officer	4 Jul 2018	
10	Publish the date set for the transition (published in the AMC Bulletin)	AMC	6 Jul 2018	
11	Create the routing tables in the AMC application in order to properly reflect the SITA PRMD routing to each COM centre.	AMC	6 Jul 2018	
12	Verify the data in the AMC, including routing and user address list.	States (external operators)	12 Jul 2018	
13	Complete the transition table.	States/ SAM CNS Officer	13 Jul 2018	
14	Update the AMC Bulletin Board to confirm that the activity is being carried out.	AMC	16 Jul 2018	
15	Each COM centre will confirm to the AMC operator, by e-mail, that it has properly implemented the AMHS user address list and the SITA PRMD routing.	SAM CNS Officer	17 Jul 2018	
16	Monitor transition and inform the coordinator (Transition Manager) in order to get assistance in case of any problem.	States / SAM CNS Officer	19-26 Jul 2018	

APPENDIX B / APÉNDICE B

TABLE 2 – AMHS INTERCONNECTIONS / TABLA 2 – INTERCONEXIONES AMHS

#	Connection / Conexión	Notes / Notas
1	SAEZ – SBBR	Operational / Operacional
2	SAEZ – SCSC	Pre-operational phase / Fase preoperativa
3	SAEZ – SGAS	SAGS system updating / Actualización en el sistema de SGAS
4	SAEZ – SLLP	Coordinations not initiated / Coordinaciones no iniciadas
5	SAEZ – SPIM	Pre-operational phase / Fase preoperativa
6	SAEZ – SUMU	Pre-operational phase / Fase preoperativa
7	SBBR – SGAS	SAGS system updating / Actualización en el sistema de SGAS
8	SBBR – SKBO	Operational / Operacional
9	SBBR – SLLP	Coordinations not initiated / Coordinaciones no iniciadas
10	SBBR – SMJP	SMJP system updating / Actualización en el sistema de SMJP
11	SBBR – SOCA	Coordinations not initiated / Coordinaciones no iniciadas
12	SBBR – SPIM	Operational / Operacional
13	SBBR – SVMI	Operational / Operacional
14	SBBR – SYCJ	Operational / Operacional
15	SCSC – SPIM	Operational / Operacional
16	SEQU – SKBO	Pre-operational phase / Fase preoperativa
17	SEQU – SPIM	Operational / Operacional
18	SEQU – SVMI	Pre-operational phase / Fase preoperativa
19	SKBO – SPIM	Operational / Operacional
20	SKBO – SVMI	Pre-operational phase / Fase preoperativa
21	SLLP – SPIM	SLLP system updating / Actualización en el sistema de SLLP
22	SMJP – SVMI	Coordinations not initiated / Coordinaciones no iniciadas
23	SMJP – SYCJ	SMJP system updating / Actualización en el sistema de SMJP
24	SOCA – SVMY	Coordinations not initiated / Coordinaciones no iniciadas
25	SPIM – SVMI	Operational / Operacional
26	SYCJ – SVMI	Coordinations not initiated / Coordinaciones no iniciadas
27	SAEZ – SVMI	(Extra Plan) Pre-operational phase / Fase preoperativa
28	SAEZ – FAOR	(South Africa / Sudáfrica) Coordinations not initiated / Coordinaciones no iniciadas
29	SAEZ – SITA	Pre-operational phase / Fase preoperativa
30	SBBR – GOOO	(Senegal) Coordinations not initiated / Coordinaciones no iniciadas

31	SBBR – LEEE	Pre-operational phase / Fase preoperativa.
32	SBBR – KATL	(United States / Estados Unidos) Coordinations initiated / Coordinaciones iniciadas.
33	SBBR – SITA	Pre-operational phase / Fase preoperativa.
34	SKBO – MPPC	Pre-operational phase / Fase preoperativa.
35	SPIM – KATL	(Estados Unidos) Coordinaciones no iniciadas.
36	SVMI – LEEE	(España) Coordinaciones no iniciadas.
37	SVMI – KATL	(Estados Unidos) Coordinaciones no iniciadas.
38	SVMI – TNCC	Coordinaciones no iniciadas.
39	SVMI – TTPP	Coordinaciones no iniciadas.

APPENDIX C / APÉNDICE C

IMPLEMENTATION OF DOMESTIC IP NETWORKS /
IMPLANTACIÓN DE REDES IP NACIONALES

STATE/ESTADO	IP APPLICATIONS IMPLEMENTED/ APLICACIONES IP IMPLANTADAS	IMPLEMENTATION DATE OF DOMESTIC IP NETWORK FOR ALL IP APPLICATIONS/ FECHA DE IMPLANTACION DE RED IP NACIONAL PARA TODAS LAS APLICACIONES EN IP
Argentina	AMHS, DATA RADAR, IP VOICE/VOZ IP	2005
Bolivia	AMHS	2019
Brazil/Brasil	AMHS, DATA RADAR, IP VOICE/VOZ IP	2015
Chile	AMHS	2015
Colombia	AMHS, RADAR	2016
Ecuador	AMHS, RADAR	2014
French Guiana (France) / Guyana Francesa (Francia)	AMHS	2019
Guyana	AMHS	2019
Panama/Panamá	AMHS, RADAR	2018
Paraguay	AMHS	2014
Peru/Perú	AMHS, RADAR	2019
Suriname/Surinam	AMHS	2019
Uruguay	AMHS RADAR	2014
Venezuela	AMHS	2010

Green = Implemented

Verde = Implantada

- END / FIN -