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Twenty Seventh Workshop/Meeting of the SAM Implementation Group SAM (SAM/IG/27) – Regional Project RLA/06/901
(Virtual, 31 May to 3 June 2022)

Agenda Item 4: SAM/IG Conclusions and Next Actions - Plenary

DELIVERABLES OF THE INTEROP TF AND ACTIVITIES PROPOSED FOR 2023

(Presented by the Secretariat)

SUMMARY

This working paper presents the deliverables provided by the activated subgroups of the Interoperability Task Force (Interop TF) and the planning of activities for the year 2023.

References:

- Final Report of SAM/IG/26 Meeting (Virtual, 20 to 23 September 2021);
- Summary of the Discussions of the Third Workshop/Meeting of the Supervisors/Operators of SAM Region COM AMHS Centers of the (Virtual, February 21-24, 2022);
- Summary of the Discussions of the First NAM/CAR/SAM Meeting/Workshop on Planning the Implementation of Automatic Dependent Surveillance – Broadcasting (Virtual, March 02-04, 2022); and
- Summary of the Discussions of the Third Workshop/Meeting of the Interoperability Task Force Subgroups (GT Interop/3) (Virtual, 14 to 17 March 2022).

ICAO Strategic Objectives:	*A – Safety* *B – Air Navigation Capacity y Efficiency* *ASBU: AMET-B0/4 (IWXXM), COMI-B0/7 (AMHS), FICE-B0/1 (AIDC), ASUR-B0/1 (ADS-B), ASUR-B1/1 (SB ADS-B)*

1. INTRODUCTION

1.1 The SAM Region Interoperability Task Force (GT Interop) was created at the SAM/IG/22 Meeting (Lima-Peru, 19 to 23 November, 2018) to support and promote initiatives to modernize the services of air navigation and ensure interoperability between automated systems used by AIM, ATM, ATFM, CNS and MET users.

1.2 Until the SAM/IG/26 Meeting (Virtual, September 20-23, 2022), the following subgroups were activated: ATM/AIDC, ATM/FPL, CNS/AMHS, CNS/ANP, CNS/SUR and MET/IWXXM.

2. DISCUSSION

MAIN DELIVERABLES OF THE ACTIVATED SUBGROUPS OF THE INTEROP TF

ATM/AIDC Subgroup

2.1 The main objective of the ATM/AIDC Subgroup is to establish the 76 links for ATS Interfacility Data Communication (AIDC) by the States of the SAM Region.

2.2 To date, 16 intraregional AIDC communications and 2 interregional AIDC communications have been established.

2.3 Due to the pandemic, in 2021 there was no establishment of new AIDC connections, but during the tests carried out, necessary changes were identified in the automated systems that will provide advances in the implementation of the connections, as soon as the adaptations are made:

- Atech has made the changes to the SAGITARIO systems used in the ACCs of Brazil, Paraguay and Venezuela. The company reported that the new version cannot be installed remotely, being necessary the installation in person. It is estimated that by the second half of the year the new software version will be installed with the correction of the errors already identified.
- Those in charge of the ACC Lima reported to the company Indra the need for adjustments to solve an issue of interoperability with the SAGITTARIUS system of the Amazonian ACC. A small correction is necessary in the Indra system of Lima, so that there is no rejection of some ABI messages of the Amazonian ACC, due to the order that comes the letters of the equipment listed in field 10; and
- During the Second Meeting of the MEVA III – REDDIG II Interconnection (MIII-RII/INTERCON/02), held in Lima from May 05 to 06, 2022, a new interconnection scheme was adopted that will implement REDDIG II nodes in Aruba, Curacao, Jamaica and San Juan (Puerto Rico). With the new scheme, it will be possible to implement AMHS interconnections with the CAR States, contributing to the establishment of AIDC communications with these States.

ATM/FPL Subgroup

ATM/FPL Road Map

2.4 The ATM/FPL Subgroup was activated to address issues related to the mitigation of errors and duplication/multiplicity of flight plans, as well as issues related to the centralization of the management of flight plans and associated messages.

2.5 During the WG INTEROP/3 Meeting (Virtual, March 14-17, 2022), the ATM/FPL Roadmap document was updated to add the DOF (Day Of Flight) element to the ACK message. Version 2.2 of the ATM/FPL Roadmap can be accessed at the link below:

https://www.icao.int/SAM/Documents/2022-RLA06901-GTINTEROP3/Hoja%20de%20Ruta%20rev%2009%20Mar%202022%20-%20ACTUALIZADO%20VERSION%202.2.pdf

2.6 By means of an email of April 29, 2022, the Brazilian representative of the Coordination Nucleus of the Interop TF, has expressed the intention to adapt the Brazilian systems to the ACK and REJ

message formats approved by the Implementation Group of the SAM Region; as well as consulting the reference documents on the matter. In response, CNS OFFICER SAM confirmed that the document adopted as a reference on the subject is the ATM/FPL Roadmap version 2.2.

Methodology for quantifying FPL errors

2.7 The participants of the Subgroup have identified the need to establish a common methodology to quantify errors in flight plans and associated messages, in order to obtain indicators to measure the level of mitigation achieved, with the application of the measures indicated in the ATM/FPL Roadmap. An Ad-hoc group was formed to work on this issue, made up of representatives of Argentina, Chile, Ecuador, Panama and Peru.

Standard Procedure for Publication in the AIP

2.8 The Subgroup agreed that a standardized format should be established to include the information in the Aeronautical Information Publication (AIP) of the States that adopt the measures recommended in the ATM/FPL Roadmap.

Request for establishment of direct flights

2.9 The Airlines, through IATA representatives, have requested more direct flights for fuel savings due to the price hike, caused by the recent pandemic crisis and the conflict in Eastern Europe. This implies a challenge for the Subgroup, in reviewing the syntax of the routes by coordinates, to verify if it is accepted by the automated systems in operation.

Appointment of a new Rapporteur of the ATM/FPL Subgroup

2.10 The current Rapporteur of the FPL/ATM Subgroup has stated that due to a new function that he will exercise in the DGAC of Peru, as of June 6, 2022, he will no longer be able to serve as Rapporteur of the Subgroup. The participants of the Subgroup deliberated on the matter and agreed that the Rapporteurship of the Subgroup will be exercised by Mr. .....

CNS/AMHS Subgroup

AMHS (P1) Interconnections

2.11 Currently, of the 28 intraregional interconnections, 26 have already been established. The following interconnections are pending:

- Brasilia COM Center – Montevideo COM Center (SBBR – SUMU); and
- Ezeiza COM Center – Montevideo COM Center (SAEZ – SUMU).

2.12 Uruguay reported that a new system has already been acquired for the COM AMHS center in Montevideo, whose installation must occur in the first semester, and should be operational in the second half of 2022.

2.13 With regard to interregional interconnections, the following are pending implementation:

- Caracas COM Center – Curaçao COM Center (SVCA – TNCC);
- Caracas COM Center – Madrid COM Center (SVCA – LEEE);
- Ezeiza COM Center – Joannesburg COM Center (SAEZ – FAOR); and
- Georgetown COM Center – Piarco COM Center (SYCJ – TTPP).

2.14 With the installation of the REDDIG II nodes (MPLS) in Johannesburg and Madrid in June 2022, it is estimated that the interconnections with South Africa and Spain will still be established in the first half of the year.

Additional AMHS (P1) interconnections

2.15 Argentina will implement the following interconnections additionally, with Spain and Venezuela:

- **Ezeiza COM Center – Caracas COM Center (SAEZ – SVCA)**; and
- Ezeiza COM Center – Madrid COM Center (SAEZ – LEEE).

2.16 During SAM/IG/27, the representatives of Argentina and Venezuela confirmed that the interoperability tests (IOT) between the COM AMHS Centers in Caracas and Ezeiza were successfully completed and the interconnection will become operational on June 6, 2022.

2.17 Brazil reported that carried out successful tests to establish an AMHS (P1) interconnection with Portugal and awaits the completion of the contracting procedures for the final communication link.

2.18 Colombia also expressed its intention to establish an interconnection with the United States (Atlanta) and COCESNA.

CNS/ANP Subgroup

2.19 The CNS/ANP Subgroup was activated at the SAM/IG/26 Meeting (Virtual, September 20-23, 2021) in order to support the review of the information contained in Part III (CNS) of Volume II of the CAR/SAM Air Navigation Plan, as well as to provide support, in the preparation of Volume III of the ANP CAR/SAM, on CNS topics.

2.20 During the WG INTEROP/3 Meeting (Virtual, March 14-17, 2022), Chile has presented the suggestion to nominate a person to be Rapporteur of the Subgroup. Subsequently, through Letter No. 04/4/0420/3465, of April 4, 2022, it appointed Mr. Edmundo Cortés Mancilla as the Rapporteur of the CNS/ANP Subgroup.

2.21 The initial formation of the CNS/ANP Subgroup is as follows:

- **CNS/ANP Subgroup**
  - **Relator: Edmundo Cortés Mancilla, ecortes@dgac.gob.cl, Chile**
  - Andrés Espina, aespina@anac.gob.ar, Argentina
  - Diego Frigerio, dfrigerio@anac.gob.ar, Argentina
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  - Vahe Antoine Yaghdjian, vahevay@decea.mil.br, Brasil
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- Jarumy Castillo, ja.castillo@inac.gob.ve, Venezuela
- Luis Escobar, l.escobar@inac.gob.ve / escoguil5@gmail.com, Venezuela

2.22 So far, only 7 States have nominated participants for the CNS/ANP Subgroup (Argentina, Bolivia, Brazil, Chile, Peru, Uruguay and Venezuela). It is urged that States that have not yet appointed participants of the CNS/PNA Subgroup take the necessary steps to contribute to the review of the information.

2.23 On May 26, 2022, the first teleconference of the group was held with the aim of identifying the activities to carry out the review, as well as the distribution of the tasks among the participants of the Subgroup.

2.24 The intention is to propose the changes regarding the SAM States and then coordinate with the CAR States to consolidate all the changes related to Part III of Volume II of the ANP CAR/SAM, for presentation in the SAM/IG/28 and subsequent approval by GREPECAS.

CNS/SUR Subgroup

2.25 The CNS/SUR Subgroup was activated to deal with interoperability issues of surveillance systems and, specifically, to carry out an analysis on an implementation of Space-based ADS-B through a Technical Cooperation Project, using the regional IP network (REDDIG II), as the distribution platform of surveillance data.

First NAM/CAR/SAM Meeting/Workshop on Planning the Implementation of Automatic Dependent Surveillance – Broadcasting (ADS-B) (ADS-B/ANP/1)

2.26 In the period from March 02 to 04, 2022, the **First NAM/CAR/SAM Meeting/Workshop on Planning the Implementation of Automatic Dependent Surveillance – Broadcasting (ADS-B/ANP/1)** was held virtually, with the participation of representatives of 22 States of the NAM/CAR/SAM Regions and COCESNA, two international organizations, two companies and ICAO Officers, totaling 107 people.

2.27 The documents and presentations of the MEETING/Workshop ADS-B/ANP/1 are available at the following link:

https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2022-RLA06901-ADSBYADSBANP1

Terrestrial ADS-B implementation in the SAM Region

2.28 The following SAM States have implemented ADS-B stations: **Brazil, Chile, Colombia, Guyana, Panama, Paraguay and Peru**. Currently, only in Brazil is using ADS-B OUT as the primary means of surveillance information in the TMA Macaé, to support the operation of helicopters in the Campos oil basin.

Space-based ADS-B Implementation in the SAM Region

2.29 Since the Meeting GT INTEROP/2 (Virtual, 09 to 13 August 2021) and SAM/IG/26 (Virtual, 20 to 23 September 2021) there was no substantial progress in the implementation of Space-based ADS-B, through a Regional Technical Cooperation Project, using REDDIG II (MPLS) as a platform for the distribution of surveillance information.

2.30 The three States that expressed interest in the proposal (Chile, Panama and Trinidad & Tobago), continue to evaluate the possibility, considering the strong impact caused by the pandemic on the planning and prioritization of projects under development in the States.

2.31 The entry of Panama as a member of the Regional Technical Cooperation Project RLA/03/901, will administratively facilitate a potential contracting of the service, within the framework of Project RLA/03/901, enabling the use of the Digital Network of the SAM Region (REDDIG II) as a distribution platform for the contracted surveillance information.

2.32 In this regard, it was reported that an additional node of REDDIG II (MPLS) was implemented by Aireon in Virginia, contracting directly from the network's telecommunications provider. This node will be able to connect to any REDDIG II node of the States that in future contract the Space-based ADS-B service.

2.33 The last proposal presented by the supplier of the SB ADS-B for an implementation through an ICAO Technical Cooperation Project consisted of:

1) The previous cost of USD 275,000.00 for each Service Delivery Point, would be reduced to USD 125,000.00 with 2 to 3 States participating in the Regional Project. If more than 3 States participate in the Project, the cost would drop to USD 50,000.00 for each SDP implemented.
2) The cost of the surveillance information for a 5-year contract would be according to the following table:

Service Volume	ICAO Prices (2021)	Prices 2022
High Density/Sole Source	$42	$44
Low Density/Sole Source	$21	$22
Low Density/ Augmenting existing surveillance/ Contingency	$8.5	$9
Medium Density/ Augmenting existing surveillance/ Contingency	$5.25	$5.50
High Density/ Augmenting existing surveillance/ Contingency	$3.15	$3.30
Ultra High Density/ Augmenting existing surveillance/ Contingency	$1.05	$1.10

3) The company would provide free 2 users of Aireon's situational awareness display in each State participating in the Project and one user for the SAM Regional Office.
4) One year (free) of information from the SAM Region for ATFM purposes.
5) The company provides (free of charge) 50 NM of adjacent airspaces for ATS planning purposes. This facility would solve surveillance data exchange issues, once the ANSP that contracts the services has the information from the adjacent centers close to its area of responsibility, increasing situational awareness.

MET/IWXXM Subgroup

2.34 El Subgrupo MET/IWXXM fue conformado con la finalidad de realización de pruebas e intercambio de mensajes OPMET en el nuevo formato IWXXM.

Tests carried out with the Regional OPMET Data Bank (RODB) of Brasilia

2.35 The following States have already conducted tests with the Regional OPMET Data Bank (RODB) of Brasilia: **Argentina, Cuba, Guyana and Venezuela**. In addition, complete and successful tests have already been carried out between the **RODB of Brasilia** with the **RODB of Brussels and Vienna**.

2.36 The reference for the implementation of the new IWXXM format is the document *Guidelines for the Implementation of OPMET Data Exchange Using IWXXM – Fourth Edition*.

2.37 Para facilitar la comprensión, una versión (no oficial) en español fue elaborada por la Oficina Regional Sudamericana y puede ser accedida a través del enlace abajo:

https://www.icao.int/SAM/Documents/2022-RLA06901-GTINTEROP3/5.%20Guia%20Implem%20IWXXM_nov2020.pdf

Web Service of the RODB of Brasilia

2.38 A letter from the SAM Regional Office was sent, communicating the guidelines for the exchange of information via web service, together with the Interface Control Document (SICD) of the system implemented in Brasilia.

2.39 States interested in implementing the exchange of information with the RODB of Brasilia, via web service, must request, through the SAM Regional Office, the registration of user and password to obtain the token.

2.40 During the INTEROP TF/3 Meeting, a representative of the company that developed the Brazilian system (Atech), made a presentation with the aim of encouraging the States of the CAR/SAM Region to develop integration with the web service of the OPMET Regional Data Bank of Brasilia.

2.41 DECEA is considering the development of an application example to teach how to use the web service of the RODB of Brasilia. The application example would allow the use of temporary users for testing, explain the necessary configurations, create scenarios for using the web service for the search and insertion of meteorological messages and all documentation, scripts and source code would be available to interested parties.

WORK PLAN 2023

2.42 The Meeting approved the activities listed in the **Appendix** to this working paper, which presents the 2023 Work Plan of the Interoperability Task Force (GT Interop).

3. SUGGESTED ACTION

3.1 The Meeting is invited to:

a) Take note of the deliverables provided by the activated subgroups of the Interop TF; and

b) Approve the proposal of activities for 2023, as deemed appropriate.

- END –

Appendix

Work Plan 2023

Activities	Objectives / Deliverables	Tentative Dates
SAM/IG/29 Air navigation implementation priorities considered in GREPECAS programs, VOL III Regional ANP and Regional initiatives.	Continue with the activities of implementation, execution and optimization under the studies of GESEA and TF Interop. (5 days)	Lima, TBD
SAM/IG/30 Air navigation implementation priorities considered in GREPECAS programs, VOL III Regional ANP and Regional initiatives.	Continue with the activities of implementation, execution and optimization under the studies of GESEA and Interop TF. (3 days)	Virtual, TBD
INTEROP/4 TF Fourth Workshop/Meeting of the Interop TF Subgroups.	Provide a meeting of the participants of the Interop TF Subgroups, to consolidate the previous work carried out, in order to finalize the products and deliverables that will be presented to the SAM Region Implementation Group (SAM/IG). (4 days)	Virtual, TBD
COM AMHS/4 Fourth Workshop/Meeting of Supervisors/Operators of COM AMHS Centers of the SAM Region	This is an event for the exchange of information and experiences between the supervisors/operators of the COM AMHS Centers of the SAM Region. Review of routing tables. Review of Contingency Plans. (4 days)	Lima, TBD (Hybrid)
ATM/FPL Workshop	Event aimed at the development of a common methodology to quantify errors in flight plans and associated messages; definition of a standardized format for the inclusion of information in the Aeronautical Information Publication (AIP) of the States adopting the measures recommended in the ATM/FPL Roadmap; and, review of the syntax of the routes by coordinates, to verify if it is accepted by the automated systems used, in order to provide more direct flights to aircraft operators, for fuel savings. (5 days)	Lima, TBD (Hybrid)

Activities	Objectives / Deliverables	Tentative Dates
Frequency Finder App Training	Training aimed at the members of the CNS/ANP Subgroup with the responsibility of updating the COM Lists of frequency assignments used in the aeronautical context. (5 days)	Lima, TBD (Hybrid)
AIDC Training	Training aimed at the members of the AIDC Implementation teams of the States of the Region. (5 days)	TBD, TDB