SAM/IG/29

INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Office

Regional Project RLA/06/901

TWENTY-NINTH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP

(SAM/IG/29)

FINAL REPORT

Lima, Peru, 15 to 19 May 2023

TABLE OF CONTENTS

ii-1 PLACE AND DURATION OF THE MEETING

The Twenty-Ninth Workshop/Meeting of the SAM Implementation Group (SAM/IG/29) was held in the premises of the ICAO South American Regional Office in Lima, Peru, from 15 to 19 May 2023, under the auspices of Regional Project RLA/06/901.

ii-2 OPENING CEREMONY AND OTHER MATTERS

Mr. Fabio Rabbani, Regional Director of the ICAO South American (SAM) Regional Office, welcomed the civil aviation authorities and representatives of organisations and industry attending the Meeting. Likewise, he reaffirmed his acknowledgment for the continuous support given to the activities undertaken by the Regional Office, particularly those of the SAM Implementation Group (SAM/IG).

ii-3 SCHEDULE, ORGANISATION, WORKING METHODS, OFFICERS AND SECRETARIAT

The Workshop/Meeting agreed to hold its sessions from 08:00 to 15:00 hours, with appropriate breaks.

The sessions from the first to the fourth day were devoted to the review of the activities and deliverables of the GESEA and the Interop TF, and to current air navigation priorities. On the fifth day, the session was held in plenary to validate and/or endorse the deliverables of the aforementioned technical groups, and to approve the conclusions of the Meeting.

Mrs. Rosanna Barú, delegate of Uruguay, and Mr. Andrés Quintana, delegate of Bolivia, acted as chairman and vice-chairman, respectively, of the Workshop/Meeting.

Mr. Fernando Hermoza, ATM/SAR Regional Officer, and Mr. Francisco Almeida, CNS Regional Officer, served as the Secretariat, and were assisted by Mr. Roberto Sosa, ATM/SAR Regional Officer.

Likewise, the coordinators and rapporteurs of the GESEA and Interop TF and subgroups contributed to the preparation and analysis of the documentation.

ii-4 WORKING LANGUAGES

The working languages of the Meeting were English and Spanish.

ii-5 AGENDA

The following agenda was adopted:

Agenda
Item 1: ANS context (ATM/CNS) Global and Regional level.

a) Global Air Navigation Plan and Elaboration of Vol. III of the ANP CAR/SAM
b) Review of the status of conclusions.

Agenda Item 2: Report of activities of the GESEA and Subgroups

a) Review of air navigation priorities in the ATM field
b) ATM implementation. Progress of the Subgroups.
c) Proposed Conclusions
d) Review of the 2023 Work Plan

Agenda Item 3: Report of activities and deliverables of the GT - INTEROP and Subgroups

a) Review of air navigation priorities in the CNS field.
b) CNS Implementation. Progress of the Subgroups.
c) Proposed Conclusions
d) Review of the 2023 Work Plan

Agenda Item 4: SAM/IG Conclusions and next actions - Plenary

a) Summary of Sessions
b) Review and approval of Conclusions

Agenda Item 5: Other Business

ii-6 **ATTENDANCE**

The Meeting was attended by 49 participants of 8 SAM States (Bolivia, Brazil, Ecuador, Panama, Paraguay, Peru, Uruguay and Venezuela); one State from the NAM/CAR Region (United States), one international organisation (IATA), and three industry providers (AIREON, ATECH and COLLINS AEROSPACE). The list of participants is shown in page iii-1 of this report.

ii-7 LIST OF CONCLUSIONS [1]

The Workshop/Meeting did not formulate any new Conclusions. The progress of the current conclusions is discussed in Item 1 below.

ii-8 LIST OF ACTIONS

The status of the actions approved by SAM/IG/28 was reviewed and it was determined that 9 actions have been completed for GESEA subjects and action S28/09 remains in progress. For the INTEROP TF subjects 04 actions have been completed and S28/14, S28/16, S28/17, and S28/18 remain in a situation of progress.

The Workshop/Meeting obtained consensus on 3 permanent SAM/IG actions, as well as 19 actions for the development and follow-up of the initiatives and work entrusted to the Secretariat and/or the contributing study and working groups. See details in the following list:

Number	Action	Who	When	Ref. Par.
Permanent actions				
1st Permanent Action	Work with their CAA authorities to keep them informed of the progress of the implementation of the SAM/IG, and to follow up on the priorities in the ATM and CNS fields.	• SAM/IG Delegates	permanent	2.5 SAM/IG/29 Report
2nd Permanent Action	Promote women's participation in all areas of SAM/IG and its support groups.	• SAM/IG Delegates • Secretariat	permanent	5.12 SAM/IG/29 Report
3rd Permanent Action	Observe peremptory deadlines for the submission of papers and documents for the following SAM/IG meetings to the Secretariat.	• SAM/IG delegates • Secretariat • States	permanent	5.13 SAM/IG/29 Report
SAMIG/28 actions				
Action S28/09	BRISA Tactical extra-ordinary; prepare a Job Card with the terms of the activities and studies to be developed by an ad-hoc group.	• SG3 ATFM - GESEA	In progress Before SAMIG/30	2.58 SAM/IG/28 Report

[1] The Conclusions are presented in the format requested by the Air Navigation Commission (ANC) in Working Paper 8993 (6/11/2015) Progress report of *ad hoc* working group in PIRG and RASG reports (item No. 20036).

Number	Action	Who	When	Ref. Par.
				2.70 SAM/IG/29 Report
Action S28/14	Appointment of representatives to the CNS/ANP Subgroup.	• Ecuador; • France (French Guyana); • Paraguay; and • Suriname	In progress Before SAMIG/30	3.56 SAM/IG/28 Report
Action S28/16	Analysis, by State Information Technology staff, of the Interface Control Document (ICD) of the Brasilia RODB web service.	• SAM States	In progress Before SAMIG/30	3.74 SAM/IG/28 Report
Action S28/17	Coordinate the formation of the ad-hoc study group based on regional and global documentation on RPAS / UAS/UTM, depending on SAM/IG, and including texts on the development of drones for in-flight inspection of radio aids.	• Secretariat	In progress Before SAMIG/30	5.8 SAM/IG/28 Report
Action S28/18	Explore options on Project Management training for the CNS and ATM field. Consult feasibility of RLA/06/901 endorsement.	• Secretariat	In progress Before SAMIG/30	5.10 SAM/IG/28 Report
SAMIG/29 Actions				
Action S29/01	Development of Job Cards: • SG1/PLAN EA/ 01/2023 • SG1/PLAN EA/ 02/2023 • SG1/PLAN EA/ 03/2023	• SG1 PLAN EA - GESEA • Secretariat • SAM/IG delegates	Report at SAM/IG/30	2.40 SAM/IG/29 Report
Action S29/02	Study of the new Circular 359 and determine whether it meets the needs of the Region, and according to this study, cancel, adapt or update the Regional Guide on the implementation of PBN procedures for visual runways, issued in November 2020.	• SG2 PANS OPS - GESEA	Report at SAM/IG/30	2.47 SAM/IG/29 Report

Number	Action	Who	When	Ref. Par.
Action S29/03	Promote the updating of flight procedure charts in the Region, at least every 5 years according to Doc 8168 parameters. This task requires mapping the age of IAC charts (conventional and PBN) as well as planning priorities in each state.	• SG2 PANS OPS - GESEA	Report at SAM/IG/30	2.49 SAM/IG/29 Report
Action S29/04	The Meeting instructed the Secretariat to explore with RLA/06/901 the feasibility of an IFPP meeting to be held at the Regional Office by 2025.	• Secretariat • GESEA coordination	Report at SAM/IG/30	2.54 SAM/IG/29 Report
Action S29/05	To coordinate and consult at the RLA/06/901 member state level through written communication on the ATFM portal initiative.	• Secretariat	Coordinations no later than June 2023	2.82 SAM/IG/29 Report
Action S29/06	That runway and ATS sector capacity measurements be executed or updated, considering the recovery in demand for operations expected for this year (to 2019 levels), and recognizing that ACCs are experiencing staff reductions after the pandemic phase.	• SG3 ATFM - GESEA • Secretariat	Report at SAM/IG/30	2.84 SAM/IG/29 Report
Action S29/07	Coordinate the possibilities of scholarship support for the ATFM Workshop (virtual - face-to-face) in Brazil, April 2024, which would require approval from the RCC of project RLA/06/901.	• Secretariat	Report at SAM/IG/30	2.88 SAM/IG/29 Report
Action S29/08	On FF-ICE concept; Coordinate the execution of activities for SAM states, the first is a briefing on the progress in Brazil and secondly a table top exercise.	• Secretariat • SAM/IG delegates • States	SL before 15 August 2023 Activities before SAMI/IG/30	5.6 SAM/IG/29 Report

Number	Action	Who	When	Ref. Par.
Action S29/09	Study the practices of Brazil and other similar practices in the region, and monitor the mitigations implemented in the SAM states, considering that PANS OPS specialists understand the degree of impact that possible interference in onboard radio altimeters can have on the safety of an instrument flight procedure.	• SG2 PANS OPS - GESEA	At SAM/IG/30	5.9 SAM/IG/29 Report
Action S29/10	Restart the reports from the States to the SAM/IG regarding the progress in the implementation of the PBN, projects with TMAs, etc. Implement new reports on the status of LOA ATS, in order to facilitate the follow-up of the validity of these documents and generate the appropriate assistance from ICAO.	• SAM/IG delegates • Secretariat	At SAM/IG/30	5.10 SAM/IG/29 Report
Action S29/11	Brazil and Paraguay will make the corrections, proposed by ATECH, in the databases of the automated systems of the ACC Asunción and ACC Curitiba. After the adjustments, they will conduct the pre-operational phase tests in the second half of 2023.	• Brazil; and • Paraguay	Before SAM/IG/30	3.5 SAM/IG/29 Report
Action S29/12	Brazil and Venezuela agreed to restart AIDC tests between ACC Amazonico and ACC Maiquetía, with a view to establishing an operational connection by the end of this year.	• Brazil; and • Venezuela	Up to 31 December 2023	3.7 SAM/IG/29 Report
Action S29/13	The Secretariat will forward to the Rapporteur of the ATM/FPL Subgroup the information provided by the	• Secretariat	Up to 30 June 2023	3.13 SAM/IG/29 Report

Number	Action	Who	When	Ref. Par.
	administration of Peru (IP/3.8), for analysis at the next on-line meeting of the ATM/FPL Subgroup.			
Action S29/14	States should take note of the changes made to the ATM / FPL Roadmap document version 3.0 and consider adopting the recommended format for feedback messages (ACK and REJ) for flight plan originators.	• SAM States	As from SAM/IG/29	3.17 SAM/IG/29 Report
Action S29/15	An Ad-hoc group of the ATM/FPL Subgroup constituted by the States using CADAS User Agents (UA) will be formed to exchange information, share best practices and learn about the initiatives taken by each State to establish a centralized management of flight plans.	• Argentina • Chile • Colombia • French Guyana • Peru; and • Venezuela	Up to 30 June 2023	3.21 SAM/IG/29 Report
Action S29/16	The SAM States should update the information in the COM 1, COM 2 and COM 3 Lists and route it prior to the Frequency Finder Workshop/Training.	• SAM States	Before 29 May 2023	3.43 SAM/IG/29 Report
Action S29/17	The SAM States are encouraged to support the ICAO position regarding CMR-23 agenda item 1.7, as proposed to be presented by the Brazilian delegation at the CITEL Meeting (22-26 May, 2023), for allocation to the aeronautical mobile-satellite service (R) within the frequency band **117.975-137 MHz,** in order to support VHF aeronautical communications in the Earth-to-space and space-to-Earth directions.	• SAM States	En las reuniones preparatorias y durante la CMR-23 At the preparatory meetings and during WRC-23	3.47 SAM/IG/29 Report

Number	Action	Who	When	Ref. Par.
Action S29/18	Chile and Peru must coordinate the exchange of surveillance data, establishing the necessary agreement documents, so that all internal instances are aware of the commitments assumed and promptly collaborate to establish the technical means for the exchange of aeronautical surveillance data.	• Chile; and • Peru	Before 31 May 2023	3.51 SAM/IG/29 Report
Action S29/19	The participants of the Workshop/Meeting were informed that from July 17-21, 2023, the *Workshop on the development of the regulation for the implementation of ADS-B (ADS-B-Imp)* will be held at the Regional Office in Mexico (NACC). A letter inviting the SAM States to the above-mentioned event will be sent no later than 20 May, 2023.	• Secretariat	Before 20 May 2023	3.72 SAM/IG/29 Report

LISTA DE PARTICIPANTES / LIST OF PARTICIPANTS

BOLIVIA
1. Andrés Quintana
2. Yesid Arze

BRASIL / BRAZIL
3. Alexander Santopietro de Souza
4. André Luiz Santos da Rocha
5. Clovis Fernandes Jr
6. Diego Henrique de Brito
7. Fabio da Silva Santos
8. Jorge Luiz Bezerra da Silva
9. Marcos Aurélio Valeca Belchior
10. Wallace Gutemberg Medeiros Luz

ECUADOR
11. Bolívar Dávalos
12. Christian Ramos

PANAMÁ
13. Gabriel Bernard
14. Ivette Iturrado
15. Ana Teresa Montenegro
16. Carlos Aparicio
17. Daniel De Ávila

PARAGUAY
18. Margarita Cabrera
19. Robin Jorge Dacak
20. Digno Nelson Cardozo

PERÚ
21. Sady Beaumont
22. Giuliano Guzmán
23. Sara Siles
24. Eloy Tafur
25. Diana Montoya
26. Eduardo Albarracín
27. Juan José Izquierdo
28. Martin Ojeda
29. Pablo Tenorio
30. Erick Fernandez
31. Raúl Anastacio Granda
32. Mariela Rodríguez
33. Jhonny Ávila
34. Guillermo Beleván

URUGUAY
35. Rosanna Barú
36. Gabriel Falco
37. Mario Dávila
38. Henry Díaz
39. Andrés Braida

VENEZUELA
40. Carlos Castañeda
41. Jarumy Castillo

ESTADOS UNIDOS / UNITED STATES
42. Raúl Chong

AIREON
43. Demetrius Zuidema

ATECH
44. Edson Fagundes

IATA
45. Julio De Souza Pereira

COLLINS AIRSPACE (ARINC)
46. Manuel Gongora

OACI / ICAO
47. Fernando Hermoza
48. Francisco Almeida
49. Roberto Sosa

Agenda Item 1: ANS context (ATM/CNS) Global and Regional level.

a) Global Air Navigation Plan and Elaboration of Vol. III of the ANP CAR/SAM
b) Review of the status of conclusions.

1.1 Under this agenda item, the following papers were reviewed:

N°	Subject	Presented by
WP/1.1	Status review of conclusions adopted by SAM/IG meetings	Secretariat
WP/1.2	Latest developments related to the Global Air Navigation Plan (GANP) and the Global Aviation Security Plan (GASP)	Uruguay
WP/1.3	Approval of the CAR/SAM Air Navigation Plan Vol. III – initial version	Secretariat
IP/1.1	Avance de implantación de las conclusiones SAM/IG/ por el estado ecuatoriano (Spanish only)	Ecuador
IP/1.2	Avance de implantación de las conclusiones SAM/IG/ por el estado uruguayo (Spanish only)	Uruguay
IP/1.3	Progress in implementation of conclusions SAM/IG/ by Guyana	Guyana
IP/1.4	Reporte de actividades contexto ANS (ATM/CNS) (Spanish only)	Paraguay
IP/1.5	Avances y seguimiento a las conclusiones SAM/IG (Spanish only)	Venezuela
IP/1.6	Avances y seguimiento a las conclusiones SAM/IG (Spanish only)	Brazil
IP/1.7	Status of conclusions for Colombia (Spanish only)	Colombia

Conclusions and Decisions adopted by SAM/IG meetings

1.2 The Meeting proceeded to review the valid conclusions and decisions, as well as the pending activities of the workshops/meetings of the SAM/IG Implementation Group which is presented in an updated form as **Appendix A** of this agenda item. The list of conclusions and activities includes:

a) the tasks to be developed and/or the corresponding conclusion in the areas under analysis;
b) the specific tasks that will lead to the fulfilment of the main task;
c) expected results in each task;
d) completion dates;
e) those responsible for its implementation;
f) task support members; and
g) the state of execution of the same and when necessary for a better understanding, some explanatory comment on the state of execution is included.

1.3 The Monitoring Tables and/or the informative notes presented by Argentina, Bolivia, Brazil, Ecuador, Guyana, Paraguay, Peru, Uruguay and Venezuela regarding the progress of

implementation of the conclusions of SAMI/IG were made available to the Workshop/Meeting. Some matters of implementation were consulted or analyzed by the States.

1.4 It was noted that the depository in the Teams application on the ICAO platform (*SAM / IG Implementation Group*) has been available since 2021 so that each State can periodically update the follow-up of conclusions. States that were unable to submit their information were invited to update it directly at that depository. The link is below:

https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/General/1%20TABLAS%20CONCLUSIONES%20SAMIG?csf=1&web=1&e=KBPJK5

Approval of the Air Navigation Plan CAR/SAM Vol. III – initial version

1.5 The GREPECAS Secretariat in the period 2019 - 2022 has carried out activities with the States/Territories and Organizations to disseminate the Template proposed by ICAO and reinforce the concepts of performance-based planning, in order to build Volume III of the Regional Air Navigation Plan CAR/SAM.

1.6 As part of the activities for the elaboration of Vol. III, the Secretariat had noted the need to strengthen, first, Volumes I and II of the RANP and then work on the formulation of Vol. III of the RAC/SAM RAP.

1.7 The Secretariat, once the process of revision and updating of Vol. I and II has been completed, has worked on the formulation of Vol. III of the RANP, working with a template formulated by ICAO, in compliance with Recommendation 4.5/1 literal d) of AN-Conf 13.

1.8 In this process, through workshops and teleconferences, opportunities for improvement have been identified for the text of the Template and for the Schedules, including proposals for new columns and explanatory texts, so that they allow them to be associated with the concepts of the GANP, as well as facilitate the interaction of planners with the tools (tutorials, catalogs, dashboards, AN-SPA, etc.), provided on the GANP website.

1.9 Meeting GREPECAS/20 (Salvador, Bahia, Brazil, November 15-18, 2023) noted that, after three years of work between States and the Secretariat, the initial version of Vol. III of the RANP CAR/SAM was formulated. After reviewing the contents of the version, GREPECAS/20 decided to approve it through Conclusion GREPECAS/02/07. Vol. III is included in the report of the aforementioned meeting, available at the following link:

https://www.icao.int/NACC/Pages/meetings-2022-grepecas20.aspx

1.10 It is extremely important to note that the Conclusion urges States to implement task forces to develop data collection activities and management of GANP KPIs as a basis for populating the data in the Planning Tables of Vol. III, with the assistance of the Secretariat.

1.11 The Secretariat is available to program activities with all States this year, being a progressive work that requires strengthening the capacities of administrations to manage data and KPI indicators, while needing resources allocated by the Administrations for their multidisciplinary work teams.

1.12 The Secretariat informed that the Follow-up Workshop to the preparation of Vol. III of the Regional Air Navigation Plan (Lima-Peru, June 12 to 15, 2023) has been scheduled, in which the Work with the States will be deepened.

Developments related to the Global Air Navigation Plan (GANP) and the Global Aviation Security Plan (GASP)

1.13 Uruguay explained that the13th Air Navigation Conference, in order to accelerate work on performance, through Recommendation 4.3/1, *Improving Air Navigation System* Performance, established the GANP Performance Expert Group, formerly known as the ICAO Global Performance Expert Group (GIPEG), to maintain and evolve the GANP performance framework.

1.14 One of the tasks of the GANP-PEG is to extend the GANP performance framework, covering the eleven KPAs and in particular to contribute to coherence and consistency related to the performance management aspects shared by the GANP, the Global Aviation Safety Plan (GASP, Doc. 10004) and the Global Aviation Security Plan (GASeP) (Doc. 10118).

1.15 The proposed safety performance framework identifies a high-level common interest in safety performance, as well as performance objectives and key performance indicators (KPIs) covering all aspects of the aviation system, enabling the GANP to consider safety in an integrated manner in its other 10 KPAs. At the same time, it provides shared security-related terminology for the GANP and GASP, promoting coherence between the two global plans.

1.16 The Teams link below provides a summary of the proposed update of the safety KPA of the GANP performance framework, including a new performance framework, as well as new focus areas, performance targets and key indicators. Assembly Resolution A41-6: ICAO Global Planning for Aviation Safety and Navigation is also shown:

https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/General/SAMIG29%20mayo%202023/Material%20apoyo/GANP%20and%20GASP%20progress?csf=1&web=1&e=600BZ8

1.17 To establish the link between these two fundamental aspects of any robust air navigation system, the provision of essential services for international civil aviation and the capacity to monitor them by the State, ICAO has assigned the essential services described under the Basic Components (BBB) framework to the Protocol Questions (PQ) of USOAP.

1.18 The result of this mapping demonstrates that the BBBs mainly refer to the critical elements six "CE-6 Licensing, Certification, Authorization and/or Approval Obligations" and seven "EC-7 Surveillance Obligations" as detailed in this web link:

https://www4.icao.int/ganpportal/bbbsusoapmapping

1.19 This mapping facilitates analysis of the impact that the provision of essential air navigation services, and the ability to monitor them, has on safety performance.

1.20 The provision of essential air navigation services by an ANSP is measured through deficiencies in relation to Regional Air Navigation Plans, while the ability of States to oversee such provision is measured through Effective Implementation (EI). The result of both aspects of security performance can be measured through KPIs20, 21, 22, and 23 included in the seventh edition of the GANP, as shown in the following link:

https://www4.icao.int/ganpportal/ASBU/KPI

1.21 The Workshop/Meeting remarked that the seventh edition of the GANP, recognizing that safety is one of the fundamental principles of aviation, presents a safety performance framework and drives an up-to-date maintenance process, reinforcing the importance of having a solid air navigation system foundation and consistency in the BBB and ASBU frameworks. The importance of working on harmonizing safety performance ambition to address the combined scope of the GANP and the GASP was stressed.

APPENDIX A

STATUS OF IMPLEMENTATION OF CONCLUSIONS AND/OR TASKS EMANATING FROM SAM/IG MEETINGS

(Updated SAM/IG/29, May 2023)

NOTE.- Each State and the Secretariat will monitor the implementation of Conclusions in the Tables available in the Teams depository , at the following link :

https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/General/1%20TABLAS%20CONCLUSIONES%20SAMIG?csf=1&web=1&e=ovvFwG

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
1. Airspace optimisation and implementation of performance-based navigation (PBN) in the SAM Region							
1-1	**Conclusion SAM/IG/14-6: Projects and/or action plans for PBN redesign of the main South American TMAs** That SAM States: a) send the project and/or action plans for PBN redesign of the main TMA(s) selected by their Administration, in order to complete the SAM PBN Project that is contained in Appendix J to this part of the Report, to the SAM Regional Office by 31 December 2014; b) send the corresponding updates to the aforementioned project and/or plans to the SAM Regional Office as soon as possible, so as to ensure harmonisation of activities under the SAM PBN Project.	Designation of the airspaces selected for optimisation with the implementation of PBN	Indicate the selected airspace for redesign or optimisation Report on updates	SAMI/IG/25	STATES	RO/ATM	**VALID**
1-2	**Conclusion SAM/IG/21-01: Objectives of harmonised PBN implementation at regional and interregional level** That SAM States, organisations, users, and stakeholders, double efforts to meet regional and interregional performance-based air navigation implementation goals, based on GREPECAS projects, and contemplating the strengthening of national PBN implementation plans so that they include performance indicators and the use of recognised project management tools and methods.	Updating of regional PBN action plans and State action plans. Follow-up to PBN implementation and specific assistance to States.	PBN implementation plans executed	SAM/IG/26	STATES	RO/ATM	**VALID**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
1-3	**Conclusion SAM/IG/25-04 Adoption of the Regional guide on the implementation of PBN visual runway procedures** SAM States adopt the Regional guide on the implementation of PBN visual runway procedures developed by GESEA and, on this basis, approve national regulations on the implementation of these procedures.	Adopt the Regional guide on implementation of PBN procedures for visual runways	Publish the national regulation on implementation of PBN procedures for visual runways	As soon as possible	STATES	RO/ATM	**VALID**
1-4	**Conclusion SAM/IG/27-01 Adoption of the SAM Airspace Operational Concept 2022-2026 (EC/SAM CONOPS)** That States adopt document SAM Airspace Operational Concept 2022-2026 (EC/SAM CONOPS), prepared with the purpose of supporting the studies of ATM specialists and planners involved in the formulation of Volume III of the CAR/SAM ANP, facilitating the understanding of the methodology of Doc 9883 set forth in the GANP.	Adopt EC/SAM CONOPS	Use technical references and guidance for regional ATM and ANS planning.	No later than October 2023	STATES	RO/ATM	**VALID**
1-5	**Conclusion SAM/IG/27-02 Adoption of the 2022–2026 Roadmap: Performance-based optimisation of SAM airspace** That States adopt the 2022–2026 Roadmap: Performance-based optimisation of SAM airspace, and align their national PBN implementation plan based on the metrics and deadlines set forth in the document	Adopt the performance-based optimisation roadmap	Use technical references and guidance for regional PBN implementation. Alignment with implementation metrics.	No later than October 2023	STATES	RO/ATM	**VALID**
1-6	**Conclusion SAM/IG/28-01 Improvements to the ATS letters of operational agreement, with regard to their content, implementation, validity and subscription process** That: a) SAM/IG and its contributory bodies promote studies and activities for the development of regional guidance material on criteria for the efficient and safe use of ATS LOAs, with regard to their content, implementation, validity and subscription process b) ATS service providers and/or competent ATS authorities, while implementing the recommendation of item a) above, coordinate and manage with their counterparts the review and update of inter-State ATS LOAs, if possible, once (01) a year.	Drafting of regional guidance material on the management of ATS operational agreements (ATS LOAs) Assistance and follow-up by the Secretariat for the review and updating of ATS LOAs.	• Regional guidance material on management of ATS LOAs • ATS LOAs reviewed and updated, if possible, once a year	SAM/IG/31	GESEA STATES		**VALID**
2. Contingency plans and procedures							

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
2-1	**Conclusion SAM/IG/23-04: Procedure to be applied in case of radioactive clouds or accidental release of radioactive material** That the civil aviation authority and/or ATS authorities, in coordination with meteorological authorities and/or meteorological watch offices, implement procedures related to the production of SIGMETs in order to: a) Ensure that their ATS/MET cooperation agreements include the exchange of information on radioactive material in messages exchanged between ATS and MET units; b) Foresee training for ATS staff on procedures related to receiving information from the London VAAC concerning radioactive material; **c)** Coordinate the inclusion of the accidental release of radioactive material or the presence of radioactive clouds in their contingency plans.	Develop and sign ATS MET cooperation agreements, including information on radioactive material in messages exchanged.	ATS MET cooperation agreements signed.	SAM/IG/26	STATES	RO/ATM RO/MET	**VALID**
2-2	**Conclusion SAM/IG/21-02: Consolidation of the implementation of 40NM longitudinal separation minima between adjacent FIRs in the SAM Region and promotion of the Action Plan for the implementation of a 20NM separation** That SAM States take action and apply procedures in the ACCs to consolidate the implementation of 40NM longitudinal separation minima and give priority to the execution of the action plan for the implementation of standard 20NM separation minima between adjacent FIRs in SAM continental airspace.	Follow-up to the implementation of the 40NM separation, follow-up to the Action Plan for the implementation of 20NM minima, and specific assistance to States.	Implementation of 20NM longitudinal separation minima in continental airspace.	SAM/IG/25	STATES	RO/ATM	**VALID**
2-3	**CONCLUSION SAM/IG/25-01 Implementation of strategic direct routing - EDE** SAM States analyse the guidance material prepared by GESEA SG1 on the strategic direct routing (EDE) concept, which has been made available to the administrations, and coordinate its implementation with IATA and international airlines, as well as with adjacent States.	Follow-up to EDE implementation Fuel savings analysis provided by airlines.	Issuance of AIC and/or SUP AIP on EDE by States	As soon as possible	STATES, AIRLINES, IATA	RO/ATM GESEA	**VALID**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
2-4	**Conclusion SAM/IG/27-03 Adoption of amendment 1 of the SAM ATS Contingency Framework Plan (MCATS / SAM) and alignment of national plans** That States adopt the guidelines of the SAM ATS Contingency Framework Plan, incorporating Amendment 1 that includes Appendix E and Appendix I, in order to finalise and publish their national ATS contingency plans, and have that documentation available for regional events on optimisation of ATS coordination and contingency plans (SOUTH SAM and NORTH SAM), scheduled for the second half of 2022.	Follow-up to the harmonisation of ATS contingency plans	Issuance of national ATS contingency plans by States, aligned with MCATS.	No later than 31 July 2022	STATES	RO/ATM GESEA	**VALID**
2.-5	**Conclusion SAM/IG/25-03 Activities for the development of the SAM ATM/CNS contingency framework plan** That States support GESEA activities towards a second stage of the MCATS, with a view to developing guidance material for a "SAM ATM/CNS Contingency Framework Plan".	Prepare document for harmonised implementation of ATM/CNS national contingency plans, with interfaces to AIM, MET, airport services, etc. duly agreed with neighbouring States, including CAR States, if applicable.	SAM ATM/CNS contingency framework plan	No later than October 2023	GESEA	RO/ATM	**VALID**
	3. ATFM implementation						
3-1	**Conclusion SAM/IG/23-01: Implementation of ATFM measures in accordance with Doc 9971, and coordination in case of ATS contingencies** **That:** SAM States prioritise the following for their ATS and ATFM services**:** a) Strengthening the functions of flow management positions (FMPs) or units (FMUs), granting them powers to coordinate and support ATS services;	Comply with the provisions of ICAO Doc 9971 and SARPs contained in ICAO Annex 11	Support for ATFM and ATC	SAM/IG/25	STATES	RO/ATM	**VALID**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
	b) Definition of the profile and skills of ATFM staff, and delivery of initial and recurrent training programmes for that staff; c) Mandating that ATFM measures be strictly based on Doc 9971 to address situations generating capacity/demand imbalances, especially in cases of ATS capacity degradation caused by unforeseen events; d) Establishment of instructions and H24 monitoring to ensure that ATFM measures have the least possible impact on international flights, and all ATFM measures are agreed with adjacent ATFM or ACC units; e) Mandating the correct application of the ATFM process, from ATM planning to the operational analysis and performance control phase; and **f)** Ruling out the use of flow control NOTAMs to deal with demand/capacity imbalances, with the only exception of the initial response that an ACC may require in the first 12 hours of an ATS contingency.						
3-2	**Conclusion SAM/IG/26-01 Adoption of the ATFM Operations Plan (OPSAM)** That States adopt the ATFM Operations Plan (OPSAM) and provide for the ongoing participation of their ATFM services in the sharing of data for the regional Dashboard of indicators and in BRISA operational teleconferences. Also, that each State encourage the participation of airlines, airports and users in OPSAM.	Adjust ATC and airport capacity to the gradual increase in demand, and contribute to the recovery and sustainability of the air transport system at regional and global level in the new projected scenario. Also, reinforce the use of KPIs in ATFM and ATM in general.	OPSAM implemented and KPIs generated.	SAM/IG/29	STATES	RO/ATM	**VALID**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
3-3	**Conclusion SAM/IG/26-02 Adoption of the Guide for the implementation of ATFM in the SAM Region 2022- 2026** The States adopt the Guide for the implementation of ATFM in the SAM Region 2022-2026, harmonised with the objectives of regional integration of this service and taking into account the implementation phases and deadlines foreseen.	SAM States to implement national or cross-border ATFM services that are suited to the air traffic flow managed by their ATS services and that duly contribute to the solution of demand/capacity imbalances in the Region.	States applying the Guide and reaching Phase IV of implementation.	December 2026	STATES	RO/ATM	**VALID**
3-4	**Conclusion SAM/IG/27-04 Adoption of the Manual on Calculation of Runway and ATC Sector Capacity** States adopt the Manual on Calculation of Runway and ATC Sector Capacity, and carry out calculation activities at their airports and ATS units, recognising that it is essential to have updated data to provide efficient ATFM services.	Implementation of a common methodology for runway and ATC sector capacity calculation in the SAM Region	Runway and ATC sector capacity calculations updated.	December 2026	STATES	RO/ATM	**VALID**
4. NIL							
5. Operational implementation of new automated ATM systems and integration of the existing systems							
5-1	**Conclusion SAM/IG/25-06 Approval of the ATM/FPL Roadmap and of the format for flight plan acknowledgment (ACK) and rejection (REJ) messages and associated messages** That States: a) Approve the ATM/FPL Roadmap and the format for flight plan acknowledgment (ACK) and rejection (REJ) messages and associated messages; and b) Adopt the guidelines and procedures of the ATM/FPL Roadmap.	Adoption of the ATM/FPL Roadmap by States.	- Roadmap implemented - Mitigate the occurrence of errors and duplication /multiplicity of flight plans, also providing feedback to the originators of FPLs and associated messages.	SAM/IG/27	STATES	RO/CNS and RO/ATM Interop TF	**VALID**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
5-2	**Conclusion SAM/IG/21-03: Activities required in the AIDC pre-operational phase to reduce migration times to the operational phase** **That**: SAM States currently in the AIDC pre-operational phase, in order to reduce time in this phase and migrate to the operational phase: a) operate AIDC for the period of time required to acquire the skills for its operation; b) monitor AIDC operation, recording errors made during the reporting, coordination and transfer stages; c) conduct statistical measurements based on the results of b), in order to identify the most frequent errors; d) based on the results of c), take the necessary action to mitigate errors; and **e)** report the results obtained in c) and d) and disseminate the lessons learned at events, teleconferences and AIDC implementation meetings of the SAM Region, so that they may serve as a reference for other AIDC implementations.	Follow-up and coordination via teleconferences and meetings	AIDC operational connection achieved	December 2019	STATES	RO/CNS and RO/ATM	**VALID** SAM/IG/27 – Until May 2022, the following States had implemented AIDC: Brazil (9 out of 25 connections); Chile (2 out of 11); Colombia (4 out of 13); Ecuador (3 out of 3); Panama (2 out of 6) and Peru (3 out of 6).
5-3	**Conclusion SAM/IG/23-03: Adaptation of AMHS terminals of aeronautical meteorology users** That, pursuant to the requirement to implement the exchange of OPMET messages in IWXXM GML format by 5 November, States: a). Adapt AMHS terminals of aeronautical meteorology users so that they may transmit and receive OPMET messages in IWXXM GML format b). Implement the necessary AMHS interconnections in order to facilitate the transmission and reception of OPMET messages in IWXXM GML format **c).** If in a position to do so, conduct OPMET message exchange trials in IWXXM GML format	To comply with the provisions of Amendment 78 to ICAO Annex 3.	Conduct tests and share results	SAM/IG/26	SAM STATES	ICAO SAM OFFICE	**VALID** SAM/IG/27 – Brazil has completed the modernisation of the RODB in Brasilia. Until May 2022, the following States had conducted successful tests with the RODB of Brasilia: Argentina, Cuba, Guyana and Venezuela.
5-4	**Conclusion SAM/IG/25-07 Implementation of space-based ADS-B under a regional technical cooperation project** That the Secretariat: a) Consult Trinidad and Tobago on their interest in participating in a potential regional implementation of space-based ADS-B, together with Chile and Panama, initially; b) Initiate procedures, together with the Technical Cooperation Bureau	Provide the States that expressed interest in the implementation of space-based ADS-B with the necessary support for contracting the service.	Support to the States concerned and coordination with ICAO TCB	No later than SAM/IG/26	RO/CNS	Panama, Chile, Trinidad and Tobago and other States involved.	**VALID** SAM/IG/27 – Chile, Panama and Trinidad & Tobago intend to resume discussions on this matter once flights return to normal following the pandemic.

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
	(TCB), to enable the contracting of the service through Regional Project RLA/03/901; and c) Organise an *ad-hoc* group under Regional Project RLA/03/901, with those States interested in participating in the regional implementation of space-based ADS-B, for the drafting of the necessary documents for a potential contracting of the service.						
5-5	**Conclusion SAM/IG/26-03 Revision of CNS tables of Vol. II of the CAR/SAM Air Navigation Plan and support in the drafting of Vol. III of the CAR/SAM ANP on CNS topics** a) That the CNS/ANP Subgroup, activated at the SAM/IG/26 meeting, review the CNS tables contained in Vol. II of the CAR/SAM Air Navigation Plan regarding information of SAM States, and provide support in the drafting of Vol. III of the CAR/SAM ANP on CNS topics; b) The Secretariat send a letter to SAM States for the nomination of participants in the CNS/ANP Subgroup; and **c)** SAM States nominate representatives in sufficient numbers to perform the tasks assigned to the CNS/ANP Subgroup.	Update the information in Vol. II of the CAR/SAM Air Navigation Plan and support the drafting of Vol. III of the CAR/SAM ANP concerning CNS planning aspects.	CAR /SAM ANP; Vol. II updated and Vol. III developed	SAM/IG/29	STATES	RO/ATM	**VALID** SAM/IG/27 – First teleconference of the Subgroup held on 26 May 2022.

Agenda Item 2: Report of activities of the GESEA and Subgroups

a) Review of air navigation priorities in the ATM field
b) ATM implementation. Progress of the Subgroups.
c) Proposed Conclusions
d) Review of the 2023 Work Plan

2.1 Under this agenda item, the following papers were discussed:

N°	Subject	Presented by
WP/2.1	SG1 - Airspace planning activities	Secretariat
WP/2.2	Regional guidance on implementation of airspace concepts	Brazil
WP/2.3	Capacity and efficiency for air navigation	Secretariat
WP/2.4	SG2 PANS OPS activities	Secretariat
WP/2.5	Update on the work of the GESEA Subgroup 3 (SG3 ATFM)	Secretariat
WP/2.6	ATFM Workshop in Brazil	Brazil
WP/2.7	ATFM portal for the SAM Region	Brazil
WP/2.8	Technical cooperation of Brazil (DECEA) for the restructuring of the Uruguayan airspace and its optimization	Uruguay
WP/2.9	DCT routing strategy for the SAM Region	IATA
WP/2.10	ATFM strategy for the SAM Region	IATA
WP/2.11	Optimization of airspace in Brazil	Brazil
WP/2.12	Report on the activities of the instrument flight procedures panel (IFPP)	Brazil
IP/2.1	Progress of the TF ATFM CROSS-BORDER - SG3 ATFM – GESEA (Spanish only)	Rapporteur of the GT ATFM XB

2.2 The Secretariat outlined the scope of the RAAC/17 Meeting (Santiago, Chile, 10-14 April 2023) in which civil aviation authorities analyzed the implementation of capacity and efficiency improvements to air navigation in the SAM States in the areas of ATM and its CNS platform.

2.3 The current priorities of the SAM Region to support air navigation capacity and efficiency initiatives were listed, in the context of Aviation's recovery after the pandemic, including;

a) Strengthening flight procedure design services (IFPD) and airspace planning. Promotion of the implementation of the PBN;
b) Strengthening of ATS services, in terms of aircraft separation, direct routing and UPR routes and the safety framework, through the following enablers:

i. Implementation of AIDC and AMHS. Management of flight plans. Interoperability;
ii. availability of CNS systems that ensure ATS surveillance coverage, including Radar/ADS B data sharing initiatives for the adjacent airspace between the FIR's, as well as improvements in pilot-controller communications; and

iii. promulgation of ATS Contingency Plans.

c) Promotion of the ATFM Operations Plan and implementation of ATFM services, according to the phases of the Regional Guide;

2.4 It was highlighted that the work of SAM/IG for the optimization of airspace and implementation of elements of the GANP should be supported through concrete actions regarding these priorities, by the ANSP and the authorities concerned.

2.5 The participating delegates were called upon to work with their AAC authorities to keep them informed of the progress of the implementation promoted by SAM/IG, and to follow up on the attention of priorities in the ATM and CNS fields. (**1st PERMANENT ACTION)**

SG1 ACTIVITIES - AIRSPACE PLANNING

2.6 The activities of SG1 - GESEA Airspace Planning, which is coordinated by Mr. Julio Pereira (IATA), were presented. The results of the recent SG1/4 meeting from 3 to 5 May were outlined.

Improved Operations Through Optimized Road Trajectories (FRTO)

2.7 SG1 activity related to the implementation of Strategic Direct Routing and User-Preferred Routes (UPR) should be designated as Enhanced Operations through Optimized Route Trajectories (FRTO) to be in line with the Global Air Navigation Plan, as well as include preliminary studies of Free Route Airspace (FRA) implementation. in its acronym in English).

2.8 At SG1/4 Brazil made two presentations related to the FRTO implementation that are in the TEAMS channel of GESEA – SG1. In the EDE/FRA presentation, the status of the project to implement the EDE and FRA concepts in the Brazilian ATM System was shown.

2.9 This presentation highlighted the development of the FRA CONOPS for Brazilian airspace that should be completed in 2023. In addition, the presentation indicated the procedures for using the DTS, published in the AIP Brazil ENR 1.9.

2.10 The 2nd presentation made by Brazil aimed to show the methodology applied in the implementation and use of the UPRs, which are designated as ***optional routes***. The presentation has shown the history of implementation of the UPRs in Brazil, which began after the beginning of the pandemic, due to the very low demand for air traffic. The initial expectation was that the UPRs would be canceled when pre-COVID 19 demand resumed, but based on the restructuring of some key ATC sectors in the airspace, in addition to the operational experience obtained by an intense CDM work, which came to have weekly meetings between stakeholders, it was possible to establish the UPRs definitively.

2.11 As future actions, the delegates of Brazil have informed that they will insert the UPRs in the AIP Brazil, in a similar way to the one already done with the preferential and alternative routes, indicating that the routes can be found on the official AIM website of Brazil:

(https://aisweb.decea.mil.br/?i=espaco-aereo&p=playbook).

2.12 Mexico has made a presentation on the implementation of the EDE in Mexican airspace involving 9 airlines, which can be found in the TEAMS channel of GESEA. The Delta Airlines representative has made a presentation on the UPRs coordinated directly by the airline with the ANSPs involved, which include Bolivia, Chile, Colombia, Ecuador, Paraguay and Peru and approved some routes

until 31 Dec 2023, such as, for example, ATL-EZE-ATL, ATL-LIM-ATL and ATL-SCL-ATL. This presentation can be found in the GESEA TEAMS channel. The presentation also provides some examples of benefits achieved in the following UPRs, as well as projections for one year:

- SBKO/KATL/SKBO – 229 ton fuel/725 ton CO2
- SAEZ/KATL/SAEZ – 572 ton fuel/1809 ton CO2
- SCEL/KATL/SCEL – 431 ton combustible/1363 ton CO2

2.13 The Meeting discussed the Action Plan for FRTO implementation, which is attached to this note as **Appendix A.** The main objective of the action plan is to harmonize and promote the implementation of the EDE in the South American Region, using, where necessary, the implementation of UPRs as a gradual mechanism for the use of more direct routes. In addition, the updated action plan also aims to follow up on preliminary FRA implementation initiatives, such as the development of FRA national CONOPS.

2.14 The action plan has also included a key activity for the advancement of the EDE implementation towards the FRA, which is the need to evaluate the implementation status of the requirements for FRTO B0/1 and B1/1 implementation (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring), which will require the participation of the experts of the SAM/IG Interop WG and will also include the requirements for the implementation of the longitudinal separation of 20/10NM.

Strategy for FRTO

2.15 IATA argued that the EDE and FRA are part of ICAO's Global Air Navigation Plan and are included in the Aviation System Block Update (ASBU) under the thread called Enhanced Operations through Optimized En-Road Trajectories (FRTO), FRTO B0/1 and FRTO B1/1 blocks. The strategy proposed in this study note is limited only to blocks 0 and 1, which can be achievable in a time horizon of 5 years. However, the proposed strategy may evolve to include in the future the remaining parts of FRTO, such as the Dynamic Configuration of Airspace and Airspace of Large Scale Transboundary Free Routes (FRA), FRTO B2/2 and FRTO B2/3 respectively.

2.16 At the regional level, ICAO will lead the implementation of DCT Routing in the CAR/SAM regions, through the Regional Planning and Implementation Group CAR/SAM (GREPECAS). Under the reformulated GREPECAS Airspace Optimization project A, it is expected that States, air navigation service providers, and airspace users will be provided with comprehensive guidance material on the implementation of DCT routing. Also, within the framework of the GREPECAS work program, it is expected to include the DCT Routing Strategy in the CAR/SAM Air Navigation Plan, mainly in its Volume III, which contains dynamic/flexible elements of the plan related to the implementation of the air navigation system and its modernization.

2.17 Regarding the actual implementation of DCT routing, close collaboration between the NACC/WG Airspace Optimization Working Group and the SAM/IG Airspace Study and Implementation Group is essential to harmonize and accelerate the implementation of DCT routing in CAR/SAM regions, to provide flight efficiency and improve aviation in the regions.

2.18 To meet the need for early benefits when States are unable to implement Strategic Direct Routing (SDS) and accelerate coordination between ANSPs and airlines, a joint working group consisting of CANSO, IATA and ICAO, called CIIFRA, was created in 2021 to support the implementation of UPRs. It is important to note that although CIIFRA's current strategy focuses on implementing UPRs for early benefits, EDEs are also part of the group's strategy as a transition to FRA.

2.19 In order to contribute to the development of the Job Card on this implementation, and propose the premises for the corresponding roadmap, **Appendix B** proposes short and medium term deadlines, as well as risks, challenges and interdependencies.

2.20 The Meeting stressed the importance of having guidance material to organize and plan the implementation of the FRTO, including the training framework for planners and ATCO personnel. It was confirmed that RLA/06/901 approved support for an activity for the Development of regional guidance material and roadmap on implementation of the FRTO module, and EDE, UPR and FRA concepts, scheduled for November 2023.

Activities generated in GREPECAS/20. Airspace optimization

2.21 It was reported that the GREPECAS/20 Meeting (Salvador, Brazil, November 15 - 18, 2023) approved Decision 20/01 that defines actions for the modification of the scope of the GREPECAS A1 project taking into account the implementation of initiatives that are currently underway referred to the APTA module (implementation of PBN, CCO/CDO) and the FRTO module (DTS, CIIFRA, UPR), so as to avoid duplicating efforts or delaying the deliverables of these initiatives.

2.22 The Program must consider the ongoing activities for the development of Volume III of the ANP CAR SAM, consequently, it can support the requirements of the management of the aforementioned Volume, including the calculation and monitoring of KPI indicators.

2.23 This Program shall consider, among others, the following objectives:

- Increase airspace efficiency and the provision of ATS services, while ensuring safety;
- Complement and support ongoing initiatives for ATFM implementation and demand-capacity balance (DCB) in airspace, ATS services and airports; and
- Reduce flight distances and, consequently, savings in fuel used and CO2 emissions.

2.24 Dependent or related elements must be identified according to the Global Air Navigation Plan - GANP (FICE, NOPS, ACAS, SNET, etc.), for each element of the planned APTA and FRTO. At the same time, the Programme should identify and develop cross-functional enablers at regional and interregional levels for implementation.

Tasks for the elaboration of VOL III of the ANP CAR/SAM.

2.25 See this item in Question 1 of the agenda.

Airspace Planning; Regional documentation and training.

2.26 As part of the actions carried out through Project RLA/06/901, regarding the optimization of the process of implementation of airspace concepts in the SAM Region, the SAM ICAO Regional Office requested the mission of an ATM specialist to develop the tasks of the Job Card "Airspace Planning" of activity SG1/PANSOPS/01/2020 of the GESEA (Airspace Study Group) 2022 Work Plan:

a) Prepare an airspace planning manual for the SAM Region containing, in its first part, the harmonized techniques for organizing the airspace structure (trajectories, airspaces, FUA, PBN concept, etc.);

b) Develop and deliver a workshop on airspace planning for specialists from the States of the SAM Region presenting harmonized techniques for the organization of airspace structure (trajectories, airspaces, FUA, PBN concept, etc.);

c) Prepare, as the second part of the manual, the text on the implementation of airspace concepts, containing harmonized guides and good practices in this area;

d) Develop a training course for specialists in the SAM Region on airspace planning and project management of airspace concepts.

2.27 Activities a) and b) above were fulfilled during 2022, according to the reports made to SAM/IG/28 and the GESEA/6 Plenary. The second phase of the work took place between April 17 and 28, 2023, at the SAM Regional Office. It was prepared draft 0.0 "SAM Region Airspace Planning Guide Manual, Part II: Implementing Airspace Concepts". In the following link of TEAMS SAM/IG are the two drafts mentioned, in PDF version:

https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/General/SAMIG29%20mayo%202023/Material%20apoyo/MANL%20PLANF%20ESPA%20AER?csf=1&web=1&e=DCbOEX

2.28 The work of the *Job Card* "Airspace Planning" is estimated to conclude in August 2023 with the workshop on Airspace Planning and Project Management of Airspace Concepts for specialists from the SAM Region. After the Workshop, feedback will be included and a full editorial review will be carried out. Wider dissemination activities on this guidance material should be organized in the Region.

ATS Contingency Plans

2.29 It was recalled that the Task Force (WG) CONT PLAN has finalized the MCATS and updated its appendices, as well as most of the contingency plans of the SAM States were updated according to the guidelines provided by the MCATS. The results of the SAM NORTE and SAM SUR meetings of the year 2022 were outlined.

2.30 However, there is still the need to establish the criteria for the efficient and safe use of the LOA ATS, regarding its content, application, validity and subscription process, including those related to contingency plans. In this sense, the meeting was of the opinion that the Task Force should be updated to deal with Action S28/04 and its corresponding JOB CARD, while maintaining the activities related to the ATS Contingency Plans, as explained below.

2.31 SG1/4 agreed to name the Task Force "Contingency Plans and ATS (PLAN/LOA ATS)" and the list of specialists who will support this activity was updated. Ms. Debora Kuc (Argentina) remained in the coordination of the WG.

2.32 The Secretariat reported on participation in the Third NAM/CAR Meeting for Contingency and Emergency Planning held at the NACC office in the week of 8 May. The results *of* the tabletop exercise on contingencies in the Caribbean region were detailed. During this exercise, the importance of closer coordination between States in the common boundary of the CAR and SAM regions was identified in order to harmonize contingency plans, and to be able to respond better to any situation. One of the important points that was addressed during this exercise is about the means of communication that should be used in contingencies, and the importance of these means working properly so that contingency plans are adequate.

2.33 The Meeting stressed the importance of conducting exercises to verify contingency plans, and considering an intraregional exercise. For an exercise in SAM scope, tentative dates were defined for July 17 and 18, after coordination via mail.

Optimization of Regional routes 2023 -2024. Implementation of RNAV-5

2.34 With regard to the optimization of regional routes, the meeting noted that there are still some conventional routes in upper airspace that should be eliminated or transformed into RNAV-5 routes. In addition, he took note of Chile's initiative for the implementation of RNP 2, which will have as its main objective to optimize the flow of/to Chilean airspace, allowing the use of all flight levels on the new routes, regardless of the cruise level table. In addition, this implementation is based on the fact that almost the entire fleet flying in Chilean airspace has GNSS and would be eligible for RNP2 approval.

2.35 In this sense, the meeting was of the opinion that it would not be necessary to establish a new activity for SG1, taking into account that there are already numerous initiatives and that human resources are limited. In this way, SG1 will follow up on the activities developed by Chile with a view to seeking best practices to disseminate them in the SAM Region.

Upcoming WGs and SG1 meetings

2.36 The meeting agreed that the next meeting of GESEA/SG1 should be held before SAM/IG/30, from 25 to 27 September 2023.

2.37 To follow up on the activities of the WG FRTO, the meeting agreed to hold 3 WG meetings in 2023, on the following dates:

- WG FRTO/1 Meeting - 20-21 June (13:00-16:00 UTC)
- WG FRTO/2 Meeting - 22-23 August (13:00-16:00 UTC)
- WG FRTO/3 meeting - 12-13 December (13:00-16:00 UTC)

2.38 With regard to the GT PLAN/LOA ATS, monthly meetings will be held on the first Monday of each month.

Job Cards on SG1 activities

2.39 The Meeting discussed three Job Cards designed to define the work of SG1, based on the actions commissioned by SAM/IG/28, as follows:

Strategic Objective(s)	Studies for the implementation of Enhanced Operations Through Optimized Road Trajectories (FRTO), including CNS/ATM enablers and the optimization of longitudinal separation in continental space.	Reference: SG1/EA PLAN/ 02/2023
Strategic Objective(s)	a) Develop regional guidance material on criteria for the efficient and safe use of ATS LOAs. Establishing its content, application, validity and subscription process, for the standardization of this document in the States of the SAM Region	Reference: SG1/EA PLAN/ 01/2023

	b) Development and strengthening of contingency planning for the SAM Region including interoperability with the Caribbean Region. c) Formulate integrated ATM/CNS Contingency Plans.	
Strategic Objective(s)	Formulation and development of the Airport Efficiency Program	Reference: SG1/PLAN EA/ 03/2023

2.40 The States were in favor of the Job Cards formulated and contributions from Venezuela, Panama and Ecuador were incorporated. The consensus of the Meeting was obtained for the deployment of the three Job Cards and, for this purpose, the Coordination of GESEA and GS1 was requested, with the support of the Secretariat, to detail and adjust their work plans and keep the SAM/IG informed of its progress with the three initiatives. (**ACTION 01)**

2.41 The three Job Cards, including the developed versions, are deposited at the following link:

https://oaci.sharepoint.com/:u:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/General/SAMIG29%20mayo%202023/Material%20apoyo/JOBCARDS/JOBCARDS.url?csf=1&web=1&e=WipIcN

SG2 Activities - PANS PAHO

2.42 SG2 – PANS PAS is coordinated by Mr. Diego Gamboa (Argentina). It was reported that on April 10, 2023, this subgroup held a Preparatory Meeting to adjust the agenda of the fourth GS2 PAHO Meeting (GESEA/SG2/4 - Virtual) that has been convened for June 6 and 7, 2023. The Secretariat made the presentation to SAMI/IG.

2.43 The information presented by France at RAAC/17 (Santiago, Chile, 10-14 April 203) was reviewed. The note "PBN implementation in France: a return experience" analyzes some operational safety incidents that are attributed to errors in the altimeter setting during the execution of Baro VNAV procedures. France argues that one way to mitigate these incidents is to accentuate the use of SBAS, whose procedures for vertical guidance do not necessarily depend on the aircraft's altimeter. It was reported that RAAC17 failed to identify a tangible risk to the region from such incidents, nor did it adopt France's approach. SG2 PANS PAS has taken note and will continue to monitor the issue.

2.44 SG2 analysed the PBN Roadmap 2022-2026. The updating of the Monitoring Tables by the States was arranged. At the same time, the progress of the application of RF segments in flight procedures was analyzed, recognizing that the Circular issued by the SRVSOP on this matter needs to be updated, with the lines of the new version of ICAO Doc 9613.

2.45 LATAM presented a case of application of RNP/AR procedures for B767 cargo aircraft, implemented in Costa Rica. Procedures for MROC runway 07/25 were approved based on the RNP and RF capabilities of these aircraft. LATAM will expand this study at SG2/4.

2.46 Brazil presented the development of Visual Prescribed Track – VPT procedures. An AIC on this subject is being developed. The Region monitors the implementation of PBN procedures on visual runways, and the development of the VPT is monitored simultaneously.

2.47 The Secretariat informed that ICAO Circular 359 on VPT had been officially issued. SG2 was commissioned to study the new circular and determine if it meets the needs of the Region, and according to said study, the Regional Guide on the implementation of PBN procedures for Visual Runways, issued in November 2020 based on the work of GESEA, is canceled, adapted or updated. **(ACTION 02)**

2.48 It was proposed to advance in the study of the ASBU NAVS-B0/4 module "Navigation Minimal Operating Networks" (Nav MON) that has the purpose of adjusting conventional radio aid networks to the deployment of GNSS navigation, as well as the procedures that ensure the levels of resilience for air navigation.

2.49 The Meeting stressed the need for GESEA and SG2 to promote the updating of flight procedure charts in the Region, at least every 5 years according to the parameters of Doc 8168. This task requires mapping the age of IAC charts (conventional and PBN) as well as planning priorities in each state. SG2/4 should address this matter. **(ACTION 03)**

2.50 SG2 is responsible for monitoring the True North Use initiative and should address it at its next meeting. The importance of continuing to measure and report the CO2 savings generated in the implementation of the PBN in the approach and arrival/departure segments was highlighted. SG2 PANS PAS renewed its commitment to work in collaboration with the other GESEA subgroups, in view of the Job Cards approved in SAMIG.

Report on the activities of the Instrument Flight Procedures Panel (IFPP)

2.51 It was reported that the Panel of Instrument Flight Procedures - IFPP (formerly OCP Panel), was created on June 7, 1966 by the Air Navigation Commission (ANC) of the ICAO, to develop and improve the criteria related to the design and publication of air navigation procedures and, in this way, respond to the continuous increase in air traffic and the evolution of equipment on board aircraft. It is composed of specialists from States and international organizations, who work through virtual means and face-to-face meetings. These meetings discuss and decide the criteria that will be proposed to the ANC for updating Doc. 8168, Doc 9905, Doc 8697, Doc 9906 and other associated publications. Brazil is the only SAM state with a representative on this Panel.

2.52 The working methods and agenda covered by the IFPP were summarized. The Working Papers (WP) referring to each of the activities developed are available for reference, only in English, at the following link:

https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/General/SAMIG29%20mayo%202023/NE%20IFPP%2016-2%20-%20MAR%202023?csf=1&web=1&e=wLwvdW

2.53 The possibility of holding an IFPP meeting at the ICAO Office in Lima in March 2025 was discussed. Several benefits could be achieved with the realization of this meeting, especially if PANS-PAHO specialists from the SAM Region could participate:

- Know the dynamics of work and internal functioning of the ICAO panels;
- Know the main issues under development by the IFPP and its prioritization of work, which would allow anticipating actions and lines of work in the SAM Region;
- Exchange of knowledge and clarification of doubts and various queries;
- Interact with the panelists, strengthening professional ties that can be very useful in future consultations on PANS-PAHO technical aspects;

- Greater alignment with ICAO standards, principles and recommendations, as well as international best practices;
- Projection of the SAM Region in the "PANS-OPS universe" and of ICAO itself.

2.54 The Meeting instructed the Secretariat to explore with RLA/06/901 the feasibility of an IFPP meeting to be held at the Regional Office by 2025, and to keep GESEA and SAM/IG informed. (**ACTION 04)**

Flight procedure designs for airspace optimization

2.55 The projects of Airspace Concepts (AEC) and their respective dates for implementation in the TMAs of Brazil were reported. See table in **Appendix C.**

2.56 The changes in relation to the last meeting were the advances in the projects for the FIR Recife (Cardel Northeast Project), the FIR Brasilia (Route Efficiency Project) and the planning changes for the optimization of the other TMA for the years 2021 to 2030. The Cardeal Northeast and Route Efficiency projects are carried out in parallel, as they have areas with common boundaries.

2.57 The Cardeal Nordeste project aims to optimize air circulation in the TMAs of Recife, Natal and Fortaleza and increase airspace capacity. The Route Efficiency project aims to optimize air circulation in the Brasilia and Recife FIRs, seeking the use of the PBN concept to develop more direct routes, and increase airspace capacity. Air traffic will also be optimized in the TMA Porto Seguro, Ilhéus, Salvador, Aracajú and Maceió.

2.58 The progress of the horizontal cooperation Brazil (DECEA/ICA) – Uruguay (DINACIA/DCA) for the restructuring of Uruguayan airspace and its optimization was reported. The planning of the process is divided into 3 phases:

PHASE 1: implement procedures in SUMU, SULS and SUAA. (concluded October 2022)
PHASE 2: implement SID/STAR terminal area Carrasco concept CDO CCO. (second semester 2023)
PHASE 3: implement other airport procedures. (second semester 2024)

SG3 ACTIVITIES- ATFM

2.59 The sixth meeting of Subgroup 3 (SG3/6) was held on 23 and 24 March 2023 via videoconference, under the coordination of Mr. Ricardo David (Brazil). The following is the analysis of the ATFM topics, presented by the delegate of Brazil, Mr. Fabio da Silva Santos:

2.60 Based on the work presented by the Task Force - SAM ATFM Regional Documentation (GT DOCS ATFM) it was proposed to include a new Appendix - ATFM Service Job Profiles for the Guide.

2.61 The next steps of the WG DOCS ATFM include maintaining the process of monitoring the measurement and declaration of capacities in the countries of the Region, promoting and supporting it when necessary, as well as conducting a second round of the regional ATFM Survey and verifying opportunities to update the Guide and the CAP Manual (including models of Declaration of Capacity, PDA and Post-Operations Report).

2.62 The DCB Monitoring Plan for the Region SAM (WG PLAN DCB) Task Group presented the results of the work developed by the group since the last SG3 meeting in 2022. The Dashboard for the Summer 23 season was presented, with its new functionalities. See the link;

https://app.powerbi.com/view?r=eyJrIjoiYWZlMDNlNzUtYjE3OC00ZjljLWFlYmMtNzhiNGE2MGE4YTM1IiwidCI6IjI2MjI4ZGNhLTcwZDMtNDkxNy04MjMzLTA4M2FjMzY1NWE5MSJ9

2.63 In the Dashboard, it was described which indicators we currently have available in the Operations Plan, according to the following;

a. Number of takeoffs and landings from major airports in the region;
b. Maximum Airport Capacity (GANP KPI09);
c. Runway capacity utilization is monitored through congestion schedules; and
d. Maximum Airport Performance (GANP KPI10).

2.64 In SG3/6, the ATFM Crossborder Task Group (GT XB) presented progress of the work developed by the group whose objectives are the elaboration of an ATFM XB Manual for the SAM Region, which establishes principles and general rules to optimize the provision of the ATFM Service at the Cross-Border level in the region, and the establishment of a model ATFM XB Letter of Agreement that contemplates and describes the procedures to coordinate the provision of the ATFM Service between SAM States.

2.65 The first draft of the ATFM LoA Model for the SAM Region was analyzed, explaining the details of each point, including: the need to determine which agency provides the ATFM Service in each State and its hours of operation; the importance of Information Exchange; the need to consider all ATFM regulations in order to reach ATFM XB Agreements; recognition of the need to establish efficient and reliable means of communication for ATFM XB coordination; and the Role of ATFM in Contingencies. Through an information note from the Rapporteur of WP XB, the details of the work in progress were learned, including its analysis of a proposal for the ATFM portal of the Region (discussed in paragraphs below).

ATFM Strategy

2.66 The Workshop/Meeting stressed that any strategy for the development of the ATFM must be based on the CONOPS – ATFM approved by GREPECAS, in order to promote interoperability between the SAM and CAR regions. At the same time, the ATM planning that originates and sustains in Volume III of the ANP CAR/SAM, and that deploys performance-based planning for the two Regions, is important.

2.67 IATA spoke about the ATFM strategy for the Region. Taking into consideration the requirements established in DOC. 9971, there are airspaces in the SAM Region with an inadequate design, mostly related to sectorization and ATC capacity. This problem prevents the use of optimal flight paths due to the need to establish flight restrictions, either lateral (use of longer routes) or vertical (use of flight level restrictions), to match demand to the capacity of very large ATC sectors, including those responsible for sequencing aircraft for major airports and controlling aircraft in the process of ascent and descent.

2.68 Regarding the CNS infrastructure, the need to improve ATS surveillance and VHF communications coverage in some key airspaces in the region is evident to allow the reduction of longitudinal separation and increase airspace capacity, as well as to avoid technical problems that lead to the need for contingency procedures.

2.69 The characteristics of the phases of the ATFM service according to Doc 9971 were highlighted; Strategic, pre-tactical, tactical, and post-operational phase. A basic roadmap is proposed as follows:

Short term (2023/2024)

- Prioritize investment in ATFM execution, including human resource allocation and training.
- Implement an ATFM tactical coordination mechanism in the SAM region.
- Implement/Improve and disseminate the ATFM Daily Plan to all *stakeholders.*
- Review the sectorization of ATC to identify present and future 'bottlenecks'.
- Implement the post-trade analysis process based on agreed key performance indicators.

Medium term (2025-2027)

- Implement a complete ATFM service, including ATM planning and ATFM execution (strategic, pre-tactical, tactical, and post-operational phases)

2.70 In the SAM Region, one of the challenges to apply the ATFM tactical phase are contingency situations and/or unexpected events that cause a significant impact to ANPS and/or airspace users. In this regard, it is necessary to adopt tactical coordination mechanisms, with a prompt response, with a view to evaluating alternatives that can reduce or eliminate these impacts, such as alternative routes, exclusion of specific flights from restrictive measures, relaxation of restrictive measures, etc. SG3 ATFM is working on the development of action S28/09.

2.71 These tactical coordination mechanisms should be established at the intraregional and interregional levels, through the adoption of a process that allows their activation by States, ANSPs and/or airspace users. The process should be based on the possibility of using videoconference calls involving the states, air navigation service providers and airspace users involved, who can make quick and effective decisions, based on the agreements reached on the calls.

2.72 For the establishment of the ATFM tactical coordination mechanism, it will be necessary to develop and update a list of ATFM or ATC points of contact (for states that do not have H24 ATFM units), which can be activated H24 to participate in ATFM Tactical Coordination Mechanism calls. These points of contact must have the power to make operational decisions, reached by agreements during the afore-mentioned calls to be executed immediately.

2.73 The Secretariat reported that SG3 is responsible for the development of the Job Card related to this ATFM tactical coordination mechanism. The Coordination of GESEA and SG3 was commissioned to promote this initiative in its following teleconferences, always in the collaborative environment of the specialists of the Region. A report on this matter is expected for SAM/IG/30.

2.74 It was highlighted that the rapid advances that GESEA studies and SAM/IG work on ATFM are generating is based on deliverables that put into practice the afore-mentioned ATFM phases. The Meeting agreed to make the greatest efforts for the implementation of ATFM in the SAM region, in accordance with the guidance provided in Annex 11, Doc 4444 and Doc 9971, as well as to include this initiative in the Regional Air Navigation Plan, as a contribution to meet the infrastructure-related part and operational efficiencies of the Aspirational Long-Term Goal (LTG) to achieve net-zero CO2 emissions. towards the year 2050.

Proposal to implement an ATFM portal

2.75 It was reported that, in 2022, SG3 approved the creation of a Working Group for the development of the *cross-border* ATFM service (GT XB), with the objective of standardizing and establishing tools for ATFM coordination among the States of the Region. In this context, and in order to

support the implementation of cross-border ATFM in the Region, Brazil presented the proposal to develop the ATFM SAM Portal, a web tool produced based on the work of GESEA and that would be the basis of the South American cross-border ATFM service.

2.76 The ATFM SAM Portal is proposed as a collaborative web application between the states of the SAM Region that allows concerned parties to interact and exchange information related to crossborder ATFM. The main objective of the portal is to promote communication, collaboration and coordination among all stakeholders, with shared information in order to improve the efficiency of air operations in the airspace of the SAM Region, through the following functionalities:

- promote the regional integration of ATFM;
- sending messages between ATFM units in real time;
- monitoring air traffic demand and declared ATC capacity;
- monitoring of meteorological phenomena in airspace;
- monitoring of events with significant impact on flow;
- production and standardized publication of the ATFM Daily Plan;
- among others.

2.77 ATFM's SAM Portal will provide information of interest to the international ATM community in English, Spanish and Portuguese. Participating States may define the airports that will have information available on the SAM ATFM Portal, in a manner harmonised with OPSAM. Thus, data on demand, capacity, eventual infrastructure degradation, application of ATFM measures, NOTAM of interest, among others, will be available for the consumption of the international ATM community through the Portal.

2.78 Participating States may also provide future (strategic and pre-tactical planning), current (tactical) and past (post-operational) information on air traffic demand from monitored airports, declared capacities, major events, works and infrastructure degradation, among others.

2.79 The SAM ATFM Portal would use the servers provided by the RLA 06 901 project, which can facilitate development and technical maintenance. Through a secure environment (username and password), flow managers of the Participating States will be able to exchange messages aimed at the implementation of an ATFM measure, which will be published in the external area of the Portal and stored in a database for future reference.

2.80 On this matter, the Secretariat reported that in the scope of analysis of SG3 and the task groups, the requirements of States on the border between SAM and CAR regions had been highlighted due to the aspect of interoperability of the projected portal with respect to other platforms, taking as an example the case of Colombia that requires tools for future ATFM crossborder work with adjacent services in the Caribbean region.

2.81 At the same time, the importance of the neutrality and security of the tool was highlighted as it will be of operational use. It must have a unique tool specific to the Region, that is, that meets their specific needs. In addition to these aspects, IATA identified that the ATFM portal can have great potential for operational solutions in the implementation of UPRs, FRTO and other ATMs. The example of the 'DASA' portal in Brazil was mentioned.

2.82 The Meeting took note of what had been analyzed and expressed a favorable opinion on the proposal of the ATFM portal, however, in view of the requirements and concerns that have been reflected in the initial analysis and given the technical characteristics that are expected to be developed, the

need for resources, training requirements, equipment and costs to be determined was identified. and it was considered essential that it be coordinated and consulted at the level of the Member States of RLA/06/901 through written communication. In this way, if consensus is obtained, a clear mandate would be generated to move forward with the portal project. The Secretariat was instructed to coordinate the aforementioned actions before RLA/06/901 no later than June 2023. **(ACTION 05)**

ATFM Training

2.83 The results of the Track Capacity Calculation Course and ATS (ATM 044 and 045) offered by Brazil (CGNA) last April, 15 days of virtual classroom and 15 days of practical work in Rio de Janeiro were reviewed. Representatives from 10 countries were trained: Argentina, Bolivia, Chile, Colombia, Ecuador, Panama, Paraguay, Peru, Uruguay and Venezuela. The very positive comments of the Instructors and participants were reported. The Secretariat stressed that the States, through this training, are in a position to form working groups at their headquarters, to immediately begin the measurement tasks. Brazil confirmed that it remains open to support consultations on these activities.

2.84 The Meeting urged GESEA and SG3 to promote action plans in the States to execute or update the measurements of runway capacity and ATS sector, considering the recovery in demand for operations expected for this year (at 2019 levels) throughout the Region, and recognizing that in the ACCs there is a reduction in personnel, after the COVID19 stage (due to retirements, lack of basic courses, medical conditions, budget limitation, etc.). That is, it is crucial to identify if there may be demand-capacity imbalances due to shrinkage in the ATCO staff and define mitigation measures. (**ACTION 06)**

2.85 The call for the Workshops/Course on Indicators to be held in Brazil, at the CGNA, between June 3 and 14, 2023, was highlighted. The instruction includes topics on ATM Performance Indicators, analysis of results based on the Brazilian experience and ATM data and information management systems and applications. The Secretariat stressed the importance of this event to strengthen the use of GANP indicators, for the progress of the states with the Regional and National Air Navigation Plans.

2.86 Another important event in the work program is the second data and indicators workshop that will take place in Lima, Peru, between September 18 and 22, 2023. The working group should discuss and work on progress in the calculation of indicators in the Operations Plan, with the results already calculated and validated, develop a draft performance report to show the possibilities of reporting for those States wishing to submit their data and compare results and progress with other States.

2.87 Uruguay reported that an ATFM training provided by the CGNA will be developed, which will address the concepts of capacity/demand and the use of existing technology for this purpose. It will allow the development of cross-border ATFM facilitating the ATFM service between the states (Brazil/Uruguay/Argentina). Estimated date of completion in November 2023.

2.88 Brazil submitted a proposal to offer an ATFM Workshop in April 2024, which includes a virtual classroom and a second phase of practical exercise in Rio de Janeiro. **Appendix D** shows the proposed didactic content. The Meeting considered this cooperation by Brazil to be very positive, and it was noted that it is necessary to train new personnel to strengthen services in several States. The Secretariat was in charge of coordinating the possibilities of support in scholarships for this event, which would require approval of the RCC of the project RLA/06/901. **(ACTION 07)**

APPENDIX A

GT FRTO ACTION PLAN

Activity	Responsible	Start Date	End Date	State	Comments
Track the Implementation Status of UPRs in the SAM Region	SG1/GESEA	May 23	TBD	In progress	
Track Strategic Direct Routing Implementation Status in the SAM Region	SG1/GESEA	May 23	TBD	In progress	Implemented in the Amazon FIR, Guayaquil, Georgetown and Recife. Implemented in most of the FIR Brasilia, Curitiba and Maiquetía. Implemented in portions of the Lima and Santiago FIR.
Track FRA Implementation Status in the SAM Region	SG1/GESEA	May 23	TBD	In progress	Implemented in a portion of the FIR Cayenne.
Set goal for EDE and FRA implementation in the next 5 years	SG1/GESEA	May 23	July 23	In progress	Referencia: NE 47 RAAC/17 – IATA
Implement Strategic Direct Routing in airspaces where feasible	States	May 20	Nov 23	In progress	
Develop aeronautical publication model for EDE implementation	Julio Pereira Fernando Hermoza	May 20	July 20	Finalized	
Develop aeronautical publication model for UPRs implementation	Julio Pereira	May 23	July 23	In progress	
Develop a model/guide for Safety Assessment for FRTO B0/1 Implementation.	Fernando Hermoza	May 20	July 20	Finalized	
Develop a safety case based on the new operational scenario with the use of the UPR and EDE	SG1/GESEA	May 23	TBD	In progress	
Develop an educational brochure to disseminate the EDE concept for CTAs and Pilots, ARO Officers.	New Rosana	May 20	July 20	Finalized	
Develop a communication plan for FRTO implementation (UPR, EDE and FRA)	SG1/GESEA	May 23	TBD	In progress	
Update the operational agreement letters for the implementation of the EDE (Cross Border)	States	May 20	TBD	In progress	
Establish the requirements for implementation of FRTO B0/1 and B1/1 (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT FRTO	May 20	TBD	In progress	

Activity	Responsible	Start Date	End Date	State	Comments
Evaluate the implementation status of the requirements for FRTO B0/1 and B1/1 implementation (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT FRTO	May 23	TBD	In progress	
Establish key performance indicators.	Julio Pereira	May 20	TBD	In progress	
Develop Direct Routes Implementation Guide Material (EDE and UPRs)	GT FRTO	April 21	TBD	In progress	It will be supported by the RLA 06/901 project
Propose Intraregional UPRs (SAM Region)	IATA/Airlines	1 April 21	TBD	In progress	
Evaluate Intraregional UPRs	States	1 April 21	TBD	In progress	
Develop evaluation process of Interregional UPRs	GT FRTO	1 April 21	TBD	In progress	
Meeting WG FRTO/1 Habilitadores ATM/CNS	Julio Pereira Fernando Hermoza	June 20 and 21 (13:00-16:00 UTC)		In progress	
WG FRTO/2 Meeting Habilitadores ATM/CNS	Julio Pereira Fernando Hermoza	August 22 and 23 (13:00-16:00 UTC)		In progress	
WG FRTO/3 Meeting Habilitadores ATM/CNS	Julio Pereira Fernando Hermoza	December 12 and 13 (13:00-16:00 UTC)		In progress	

APPENDIX B

FRTO strategy proposed by IATA

Short term (2023/2024)

- Implement the UPRs of the route catalog.
- Create a process to accelerate the publication of UPRs.
- Develop regionally oriented material for implementing DTS and UPRs, including operational/technical requirements.
- Develop a regional CONOPS FRA, including operational/technical requirements.
- Start FRA testing in at least 1 CAR/SAM state.
- Include UPR, EDE and FRA in the Air Navigation Plan CAR/SAM, through GREPECAS and the corresponding NACC and SAM Implementation Groups.

Medium term (2025-2027)

- Implement EDEs in 80%+ of SAM FIRs.
- Implement cross-border EDEs in at least 4 adjacent SAM FIRs.
- Implement FRAs in 20%+ of FIR CAR/SAM.

Risks, challenges and interdependencies

- Lack of CNS infrastructure.
- ATM system deficiency.
- Lack of ATC capacity due to inadequate sectorization.
- Lack of Human Resources, mainly Air Traffic Controllers, to open new ATC sectors needed to support the growing demand and implementation of EDE/FRA.
- The misuse of airport infrastructure generates a domino effect in airspace management.
- Need for harmonized implementation of new ATM systems to meet EDE/FRA requirements, such as MTCD and compliance monitoring tools.
- Include the DTS/FRA requirement in the AIDC implementation process.

APPENDIX C

PBN IMPLEMENTATION PROGRESS IN TMA IN BRAZIL

Brazil	Brasilia		NOV 2015 (deployed)
	London		NOV 2015 (deployed)
	São Paulo (partial exchanges)		NOV 2015 (deployed)
	Savior		APR 2017 (deployed)
	Manaus		AGM 2017 (deployed)
	(PBN SUL)	Curitiba	OCT 2017 (implemented)
		Florianopolis	
		Joinville	
		Navigators	
		Porto Alegre	
		São Paulo (partial changes)	
		FIR CW route network	
	São Paulo (TMA-SP Neo)		MAY 2021 (implemented)
	TMA Belém (CCO/CDO – RNP con RF LEG)		DEC 2021
	TMA Campo Grande (CCO/CDO)		DEC 2021
	FIR Recife (Proyecto Cardinal Nordeste)		OCT 2023
	FIR Brasilia (Route Efficiency Project)		OCT 2023
	Amazon FIR (routes and TMA)		APR 2025
	FIR Curitiba (routes and TMA)		MAY 2027
	FIR Atlantic (routes)		JUN 2030

APPENDIX D

Proposal of content of the ATFM Workshop offered by Brazil

1.1 Section 1: Implementing ATFM

- Doc. 9971;
- ATFM Implementation Manual for SAM Region; and
- ATFM structure.

1.2 Section 2: ATFM Strategic Phase

- Notions of airspace planning (optional routes and direct routes); and
- Capacity/Demand Analysis - Analysis of Airspace and Airports with related events.

1.3 Section 3: ATFM Pre-Tactical Phase

- Pre-tactical processes;
- Analysis of special events in Airports and Airspace;
- Demand analysis and capacity review and upgrade;
- Analysis of Meteorological Events with Capacity Impacts; and
- Construction of the PDA;

1.4 Section 4: ATFM Tactical Phase

- Applicability of PDA;
- Demand and Capacity Analysis;
- Meteorological Analysis;
- Monitoring the operability of systems with respect to capacity;
- Adoption of ATFM measures; and
- Reports for post-operation analysis.

1.5 Section 5: Postoperative analysis

- Analysis of operational trends or opportunities for improvement;
- Research of the future cause and effect relationship of ATFM measures, to assist in the selection and development of future actions and strategies;
- Collect additional information to optimize the efficiency of the ATM system, in general or for ongoing events;
- Generation of analysis of indicators, statistical reports and feedback of the phases of the ATFM.

Agenda Item 3: Report of activities and deliverables of the GT INTEROP and Subgroups

a) Review of air navigation priorities in the CNS field.
b) CNS Implementation. Progress of the Subgroups.
c) Proposed Conclusions
d) Review of the 2023 Work Plan

3.1 Under this agenda item, the following papers were discussed:

N°	Subject	Presented by
WP/3.1	Activities carried out in the INTEROP TF Subgroups	Secretariat
WP/3.2	Adoption of space-based ADS-B technology based on a business case analysis	IATA
WP/3.3	Brazilian proposal for WRC-23 Agenda item 1.7	Brazil
WP/3.4	ATM/FPL roadmap update and modification to the acceptance message format (ACK) and rejection (REJ) of flight plans	Rapporteur of the ATM/FPL Subgroup
IP/3.1	Implementation of the new AMHS system in Uruguay	Uruguay
IP/3.2	Activities carried out by Brazil to adapt the Regional OPMET Data Bank (RODB) IWXXM	Brasil
IP/3.3	Transport of space-based ADS-B information via REDDIG II	AIREON
IP/3.4	Benefits of space-based ADS-B for Air Traffic Flow Management (ATFM)	AIREON
IP/3.5	GADSS and AireonLOCATE	AIREON
IP/3.6	Activities of Paraguay in the implementation of AIDC	Paraguay
IP/3.7	ADS-B Implementation in Brazil (Spanish only)	Brazil
IP/3.8	Estado actual de interconexión del sistema AIDC de Perú (Spanish onlyl)	Peru
IP/3.9	Creation of ATM/FPL Group – FPL Treatment Unit (Spanish onlyl)	Peru

DISCUSSIONS DURING THE WORKSHOP/MEETING SAM/IG/29

ATM/AIDC Subgroup

3.2 The main objective of the ATM/AIDC Subgroup is to establish the connections for ATS Interfacility Data Link Communication (AIDC) by the States of the MAR Region.

3.3 The Meeting noted that, so far, 16 intra-regional AIDC communications and 2 inter-regional AIDC communications have been established. **Appendix A** of this working paper lists the States that have implemented AIDCs.

Establishment of AIDC between centers using the same automation system

3.4 The participants of the SAM/IG/29 Workshop/Meeting agreed that States using the same control center automation system should seek to move forward with AIDC implementation between their adjacent centers. In this context, it is identified that there are opportunities for Brazil, Paraguay and

Venezuela, which could seek to move forward with AIDC between ACC Amazonico - ACC Maiquetía, and ACC Asunción - ACC Curitiba.

3.5 Brazil and Paraguay reported that the corrections proposed by ATECH are scheduled to be made to the Paraguay Database from 22 to 25 May, 2023. After these corrections, adjustments will also be made to the ACC-CW database (Curitiba-Brazil). The expectation is to perform the tests and start the pre-operational phase in the second half of 2023. **Action S29/11**

3.6 The Atech representative recommended that the database adjustments be made jointly between the database managers in Asuncion and Curitiba, so that the airways, coordination points, and AMHS addresses are jointly adjusted. In addition, the databases should be put into operation at the same time, and then the AIDC tests should be performed again.

3.7 Likewise, Brazil and Venezuela agreed to resume AIDC tests between ACC Amazónico and ACC Maiquetía, with a view to establishing an operational connection by the end of this year. **Action S29/12**

3.8 The Atech representative recommended that the ACC-AZ and ACC-MI database managers meet to ensure that the airways, coordination points, and AMHS addresses are configured the same for the databases.

Visit of EASA representative to ACC Lima

3.9 The Workshop/Meeting participants noted that in the framework of the European Union (EU) and Latin America & Caribbean Civil Aviation Cooperation Project (EU-LAC APP) managed by EASA, a visit was made to CORPAC's premises at Jorge Chavez Airport (Lima), mainly to the Lima Area Control Center (ACC) by a team formed by an EU-LAC APP expert and ICAO SAM regional office staff, in order to identify areas for improvement and promote recommendations, with the objective of implementing the AIDC in Peru with all adjacent international centers as soon as possible.

3.10 The EU-LAC APP report with the recommendations issued is being evaluated by the CNS provider, whose report will be forwarded to the national aviation authority, and after that ICAO will be informed for presentation at the next SAMIG.

Statistics of errors in operational AIDC connections of ACC Lima

3.11 Peru has submitted an information paper showing updated information regarding the errors obtained in the coordination phases with adjacent FIRs with which AIDC interconnections have been established at the operational level.

3.12 The analysis of the recorded errors focused on errors LRM 6 and LRM 7, which consider the lack of flight plans (FPL) and the duplicity or multiplicity of these.

3.13 The Workshop/Meeting participants agreed that the IP/3.8 information be shared with the ATM/FPL Subgroup that is applying the methodology adopted at the SAM/IG/28 Workshop/Meeting and performing the analyses to mitigate errors and duplicity/multiplicity of flight plans. The Secretariat will forward to the ATM/FPL Subgroup Rapporteur the information provided by the administration of Peru, for analysis at the next ATM/FPL Subgroup on-line meeting. **Action S29/13**

ATM/FPL Subgroup

3.14 The purpose of the ATM/FPL Subgroup is to study and propose solutions for the centralization of flight plan management, in order to mitigate errors and duplication/multiplicity of flight plans, with the participation of representatives of States and Industry.

3.15 The Workshop/Meeting participants noted that the First Workshop/Meeting of the ATM/FPL Subgroup (SG ATM/FPL/1) was held at the Lima Regional Office from 27 to 31 March, 2023, with the participation of 11 representatives from Bolivia, Brazil, Chile, Ecuador, Paraguay, Peru and Venezuela. The Summary of Discussions can be accessed through the following link:

https://www.icao.int/SAM/Documents/2023-RLA06901-SGATMFPL1/SUMARIO%20REUNION%20ATM_FPL%20MARZO%202023.pdf

3.16 The main deliverable of the ATM/FPL Subgroup was the update of the ATM/FPL Roadmap for version 3.0, in which changes were made to the appendix describing the ACK and REJ message formats.

- Example of ACK message:

(ACK FPL-CMP124-SPJC1645-MPTO-DOF/210907)

Type of response = (ACK
Type of message = FPL-
Flight Identification = CMP124-
DEP Aerodrome and EOBT = SPJC1645-
ARR Aerodrome = MPTO-
Day of Flight = DOF/210907)

Note: 1
- Beginning of the message with a parenthesis "(", which will be the signal of the beginning of the data;
- Composition of the message separated by a hyphen, "-", for the beginning of each field;
- DOF element constituting a field shall be separated by a slash "/"; and
- The end of the ATS data shall be indicated by a closed parenthesis ")".

- Example of message REJ:

(REJ FPL-JBU1824-SEQM1645-KFLL-DOF/210907) INCORRECT FPL FIELD 15

Type of response = (REJ
Type of message = FPL-
Flight Identification = JBU1824-
DEP Aerodorome and EOBT = SEQM1645-
ARR Aerodrome = KFLL-
Day of Flight = DOF/210907)
Reason for Rejection = INCORRECT FPL FIELD 15

Note 1: Because of the rejection, the FPL box(es) containing the error will be included, followed by a slash "/". Example: 10/18.

Note 2:
- Beginning of the message with a parenthesis "(", which will constitute the signal of the beginning of the data;
- Composition of the message separated by a hyphen, "-", for the beginning of each field;
- DOF element constituting a field shall be separated by a slash "/"; and
- The end of the ATS message shall be indicated by a closed parenthesis ")".

3.17 States should note the changes made to the ATM/FPL Roadmap document version 3.0 and consider adopting the recommended format for feedback messages (ACK and REJ) for flight plan originators. **Action S29/14**

3.18 Chile stated, by email to the Secretariat, that will evaluate the proposed format for acceptance (ACK) and rejection (REJ) of FPLs in its Flight Plan management system, taking advantage of the ability to use its AMHS system (CADAS), which validates format and syntax of FPLs, and see what the effect of these new formats is.

3.19 The Workshop/Meeting participants noted that some States in the Region (Argentina, Chile, Colombia, French Guyana, Peru and Venezuela) use the AMHS system manufactured by Frequentis-Comsoft that implement the CADAS User Agent (UA), with functionality to perform syntactic and semantic critique of received and transmitted flight plans.

3.20 This functionality allows, more easily, to implement a centralized management of flight plans, in order to mitigate errors, before distributing to the control centers involved.

3.21 An Ad-hoc group of the ATM/FPL Subgroup consisting of representatives from Argentina, Chile, Colombia, French Guyana, Peru and Venezuela will be formed to exchange information, share best practices and learn about the initiatives taken by each State to establish a centralized management of flight plans. **Action S29/15**

3.22 Peru has submitted NI/3.9, which informs the formation of the ATM/FPL multioperational group, whose purpose is to establish procedures for the treatment of flight plans, to mitigate errors/duplicity of FPLs.

3.23 The Peruvian State under the supervision of the Authority has seen fit the creation of the FPL Processing Unit that, with the support of the Air Navigation Service Provider and the Aeronautical Operations Management, formed the multi-operational group of ATS collaborators, for which, has scheduled an operational meeting on 26 May, to establish a progressive Work Plan, which will be reporting later to the ATM/FPL Sub-Group rapporteur and other stakeholders.

Brazilian Flight Plan Centralization System (SIGMA)

3.24 The Workshop/Meeting participants noted that, on 18-19 April, 2023, a presentation was made on the functionalities of the SIGMA system implemented in Brazil (DECEA), which provides centralized and automated management of flight plans, contributing to the mitigation of flight plan errors.

CNS/AMHS Subgroup

3.25 The CNS/AMHS Subgroup is aimed at establishing AMHS interconnections between the Region's COM Centers and with the COM Centers of the other ICAO regions.

3.26 Since SAM/IG/28, The following AMHS interconnections (P1) were established via REDDIG II:

- Brasilia COM Center – Madrid COM Center (SBBR - LEEE);
- Brasilia COM Center – Montevideo COM Center (SBBR - SUMU);
- Caracas COM Center - Madrid COM Center (SVCA - LEEE);
- Ezeiza COM Center - CENAMER COM Center (SAEZ - MHTG);
- Ezeiza COM Center - Madrid COM Center (SAEZ - LEEE);
- Ezeiza COM Center - Montevideo COM Center (SAEZ - SUMU);
- Lima COM Center – CENAMER COM Center (SPIM – MHTG);
- Lima COM Center – Panama COM Center (SPIM – MPPC); and
- Lima COM Center - Montevideo COM Center (SPIM - SUMU).

3.27 The Secretariat reported that interoperability testing (IOT) between the Ezeiza COM Center and the Johannesburg COM Center began on 15 May, 2023.

3.28 **Appendix B** to this working paper presents the AMHS (P1) intra-regional and inter-regional (planned and extra-plan) interconnections of the SAM Region.

3.29 Uruguay submitted IP/3.1 providing information on the implementation of the new Montevideo AMHS COM Center system.

3.30 Uruguay now has a new 100% AMHS system from Frequentis-California. This system has redundant servers, as well as test servers and a contingency server that will be configured later. In addition, it has 26 AMHS UAs terminals distributed throughout the country and 3 operational P1 connections between the MTA of the Montevideo COM center and the MTAs of the Lima, Brasilia and Buenos Aires COM centers, therefore obtaining a double triangulation that increases redundancy and security in message traffic. It also incorporates the functionality for handling meteorological information in IWXXM format, thus complying with ICAO requirements.

3.31 Uruguay thanked Argentina, Brazil, Peru, Venezuela and the administration of the regional network (REDDIG II), who collaborated with the work carried out to achieve both the temporary AFTN connections prior to the migration to the new AMHS system, and the operational P1 connections between the MTAs.

3.32 Finally, the Secretariat highlighted the importance of the AMHS COM Centers for the provision of air navigation services. The aeronautical context still depends on messaging to exchange the necessary information for the provision of services, through flight plan messages, aeronautical and meteorological information, among others; being crucial that the AMHS COM Centers operate continuously, with trained personnel and adequate and sufficient systems for the operation of the aeronautical messaging service.

Fourth Workshop/Meeting of AMHS COM Center Supervisors/Operators in the SAM Region

3.33 The participants of the Workshop/Meeting noted that the Fourth Workshop/Meeting of COM AMHS Center Supervisors/Operators of the SAM Region (COM AMHS/4) was held in Lima on 24-27 April, 2023, with the participation of 14 representatives from the COM AMHS Centers of Bolivia, Chile, Ecuador, Panama, Peru, Uruguay and Venezuela.

3.34 During the COM AMHS/4 Workshop/Meeting, the Contingency Plans of the COM Centers of the Region were discussed; the Routing Tables were revised and the information in the

EUROCONTROL AMHS Address Management Center (AMC) was updated; the CNS Table II-1 *Aeronautical Message Service* (AFTN/AMHS) Plan in Volume II of the CAR/SAM ANP was updated; and other matters concerning the Aeronautical Messaging Service were discussed.

3.35 The Summary of the Meeting can be accessed through the following link:

https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2023-RLA06901-COMAMHS4&t=1

CNS/ANP Subgroup

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

3.37 The participants of the Workshop/Meeting were informed that the Rapporteur of the CNS/ANP Subgroup has worked individually with the States to consolidate the information from the SAM Region in order to subsequently work with the CAR States in coordination with the NACC and SAM Offices. It is estimated that the consolidation of information from the CAR and SAM States will begin in July 2023, to be completed by December 2023.

3.38 The Secretariat also informed that during the GREPECAS/20 Meeting (Salvador/Brazil, 16-18 November, 2022), Conclusion GREPECAS/20-5 was approved for the creation of an Ad-hoc Group to develop a regional project for the management of aeronautical frequencies.

3.39 In the period from 30 January to 3 February, 2023, representatives from Chile, Dominican Republic, Haiti, Uruguay and COCESNA met at the NACC Office (Mexico) as participants of the Ad-hoc Group, formed to develop the GREPECAS Project required in Conclusion GREPECAS/20-5.

3.40 The work carried out by the Ad-hoc Group was approved at the Fifth Virtual Meeting of the GREPECAS Program and Project Review Committee (CRPP) (eCRPP/5), establishing a GREPECAS Project for the Regional CAR/SAM Management of the Aviation Radio Spectrum.

3.41 The Secretariat clarified that the activities related to the SAM States of the aforementioned project will be carried out within the framework of the CNS/ANP Subgroup. In this regard, electronic templates with the information contained in the COM 1, COM 2 and COM 3 Lists have already been sent for updating by each State.

3.42 It was noted that, on 2 March, 2023, the SAM Office circulated the letter LN3/24.1 - SA6940, inviting participation in the *Workshop/Training on "Frequency Finder 2023" application*, which will be held at the ICAO SAM Office, from 29 May to 2 June, 2023.

3.43 The SAM States should update the information in the COM 1, COM 2 and COM 3 Lists and route it prior to the Frequency Finder Workshop/Training. **Action S29/16**

Brazilian proposal for WRC-23 agenda item 1.7

3.44 Brazil has submitted WP/3.3 which deals with the Brazilian proposal for World Radiocommunication Conference (WRC-23) agenda item 1.7, to be discussed at the next meeting of the Inter-American Telecommunication Commission (CITEL), to be held from 22 to 26 May 2023, with the objective of reaching an official position of the Americas region for this agenda item at WRC-23.

3.45 The working paper indicates that, at the preparatory meeting for the Conference (CPM23-2) held in March 2023, the final text of WRC-23 was approved with the definition of 5 methods: A, B1, B2, B3 and B4.

3.46 Method B1 proposes a new allocation in the band 117.975-137 MHz with the addition of a power flux-density limit (PFD), on unwanted emissions from AMS(R)S space stations falling above 137 MHz, to ensure protection of adjacent band services above 137 MHz. Method B1 also proposes coordination for coexistence between AMS(R)S and other primary in-band services in accordance with RR No. 9.11A with a coordination threshold proposed in Annex 1 of Appendix 5 of the Radio Regulations (RR).

3.47 In this regard, the SAM States are encouraged to support the ICAO Position in relation to WRC-23 agenda item 1.7, as proposed to be presented by the Brazilian delegation at the CITEL Meeting (22-26 May 2023), for allocation to the aeronautical mobile-satellite service (R) within the frequency band **117.975-137 MHz**, in order to support VHF aeronautical communications in the Earth-to-space and space-to-Earth directions. **Action S29/17**

3.48 Argentina stated, through an e-mail message to the Secretariat, that it was aware of the Brazilian proposal and that it will be sent to the national telecommunication authority for consideration at the CITEL meeting (22-26 May, 2023), for allocation to the aeronautical mobile-satellite service (R) in the frequency band 117.975-137 MHz, in order to support aeronautical VHF communications in the Earth-to-space and space-to-Earth directions.

CNS/SUR Subgroup

3.49 The CNS/SUR Subgroup deals with the exchange of aeronautical surveillance data and is responsible for studying and proposing the necessary activities for a regional implementation of ADS-B, using REDDIG as a platform for information distribution, reducing the cost by contracting telecommunication services.

Exchange of aeronautical surveillance data

3.50 Since the SAM/IG/28 Workshop/Meeting, the following aeronautical surveillance information exchange initiative has been carried out:

- Chile - Peru exchange of Iquique and Arequipa sensor data; and

3.51 The Secretariat stressed the importance that the States that are coordinating the exchange of surveillance data, establish the necessary agreement documents, so that all the internal instances are aware of the commitments assumed and promptly collaborate to establish the technical means for the exchange of aeronautical surveillance data. **Action S29/18**

3.52 **Appendix C** to this working paper presents the surveillance information exchanges established and in progress in the SAM Region.

Space-based ADS-B data transmission via REDDIG II

3.53 The Workshop/Meeting participants noted that, on 20 April, 2023, the connection via REDDIG II was established through the MPLS nodes of Ilopango and Virginia, as one of the channels for providing Space-based ADS-B service to COCESNA, according to the information presented in IP/3.1.

3.54 The use of REDDIG for Space-based ADS-B data transmission will represent a 50% savings for COCESNA over the initial costs of communication links for the contracted service.

ADS-B Implementation in Brazil

3.55 Brazil submitted IP/3.7 with information on the implementation of 66 (sixty-six) ADS-B stations to serve the Brazilian continental airspace above level 245. In addition to the above-mentioned receivers, the system will be integrated by four Processing Centers and a Monitoring Center, the latter essential for the administration, supervision and maintenance process of the ADS-B receivers.

3.56 This year, Brazil (DECEA) will publish an Aeronautical Information Circular (AIC), which will stipulate a mandate in 2027 for the use of the ADS-B system in Brazilian continental airspace above level 245.

3.57 The expectation is that aircraft that will use the ADS-B system in continental airspace be equipped with this system by February 2027.

3.58 Brazil also informed that it continues with actions aimed at improving surveillance in the airspace of the oceanic areas of the Brazilian oil basins through the use of ADS-B. In this sense, in order to attend to the airspace of the Brazilian oil basins, the Brazilian Air Force will continue to use ADS-B. In this sense, in order to attend to the airspace of the Santos Basin, the installation of four more ADS-Bs on oil platforms, two in the continental area and a Processing Center is underway.

Benefits of Space-based ADS-B for Air Traffic Flow Management (ATFM) / GADSS and AireonLOCATE

3.59 The Aireon representative made a presentation on the issues covered in IP/3.4 - *Benefits of Space-based ADS-B for air traffic flow management (ATFM)* and IP/3.5 - *Global Aeronautical Distress Safety System (GADSS) and AireonLOCATE.*

3.60 The Workshop/Meeting participants noted that AireonFLOW is a data service that provides quality surveillance information for Air Traffic Management (ATM), within a designated primary Area of Responsibility (AoR) Service Volume and typically up to 3000 NM beyond (the "Long Range Area Service Volume") to support air traffic flow management initiatives. Customers can define their Long Range Area Service Volume to meet their unique operational objectives.

3.61 AireonLOCATE is a web-based platform that provides customers with the ability to locate any ADS-B equipped aircraft in real time, providing last position data and the last 15 minutes of flight time. The combination of reliable data and a secure, easy-to-use web interface provides unprecedented surveillance capabilities for customers in extremely time-critical circumstances.

3.62 The AireonLOCATE data service is accessed to the second via a secure web link, saving valuable time in search and rescue operations by providing the last known position of the aircraft.

Adoption of ADS-B technology based on business case analysis

3.63 IATA presented NE/3.2 highlighting the importance of taking into consideration the principles and recommendations set out in Doc 9082 for the implementation of new systems for the provision of air navigation services.

3.64 The working paper has already been presented at other ICAO events, such as the Seventeenth Meeting of Civil Aviation Authorities of the South American Region (RAAC/17), held in

Santiago/Chile 10-14 April, 2023. The link below provides access to the Report of the Asynchronous Phase of the RAAC/17 Meeting:

https://www.icao.int/SAM/Documents/2023-RAAC17/Informe%20Fase%20Asincronica.pdf

3.65 The Workshop/Meeting participants were informed that ADS-B technology is already a mature technology and that it can be implemented in two ways: implementation of an Air Navigation Service Provider (ANSP) own (ground) infrastructure to capture the signals transmitted by aircraft or contracting the services of a certified surveillance information provider, which has implemented an infrastructure by means of low orbit satellites (SB ADS-B).

3.66 ASBU Element ASUR-B1/1 - Receiving Aircraft ADS-B Signals via Space-based ADS-B (SB ADS-B), states that *"SB ADS-B provides accurate position/velocity information in airspace where it is not cost effective or even feasible to place ground-based surveillance infrastructure."*

3.67 Currently, in remote ocean areas there are two possibilities available: ADS-C (contract) and ADS-B (broadcast). At the beginning of Chapter 8 ATS Surveillance Services of Doc 4444, there is the following note:

Note. - Chapter 13 addresses ADS - contract (ADS-C), which is currently used exclusively to provide separation based on procedures.

3.68 In the same Chapter 8 of Doc 4444, primary surveillance radar (PSR), secondary surveillance radar (SSR), ADS-B and multilateration (MLAT) systems are listed as ATS surveillance systems.

3.69 At the beginning of Chapter 13 *Automatic Dependent Surveillance Services - Contract (ADS-C)* of Doc 4444, there is the following note:

Note. – In the Global Operational Data Link (GOLD) Manual (Doc 10037) guidance texts on the implementation of ADS-C are included.

The provision of air traffic services to aircraft based on information received from aircraft via ADS-C is generally referred to as the provision of ADS-C services.

3.70 Two situations may occur in the case of adoption of Space-based ADS-B by an ANSP responsible for an oceanic remote area: no increase in the fee for the provision of air navigation services or an increase in the fee by the ANSP, which should be guided by the provisions of Doc 9082.

3.71 Considering that, according to IATA, "Jet fuel accounts for almost 30% of airline operating expenses." (IATA - Fuel), and "Total user charges for air navigation and airport services share 5-6% of the airline's total cost." (IATA - Air Navigation Service Charges), it is in the interest of airlines and other aircraft operators the provision of Space-based ADS-B surveillance, even with there is an increase in tariff, in accordance with the principles advocated in Doc 9082; because the advantages of having conditions to perform more direct flights, with better occupation of airspace, allowing fuel savings in air operations and less emission of gases into the atmosphere, in addition to the significant increase in operational safety.

3.72 The participants of the Workshop/Meeting were informed that from 17-21 July, 2023, the **Workshop on the development of the regulation for the implementation of ADS-B (ADS-B-Imp)** will be held at the Regional Office in Mexico (NACC). A letter inviting the CAR States to the above event will be sent no later than 19 May, 2023. **Action S29/19 - Who: Secretariat - When: by 20 May 2023.**

3.73 Argentina indicated, through an e-mail message to the Secretariat, that it is aware of the Workshop on the development of the regulation for the implementation of ADS-B (ADS-B-Imp to be held in Mexico (NACC Office), from 17-21 July, 2023.

MET/IWXXM Subgroup

3.74 The MET/IWXXM Subgroup was formed for the purpose of testing and exchanging OPMET messages in the new IWXXM format, via the Aeronautical Messaging Service (AMHS).

3.75 With the adaptations made to the Regional OPMET Data Bank (RODB) in Brasilia (see IP/3.1) and the regional AMHS implementation, it is estimated that the implementation of the IWXXM format for the exchange of meteorological operational information will make significant progress in the States of the SAM Region this year.

3.76 The Secretariat informed that a letter was circulated to the SAM States, communicating the guidelines for the exchange of information via web service, together with the System Interface Control Document (SICD) of the system implemented in Brasilia.

3.77 At the SAM/IG/28 Workshop/Meeting, Action S28/16 was established, but so far only one State has taken the initiative to connect to the RODB Brasilia, via webservice.

3.78 Brazil reported that it is working on planning for a new update of the OPMET Data Bank in 2024, with the objective of complying with the most recent version of the IWXXM protocol, version 2021-2, which includes amendments 79 and 80.

WORK PLAN 2023

3.79 The Secretariat reported that the activities scheduled for the year 2023 are being carried out regularly, so far. Further information on the development of the 2023 Work Plan was provided under Agenda Item 4.

APPENDIX A / APÉNDICE A

Comunicaciones AIDC implementadas / Implemented AIDC communicacions

Brasil (9 de 25)

Centro A	Centro B
ACC Amazónico	ACC Brasilia – 1
	ACC Curitiba – 2
	ACC Recife – 3
	ACC Atlántico – 4
ACC Atlántico	ACC Amazónico – (4)
	ACC Curitiba – 5
	ACC Recife – 6
ACC Brasilia	ACC Amazónico – (1)
	ACC Curitiba – 7
	ACC Recife – 8
ACC Curitiba	ACC Amazónico – (2)
	ACC Atlántico – (5)
	ACC Brasilia – (7)
	ACC Recife – 9
ACC Recife	ACC Amazónico – (3)
	ACC Atlántico – (6)
	ACC Brasilia – (8)
	ACC Curitiba – (9)

Panamá (2 de 6)

Centro A	Centro B
ACC Panamá	ACC CENAMER – 1
	ACC Barranquilla – 2

Chile (2 de 11)

Centro A	Centro B
ACC Iquique	ACC Lima – 1
ACC Puerto Montt	Punta Arenas – 2
ACC Punta Arenas	ACC Puerto Montt – (2)

Colombia (4 de 13)

Centro A	Centro B
ACC Barranquilla	ACC Bogotá – 1
	ACC Panamá – 2
ACC Bogotá	ACC Barranquilla – (1)
	ACC Guayaquil – 3
	ACC Lima – 4

Ecuador (3 de 3)

Centro A	Centro B
ACC Guayaquil	ACC Bogotá – 1
	ACC Lima – 2
	ACC CENAMER – 3

Perú (3 de 5)

Centro A	Centro B
ACC Lima	ACC Bogotá – 1
	ACC Iquique – 2
	ACC Guayaquil – 3

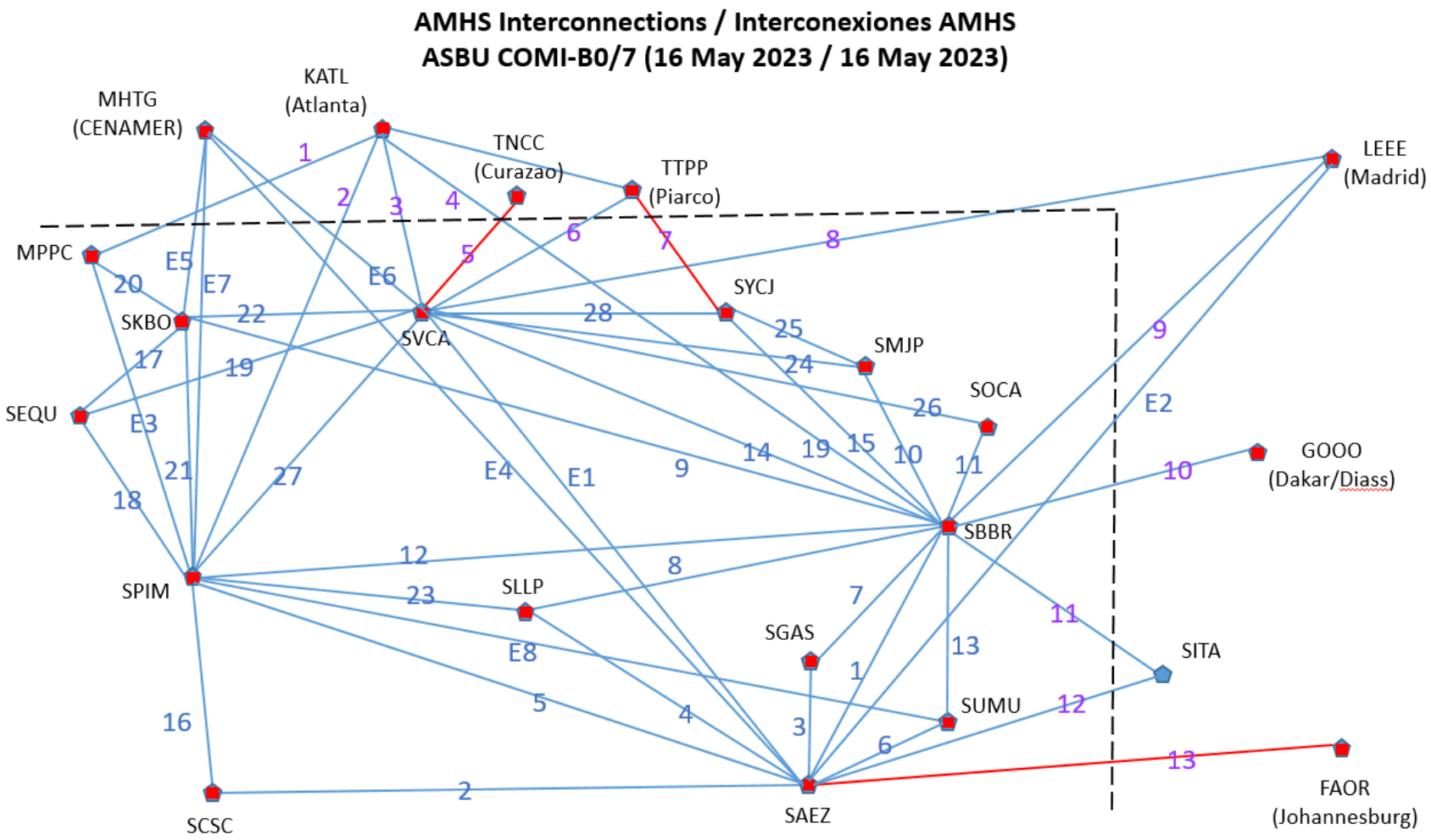
APPENDIX B

Interconexiones AMHS – Región SAM / AMHS Interconnection – SAM Region

	Conexión P1 / P1 Connection	Situación / Situation	Operativa en / Operational in	Observaciones / Notes
1	SAEZ – SBBR	Operativa / Operational	04/04/2018	
2	SAEZ – SCSC	Operativa / Operational	21/01/2020	
3	SAEZ – SGAS	Operativa / Operational	30/11/2018	
4	SAEZ – SLLP	Operativa / Operational	10/02/2020	
5	SAEZ – SPIM	Operativa / Operational	10/05/2019	
6	SAEZ – SUMU	Operativa / Operational	30/11/2022	
7	SBBR – SGAS	Operativa / Operational	30/11/2018	
8	SBBR – SLLP	Operativa / Operational	30/07/2019	
9	SBBR – SKBO	Operativa / Operational	22/05/2017	
10	SBBR – SMJP	Operativa / Operational	06/09/2018	
11	SBBR – SOCA	Operativa / Operational	22/01/2020	
12	SBBR – SPIM	Operativa / Operational	14/12/2015	
13	**SBBR – SUMU**	**Operativa / Operational**	**14/02/2023**	
14	SBBR – SVCA	Operativa / Operational	28/02/2018	
15	SBBR – SYCJ	Operativa / Operational	06/07/2017	
16	SCSC – SPIM	Operativa / Operational	14/12/2015	
17	SEQU – SKBO	Operativa / Operational	16/01/2020	
18	SEQU – SPIM	Operativa / Operational	14/07/2012	
19	SEQU – SVCA	Operativa / Operational	11/10/2018	
20	SKBO – MPPC	Operativa / Operational	30/07/2020	
21	SKBO – SPIM	Operativa / Operational	15/11/2010	
22	SKBO – SVCA	Operativa / Operational	01/12/2017	
23	SLLP – SPIM	Operativa / Operational	10/05/2019	
24	SMJP – SVCA	Operativa / Operational	31/03/2019	
25	SMJP – SYCJ	Operativa / Operational	11/10/2018	
26	SOCA – SVCA	Operativa / Operational	22/01/2020	
27	SPIM – SVCA	Operativa / Operational	01/12/2017	
28	SVCA – SYCJ	Operativa / Operational	27/08/2019	

Interconexiones AMHS – Región SAM / AMHS Interconnection – SAM Region

	Conexión P1 / P1 Connection	Situación / Situation	Operativa en / Operational in	Observaciones / Notes
1	MPPC – KATL	Operativa / Operational	2018	
2	SPIM – KATL	Operativa / Operational	02/03/2020	
3	SVCA – KATL	Operativa / Operational	27/01/2021	
4	SBBR – KATL	Operativa / Operational	06/08/2019	
5	SVCA – TNCC			
6	SVCA – TTPP	Operativa / Operational	26/04/2021	
7	SYCJ – TTPP			
8	**SVCA – LEEE**	**Operativa / Operational**	**23/02/2023**	
9	SBBR – LEEE	Operativa / Operational	11/10/2018	
10	SBBR – GOOO	Operativa / Operational	25/06/2020	
11	SBBR – SITA	Operativa / Operational	16/08/2018	
12	SAEZ – SITA	Operativa / Operational	18/07/2019	
13	SAEZ – FAOR	En coordinación / In coordination		
E1	SAEZ – SVCA	Operativa / Operational	06/06/2022	Extra plan (Argentina – Venezuela)
E2	**SAEZ – LEEE**	**Operativa / Operational**	**08/03/2023**	**Extra plan (ENAIRE)**
E3	**MPPC – SPIM**	**Operativa / Operational**	**24/04/2023**	**Extra plan (Panamá - Perú)**
E4	SAEZ – MHTG	Operativa / Operational	12/10/2023	Extra plan (CENAMER)
E5	SKBO – MHTG	Operativa / Operational	15/08/2022	Extra plan (CENAMER)
E6	SVCA – MHTG	Operativa / Operational	06/09/2022	Extra plan (CENAMER)
E7	SPIM – MHTG	Operativa / Operational	30/08/2022	Extra plan (CENAMER)
E8	SPIM – SUMU	Operativa / Operational	07/12/2022	Extra plan (Peru - Uruguay)


AMHS Interconnections / Interconexiones AMHS
ASBU COMI-B0/7 (16 May 2023 / 16 May 2023)
MHTG
(CENAMER)
KATL
(Atlanta)
TNCC
(Curazao)
TTPP
(Piarco)
LEEE
(Madrid)
MPPC
SKBO
SVCA
SYCJ
SMJP
SOCA
SEQU
GOOO
(Dakar/Diass)
SBBR
SPIM
SLLP
SGAS
SITA
SUMU
SCSC
SAEZ
FAOR
(Johannesburg)
E1
E2
E3
E4
E5
E6
E7
E8

APÉNDICE C / APPENDIX C

INTERCAMBIO DE DATOS DE VIGILANCIA – REGIÓN SAM

EXCHANGE OF SURVEILLANCE DATA – SAM REGION

Desde / From	Hacia / To	SSR	ADS-B Terrestre / Terrestrial ADS-B	ADS-B Satelital / Space-based ADS-B	Estado / Status
Asunción (Paraguay)	Resistencia (Argentina)	Asterix			Operacional
Asunción (Paraguay)	Resistencia (Argentina)		Asterix		No integrado
Corrientes (Argentina)	Asunción (Paraguay)	Asterix			Operacional
Posadas (Argentina)	Asunción (Paraguay)	Asterix			Operacional
Foz do Iguazú (Brasil)	Guaraní (Paraguay)	Asterix			Operacional
Carrasco – Selex (Uruguay)	Ezeiza (Argentina)	Asterix			Operacional
Carrasco – Indra (Uruguay)	Ezeiza (Argentina)	Asterix			Operacional
Durazno (Uruguay)	Ezeiza (Argentina)	Asterix			Operacional
Ezeiza (Argentina)	Carrasco (Uruguay)	Asterix			Operacional
Paraná (Argentina)	Carrasco (Uruguay)	Asterix			En test
Quilmes (Argentina)	Carrasco (Uruguay)	Asterix			En test
Santiago (Chile)	Mendoza (Argentina)	Asterix			En test
Malarguë (Argentina)	Santiago (Chile)	Asterix			En test
Aireon (Virginia – USA)	COCESNA (Ilopango – El Salvador			Asterix	Operacional
Arequipa (Perú)	Santiago (Chile)	Asterix			En coordinación
Iquique (Chile)	Lima (Perú)	Asterix			En coordinación

Agenda Item 4: SAM/IG Conclusions and next actions - Plenary

a) Summary of Sessions
b) **Review and approval of Conclusions**

4.1 Under this Agenda item, the SAM/IG Meeting, assembled in Plenary, reviewed the following papers:

N°	Subject	Presented by
WP/4.1	Analysis and summary of the GESEA Group and formulation of Conclusions for consideration by the Plenary	Secretariat
WP/4.2	Conclusions of the INTEROP TF and proposals for Activities for 2023	Secretariat

4.2 The Workshop/Meeting formed in Plenary, received from the Secretariat executive summaries of the two groups formed: GESEA and GT Interop.

GESEA GROUP

4.3 After the deliberations carried out (see Agenda Items 2 and 5) the Plenary of the Workshop/Meeting obtained consensus on **10 actions** for the development and follow-up of the initiatives and work entrusted to the components of SAM / IG and GESEA. The list of actions is presented in the table of the Summary of this report, including a mention of the paragraph that exposes the respective analysis.

4.4 There were no new conclusions by GESEA.

GESEA Work Plan

4.5 The 2023 Work Plan approved in the previous SAM/IG/28 was reviewed, and the dates of these face-to-face or virtual events were confirmed, according to the review of the GESEA Plenary in coordination with RLA/06/901. See **Appendix A**.

INTEROPERABILITY TASK FORCE (INTEROP TF)

4.6 Following the discussions held (see Agenda Item 3), the participants of the SAM/IG/29 Workshop/Meeting formulated the following actions regarding the INTEROP TF:

ATM/AIDC Subgroup

Establishment of the AIDC between centers that use the same automation system.

4.7 Brazil and Paraguay will make the corrections, proposed by ATECH, in the databases of the automated systems of ACC Asuncion and ACC Curitiba. After the adjustments, they will conduct the pre-operational phase tests in the second half of 2023. **Action S29/11 - Who: Brazil, Paraguay and ATECH - When: Before the SAM/IG/30 Workshop/Meeting.**

4.8 Brazil and Venezuela agreed to resume AIDC tests between ACC Amazonico and ACC Maiquetia, with a view to establishing an operational connection by the end of this year. **Action S29/12 - Who: Brazil and Venezuela - When: By 31 December, 2023.**

Statistics of errors in the operational AIDC connections of ACC Lima

4.9 The Secretariat shall forward to the Rapporteur of the ATM/FPL Subgroup the information provided by the administration of Peru (IP/3.8), for analysis at the next on-line meeting of the ATM/FPL Subgroup. **Action S29/13 - Who: Secretariat - When: by June 30, 2023.**

ATM/FPL Subgroup

Changes in the format of ACK and REJ messages

4.10 The main deliverable of the ATM/FPL Sub-Group was the update of the ATM/FPL Roadmap to version 3.0, in which changes were made to the appendix describing the ACK and REJ message formats.

4.11 States should take note of the changes made to the ATM/FPL Roadmap version 3.0 document and consider adopting the recommended format for feedback messages (ACK and REJ) for flight plan originators. **Action S29/14 - Who: SAM States - When: as of SAM/IG/29 Workshop/Meeting.**

Ad-hoc Group of States using CADAS UAs

4.12 An Ad-hoc group of the ATM/FPL Subgroup constituted by the States using CADAS User Agents (UA) shall be formed to exchange information, share best practices and learn about the initiatives taken by each State to establish a centralized management of flight plans. **Action S29/15 - Who: Argentina, Chile, Colombia, French Guyana, Peru and Venezuela - When: until June 30, 2023.**

CNS/ANP Subgroup

Update of COM 1, COM 2 and COM 3 Lists

4.13 The SAM States should update the information in the COM 1, COM 2 and COM 3 Lists and route them prior to the Frequency Finder Workshop/Training. **Action S29/16 - Who: SAM States - When: by 29 May 2023.**

Brazilian proposal for WRC-23 Agenda item 1.7

4.14 The SAM States are encouraged to support the ICAO position on WRC-23 agenda item 1.7, as proposed to be presented by the Brazilian delegation at the CITEL meeting (22-26 May 2023), for allocation to the aeronautical mobile-satellite (R) service within the frequency band **117.975-137 MHz**, in order to support VHF aeronautical communications in the Earth-to-space and space-to-Earth directions. **Action S29/17 - Who: SAM States - When: at preparatory meetings and during the World Radiocommunication Conference 2023 (WRC-23).**

CNS/SUR Subgroup

Exchange of aeronautical surveillance data

4.15 Chile and Peru should coordinate the exchange of surveillance data, establishing the necessary agreement documents, so that all internal instances are aware of the commitments assumed and promptly collaborate to establish the technical means for the exchange of aeronautical surveillance data. **Action S29/18 - Who: Chile and Peru - When: by 31 May 2023.**

Workshop/Meeting on ADS-B Implementation (Regulation/Standards)

4.16 The participants of the Workshop/Meeting were informed that from 17-21 July, 2023, the **Workshop on the development of the regulation for the implementation of ADS-B (ADS-B-Imp)** will be held at the Regional Office in Mexico (NACC). A letter inviting the SAM States to the above event will be sent no later than 20 May, 2023. **Action S29/19 - Who: Secretariat - When: by 20 May 2023.**

Work Plan 2023 INTEROP TF

4.17 The 2023 Work Plan approved at the previous SAM/IG/28 was reviewed, and the dates of these face-to-face or virtual events were confirmed, as revised by the Plenary INTEROP TF in coordination with RLA/06/901. See **Appendix B**.

APPENDIX A

Integrated Work Plan 2023 – GESEA

	Activities	Dates	Objectives / Deliverables
FEBRUARY	GT XB ATFM	Virtual, 14 to 15 Feb	VIRTUAL
	GT PLAN DCB ATFM	Virtual, 27 February	VIRTUAL
MARCH	GESEA plenary meeting/6	Virtual, March 1-3 Eye 1400 – 1700 UTC	Organization of the implementation of concepts according to deliverables of Subgroups 2022 Review and adjustments of the PTA. Follow-up of activities.
	Meeting GESEA SG3 ATFM GESEA/SG3/6	Virtual, 23 and 24 March	Continuation of scheduled studies. Monitoring of implementation activities and optimization of the ATFM service.
APRIL	Track System and ATC Sector Capability Course ATM044 and ATM 045	• Phase 1; virtual from April 3 to 14; • Phase 2: practice, FACE-TO-FACE, Rio de Janeiro, April 17 to 28.	Participants trained in performance-based demand and capacity monitoring of the ATC and airport sectors
	GT DOCS ATFM	Virtual, 10 April	Virtual
	PREPARE. SG2 PANS PAHO	Virtual, 10 April 0830 am	Virtual Review tasks and REV. Doc 9613, DTFM, etc.
	Development of regional guidance material on airspace planning regulations – Airspace implementation projects	Lima, April 17-28	Publication of Material on project management of implementation / optimization of airspace.
	GT XB ATFM	Virtual, April 17-18	
	GT PLAN DCB ATFM	Virtual, 20 April	VIRTUAL
MAY			
	Meeting GESEA SG1 /4 Airspace Planning	Virtual, May 3-5	Continuation of scheduled studies. Monitoring of implementation and optimization activities.
	GT DOCS ATFM	Virtual, 8 May	VIRTUAL
	GT XB ATFM	Virtual, 9 May	VIRTUAL
	SAM/IG/29 Air navigation implementation priorities considered in GREPECAS, VOL III	Lima, May 15-19 FACE	Monitoring of the activities of Implementation and execution and

	ANP Regional programs and Regional initiatives.		optimization under the studies of GESEA. Support for the Management of the Regional Plan ANP CAR-SAM Vol. III.
JUNE	GT PLAN DCB ATFM	Virtual, 5 June	VIRTUAL
	GT PLAN/LOA ATS	Virtual, 5 June	VIRTUAL
	Meeting GESEA SG2 /4 PANS PAHO	Virtual, June 6 and 7	Continuation of scheduled PANS PAS studies. Monitoring of implementation activities operational elements of the APTA module. Optimization of the IFPD service.
	GT DOCS ATFM	Virtual, 12 June	VIRTUAL
	Workshop/Meeting for the SAM Region on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in the ATM.	Lima, June 19 to 23	Analysis of the FUA implementation. Planning based on the operational element FRTO-B0/2 of the ASBU. Dissemination and analysis of the new ICAO document 10088.
	GT XB ATFM	Virtual, 22 to 23 June	VIRTUAL
JULY	ATM Performance Indicators Course	Rio de Janeiro, July 3-14	It will also address the methodology and application of the GANP ATM performance indicators.
	GT PLAN/LOA ATS	Virtual, July 3	VIRTUAL
	ATS Contingency Exercise (TableTOP)	***Virtual, 17 and 18 July***	***VIRTUAL Table TOP***
	GT XB ATFM	Virtual, **19 and 20 July**	VIRTUAL
	GT PLAN DCB ATFM	Virtual, July 31	VIRTUAL
AUGUST			
	GT PLAN/LOA ATS	Virtual, 7 August	VIRTUAL
	GT DOCS ATFM	Virtual, 14 August	VIRTUAL
	2nd Workshop for Airspace Planners – Airspace Implementation Projects.	Mission: Preparation of didactic material. Lima, August 14 to 25 Workshop: Lima, August 21-25 TBD	At least one planning specialist per Member State trained in airspace organisation and design techniques – ASM.
	GT XB ATFM	Virtual, 16 to 17 August	VIRTUAL

SEPTEMBER			
	SG3/7 GESEA	4 and 5 September	VIRTUAL
	GT PLAN/LOA ATS	Virtual, September 4	VIRTUAL
	GT DOCS ATFM	Virtual, 11 September	VIRTUAL
	2nd Workshop/Meeting on ATFM Data Management and Regional Indicators	Lima, September 18-22	Standardization of ATFM data. Analysis of demand forecasts and indicators. Power BI app for regional and country analytics.
	SG1 X 5	25 26 27 September	
OCTOBER	GT PLAN DCB ATFM	Virtual, October 2	VIRTUAL
	GT PLAN/LOA ATS	Virtual, 2 October	VIRTUAL
	Workshop/Meeting of the Working Group on ATFM Crossborder SAM (GT XB)	Lima, October 9-13	Planning of the implementation of the Crossborder ATFM, according to SAM Implementation Guide, based on intra-regional scenarios. Analysis of deliverables of the GT XB.
	GT DOCS ATFM	Virtual, 16 October	Virtual
	SAM/IG/30 **Air navigation implementation priorities considered in GREPECAS, VOL III ANP Regional programs and Regional initiatives**	**Virtual, October 23-27**	Monitoring of the activities of Implementation and execution and optimization under the studies of GESEA. Support for the Management of the Regional Plan ANP CAR-SAM Vol. III.
NOVEMBER	GT PLAN/LOA ATS	Virtual, 6 November	virtual
	GT DOCS ATFM	Virtual, 13 November	Virtual
	Development of regional guidance material on implementation of the FRTO module, and EDE and UPR concepts (AORRA). Also FRA e ROADMAP.	Lima, November 20 to December 1. 2 weeks.	Development of regional guidance material. This subject requires the support of an expert, given the complexity of the subject of enablers and relationships with other elements of the ASBU.
	GT PLAN DCB ATFM	Virtual, 27 November	virtual
DECEMBER	GT PLAN/LOA ATS	Virtual, 4 December	virtual
	GT DOCS ATFM	Virtual, 11 December	Virtual
	GT FRTO	12 and 13 December	Virtual

APPENDIX B

Work Plan 2023 – INTEROP TF

Activities	Objectives / Deliverables	Tentative Dates
SAM/IG/29 **Air navigation implementation priorities considered in GREPECAS, VOL III ANP Regional programs and Regional initiatives**	**Continue with the activities of implementation, execution and optimization under the studies of GESEA and GT Interop. (5 days)**	**Lima, 15 to 19 May 2023**
SAM/IG/30 Air navigation implementation priorities considered in GREPECAS, VOL III ANP Regional programs and Regional initiatives	Continue with the activities of implementation, execution and optimization under the studies of GESEA and GT Interop. (5 days)	Virtual, 23 to 27 October 2023
WG INTEROP/4 Fourth Workshop/Meeting of the Interop WG Subgroups	Provide a meeting of the participants of the Subgroups of the Interop WG, to consolidate the previous work carried out, with the aim of finalizing the products and deliverables that will be presented to the Implementation Group of the SAM Region (SAM/IG). (4 days)	Virtual, 2 to 6 October 2023
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 supervisors/operators of the AMHS COM Centers of the SAM Region. Review of routing tables. Review of Contingency Plans. (4 days)**	**Lima, April 24 to 27, 2023**
SG ATM/FPL/1 **First Workshop/Meeting of the ATM/FPL Subgroup**	**Event aimed at the analysis of the indicators obtained with the application of the methodology adopted for the quantification of errors in flight plans; definition of a standardized format for inclusion of information in the Aeronautical Information Publication (AIP) of the States that adopt 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, 13 to 17 March 2023**
Training on the Frequency Finder app	**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, May 29 to June 2, 2023**

Activities	Objectives / Deliverables	Tentative Dates
AIDC Training	Training aimed at the members of the AIDC Implementation teams of the States of the Region. (5 days)	TBD
AMHS Advanced Course	Event will be replaced by a free Workshop/Meeting for Project RLA/06/901.	Virtual, TBD

Agenda Item 5: Other business

5.1 Under this agenda item, the following papers were reviewed:

N°	Subject	Presented by
WP/5.1	Flight and flow information for a collaborative environment (FF-ICE)	Brazil
IP/5.1	Gender Equality Commitment DINACIA (VIDEO)	Uruguay
IP/5.2	Aviation risk mitigation measures due to the implementation of 5G frequencies in Brazil	Brazil

5.2 Brazil presented its development of the Flight and Flow Information for the Cooperative Environment (FF-ICE) concept. It was highlighted that the FF-ICE will support the definition of support processes for the planning and management of the flight path, as well as the flow. It should be noted that for the initial implementation of FF-ICE, the ATM community agreed, at CNA/12.2012, to develop the necessary tools to mitigate the problems associated with the current flight planning mechanism and establish the basis for the transition that allows the implementation of the full FF-ICE. Six years later, it endorsed its implementation strategy at CNA/13.2018.

5.3 In this context, the Air Navigation Commission (CNA) has developed proposals to amend the Annexes, Procedures for Air Navigation Services (PANS) and guidance material, with an applicability date in the coming years (Q4 2024), and technical and operational validations of these proposals and the concept itself are underway in other Regions.

5.4 The initial implementation of the FF-ICE will include, among others, the following changes presented by the CNA proposals:

a) Use of the *Global Unique Flight Identifier* (GUFI);
b) use of an additional Service that allows pre-departure negotiation and coordination between the user and the ATM service provider;
c) an expanded scope of flight plan information; and
d) more flexible means of exchanging information on flight plans.

5.5 In this perspective, the current requirements and processes related to the "flight plan" or "flight planning" will remain in force until a proposed regional deadline of 2032 according to the corresponding amendment, thus having a mixed period contemplating the "FF-ICE" and "Non-FF-ICE" States.

5.6 The Meeting reviewed the information presented on FF-ICE, and stressed that we have to fill the gaps in the management of flight plans in the Region (see report of question 3 of the agenda), to be ready for the application of this concept. It was agreed that the Secretariat will be in charge of coordinating the execution of activities for interested SAM states, the first is a briefing on progress in Brazil and secondly a table exercise on FF-ICE. (**ACTION 08)**

5.7 It was reported that, in November 2021, the Brazilian National Telecommunications Agency (ANATEL) held the 5G auction that established the range of 3,300-3,700 MHz for the implementation of IMT/5G systems. To ensure the continuity of safe air navigation operations, DECEA

held meetings with ANATEL, with the aim of identifying restrictive measures to 5G systems that guarantee the safe operation of radio altimeters, during the period of development of a new regulation and consequent modernization of radio altimeter equipment. ANATEL published Act. No. 9064/2022, establishing the rules for antenna beams, pointing limit, maximum powers, etc.

5.8 It was reported that ICAO has transmitted various information to States on the risks of radio-altimeter involvement, however, it is not clear what measures have been implemented in other SAM States, apart from Brazil.

5.9 The Meeting agreed to instruct GESEA, through SG2, to study the practices of Brazil and others similar in the region, and to monitor the mitigations implemented in the SAM States, considering that PANS PAS specialists understand the degree of impact that possible interference in the radio-altimeters on board can generate on the safety of an instrument flight procedure. It was agreed that GESEA would report to SAM/IG/30 on its studies and findings. (**ACTION 09)**

5.10 It was noted the importance of taking up the reports of the States before the SAM/IG, regarding the progress in the implementation of the PBN, projects with TMAs, etc. On the other hand, in GESEA work it has been recommended to include reports on the situation of the LOA ATS, so as to facilitate monitoring of the validity of these documents and generate the appropriate assistance from ICAO. These reports have been discontinued in the new format of meetings adopted in the COVID19 period, therefore, the Secretariat and the States were urged to include this activity again, as of SAM/IG/30. (**ACTION 10)**

Organization and improvements for SAM/IG

5.11 Uruguay presented a video about its commitment to Gender Equality in the field of civil aviation. ICAO's drive to advance equal participation within the scope of its activities was highlighted. In the present SAM/IG, 10% female participation was observed.

5.12 The availability of tools on the UN WOMEN website (WEPS TOOL - https://weps-gapanalysis.org/) was reviewed, which facilitates the implementation of a survey of women's participation in civil aviation organizations, air navigation providers, airports, airlines, etc. The Meeting agreed to make an ongoing effort to promote women's participation in all areas of SAM/IG and its support groups. (**2nd PERMANENT ACTION)**

5.13 The Meeting agreed to observe peremptory deadlines for the submission of notes and documents from subsequent SAM/IG meetings to the Secretariat. Project RLA/06/901 and the Regional Office have a broad set of activities (several are carried out simultaneously) for the whole year and must plan in detail the attention and support of events within defined task deadlines. At the same time, Meeting documents should be available sufficiently in advance to allow delegates to study them to define their positions on each Note. The Meeting therefore expressed its commitment to meeting deadlines to be indicated in the letters of convocation. (**3rd PERMANENT ACTION)**

5.14 It was reported that RLA/06/901 – SAM/IG and RLA/03/901 – REDDIG are implementing computer facilities, including dedicated servers, to disseminate the work of the groups, repository of documentation, and host tools for the development and optimization of air navigation. Further progress on these facilities is expected at SAM/IG/30. The new web domains were presented, even in *demo version*:

https://www.navisam.aero/reddig/
https://navisam.aero/rla06901/