INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Office

Regional Project RLA/06/901

TWENTY-EIGHTH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP

(SAM/IG/28)

FINAL REPORT

Lima, Peru, 3 to 7 October 2022

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TABLE OF CONTENTS

ii-1 PLACE AND DURATION OF THE MEETING

The Twenty-Eighth Workshop/Meeting of the SAM Implementation Group (SAM/IG/28) was held both face-to-face and virtually (via Zoom) on 3-7 October 2022, under the auspices of Regional Project RLA/06/901.

ii-2 OPENING CEREMONY AND OTHER MATTERS

Mr. Oscar Quesada, Deputy Regional Director of the ICAO South American (SAM) Regional Office, welcomed the civil aviation authorities and representatives of organisations and industry attending the Meeting both in person and virtually. 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. Jaime Alvarez, delegate of Bolivia, acted as chair and vice-chair, 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, and Mr. Javier Vittor, REDDIG Administrator.

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) at global and regional level

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

Agenda Item 2: Report of activities of GESEA and its 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 Interop TF and its 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 144 participants of 13 SAM States (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela); one State from the NAM/CAR Region (United States), one agency from the EUR/NAT Region (EASA), one international organisation (IATA), one industry provider (COLLINS AIRSPACE), and one system and training provider (INGENAV). The list of participants is shown in page iii-1 of this report.

ii-7 LIST OF CONCLUSIONS [1]

No.	Title of the Conclusion	Page
Conclusion SAM/IG/28-01	Improvements to ATS letters of operational agreement, regarding their content, application, validity and subscription process	4-1

ii-8 LIST OF ACTIONS

The Workshop/Meeting reached consensus on **18 actions** for the implementation and follow-up of the initiatives and tasks entrusted to SAM/IG components and contributory bodies, as listed below:

Number	Action	Who	When	Ref. Par.
Action S28/01	That Conclusion SAM/IG/18-01, *PANS-OPS recommendations for harmonising instrument procedures in the SAM Region*, be transferred to the GESEA SG2 PANS OPS activities for evaluation and updating.	GESEA SG2 PANS OPS	Before the first meeting of SG2 in 2023	1.10
Action S28/02	Coordinate a working paper to be submitted to GREPECAS/20 on multilingualism required in ICAO documentation and the specific case of the GANP	Secretariat	Before GREPECAS /20	1.15
Action S28/03	Request the support of Project RLA/ 06/901 for the development of guidance material for SDR-FRA implementation (GANP FRTO concept), through the recruitment of experts from SAM States	Secretariat	Before RCC16	2.16
Action S28/04	Implement the conclusion on improvements to ATS letters of operational agreement, regarding their content, application, validity and subscription process. Prepare a Job Card with the terms of the activities and studies to be performed by an *ad hoc* group.	GESEA SG1	Before the GESEA Plenary in 2023	2.24

[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.
Action S28/05	Implementation of 20NM longitudinal separation of aircraft between adjacent FIRs in continental airspace. Prepare papers on the required CNS facilities, to be presented to the Meeting of civil aviation authorities – RAAC/17 (Santiago, March 2023)	Secretariat GESEA INTEROP TF	Before the GESEA Plenary in 2023	2.27
Action S28/06	Implementation of 20NM longitudinal separation of aircraft between adjacent FIRs in continental airspace. Prepare a Job Card with the terms of the activities and studies to be performed by an *ad hoc* tripartite group (GESEA, INTEROP TF and GTE focal point)	GESEA SG1	Before the GESEA Plenary in 2023	2.28
Action S28/07	Airport efficiency programme. Prepare a Job Card with the terms of the activities and studies to be performed by an *ad hoc* group involving SG3 and the focal point of the airport concerned.	GESEA SG1	Before the GESEA Plenary in 2023	2.32
Action S28/08	a) Seminar on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in ATM in November 2022; and b) Reschedule the face-to-face workshop / meeting to the first half of 2023.	Secretariat	a) Before December 2022 b) Before July 2023	2.37
Action S28/09	Extraordinary tactical BRISA; prepare a Job Card with the terms of the activities and studies to be performed by an *ad hoc* group.	GESEA SG3	Before the GESEA Plenary in 2023	2.58
Action S28/10	Coordinate with CGNA and DECEA of Brazil the convening and documentation for Courses on ATFM capacity and Course on KPIs.	Secretariat	Before February 2023	2.62
Action S28/11	Creation of an information sharing space (Share Point) in the MS Teams platform of the SAM Regional Office.	Secretariat	Before December 2022	3.4
Action S28/12	Adoption of the data collection methodology to quantify errors in	FPL monitoring group	Collect information on a weekly basis	3.27

Number	Action	Who	When	Ref. Par.
	flight plans and associated messages.		for October, November and December 2022	
Action S28/13	Delivery of data collected using the methodology adopted to quantify FPL errors.	FPL monitoring group	Following data collection	3.30
Action S28/14	Designation of representatives to the CNS/ANP Subgroup	Ecuador, France (French Guiana), Paraguay, and Suriname	Before December 2022	3.56
Action S28/15	Designation of a representative of Colombia as rapporteur of the CNS/South Subgroup	Colombia	Before December 2022	3.58
Action S28/16	Review by State IT staff of the Interface Control Document (ICD) of the Brasilia RODB web service.	SAM States	Before SAM/IG/29	3.74
Action S28/17	Coordinate the creation of the *ad hoc* group to conduct studies based on regional and global documentation on RPAS/UAS/UTM, under SAM/IG, including texts on the development of drones for in-flight inspection of radio aids.	Secretariat	Before SAM/IG/29	5.8
Action S28/18	Explore options for training in project management for the CNS and ATM areas. Consult possibility of obtaining support from RLA 06 901.	Secretariat	Before RCC/16	5.10

LISTA DE PARTICIPANTES / LIST OF PARTICIPANTS

**** SAM States***

ARGENTINA

ANAC

1. Andrés Espina
2. Débora Kuc
3. Diego Frigerio
4. Guillermo Castro
5. Leandro Bauzá
6. Luis Gonzalez
7. Magalí Haufler
8. Marco Lemos
9. Mauricio Nogara
10. Mercedes Rodriguez
11. Moira Callegare
12. Raúl Drandich
13. Silvia Ruiz

EANA

14. Adrián Malizia
15. Diego Gamboa
16. Diego Ortiz
17. Hernán Ibarra
18. Jorge Cornelio
19. Leonardo Costas
20. Lilian Velázquez
21. Lucas López
22. Maria Cecilia Varela
23. Natalia Rodríguez
24. Paola López
25. Patricia Urbano
26. Silvia García
27. Yesica Stoffel

FAA

28. José Penchi

BOLIVIA

29. Andrea Rubin de Celis
30. Armando Rodríguez
31. Arturo Griffiths
32. Delvi Vera
33. Hernán Tito
34. Jaime Y. Álvarez (on-site attendance)
35. John Apaza
36. Luis Rojas
37. Paula Ramos
38. Remigio Blanco
39. V. Andrés Quintana
40. Yezid Arze (on-site attendance)

BRASIL / BRAZIL

41. Bruno Antunes (on-site attendance)
42. Bruno Ramos
43. Clóvis Fernandes Junior (on-site attendance)
44. Diego De Brito
45. Fabio Santos
46. Hebert Dos Santos (on-site attendance)
47. José Izidro Apolinário (on-site attendance)
48. Marcelo Melo
49. Vahe Yaghdjian
50. Wallace Gutenberg (on-site attendance)

CHILE

51. Alfonso De La Vega
52. Christian Vergara (on-site attendance)
53. Edmundo Cortés
54. Gustavo Cáceres
55. Francisco Gálvez
56. Héctor Ibarra (on-site attendance)
57. José Morales
58. Marcelo Rojas
59. Pablo Valenzuela
60. Patricio Zelada
61. Pedro Pastrián
62. Rodrigo Fajardo

COLOMBIA

63. Carlos Mayorga
64. Ferney Galindo (on-site attendance)
65. Joaquín Penagos
66. Jorge Saltarín
67. José Gómez (on-site attendance)
68. Ricardo Cárdenas
69. Viviana Obando
70. Wilbert Hernández
71. Wiston Caro

ECUADOR

72. Alejandro Coronado
73. Alexander Guncay
74. Alis Villavicencio
75. Arturo Lomas
76. Eugenio Espinoza
77. Jorge Zúñiga
78. José Paredes
79. Lizeth Aldas
80. Marcelo Valencia

GUYANA
81. Rickford Samaroo
82. Roy Sookhoo
83. Trevor Daly

PANAMÁ
84. Alberto West
85. Ana Teresa Montenegro (on-site attendance)
86. Arsenio Bethancourt
87. Carlos Aparicio (on-site attendance)
88. Daniel De Ávila (on-site attendance)
89. Edwin Gfeller
90. Gabriel Bernard (on-site attendance)
91. Ivette Iturrado (on-site attendance)

PARAGUAY
92. Lidia Cáceres
93. Eleno Centurión
94. Juan Feliz Estigarribia

PERÚ
DGAC
95. Brenda Céspedes
96. Diana Montoya (on-site attendance)
97. Eloy Tafur
98. Giuliano Guzman (on-site attendance)
99. Hugo Rosado
100. José Mondragón
101. Luis Luna (on-site attendance)
102. Paulo Vila (on-site attendance)
103. Sady Beaumont (on-site attendance)

CORPAC
104. Ángel Prado
105. Carlos Chambi
106. César Vargas
107. Edson Yataco (on-site attendance)
108. Efrain Flores
109. Erik Soria
110. Henry Loza
111. Jhonatan Contrera
112. Jorge García
113. Jorge Merino
114. Jose Ávila
115. Marco Antonio Vargas
116. Mario Gavidia
117. Martín Ojeda
118. Pablo Candela
119. Percy Agüero
120. Raúl A. Granda
121. Víctor Zavaleta

SURINAM / SURINAME
122. Maira Rozenblab
123. Marylane Tsen You
124. Radha Kalawatie Atwaroe

URUGUAY
125. Adriana San Germán
126. Andrés Braida (on-site attendance)
127. Gabriel Falco (on-site attendance)
128. Henry Díaz (on-site attendance)
129. Marco Vignolo
130. Mario Dávila
131. Mónica Rodríguez
132. Rosanna Barú (on-site attendance)

VENEZUELA
133. Jarumy Castillo (on-site attendance)
134. Maribel Mayora (on-site attendance)

**** NAM/CAR States***

ESTADOS UNIDOS / UNITED STATES
135. Alberto O´Neill (on-site attendance)

****Otros***

EASA
136. German Meyer

IATA
137. Jaime Abigantus
138. Julio Pereira

INGENAV
139. Nicolás Borovich

COLLINS AIRSPACE (ARINC)
140. Manuel Gongora (on-site attendance)

OACI / ICAO
141. Fernando Hermoza (on-site attendance)
142. Francisco Almeida (on-site attendance)
143. Javier Vittor
144. Roberto Sosa (on-site attendance)

Agenda Item 1: ANS context (ATM/CNS) at global and regional level

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

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

a) **WP/1.1** - *Review of the status of conclusions adopted by SAM/IG meetings* (presented by the Secretariat)
b) **WP/1.2** – *Progress in the preparation of VOL III of the CAR/SAM ANP* (slides presented by the Secretariat)
c) **WP/1.3** - *Creation of the ATM performance commission (Spanish only)* (presented by Brazil)
d) **WP/1.4** - *Endorsement of the updated Global Air Navigation Plan* (GANP) (presented by Uruguay)
e) **WP/1.5** - *Installation of ADS-B stations in Uruguay's airspace* (presented by Uruguay)
f) **WP/1.6** - *Decommissioning of radio aids in Uruguay's airspace* (presented by Uruguay)
g) **WP/1.7** - *Translation of the Global Air Navigation Plan* (presented by Uruguay)
h) **IP/1.1** - *Brazil - Status of conclusions* (presented by Brazil)
i) **IP/1.2** - Progress and follow-up of SAM/IG conclusions *(Spanish only)* (presented by Venezuela)
j) **IP/1.3** - *Current status of SAM/IG/27 conclusions (Spanish only)* (presented by Bolivia)
k) **IP/1.4** - *Progress in the implementation of SAM/IG conclusions by Peru (Spanish only)* (presented by Peru)
l) **IP/1.5** - *Status of the SAM/IG/27 conclusions (Spanish only)* (presented by Argentina)
m) **IP/1.6** - *Progress in the implementation of SAM/IG conclusions by Chile* (presented by Chile)
n) **IP/1.7** Progress report of Uruguay on the activities of GESEA and INTEROP TF *(Spanish only)* (presented by Uruguay)

Conclusions and Decisions adopted by SAM/IG meetings

1.2 The Meeting reviewed the valid conclusions and decisions, as well as the pending activities of the SAM Implementation Group (SAM/IG) workshops/meetings, as shown in the updated list contained in **Appendix A** to this agenda item. The list of conclusions and activities include:

a) tasks to be carried out and/or the corresponding conclusion in the areas under consideration;
b) specific tasks leading to the accomplishment of the main task;
c) expected results of each task;
d) completion dates;
e) parties responsible for their implementation;
f) members who will support the task; and
g) status of implementation of the task and, when so required for better understanding, an explanatory note on the status of implementation.

1.3 The Meeting agreed to declare finalised Conclusion SAM/IG/24-01: Procedures for the development and dissemination of ADPs and conduction of ATFM teleconferences, taking into account that ADPs were being circulated in the Region on a regular basis. Also, the pre-tactical BRISA teleconferences and the strategic/post operational session were being conducted in accordance with the ATFM OPSAM. See the section on Agenda item 2 in the report.

1.4 The Workshop/Meeting was presented with information papers submitted by Argentina, Bolivia, Brazil, Chile, Peru, Uruguay and Venezuela on the status of implementation of SAMI/IG conclusions. Some aspects of this implementation were discussed or analysed by the States.

1.5 It was noted that the tables were essential for each State to make its own assessment of progress in these matters and, at the same time, to facilitate the Secretariat's assistance in the implementation of the conclusions. The Secretariat reported that a repository had been created in the GESEA TEAMS channel for States to manage their tables, at:

https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/S%20A%20M%20I%20G%20s/TABLAS%20CONCLUSIONES%20SAMIG?csf=1&web=1&e=G7OTSA

1.6 As agreed at the SAM/IG/27 meeting, a review was made of the validity of Conclusions B1, B2, B3, B4 of the previous follow-up table that had been used up until SAM/IG/26. The status of each conclusion is presented further below. The following table shows the results of the analysis by the Workshop/Meeting.

Num.	Conclusion	Objective	Status
B-1	Conclusion SAM/IG/13-9 - IATA safety event indicators for SAM States	SMS analysis and mitigation measures (REPORT AT EACH SAM/IG MEETING)	*SUPERSEDED*
B-2	Conclusion SAM IG/14-18 - Exception in the insertion of alternate aerodromes	Procedure included in the AIP (December 2015)	*SUPERSEDED*
B-3	Conclusion SAM/IG/16-1 Model amendment to the letter of operational agreement on AIDC between two centres	Model letter of operational agreement (December 2016)	*FINALISED*
B-4	Conclusion SAM/IG/18-01 - PANS-OPS recommendations for harmonising instrument procedures in the SAM Region	Recommendations developed by the PANS-OPS group implemented (SAMIG21)	*FINALISED*

1.7 Regarding Conclusion SAM/IG/13-9 - *IATA Safety Event Indicators for SAM States*, States were advised to take note of the work and reports of the RASG PA on the status of safety in the Region.

https://www.icao.int/RASGPA/Pages/About.aspx

1.8 With respect to Conclusion SM/IG/14-18 - *Exception in the insertion of alternate aerodromes*, States were advised to review the discussions and working papers of the SAM/IG/14 meeting and consider, in the current operational context, the feasibility of IATA's technical proposal, which offered fuel savings to airlines. In the following links:

https://www.icao.int/SAM/Documents/2014-SAMIG14/SAMIG14_NI14IATA.pdf

https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2014-SAMIG14&t=1

1.9 Regarding Conclusion SAM/IG/16-1 - *Model amendment to the letter of operational agreement on AIDC between two centres*, States were advised to review the discussion and working papers of the SAM/IG/16 meeting. It was noted that several ATS LOAs in the Region had incorporated specific paragraphs on AIDC between ACCs.

https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2015-SAMIG16&t=1

1.10 Regarding Conclusion SAM/IG/18-01 - *PANS-OPS recommendations for harmonising instrument procedures in the SAM Region*, it was agreed that it be transferred to the GESEA SG2 PANS OPS for assessment and updating, and submit the results to the first meeting of that subgroup in 2023. (**Action S28/01).**

1.11 The Secretariat presented the activities to enhance the regional air navigation plan - CAR/SAM ANP. The recent communication of the Lima and Mexico Offices on the updating of data in Vol. I and Vol. II was reviewed. The progress of work on the development of Volume III of the CAR/SAM ANP was presented. Several opportunities for improvement to the text in the template of Vol. III were presented, aimed at better understanding the information and tools published on the ICAO Global Air Navigation Plan (GANP) website.

1.12 Examples were presented with draft data from Brazil, Peru, Chile and Colombia. Progress made in the formulation of Vol. III was expected to be presented at GREPECAS/20, with the tables already containing data, such as the SAM CTA/AMT table, the CAR/SAM SWOT tables, and some tables with preliminary data of SAM States. IATA expressed interest in participating in this development and it was agreed that the Secretariat would coordinate a second meeting with the industry to provide input for the process prior to the GREPECAS meeting.

1.13 Brazil presented the joint DECEA-CGNA initiative for the creation of the ATM performance committee (CP-ATM) of the Brazilian Airspace Control System (SISCEAB). The idea is to create a guiding document for planning the necessary activities at the strategic and operational level. In 2021, the DECEA ATM performance plan (PCA 100-3) was developed for the establishment of criteria to measure the performance of the national ATM system, and for setting consistent targets.

1.14 Uruguay reported on the withdrawal (decommissioning) of radio aids in its State. IATA noted that States should consider the need to maintain, inasmuch as possible, a minimum structure of conventional radio aids for resilience during the implementation of satellite-based navigation. These

concepts were contained in the NAVS-B0/4 element of the GANP. It was also highlighted that, in some cases, radio aids were part of the CAR/SAM ANP tables and data, and, if removed, an amendment to this document had to be made. It was requested that the Regional SAM Office be informed in such cases.

1.15 Consensus was reached on the importance of having ICAO documentation in the Spanish language for the SAM Region. Difficulties were being experienced due to this lack of documentation on air navigation and safety planning and implementation, although GASP Doc 10004 - Global Aviation Safety Plan (2020-2022 edition) was available in Spanish, setting a difference between the two plans. The Secretariat was entrusted with coordinating a working paper for GREPECAS/20 on multilingualism required in ICAO documentation and the specific case of the GANP (**Action S28/02).**

1.16 Uruguay expressed its support to the implementation of the GANP and the development of Vol III of the CAR/SAM ANP. The need for further coordination between the GANP and GASP was highlighted, considering that the amendment provided common safety terminology for both plans, which would promote an advantageous uniformity. For more details, visit the following link:

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

1.17 Uruguay presented its ADS-B implementation plan, reporting on the technical and operational guidance documents published by DINACIA. The issue of ADS-B is discussed in detail in Item 3 of this report.

APPENDIX A

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

(Updated at SAM/IG/28, October 2022)

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**
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**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
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** **APPROVED SAM/IG/28**
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							

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
~~3-1~~	~~**Conclusion SAM/IG/24-01: Procedures for developing and disseminating ADPs and holding of ATFM teleconferences**~~ ~~**That:** ATFM services implemented in the SAM States provide for the development of the daily plan -(ADP) and coordinate the means and procedures for its distribution or publication in repositories or websites on a regular basis, designating their focal points responsible for implementing this initiative. In addition, to study and define an agile procedure for conducting ATFM regional teleconferences with the purpose of progressively achieving a daily periodicity~~.	Prepare ADPs, coordinating their dissemination with SAM regional ATFM units and, if applicable, CAR units. Sign or update ATFM letters of agreement to formalise the exchange and its processes. Consider media for ATFM teleconferences	~~ADPs exchanged between units of the SAM Region and, if applicable, of the CAR Region~~	~~SAM/IG/26~~	~~STATES / ATFM FOCAL POINTS~~	~~RO/ATM~~	**FINALISED**
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; 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.	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
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**
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**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
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**
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).

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
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 (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.	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.
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;	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.

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
	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.						

Updated by FH October 2022

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

a) WP/2.1 – *Report of activities of GESEA Subgroup 1* (presented by the Secretariat)
b) WP/2.2 – *Regional guide on airspace planning techniques* (presented by Brazil)
c) WP/2.3 –*Progress of GESEA Subgroup 3 –ATFM* (presented by the Secretariat)
d) WP/2.4 –*Capacity optimisation at the Porto Seguro TMA (Spanish only)* (presented by Brazil)
e) WP/2.5 - *Implementation of dynamic sectorisation (lateral flexibility) in the Brasilia FIR, Brazil (Spanish only)* (presented by Brazil)
f) WP/2.6 – *Results of the implementation of strategic direct routing (EDE) in Brazilian airspace (Spanish only)* (presented by Brazil)
g) WP/2.7 - *Optimisation of longitudinal separation for aircraft in continental airspace (Spanish only)* (presented by Argentina)
h) WP/2.8 - *Proposal for improving the process for updating ATS letters of operational agreement* (presented by Argentina)
i) WP/2.9 – *First Workshop/Meeting on optimising ATS coordination and contingency plans (SAM/ATS/ATFM – SAM SUR)* (presented by the Secretariat)
j) WP/2.10 – *True north (geographic north) reference system* (presented by the Secretariat)
k) WP/2.11 – *Airport efficiency programme* (presented by IATA)
l) WP/2.12 – *Optimising the activation of ATS contigency plans and the application of pre-tactical/tactical BRISA* (presented by IATA)
m) WP/2.13 - *Airspace optimization in Brazil (Spanish only)* (presented by Brazil)

2.2 The coordinators and members of subgroups SG1 Airspace Planning, SG2 PANS OPS and SG3 ATFM described the progress of their work, presented new deliverables and formulated proposals for conclusions to support their next actions aimed at airspace optimisation and the implementation of improvements linked to operational threads of the GANP. States also submitted proposals for improvements to GESEA processes and reported on their progress.

ACTIVITIES OF SG1 - AIRSPACE PLANNING

2.3 The activities of SG1 - Airspace planning, which is under the coordination of Mr. Julio Pereira (IATA), were presented.

Implementation of strategic direct routing (EDE)

2.4 The status of implementation of EDE in the SAM Region is shown in **Appendix A** to this part of the report. It should be noted that EDE continues to be the main strategy for the implementation of the initiatives linked to the FRTO module of the GANP.

2.5 The Meeting was informed that after the implementation of the **EDE** concept in the Brasilia and Curitiba FIRs, DECEA Brazil requested the main Brazilian airlines to analyse any possible benefits observed in their operations in the areas covered by the concept.

2.6 During July 2022, and considering only flights that had benefited from the implementation of EDE in the Brasilia and Curitiba FIRs, GOL company calculated a reduction of 1,285 NM in segments flown, generating savings of 5.5 tons of fuel (equivalent to a reduction of 17.38 tons of CO2).

2.7 On the other hand, AZUL LINHAS AÉREAS reported that the EDE concept was positive for 20% of its itineraries. In two months of analysis (April 21 to June 20, 2022), considering all FIRs covered by the concept, the company reported a reduction in flying distances of more than 1,935 NM, saving around 8.7 tons of fuel (equivalent to a reduction of 27.49 Tons of CO2).

2.8 LATAM reported that, in the airspace of the SBRE and SBAZ FIRs, 702 flights of its itineraries benefited from DCT segments from the implementation of the EDE.

Implementation of user-preferred routes (UPR)

2.9 The UPR route catalogue was developed within the scope of CIIFRA, with a view to harmonising UPR implementation proposals in the NACC and SAM Regions. Routes involving only the NACC Region or the NACC and SAM Regions were being coordinated by the CIIFRA group (see **Appendix B** to this part of the report) and routes involving only the SAM Region were being implemented by GESEA (see **Appendix C**).

2.10 Regarding routes involving only the SAM Region, GOL had presented UPRs for 9 city pairs that need coordination with Argentina, Brazil and Uruguay. The routes had already been evaluated and approved by Brazil, with additional distance reductions, compared to GOL's proposals.

2.11 A specific meeting was held between the aforementioned States, but it was not possible to advance in this implementation in the Montevideo FIR, due to technical problems in one of the radars supporting the ATS surveillance service.

2.12 Regarding the UPRs involving only Argentina and Brazil, analysis by EANA is awaited. As an example, a single route, between SBFZ and SABE, only in the Brazilian airspace, will provide a saving of 44NM and 159Kg of fuel if compared to the current route (UN741), following its approval by Uruguay.

Traffic flow between Colombia and Panama

2.13 The project to restructure air traffic flows between the Bogota and Panama FIR was presented. It was agreed to deconcentrate the flow of the common point DAKMO, and to implement new RNAV routes, some unidirectional, as well as to separate overflight flows. This would make it possible to reduce the risk windows caused by high traffic volume and air traffic conflicts in this joint sector, and to increase the possibility of CCO/CDO and reduce the workload of the ATCOs involved. **It was agreed to publish the SUP/AMDT in both States on 6 October, 2022, effective 1 December, 2022.**

2.14 Colombia reported that a project was being carried out to re-sectorise the Bogota FIR, with a view to dividing the workload related to air traffic sequencing for SKBO, SKRG and SKCL airports, as well as for MPTO. Furthermore, a more appropriate division of workload would allow in the future the use of UPRs and the corresponding evolution to EDE and FRA.

EDE-FRA implementation guidance material

2.15 The preliminary version of the EDE-FRA Implementation Guidance Material can be found on the GESEA TEAMS Channel. This version included the material related to the work developed by CIIFRA, taking into account the intention that this guide material be applied by the NACC and SAM Regions.

2.16 Considering the complexity of developing this guidance material and the resulting need for full-time dedication during approximately 2 weeks, it would be advisable for the Meeting to consider requesting the support of Project RLA/06/901 for its preparation, through the hiring of experts from SAM States. The Secretariat was tasked with exploring the feasibility of such support. [**Action S28/03**]

Airspace Planning: Regional Documentation and Training

2.17 The regional airspace planning documentation was developed from 8 to 19 August 2022 at the premises of ICAO SAM Regional Office in Lima. The content developed for the Guide was as follows:

(a) Paths: arrivals, departures and routes;
(b) Separation between paths;
(c) Holding;
(d) Conditioned airspace;
(e) Airspace organisation (FIR, TMA and CTR);
(f) Sectorisation – limits of the ATC service;
g) Operational scenarios.

2.18 The Workshop for Planners based on the guidance material will be held in **Lima, Peru, on 7-11 November, 2022**.

ATS Contingency Plan. SAM SUR Workshop/Meeting

2.19 The First Workshop/Meeting on Optimisation of ATS Coordination and SAM/ATS/ATFM Contingency Plans – SAM SUR was held in Lima, Peru, on 5-9 September, 2022. The Workshop/Meeting was divided into nine (9) bilateral working groups, bringing together the six (6) States with their respective counterparts. The meeting report with the results and details of deliverables prepared (only in Spanish) is available at:

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

2.20 As a result of this workshop/meeting, initiatives were presented and submitted to the consideration of SAM/IG/28 on the following two topics:

Topic I SAM SUR - Proposal for improving the process of updating ATS letters of operational agreement

2.21 A proposal for improving the process of updating ATS letters of operational agreement, presented by Argentina, was analysed. It was noted that, although there were no regulatory provisions on the methodology for the review, update and subscription of ATS LOAs, in several States these documents were signed with the intervention of the senior management of the civil aviation authority (CAA) and/or the air navigation service providers (ANSPs), which made it difficult to update these letters of agreement and had them available in ATC units.

2.22 Consequently, delegates identified some topics for study and implement within the scope

of SAM/IG and its contributory bodies, with a view to optimising the LOA updating process, in order to standardise and condense the content of these documents, recognising their importance for safety, for the training processes of ATC personnel, and for decision-making in the CAA when coordinating and transferring aircraft.

2.23 Therefore, the Meeting formulated draft **Conclusion SAM/IG/28-01**: Improvements to ATS letters of operational agreement regarding their content, application, validity and subscription process, which was approved in the Plenary, as set out in the report on Agenda Item 4.

2.24 Regarding the aforementioned conclusion, SG1 was tasked with preparing a Job Card with the terms of the activities and studies to be performed by an *ad hoc* group. Progress would be reported at the next GESEA plenary. [**Action S28/04**]

Topic II SAM SUR – Optimisation of longitudinal separation for aircraft in continental airspace

2.25 There were still a few neighbouring (continental) airspace segments between FIRs in South America that applied 80NM due to gaps in air-ground VHF. In general, a 40NM longitudinal separation was the standard. There was a need to promote actions to standardise the implementation of longitudinal separation of aircraft between adjacent FIRs, in continental airspace, and to promote its reduction to 20 NM GNSS, as a short-term objective.

2.26 The implementation of several enablers must be ensured:

a) VHF coverage;
b) ATS surveillance systems;
c) Implementation of PBN airspaces and flight procedures;
d) Implementation of direct routing (EDE) and/or user-preferred routes (UPRs);
e) ATFM implementations, *inter alia*.

2.27 In this regard, it was noted that the aforementioned implementations entailed budgets, and thus the importance of submitting working papers to the Meeting of Civil Aviation Authorities – RAAC/17 (Santiago, March 2023) to present the initiative and facilitate decision-making. The Secretariat was charged with coordinating these papers. [**Action S28/05**]

2.28 To carry out the initiative, SG1 was entrusted with preparing a Job Card with the terms of the activities and studies to be performed by an *ad hoc* (tripartite) group to include GESEA, INTEROP TF, and a focal point of the GTE (to address aspects of safety and reduction of LHDs). Progress would be reported at the next GESEA plenary. [**Action S28/06**]

2022-2023 Regional route optimisation 2022-2023. Implementation of RNAV-5

2.29 See paragraphs 2.13 and 2.14 above on the initiatives underway between Panama and Colombia.

Airport Efficiency Programme

2.30 IATA stated that there was a close relationship between the efficiency of runway operations, aircraft separation applied by TWR/approach control, and airspace design. An optimisation of runway occupancy time, the application of the high-intensity runway operations (HIRO), and departures

from RWY/TWY intersections, were examples of prerequisites for optimising separation standards between arrivals, departures, and arrivals/departures.

2.31 Enhanced separation standards allowed for an optimum airport acceptance rate and, thus, a reduction of airborne/ground holdings, reduced radar vectoring and better flight profiles. In this sense, the application of the Airport Efficiency Programme could be considered as a prerequisite for a successful implementation of a new airspace concept.

2.32 In order to carry out the initiative at the level of pilot programmes at certain airports of the Region, SG1 was tasked with preparing a Job Card with the terms of the activities and studies to be performed by an *ad hoc* group to include SG3 and the focal point of the airport involved. Progress would be reported at the next GESEA plenary. [**Action S28/07**]

Other Topics on Airspace and ATS Planning/Optimisation

2.33 Brazil presented a summary of the implementation of the concept of dynamic sectorisation (lateral flexibility) in the flight information region (FIR) of Brasilia. This initiative had significantly increased sector capacity (S02) at the BS-ACC, reduced ATFM measures and thus improved the system delay indicators.

2.34 The activities for CPDLC implementation in the continental area of Brazil were presented. Operational experience showed that there were few domestic commercial aircraft equipped with CPDLC data link avionics, but most international and general aviation aircraft were ready, and adherence to the use of CPDLC had been quite significant. The following figure shows the implementation timetable for the FIRs in Brazil:

2.35 INGENAV made a presentation of the concept of Operational Readiness and Transition (ORAT) for change management, presenting a case developed at the airport and ACC of Oman. Likewise, questions were answered regarding *rostering* tools that allowed the preparation of ATC personnel duty rosters based on labour criteria and conditions (work/rest hours, medical validation, etc.) established by ATS management. The presentation is included in the material posted on the website.

Training

2.36 The feasibility of holding the Workshop/Meeting on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in ATM, at the ICAO Regional Office in Lima, Peru, on 5-10 December, 2022, was analysed. It was concluded that several States would find it difficult to participate since budgets were strained by the end of the year. Likewise, the objective was to ensure the participation of military personnel (in charge of civil-military cooperation) of each State in this event.

2.37 The Meeting agreed to modify the approach to the activity so as to have a two-day **Seminar on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in ATM** on 28-29 November, 2022, for all SAM States. Likewise, the face-to-face workshop/Meeting would be rescheduled in the first half of 2023. The Secretariat was tasked with convening and coordinating the activity. **[Action S28/08].**

ACTIVITIES OF SG2 - PANS OPS

2.38 SG2 – PANS OPS is coordinated by Mr. Diego Gamboa (Argentina). Progress continued, as reported at the SAM/IG/27 meeting. A summary of the review follows:

Follow-up to PBN implementation in the SAM Region (Resolution A-37/11) and TMA optimisation. RNAV routes

2.39 The Secretariat informed that Table XLS approved by SAM/IG/27 to record progress in PBN implementation in the States (traffic light indicator) could be downloaded from the GESEA TEAMS channel, at the link below. States could also use it freely to insert data of their domestic airports.

https://oaci.sharepoint.com/:x:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG2%20PANS%20OPS/SEGUIMIENTO%20implant.%20PBN/GESEA%20SG2%20PBN%20progress.xlsx?d=w910ce628a6874dc49e52ae9f47cd4673&csf=1&web=1&e=N89mEn

2.40 Information on airspace optimisation in Brazil was presented. In general, there was 100% implementation of STAR/SID routes (efficiency criteria were applied for STAR requirements, as well as omnidirectional departure and merge point criteria), APV/LNAV and application of CCO and CDO. A detailed presentation can be found on the SAM/IG/28 website.

2.41 Peru presented a case of implementation of new PBN flight procedures at the "Mayor General FAP Armando Revoredo Iglesias" airport (SPJR) in Cajamarca, where a set of PBN and visual procedures had been implemented to expedite departures and gain capacity and efficiency, in addition to facilitating ATFM CTOT measures. The presentation is included in the material posted on the website.

True north (geographic north) reference system

2.42 ICAO proposes to eliminate the practice of using a magnetic north reference system for bearings, tracks and radials and instead publish and use only the true north reference system. Procedure design is referenced to true north and converted to magnetic north.

2.43 ICAO has prepared a survey (State letter SL22.87.SP) to get feedback from States and their respective aviation sectors on the level of support needed for ICAO to begin work to move from a magnetic north reference system to a true north reference system for heading and track in air operations.

2.44 More information on true north can be found at:

https://www.icao.int/safety/OPS/OPS-Section/Pages/Truenorth.aspx.

https://www.icao.tv/videos/moving-from-magnetic-to-true-north-in-aviation

ACTIVITIES OF SG3- ATFM

2.45 The Fifth Meeting of Subgroup 3 (SG3/5) was held on 13-14 September 2022 via videoconference, under the coordination of Mr. Ricardo David (Brazil). The work plan is shown in the report on agenda item 4. An analysis of ATFM issues follows:

DOCS TF: Manual for calculating runway and ATC sector capacity

2.46 The analysis of documents "Guide for the implementation of ATFM services in the SAM Region 2022-2026" and "Capacity calculation manual" (current versions were approved in SAM/IG/26 and SAM/IG/27, respectively) should continue in order to identify opportunities for improvement in these documents, for presentation at the next SG3 meeting in April 2023 and then submission for approval to SAM/IG/29.

2.47 The next steps include monitoring the capacity measurement and declaration process in the countries of the Region, promoting and supporting it when necessary, and conducting a second round of the regional ATFM survey and verifying opportunities to update the Guide and the CAP Manual (including capacity declaration, ADP and post-operations report models).

DCB PLAN TF: OPSAM, DASHBOARD and BRISA

2.48 Two activities were considered finalised: the implementation in the OPSAM dashboard of functionalities related to runway capacity of airports, in order to identify saturation times, as well as specific capacity constraints, for example, due to works; and the structuring of a single database format to permit the exchange of post-operations data, to enable post-operational analysis for BRISA

2.49 The *ad hoc* BRISA group was organised so States could define which airports should be part of BRISA, based on the main city pairs in the Region and seasonal flow, *inter alia*; and to establish a connection between BRISA meetings, so that the pre-tactical would constitute an update of the content of the strategic BRISA. It is proposed that this task be considered as finalised, leaving to SG3 the arrangements for the participation of the industry in this work modality.

2.50 It was felt that the GADHOC should remain on standby awaiting for an opportunity to improve BRISA, especially in terms of user participation and the use of the English language.

2.51 The results of the survey to States to obtain data on the development and implementation of the ATFM service in the SAM Region and to identify which States in the Region had defined runway capacity values for their airports and/or ATC sectors, were presented. A second survey was foreseen to supplement the data collected. The summary appears in the two tables below (figures in Spanish only):

Asunto 3 – Status ATFM SAM. Implantación servicio ATFM

2.Su Estado ha implantado el Servicio ATFM?	8 - SI, 1 - NO, 2 NO RESPONDIERON,11 ENCUESTADOS	75%	
3.Está utilizando la Guía para Implantación del Servicio ATFM en la Región SAM 2020-2025?	7-SI, 2-NO (1 APLICÓ OTRO PROCESO), 2 NO RESPONDIERON,11 ENCUESTADOS	75%	
4.En qué fase o fases de implantación de la Guía se encuentra?	3 - Fase ATFM I: (capacidad/demanda y línea base) 2 - Fase ATFM II: Fase ATFM II-A (nacional básico) 2 - Fase ATFM II: Fase ATFM II-B (nacional operacional) 2 - NO (1 APLICÓ OTRO PROCESO) 2 NO RESPONDIERON,11 ENCUESTADOS	70%	SE HAN DESARROLLADO TRES FASES EN DISTINTA CONDICIÓN
5.Cuales son los siguientes pasos en su implantación?	6 - INDICAN QUE SEGUIRAN DESARROLLANDO LAS FASES Y ADQUIRIENDO CONOCIMIENTOS 1 - INDICA QUE HA ALCANZADO EL NIVEL REQUERIDO Y NO PREVEE DESARROLLOS 2 - NO (1 AL NO APLICAR ESTE PROCESO ESTABLECE DESARROLLOS PROPIOS) 2 NO RESPONDIERON,11 ENCUESTADOS	55%	
6.Si considera que existen mejoras para la Guía dejar un comentario a continuación.	3 - INDICAN QUE SE PUEDE HACER MEJORAS 6 - NO (1 AL NO APLICAR ESTE PROCESO ESTABLECE DESARROLLOS PROPIOS) 2 NO RESPONDIERON,11 ENCUESTADOS	25%	
7.Indique a continuación la causa por la que no ha podido implantar el Servicio ATFM y/o la Guía?	8 - NO CORRESPONDE DAR RESPUESTA 1 - APLICÓ OTRO PROCESO PORQUE COMENZO ATFM ANTES DE LA GUÍA 2 NO RESPONDIERON,11 ENCUESTADOS		

Asunto 3 – Status ATFM SAM. Cálculo de Capacidad de Pista y Sector ATC

1.Su Estado ha implementado un proceso de cálculo de capacidad de pista y/o sector ATC?	9 - INDICAN HAN REALIZADO EL CÁLCULO 2 NO RESPONDIERON,11 ENCUESTADOS	85%	
2.El proceso de cálculo de capacidad empleado por su Estado, se basa en los lineamientos descritos por la RO OACI SAM en el Manual de Cálculo de Capacidad de Pista y Sector ATC - Draft 1.0?	5 - INDICAN QUE SI 4 - NO (3 HAN APLICADO OTROS DESARROLLOS) 2 NO RESPONDIERON,11 ENCUESTADOS	80%	
3.En caso que la respuesta a la pregunta 2. haya sido NO, ¿Cuáles fueron las razones que motivaron a su Estado a emplear una metodología diferente? ¿Cuáles son las ventajas obtenidas de aplicar esa metodología?	4 - NO (1 NO HA PODIDO IMPLEMENTAR Y 3 HAN APLICADO OTROS DESARROLLOS)	90%	
4. ¿Cuenta el Estado con un Plan de Medición de capacidad Pista? De ser su respuesta SI, señale cuantas y cuales pistas están incluidas en el mismo e indique el porcentaje de cumplimiento de su Plan.	8 - INDICAN QUE SI 1 - NO 2 NO RESPONDIERON,11 ENCUESTADOS	80%	PISTAS
5. ¿Cuenta el Estado con un Plan de Medición de capacidad de Sector ATC? De ser su respuesta SI, señale cuantos y cuales sectores están incluidas en el mismo e indique el porcentaje de cumplimiento de su Plan.	7 - INDICAN QUE SI EN DISTINTOS PORCENTAJES 1 - NO 2 NO RESPONDIERON,11 ENCUESTADOS	70%	SECTOR ATC
6.Su Estado ha publicado la declaración de capacidad (Capacidad Declarada) de pista y sector ATC, para cada aeródromo/Aeropuerto y Sector ATC, en la AIP? ¿Su Estado ha publicado en la AIP la Capacidad Declarada de pista y sector ATC para cada aeródromo/aeropuerto y Sectores ATC?	5 - INDICAN QUE SI 4 - NO (POR DISTINTAS RAZONES Y 1 ESTA EN PROCESO) 2 NO RESPONDIERON,11 ENCUESTADOS	50%	
7.En caso que la respuesta a la pregunta 2. haya sido NO, y no haya desarrollado ninguna metodología de cálculo de capacidad de pista y sector ATC, indique las razones.			

Cross-border ATFM TF

2.52 The creation of the Cross-border ATFM Task Force (XB TF) was approved, as well as the designation of Mr. Leonardo Costa (Argentina) as rapporteur. It was proposed that this XB TF begin studies related to the interrelationships that already existed among Argentina, Brazil, Chile and Uruguay, as well as between Colombia and its adjacent States, leading to the establishment of cross-border coordination of interest to ATFM or ATS.

2.53 The deliverables approved for the XB TF were as follows:

a) To study a cross-border ATFM process model and a high-ATM-impact cross-border coordination model;
b) To establish an ATS/ATFM LOA/CAO/MOU model; and
c) To develop a SAM cross-border ATFM manual.

Other topics: ATFM, capacity and efficiency

2.54 IATA explained that it was crucial to establish a difference between the activation of the ATS contingency plan, which should be done through the mechanisms established in the MCATS and in State plans, using the call tree, and the discussion of alternative measures, which could take place within the scope of the ATFM tactical coordination mechanism, which could be called **'extraordinary tactical BRISA'.**

2.55 Likewise, unexpected events that did not require the activation of contingency plans, but had a significant impact on airspace users and/or ANSPs, could also be considered in the ATFM tactical coordination mechanism.

2.56 The following requirements are necessary for the establishment of the ATFM tactical coordination mechanism (Extraordinary BRISA):

a) Check the feasibility for SAM ATFM units that operate H24 to volunteer to coordinate the ATFM tactical coordination mechanism on a rotational system.

b) Develop and keep up-to-date a list of ATFM or ATC points of contact (for States that do not have ATFM units operating H24), that can be activated H24 for participation in calls of the ATFM tactical coordination mechanism (Extraordinary BRISA).

2.57 It was recognised that maintaining the level of contingency response, as described, could entail use of resources of the Administrations and significant organisational tasks, as well as require improvements within the scope of ATS and ATFM providers. Consensus was reached to study and gradually implement IATA's proposal.

2.58 To carry out the initiative, SG3 was tasked with the preparation of a Job Card with the terms of the activities and studies to be performed by an *ad hoc* group. Progress would be reported at the next GESEA plenary. **[Action S28/09]**

2.59 Brazil presented the initiatives implemented in 2021 for the Porto Seguro TMA, which were decisive for organising the demand. It should be noted that, unlike the previous season, the demand for SBPS, mostly from commercial flights, had not been affected by ATFM measures. It was also noted that punctuality in SBPS showed quite good results, although movements in that period had increased significantly (1,032 movements in December 2020 and 1,614 in December 2021).

Training

2.60 In order to support compliance by SAM States of the provisions on ATFM PHASE I (Capacity/Demand) of the Guide for the Implementation of the ATFM Service in the SAM Region, Brazil would deliver a course on runway and ATC sector system capacity (20 participants) in two phases: the first, theoretical, to be delivered remotely on 3-14 April, 2023; the second phase, practical, would be face-to-face, on 17-28 April, 2022, at the Rio de Janeiro International Airport (Galeão) of Brazil.

2.61 In order to support compliance by SAM States of GANP provisions, as well as for the post-operations phase of the national ATFM, in accordance with the Guide for the Implementation of the ATFM Service in the SAM Region, Brazil would deliver a course of ATM performance indicators (20 participants) in two phases: the first, theoretical, to be delivered remotely in the months of May and June 2023; and the second phase would be conducted face-to-face, on 3-14 July, 2022, at the CGNA, Rio de Janeiro, Brazil.

2.62 The Meeting welcomed Brazil's proposal for horizontal cooperation. It was noted that training on GANP KPI management was very scarce. It was expected that competencies would be developed in personnel managing data to feed KPIs in the States. The Secretariat was tasked with coordinating with CGNA and DECEA Brazil the convening and documentation for these two initiatives. The profile of the participants and the strategies underlying this training would be described in the Mnemonic Sheet that accompanied the invitation letters from the SAM Office. [**Action S28/10]**

GESEA Work Plan

2.63 The 2023 GESEA Work Plan was outlined, highlighting the revised dates for the events that had been scheduled with the support to be coordinated from RLA 06 901, as set out in the report on Agenda Item 4.

APPENDIX A

Status of EDE Implementation in the South American Region

- Argentina. - EDE has not yet been implemented. It is in the process of implementation in the Baires TMA and is expected to impact the airspace of several FIRs around Ezeiza. Therefore, EDE implementation has not yet been defined.
- Bolivia. - EDE has not yet been implemented. The progress in the implementation of the ATS surveillance service in the La Paz FIR was reviewed, and it was expected that pilot-controller VHF communication coverage would also be extended. It was expected that it would be possible to implement EDE once these technical conditions were achieved.
- Brazil. - EDE has been implemented in all of the Recife and Amazonica FIRs and in most of the Brasilia and Curitiba FIRs, as published in the AIP of Brazil (ENR 1.9 AIR TRAFFIC FLOW MANAGEMENT AND AIRSPACE MANAGEMENT).
- Chile. – EDE implemented in a portion of oceanic airspace, in accordance with AIC NR 19 - 28 OCT 2020.
- Colombia. – EDE has not been implemented. SUP AIP A64/C86, 04 NOV 2020, has been cancelled, in view of the increase in air traffic volume in the Barranquilla and Bogota FIRs.
- Ecuador. – EDE implemented in all of the Guayaquil FIR, as published in the AIP, in ENR 1.10.
- Panama. – EDE has not yet been implemented. However, it was noted that there had been a tactical application for direct flights for a long time. The conditions that apply are published in AIP ENR 1.8-1.
- Peru. – EDE has been implemented as of 1 June 2021 in the upper oceanic airspace of the Lima FIR, through AIP Supplement 01/21. Initially, the entry and/or exit to/from the EDE airspace of the Lima FIR must be done through waypoints published in the AIP of Peru.
- Uruguay. - EDE has not been implemented. It was noted that all SID/STAR procedures and ATS routes within the Montevideo FIR had a direct and very efficient configuration. The option of publishing specific information in the AIP was analysed, with a view to providing the information to airlines for the filing of flight plans originating in Montevideo, which could apply EDE in the neighbouring FIRs. Furthermore, there would probably be more information, subject to the implementation process in the Baires TMA, which is expected to impact the MONTEVIDEO FIR airspace.
- Venezuela. – EDE was implemented in most of the Maiquetia FIR by SUP AIP C03-A03/21 on AIRAC date May 2021.

APPENDIX B

CIIFRA Route Catalog

UPDATED: August 29, 2022

Airline	City Pair	Southbound Route	Northbound Route	Status	Start Date	End Date
Aerolinas Argentinas (ARG)	SAEZ - KJFK - SAEZ	Not requested	SAEZ PTA6A KUKEN UL324 MIGOT UM402 BVI UM423 KIKER DCT DONQU L454 OKONU DCT YAALE Y495 CAMRN DCT KJFK	Approved	7/15/2022	10/13/2022
Aerolinas Argentinas (ARG)	SAEZ - KMIA - SAEZ	KMIA GWAVA1 URSUS UP406 BILSI UL795 LORBA DCT EMABU UP525 SJE UB689 LET UP525 RCO UL417 LOKOX UM784 BOLET UL404 ISOPO UT672 MULTA UW24 SNT SNT6A SAEZ	SAEZ BIVAM2A BIVAM UW8 PAR UL417 PABON EJA KILER UM779 ZEUSS VIICE1 KMIA	Approved		3/5/2023
Aerolinas Argentinas (ARG)	KMIA - SAEZ	KMIA GWAVA1 URSUS UP406 BILSI UL795 LORBA DCT EMABU UP525 SJE **UB689 PABON ISARA PUBUM SNT** SNT6A SAEZ	Not requested	To be coordinated		
Aerolinas Argentinas (ARG)	MMUN - SAEZ	MMUN CZM1A CZM **UB881 ANIKO DCT RADIM DCT LIXAS UL203** ARNEL UM542 TAL UV1 JCL UL550 RDS UT672 MULTA UW24 SNT SNT7U SAEZ	Not requested	Approved	8/29/2022	11/27/2022
American (AAL)	KMIA - SPJC - KMIA	KMIA MAYNR1 FUNDI DCT LEPON DCT ARNAL DCT TINPA DCT VAMOS DCT GYV DCT VAKUD DCT ATATU ATATU2 SPJC	SPJC ISRE2F ISREN DCT VAKUD UL780 GYV DCT VAMOS DCT TINPA DCT LEVOR UP536 GCM UG448 ATUVI DCT IKBIX SNDBR2 KMIA	Approved	6/15/2022	10/7/2022
American (AAL)	KDFW - SPJC	KDFW ARTZ8 TNV MUSYL L207 IPSEV UL207 CPE IOS URPOS LIXAS UL203 ATENO UM542 TAL UV1 ATATU ATATU2 SPJC	Not requested	To be coordinated		
American (AAL)	KMIA - SCEL - KMIA	KMIA MAYNR1 FUNDI LEPON ARNAL TINPA VAMOS GYV VAKUD ATUTU ILMAR UL302 SIMOK SIMO5D SCL	SCEL DONT4B DONTI UL780 ISREN VAKUD UL780 GYV VAMOS TINPA LEVOR UP536 GCM UG448 ATUVI IKBIX SNDBR2 KMIA	Approved	TBD	TBD
Caribbean (BWA)	TTPP - KMIA - TPPP	KMIA SKIP52 SKIPS Y290 HAGIT Y421 HARBG L452 ANADA UG449 PERGA ITRAK NAPKO LEXOR TALUS TTPP	TTPP DCT ANADA DCT MUNOZ DCT HARBG Y330 FODED DCT MADIZ DCT FOXID DCT FLIPR FLIPR7 KMIA	Approved		11/4/2022
Caribbean (BWA)	TTPP - KJFK - TTPP	KJFK JFK SHIPP SPDEY DOGRS BLUUU DUMPR ISLES SQUAD DARUX ENAPI SHEIL ODUCA GEECE PERGA ITRAK NAPKO LEXOR TALUS TTPP	TTPP POS GEECE ODUCA L459 SHEIL ENAPI DARUX L459 SAVIK YAALE YETTI MOUGH OWENZ PREPI LEECY CAMRN KJFK	Unable		
Copa (CMP)	MPTO - SBGL - MPTO	MPTO DCT OREPI DCT DAKMO UW36 VASIL DCT OBKIL DCT GAVIT DCT ILKOD DCT 0835505957W DCT PALEP DCT 1404505339W DCT NAXIV DCT SAMGA DCT OGMUK UTBOM2A SBGL	SBGL EVRAD1A ENSOD DCT VULER DCT GELIB DCT NAXIV DCT SAMAR DCT ESDAG DCT 0901S05939W DCT MIMUM DCT 0428S06440W DCT GAVIT DCT OBKIL UM549 DAKMO DCT ISOKO ISOKO1 MPTO	Approved	5/9/2022	No end date
Copa (CMP)	MPTO - KLAX - MPTO	KLAX PNDAH2 TCATE DCT PPE DCT ALGUN DCT OTOSO DCT IPSAG DCT OTITI DCT EMOBI DCT EMADA DCT IOS DCT ANSON DCT VUMAN VUMAN1A MPTO	MPTO SIMAN2A SIMAN DCT AMUBI DCT VOKAS DCT ATUTO DCT AXOMU DCT RAULS DCT CVM DCT AVAPA DCT ASUTA DCT AMMOR OLAAA2 KLAX	In coordination		
Delta (DAL)	KATL - SPJC - KATL	KATL SMLTZ2 WALET DCT YUESS Q79 MCLAW Y442 FUNDI DCT LEPON DCT ARNAL DCT TINPA DCT VAMOS DCT GYV DCT VAKUD DCT ATATU ATATU2 SPJC	SPJC ISREN2F ISREN DCT VAKUD UL780 GYV DCT VAMOS DCT TINPA DCT LEVOR UP536 GCM UG448 ATUVI DCT IKBIX Y183 PEAKY Q87 MATLK Q77 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved		10/14/2022
Delta (DAL)	KATL - SBGR - KATL	KATL VRSTY2 MCN DCT YANTI Q89 MANLE Y185 RENAH Y355 FIPEK Y294 GESSO L467 ANADA DCT KORTO DCT SUMVA ... SBGR	SBGR ... SUMVA DCT KORTO DCT ANADA L452 HARBG Y421 HAGIT Y306 VENDS Y185 MANLE Q89 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved		10/25/2022
Delta (DAL)	KATL - SAEZ - KATL (Option 1)	KATL SMLTZ2 WALET DCT YUESS Q79 FEMID DCT DHP A509 URSUS UP406 BILSI EMABU UP525 RCO UL417 TOPOG UL404 ISOPO UT672 MULTA UW24 SNT SNT6A SAEZ	SAEZ BIVAM2A BIVAM UW8 PAR UL417 BORDO Y259 OCTAL Q77 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved		10/7/2022
Delta (DAL)	KATL - SAEZ - KATL (Option 2)	KATL VRSTY2 MCN DCT YANTI Q89 SHRKS DCT CRG DCT DEBRL DCT OMN DCT URSUS UP406 BILSI UL795 LORBA DCT EMABU DCT BOBKA DCT VULNO DCT LONAX DCT PUPAS DCT LET DCT ARNUB DCT ISARA DCT PUBUM UL417 TOPOG UL404 ISOPO UT672 MULTA UW24 SNT SNT6A SAEZ	SAEZ BIVAM2A BIVAM UW8 PAR UL417 PUBUM DCT CITRA DCT PUDBU DCT ARUXA DCT LONAX DCT IROTI DCT NEVPA UL417 LENAX DCT ALTIB UM779 ZEUSS DCT OCTAL Q77 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL	Approved	6/24/2022	10/7/2022
Delta (DAL)	KATL - SCEL - KATL	KATL VRSTY2 MCN DCT YANTI Q89 SHRKS DCT DEBRL Q97 EBAYY DCT DHP A509 URSUS UL780 SULNA DCT TOY UV208 SIMOK SIMO6B SCEL	Not requested	To be coordinated		
Gol Linhas Aéreas (GOL)	SBBR - MMUN - SBBR	MMUNR12R BOTOP2A BOTOP UM782 ARNAL DCT ROKIN DCT IROTI DCT TME DCT KODSI DCT AKPEP DCT MIBAB DCT ISIPA DCT RAXIL DCT XINGU DCT MALMI UZ33 PAPES OBDOG2A SBBRR11L	SBBRR11R KOTVU3B PAPES UZ33 MALMI DCT TELOS DCT PUMTU DCT DEMIT UM656 EKOXU DCT MIBAB DCT AKPEP DCT KODSI DCT TME DCT DIBAM UW10 MGN DCT ALPON DCT LEVOR DCT BIRLO DCT ANIKO DCT PAULE PAULE1H MMUNR12L	To be coordinated		
Gol Linhas Aéreas (GOL)	SBGR - MDPC - SBGR	Not requested	SBGRR09L UKBEV1D UKBEV UZ26 KEXIT UZ46 ROMIK DCT OPRUX DCT LIVAB DCT VUREB DCT DARLO DCT UTMID DCT EDPET DCT BUVIP DCT LDP DCT ANBAG UM423 MTA DCT UTGIS DCT ARMUR DCT SATDE RNAV MDPCR08	To be coordinated		

United (UAL)	KIAH - MSLP - KIAH	KIAH.RITAA6.WWREN..KANNA..KEKRI..TADET..BASKO..VSA..ASOKU..OLISU..MSLP	MSLP..OLISU.UG436.AUR.UW3.ASOKU..VSA..BASKO..TADET..KEKRI..MAM.J25.CRP.HTOWN2.KIAH	Approved		Ad Hoc Basis
United (UAL)	KIAH - MMPR - KIAH	KIAH ... CRP MTY OTEKA KEDMA MMPR	MMPR ... XUDED UT148 OTEKA MTY CRP ... KIAH	Approved		11/30/2022
United (UAL)	KIAH-MMSD-KIAH	KIAH ... PNG DCT CODLE DCT TENAY MMSD	MMSD DCT USBOG DCT OLESI DCT CUL UJ10 SLW J29 CRP KIAH	To be coordinated		
United (UAL)	KIAH-MMGL-KIAH	KIAH ... DEVOE AXEDO LIVRI ... MMGL	MMGL ... GOYAS ALOVO DEVOE CRP ... KIAH	To be coordinated		
Emirates (UAE)	MMMX -SEQM Option 2	TEVOS UT113 OAX DCT IPSUM UL318 PALAD	Not requested	To be coordinated		
Emirates (UAE)	MMMX -SEQM Option 1	TEVOS UT113 OAX DCT ALSAL UL318 PALAD	Not requested	To be coordinated		
Emirates (UAE)	KORD-SEQM	BACEN DCT BLOKR DCT BEKKI DCT ENL DCT SQS J35 MCB DCT HRV L333 PISAD UL333 ILUBA UN420 SPP DCT RHT DCT TOKUT UM674 NEGAL DCT	Not requested	To be coordinated		
Emirates (UAE)	MMGL-KIAH	Not requested	OTOKI DCT URVIK DCT MTY J29 CRP DCT LMEDA	To be coordinated		

APPENDIX C

CIIFRA SAM Internal Route Catalog

UPDATED: August 19, 2022

Airline	City Pair	Southbound Route	Northbound Route	Status	Start Date
Gol Linhas Aéreas (GOL)	SBGR - SAME - SBGR	SBGRR09L ZORZA1A SOVSI UZ85 ATIMA DCT ESNOG DCT ARULA UM400 SIKOB DCT	SAMER36 SALBO1C SALBO UL531 CBA DCT IREKA UW14 UROLI DCT GEBUN DCT VUNAT		
Gol Linhas Aéreas (GOL)	SCEL - SBGR	No southbound route	SCELR17R GUVOL5B GUVOL DCT ORABA DCT ERE UW14 UROLI DCT GEBUN DCT TERER		
Gol Linhas Aéreas (GOL)	SAAR - SBGR	No southbound route	SAARR20 DABOT1G DABOT DCT RIOKA DCT GEMSU DCT VUNEG UZ71 BOLIP UZ28 XONUG		
Gol Linhas Aéreas (GOL)	SACO - SBGR	No southbound route	SACOR01 IRAVO1 GEMOP DCT SIKOB DCT TIGDI DCT ESUKA DCT SUMPO UZ28 XONUG		
Gol Linhas Aéreas (GOL)	SBFZ - SABE	SBFZR13 RODIT1A RODIT UM654 ANSOK DCT UGPIR DCT MOTGI DCT UBLAM DCT TOGAL UL324 KUKEN KUKEN2Q SABER13	No northbound route		
Gol Linhas Aéreas (GOL)	SBMO - SABE - SBMO	SBMO SBMOR12 ESBIR2A DENDO DCT MAPVU DCT VUTNO DCT OPVUK UZ21 LOKAM UZ85 BIVAR DCT VUGUP DCT MAZAR DCT URURI DCT KUKEN KUKEN2Q SABER13 SABE	SABE SABER13 KUKEN7 KUKEN DCT URURI DCT PUBED DCT DOLDI DCT XONUG DCT BIVAR DCT KONVI UZ23 BHZ DCT VUTNO DCT MAPVU DCT MCE DCT SBMOR12 SBMO		
Gol Linhas Aéreas (GOL)	SABE - SBSG - SABE	SBSG SBSGR12 AMVUK1C VACAR DCT MOSMU UZ30 ENTIT DCT DIDAB DCT DOLDI DCT PUBED DCT URURI DCT KUKEN KUKEN2Q SABER13 SABE	SABE SABER31 KUKEN7 KUKEN DCT URURI DCT EPGEP DCT UMGES DCT GELAB DCT UKBAG DCT SIGIR DCT ALGAP DCT OFITO DCT RAXIK DCT VACAR VACAR1G SBSGR12 SBSG		
Gol Linhas Aéreas (GOL)	SABE - SBRF - SABE	SBRF SBRFR18 SATMA2A MCE DCT ELEFA DCT REMIG UZ30 ENTIT DCT KIGES DCT SUMPO SABE UN741 PUBED DCT UMRUD UN741 PAPIX PAPIX1R SABER31	SABE SABER13 KUKEN7 KUKEN DCT URURI DCT PUBED DCT DOLDI DCT XONUG DCT BIVAR DCT KONVI UZ23 BHZ DCT VUTNO DCT MAPVU DCT ARU BUVAD1A SBRFR18 SBRF		
Gol Linhas Aéreas (GOL)	SABE - SBSV - SABE	SBSV SBSVR10 GEDEX2A TOLOG DCT LOMOR DCT VUKAT UZ57 OPVUK UZ21 LOKAM UZ85 BIVAR DCT VUGUP DCT MAZAR DCT URURI DCT KUKEN KUKEN2Q SABER13 SABE	SABE SABER13 KUKEN7 KUKEN DCT URURI DCT PUBED DCT CTB DCT KONVI UZ23 BHZ DCT VUTNO DCT MUMAS ASUGA1A SBSVR10 SBSV		

Agenda Item 3: Report of activities and deliverables of the Interop TF and its 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:

a) WP/3.1 – *Activities carried out in the INTEROP TF subgroups* (presented by the Secretariat)
b) WP/3.2 – *Methodology to quantify errors in flight plans* (presented by the Secretariat)
c) WP/3.3 – *Progress, challenges and advantages of ADS-B implementation in the SAM Region* (presented by Colombia)
d) WP/3.4 - *Activities executed by Brazil for the Regional OPMET Data Bank (RODB) 3.0 IWXXM* (presented by Brazil)
e) IP.3.1 – *Chilean activities for the mitigation of errors in flight plans and associated messages* (presented by Chile)
f) IP/3.2 – *Current status of interconnection of the AMHS system of Peru (Spanish only)* (presented by Peru)

3.2 The Meeting analyzed the following topics:

Review of air navigation priorities in the CNS field

3.3 The priority of the INTEROP TF is to promote the implementation of ASBU elements of Version 6 of the Global Air Navigation Plan (GANP), which support the operational improvements of air navigation services. The main issues discussed during the SAM/IG/28 Workshop/Meeting were:

- Monitoring of AIDC implementation (FICE-B0/1);
- Delivery of the common methodology developed by the *Ad hoc* Group of the ATM/FPL Subgroup to quantify errors in the preparation of flight plans (FPLs) and associated messages (COMI-B0/7 and FICE-B0/1);
- Monitoring of AMHS implementation (COMI-B0/7);
- Follow-up of the activities carried out by the CNS/ANP Subgroup, in order to review the information contained in Volume II of the CAR/SAM Air Navigation Plan, Part III (CNS);
- Status of implementation of ADS-B in the SAM Region and development of initiatives that seek to share information and surveillance data among the States of the Region, including ADS-B data (ASUR-B0/1 and ASUR-B1/1); and
- Monitoring of tests carried out for the exchange of meteorological information in IWXXM format with the OPMET regional data bank of Brasilia (AMET-B0/4).

3.4 The Secretariat reported that an information sharing space (Share Point) would be created on the MS Teams platform of the SAM Regional Office for the INTEROP TF and its activated subgroups. (Action SAM/IG/28-XX)

CNS implementation. Advances by the Subgroups

3.5 Under this agenda item, information was provided on the main deliverables of the activated subgroups and progress made to date.

ATM/AIDC Subgroup

3.6 The main objective of the ATM/AIDC Subgroup was the establishment by SAM States of the 76 connections for data link communication between ATS units (AIDC).

3.7 The Meeting took note that, to date, 16 intra-regional AIDC communications and 2 inter-regional AIDC communications had been established.

3.8 The information provided by the States to the Secretariat for the SAM/IG/28 Workshop/Meeting is presented below:

Argentina

3.9 Of the 17 AIDC links planned (6 national, 10 regional, 1 intra-regional), none had been implemented or were operational. Due to inconsistencies identified in AIDC implementation, use of AIDC in the ACCs of Argentina continued to be disabled until interconnection problems with adjacent ACCs were solved, prioritising interconnection at the domestic level. Once the situation was resolved, progress would be made at the international level.

3.10 The 2020-2024 Air Navigation Service Plan submitted by the air navigation service provider EANA S.E to the aeronautical authority (ANAC) contemplated the updating of ATM automated systems.

Bolivia

3.11 Bolivia had not yet implemented AIDC and was in a bidding process for the acquisition of a new AMHS system for interconnection with the TopSky system; its implementation was expected by 2024.

Brazil

Amazónico ACC – Lima ACC

3.12 In tests carried out in June 2021, a high volume of rejects was observed in messages. The ACC-AZ SAGITARIO STVD was updated in June 2022 and the analysis and update of the INDRA system of the Lima ACC was awaiting scheduling. Additional testing between the centres was expected to take place soon.

Amazonico ACC – Maiquetia ACC

3.13 Pre-operational tests were carried out in early 2022. Control transfers between centres were successful in most cases. To correct errors in the Amazonico ACC, the Sagitario STVD was updated in June 2022.

3.14 The new version of the Maiquetia SAGITARIO system was scheduled to be installed in the second half of October 2022.

Curitiba ACC – Asunción ACC

3.15 The Sagitario version of the ACC-CW was updated in July 2022. Negotiations were currently in progress between the operational sectors of Brazil and Paraguay in order to prepare a memorandum of understanding to start connection tests between the two centres.

Chile

3.16 AIDC implemented and in the operational phase between the Iquique ACC and the Lima ACC. The AIDC link between the Iquique ACC and the Córdoba ACC was in the testing phase. For the Santiago and Oceanico ACCs, implementation was planned to start in December 2022 and measures set forth in conclusion SAM/IG/21-03 would be adopted during the pre-operational phase.

Colombia

3.17 The letter of agreement for the AIDC link between the Barranquilla ACC and the CENAMER ACC was about to be signed. Regarding AIDC operational tests between Barranquilla ACC – Maiquetia ACC, errors had been found in the configuration of the Barranquilla COPs and some issues in the ATECH system, awaiting adjustments of the INDRA system to schedule a new operational test. Upon completion of tests with Barranquilla, pre-operational tests would be carried out between the Bogotá ACC and the Maiquetia ACC. Regarding AIDC between Barranquilla ACC and Kingston ACC, there was no information from Jamaica regarding the initiation of operational tests.

Ecuador

3.18 Ecuador had completed the implementation and taken the three planned AIDC links to the operational phase: Colombia (Bogotá), COCESNA (CENAMER), and Peru (Lima).

Paraguay

3.19 The SAGITARIO system of the Asunción ACC had been updated and they were already in coordination with Brazil to start tests with the Curitiba ACC.

Peru

3.20 The Coordinator of the ATM/AIDC Subgroup held a meeting on 23 September, 2022, with representatives of Peru, the SAM Office, EASA and INDRA to discuss necessary updates in the Lima ACC system. He was informed that, upon renewal of the support/maintenance contract, the necessary adjustments identified would be implemented, with a view to resuming tests with the adjacent centres that did not yet have AIDC links with the Lima ACC.

Uruguay

3.21 Upon completion of the implementation of the Montevideo AMHS system, Uruguay would begin coordination for the establishment of the AIDC link with the Curitiba ACC. It was estimated that the implementation would be completed by the end of November 2022.

Venezuela

3.22 In 2019, Venezuela began the implementation of activities and solutions aimed at solving the problems encountered in the pre-operational phase during the AIDC interconnection processes between the adjacent area control centres of Brazil and Colombia.

3.23 ATECH reported that it had coordinated with ATM management of Venezuela to update the Maiquetía ACC system in the second half of October 2022.

3.24 The participants took note of the work carried out by GESEA Subgroup 1 for the reorganisation of air traffic flows between Colombia and Panama, making it possible to reduce the risk windows caused by high traffic volume and air traffic conflicts in this joint sector, and increase the possibilities of conducting CCO/CDO and reducing the workload of the ATCOs involved. In this sense, it was estimated that the measures adopted would facilitate the implementation of AIDC between the Bogotá ACC and the Panama ACC.

ATM/FPL Subgroup

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

Methodology to quantify FPL errors

3.26 The Rapporteur of the ATM/FPL Subgroup presented the methodology developed for the collection of data to quantify errors in flight plans and associated messages, in order to obtain indicators and measure the level of mitigation achieved with the adoption of measures set forth in the ATM/FPL Roadmap.

3.27 The methodology consisted in the collection of flight plan data in the ATS control centre systems, to be performed by State personnel involved in the FPL monitoring group. **Appendix A** to this part of the report presents the list of participants of the FPL monitoring group. **(Action S28/12)**

3.28 The collected data would be inserted in the tables presented in **Appendices B, C** and **D** to this part of the report. The analysis period would be from October to December 2022.

3.29 The Daily Record (Appendix B) would cover a period of 7 days to determine the day with the highest percentage of errors. The day with the highest percentage of errors would be broken down by completing the Duplicate FPL report (Appendix C) and the Record of FPLs with Errors (Appendix D) tables.

3.30 The information collected by each State should be forwarded to the rapporteur of the ATM/FPL Subgroup, as soon as possible, during the following week. Once the *share point* was established in the MS Teams platform of the SAM Regional Office, the focal points of the FPL Monitoring Group would be responsible for updating the information in the respective repository. **(Action S28/13)**

3.31 A representative from Chile presented IP/3.1 on initiatives to quantify errors in flight plan messages in the DGAC of Chile, highlighting that the CADAS-ATS terminals (Frequentis) were capable of semantic and syntactic analysis of messages, identifying messages with errors and describing the error with a colour code, as well as marking duplicate messages.

3.32 The Secretariat noted that several SAM States used AMHS systems from the same manufacturer and that the functionalities mentioned in the Chilean working paper could possibly be used to obtain the information required by the methodology proposed by the *Ad hoc* Group of the ATM-FPL Subgroup.

3.33 The information provided by the States to the Secretariat for the SAM/IG/28 Workshop/Meeting is presented below:

Argentina

3.34 The new Ezeiza AMHS system was in operation since May 2022. The updating of ATM systems was also contemplated in the plans, in order to be able to continue with the activities contained in the Roadmap approved in Conclusion SAM/IG/25-06.

3.35 In the national planning of Argentina, flight plan centralisation was not yet contemplated.

Brazil

3.36 In 2021, Brazil implemented an automated system for centralised management of flight plans, which provided feedback messages to FPL originators, delivering acknowledgment (ACK) or rejection (REJ) messages related to the flight plans sent.

3.37 In previous meetings, it had been noted that the format adopted for the Brazilian system was not fully consistent with the format established in the document prepared by the ATM/FPL Subgroup, because the Brazilian system had been developed prior to the publication of the ATM/FPL Roadmap.

3.38 Brazil (DECEA) had established a contract with the system developer, in order to implement changes for alignment with the format proposed in the ATM/FPL Roadmap.

Chile

3.39 In Chile, errors in the FPLs had been minimised through reports and suggestions to users, achieving very good results (see item 3.31 of this part of the report).

3.40 Likewise, Chile had participated in the *Ad hoc* Group for the preparation of the methodology to quantify errors in flight plans (FPL) and associated messages, and was fully capable of using the adopted methodology.

Peru

3.41 Peru received, verified and accepted all the international flight plans from airlines that carried out regular flights, via AMHS, through ACK and REJ messages, which accounted for 95%.

3.42 Likewise, domestic flights of airlines such as LATAM, VIVA AIR and SKY AIRLINES, were filing their flight plans via AMHS at different controlled aerodromes of the LIMA FIR, and FPLs were being accepted through the file of the airline.

3.43 Peru intended to update the letters of agreement with all the airlines during the last quarter of this year.

3.44 Regarding repetitive flights, Peru no longer used them out since 2019. The companies decided--upon agreement--to deliver their flight plans via AMHS, so that the interested parties could obtain the information more effectively.

Uruguay

3.45 After the implementation of the Montevideo AMHS system, Uruguay would begin the implementation of the measures proposed in the ATM/FPL Roadmap.

Venezuela

3.46 Venezuela did not have an automated system for centralised management of flight plans that provided feedback messages to FPL originators, sending messages of acceptance (ACK) or rejection (REJ) of the flight plans submitted. However, it had adopted the ATM/FPL Roadmap and estimated that it would soon acquire the software to allow these operations to be carried out automatically.

CNS/AMHS Subgroup

3.47 The CNS/AMHS Subgroup sought to establish AMHS interconnections between the COM centres of the Region and with the COM centres of other ICAO regions.

Extra CARS/SAM Regional Plan AMHS Interconnections (P1)

3.48 The Meeting took note that since the SAM/IG/27 workshop/meeting and with the implementation of the COCESNA REDDIG II node in Ilopango, it was possible to establish the following extra-plan AMHS (P1) interconnections:

- Bogota COM centre – CENAMER COM centre (SKED – MHTG);
- Caracas COM centre – CENAMER COM centre (SVCA – MHTG); and
- Lima COM centre – CENAMER COM centre (SPIM – MHTG).

3.49 It was estimated that by the end of October 2022, an additional extra plan interconnection would be established:

- Ezeiza COM centre – CENAMER COM centre (SAEZ – MHTG).

3.50 Likewise, it was estimated that the following interconnections would still be established in 2022:

- Brasilia COM centre – Madrid COM centre (SBBR – LEEE) – plan;
- Caracas COM centre – Madrid centre (SBBR – LEEE) – plan;
- Ezeiza COM centre – Johannesburg COM centre (SAEZ – FAOR) – plan;
- Ezeiza COM centre – Madrid COM centre (SAEZ – LEEE) – extra plan;
- Georgetown COM centre – Piarco COM centre (SYCJ – TTPP) – plan;
- Montevideo COM centre – Brasilia COM centre (SUMU – SBBR) – plan;
- Montevideo COM centre – Ezeiza COM centre (SUMU – SAEZ) – plan; and
- Montevideo COM centre – Lima COM centre (SUMU – SPIM) – extra plan.

3.51 It was noted that the new system of the Montevideo AMHS COM centre had already been installed and, by the end of November 2022, interoperability (IOT) and pre-operational (POT) tests would be carried out with the AMHS COM centres of Brasilia, Ezeiza and Lima.

3.52 The participants noted that AMHS implementation was based on previous AFTN circuit planning. Since AMHS is a network application that uses the regional IP network (REDDIG II) to establish interconnections (P1) between the COM centres of the States, it is possible and appropriate to set up more connections, increasing connectivity and redundancy for the delivery of aeronautical messages.

3.53 The Secretariat reported that the Advanced Course on AMHS would be delivered on 7-11 November, 2022, in which a representative from Guyana and Trinidad and Tobago were given the opportunity to participate.

CNS/ANP Subgroup

3.54 The CNS/ANP Subgroup was activated at the SAM/IG/26 meeting (Virtual, 20-23 September, 2021) to support the review of the information contained in Volume II of the CAR/SAM Air Navigation Plan, and to provide support in the preparation of Volume III of the CAR/SAM ANP, on CNS issues.

3.55 The rapporteur of the CNS/ANP Subgroup noted that the tables were being reviewed through individual meetings with each State. The participants of the CNS/ANP Subgroup had to coordinate with the rapporteur for the revision of the tables. The following States had already completed the review: Argentina, Bolivia, Chile, Peru and Uruguay.

3.56 The Secretariat highlighted that it was important for all States to participate in the review of information contained in Volume II of the CAR/SAM ANP. The following States did not designate representatives for the CNS/ANP Subgroup (Ecuador, France/French Guiana, Paraguay, and Suriname). (Action SAM/IG/28-XX).

CNS/SUR Subgroup

3.57 The CNS/SUR Subgroup dealt with aeronautical surveillance data exchange issues, and was also responsible for studying and proposing the necessary activities for regional implementation of space-based ADS-B in the SAM Region, using REDDIG as a platform for distribution of information, reducing the cost of contracting telecommunication services.

3.58 The Meeting took note that a rapporteur should be assigned to the CNS/SUR Subgroup, to be confirmed when disseminating the final report of the SAM/IG/28 Workshop/Meeting. Colombia received the endorsement of the other member States of the SAM/IG Group for the assignment of a representative of Aerocivil, to be confirmed, as rapporteur of the CNS/SUR Subgroup. **(Action S28/15)**

3.59 Colombia presented a working paper (WP/3.3) on the progress, challenges and benefits of ADS-B implementation in the SAM Region, encouraging the other States to further the work done by the CNS/SUR Subgroup of the INTEROP TF, with the purpose of developing an initiative for sharing information and surveillance data among the States of the Region, including ADS-B data, whether information from ground or satellite stations, and in accordance with the system implemented by each air navigation service provider and the authorities in each State.

3.60 The Secretariat noted that due to the modernisation of their SSR surveillance systems, some States had acquired solutions with integrated ADS-B systems, in accordance with the Global Air Navigation Plan (GANP). A considerable number of States already had several ADS-B stations in place, with ADS-B surveillance information integrated into ATC automated systems, but were not using it as a primary means

of surveillance. Brazil was the only SAM State that already used ADS-B as the primary means of surveillance, for the air traffic control service in the Campos Basin region (Macaé TMA).

3.61 The Meeting took note that there were several steps and actions to be taken in order to adopt ADS-B as the primary means of surveillance in controlled airspace. Several actors in the aeronautical context needed to participate in the process, such as aircraft operators (airlines and general aviation), air navigation service providers (ANSPs), the regulatory body, entities representing pilots and controllers, who had to work under the leadership of the civil aviation authority (CAA) to develop implementation plans in each State.

3.62 According to the Global Air Navigation Plan (GANP), Version 6, ADS-B is an important enabler for the implementation of other ASBU (Aviation System Block Upgrade) elements/modules. **Appendix E** to this part of the report presents the Technology Thread Roadmap, with emphasis on the ASUR module with the ASUR-B0/1 element, automatic dependent surveillance – broadcast (ADS-B), which enabled the implementation of several more advanced block elements (B1, B2 and B3).

3.63 The Secretariat noted that the First NAM/CAR/SAM meeting/workshop on Planning for the Implementation of Automatic Dependent Surveillance – Broadcast (ADS-B) (ADS-B/ANP/1) had been held on 22-24 March, 2022), with the purpose of assisting States in the implementation of ADS-B OUT in accordance with the planning methodology applied in the new Volume III of the CAR/SAM ANP, based on the ASBU threads and modules/elements recommended in the sixth edition of the GANP.

3.64 The event was geared to air navigation service implementation planners specialised in surveillance at the operational and technical level (ATM, ATFM, CNS, information technology, etc.), mainly the members of the CNS/ANP and CNS/SUR subgroups of the Interoperability Task Force (INTEROP TF), in the case of SAM States, and of the Surveillance Task Force (SURV/TF) in the case of the NAM/CAR Region.

3.65 The information provided can be found at:

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

3.66 The Secretariat reported that it was coordinating with the NACC Office to hold a second event (ADS-B/ANP/2) for States that already had ADS-B systems in place (with ground or satellite sensors), in order to learn about the stages of planning, coordination with all the stakeholders in the aeronautical context, regulation, certification and training, for the adoption of ADS-B as primary means of aeronautical surveillance.

3.67 Likewise, the Secretariat suggested that Colombia present the working paper at the next meeting of the Caribbean/South American Regional Planning and Implementation Group (GREPECAS/20), to be held in Salvador-BA (Brazil), on 15-18 November, 2022.

MET/IWXXM Subgroup

3.68 The Meeting took note of the progress made in the interoperability tests with the regional OPMET data bank (RODB) of Brasilia, through the aeronautical messaging system (AMHS). So far, the following States had conducted tests with the Brasilia RODB: Argentina, Cuba, Guyana, Paraguay and

Venezuela. Likewise, complete and successful tests had already been carried out between the RODB of Brasilia and the RODBs of Brussels and Vienna.

3.69 The rapporteur of the MET/IWXXM Subgroup noted that connectivity tests (via AMHS) were being coordinated with the London and Washington RODBs.

3.70 Likewise, the rapporteur of the Subgroup noted that, following the letter that the SAM Regional Office had sent to SAM States containing guidelines for the exchange of information via web service, together with the *System Interface Control Document (SICD)* of the system implemented in Brasilia, no request for interconnection, via web service, had been received by the Brazilian administration.

3.71 In July 2022, Brazil made a presentation to CAR/SAM States, through ATECH, with the purpose of encouraging these States to proceed with the integration with the Brasilia RODB web service.

3.72 The Meeting was presented with an application developed as an example to integrate meteorology systems to the OPMET bank of Brasilia. The purpose of this application was to show in practice the steps to be followed when integrating banks (system-system) using the web service functionality.

3.73 The source code was made available in the repository below, emphasising that it was a public source code and could be used by States as an example to consult the OPMET Data Bank:

https://github.com/antoniodiasabc/OPMET_search

3.74 The Secretariat encouraged SAM States to share the ICD circulated by the SAM Office with professionals of the information technology area, and discuss the possibility of using the example application for the integration, via web service, of meteorological systems of the States with the RODB of Brasilia. **(Action S28/16)**.

Proposed Conclusions

3.75 No new conclusions were formulated by the members of the INTEROP TF during the SAM/IG/28 Workshop/Meeting.

2023Work Plan

3.76 The members of the INTEROP GT approved the activities listed in **Appendix A** to the report on Agenda Item 4, containing the 2023 Work Plan of the Interoperability Task Force (INTEROP TF).

APPENDIX A

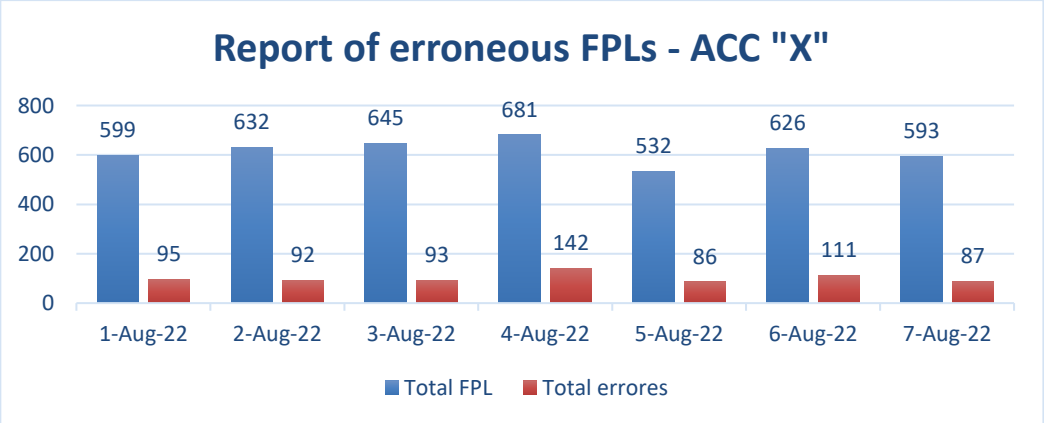
List of the FPL Monitoring Group

Name	State	Entity	Email	Phone
Héctor Marcelo Cancinos	Argentina	DGAC	hcancinos@anac.com.ar	
Marcos Lemos	Argentina	ENAC	mlemos@anac.gob.ar	
Yesid Arze	Bolivia	DGAC	yarze@dgac.gob.bo	
Delvi Vera	Bolivia	DGAC	dvera@dgac.gob.bo	
Iver Mijael Vargas	Bolivia	DGAC	ivargas@dgac.gob.bo	
Jaime Álvarez	Bolivia	DGAC	jalvarez@dgac.gob.bo	
Hebert dos Santos	Brazil	DECEA	heberths@decea.gov.br	
Antonio Carlos Fernandez	Brazil	DECEA	antonioacf@decea.mil.br	
Ricardo Velásquez	Chile	DGAC	rvelasquez@dgac.gob.cl	+569 77340048
Pablo Valenzuela	Chile	DGAC	pablo.valenzuela@dgac.gob.cl	+569 51117512
Paulo Chacón	Chile	DGAC	pchacon@dgac.gob.cl	+569 94529347
Gladys M. de la Cruz	Colombia	Aerocivil	gladys.roa@aerocivil.gov.co	
Mauricio Corredor Monroy	Colombia	Aerocivil	mauricio.corredor@aerocivil.gov.co	
Jorge Zúñiga	Ecuador	DGAC	jorge.zuniga@aviacioncivil.gob.ec	
Juan Poalasín	Ecuador	DGAC	juan.poalasin@aviacioncivil.gob.ec	
Eugenio Espinoza	Ecuador	DGAC	eugenio.espinoza@aviacioncivil.gob.ec	
Yanira Lozano	Panama	AAC	yanira.lozano@aeronautica.gob.pa	
Daniel de Avila	Panama	AAC	daniel.deavila@aeronautica.gob.pa	
Sara Siles La Rosa	Peru	DGAC	ssiles@mtc.gob.pe	
Juan Izquierdo	Peru	CORPAC	jizquierdo@corpac.gob.pe	+51 1 230 1407
Graciela Monzillo	Uruguay	DINACIA	gmonzillo@dinacia.gub.uy	
Guillermo Facello	Uruguay	DINACIA	guillermo.facello@dinacia.gub.uy	
Juan Pereira	Venezuela	INAC	jepr261073@gmail.com	

APPENDIX B

Daily log – Total FPLs and Total Errors (Example)

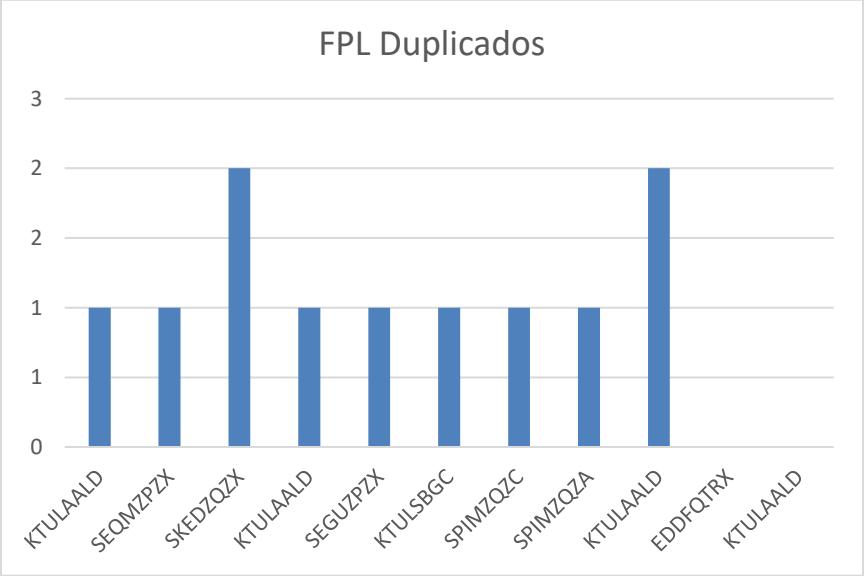
REGISTRO DE PLANES DE VUELO				
PAIS				
Fecha	Total FPL	Total errores	Porcentaje	Observaciones
1-ago-22	599	95	16%	
2-ago-22	632	92	15%	
3-ago-22	645	93	14%	
4-ago-22	681	142	**21%**	Para revision de errores
5-ago-22	532	86	16%	
6-ago-22	626	111	18%	
7-ago-22	593	87	15%	
8-ago-22	646	107	17%	
9-ago-22	598	95	16%	
10-ago-22	562	98	17%	
11-ago-22	461	92	**20%**	Para revision de errores
12-ago-22	544	93	17%	
13-ago-22	460	54	12%	
14-ago-22	462	76	16%	
15-ago-22	549	98	18%	
16-ago-22	649	91	14%	
17-ago-22	611	102	17%	
18-ago-22	666	116	17%	
19-ago-22	444	91	**20%**	Para revision de errores
20-ago-22	561	98	17%	
21-ago-22	417	57	14%	
22-ago-22	600	95	16%	
23-ago-22	617	100	16%	
24-ago-22	697	134	**19%**	Para revision de errores
25-ago-22	684	124	18%	
26-ago-22	626	107	17%	
27-ago-22	550	80	15%	
28-ago-22	470	54	11%	
29-ago-22	564	86	15%	
30-ago-22	589	87	15%	
31-ago-22	636	97	15%	



APPENDIX C

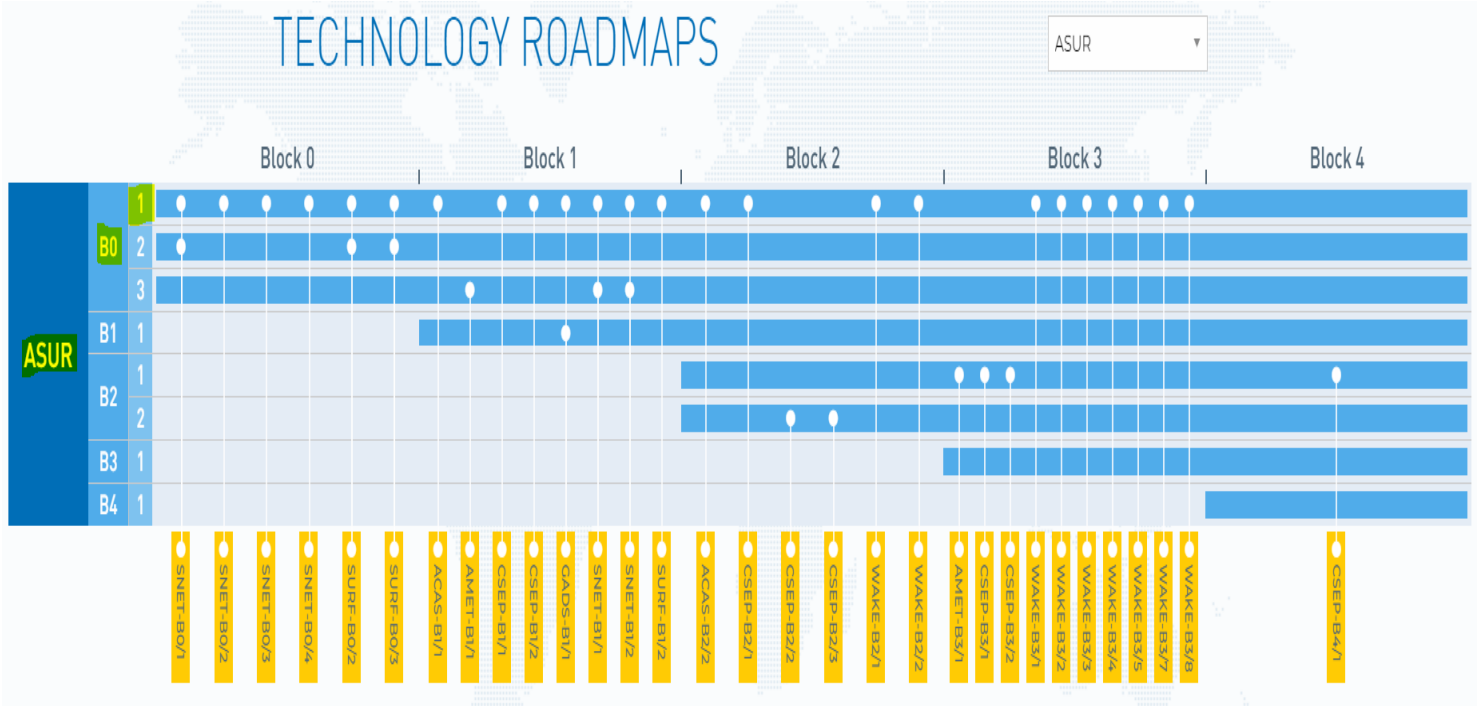
Report on Duplicate FPLs (Example)

Reporte de FPL Duplicados								
Estado	**Fecha**	**ID del vuelo**	**OVR/DEP/ARR**	**Dirección Originador**	**FPL Duplicados**	**LRM/07/07**	**LRM/06/07**	**Observaciones**
Ecuador	4-ago-22	AAL2162	DEP	KTULAALD	1			2FPL
				SEQMZPZX	1			
		AAL2163	ARR	SKEDZQZX	2			4 FPL
				KTULAALD	1			
		LNE1534		SEGUZPZX	1			
				KTULSBGC	1			
		AAL379	OVF	SPIMZQZC	1			4 FPL
				SPIMZQZA	1			
				KTULAALD	2			
		QTR8164	DEP	EDDFQTRX	0	SKEDAIDC		
		AAL588	DEP	KTULAALD	0		SKEDAIDC	



APPENDIX D

Technology Thread Roadmap
ASUR Module – ASUR-B0/1 Element



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:

a) WP/4.1 - *Analysis and summary of the GESEA Group and formulation of conclusions for consideration by the SAM/IG/28 Plenary* (presented by the Secretariat)

b) WP/4.2 - *Conclusions of the INTEROP TF and proposed activities for 2023* (presented by the Secretariat)

4.2 The Workshop/Meeting, assembled in Plenary, was presented by the Secretariat with executive summaries of the two groups formed: GESEA and Interop TF.

4.3 Consensus was reached on **10 actions** for the implementation and follow-up of the initiatives and tasks entrusted to the componentes of SAM/IG and GESEA. The list of actions is shown in the History section of this report.

Conclusions on GESEA matters

4.4 A report was presented on the discussions and issues raised by GESEA, as well as on the characteristics and content of the deliverables produced by the SG1, SG2 and SG3 subgroups. These issues are described in detail in the report on agenda item 2.

4.5 Accordingly, a conclusion was adopted as follows (next page):

CONCLUSION SAM/IG/28-01	**Improvements to ATS letters of operational agreement, regarding their content, application, validity and subscription process**
That: a) SAM/IG and its contributory bodies promote studies and activities for the preparation of regional guidance material on criteria for the efficient and safe use of ATS LOAs, regarding their content, application, validity and subscription process. b) ATS services providers and/or competent authorities, while implementing the recommendation under item a) above, coordinate and manage with their counterparts the review and updating of the ATS LOAs between States, if possible, once (1) a year.	**Expected impact**: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Technical/Operational
Why: To ensure efficiency and safety in the provision of ATS services and handover of aircraft between adjacent units, supporting the recovery of the industry and restoration of air connectivity of the SAM Region.	
When: No later tan June 2024	**Status**: Adopted by SAM/IG/28
Who: ☐ Coordinators ☒ States ☒ ICAO Secretariat ☐ ICAO HQ ☐ Other:	

2023 GESEA Work Plan

4.6 The 2022 - 2023 work plan formulated for the GESEA SG3 ATFM was outlined. The proposed activities for obtaining the support of RLA/06/901 were presented. See Tables 1 and 2 below:

Table 1
2022-2023 Work Plan of SG3 – ATFM

Initially, activities via videoconferencing, considering 14:00 to 17:30 UTC

2022	SG3	DCB PLAN TF	ATFM DOCS WG*	XB WG
October	--	17 to 18	10	11 to 12
Novembe	--	--	14	15 to 16
December	--	5	12	--
2023	SG3	DCB PLAN WG	ATFM DOCS WG*	XB WG
January	--	30	---	TBD**
February	--	27	---	14 to 15
March	20 to 21	--	13	--
April	--	10	10	17 to 18
May	--	29	TBD	17 to 18
June	--	--	TBD	22 to 23

July	--	3	TBD	19 to 20
August	--	--	TBD	16 to 17
Septembe	4 to 5	--	TBD	--
October	--	2	TBD	--
Novembe	--	27	TBD	--
December	--	--	TBD	--

** The rapporteur of the ATFM DOCS WG will coordinate the dates with the delegates in due course.*

*** The XB WG will assess the need for a meeting in January, taking into account the intention to deliver a first product at the SG3/6 meeting.*

Table 2
2023 Work Plan – to coordinate the support of Project RLA/06/901

Activities	Objectives / Deliverables	Tentative dates for 2023
GESEA plenary meeting	Organisation of implementation of concepts according to subgroup deliverables. Review and adjustments to the work plan. Follow-up of activities.	Virtual, **1-3 March** • Translation of documents
Development of regional guidance material on airspace planning regulations - Airspace implementation projects	Implementation/airspace optimisation project management material.	• Lima, **6-17 March** • 1 expert/mission.
GESEA SG3 ATFM meeting	Continuation of programmed studies. Follow-up of activities for ATFM implementation and optimisation.	Virtual, **20-21 March** • Translation of documents
GESEA SG1 meeting Airspace planning	Continuation of programmed studies. Follow-up of implementation and optimisation activities.	Virtual, **12-14 April** • Translation of documents
Course on runway and ATC sector capacity; support from Brazil	Participants trained in demand and capacity monitoring based on ATC sector and airport performance, with the purpose of identifying possible DCB imbalances. This enables ATFM service providers to take action to optimise ATC capacities.	Phase 1: remote on 3-14 April; Phase 2: practical, face-to-face, **17-28 April**, Rio de Janeiro International Airport (Galeão), Brazil. • 20 scholarships for States RLA/06/901

GESEA SG2 PANS OPS meeting	Continuation of programmed studies of PANS OPS. Follow-up of activities to implement operational elements of the APTA module. Optimisation of the IFPD service.	Virtual, **8-9 May** • Translation of documents
SAM/IG/29 Air navigation implementation priorities contemplated in GREPECAS programmes, VOL III of the Regional ANP and regional initiatives	Continue the implementation and optimisation activities based on studies by GESEA. Support to management of CAR/SAM regional ANP Vol. III.	Lima, Peru, **15-19 May** • 30 scholarships for States RLA/06/901 • Simultaneous interpretation
Workshop/meeting for the SAM Region on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in ATM	• Review of FUA implementation. Planning based on operational element FRTO-B0/2 of ASBU. • Dissemination and analysis of the new ICAO document 10088	Lima, **12-16 June** • 20 scholarships for States RLA/06/901 • Simultaneous interpretation
Course on ATM performance indicators; support from Brazil	The course will also address the methodology and application of the GANP ATM performance indicators, with emphasis on departure and arrival punctuality indicators (KPI01 and KPI14), additional taxi-in and taxi-out time (KPI02 and KPI13), additional time in the terminal area (KPI08), and peak airport arrival rate (KPI09).	Phase 1: theoretical, to be delivered remotely in May and June; Phase 2: face-to-face, **3-14 July,** at CGNA, Rio de Janeiro, Brazil. • 20 scholarships for States RLA/06/901 • 1 mission/expert
2nd workshop/meeting on management of regional ATFM data and indicators	ATFM data standardisation. Analysis of demand forecasts and indicators. Power BI application for analysis at regional and national level.	Lima, **7-11 August** • 2 mission/expert (facilitator) • 10 scholarships for States RLA/06/901
2nd workshop for airspace planners - Airspace implementation projects.	At least one expert planner per member State, trained in airspace organisation and design techniques - ASM	Lima, **21-25 August** • 1 mission/expert (facilitator) in Lima, **14-25 August** • Workshop to be delivered: Lima, 21-25 **August** • 10 scholarships for States RLA/06/901 •

Drafting of regional guidance material on the implementation of FRTO module, and EDE and UPR concepts	Deliverable. The topic requires the participation of an expert, given the complexity of the issue of enablers and relationships with other ASBU elements.	• Lima, **TBD** • 1 mission/expert. 2 weeks.
Workshop/meeting of the SAM Cross-border ATFM working group (XB WG)	Consolidate studies for the implementation of cross-border ATFM, according to the SAM Implementation Guide, based on intra-regional scenarios. Review of deliverables.	Lima (or other SAM venue), **9-13 October** • 10 scholarships for States RLA/06/901 • 1 mission/expert
SAM/IG/30 Air navigation implementation priorities contemplated in GREPECAS programmes, VOL III of the Regional ANP and regional initiatives	Continue with implementation and optimisation activities based on studies by GESEA. Support to the management of the CAR/SAM regional ANP Vol. III.	Lima, **23-27 October** • 30 scholarships for States RLA/06/901 • Simultaneous interpretation

Conclusions on INTEROP TF matters

4.7 No new conclusions were formulated by the INTEROP TF during the SAM/IG/28 workshop/meeting.

4.8 Consensus was reached on 6 actions for the development and follow-up of the initiatives and tasks entrusted to the components of SAM/IG and INTEROP TF. The list of actions is presented in the "History" section of this report.

2023 Work Plan of INTEROP TF

4.9 Under this item, the participants of the Interop TF discussed the 2023 work plan, as shown in **Appendix A** to this part of the report, with the proposal of activities to be supported by Technical Cooperation Project RLA/06/901, for approval by the Coordination Committee of the aforementioned project.

APPENDIX A

2023 Work Plan of the INTEROP TF

Activities	Objectives / Deliverables	Tentative dates
SAM/IG/29 Air navigation implementation priorities contemplated in GREPECAS programmes, VOL III of the Regional ANP and regional initiatives.	Continue implementation and optimisation activities based on studies by GESEA and Interop TF (5 days)	Lima, 15-19 May 2023
SAM/IG/30 Air navigation implementation priorities contemplated in GREPECAS programmes, VOL III of the Regional ANP and regional initiatives.	Continue implementation and optimisation activities based on studies by GESEA and Interop TF (5 days)	Lima, 23-27 October 2023
GT INTEROP/4 Fourth workshop/meeting of the Interop TF subgroups	Bring together the participants of the Interop TF subgroups to consolidate the work done, with a view to finalising the products and deliverables to be presented to the SAM Implementation Group. (SAM/IG) (4 days)	Virtual, 2-5 May 2023
COM AMHS/4 Fourth workshop/meeting of supervisors/operators of COM AMHS centres of the SAM Region	This is an event for the exchange of information and experiences among supervisors/operators of AMHS COM centres of the SAM Region. • Review of routing tables • Review of contingency plans (4 days)	Lima, 24-27 April 2023 • 10 scholarships; and • Simultaneous interpretation if hybrid
ATM/FPL workshop/meeting First workshop/meeting of the ATM/FPL subgroup	• Analysis of the indicators obtained through the methodology adopted for the quantification of flight plan errors; • Definition of a standard format for the insertion of information in the aeronautical information publication (AIP) of States that adopt the measures set forth in the ATM/FPL Roadmap; and • Review of route syntax by coordinates, to check if it is accepted by the automated systems used,	Lima, 6-10 March 2023 • 10 scholarships; and • Simultaneous interpretation

Activities	Objectives / Deliverables	Tentative dates
	and thus provide more direct flights to aircraft operators, to save fuel (5 days)	
Training on the Frequency Finder application	Training geared to members of the CNS/ANP subgroup tasked with updating the COM lists of frequency assignments used in the aeronautical context (5 days)	Lima, 10-14 Abril 2023 • 10 scholarships; • DSA and air tickets for 1 CNS Officer from HQ • Simultaneous interpretation
AIDC training	Training geared to members of AIDC implementation teams of the States of the Region (5 days)	Face-to-face, TBD 2 scholarships for training facilitators
Advanced course on AMHS	Training geared to the members of AMHS COM centres (supervisors and operators), and CNS inspectors of the States of the Region	Virtual, 22 - 23 August 2023 (Spanish) Virtual, 24 - 25 August 2023 (English)

Agenda Item 5: Other business

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

a) WP/5.1 –*Equal opportunities for female representation in international civil Aviation (Spanish only)* (presented by Uruguay)
b) WP/5.2 – *Colombian Civil Aviation Authority's endorsement of the ICAO position on related matters to be considered at the World Radiocommunication Conference (2023) (WRC-23) of the International Telecommunication Union (ITU)* (presented by Colombia)
c) WP/5.3 –*Test / demonstration of in-flight inspection with RPAS / UAS (drones) of the ILS and VOR/DME radio aid systems at the Matecaña de Pereira International Airport* (presented by Colombia)
d) IP/5.1 – *Runway and ATC sector system capacity course* (presented by Brazil)
e) IP/5.2 –*ATM performance indicators course* (presented by Brazil)
f) IP/5.3 - *Implementation of CPDLC in Brazilian continental airspace (English only)* (presented by Brazil)

5.2 Under this item, the Meeting reviewed the working paper of Uruguay on the need for equal opportunities for female representation, as set out in Goal 5 of the UN Sustainable Development Goals. Consensus was reached that SAM/IG and all the forums in which their experts participate should encourage and foster gender equality in the aviation sector by promoting the ICAO Gender Equality Programme, and empowering women in ICAO and throughout the international aviation sector.

5.3 In this regard, States were urged to encourage studies, whether at regional or targeted level, to measure the baseline of women's participation in civil aviation in order to develop an improvement strategy tailored to local or subregional realities for the sustainable promotion of women in aviation.

5.4 Colombia expressed its support to the ICAO position on the issues to be discussed at the International Telecommunication Union (ITU) World Radiocommunication Conference (WRC-23). In Colombia, the Ministry of Information and Communication Technologies, through Law 1341 of 2009, had created the National Spectrum Agency and were conducting the management, planning, allocation and surveillance of the radio spectrum based on the National Frequency Allocation Table.

5.5 The Meeting agreed that SAM States, together with their national spectrum authorities, should begin the assessment of the proposal for the protection of the radio frequency spectrum allocated to the aeronautical service through support of the ICAO position, with a view to bringing it to the Inter-American Telecommunication Commission (CITEL) or ITU-R regional meetings. States were urged to support the ICAO position at ITU WRC-23, as shown in **Appendix A** to this part of the report.

5.6 Upon analysing the results obtained in the first flight inspection trial/demonstration with RPAS/UAS (DRONES) of the ILS and VOR/DME radio aid systems at the Matecaña International Airport in Pereira, conducted on 25-29 April 2022, the Meeting considered the need for SAMIG to begin studies on RPAS/UAS technology and its applications, and the CONOPS of air traffic management for UAS - UTM.

5.7 It was noted that the SRVSOP had recently completed work on guidance material and proposals for LAR regulations (in English and Spanish), which was posted in the following folder on the GESEA channel, for reference by the participants:

https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-SAMIG/Shared%20Documents/SAMIG/Drafts%20RPAS%20UAS%20UTM?csf=1&web=1&e=9NHRTV

5.8 Consensus was reached to organise an *ad hoc* study group, under SAM/IG, based on regional and global documentation on RPAS/UAS/UTM, covering topics related to the development of drones for in-flight inspection of radio aids. The Secretariat was requested to coordinate the creation of the *ad hoc* group **(Action S28/17)**.

5.9 The information presented by Brazil on the implementation of CPDLC in continental airspace is covered under Item 2 of this report.

Training

5.10 The importance of scheduling project management courses for SAM/IG delegates and experts was highlighted, taking into account the complexity of some CNS and ATM implementation tasks. The Secretariat was tasked with exploring some options for such training and consulting on the feasibility of obtaining the support of RLA 06 901 **(Action S28/18)**.

5.11 Information provided by Brazil on the ATC Sector and Runway System Capacity Course and the ATM Performance Indicators Course is covered under Item 2 of this report.

APPENDIX A

Regulatory provisions to facilitate radiocommunications for sub-orbital vehicles (WRC-23 agenda item 1.6)

- A new aeronautical mobile-satellite (R) service (AMS(R)S) allocation of aeronautical metric-wave (VHF) communications in the frequency band 117.975 - 137 MHz, while preventing any undue constraints on existing metric-wave systems of the aeronautical service operating in that band (agenda item 1.7);
- Appropriate regulatory actions, with a view to reviewing and, if necessary, revising Resolution 155 to accommodate the use of fixed-satellite service (FSS) networks by RPAS C2 links (agenda item 1.8);
- Review Appendix 27 of the Radio Regulations and consider appropriate regulatory actions to accommodate digital technologies for aviation safety-of-life applications in existing aeronautical decametric-wave (HF) bands (agenda item 1.9);
- Studies on spectrum needs and regulatory measures for possible new allocations for the aeronautical mobile service for the use of non-safety aeronautical mobile applications (agenda item 1.10);
- Review any difficulties or inconsistencies encountered in the application of the Radio Regulations (agenda item 9.2);
- Possible measures to address, in the frequency band 4 800-4 990 MHz, protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories (agenda item 1.1);
- Identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis (agenda item 1.2);
- Primary allocation of the frequency band 3 600-3 800 MHz to mobile service within ITU Region 1 (agenda item 1.3);
- Use of high-altitude platform stations as IMT base stations in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT, on a global or regional level (agenda item 1.4);
- Possible regulatory actions to support the modernisation of the Global Maritime Distress and Safety System (GMDSS) and the implementation of e-navigation (agenda item 1.11);
- Possible upgrade of the allocation of the frequency band 14.8-15.35 GHz to the space research service (agenda item 1.13); A41-WP/266 TE99 A-2 Appendix;
- Harmonise the use of the frequency band 12.75-13.25 GHz (earth-to-space) by earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service (agenda item 1.15);
- Technical, operational and regulatory measures to facilitate the use of the frequency bands 17.7-18.6 GHz, 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-earth) and 27.5-29.1 GHz and 29.5-30 GHz (earth-to-space) by non-geostationary satellite orbit (GSO) fixed-satellite service (FSS) earth

stations in motion, while ensuring due protection of existing services in those frequency bands (agenda item 1.16);

- Appropriate regulatory actions for the provision of inter-satellite links in specific frequency bands, by adding an inter-satellite service allocation where appropriate (agenda item 1.17);
- Review of resolutions and recommendations of previous WRCs with a view to their possible revision, replacement or abrogation (agenda item 4);
- Review of the amateur service and the amateur-satellite service allocations in the frequency band 1 240 1 300 MHz to determine if additional measures are required to ensure protection of the radionavigation-satellite (space-to-earth) service operating in the same band (agenda item 9.1, paragraph b).