SAM/IG/30

INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Office

Regional Project RLA/06/901

THIRTIETH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP

(SAM/IG/30)

FINAL REPORT

Lima, Peru, 23 to 27 October 2023

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ii-1 PLACE AND DURATION OF THE MEETING

The Thirtieth Workshop/Meeting of the SAM Implementation Group (SAM/IG/30) was held in the premises of the ICAO South American Regional Office in Lima, Peru, from 23 to 27 October 2023, under the auspices of Regional Project RLA/06/901.

ii-2 OPENING CEREMONY AND OTHER MATTERS

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

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

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

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

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

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

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

ii-4 WORKING LANGUAGES

The working languages of the Meeting were English and Spanish.

ii-5 AGENDA

The following agenda was adopted:

Agenda Item 1: Review of the status of conclusions and actions

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

a) Review of air navigation priorities in the ATM field

b) ATM implementation. Progress of the Subgroups.

Agenda Item 3: Report of working groups activities and deliverables of the GT-Interop and Subgroups

a) Review of air navigation priorities in the CNS field.
b) CNS Implementation. Progress of the Subgroups.
c) GREPECAS project for the management of aeronautical frequencies.

Agenda Item 4: Work plan for 2024 of the SAM/IG and its contributing bodies.

Agenda Item 5: Safety

Agenda Item 6: Global Air Navigation Plan (GANP) seventh edition and GREPECAS commitments for the CAR/SAM Regional Plan, Operational concept ofr UAS air traffic management (CONOPS UTM). Other Business.

ii-6 ATTENDANCE

The Meeting was attended by 52 participants of 11 SAM States SAM (Bolivia, Brazil, Chile, Ecuador, Guyana, Panama, Paraguay, Peru, Suriname, Uruguay, and Venezuela); two international organisations (IATA and EASA), an aviation consultant (FRACS of France) and two industry providers (FREQUENTIS and SITA). The list of participants is shown in page iii-1 of this report.

ii-7 LIST OF CONCLUSIONS

N°	Title of the Conclusion	Page
Conclusion SAM/IG/30-01	Optimization of the SAM Region airspace based on the implementation of APTA and FRTO modules.	2-3
Conclusion SAM/IG/30-02	Treatment of LHD events in ACCs, for the mitigation and elimination of hotspot points.	5-2
Conclusion SAM/IG/30-03	Activities for the future implementation of Air Traffic Management for UAS (UTM)	6-4

ii-8 LIST OF ACTIONS

The last SAM/IG/29 Workshop/Meeting obtained consensus on 3 permanent actions for the Group. See List.

The status of the actions approved by SAMI/IG/28 and SAM/IG/29 was reviewed and it was determined that 11 actions have been completed and 10 actions are in progress. 3 actions from SAM/IG/29 are not initiated, they need to be advanced by the Secretariat.

The SAM/IG/30 Workshop/Meeting agreed on 19 actions for the development and follow-up of the initiatives and work entrusted to the Secretariat and/or the contributing study groups and working groups. See details in the following list:

Permanent Actions				
Number	**Action**	**Who**	**When**	**Ref. Par.**
1st Permanent Action	Work with their CAA authorities to keep them informed of the progress of the implementation of the SAM/IG, and to follow up on the priorities in the ATM and CNS fields.	• SAM/IG Delegates	*Permanent*	2.5 SAM/IG/29 Report

Number	Action	Who	When	Ref. Par.
2nd Permanent Action	Promote women's participation in all areas of SAM/IG and its support groups.	• SAM/IG Delegates • Secretariat	*Permanent*	5.12 SAM/IG/29 Report
3rd Permanent Action	Observe peremptory deadlines for the submission of Notes and documents for the following SAM/IG meetings to the Secretariat.	• SAM/IG Delegates • Secretariat • States	*Permanent*	5.13 SAM/IG/29 Report
SAMIG/28 Actions				
~~Action S28/09~~	~~BRISA Tactical extra ordinary; prepare a Job Card with the terms of the activities and studies to be developed by an ad hoc group.~~	• SG3 ATFM - GESEA	In progress Before SAMIG/30 **Replace with** S30/01	2.58 SAM/IG/29 Report 2.70 SAM/IG/29 Report *(Replace with S30/01)*
~~Action S28/14~~	~~Appointment of representatives in the CNS/ANP Subgroup.~~	• Ecuador; • Francia (French Guyana); • Paraguay; and • Suriname	**Concluded**	3.56 SAM/IG/28 Report
~~Action S28/16~~	~~Analysis, by State Information Technology staff, of the Interface Control Document (ICD) of the Brasilia RODB web service.~~	• SAM States	**Concluded**	3.74 SAM/IG/28 Report
~~Action S28/17~~	~~Coordinate the formation of the ad hoc study group based on regional and global documentation on RPAS / UAS/UTM, depending on SAM/IG, and including texts on the development of drones for in-flight inspection of radio aids.~~	• Secretariat	In progress Before SAMIG/30 **Replace with** SAM/IG/30-03 Conclusion	5.8 SAM/IG/28 Report *(Replace with SAM/IG/30-03 Conclusion)*
~~Action S28/18~~	~~Explore options on Project Management training for the CNS and ATM field. Consult feasibility of RLA/06/901 endorsement.~~	• Secretariat	In progress Before SAMIG/30 **Concluded**	5.10 SAM/IG/28 Report *(It is not feasible for*

Number	Action	Who	When	Ref. Par.
				RLA/06/901 to support this training. The training topics must be directly associated with the implementation, i.e. be in the technical or operational field of air navigation).
SAMIG/29 Actions				
~~Action S29/01~~	~~Development of Job Cards:~~ ~~• SG1/PLAN EA/ 01/2023~~ ~~• SG1/PLAN EA/ 02/2023~~ ~~• SG1/PLAN EA/ 03/2023~~	• SG1 PLAN EA - GESEA • Secretariat • SAM/IG delegates	Report at SAM/IG/30 **Replace**	2.40 SAM/IG/29 Report *(By S30-02, S30-03, S30-04) (Initiated Jc 01 Initiated Jc 02 Not started Jc 03)*
Action S29/02	Study of the new Circular 359 and determine whether it meets the needs of the Region, and according to this study, cancel, adapt or update the Regional Guide on the implementation of PBN procedures for visual runways, issued in November 2020.	• SG2 PANS OPS - GESEA	Report at SAM/IG/30 **Started** Report at SAM/IG/31	2.47 SAM/IG/29 Report
Action S29/03	Promote the updating of flight procedure charts in the Region, at least every 5 years according to Doc 8168 parameters. This task requires **mapping the age of IAC charts** (conventional and PBN) as well as planning priorities in each state.	• SG2 PANS OPS - GESEA	Report at SAM/IG/30 **Started** Report at SAM/IG/31	2.49 SAM/IG/29 Report *(*Note: Strictly speaking, it is required to map the age of the IFP designs, and also dates*

Number	Action	Who	When	Ref. Par.
				of lifting of obstacles).
Action S29/04	The Meeting instructed the Secretariat to explore with RLA/06/901 the feasibility of an IFPP meeting to be held at the Regional Office by 2025.	• Secretariat • GESEA coordination	Report at SAM/IG/30 **Started** Report at SAM/IG/32	2.54 SAM/IG/29 Report
~~Action S29/05~~	~~To coordinate and consult at the RLA/06/901 member state level through written communication on the ATFM portal initiative.~~	• Secretariat	Coordination no later than June 2023 **Concluded**	2.82 SAM/IG/29 Report *(SAM/IG/30 par. 2.55)*
Action S29/06	That runway and ATS sector capacity measurements be executed or updated, considering the recovery in demand for operations expected for this year (to 2019 levels), and recognizing that ACCs are experiencing staff reductions after the pandemic phase.	• SG3 ATFM - GESEA • Secretariat	Report at SAM/IG/30 **Initiate** Report to SAM/IG	2.84 SAM/IG/29 Report
~~Action S29/07~~	~~Coordinate the possibilities of scholarship support for the ATFM Workshop (virtual - face-to-face) in Brazil, April 2024, which would require approval from the RCC of project RLA/06/901.~~	• Secretariat	Report at SAM/IG/30 **Concluded**	2.88 SAM/IG/29 Report *(SAM/IG/30 par. 2.57)*
Action S29/08	On FF-ICE concept; Coordinate the execution of activities for SAM states, the first is a briefing on the progress in Brazil and secondly a table top exercise.	• Secretariat • SAM/IG delegates • States	SL before 15 August 2023 Activities before SAMI/IG/30 **Started** Report at SAM/IG/31	5.6 SAM/IG/29 Report *(first activity with Davi Monteiro in August 2023)*
Action S29/09	5G Interference. Study the practices of Brazil and other similar practices in the region, and monitor the mitigations implemented in the SAM states, considering that PANS OPS	• SG2 PANS OPS - GESEA	At SAM/IG/30 **Not started** Report at	5.9 SAM/IG/29 Report *(Note 5G interference)*

Number	Action	Who	When	Ref. Par.
	specialists understand the degree of impact that possible interference in onboard radio altimeters can have on the safety of an instrument flight procedure.		SAM/IG/31	
Action S29/10	a) Restart the reports from the States to the SAM/IG regarding the progress in the implementation of the PBN, projects with TMAs, etc. b) Implement new reports on the status of LOA ATS, in order to facilitate the follow-up of the validity of these documents and generate the appropriate assistance from ICAO.	• SAM/IG delegates • Secretariat	At SAM/IG/30 **a) Not started** **b) Not started** Report at SAM/IG/31	5.10 SAM/IG/29 Report *(SAMIG30; separated into two actions a) and b)*
Action S29/11	Brazil and Paraguay will make the corrections, proposed by ATECH, in the databases of the automated systems of the ACC Asunción and ACC Curitiba. After the adjustments, they will conduct the pre-operational phase tests in the second half of 2023.	• Brazil; and • Paraguay.	Before SAM/IG/30 **Started** Report at SAM/IG/31	3.5 SAM/IG/29 Report *(SAMIG/30; started in August 2023)*
Action S29/12	Brazil and Venezuela agreed to restart AIDC tests between ACC Amazonico and ACC Maiquetia, with a view to establishing an operational connection by the end of this year.	• Brazil; and • Venezuela.	Before SAM/IG/30 **Started** Report at SAM/IG/31	3.7 SAM/IG/29 Report *(SAMIG30; started in August 2023)*
~~Action S29/13~~	~~The Secretariat will forward to the Rapporteur of the ATM/FPL Subgroup the information provided by the administration of Peru (IP/3.8), for analysis at the next on line meeting of the ATM/FPL Subgroup.~~	• Secretariat	**Concluded**	3.13 SAM/IG/29 Report
Action S29/14	States should take note of the changes made to the ATM / FPL Roadmap document version 3.0 and consider adopting the recommended format for feedback	• SAM States	As from SAM/IG/29 **Started** Report at	3.17 SAM/IG/29 Report

Number	Action	Who	When	Ref. Par.
	messages (ACK and REJ) for flight plan originators.		SAM/IG/31	
Action S29/15	An Ad-hoc group of the ATM/FPL Subgroup constituted by the States using CADAS User Agents (UA) will be formed to exchange information, share best practices and learn about the initiatives taken by each State to establish a centralized management of flight plans	• Argentina • Chile • Colombia • French Guyana • Peru; and • Venezuela	Up to 30 June 2023 **Not started** Report at SAM/IG/31	3.21 SAM/IG/29 Report
~~Action S29/16~~	~~The SAM States should update the information in the COM-1, COM-2 and COM-3 Lists and route it prior to the Frequency Finder Workshop/Training.~~	• SAM States	Before 29 May 2023 **Concluded**	3.43 SAM/IG/29 Report
Action S29/17	The SAM States are encouraged to support the ICAO position regarding CMR-23 agenda item 1.7, as proposed to be presented by the Brazilian delegation at the CITEL Meeting (22-26 May, 2023), for allocation to the aeronautical mobile-satellite service (R) within the frequency band **117.975-137 MHz,** in order to support VHF aeronautical communications in the Earth-to-space and space-to-Earth directions.	• SAM States	At the preparatory meetings and during WRC-23 **Started**	3.47 SAM/IG/29 Report *(in progress WRC-23 will be held in November 2023).*
Action S29/18	Chile and Peru must coordinate the exchange of surveillance data, establishing the necessary agreement documents, so that all internal instances are aware of the commitments assumed and promptly collaborate to establish the technical means for the exchange of aeronautical surveillance data	• Chile; and • Peru.	Before 31 May 2023 **Started**	3.51 SAM/IG/29 Report (in progress Peru will acquire equipment to enable the exchange of surveillance data with Chile).
~~Action S29/19~~	~~The participants of the Workshop/Meeting were informed that from July 17-21,~~	• Secretariat	Before 20 May 2023	3.72 SAM/IG/29 Report

Number	Action	Who	When	Ref. Par.
	~~2023, the *Workshop on the development of the regulation for the implementation of ADS-B (ADS-B Imp)* will be held at the Regional Office in Mexico (NACC). A letter inviting the SAM States to the above-mentioned event will be sent no later than 20 May, 2023.~~		**Concluded**	*(workshop held)*

Actions approved in SAM/IG/30

Number	Action	Who	When	Ref. Par. *(Notes)*
Action S30/01	Job Card Development: SG1/PLAN EA/ 02/2023. Studies and implementation of ASBU FRTO B0/1 and B1/1 Airspace Optimization.	• SG1 PLANESPA - GESEA • Secretariat • SAM/IG delegates	**Started** Report SAM/IG	2.3 SAM/IG/30 Report *(replaces S29/01)*
Action S30/02	Manage and maintain a list of focal points (POC) for each State to coordinate FRTO and DTS implementation. They must have an operational profile and be responsible for coordination with the CNS area and other concerned areas of the ANSP. POCs will also be responsible for generating feedback to SG1 on the implementation.	• SG1 PLANESPA - GESEA • Secretariat • SAM/IG delegates	From SAM/IG/30	2.6 SAM/IG/30 Report
Action S30/03	Coordinate with the States and execute publication of UPRs and DTS processes, through agile and easily accessible means, such as repositories, applications or websites.	• SG1 PLANESPA - GESEA • Secretariat • SAM/IG delegates	From SAM/IG/30	2.7 SAM/IG/30 Report
Action S30/04	Approve and adopt the AIP amendment model proposed by GESEA's SG1 PLANESPA. Monitor the corresponding publication in each State.	• SG1 PLANESPA - GESEA • Secretariat • SAM/IG delegates	From SAM/IG/30	2.9 SAM/IG/30 Report
Action S30/05	To commission a committee of specialists to revise/edit the SAM Airspace Planning Guidance Manual, Part I and II. The Texts will be	Bolivia, Brazil (rapporteur) Chile,	1st virtual meeting, 14 November 2023	2.19 SAM/IG/30 Report

Number	Action	Who	When	Ref. Par. *(Notes)*
	submitted for approval to SAM/IG/31.	Panama, Peru, Uruguay • IATA	Report to SAM/IG/31	
Action S30/06	Entrust a committee of specialists with the revision/editing of the national FUA Manual (model), prepared by the Workshop held in Lima in June 2023. The texts will be submitted for approval by SAM/IG/31.	Bolivia, Chile, Ecuador, Paraguay (rapporteur), Peru, • Suriname, Venezuela.	1st virtual meeting, 15 November 2023 1400 UTC Report to SAM/IG/31	2.26 SAM/IG/30 Report
Action S30/07	Development of Job Card: SG1/PLAN EA/ 01/2023. Regional Guidance Material for the ATM and strengthening of Contingency Plans	• SG1 PLANESPA - GESEA • Secretariat • SAM/IG delegates	**Started** Report to SAM/IG	2.28 SAM/IG/30 Report *(replaces S29/01)*
Action S30/08	Organize the preparation of technical documentation to update (if necessary, replace) the EC/SAM CONOPS, considering the 7th edition of the GANP (including KPA Safety) and the UTM CONOPS of the SAM Region.	• Secretariat	Report to SAM/IG/32	2.40 SAM/IG/30 Report
Action S30/09	Optimize processes for BRISA sessions in the context of studies for the development of the ATFM crossborder service. Consider pre-tactical, strategic, post-operational BRISA, as well as extraordinary BRISA deployments.	• SG3 ATFM - GESEA – GT ATFM XB.	Report progress in SAM/IG/31 and SAM/IG/32	2.65 SAM/IG/30 Report *(replaces S28/09)*
Action S30/10	Job Card Development: SG1/PLAN EA/ 03/2023. Implementation of an Efficiency Program for selected airports in the SAM Region.	• SG1 PLANESPA - GESEA • Secretariat • SAM/IG delegates	**Not Started** Report to SAM/IG	2.72 SAM/IG/30 Report *(replaces S29/01)*
Action S30/11	Coordinate the presentation on IATA FDX data for the SAMIG/31 Meeting.	• IATA • Secretariat	SAM/IG/31	5.4 SAM/IG/30 Report
Action S30/12	Activation of an ad-hoc group (GADHOC CBT - ATCO) of the SAM/IG, under the Rapporteurship of Chile and the support of Brazil and Uruguay, to work collaboratively with the States and	• Chile (Rapporteur) • Secretariat • SAM States	From SAM/IG/30	5.10 SAM/IG/30 Report

Number	Action	Who	When	Ref. Par. *(Notes)*
	the CIAC group on initiatives to promote performance-based training for ATCO personnel and, in progressive development, for the operational technical personnel of the ANS services. The ad-hoc group will liaise with the Secretariat and report its progress to SAMIG/31.			
Action S30/13	Activation of the CNS/VOIP Subgroup.	• SAM States and Secretariat	From SAM/IG/30	3.19 SAM/IG/30 Report
Action S30/14	States should take note of the changes made to the ATM/FPL Roadmap document version 3.0 and consider adopting the recommended format for feedback messages (ACK and REJ) for flight plan originators.	• ATM/FPL Subgroup	From SAM/IG/30	3.36 SAM/IG/30 Report
Action S30/15	Harmonization of the nomenclature to be used for SID and STAR routes.	• ATM/FPL Subgroup	From SAM/IG/30	3.37 SAM/IG/30 Report
Action S30/16	Review and adaptation of the ACK and REJ message format.	• ATM/FPL Subgroup • IATA	From SAM/IG/30	3.38 SAM/IG/30 Report
Action S30/17	Designation of a new Rapporteur, a specialist from Peru, for the CNS/SUR Subgroup.	• Peru • CNS/SUR Subgroup • Secretariat	From SAM/IG/30	3.50 SAM/IG/30 Report
Action S30/18	Preparation of a study in the CNS/SUR Subgroup, with the support of ATM experts, of the separation minima that could be used by applying the existing ADS-B avionics on board the aircraft, using the information provided in ICAO Circular 326 as a guide.	• CNS/SUR Subgroup	From SAM/IG/30	3.57 SAM/IG/30 Report
Action S30/19	Coordination for an EASA Workshop/Seminar on the new European framework of ATM/ANS equipment conformity assessment.	• Secretariat	During 2024	6.23 SAM/IG/30 Report

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Agenda
Item 1: Review of the status of conclusions and actions

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

N°	Subject	Presented by
WP/1.1	Status review of conclusions adopted by SAM/IG meetings	Secretariat
WP/1.2	Outcome of the Seventeenth Meeting of Civil Aviation Authorities - RAAC/17	Secretariat
IP/1.1	Progress on implementation of conclusions SAM/IG/ by Guyana	Guyana
IP/1.2	Avance de conclusiones relacionadas con el ATFM de Colombia *(Spanish only)*	Colombia
IP/1.3	Progress on the implementation of SAM/IG conclusions and actions by the State of Chile	Chile
IP/1.4	Avance de implantación de las conclusiones SAM/IG *(Spanish only)*	Paraguay
IP/1.5	Avance de implantación de las conclusiones SAM/IG por el Estado Peruano *(Spanish only)*	Peru
IP/1.6	Progress on the implementation made by Suriname on the Conclusions of the SAM/IG	Suriname
IP/1.7	Avances y seguimiento a las conclusiones SAM/IG *(Spanish only)*	Venezuela

Conclusions and Decisions adopted SAM/IG meetings

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

a) the tasks to be carried out and/or the corresponding conclusion in the areas under analysis;
b) the specific tasks that will lead to the completion of the main task;
c) expected results for each task;
d) completion dates;
e) those responsible for its implementation;
f) support members for the task; and

g) the status of implementation and, where necessary for a better understanding, some explanatory comment on the status of implementation is included.

1.3 The follow-up tables and/or information papers submitted by Bolivia, Brazil, Colombia, Chile, Ecuador, Guyana, Panama, Paraguay, Peru, Uruguay and Venezuela regarding the progress of implementation of the SAMI/IG conclusions were presented to the Workshop/Meeting. See paragraph 1.5 below.

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

https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/REUNIONES%20SAMIG/REUNIONES%20SAM_IG/1%20TABLAS%20CONCLUSIONES%20SAMIG?csf=1&web=1&e=SWWp2A

Information presented

1.5 States presented information papers on the progress of the Conclusions. These papers with complete information are available with the documents of the Meeting Workshop, as listed in paragraph 1.1 above. Some issues were highlighted in these reports; Guyana outlined its work on the implementation of flight procedures, Colombia reported progress on ATFM topics, Chile reported its initiatives for improvements to the ATS and flight procedures, and ongoing coordination for radar data sharing (see Agenda Item 3 of this Report), Paraguay highlighted its AIDC implementation activities and runway capacity calculations.

1.6 Peru informed progress in ATS agreement letters and advanced ATS capacity calculations in the Lima ACC, and Cusco APP, Suriname reported the implementation of ADS-B in the Paramaribo FIR, and Venezuela highlighted its new ATS agreement letters with improvements for the VFR operation in the adjacent area of Cucuta (Colombia).

APPENDIX A

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

(updated SAM/IG/30, October 2023)

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

https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/REUNIONES%20SAMIG/REUNIONES%20SAM_IG/1%20TABLAS%20CONCLUSIONES%20SAMIG?csf=1&web=1&e=SWWp2A

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~~	**REPLACED SEE CONCLUSION SAM/IG/30-01** **Optimization of the airspace of the SAM Region based on the implementation of APTA and FRTO modules**
~~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~~	**REPLACED SEE CONCLUSION SAM/IG/30-01** **Optimization of the airspace of the SAM Region based on the implementation of APTA and FRTO modules**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
1-1	**Conclusion SAM/IG/30-01: Optimization of the airspace in SAM Region based on the implementation of APTA and FRTO modules** The States, through actions of the Air Navigation Directorates/Managements/Headquarters, promote the implementation of GANP modules; Enhanced Arrival/Departure Operations (APTA) and Enhanced Operations through Optimized En-route Trajectories (FRTO), facilitating, within the scope of RLA/06/901: a) resources and specialists for activities and studies related to the implementation of these modules; b) support for the development of regional documents and technical materials; c) support for training and capacity building on APTA and FRTO implementations; d) shared data for the calculation of Regional KPI indicators; e) support to activities for the formulation and management of National Air Navigation Plans; f) support to the activities of the ANP CAR/SAM Regional Plan; g) and among other elements that may be required	Updating of Regional FRTO action plans and States' APTA action plans	APTA and FRTO plans implemented	Period 2024-2027	STATES	RO/ATM	**APROVED SAM/IG /30** **REPACES:** **SAM/IG/14-6** **SAM/IG/21-01** **SAM/IG/21-02**
1-2	**Conclusion SAM/IG/25-04 Adoption of the Regional guide on the implementation of PBN visual runway procedures** SAM States adopt the Regional guide on the implementation of PBN visual runway procedures developed by GESEA and, on this basis, approve national regulations on the implementation of these procedures.	Adopt the Regional guide on implementation of PBN procedures for visual runways	Publish the national regulation on implementation of PBN procedures for visual runways	As soon as possible	STATES	RO/ATM	**VALID**
~~1-4~~	~~**Conclusion SAM/IG/27-01 Adoption of the SAM Airspace Operational Concept 2022-2026 (EC/SAM CONOPS)**~~ ~~That States adopt document SAM Airspace Operational Concept 2022-2026 (EC/SAM CONOPS), prepared with the purpose of supporting the studies of ATM specialists and planners involved in the formulation of Volume III of the CAR/SAM ANP, facilitating the understanding of the methodology of Doc 9883 set forth in the GANP.~~	~~Adopt EC/SAM CONOPS~~	~~Use technical references and guidance for regional ATM and ANS planning.~~	~~No later than October 2023~~	~~STATES~~	~~RO/ATM~~	**REPLACED SEE ACTION S30/08**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
1-3	**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**
1-4	**Conclusion SAM/IG/28-01 Improvements to the ATS letters of operational agreement, with regard to their content, implementation, validity and subscription process** That: a) SAM/IG and its contributory bodies promote studies and activities for the development of regional guidance material on criteria for the efficient and safe use of ATS LOAs, with regard to their content, implementation, validity and subscription process b) ATS service providers and/or competent ATS authorities, while implementing the recommendation of item a) above, coordinate and manage with their counterparts the review and update of inter-State ATS LOAs, if possible, once (01) a year.	Drafting of regional guidance material on the management of ATS operational agreements (ATS LOAs) Assistance and follow-up by the Secretariat for the review and updating of ATS LOAs.	• Regional guidance material on management of ATS LOAs • ATS LOAs reviewed and updated, if possible, once a year	SAM/IG/31	GESEA STATES		**VALID**
2. Contingency plans and procedures							
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**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
~~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~~	**REPLACED** **SEE CONCLUSION SAM/IG/30-01 Optimization of the airspace in SAM Region based on the implementation of APTA and FRTO modules.**
2-2	**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**
2-3	**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**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
2.-4	**Conclusion SAM/IG/25-03 Activities for the development of the SAM ATM/CNS contingency framework plan** That States support GESEA activities towards a second stage of the MCATS, with a view to developing guidance material for a "SAM ATM/CNS Contingency Framework Plan".	Prepare document for harmonised implementation of ATM/CNS national contingency plans, with interfaces to AIM, MET, airport services, etc. duly agreed with neighbouring States, including CAR States, if applicable.	SAM ATM/CNS contingency framework plan	No later than October 2023	GESEA	RO/ATM	**VALID**
3. ATFM implementation							
3-1	**Conclusion SAM/IG/23-01: Implementation of ATFM measures in accordance with Doc 9971, and coordination in case of ATS contingencies** **That:** SAM States prioritise the following for their ATS and ATFM services**:** a) Strengthening the functions of flow management positions (FMPs) or units (FMUs), granting them powers to coordinate and support ATS services; 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. UAS Air Traffic Management (UTM)							
4.a.1	**Conclusion SAM/IG/30-02: Activities for the future implementation of Air Traffic Management for UAS (UTM)** That States, through actions of the Air Navigation Directorates/Managements/Headquarters, nominate groups of ATM/CNS specialists and define activities to: a) participate in the activities of the SRVSOP on the development of the CONOPS UTM and the regulatory set LAR 100 – 101 – 102; b) Support SAM/IG and its contributing bodies in the preparation of Manuals and Technical Guides for the UTM; c) conduct regional training activities on UTM, UAS/RPAS; d) and periodically report to SAM/IG on access to airspace by UAS/RPAS, as well as advances in the use of UAS/RPAS in the calibration of navigation aids and other aerial work applications.	Active participation in SRVSOP activities regarding CONOPS UTM development and LAR 100-101-102 set; support to SAM/IG and its contributing bodies in the elaboration of manuals and technical guides for UTM. Carry out training regional activities on UTM, UAS/RPAS.	Periodic reports on access to air space by UAS/RPAS, as well as advances in the use of UAS/RPAS in the calibration of navigation aids and other applications of aerial work.	SAM/IG/33	STATES	RO/ATM	**APROVED SAM/IG/30**

No.	Tasks to be developed	Specific tasks	Deliverables	Completion date	Responsible party	Members supporting the task	Status of implementation
4.b.1	**Conclusion SAM/IG/30-03: Treatment of LHD events in ACCs, for mitigation and elimination of hotspot points** That the States, through actions of the Air Navigation Directorates/Managements/Headquarters, stipulate: a) Follow-up on the results of the meetings of the GREPECAS Scrutiny Group – GTE, and follow-up on the implementation of its recommendations and conclusions; b) Reinforce the training of ATS personnel and supervisors, and review the ATS/FPL procedures and manuals of the ACC sectors involved in the generation of LHDs; c) Establish by means of LOA ATS the preliminary investigation within 48 hours of the LHD events, involving the two ACCs, in order to provide for immediate mitigation if necessary; d) Implement, with high priority, all connections of the AIDC systems in the ACCs; e) Close VHF communications and ATS surveillance coverage gaps at all air traffic transfer points between ACCs; f) and promote a culture of safety.	Follow-up to the results of the GREPECAS GTE Scrutiny Group meeting and follow-up to the implementation of its conclusions and recommendations. ATS personnel and supervisors training and review , and follow-up to the implementation of its recommendations and conclusions. Training of ATS personnel and supervisors, and review of ATS/FPL procedures and manuals for the ACC sectors involved in LHD generation.	ATS LOAs implemented for the preliminary investigation within 48 hours of LHD events, involving the two ACCs, to provide for immediate mitigation if applicable. All connections of the AIDC systems in the ACCs, implemented. Full coverage of VHF communications and ATS surveillance at all air traffic transfer points between ACCs	SAM/IG/33	STATES	RO/ATM	**APROVED SAM/IG/30**
5. Operational implementation of new automated ATM systems and integration of the existing systems							
5-1	**Conclusion SAM/IG/25-06 Approval of the ATM/FPL Roadmap and of the format for flight plan acknowledgment (ACK) and rejection (REJ) messages and associated messages** That States: a) Approve the ATM/FPL Roadmap and the format for flight plan acknowledgment (ACK) and rejection (REJ) messages and associated messages; and b) Adopt the guidelines and procedures of the ATM/FPL Roadmap.	Adoption of the ATM/FPL Roadmap by States.	- Roadmap implemented - Mitigate the occurrence of errors and duplication /multiplicity of flight plans, also providing feedback to the originators of FPLs and associated messages.	SAM/IG/27	STATES	RO/CNS and RO/ATM Interop TF	**VALID**

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

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

Updated FHH

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

a) Review of air navigation priorities in the ATM field
b) ATM implementation. Progress of the Subgroups
c)

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

N°	Subject	Presented by
WP/2.1	SG1 Activities - Airspace Planning	Secretariat
WP/2.2	Activities of SG2 PANS OPS	Secretariat
WP/2.3	Update on the work of GESEA Subgroup 3 (SG3 ATFM)	Secretariat
WP/2.4	Implementation by the Peruvian State of key performance indicators of the GANP	Peru
WP/2.5	Regional guidance on implementation of airspace concepts	Brazil
WP/2.6	Tabletop exercises for ATS contingency plans	Secretariat
WP/2.7	Flexible use of airspace (FUA) and civil-military cooperation in the ATM	Secretariat
WP/2.8	Aproximación a RWY 20 Aeropuerto Chacalluta, de la ciudad de Arica, Chile *(Spanish only)*	IATA
IP/2.1	Runway system capacity upgrade	Paraguay
IP/2.2	Estado de implantación de iniciativas EDE y UPR en la FIR Lima *(Spanish only)*	Peru

2.2 In this agenda item, the progress of the activities of the Airspace Study and Implementation Group – GESEA and its three contributing subgroups was analyzed. The outcome of GESEA's discussion has an impact on the identification of activities for the 2024 work program, which is presented in **Appendix A** of this part of the Report.

SG1 Activities – Airspace Planning

FRTO WG Report

2.3 The FRTO WG held its second meeting on August 22 and 23, 2023, by virtual means, MS TEAMS. Mr. Julio Pereira of IATA is the coordinator of the task force. The WG focuses its work on the development of the Job Card: SG1/PLAN EA/ 02/2023. Studies and implementation ASBU FRTO B0/1 and B1/1 Airspace Optimization. **Action S30/01.**

2.4 All material and summaries, including presentations, are available at the following link on the GESEA channel:

https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG1%20PLANESPA/1.%20GRUPOS%20DE%20TAREA/GT%20FRTO%20(previous%20GT%20DCT%20FRA)/Meetings/FRTO%202?csf=1&web=1&e=HEgskU

2.5 The Working Group developed the following actions, focused on the implementation of the FRTO concept. The details of the coordination and studies that are deployed for each action were analyzed:

- ✓ Action 1: SAM States should inform the FRTO/2 meeting of possible interest in using the DASA tool and the possibility of providing the necessary airspace information.
- ✓ Action 2: SAM States should inform the FRTO/2 meeting of interest in holding a specific call on the DASA tool to obtain more details about the tool, including other functionalities, in addition to UPRs.
- ✓ Action 3: SAM States should provide a point of contact and an alternate point of contact for the analysis of UPR route catalog proposals.
- ✓ Action 4: SAM States should present their FRTO implementation strategy, with a view to shaping the regional SAM strategy, as well as setting regional implementation targets.
- ✓ Action 5: SAM States should evaluate the proposed amendment to the AIP (attached as Appendix F to the summary of FRTO/1) and provide their suggested comments to the FRTO/2 meeting.
- ✓ Action 6: Representatives of Ecuador made a presentation on the MTCD, Pathway Conformance and AIDC tools at the FRTO/2 meeting.
- ✓ Action 7: SAM States should provide the information in item 14 (summary of FRTO/1) to FRTO/2.

2.6 The FRTO WG meeting tasked the Secretariat with managing and maintaining a list of focal points (POCs) and alternate(s) for each State, to coordinate the implementation of FRTO and DTS. They must have an operational profile and powers to coordinate with the CNS area and other concerned areas of the ANSP. POCs will also be responsible for generating feedback to SG1 on implementation. During the Workshop/Meeting, responses were obtained from a number of States and an initial list was drawn up (See **Appendix B**) which will need to be confirmed by the Secretariat for making available to the WG. **Action S30/02.**

2.7 The meeting highlighted the great importance of requesting the preparation of a feedback document from each MAR State, regarding the course of the activities and trials related to the DTS and UPR routes that have been carried out to date in the Region. Emphasis was placed on the importance of coordinating with States and publishing UPRs and DTS processes through agile and easily accessible means, such as repositories, applications or websites. **Action S30/03.**

2.8 Paraguay presented a report on the Capacity Update of the runway system. For its part, Peru reported on the status of implementation of DTS and UPR initiatives in the Lima FIR.

2.9 The Secretariat reported that between November 20 and December 1, 2023, the preparation of the Guide Material on the implementation of the FRTO module (FRA, EDE, UPRs) has been scheduled. This activity is supported by RLA/06/901. The FRTO WG Action Plan and the documents under development, including the proposed model AIP amendment, are shown in **Appendix B.**

2.10 The Workshop/Meeting decided to approve and adopt the model AIP amendment proposed by GESEA's SG1 PLANESPA. The corresponding publication in each State should be monitored. **Action S30/04.**

2.11 The FRTO/3 virtual meeting will be held from December 12 to 13, 2023, from 13:00 to 16:00 UTC (08:00 to 11:00 local time Lima).

2.12 In view of the FRTO WG analysis, the challenges of deployment covering large volumes of airspace at regional and interregional level were identified. It was agreed on the need to provide resources and promote together with the Industry the Optimization of the airspace of the SAM Region based on the implementation of APTA and FRTO modules, formulating the following Conclusion:

<table>
<tr><td>CONCLUSION SAM/IG/30-01</td><td colspan="2">Optimization of the airspace of the SAM Region based on the implementation of APTA and FRTO modules</td></tr>
<tr><td colspan="2">What:
The States, through actions of the Air Navigation Directorates/Managements/Headquarters, promote the implementation of GANP modules; Enhanced Arrival/Departure Operations (APTA) and Enhanced Operations through Optimized En-Route Trajectories (FRTO), facilitating, within the scope of RLA 06 901:

a) ATM and CNS resources and specialists for activities and studies related to the implementation of these modules;
b) support for the development of regional documents and technical materials;
c) support for training and capacity building on APTA and FRTO implementations;
d) shared data for the calculation of Regional KPI indicators;
e) support to activities for the formulation and management of National Air Navigation Plans;
f) support to the activities of the ANP CAR/SAM Regional Plan; and
g) among other elements that are required.</td><td>Expected Impact:

☒ Political/Global
☒ Inter-regional
☒ Economic
☒ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="3">Why: To address, together with industry and users, the need to optimize regional and interregional airspace in terms of efficiency, capacity, operational safety and environmental protection, and to include performance measurement with the use of KPIs in implementations.</td></tr>
<tr><td colspan="2">When: 2024-2027</td><td>Status: Adopted by SAM/IG/30</td></tr>
<tr><td colspan="3">Who: ☒ Coordinators ☒ States ☒ Secretariat ICAO ☐ ICAO HQ ☒ Others: IATA, users</td></tr>
</table>

SAM Region Airspace Planning Guide Manual

2.13 As part of the actions carried out through Project RLA/06/901, in 2022 the mission of an ATM specialist was requested to carry out the tasks of the Job Card "Airspace Planning" of the SG1/PANSOPS/01/2020 activity:

- ✓ Task 1: Develop an Airspace Planning Manual for the SAM Region containing harmonized airspace structure organization techniques (trajectories, airspace, FUA, PBN concept, etc.);

- ✓ Task 2: Develop and deliver a Workshop on Airspace Planning for specialists from the States of the SAM Region that presents the harmonized techniques for the organization of the airspace structure (trajectories, airspaces, FUA, PBN concept, etc.).

2.14 For the current year 2023, following the development of the aforementioned Job Card, the following tasks were scheduled:

- ✓ Task 3: Develop a Guide on Project Management of Airspace Concepts of the SAM Region containing harmonized guidelines and good practices for the implementation of Airspace Concepts;

- ✓ Task 4: Develop a training course for specialists from the SAM Region on Airspace Planning and Project Management of Airspace Concepts.

2.15 Task 3 was developed between April 17 and 28, 2023, at the ICAO SAM Regional Office, based in Lima, Peru, providing the SAM Region with a first draft of requirements and criteria regarding the implementation phases of airspace concepts projects: planning, design, validation and implementation.

2.16 Task 4 was carried out in the first week of the mission, from August 14 to 18, 2023, to develop the workshop material, based on the Regional Guide on Project Management of Airspace Concepts of the SAM Region (draft version), which basically contains the following topics (with theoretical presentations and practical exercises):

- ✓ Airspace Concepts Implementation Process;
- ✓ Planning Phase;
- ✓ Design Phase;
- ✓ Validation Phase;
- ✓ Implementation Phase.

2.17 In the second week, from August 21 to 25, 2023, the Workshop was held in the sense of promoting basic training for specialists in the SAM Region on Project Management of Airspace Concepts. The Workshop was attended by representatives of the following States: Bolivia, Brazil, Chile, Ecuador, Panama, Peru and Uruguay.

2.18 The topics presented and the dynamics of the presentation of the workshop were the following:

- ✓ Module 1 (Review of the 1st Workshop);
- ✓ Module 2 (Implementation of Airspace Concepts);
- ✓ Module 3 (Planning Phase) – Model Forms – GANP (KPA/KPI);
- ✓ Module 4 (Design Phase);
- ✓ Module 5 (Validation Phase);

- ✓ Module 6 (Implementation Phase);
- ✓ Module 7 (Exercises): The practical activity for the development of the 4 forms (models) that were presented in Module 3 (Planning Phase)

  - Preparation of the CEA Project Proposal;
  - Project Terms of Reference;
  - Project Analytical Structure (EAP);
  - Performance Measurement Plan.

2.19 At the end of the work period, the tasks of preparation and delivery of the workshop were carried out as planned and within the expected objectives. The materials for the workshop were handed over to the ATM/SAR Officer at the Lima Office. The material presented at the Workshop can be found at the following GESEA channel link:

https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG1%20PLANESPA/Talleres%20y%20GUIA%20PLANIF%20ESP%20AEREO/TALLER%202%20x%20agosto%202023?csf=1&web=1&e=yQnSXW

2.20 As a result of all the development of the Job Card, there is a draft Manual for Airspace Planning (SAM), divided into Part I and Part II. The Workshop/Meeting agreed to commission a committee of specialists (Bolivia, Brazil, Chile, Panama, Peru, Uruguay and IATA) to revise/edit the Guide Manual. The Texts will be submitted for approval by SAM/IG/31. **Action S30/05.**

2.21 View the material in the following repository:

https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG1%20PLANESPA/Talleres%20y%20GUIA%20PLANIF%20ESP%20AEREO/MANUAL%20GUIA%20circular%20SAMIG30?csf=1&web=1&e=vKOAP0

Flexible Use of Airspace (FUA) and Civil-Military Cooperation in the ATM

2.22 The Workshop/Meeting for the SAM Region on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in the ATM, was held at the ICAO South American Regional Office, Lima, from 19 to 23 June 2023. The FUA is an element of the FRTO, within the GANP.

2.23 It was recognized that the MAR Region should initiate activities to adopt the provisions of document 10088 as a matter of priority. In all states, there is a marked interest in the contribution of the FUA to operational safety, as well as in the capacity and efficiency of the airspace, which is linked to the possibility of fuel savings and CO2 emissions in the atmosphere.

2.24 The Workshop/Meeting agreed that the implementation of a Committee for the Organization and Management of Airspace (CAOM) in each administration is feasible in the short term, relying on the model of the FUA Manual that allows the development of a **national FUA Manual** that recognizes and incorporates the legal system and internal practices in the field of FUA and ASM.

2.25 The implementation of the FUA at the national level must take into account the requirements of economic, administrative and personnel resources for its viability. At the same time, the need to establish a roadmap and instruments to verify each stage of progress was recognized, which must

be promoted by SAMIG and its contributing bodies, as part of the implementation work of the FRTO module that is already in progress.

2.26 Without prejudice to the formal processes and validation mentioned above, it was recognized that the civil-military administrations should advance the tasks of socialization and dissemination of the concepts of Doc. 10088 at the ATM community levels and in the military field, in addition to advancing the efforts for the formation of a CAOM, reviewing the LOAs/MOUs that are obsolete or subscribing new instruments for the ASM.

2.27 It was decided to entrust a committee of specialists with the revision/editing of the national FUA (model) Manual, prepared by the Workshop/Meeting held in June 2023. The texts will be submitted for approval under SAM/IG/31. **Action S30/06.**

REPORT OF THE WG PLAN/LOA ATS - GADHOC PLAN CONT

2.28 The CONT PLAN/LOA ATS Task Force of Subgroup 1, under the coordination of Ms. Debora Kuc of ANAC Argentina, presented the activities developed by it to date and presented the actions to be taken in the last quarter of the current year and in the year 2024.

2.29 The WG focuses its work on the development of the Job Card: SG1/PLAN EA/ 01/2023. Regional Guide Material for the MTA and Strengthening of Contingency Plans. **Action S30/07.**

2.30 Previous work that led to the development and implementation of the current Work Plan was listed, as follows:

- Framework Plan for Contingencies of the SAM Region (MCATS/SAM), whose preparation and approval was carried out at the Twenty-Fifth Workshop/Meeting of the Implementation Group of the South American Region (SAM/IG 25), in 2020;
- Amendment to Appendix E - TERMS OF REFERENCE OF THE CONTINGENCY COORDINATION TEAM (CCT) - and introduction of Appendix I - HARMONIZATION PROCESSES FOR ATS LEVEL 2 contingency plans - to the MCATS/SAM, in SAM/IG 27, in the year 2022. The latter stipulates mechanisms for updating these Plans in an expeditious manner; and
- Implementation of actions for the harmonization of ATS LEVEL 2 Contingency Plans through the formation of working groups between two or more adjacent States of the SAM Region, during the year 2022.

2.31 Consequently, in order to meet the strategic objectives agreed in SAM/IG/29 – carried out between 15 and 19 May 2023 – in terms of ATS Contingency Plans and LOA ATS, two work proposals were made:

WORK PROPOSAL N° 1: Develop Guide Material for the preparation and updating of ATS Operational Letters of Agreement (LOA) that involved the performance of the following tasks:

i. Diagnosis and/or Evaluation of the Processes of Elaboration and Updating of ATS LOAs applied by the MAR States;
ii. Identification of needs and opportunities for improvement;
iii. Analysis of available material in the field and good practices; and
iv. Preparation of a document that includes the reference guidance material and a standardized ATS LOA template.

WORK PROPOSAL N° 2: Develop a Strengthening Plan for ATS Contingency Planning in the SAM Region.

2.32 On the basis of the analysis, it was agreed to adopt the following actions:

- Regarding the guidance material for the development and updating of CAO ATS:

1) Submission of the draft document entitled "Guide for the preparation and updating of CAO ATS" to the States of the SAM Region so that they may make the comments and suggestions they deem pertinent, before October 6;
2°) Translation of the cited document into English, in coordination with the RO SAM, whose update date is "to be confirmed"; and
3) Approval of the "Guide" and making it available to the MAR States, the date of which is "to be confirmed".

- In relation to the revision and updating of the MCATS/SAM: work will begin to this end, taking into account the opportunities for improvement identified since its issuance to date; as well as the results of the ATS Level 2 Contingency Plans Desktop Exercise (Tabletop); and provisions for the HADRA initiative.

- Regarding the ***Table top Exercise (TTX***) of ATS Contingency Plans, see the following paragraphs.

Table top Exercise (TTX) on ATS contingency plans.

2.33 A Table Top Exercise on ATS Contingency Plan was scheduled for July 2023. After coordination, it was agreed to carry it out on the MS TEAMS Platform on September 7 and 8, 2023. Documents, records and presentations can be found in the following folder of the GESEA channel:

https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG1%20PLAN%20EA/1.%20GRUPOS%20DE%20TAREA/GT%20PLAN%20_LOA%20ATS%20reorganizado/2023%20seteimbre%201r%20TABLE%20TOP%20PLANCONT?csf=1&web=1&e=d33LcD

2.34 During the tabletop exercise, an exhibition of an ATC ZERO event in July 2020 that affected the LIMA FIR was made. The background of the health emergency situation and the severe degradation of the ATS due to lack of personnel was shared. Lessons learned were highlighted.

2.35 An ATS Contingency Plan exercise was developed based on the operational/technical scenario of the ACC Bogotá. Delegates analysed 12 *notes* linked to consecutive events in 1 hour of exercise, obtaining valuable feedback.

2.36 It was highlighted that, in September 2023, the Thirteenth meeting of the panel of Experts, ANS, initiated activities for the approval of Appendix 17 "Requirements for ATS Contingency Plans" of LAR 211, which is in the process of validation and approval. According to what has been reported, for LAR 211 it is planned to stipulate periodic tests or drills on ATS contingency plans.

2.37 Therefore, the aforementioned LAR is being harmonized with the MCATS, in terms of the need to carry out exercises/drills for the application of Contingency Plans. The MCATS, in this case, indicates activities once a year in each State for Level 2 Plans. The purpose is;

a) Verify the validity of the call tree, corroborate the validity of the data from focal points including IATA.
b) Review the technical data of the Plan, including ATS communication and frequencies, transfer points/airways, aircraft separation, NOTAM procedures, use of the TIBA procedure and Auto-transfer, etc.
c) Verify the efficiency and availability of communications between focal points.

2.38 The Workshop/Meeting agreed to conduct two TTX exercises in 2024, based on the Contingency Plans of Peru and Ecuador, as detailed in **Appendix A.**

SG2 Activities – PANS OPS

2.39 The Airspace Study and Implementation Group – GESEA has subgroup 2, intended for activities for the standardized application of the ICAO PANS OPS criteria. The Coordinator of SG2 is Mr. Diego Gamboa (Argentina).

2.40 SG2/4 addressed the subgroup's set of outcomes and deliverables during 2023, and the scope of the conclusions of SAM/IG/29. It was agreed that Subgroup 2 and its corresponding WGs should frame their activities within the development of the 2022-2026 Roadmap. In this document, in section 6, you will find the support metrics for the aforementioned period where the elements of implementation and the agreed goals and dates are exposed.

2.41 Therefore, SG2 was invited to organize the preparation of technical documentation to update (if necessary, replace) the CONOPS EC/SAM, considering the 7th edition of the GANP (includes KPA Safety) and the CONOPS UTM of the SAM Region. **Action S30/08.**

2.42 The Meeting agreed on the reconfiguration of two (02) Task Groups. The first of these will be called WG IMPLEMENTATION to address the following issues of Regional implementation:

a) Roadmap 2022 – 2026: Optimization based on SAM airspace performance.
b) Campaign for review/update of PBN procedures. Action Plans and Monitoring Tables.
c) Flight procedures with the use of RF in RNP APCH.
d) Circular 359 – "Elaboration of procedures for visual maneuvers with prescribed defeats using the required navigation performance".
e) Redesign of TMA based on PBN.
f) SATDIS tool ver. 2, for RATE availability.
g) Measurement of CO2 savings in PBN deployments.
h) Revisions/update of IFP flight procedures, in accordance with Doc. 8168 deadlines.
i) Other issues associated with the implementation of the PBN.

Mr. Carlos Castañeda of INAC Venezuela was appointed as rapporteur of the WG.

2.43 The second will be called GT DOCS. PANSOPS, by Mr. Eloy Tafur of DGAC PERU to address the study or revision of the following documents and texts:

a) Revision of Doc. 9613 Performance-based Navigation (PBN) Manual, Fifth Edition, (Advance unedited). Other ICAO documentation for PBN and PANS OPS.
b) Update requirements for SRVSOP Circulars.
c) Action S28/01 of SAMIG28; PANS-OPS Recommendations for Harmonization of Instrumental Procedures in the SAM Region.

d) Other technical documents.

Revision of Doc. 9613 Performance-based Navigation (PBN) Manual, Fifth Edition, (Advance unedited).

2.44 Mr. Tafur, supported by Mr. Hernan Ibarra (Argentina) and Mr. Everaldo Lima (Brazil) through a presentation, addressed the revision of the Doc. 9613 Performance-based Navigation (PBN) Manual, fifth edition. Changes have been made to the organization of the document and new concepts have been included. In some cases, information has been eliminated or consolidated because it is already contained in ICAO Docs. 9992 and 9997. Changes have also been made to PBN terminology and data in the Navigation Specification Tables. The final result will be presented in December 2023.

SATDIS tool ver. 2, for RAIM availability

2.45 The Secretariat expressed the need for the support of SG2 for the dissemination of the use of the SATDIS tool for the availability of RAIM in the MAR region. It was reported that a direct access to the website of this tool has been enabled from the GESEA channel in MS TEAMS, showing how the tool can be accessed.

2.46 Likewise, it was reported that there is a list of the focal points of the states in the first pages of the web application, therefore, the focal points of subgroup 2 should contact in their states those in charge of the implementation of SATDIS designated by the aeronautical authority, to offer support from the perspective of the PBN implementation. It was noted that most of these current SATDIS managers do not belong to the area of air navigation.

Measuring CO2 Savings in PBN Deployments

2.47 Regarding the measurement of the CO2 emissions savings that are generated by the implementation of PBN flight procedures, the Secretariat noted that these data are relevant for administrations to be able to show progress in environmental protection issues, however, caution should be taken in the workload that it may mean. For the Flight Procedure Design Units, the task of keeping the environmental community informed about the aforementioned savings. It should be noted that there are already programmes and activities in the administrations for environmental goals, including the CORSIA programme.

Other SG2 Matters

2.48 The Secretariat outlined the need to analyze the PANS OPS Recommendations for harmonization of instrumental procedures in the South American region. These are contained in conclusion SAM/IG/18. The PANSOPS DOCS WG was tasked with carrying out the review of these recommendations, and analysing the relevance of deepening their implementation or discarding them, as the case may be, given the time that has elapsed since their formulation.

2.49 The new ICAO ISTARS 4.0 website was presented, and some improvements to its tools compared to the previous version were explained. The data on the SAM Region was analyzed in terms of PBN implementation, reaching 92.38%, that is, 206 of 223 runway thresholds of international airports are implemented.

Approach to RWY 20 Chacalluta Airport, Arica City, Chile

2.50 Under study note NE/2.8, the need to follow up on the proposal for the implementation of an instrumental approach procedure to Rwy 20 of the Airport of the city of Arica, Chile, carried out at SAM/IG/23 (Lima, May 20 to 24, 2019) was exposed.

2.51 This implementation has been made impossible by the overflight of the approach path through Peruvian territory and the proximity of Tacna Airport. The States concerned were sensitized to the issue in order to find a way to allow safe operations at the airports involved.

2.52 The Meeting invited the States of Chile and Peru to continue the conversation on the issue and to promote a solution in accordance with the capacities and limitations of public passenger transport aircraft, which would allow operations to continue in Arica and Tacna in the safest and most efficient way possible without waiting for a major incident to occur at some point.

SG3 Activities – ATFM

2.53 It was reported that the coordinator of Subgroup 3, Mr. David Benedictis, was assuming his new duties in a Brazilian Air Force mission. In consensus with the coordinators of GESEA and coordinators of the three task groups of SG3, Mr. Bruno Antunes, an official who serves as deputy head of the CGNA of Brazil, was summoned for the Coordination.

2.54 The Meeting expressed its appreciation to Mr. David Benedictis for his effort and dedication to the rapid advancement of ATFM implementation activities. Mr. Antunes greeted and thanked the commission received from GESEA.

2.55 Progress was made on the following SAMIG Actions, related to SG3:

Action S29/05 - To coordinate and consult at the level of the Member States of RLA/06/901 through a written communication on the ATFM portal initiative.

2.56 A letter of consultation with technical deputies was sent to the Member States of Project RLA 06 901, and 4 opinions/comments were received in favor of the ATFM Portal initiative. The absence of a response to the letter is assumed as acceptance without comment, according to the practices of the Project. Among these responses, one State expressed the need to know more data on the costs that the initiative may generate.

Action S29/06 - That the measurements of runway capacity and the ATS sector be executed or updated, considering the recovery of the demand for operations expected for this year (to 2019 levels), and recognizing that in the ACCs there is a reduction in personnel, after the pandemic stage.

2.57 The results of the courses on measurement and calculation of runway capacity and ATC sector, offered by Brazil in April of this year, were highlighted. Paraguay reported that the capacity calculation of the runway of the Asunción international airport has been completed, which will be published in the AIP. Panama reported on the organization of activities for the measurement of capacity at Tocumen airport in the coming weeks. Peru reported the progress of activities to calculate the capacity of sectors in ACC in Lima. Venezuela has measurement activities in progress, including the development of its National Air Navigation Plan.

Action S29/07 - Coordinate the possibilities of scholarship support for the ATFM Workshop (virtual – face-to-face) in Brazil, April 2024, which would require approval of the RCC of the RLA/06/901 project.

2.58 The next steps to obtain support from the RLA 06 901 project to provide scholarships to member states to attend the ATFM workshop that will be offered by Brazil in April 2024 were outlined.

Brazil confirmed that it is planned in two parts; Virtual Classroom (1 to 5 April 2024) and face-to-face part in Rio de Janeiro, Brazil, from 8 to 19 April 2024. See **Appendix A.**

Report of the DCB WG

2.59 The Rapporteur of the Task Force – DCB Planning (DCB Plan WG), Mr. Adriano Duarte (Brazil), remarked that the objective of the WG is to contribute to the development of data exchange, construction of indicators and making information available for decision-making. A dashboard has been maintained with movement information from the main airports in the region. It runs until IATA Winter 23 season.

2.60 Eleven SAM states that are members of RLA/06/901, to date, provide data on operations (demand) for their international airports. Uruguay started its activities with the support of Brazil.

2.61 ATFM indicators (in accordance with the GANP) already available in the Operations Plan:

- ✓ Number of take-offs and landings from major airports in the region;
- ✓ Runway Capacity of Monitored Airports (GANP KPI09);
- ✓ Runway capacity utilization is monitored through congestion schedules;
- ✓ Maximum Runway Performance (GANP KPI10).
- ✓ Punctuality of departures and arrivals (GANP KPI01 and KPI14);
- ✓ Additional taxiing time of monitored airports (GANP KPI02 and KPI13 – RWY and *Gate*);
- ✓ Flight Time Variability for Major City Pairs (GANP KPI15);
- ✓ Demand Accommodation (GANP KPI11);
- ✓ Additional time in terminal area (GANP KPI08 – ASMA).

2.62 Regarding the Workshop/Course on ATM Performance Indicators held from July 3 to 14, 2023, at CGNA, Rio de Janeiro, Brazil, it was presented that the experience of Brazil and other SAM States was analyzed, focusing on systems and applications, as well as working methods for the available data and information. Regarding the Second ATFM Data and Indicators Workshop, it was reported that it was held in the South American regional office in person, from September 18 to 22 of this year. Progress in the calculation of indicators of the operations plan was analyzed. The construction of the operations dashboard for the WINTER 23 season was addressed.

WG Report ATFM Documentation

2.63 In this agenda item, the Rapporteur of the Task Force - Regional Documentation SAM ATFM (ATFM DOCS WG), Mr. Jorge Cornelio (Argentina), summarized its progress, promoted through the meetings of the second Monday each month. A summary of the tasks carried out and those in progress is presented, depending on the document in question:

A. Guide for the Implementation of the ATFM Service in the SAM Region 2021 – 2025

- Analyze the possibility of Improvements:
  - PDA Improvements (Made),
  - Post-Operation Report Improvements (Performed),
- Other:
  - The proposal for a Study Note for approval was made in SAMIG/29.

NOTE: The OTHER point is open to new proposals for improvement.

B. Runway Capacity and ATS Sector Calculation Manual

- Open the analysis process to standardize the capability statement (On Going)
- Standardize the measurement and data collection process in the manual, including the steps to follow, the forms and processes necessary for the region to have a unified format. (On Going)
- Standardize a notification format for the SAM region, establishing the best medium: AIP, AIC, WEB Portal. Define a strategy to promote the definition of runway capacity values and ATC sectors for States that do not yet have such a definition. (On Going)

C. Map the development process of the Implementation of the ATFM Service in the SAM Region and the performance of the Runway and ATC Sector Capacity Calculation, and its declaration;

- Survey Cycles (Permanent) – Annual or On-Demand.

ATFM Cross Border GT Report

2.64 The Rapporteur of the ATFM Crossborder Task Force (ATFM XB), MR. Leonardo Costa (Argentina), outlined the WG's assignments that are being developed:

- Elaboration of a model ATFM XB Letter of Agreement between adjacent States

  A Model of ATFM XB LoA WITH MINIMUM CONTENTS NECESSARY FOR THE PARTICULAR SITUATIONS BETWEEN TWO STATES AND THEIR RESPECTIVE ATFM DEPENDENCIES (FMU)

- Development of an ATFM XB Manual for the SAM Region

  That promotes the application of the CDM methodology at the Cross-Border level.

  That contains general principles and rules for the provision of ATFM Service at the Cross-Border level in the SAM Region.

  To establish clear and efficient criteria for the application of ATFM Measures *(MIT, MINIT, PASSBACK, GROUND STOP, etc.)*

2.65 The Workshop/Meeting of the Working Group on Crossborder ATFM SAM (WG XB), scheduled for the week of October 9-13, was postponed. It has been rescheduled for the month of May 2024. See **Appendix A.**

Enhancements for BRISA sessions in the Cross Border area

2.66 The rapporteur of WG XB explained that the team has been analyzing possible improvements for the BISA sessions, including organizing a daily BRISA session between units that, in the near future, are developing cross-border services. In this sense, it was agreed to reinforce the studies to optimize processes for the BRISA sessions in the context of the studies for the development of the cross-border ATFM service. Consider pre-tactical, strategic, post-operations BRISA as well as extraordinary BRISA deployment. **Action S30/09.**

Organization to promote the ATFM portal

2.67 At its recent meeting on 12 October 2023, the WG decided to form an ad-hoc group (GADHOC), to effectively support the development of the ATFM portal and ensure an adequate interface with the portal's users. This GADHOC will be coordinated by a delegate from Brazil and will have the support of specialists from Argentina, Peru and Chile, several of them with profiles oriented to computer

science and systems management issues. By the way, it has the support of all the GESEA States, based on the "open group" work that characterizes it. Through remote access via TEAMS, CGNA's technology support team presented the advances in the design of the portal, the inclusion of tools and operational interfaces.

GANP Key Performance Indicators

2.68 Peru presented the implementation of the monitoring by the Peruvian State of the Key Performance Indicators (KPIs) of the Global Air Navigation Plan (GANP), so that the Aeronautical Authority begins the measurement of the performance of the ATFM and ACDM systems. In this context, an initial version of the Dashboard of Indicators for the Peruvian State has been implemented.

2.69 Due to the importance of fulfilling the task of measuring and monitoring the different systems, the work team developed the measurement of the following ATFM/ACDM indicators:

KPIs	AIRPORT
KPI 01: On-time delivery	Jorge Chavez International Airport – Lima Velasco Astete International Airport - Cusco
KPI 02: Additional Exit Break-In Time	
KPI 09 (*): Maximum airport capacity (arrivals and departures)	
KPI 10 (*): Maximum airport throughput (peak rate)	
KPI 13: Additional Arrival Break-In Time	
KPI 14: On-time arrivals	

(*) Recently Implemented Indicators

1.69.1 Work is underway so that, by 2024, the measurement of these KPIs will be extended to the aerodromes of the following cities: Piura, Tarapoto, Chiclayo, Trujillo, Iquitos, Cajamarca, Pucallpa, Arequipa, Tacna, and Juliaca. At the same time, the KPA Safety indicator management is expected to begin.

Other SG3 Matters

2.70 Panama presented an initiative executed at the Tocumen International Airport (MPTO) in conjunction with the airline COPA, to test various configurations of runway selection in use, for arrivals and departures, with a view to identifying efficiency improvements. It was concluded after two months of observation that the assignment of runways based on the distance to/from the aircraft parking station represented a contribution to efficiency and reduction of fuel use and CO2 emissions. Panama undertook to keep SAM/IG informed of the further development of these tests. The initial results are as follows:

a) Missed approach was significantly reduced
b) The airline operator reported a decrease in its taxiing times of 4,872 minutes
c) Achieved savings of 17,623 gallons of fuel
d) 171,800 kgs of CO2 were not emitted.

2.71 Uruguay reported that a two-week ATFM training workshop will be held next November in the field of cooperation with Brazil. This program will include a familiarization stage for air traffic controllers.

2.72 SG3 stressed the importance of delivering surveys to States preparing their task forces on a regular basis. This information makes it possible to fine-tune the tasks of the ATFM specialists who

collaborate on the deliverables, which results in the efficiency of the work of GESEA, the contributing body of the SAM/IG.

Information concerning GESEA

2.73 Reviewed What the Job Card: SG1/PLAN EA/ 03/2023 for the Implementation of an Efficiency Program for selected airports in the SAM Region, needs to be initiated. Progress on these initiatives was presented in Brazil and Chile.

2.74 It was noted that GESEA has yet to organize the development of the Job Card: SG1/PLAN EA/ 03/2023. Implementation of an Efficiency Program for selected airports in the SAM Region. Initiatives in Brazil and Chile were reported. **Action S30/10.**

2.75 A Scheme was developed to synchronize GESEA Meetings, according to the following:

J PEREIRA	SG1 GT FRTO – 4TH TUESDAY & WEDNESDAY
D KUC	SG1 GTPLAN/LOA ATS – 1ST MONDAY
C CASTAÑEDA	SG2 GT IMPLAN – 2ND THURSDAY
E TAFUR	SG2 WT DOCS PANS OPS – CONVENES ACCORDING TO PROGRESS
TO DUARTE	SG3 GT PLAN DCB – LAST MONDAY
J CORNELIO	SG3 GT DOCS ATFM – 2ND MONDAY
L COAST	SG3 GT DOCS ATFM – CONVENES ACCORDING TO PROGRESS

Information Presented

2.76 Under the information note NI/2.1, Paraguay reported on the runway capacity calculations of the Asunción airport. Under NI/2.2, Peru reported on its progress in the implementation of the EDE (SDR), highlighting that it will be extended to more spaces within the LIMA FIR.

APPENDIX A

GESEA 2024 Work Plan

Activities	Objectives / Deliverables	Tentative Dates
SAM/IG/31 Priorities for the implementation of air navigation considered in GREPICAS programs, vol III Regional ANP and Regional initiatives.	Continue with the implementation, execution and optimization activities under the studies of GESEA and GT INTEROP. (5 days)	Lima, 20 to 24 May 2024
SAM/IG/32 Priorities for the implementation of air navigation considered in GREPICAS programs, vol III Regional ANP and Regional initiatives.	Continue with the implementation, execution and optimization activities under the studies of GESEA and GT INTEROP. (5 days)	Lima, 21 to 25 October 2024
GESEA Plenary Meeting/7	Organization of the implementation of efficiency and capacity initiatives. 2023 Subgroup Deliverables Review and adjustments of the PTA for Subgroups SG1 – SG2 – SG3 and respective Task Groups. Follow up.	Virtual, March 5-8
FRTO & SAM Airspace Optimization Webinar	Dissemination and studies on the regional guide material on the implementation of the FRTO module, and DTS and UPR concepts.	Virtual, March 13-15
ATFM Workshop	ATFM in-service training, in accordance with ICAO Doc. 9971. Divided into Virtual Classroom Phase and Face-to-Face Phase.	Virtual Classroom (1 to 5 April) and face-to-face, Rio de Janeiro, Brazil from April 8 to 19
Recurrent PANS OPS - PBN Course	Recurrent PANS OPS course for designers with PBN design experience.	Lima, Peru, April 8-13 -tentative- from Monday to Saturday
Workshop/Meeting of the Working Group on ATFM Crossborder SAM (GT XB)	Planning of the implementation of the Cross-border ATFM, according to the SAM Implementation Guide, based on intra-regional scenarios. Analysis of GT XB deliverables.	Lima, May 6-10

Activities	Objectives / Deliverables	Tentative Dates
Workshop on the use of ATFM portal tools	Training of ATFM specialists in the use of the portal's features and tools for ATFM management. Implementation analysis.	Lima, Peru, June 3-7
Third ATFM Workshop: data management and calculation of GANP performance indicators	Standardization of ATFM data. Demand analysis – capacity and forecasts. Benchmarking. Generation of GANP performance indicators.	Virtual, July 8-10
GESEA SG1 PLANESPA Meeting	Follow-up of studies and activities for the implementation and optimisation of airspace. ATS Contingency Plans,	Virtual, July 17, 18, 19
(Tabletop Exercise) TTX PLANCONT ATS - PERU	State **PERU** - ANSP ATS Contingency Plan	Virtual, July 24
GESEA SG3 ATFM Meeting	Follow-up of studies and activities for the implementation and optimization of the ATFM service.	Virtual, August 14, 15, 16
GESEA SG2 PANS OPS Meeting	Follow-up of studies and activities of PBN implementation and optimization of the IFPD service.	Virtual, 11, 12 13 September
Webinar on UTM	Dissemination and studies on CONOPS UTC. Regional regulation on RPAS UAS.	Virtual, 25 26 27 September
TTX PLANCONT ATS - ECUADOR	State **ECUADOR** - ANSP ATS Contingency Plan	Virtual, October 9

APPENDIX B

FOCAL POINTS FOR FRTO COORDINATION – SG1 GESEA

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ACTION PLAN AND DEVELOPING DOCUMENTS OF THE FRTO WG

Activity	**Responsible**	**Start Date**	**End Date**	**State**	**Obs.**
Track the Implementation Status of UPRs in the SAM Region	GT FRTO	May 23	TBD	In Progress	
Track the Implementation Status of Strategic Direct Routing in the SAM Region	GT FRTO	May 23	TBD	In Progress	Implemented in the Amazon, Guayaquil, Georgetown and Recife FIRs. Implemented in most of the FIR Brasilia, Curitiba and Maiquetia. Implemented in portions of the Lima and Santiago FIRs.
Track FRA Implementation Status in the SAM Region	GT FRTO	May 23	TBD	In Progress	Implemented in a portion of the Cayenne FIR.
Track the Implementation Status of 20 NM Longitudinal Separation (GNSS)	GT FRTO	May 23	TBD	In Progress	

Activity	Responsible	Start Date	End Date	State	Obs.
Track the Implementation Status of 10/5 NM Longitudinal Spacing (ATS Surveillance)	GT FRTO	May 23	TBD	In Progress	
Set a goal for DTS and FRA implementation in the next 5 years	SG1/GESEA	May 23	July 23	In Progress	Reference: WP/47 RAAC/17 – IATA
Implement Strategic Direct Routing in airspaces where feasible	States	May 20	Nov 23	In Progress	
Develop aeronautical publication model for UPR implementation	Julio Pereira	May 23	July 23	In Progress	
Develop a safety case based on the new operational scenario with the use of the UPR and DTS	SG1/GESEA	May 23	TBD	In Progress	
Develop a communication plan for FRTO implementation (UPR, EDE and FRA)	SG1/GESEA	May 23	TBD	In Progress	
Update the Operational Agreement Letters for the Implementation of the DTS (Cross Border)	States	May 20	TBD	In Progress	
Establish the requirements for the implementation of FRTO B0/1 and B1/1 (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT FRTO	May 20	TBD	In Progress	
Evaluate the implementation status of the FRTO B0/1 and B1/1 implementation requirements (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT ATM/CNS	May 23	TBD	In Progress	
Establish key performance indicators.	Julio Pereira	May 20	TBD	In Progress	
Develop Implementation Guide Material of the FRTO module (FRA, EDE and UPRs)	GT FRTO	20 November 2023	01 December 2023	In Progress	It will be supported by the RLA/ 06/901 project

Activity	Responsible	Start Date	End Date	State	Obs.
Propose Intraregional UPRs (SAM Region)	IATA/Airlines	01 April 21	TBD	In Progress	
Evaluate Intraregional UPRs	States	01 April 21	TBD	In Progress	
Develop an evaluation process for interregional UPRs	GT FRTO	01 April 21	TBD	In Progress	
GESEA/SG1-5 Meeting	Julio Pereira Fernando Hermoza	25 to 27 September		In Progress	SAM/IG/30 – 23 to 27 OCT 2023
WG FRTO/1 Meeting ATM/CNS Enablers	Julio Pereira Fernando Hermoza	June 20-21 (13:00-16:00 UTC)		In Progress	
WG FRTO/2 Meeting ATM/CNS Enablers	Julio Pereira Fernando Hermoza	August 22-23 (13:00-16:00 UTC)		In Progress	
WG Meeting FRTO/3 ATM/CNS Enablers	Julio Pereira Fernando Hermoza	December 12 and 13 (13:00-16:00 UTC)		In Progress	
Develop a model/guide for Operational Safety Assessment for the Implementation of FRTO B0/1.	Fernando Hermoza	May 20	July 20	Finalized	
Develop an aeronautical publication model for DTS implementation	Julio Pereira Fernando Hermoza	May 20	July 20	Finalized	
Develop an educational brochure to disseminate the DTS concept for CTAs and Pilots, ARO Officers.	Rosana Baru	May 20	July 20	Finalized	

PROPOSAL FOR A TEMPLATE FOR AMENDMENT TO THE AIP – UPR

User-Preferred Routes

User Preferred Routes (UPRs) are routes requested by airlines that optimize the route between specific city pairs. UPRs must be approved by all Navigation Service Providers (ANSPs), through their Flow Management Units, Area Control Center Managers, or Civil Aviation Authorities, as applicable, responsible for the provision of air traffic services on any section of the UPR. As of its publication, airlines will be able to use those segments for any pair of cities until they are cancelled or modified.

UPRs will be able to go through a trial period, and in this case, it will be available for a specific period of time (i.e. a trial period) and a specific airline. The route tests aim to determine the operational viability of

the routes and once the operational viability of the routes has been verified, they will be published through the process described below.

Aircraft must use UPRs from one of the following waypoints:

(a) Published ATS route; or

(b) Last waypoint of a published output procedure (SID); or

c) Boundary of an area in which Strategic Direct Routing (SDE) applies.

The UPRs are published at the following address on the website of the

Air Navigation: xxxxxxxxxxxxxxxxx

The complete UPRs, which exceed the limits of the National FIRs, can be found on the Portal

SAM/ICAO SAM Office WEBSITE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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UPR AT FIR CENAMER

FREE ROUTE AIRSPACE AND USER PREFERRED ROUTES (UPRs) IN CENAMER FIR

1 Purpose

1.1 The purpose of this Aeronautical Information Circular (AIC) is to disseminate to all personnel involved in air operations, a trial of Free Route Airspace and a series of User Preferred Routes (UPRs) that may be filed in their flight plan and used by Air Traffic Control in the clearance.

2 DEFINITION

2.1 Free Route Airspace (FRA) is a specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate published significant points, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.

2.2 UPRs are routes requested by the airlines, or proposed by the ANSP, to optimize the flight path between a specific city-pair. UPR trial requests must be approved by all Air Navigation Service Providers (ANSPs), through their Flow Management Units, Area Control Centre managers, or Civil Aviation Authorities, as applicable, in which any segment of the route occurs. Within this airspace, flights remain subject to air traffic control.

2.3 After a requested UPR is approved for a trial, it will be available for a specified period (i.e., trial period) and for use by a specific airline. The purpose of the UPR trial is to determine the operational feasibility of the UPR segments. Once the operational feasibility of the UPR segments have been verified, the States will publish them via AIC/AIP.

2.4 After the States publish the UPR segments within their AIC/AIPs, those segments may be used by all aircraft operators for any city pair until further notice.

2.5 The personnel responsible for the preparation and presentation of flight plans (Aircraft Operators or Pilots) are responsible for complying with the provisions of this AIC.

3 Introduction

3.1 The ICAO Global Air Navigation Plan (GANP) and Aviation System Block Upgrades (ASBU) methodology provide a flexible, global approach for all aviation stakeholders to advance their Air Navigation capacities based on their specific operational requirements. ASBU FRTO Block 0 Element 1 (B0/1, Direct routing (DCT) states that DCTs are established at national and regional levels and can be made available for flight planning within the published conditions of use. DCTs should be considered an early iteration of the FRA (Free Route Airspace) concept of operation that allow airspace users to optimize flight and fuel planning.

3.2 While the implementation of the broader concept of DCT routing is still being developed, it is operationally important to take advantage of opportunities to implement user preferred routes for filing flight plans, which consist of the most optimized routes possible according to the technical/operational capabilities of the involved ANSPs.

3.3 ICAO NACC Airspace Optimization Task Force, ICAO SAM Airspace Study and Implementation Group (GESEA), CANSO (CADENA), and IATA have identified opportunities to achieve fuel savings and reduce CO2 emissions by working collaboratively to help optimize a flight's end-to-end routing. In today's environment, after the flight plan has been filed and the aircraft is enroute, pilots will often receive "direct routings" from air traffic controllers. While this can help shorten the route, the aircraft has already been fueled for the longer route and must still carry that extra fuel to destination.

3.4 By working with the Civil Aviation Authorities (CAA), ANSPs, airlines, NACC and SAM ICAO offices, and with the support of CANSO (CADENA) and IATA, it has been possible to facilitate the development of optimized city-pair user preferred routes that can be used by dispatchers for filing flight plans so that fuel savings and CO2 reductions can be achieved.

3.5 Section 5 below contains routes that may be used by aircraft operators in the preparation of optimized IFR Flight Plans (FPL) between origin and destination airports.

3.6 As additional UPRs opportunities are identified and developed by ICAO NACC Airspace Optimization Task Force, the ICAO SAM Airspace Study and Implementation Group (GESEA), CANSO (CADENA), and IATA, and approved for use by the CAAs and ANSPs, this AIC will be updated and published.

4 Aircraft Capabilities

4.1 In order to file and fly the optimized routes, the following minimum aircraft capabilities are required:

Flight Plan Entries	
Communication Requirements	Voice communication –VHF (mandatory), CPDLC (not mandatory), to maintain contact over the entire route to be flown.
PBN Requirements	RNAV-5
PBN in field 18 PBN/	B1/B2

5 FREE ROUTE and UPRs in CENAMER FIR

5.1 Free Route Airspace as defined in section 2 of this circular will be available for aircraft overflying the CENAMER FIR at or above FL300, oceanic airspace is excluded from initial trials.

5.2 Due to the complexity of Central American Airspace, restrictions will apply for departures and arrivals; UPRs will be available in this stage of trials, and must be coordinated between users and COCESNA

5.3 As pertains to the portion of the routes in the CENAMER FIR, the UPR segments below have been coordinated, reviewed, and approved by COCESNA for use by aircraft departing or arriving in Central America.

a) Overflights from Guayaquil's airspace (SEGU) to Merida's (MMMD) airspace:
- RADIM DCT AMIDA
- RADIM DCT SIGMA
- SETRI DCT NALDA

b) Overflights from Merida's airspace (MMMD) to Guayaquil's airspace (SEGU):
- ANIKO DCT RADIM

c) Traffic departing from MROC:
- ULAPO DCT BZE
- ULAPO DCT BTO
- ULAPO DCT AMIDA
- ULAPO DCT SIGMA
- RADON DCT AMUBI

d) Traffic departing from MRLB:
- LISPA DCT SELEK
- LISPA DCT BZE
- LISPA DCT BTO

e) Traffic arriving in MROC:
- PIXEN DCT LIB
- TUGET DCT LIB
- ANIKO DCT LIB

For any question, please contact:

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EDE (SDR) AT FIR SANTO DOMINGO

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AIC
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USO FLEXIBLE DEL ESPACIO AÉREO
FLEXIBLE USE OF THE AIRSPACE

En apoyo de los operadores de aeronaves, como contribución para ayudar en la reducción del costo operativo, el Instituto Dominicano de Aviación Civil (IDAC) ha decidido implementar el "uso flexible del espacio aéreo" dentro de la FIR Santo Domingo, permitiendo el uso DCT en la Casilla 15 del Plan de Vuelo, sin perjuicio del cumplimiento de los procedimientos de navegación y evitando las áreas Prohibidas, Restringidas y Peligrosas.

In support of aircraft operators, such as contribution to help reduce operating costs, the Instituto Dominicano de Aviación Civil (IDAC) has decided to implement the "flexible use of airspace" within the Santo Domingo FIR, allowing the use of DCT in Box 15 of the Flight Plan, without prejudice compliance with navigation procedures and avoiding Prohibited, Restricted and Dangerous areas.

En tal sentido se podrá proceder de la siguiente manera:

In this sense, you can proceed as follows:

Sobrevuelos:
Usar los puntos de notificación publicados para ingresar o salir de la FIR.

Overflights:
Use published waypoints for entry or exit of the FIR.

Llegadas:
Dentro de la FIR, DCT podría terminar en el punto de notificación donde inicia la STAR.

Arrivals:
Within the FIR, the DCT could end at the waypoint where the STAR initiates.

Salidas:
El inicio del DCT podría aprobarse a partir del último punto de notificación de la SID.

Departures:
The start of the DCT could be approved as of last reporting point of the SID.

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

a) Review of air navigation priorities in the CNS field.
b) CNS Implementation. Progress of the Subgroups.
c) GREPECAS project for the management of aeronautical frequencies.

3.1 Under this agenda item the following papers were discussed:

N°	Title	Presented by
WP/3.1	CNS priorities and work plan 2024	Secretariat
WP/3.2	Activities carried out in the INTEROP TF Subgroups	Secretariat
WP/3.3	AIDC update and improvements in Peru *(Spanish only)*	Peru
WP/3.4	PAPI calibration using drones	FRACS/Heliper
WP/3.5	ADS-Implementation	Uruguay
WP/3.6	ADS-B Implementation in CAR/SAM Regions	IATA
WP/3.7	Implementation of Digital– Automatic Terminal Information Services (D-ATIS) and Datalink Departure Clearance (DCL) in International Airports of the CAR/SAM Regions	IATA
IP/3.1	Current status of interconnection of the AIDC system in Paraguay	Paraguay
IP/3.2	CNS Implementation	Guyana
IP/3.3	ADS-B implementation in Brazil *(Spanish only)*	Brazil
IP/3.4	Development of activities and processes on the mitigation of duplicity/multiplicity and errors related to FPLS and associated messages *(Spanish only)*	Peru

Review of air navigation priorities in the CNS field

3.2 The Workshop/Meeting participants noted that the SAM Region Implementation Group (SAM/IG) is comprised of two main groups: the GESEA (SAM Airspace Study and Implementation Group) which is a group mostly composed of air traffic experts, developing the analyses, studies and implementation of airspace infrastructure in the SAM Region; and the Interoperability Task Force Group (INTEROP TF) to support and promote air navigation services modernization initiatives and ensure interoperability between the automated systems used by AIM, ATM, ATFM, CNS and MET users.

3.3 It was also stressed the importance that those responsible in the SAM States for the implementation of CNS/ATM systems, mainly the Directors of Air Navigation and associated personnel, be very clear about the priorities established for the SAM Region, as far as CNS implementations are concerned.

Network Infrastructure - National ATN

3.4 The concept of the Aeronautical Telecommunications Network (ATN) consists of the interconnection of several networks implemented at the national, regional and global level. Since the

adoption of the Internet Protocol Suite (IPS), ATN implementation has gained momentum due to the large number of commercially available products (COTS) compared to the ATN OSI version.

3.5 Regionally, the SAM States already have a network infrastructure, fully compliant with Doc 9896, known as the SAM Region Digital Network (REDDIG), providing the digital communication platform for the provision of air navigation services.

3.6 It is essential that the SAM States implement the national (domestic) communications network infrastructure, in accordance with the provisions of Doc 9896 - *Manual for Implementing the Aeronautical Telecommunications Network (ATN) using standards and protocols of the Internet Protocol Family (IPS), in order to ensure the interoperability of the implemented systems.*

AMHS Implementation

3.7 It was noted that AMHS implementation in the SAM Region is well underway and close to 100% completion. However, some relevant aspects should be taken into account by the SAM States as a priority:

- Modernization of AMHS systems: some States operate old systems that lack new functionalities needed in the current Aeronautical Messaging Service;
- Adaptation of user terminals for new message formats: the IWXXM format for OPMET messages is already in place and some States do not have systems that support the format;
- Migration of all AFTN users: all users (human and automated) must be migrated from the AFTN context to the AMHS context; and
- Definition of the strategy for implementing the AMHS/SWIM Gateway: the SAM States must define what strategy they will take regarding the implementation of the *AMHS/SWIM Gateway*.

ADS-B implementation

3.8 Workshop/Meeting participants were informed that several States have implemented ADS-B stations providing, in some cases, full coverage in the upper airspaces. However, only one airspace in the SAM Region uses ADS-B as a primary means of surveillance: the Macaé TMA in Brazil, to provide service for aircraft operating in the Campos-RJ oil basin.

3.9 Currently, 12 States in the SAM Region have ADS-B stations in place that can capture information from equipped aircraft flying in the airspace in the coverage area of these stations.

3.10 It is a priority for the States to take steps to integrate the information from ADS-B sensors in the automated centers and implement the capacity to analyze the information collected, in order to use it for planning and elaboration of performance indicators.

3.11 It is recommended that ADS-B implementation be carried out by a multidisciplinary group that involves and integrates technical, operational, safety, security, administrative, financial and legislative requirements for a successful implementation of ADS-B with a roadmap of concise implementation and a clear definition of roles and responsibilities.

3.12 This multidisciplinary group should include representatives from various segments of the aeronautical context (ANSP, IATA, aircraft operators, pilot and controller representatives, etc.) under the leadership of the civil aviation authority, establishing the main frameworks of the implementation process.

AIDC Implementation

3.13 The Workshop/Meeting participants noted that, in 2013, the civil aviation authorities of the SAM Region signed a commitment document (Declaration of Bogota), establishing objectives and targets to move forward with the implementation of systems necessary for the provision of air navigation services with greater safety.

3.14 The goal for establishing the AIDC was to have 100% implementation by December 2016. Currently, of the 77 planned communications, only 20 were operationally established.

3.15 It is necessary that the SAM States take effective measures to move forward with the AIDC implementation, in order to obtain the operational benefits and security provided by this functionality, available in the automated ATC centers.

Implementation of VoIP ATM

3.16 The Workshop/Meeting participants noted that the "Interoperability Standards for VOIP ATM Components" (EUROCAE ED-137) are already available and some SAM States already have systems (VCCS and telephone exchanges) capable of using VoIP technology and protocols.

3.17 It is essential that the SAM States plan the modernization of the voice systems used in the provision of air navigation services, so that the old technologies are gradually replaced by EUROCAE ED-137 compliant systems.

3.18 After deliberating on the subject, the participants of the SAM/IG/30 Workshop/Meeting agreed to activate the CNS/VoIP Subgroup, with the objective of surveying the VoIP capabilities implemented by the SAM States, prepare the Syllabus for the training to be contracted on "Interoperability Standards for ATM VOIP Components (EUROCAE ED-137)" and coordinate the establishment of the first voice communications based on EUROCAE ED-137 Standards, via REDDIG.

3.19 In this sense, the Secretariat will circulate a communication informing the activation of the CNS/VoIP Subgroup, so that the SAM States can designate members. **Action S30/12**.

INTEROP TF Work Plan 2024

3.20 Taking into account the defined priorities, the participants of the Workshop/Meeting deliberated on the activities to be carried out in 2024 by the INTEROP TF. **Appendix A** of this part of the Report presents the proposed activities of the INTEROP WG for 2024, for approval at the Coordination Committee Meeting of the Regional Technical Cooperation Project RLA/06/901 (Lima, 26 October, 2023).

CNS Implementation. Progress of the Subgroups

ATM/AIDC Subgroup

Establishment of the AIDC between centers using the same automation system.

3.21 The Workshop/Meeting participants noted that, based on **Action S29/11** of the SAM/IG/29 Workshop/Meeting Report, Brazil and Paraguay resumed AIDC testing between ACC Asuncion and ACC Curitiba, with support from the automated system manufacturer (Atech).

3.22 A teleconference was held on 25 August, 2023, when the coordinators of Brazil and Paraguay were defined for the establishment of the AIDC connection.

3.23 In addition, a visit was made from 15 to 21 October, 2023, to the two area control centers, by the ATM/AIDC Subgroup Rapporteur, accompanied by the CNS Officer of the SAM Office and an expert from the EASA EU-LAC APP regional cooperation project; with the objective of knowing more in detail the AIDC implementation situation between the centers and to advance with the pre-operational tests. As a result of this visit, it will be possible to develop recommendations and actions for the implementation, as well as to identify areas of harmonization that may be useful for all the States.

3.24 Paraguay presented NI/3.1, informing that pre-operational AIDC interconnection tests were carried out between 10 and 24 July of the current year. These tests had approximately 60% of successful coordination.

3.25 The coordination errors were analyzed by ATECH support, which has sent a summary of the solutions for these errors, which include corrections to the databases in both ACC's and also the need to modify the SAGITARIO surveillance system software in ACC Asunción. ATECH expects to upgrade to a new version of the SAGITARIO ATM in November 2023.

3.26 Based on Action **S29/12** of the SAM/IG/29 Workshop/Meeting Report, Brazil and Venezuela resumed AIDC testing between ACC Amazónico and ACC Maiquetía, with support from the automated system manufacturer (Atech).

3.27 A teleconference was held on 24 August, 2023, where the Brazilian and Venezuelan coordinators for the establishment of the AIDC connection were defined.

3.28 Likewise, on 24 August, 2023, Colombia and Venezuela resumed the AIDC tests between ACC Barranquilla and ACC Maiquetía which were 95% successful, having found that an error is generated when Barranquilla requests a coordination (CDN), since the CDN message sent from Indra's system to Atech's system contains fields 15 and 18, and the Atech system (SAGITARIO) only handles CDN messages with fields 10 and 14, a situation that indicates the need for Atech to adapt the system, in accordance with the current ICD guidelines, so as not to generate problems in the AIDC connection.

3.29 The participants were informed that, despite not using the same automated system, in a teleconference held in July, the intention was shared between Chile and Peru to start coordinations to initiate pre-operational tests between the FIR Santiago Oceánico and the FIR Lima. Subsequent meetings were held to define the activities to be carried out and the conditions for the tests, which should begin in October.

3.30 Other information provided was the holding of a tripartite teleconference on 25 July, 2023, which made it possible to share with the focal points of SCEL, SEGU and SPIM the many particularities identified in the automated coordinations, considering that the flow of transit in the Pacific involves, to a large extent, these three States. The participants shared their experiences, lessons learned and doubts on the use of the tool. Peru was able to share details on the recording of errors related to LRM 6 and LRM 7, which finally led to a commitment by the participants to analyze the data and implement appropriate mitigation measures.

3.31 Peru has submitted NE/3.3, with updated information on LRM 6 and LRM 7 errors, which also addresses the need for reinforced training of ACC LIMA and FDP staff.

ATM/FPL Subgroup

3.32 The Workshop/Meeting participants noted that, following the SAM Implementation Group Workshop/Meeting (SAM/IG/29), two virtual meetings of the ATM/FPL Subgroup were held in September. During these meetings, the focal points were briefed on progress related to the development of action plans to mitigate duplicity and flight plan errors. This progress aligns with the roadmap established for the centralization of flight plans in a single AMHS directorate.

3.33 At the virtual meeting on 26 September, 2023, some actions to be taken to mitigate flight plan errors and duplication were discussed:

- Error-inducing constraints;
- Suggestions for assessing capability and differences in automated flight plan validation systems;
- Outdated databases;
- Addressing AIP flight plans ENR 1.11;
- Syntax in box 15 of the FPL with respect to coordinates and their validation in the FDP; and
- Information exchange with the focal points of ICAO Groups and Subgroups that carry out activities related to EDE, UPR, FRTO, AIDC, FF-ICE.

3.34 It was noted that on 27 September, 2023, the Chilean and Peruvian Focal Points performed the exchange of messages with two flight plans with non-collective AMHS addressing. The results of these tests were satisfactory, allowing further evaluation of the effectiveness of single address configurations for the FPL.

3.35 Peru has presented IP/3.4, on the different inconsistencies that the Peruvian State has detected and is working on regarding duplicity/multiplicity and errors with flight plans and associated messages, both in the messaging systems and/or automated center.

3.36 The participants of the Workshop/Meeting considered it important that the ATM/FPL Subgroup work on the harmonization of the publication in the AIPs of the information related to FPLs and associated messages. **Action S30/13**.

3.37 It is also requested that the ATM/FPL Subgroup harmonize the nomenclature to be used for SIDs and STARs. **Action S30/14**.

3.38 Likewise, the participants of the SAM/IG/30 Workshop/Meeting have indicated that the ATM/FPL Subgroup should review and adapt the ACK and REJ message format of the ATM/FPL Roadmap document. **Action S30/15**.

3.39 It has been identified that, although the States of the Region use the AMHS system manufactured by Frequentis-Comsoft, and implement the CADAS User Agent (UA), they do not have uniformity in terms of capabilities and functionalities, due to the different versions of their systems. In this context, the collaboration of the Chilean focal point has been requested, who will once again present the system and functionalities, in an online (virtual) event, in order to carry out an exchange of information, share best practices and learn about the initiatives undertaken by each State to establish a centralized management of flight plans (**Action S29/15**).

3.40 The ATM/FPL Subgroup Rapporteur Mr. Jorge Zuñiga informed that, due to his appointment to new functions within the DGCA, these make it impossible to have an effective continuity in the coordination of the activities of the ATM/FPL Subgroup, putting for consideration of the

Workshop/Meeting Mr. Pablo Valenzuela from the State of Chile to assume the role of Rapporteur/Coordination of the ATM/FPL Subgroup. After a quick deliberation, the Workshop/Meeting approved the indication.

CNS/AMHS Subgroup

3.41 Workshop/Meeting participants noted that AMHS implementation is well underway in the SAM Region, with only 2 interconnections remaining between the centers listed below:

- Caracas COM Center (SVCA) - Curaçao COM Center (TNCC); and
- Georgetown COM Center (SYCJ) - Piarco COM Center (TTPP).

3.42 The first interconnection is pending the implementation of the new CANSNET network of the NAM/CAR States, so that the connection with REDDIG can be established through the Network-to-Network Interface (NNI) between the telecommunication providers of the two regional networks.

3.43 The second interconnection is being coordinated for more than two years and the connectivity requirements have already been met, with only the interoperability tests (IOT) and pre-operational tests (POT) remaining to make the interconnection operational. As the two centers already have other operational interconnections with other AMHS centers, it is estimated that the tests will be successfully completed quickly.

AMHS Virtual Workshop 2023

3.44 The Virtual Workshop 2023 was held from 25 to 27 September, 2023, with 91 registered participants from all the SAM States, except Suriname. The objective of the event was to review the concepts of the main e-mail protocols (SMTP and X.400), compare the characteristics and functionalities of the two protocols and recognize the importance of adopting the protocols developed in the context of the International Organization for Standardization (ISO) for the aeronautical context. Also, during the Workshop the SAM State information available on the Eurocontrol AMC web application was reviewed.

3.45 The Workshop material is available at the following link:
https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2023-RLA06901-VirtualAMHS

CNS/ANP Subgroup

3.46 The participants of the Workshop/Meeting noted that the CNS/ANP Subgroup was activated at the SAM/IG/26 Meeting (Virtual, 20-23 September, 2021), with the purpose of supporting the review of the information contained in Vol II of the CAR/SAM Air Navigation Plan, as well as providing support in the elaboration of Vol III of the CAR/SAM ANP, on CNS topics. Furthermore, after the activation of the GREPECAS Project for the CAR/SAM Regional Management of the Radio Spectrum for Aviation, the CNS/ANP Subgroup began to support the activities developed within the framework of this GREPECAS Project.

3.47 Regarding the updating of the information contained in Part III (CNS) of Volume II of the CAR/SAM ANP, a working paper will be presented during the GREPECAS/21 Meeting proposing the consolidation of the information with the CAR States, the adoption of new formats (electronic templates) for the CNS Tables and publication on the ICAO iSTARS/SPACE application web page, after approval by GREPECAS and completion of the Proposal for Amendment (PfA) process jointly by the Regional Offices (NACC and SAM).

3.48 It is recommended that the SAM States support the proposal to be presented at the GREPECAS/21 Meeting, to be held in Santo Domingo, 14 to 17 November, 2023, for the approval of a GREPECAS Conclusion. **Appendix B** to this part of the Report presents the draft conclusion to be approved by the GREPECAS/21 Meeting.

3.49 Another working paper will be presented at the GREPECAS/21 Meeting, dealing with the adoption of the Frequency Finder 2023 application as a tool for the management of VHF NAV (COM2 List) and VHF COM (COM3 List) frequencies. Likewise, it is recommended that the SAM States support the proposal to adopt the Frequency Finder 2023 application as a frequency management tool and consolidate the information in the application's database.

CNS/SUR Subgroup

Rapporteur of the CNS/SUR Subgroup

3.50 Due to the situation of Mr. Jorge Enrique Saltarín Sánchez's inability to continue with his functions as Rapporteur of the CNS/SUR Subgroup, the participants of the SAM/IG/30 Workshop/Meeting, deliberating on the matter, have approved the nomination of Mr. Giuliano Guzmán of Peru to assume the position of Rapporteur of the CNS/SUR Subgroup. The Secretariat will circulate the information among the SAM States. **Action S30/17**.

Exchange of aeronautical surveillance data between Chile and Peru.

3.51 The participants of the Workshop/Meeting noted that, during the coordination work to establish the exchange of secondary radar surveillance (SSR) data between Chile and Peru, of data from the Iquique and Arequipa sensors, the Peruvian representatives indicated that no progress was made due to the need to install a filter or converter for security reasons.

ADS-B Implementation

3.52 Brazil has submitted IP/3.3, detailing the ADS-B implementation in Brazil that will provide coverage of all continental airspace above FL 245, providing longitudinal separations of 5 NM.

3.53 Suriname has provided, through IP/3.2, information on ADS-B implementation, in addition to other infrastructure modernization initiatives and implementation of new systems (see item 3.66).

3.54 Uruguay has submitted WP/3.5, reporting the status of the implementation of the Automatic Dependent Surveillance System - Broadcasting (ADS-B) in Uruguay. ADS-B stations were installed in Carrasco, Durazno, Tacuarembó, and Salto. Also, an ADS-B/MLAT system was implemented at the Laguna del Sauce Airport (SULS), and when it starts operating, it will be possible to evaluate the system's capacity to operate with an operability similar to radar.

3.55 IATA has submitted WP/3.6, with the objective of following up on the proposals presented during GREPECAS/20 on ADS-B implementation, as well as presenting proposals for principles to be applied in ADS-B planning and implementation.

3.56 IATA urges States to adopt the following principles for ADS-B planning/implementation:

a) Use ICAO Circular 326 and the Six-Step Method (Doc. 9883) as guidance material in the ADS-B planning and implementation process;

b) Establish cost-benefit analysis and the development of a CONOPS as basic requirements for ADS-B planning and implementation;
c) Implementation of measurable operational and/or safety improvements as agreed upon by stakeholders;
d) Following an inclusive process of airline consultation prior to investments;
e) Follow principles of air navigation collection charges to ICAO users (Doc. 9082);
f) ADS-B should not be implemented as a redundant surveillance capability and, provided there is a positive business case, should replace radar or be used in non-radar airspace to enhance ATS surveillance.
g) The requirement for ADS-B OUT avionics equipment should be considered only for airspace where ADS-B is planned to be the sole ATS surveillance system.
h) Once ADS-B ground stations become operational, ANSPs should, in consultation with airlines, publicly and transparently establish a schedule for deactivating other surveillance infrastructure.
i) Performance requirements for ADS-B OUT should be consistent with ICAO Circular 326 and apply, to the extent possible, the existing ADS-B avionics available on board the aircraft.

3.57 Also, as a proposal, IATA suggests that studies be conducted by the CNS/SUR Subgroup of the INTEROP TF, with the support of ATM experts, of the separation minima that could be used when applying existing ADS-B avionics on board aircraft, using the information provided in ICAO Circular 326 as a guide. **Action S30/18**.

Working Table during GREPECAS/21 Meeting

3.58 The Secretariat has indicated to the participants of the Workshop/Meeting that during the GREPECAS/21 Meeting (Santo Domingo, 14-17 November, 2023), a working group will be formed to design a roadmap for the operational and effective use of ADS-B in the CAR/SAM Regions.

3.59 The SAM States are encouraged to participate in the working group to be held on 16 November, 2023, being important to have information from each State regarding the planning for operational establishment, space served, number of stations and coverage, fleet status in terms of aircraft baggage and adopted versions (version 0, version 1 and version 2) and regulations already published.

Space-based ADS-B data transmission via REDDIG II

3.60 It was reported that on 20 April, 2023, the connection via REDDIG II was established, through the MPLS nodes of Ilopango and Virginia, as one of the channels for providing the Space-based ADS-B service to COCESNA. The connection has proven to have a high availability and this indicates that any State that is part of the network can implement this service with Aireon, even with lower costs.

MET/IWXXM Subgroup

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

3.62 The exchange of OPMET information, in digital format, is part of the improvement area of the global data interoperability performance and systems of the *Aviation System Block Upgrades (ASBU)* program and is in line with the *SWIM - System Wide Information Management* concept.

3.63 The OPMET Regional Bank of Brasilia is the system responsible for receiving and sending operational meteorological information from the CARSAM Region (Caribbean and South America), complying with the standard recommended by the ICAO (International Civil Aviation Organization).

3.64 With the adaptations made to the Regional OPMET Data Bank (RODB) of Brasilia and the regional AMHS implementation, it is estimated that the implementation of the IWXXM format for the exchange of operational meteorological information will be significantly advanced in the States of the SAM Region during 2024.

3.65 A further update of the OPMET Bank should take place in 2024, when the new 2021-2 and 2023-1 versions of the IWXXM protocol, evolutions of IWXXM made available by ICAO, will be included.

Other CNS implementation topics

CNS Implementation in Guyana

3.66 Guyana has submitted IP/3.2 providing information on the modernization of infrastructure and implementation of new systems, which allowed for a significant improvement in the provision of air navigation services:

Cheddi Jagan International Airport (CJIA)
- Extension of the runway from 2,286m to 3,360m;
- Construction of new taxiways; and
- Expansion and modernization of the passenger terminal.

CNS Systems

- Enhanced CNS infrastructure providing uninterrupted ADS-B surveillance coverage for the entire Georgetown Flight Information Region (FIR) from FL 030 and above;
- ADS-B surveillance coverage extends to a minimum of 340 nautical miles from TIM above FL 300; and
- VHF communication coverage ranges from 150 nautical miles at FL 030 and above and extends to a maximum range of 320 NM at FL 300 and above.

3.67 To ensure smooth operations and raise awareness among air operators about improving CNS services in Guyana, the State plans to implement the following measures:

a) Collaborate with airline operators, industry associations and aviation stakeholders to provide detailed information on its CNS services;
b) Organize workshops, seminars and training sessions to familiarize airline operators with the new systems and procedures;
c) Update the communication channel for airlines to address queries and provide ongoing support;
d) Collect comments from airline operators to identify and address any operational challenges or operational concerns; and
e) Implement periodic updates and enhancements to the CNS systems based on user feedback and operational needs.

Calibration of PAPI using drones

3.68 The Workshop/Meeting participants received information provided by FRACS/Heliper (WP/3.4) on the implementation of the calibration of visual aids to navigation, in particular PAPI, using drones and the CAVOC method used by France Aviation Civile Services in partnership with Heliper which was certified by the French DGCA.

3.69 Operated by or with a technician skilled in the adjustment of visual aids, the CAVOC method makes it possible to instantly correct defects observed during calibration, adjust the PAPI and immediately perform a calibration to verify the operability of the device.

3.70 Since the system used is a small commercial drone to which software functions have been added, it is transportable and operable anywhere without any particular transportation complications.

3.71 Operated in accordance with the current regulatory framework for drone operations, it offers great flexibility of implementation without major constraints on aerodrome operation. This is especially true for aerodromes that are not equipped with ILS and are not subject to periodic in-flight inspections.

3.72 For ILS-equipped aerodromes, the implementation of drone calibration, currently under study, will be able to provide regular adjustments and maintenance to reduce the frequency of in-flight inspections while maintaining the required level of safety.

D-ATIS and DCL Implementation

3.73 IATA has submitted WP/3.7, with the objective of encouraging the deployment of Data Link Automated Terminal Information Service (D-ATIS) and Data Link Departure Clearance (DCL) at international airports for safer operations in the SAM Region, given the benefits including reduced pilot and controller workload and increased efficiency.

3.74 IATA has suggested that D-ATIS/DCL implementation at international airports be established as a requirement in both the CAR/SAM Regional Air Navigation Plan and the SAM/IG Work Plan, through the INTEROP TF and Subgroups.

3.75 In addition, IATA has indicated that disclosure of the availability of D-ATIS/DCL provision in relevant aeronautical information publications is recommended.

3.76 On the subject, a brief presentation was also made by SITA on the benefits provided by the implementation of D-ATIS and DCL, as well as the current trend of automation of control towers (TWR), enabling the management of several systems from the same operational position, improving the working conditions of controllers.

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APPENDIX A

Work Plan 2024 of INTEROP TF

Activities	Objetives / Deliverables	Tentative dates
SAM/IG/31 Air navigation implementation priorities considered in GREPECAS programs, VOL III Regional ANP and Regional initiatives.	Continue with implementation, execution and optimization activities under GESEA and Interop TF studies (5 days).	Lima, 20 to 24 May 2024
SAM/IG/32 Air navigation implementation priorities considered in GREPECAS programs, VOL III Regional ANP and Regional initiatives.	Continue with implementation, execution and optimization activities under GESEA and Interop TF studies (5 days).	Lima, 21 to 25 October 2024
SG CNS/VOIP/1 First Workshop/Meeting of the CNS/VOIP Subgroup.	• Survey of VOIP capabilities implemented by the SAM States; • Definition of the Syllabus for the training to be contracted on "Interoperability Standards for VOIP ATM Components (EUROCAE ED-137)"; • -Coordination for the establishment of the first oral communications based on the EUROCAE ED-137 Standards, via REDDIG (5 days).	Lima, 26 February to 1 March 2024
SG ATM/FPL/1 Second Workshop/Meeting of the ATM/FPL Subgroup	• Analysis of the indicators obtained with the application of the methodology adopted for the quantification of errors in flight plans; • Definition of a standardized format for inclusion of the information in the Aeronautical Information Publication (AIP) of the States that adopt the measures recommended in the ATM/FPL Roadmap; and • Review of the syntax of the routes by coordinates, to verify if it is accepted by the automated systems used, in order to provide more direct flights to aircraft operators, to save fuel. (4 days)	Lima, 5 to 8 March 2024 • 10 fellowships; and • Simultaneous interpretation
COM AMHS/5 Fifth Workshop/Meeting of Supervisors/Operators of	This is an event for exchange of information and experiences among the supervisors/operators of the COM AMHS Centers in the SAM Region. • Review of routing tables.	Lima, 19 to 22 April 2023

Activities	Objetives / Deliverables	Tentative dates
COM AMHS Centers of the SAM Region	• Review of Contingency Plans. (4 days)	• 10 Fellowships; and • Simultaneous interpretation if hybrid
Workshop/Training on AMHS/SWIM Gateway 2024	To train 25 representatives of the SAM States, mainly members of the CNS/AMHS Subgroup and CNS Inspectors, with knowledge on operation, specification and development of systems that implement the AMHS/SWIM Gateway function. (5 days)	Virtual, 6 to 10 May 2024 Contracting of the course for 25 participants
EUROCAE ED-137 2024 Workshop/Training on "Interoperability Standards for ATM VOIP Components" - ED-137	To train 15 representatives of the SAM States, mainly members of the CNS/VOIP Subgroup, with sufficient knowledge to establish oral communications in the aeronautical context, via REDDIG II, using the EUROCAE ED-137 standards.	TBD, 10 to 14 June 2024. • 10 Fellowships • Simultaneous interpretation • Contracting of the classroom course for 15 participants •
ADS-B CNS/SUR/1 Workshop/Training on collection, monitoring, analysis and use of information from ADS-B sensors.	To train 15 representatives of the SAM States, mainly members of the CNS/SUR Subgroup, with the ability to generate quality indicators and other parameters from ADS-B OUT sensors (5 days).	Lima, 1 to5 July 2024 • 10 fellowships • 1 ADS-B expert (COCESNA) • Simultaneous interpretation
ATM/AIDC 2024-1 and ATM/AIDC 2024-2 Local coordination to establish AIDC communication between adjacent control centers.	• Local coordination with adjacent international centers of the SAM Region (2 missions), to promote AIDC implementation. • Identification of the constraints that impede progress for the operational phase of AIDC communication; and • Preparation of a report with an action plan for the operational establishment of AIDC communication between the centers involved (5 days per mission).	Place: TBD Date: TBD (5 days) Place: TBD Date: TBD (5 days) 2 experts

APPENDIX B

<table>
<tr><td colspan="3">DRAFT CONCLUS9ON GREPECAS/21-XX</td><td colspan="2">Update of the information in Part III (CNS) of Volume II of the CAR/SAM Air Navigation Plan</td></tr>
<tr><td colspan="3">That:
the CAR/SAM States/Territories:

a) in coordination with the NACC and SAM Regional Offices, update the information in Part III (CNS) of Volume II of the CAR/SAM ANP.
b) assign ANP Focal Points for coordination with the Regional Offices;
c) adopt a new file format for the CNS tables.</td><td colspan="2">Impacto esperado:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Technical / Operational</td></tr>
<tr><td colspan="5">Why:
For Part III (CNS) of Volume II of the CAR/SAM ANP to be properly updated and published, so as to ensure the preparation and implementation of Volume III of the Plan on an adequate basis.</td></tr>
<tr><td>When:</td><td colspan="2">April 2024</td><td>State:</td><td>☒ Valid / ☐ Invalid / ☐ Concluded</td></tr>
<tr><td>Who:</td><td colspan="4">☒ CAR/SAM States/Territories ☒ ICAO NACC and SAM ☒ Other: COCESNA</td></tr>
</table>

Agenda Item 4: 2024 Work Plan of the SAM/IG and its Contributing Bodies

4.1 Under this item on the Agenda, the following note was analyzed:

N°	Title	Submitted by
NE/4.1	List of actions and conclusions by the meeting and work plan 2024.	Secretariat

4.2 The Workshop/Meeting analysed the status of progress of the Actions of SAM/IG/28 and SAM/IG/29, as well as validated the new Actions and Conclusions formulated in the deliberations of the GESEA and WG Interop groups. The overview of this report shows the Monitoring Table of SAM/IG actions, with the references and the corresponding follow-up.

4.3 Agenda Item 2 presents the Conclusions of this Workshop/Meeting, supported individually.

4.4 The 2024 Work Plans were agreed for the GESEA and the INTEROP, and were presented for analysis and corresponding support, during the Seventeenth Meeting of the Coordination Committee (RCC/17) of Project RLA/06/901, held from 1:00 p.m. on October 26. See report and documents of Meeting RCC/17 at the link:

icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2023-RLA06901-RCC17&t=1

4.5 The 2024 GESEA and INTEROP Work Plans are shown, respectively, in Appendices to the Agenda Item 2 and Item 3.

Agenda Item 5: Safety

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

N°	Subject	Presented by
WP/5.1	Result of the RVSM SAM airspace monitoring program 2022	Secretariat
WP/5.2	Coordination GTE and RAGS-PA	Uruguay
WP/5.3	Standardization and certification of technical knowledge for Air Traffic Controllers (ATCO) of the SAM Region	Chile

RVSM SAM Airspace Monitoring Program 2022

5.2 Under Working Paper WP/5.1, the Secretariat highlighted the safety assessment of RVSM airspace in the SAM region during the twenty-third meeting of the GTE. While the risk remains acceptable, three FIRs in South America had elevated levels in 2022. ATS (Code "E") coordination issues were highlighted as the main challenge, with 685 events in 2022. States were urged to promote strategies to reduce risk in high-level FIRs, automate inter-State communications (AIDC), and address technical failures that affect coordination.

5.3 The importance of training ATCO staff, especially for Supervisors, implementing more agile processes to address the bilateral investigation of events in the ACCs involved, as well as the high priority of covering VHF coverage and ATS surveillance gaps at transfer points between FIRs was highlighted. The implementation of multilateral actions and the updating of the RVSM database are key to improving operational safety.

5.4 The Workshop/Meeting requested the IATA Secretary and delegate to coordinate a presentation on airline FDX data, which can provide further details of events based on flight data for SAM/IG/31. **Action S30/11.**

5.5 Therefore, the following Conclusion was formulated;

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<table>
<tr><td>CONCLUSION SAM/IG/30-02</td><td colspan="2">Treatment of LHD events in ACCs, for mitigation and elimination of hotspot points</td></tr>
<tr><td colspan="2">What:

States, through actions of their Air Navigation Directorates/Managements/Headquarters, provide:

a) Follow-up on the results of the meetings of the GREPECAS Scrutiny Group – GTE, and follow-up on the implementation of its recommendations and conclusions;
b) Reinforce the training of ATS personnel and supervisors, and review the ATS/FPL procedures and manuals of the ACC sectors involved in the generation of LHDs;
c) Establish by means of LOA ATS the preliminary investigation within 48 hours of the LHD events, involving the two ACCs, in order to provide for immediate mitigation if necessary;
d) Implement, with high priority, all connections of the AIDC systems in the ACCs;
e) Close VHF communications and ATS surveillance coverage gaps at all air traffic transfer points between ACCs; and
f) Promote a culture of safety.</td><td>Expected Impact:

☐ Political/Global
☒ Inter-regional
☒ Economic
☐ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="3">Why: To reduce and eliminate LHD events, with special emphasis on those generated at the hotspots identified by CARSAMMA and the GTE. To enable the rapid implementation of elements for the optimization of Airspace.</td></tr>
<tr><td colspan="2">When: 2024 – 2026 period</td><td>Status: Adopted by SAM/IG/30</td></tr>
<tr><td colspan="3">Who: ☐ Coordinators ☒ States ☒ ICAO Secretariat ☒ ICAO HQ ☒ Other:</td></tr>
</table>

GTE and RAGS-PA Coordination

5.6 Uruguay explained that, at the last ICAO Assembly, the seventh edition of the GANP was presented, focusing on operational safety. GREPECAS and RASG-PA work to avoid duplication of efforts in regional aviation safety. Confidential data exchange was agreed to improve operational safety. Uruguay participated in the GTE meeting, where it was agreed to foster data sharing with PA-RAST. The Meeting agreed that it is essential to disseminate the information to the ANSPs/States and to work on the exchange of data, considering the linking of TCAS events with LHD registries, in addition to standardizing training based on performance indicators in the region.

CBT Instruction for ATCO Personnel

5.7 Chile, through Working Paper SAM/IG/30-WP/5.3, presented to the Meeting the need to establish a collaborative process that allows the homologation and certification of the technical knowledge of ATCOs in the SAM region, in order to initiate new training practices that promote the coordinated, continuous and updated training of professionals, through the Competency-Based Instruction and Evaluation (CBT) promoted by ICAO.

5.8 The scope of resolution A40-25 was reviewed (Pages II-51 and II-52, "Resolutions in force of the Assembly" as of October 7, 2022 – Doc 10184). Likewise, the set of LAR regulations, developed to date for the topics of Instruction. The SAM Region should aim to maintain the desirable levels of security with a view to a national, regional and global ATM system of excellence and seamless, which will provide greater fluidity and dynamism to global aviation, allowing the skills of Air Traffic Controllers to be adapted to the dizzying evolution of CNS/ATM systems and support services.

5.9 It was analyzed that the growth of air operations, the increase in workload, and the permanent technological innovation represents a challenge regarding the incorporation of new knowledge and skills for ATCO personnel and ATM support services/platforms. The current approach to the human factor was addressed in the context of the implementation of CNS and ATM improvements for air navigation. At the same time, it was recognized that the regional working group of Civil Aviation Training Centers (CIAC) is also addressing this matter, therefore, it would be very productive to establish contact with this group to contribute with studies and deliverables.

5.10 The Meeting agreed on the great importance of this issue, identifying that a diagnosis of the shortages in the SAM Region is required, as well as the formulation of programs for the standardization of instruction, allowing the evaluation and certification of ATCO personnel in the Region. In this regard, an ad-hoc group (GADHOC CBT – ATCO) of the SAM/IG was activated under the Rapporteurship of Chile and with the support of Brazil and Uruguay, to work collaboratively with the States and the CIAC group, in initiatives that promote performance-based instruction for ATCO personnel and, in progressive development, for the technical operational staff of the ANS services. The ad-hoc group will be in contact with the Secretariat and should report its progress to SAM/IG/31. **Action S30/12.**

Agenda Item 6: Global Air Navigation Plan (GANP) seventh edition and GREPECAS commitments for the CAR/SAM Regional Plan, Operational concept for UAS air traffic management (CONOPS UTM) and Other Business

6.1 Under this agenda item the following notes were presented:

N°	Title	Presented by
WP/6.1	Safety indicators of GANP	Uruguay
WP/6.2	Implementation of Volume III of the Regional Plan - ANP CAR/SAM	Secretariat
WP/6.3	Integration of activities on the management of the UAS air traffic	Secretariat
WP/6.4	Uruguay at global summit on gender equality in aviation	Uruguay
IP/6.1	The new European Conformity Assessment framework for ATM/ANS ground equipment	EASA
IP/6.2	Propuesta brasileña para CITEL sobre el punto 10 (tema 2.9) del orden del día de la CMR-23 (Spanish only)	Brazil
IP/6.3	Propuesta del sistema de comunicación AVAYA como medio coordinación alterno ATS (Spanish only)	Venezuela

GANP Safety Indicators

6.2 Under working paper WP/6.1 Uruguay highlighted the updating of the seventh edition of the GANP. Uruguay participated in the international ATM performance indicators course, delivered in CGNA Brazil. The course stressed the importance of indicators for assessing safety. Brazil works in several key areas of performance, and the Controller Operational Index was emphasized. The four new safety performance indicators of the GANP that were introduced are:

- KPI 20 - Number of Plane Crashes
- KPI 21 - Number of forays on the track
- KPI 22 - Number of Track Outputs
- KPI 23 - Airprox Number/TCAS Alert/Loss of Separation/Near-Air Collisions/Airborne Collisions (MAC)

6.3 The Workshop/Meeting reached consensus to prioritize the use of these indicators for planning and control in airspace management.

Volume III of the Regional Plan - ANP CAR/SAM

6.4 The progress made in the management of Volume III of the CAR/SAM Regional Air Navigation Plan (RANP) was analyzed, with a summary on performance-based planning. See **Appendix A** to this part of the Report.

6.5 The CAR/SAM region has developed initial competencies for the formulation of the Tables in Vol. III. Work has been made with States, Organizations, ANSPs and, in a basic way with the Industry. The Secretariat supported the preparation of Tables required in steps 1 and 2.

6.6 On the development of step 3, the Secretariat considered the need to strengthen the management of KPIs by Administrations with the assistance of the Regional Offices a key. This should be a scalable process that can be initiated with the collection of air traffic demand data, and take-off/landing times versus estimated times, as well as off-socket and off-shimmer hours, compared taxiing times for departure and arrival, flow of operations at an airport, comparison of planned flight and actual flight, etc.

6.7 Based on the definition of KPI, transitional targets should be established for these indicators, in other words, initially it will be very difficult to agree on improvement goals for the indicators. A practical proposal would be to agree on *minimum* goals for the indicator and at the same time, observe for a period (between 1 and 2 years) the performance of the KPI involved. Note that some implementations are in progress in CAR/SAM, including the ASBU APTA and FRTO modules. At the same time, during the aforementioned period, it would be improving the management of indicators in the States.

6.8 Step 4 refers to the deployment of the planning, leading to the selection of the ASBU elements in terms of solutions that meet expectations for improvement. In this step, it should be recognized, again, that there are implementations in progress. Planning for Step 4 would be carried out in a *top-down approach,* with the assistance of the Secretariat.

6.9 Step 5 would be the responsibility of States/Organizations that carry out the implementation of the ASBU or, in the case of an implementation that is already in process, analyze whether an implementation in progress needs to be strengthened.

6.10 Step 6 of the approach will be to assess the achievement of the objectives and targets of the implementation, however, the first few years would initially be considered transitional goals, as set out in paragraph 2.13 above.

6.11 To date, most States are in the process of preparing for the formulation of KPI baselines. As a result, in version 0 of the ANP, Tables PMP III-4 and PMP III-5 have included data provided by four (04) States. Therefore, in order to move forward with Volume III, it is necessary to relaunch tasks for the fulfilment of step 3 by the States.

6.12 Issues identified during the process:

- Understanding of the relevance of the ANP CAR/SAM Regional Plan as an instrument for global planning and for the establishment of international responsibilities, and of the relationship of the Regional Plan with the law for the establishment of aeronautical charges.

- Lack of cooperation between the State air navigation planning body and the data providers that are necessary for the formulation of KPIs. In some cases, both depend on the same administration, however, the delivery of data is not facilitated.

- Insufficient resources, knowledge and/or technology to manage *simple indicators and* complex *indicators* (e.g. KPI17 and KPI19 need to be automated).

- Need to improve the cost-benefit analysis in the decision-making process for the implementation of elements of improvement in the air navigation area.

- Reorient regional planning to introduce the six-step method as a reference for GREPECAS, so that it can be verified that the agreed improvement elements for air navigation deliver the expected results. Identify the tools needed by NACC and SAM Offices to appropriately assist in this goal.

6.13 Specific challenges faced in the effective implementation of Volume III were identified, so that it becomes a management tool for performance-based planning. The Workshop/Meeting confirmed its commitment to support GREPECAS in the face of the challenges of effectively implementing Volume III of the ANP CAR SAM.

CONOPS UTM

6.14 Through Working Paper WP/6.3, the Operational Concept for the Air Traffic Management of Unmanned Aircraft - CONOPS UTM was presented, which was developed by SRVSOP specialists, with a view to identify actions for study, development and improvement of the document, as well as the application of its fundamentals, when States need to prepare basic regulations and/or need to design (or redesign) their airspace.

6.15 This CONOPS is not intended to propose or endorse any specific UTM system design or technical solutions to meet the UTM challenge. Its main objective is to provide a comprehensive framework for such a system. In this sense, the information contained in this CONOPS proposes a common set of guiding principles and enabling actions.

6.16 Consensus was reached to undertake specific tasks for the future development and implementation of the CONOPS UTM, through the participation of the SAM/IG experts, if possible nominating additional specialists from the States so as not to increase the current workload of the GESEA and GT Interop contributing groups. Consequently, the Workshop/Meeting formulated the following Conclusion;

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<table>
<tr><td>CONCLUSION SAM/IG/30-03</td><td colspan="2">Activities for the future implementation of Air Traffic Management for UAS (UTM)</td></tr>
<tr><td colspan="2">What:
States, through actions of its Air Navigation Directorates/Managements/Headquarters, nominate groups of ATM/CNS specialists and define activities to:

a) participate in the activities of the SRVSOP on the development of the CONOPS UTM and the regulatory set LAR 100 – 101 – 102;
b) Support SAM/IG and its contributing bodies in the preparation of Manuals and Technical Guides for the UTM;
c) conduct regional training activities on UTM, UAS/RPAS; and
d) Periodically report to SAM/IG on access to airspace by UAS/RPAS, as well as advances in the use of UAS/RPAS in the calibration of navigation aids and other air work applications.</td><td>Expected Impact:

☐ Political/Global
☐ Inter-regional
☒ Economic
☒ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="3">Why: It is necessary to initiate activities of regulatory entities and ANSP providers to establish foundations for the implementation, in the medium to long term, of Air Traffic Management for UAS (UTM). Likewise, establish collaboration with the SRVSOP on this matter.</td></tr>
<tr><td colspan="2">When: 2024 - 2026</td><td>Status: Adopted by SAM/IG/30</td></tr>
<tr><td colspan="3">Who: ☒ Coordinators ☒ States ☒ ICAO Secretariat ☐ ICAO HQ ☒ Other: SRVSOP</td></tr>
</table>

6.17 In addition, the Workshop/Meeting included a webinar on UTM in the 2024 Work Plan. See GESEA's agenda in **Appendix A** to Question 2.

Gender Equality

6.18 Under working paper WP/6.4, Uruguay highlighted the holding of the 2nd World Summit on Gender Equality in Aviation 2023 in Madrid, Spain, with face-to-face and online participation. The summit addressed gender inequality in aviation, highlighting that only 6% of positions are held by women. The importance of attracting female talent to senior management roles was emphasized. The agenda highlighted the key role of aviation in global sustainable development.

6.19 In Uruguay, there are legal regulations that support equal opportunities regardless of gender. Actions are suggested to address cultural stigmas, increase female participation, and reject inequities. The 1st Permanent Action of the SAM/IG was ratified, which calls for working with the Aviation

Authorities to keep them informed of the progress of the implementation promoted by SAM/IG, and to follow up on the attention to the priorities in the ATM and CNS fields.

Information submitted

The new European assessment framework in compliance with ATM/ANS equipment

6.20 The EASA representative presented IP/6.1 on the new European ATM/ANS equipment conformity assessment framework, aimed at improving interoperability and harmonization in Europe for ATM/ANS equipment and manufacturers, through a new regulatory, certification and supervision framework for terrestrial ATM/ANS equipment.

6.21 The new framework streamlines the certification of ATM/ANS equipment and strengthens EASA's role as the certification authority for both airborne and ground-based ATM/ANS equipment, ensuring that both are designed and produced in a consistent manner.

6.22 The new regulatory framework and associated technical material (acceptable means of compliance, guidance material and certification specification) provide the detailed requirements and specifications for ATM/ANS systems and their constituents (hardware, software and any tangible objects on which interoperability depends).

6.23 The new standards became effective in September 2023, and the certification and declaration requirements will be fully implemented in September 2028. Until then, legacy equipment is considered provisionally compliant and will be evaluated by EASA, and service provider declarations of conformity will be sufficient for modified and new ATM/ANS equipment.

6.24 Third country organizations intending to sell equipment on the EU market must also comply with the relevant requirements (to ensure both compliance with the essential requirements and a level playing field).

Brazilian proposal for CITEL on WRC-23 agenda item 10 (subject 2.9)

6.25 Brazil has submitted IP/6.2 dealing with Brazil's contribution to item 2.9 of the preliminary agenda of the 2027 World Radiocommunication Conference (WRC-27), constant in item 10 of WRC-23, which was presented at the 42nd meeting of PCC.II of CITEL, from 28 August to1 September, 2023.

6.26 Globally, the band 1 300-1 350 MHz (and in many countries also the band 1 215-1 300 MHz) is widely used for primary surveillance radars, both for en-route and terminal surveillance tasks, mainly providing independent and non-cooperative forward airspace surveillance for air traffic control and national defense.

6.27 Although Resolution 250 (WRC-19) states that sharing and compatibility studies in the 1 300-1 350 MHz frequency band should ensure the protection of existing services to which the band is allocated on a primary basis, studies to date have not demonstrated any potential compatibility with systems operating in this band, therefore, there is great concern about a new WRC-27 agenda item considering a new allocation of the mobile service to the 1 300-1 350 MHz frequency band that could cause harmful interference to these existing radar systems and has the potential to harm public safety.

6.28 Taking into account the potential risks to aviation, Brazil proposed the deletion of item 2.9 of the preliminary agenda of WRC-27.

6.29 The proposal presented by Brazil at the last CITEL meeting was supported by 6 other administrations, elevating the document to the status of Inter-American Proposal (IAP) for WRC-23, i.e., it will be the official position of the CITEL region (Americas) at WRC-23.

Proposal of the AVAYA communication system as an alternative means of ATS coordination.

6.30 The representatives of Venezuela presented IP/6.3 which deals with the solution adopted for oral communications between Cúcuta APP (Colombia) and the Táchira's TWRs, Santo Domingo, and La Fría in Venezuela.

6.31 The solution adopted takes advantage of the VoIP (Voice over IP) capabilities of the AVAYA telephone exchange in Bogotá, through Internet connections, to implement extensions in remote locations.

6.32 Venezuela has expressed its intention to acquire a similar system to optimize ACC SVMI's internal communications, initially with the airports of Los Roques, Canaima, and other remote airports that require constant coordination and in the future VOZ-IP communications with Aruba, Curaçao, San Juan de Puerto Rico and Colombia.

APPENDIX A

Progress in the management of VOL III of CAR/SAM RANP

See WP/6.2 – SAM/IG/30:
https://www.icao.int/SAM/Documents/2023-RLA06901-SAMIG30/SAMIG30_WP6.2%20IMplemet%20VOL%20III%20ANP.pdf)

1.1 In November 2012, the Twelfth Air Navigation Conference (AN-Conf/12) formulated Recommendation 6/1 - Regional Performance Framework - Methodologies and planning tools related to the alignment of Regional ANPs (RANP) with the fourth edition of the Global Air Navigation Plan (GANP[1] - Doc. 9750). The result was the adoption of the Regional Air Navigation Plan (ANP) format in April 2014, which included changes to the regional ANPs with a new three-Volume structure and improvements to format and content, as detailed:

A. Volume I of the ANP contains stable elements whose amendment requires approval by the Council such as the allocation of responsibilities to States for the provision of:
   - ✓ aerodromes
   - ✓ air navigation facilities and services
   - ✓ additional requirements specific to the region and not covered by SARPs.

B. Volume II should contain the dynamic elements of the plan, the amendment of which does not require Council approval (approval is by regional agreement of the relevant PIRGs), referring to:
   - ✓ the allocation of responsibilities;
   - ✓ mandatory requirements subject to regional agreement; and/or
   - ✓ additional requirements specific to the region and not covered by the SARPs.

C. In Volume III[2], the dynamic/flexible elements of the plan are stipulated providing implementation planning guidelines for air navigation systems.

Three GANP Frameworks

1.2 Since 2020 in the Secretariat's assistance activities for the development of Vol. III, it has been difficult to distinguish the following three GANP frameworks:

1 BBB Framework: Basic Building Blocks
2 ASBU Framework: Aviation System Building Blocks Improvements
3 GANP Performance Framework

1.3 Since the approval of the 7th edition of the GANP in 2022, 4 new Key Performance Indicators (KPIs) on the key performance area "Operational Safety" have been added, which allow

[1] https://www4.icao.int/ganpportal/
[2] *The template for Volume III was approved by the ICAO Council in June 2014.*

measuring/monitoring the implementation of certain elements of the *Operational* thread of the ASBU framework[3].

1.4 The 7th edition of the GANP also clarifies how to manage the BBB framework and how to verify it, thus establishing a practical link between the Global Plans; the GANP and the Global Aviation Safety Plan (GASP - Doc. 10004).

1.5 In summary, the GANP Seventh Edition and the GASP 2023-2025 Edition converge on the following concepts:

- The BBBs stipulated in the GANP and GASP form an independent framework, and not a block of the ASBU framework.
- The BBB framework does not represent an evolutionary step, but a reference. This reference is defined by the essential services agreed by States under the Convention on International Civil Aviation for the safe and orderly conduct of international civil aviation. In accordance with the approved format and content of the ANP, the data linked to the BBB are set out in Volume I and Volume II which describe the essential services mentioned above.
- The ASBU framework defines a set of operational improvements within some areas of the air navigation system that the aviation community agreed to work on in order to maintain or improve system performance (ASBU wires).
- An ASBU element is a specific change in operations aimed at improving the performance of its air navigation system under specific operational conditions.

1.6 Finally, the GANP Performance Framework is composed of: the catalog of Performance Objectives, the definition of 23 KPIs, and a tool for "Air Navigation System Performance Assessment (AN-SPA)".

Volume III of the CAR/SAM ANP and Performance-Based Planning

1.7 Volume III *unfolds* the 6-step methodology of performance-based planning that stipulates an iterative process, always within the ASBU framework and the respective performance framework covering, to date, four KPAs: Efficiency, Capacity, Predictability, and Safety[4].

1.8 The six steps of the iterative process (see figure 1) are:

Step 1: Define/examine scope, context and overall ambitions/expectations.
Step 2: Determine opportunities, problems and set objectives (performance ambitions)
Step 3: Quantify objectives (with KPIs baselines and based on performance improvement targets)
Step 4: Determine solutions (from the ASBU framework[5]) to exploit opportunities and solve problems
Step 5: Implement solutions (from the ASBU framework)
Step 6: Evaluate achievement of objectives (measure/monitor progress of KPIs according to formulated goals)

[3] *The ASBU Framework is divided into three main threads; Operational, Information and Technology.*

[4] *There are seven other KPAs for which indicators will be developed*
[5] *Theoretically, non-ASBU solutions are also considered.*

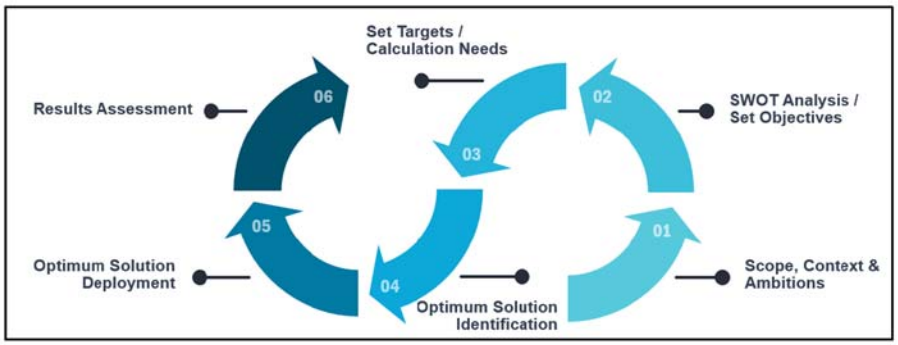

Figure 1

1.9 The CAR/SAM Regions have initiated activities for the preparation of Volume III since 2020. In this process, through workshops and teleconferences, improvement opportunities have been identified for the template text and for the Planning Tables, including proposals for new columns and clarifying texts, in order to associate them with the GANP concepts, as well as to facilitate the interaction of planners with the tools (tutorials, catalogs, scorecards, AN-SPA, etc.) provided on the GANP website.

1.10 GREPECAS/20 (Brazil, November 2022) through Conclusion GREPECAS/20/07 adopted the initial version (version 0) of Volume III of the CAR/SAM ANP, and following actions for the management and development of performance-based planning.

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