



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

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

**ANALYSIS AND SUMMARY OF THE GESEA GROUP AND FORMULATION OF
CONCLUSIONS FOR CONSIDERATION BY THE PLENARY SAM/IG/29**

(Presented by the Secretariat)

SUMMARY	
This working paper presents a summary of the deliberations carried out by GESEA on the 1st, 2nd and 3rd days of session, and an extract from the report of the work of technical subgroups reflected in the working papers and information papers submitted for the Meeting.	
References: • Final Meeting Report SAM/IG/24 (Lima, November 4-8, 2019). • Final Meeting Report SAM/IG/25 (Virtual, 2-4 November 2020). • Final Meeting Report SAM/IG/26 (Virtual, September 20-23, 2021). • Final Meeting Report SAM/IG/27 (Virtual, 31 May to 3 June 2022) • Final Meeting Report SAM/IG/28 (Lima, October 3-7, 2022)	
ICAO's Strategic Objectives:	<i>A – Safety</i> <i>B – Air Navigation Capacity and Efficiency</i>

1. Introduction

1.1 According to the agenda agreed by SAM/IG/29, two and a half days of meetings of the GESEA technical team were held, together with States, Industry and Organizations.

1.2 The subgroups SG1 Airspace Planning, SG2 PANS OPS and SG3 ATFM, presented, with the support of the Secretariat and the delegates, the progress of their work in task groups and/or in Workshops / Meetings, while new deliverables and Job Cards were presented.

1.3 Proposals were made for future activities to optimize the air space and implementation of elements for improvement linked to operational drivers of the GANP. States also submitted proposals for improvements to GESEA processes and reported on their progress. Discussion of question 5 of the "Other Matters" Agenda is included.

1.4 GESEA and subgroups, as well as States, submitted working papers and information papers. This material can be found on the Meeting's website at the link:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2023-RLA06901-SAMIG29&t=1>

1.5 The following table presents the working and information papers presented;

WP/2.1	Activities of SG1 – Airspace Planning	Secretariat
WP/2.2	Regional Guide on Implementing Airspace Concepts	Brazil
WP/2.3	Capacity and efficiency for air navigation	Secretariat
WP/2.4	Activities of SG2 PANS OPS	Secretariat
WP/2.5	Update on the work of GESEA Subgroup 3 (SG3 ATFM)	Secretariat
WP/2.6	ATFM Workshop in Brazil	Brazil
WP/2.7	ATFM Portal for the SAM Region	Brazil
WP/2.8	Brazilian Technical Cooperation (DECEA) for the restructuring of Uruguayan airspace and its optimization	Uruguay
WP/2.9	DCT Routing Strategy for the SAM Region	IATA
WP/2.10	ATFM Strategy for the SAM Region	IATA
WP/2.11	Optimization of airspace in Brazil	Brazil
WP/2.12	Report on the activities of the Instrument Flight Procedures Panel (IFPP)	Brazil
NI/2.1	Advances of the GT ATFM cross-border - SG3 ATFM – GESEA (<i>Spanish only</i>)	Rapporteur of the GT ATFM XB
WP/5.1	Flight and flow information for the cooperative environment (FF-ICE)	Brazil
IP/5.1	Gender Equality Commitment DINACIA (VIDEO)	Uruguay
IP/5.2	Air risk mitigation measures due to the implementation of 5G frequencies in Brazil	Brazil

2. Analysis

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

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

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

- i. Implementation of AIDC and AMHS. Management of flight plans. Interoperability;
 - ii. availability of CNS systems that ensure ATS surveillance coverage, including Radar/ADS B data sharing initiatives for the adjacent airspace between the FIR's, as well as improvements in pilot-controller communications; and
 - iii. promulgation of ATS Contingency Plans.
- c) Promotion of the ATFM Operations Plan and implementation of ATFM services, according to the fases of the Regional Guide;

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

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

SG1 ACTIVITIES - AIRSPACE PLANNING

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

Improved Operations Through Optimized Road Trajectories (FRT0)

2.6 SG1 activity related to the implementation of Strategic Direct Routing and User-Preferred Routes (UPR) should be designated as Enhanced Operations through Optimized Route Trajectories (FRT0) to be aligned with the Global Air Navigation Plan, as well as include preliminary studies of the implementation of Free Route Airspace (FRA). in its acronym in English).

2.7 At SG1/4 Brazil made two presentations related to the FRT0 implementation that are in the TEAMS channel of GESEA – SG1. In the EDE/FRA presentation, the status of the project to implement the EDE and FRA concepts in the Brazilian ATM System was shown.

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

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

2.10 As future actions, the delegates of Brazil have informed that they will insert the UPRs in the AIP Brazil, in a similar way to the one already done with the preferential and alternative routes, indicating that the routes can be found on the official AIM website of Brazil (<https://aisweb.decea.mil.br/?i=espaco-aereo&p=playbook>).

2.11 Mexico has prepared a presentation on the implementation of the EDE in Mexican airspace involving 9 airlines, which can be found in the TEAMS channel of GESEA. The Delta Airlines representative has made a presentation on the UPRs coordinated directly by the airline with the ANSPs involved, which include Bolivia, Chile, Colombia, Ecuador, Paraguay and Peru and approved some routes until 31 DEC 2023, such as, for example, ATL-EZE-ATL, ATL-LIM-ATL and ATL-SCL-ATL. This presentation can be found in the GESEA TEAMS channel. The presentation also provides some examples of benefits achieved in the following UPRs, as well as projections for one year:

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

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

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

Strategy for FRTTO

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

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

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

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

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

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

Activities generated in GREPECAS/20. Airspace optimization

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

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

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

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

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

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

2.24 See this item in Question 1 of the agenda.

Airspace Planning; Regional documentation and training.

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

- a) Prepare an airspace planning manual for the SAM Region containing, in its first part, the harmonized techniques for organizing the airspace structure (trajectories, airspaces, FUA, PBN concept, etc.);
- b) Develop and deliver a workshop on airspace planning for specialists from the States of the SAM Region presenting harmonized techniques for the organization of airspace structure (trajectories, airspaces, FUA, PBN concept, etc.);
- c) Prepare, as the second part of the manual, the text on the implementation of airspace concepts, containing harmonized guides and good practices in this area;
- d) Develop a training course for specialists in the SAM Region on airspace planning and project management of airspace concepts.

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

<https://oaci.sharepoint.com/:f:/r/sites/SAMIG-Grupodeimplementacin/Shared%20Documents/General/SAMIG29%20mayo%202023/Material%20apoyo?csf=1&web=1&e=X9xWAA>

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

ATS Contingency Plans.

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

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

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

2.31 The Secretariat reported on participation in the Third NAM/CAR Meeting for Contingency and Emergency Planning held at the NACC office in the week of 8th May. The results of the "tabletop" exercise on contingencies in the Caribbean region were detailed. During this exercise, the importance of closer coordination between the border States of the Caribbean and South American regions was identified in order to harmonize contingency plans, and to be able to respond better to any situation. One of the

important points that was addressed during this exercise is about the means of communication that should be used in contingencies, and the importance of these means working properly so that contingency plans are adequate.

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

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

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

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

Upcoming WGs and SG1 meetings

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

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

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

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

Job Cards on SG1 activities

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

Strategic Objective(s)	Studies for the implementation of Enhanced Operations Through Optimized Road Trajectories (FRTTO), including CNS/ATM enablers and the optimization of longitudinal separation in continental space.	Reference: SG1/EA PLAN/ 02/2023
Strategic Objective(s)	a) Develop regional guidance material on criteria for the efficient and safe use of ATS LOAs. Establishing its content, application, validity and subscription process, for the standardization of this document in the States of the SAM Region. b) Development and strengthening of contingency planning for the SAM Region including interoperability with the Caribbean Region. c) Formulate integrated ATM/CNS Contingency Plans.	Reference: SG1/EA PLAN/ 01/2023
Strategic Objective(s)	Formulation and development of the Airport Efficiency Program	Reference: SG1/PLAN EA/ 03/2023

2.39 The States were in favor of the Job Cards formulated and contributions were received from Venezuela, Panama and Ecuador. When these contributions were incorporated and based on what was analyzed in previous paragraphs, the consensus of the Meeting was obtained for the deployment of the three Job Cards and, for this purpose, the Coordination of GESEA and SG1, with the support of the Secretariat, was requested to detail and adjust their work plans and keep the SAM/IG informed of their progress with the three initiatives. (**ACTION 01**)

SG2 Activities - PANS OPS

2.40 SG2 – PANS OPS is coordinated by Mr. Diego Gamboa (Argentina). On April 10, 2023, this subgroup held a preparatory meeting to adjust the agenda of the fourth SG2 PANS OPS Meeting (GESEA/SG2/4 - Virtual) that has been convened for June 6 and 7, 2023. The Secretariat made the presentation to SAM/IG.

2.41 The information presented by France at the RAAC/17 Meeting (Santiago, Chile, from 10 to 14 April 2023) was reviewed. The note "PBN implementation in France: a return experience" analyzes some operational safety incidents that are attributed to errors in the altimeter setting during the execution of Baro VNAV procedures. France suggests that one way to mitigate these incidents is to accentuate the use of SBAS, whose procedures for vertical guidance do not necessarily depend on the aircraft's altimeter. It was reported that RAAC17 failed to identify a tangible risk to the region from such incidents, nor did it adopt France's approach. SG2 PANS OPS has taken note and will continue to monitor the issue.

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

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

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

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

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

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

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

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

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

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

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

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

- Know the dynamics of work and internal functioning of the ICAO panels;
- Know the main issues under development by the IFPP and its prioritization of work, which would allow anticipating actions and lines of work in the SAM Region;
- Exchange of knowledge and clarification of doubts and various queries;
- Interact with the panelists, strengthening professional ties that can be very useful in future consultations on PANS-OPS technical aspects;
- Greater alignment with ICAO standards, principles and recommendations, as well as international best practices;
- Projection of the SAM Region in the "PANS-OPS universe" and of ICAO itself.

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

Flight procedure designs for airspace optimization

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

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

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

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

PHASE 1: implement procedures in SUMU, SULS and SUAA. (concluded October 2022)

PHASE 2: implement SID/STAR terminal area Carrasco concept CDO CCO. (second semester 2023)

PHASE 3: implement other airport procedures. (second semester 2024).

SG3 ACTIVITIES- ATFM

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

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

2.59 The next steps of the DOCS ATFM Task Force include maintaining the process of monitoring the measurement and declaration of capacities in the countries of the Region, promoting and

supporting it when necessary, as well as conducting a second round of the regional ATFM Survey and verifying opportunities to update the Guide and the CAP Manual (including models of Declaration of Capacity, PDA and Post-Operations Report).

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

<https://app.powerbi.com/view?r=eyJrIjojYWZlMDNINzUtYjE3OC00ZjllLWFlYmMtNzhiNGE2MGE4YTMlIiwidCI6IjI2MjI4ZGNhLTcwZDMtNDkxNy04MjMzLTQ4M2FjMzY1NWE5MSJ9>

2.61 In the Dashboard, it was described which indicators are available in the Operations Plan, according to the following;

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

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

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

ATFM Strategy

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

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

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

Short term (2023/2024)

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

Medium term (2025-2027)

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

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

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

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

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

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

Proposal to implement a regional ATFM portal

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

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

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

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

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

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

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

2.77 On this matter, the Secretariat reported that in the scope of analysis of SG3 and the task groups, some concerns had been expressed about the aspect of interoperability of the projected portal with respect to other platforms, taking as an example the case of Colombia that required tools for future ATFM *cross-border* work with adjacent services in the Caribbean region.

2.78 At the same time, the importance of the neutrality and security of the tool was highlighted as it will be of operational use. It must have a unique tool specific to the Region, that is, that meets their specific needs. In addition to these aspects, IATA identified that the ATFM portal can have great potential for operational solutions in the implementation of UPRs, FRT0 and other ATMs. The example of the 'DASA' portal in Brazil was mentioned.

2.79 The Meeting took note of what had been analyzed and expressed a favorable opinion on the proposal of the ATFM portal, however, in view of the concerns that have been generated in the initial analysis and given the relevance of the proposal that entails the use of resources, training requirements, equipment and costs to be determined, the need for coordination and consultation at the level of the Member States of RLA/06/901 through written communication was recognized. In this way, if consensus is obtained,

a clear mandate would be generated to move forward with the portal project. The Secretariat was instructed to coordinate the aforementioned actions before RLA/06/901 no later than June 2023. **(ACTION 05)**

ATFM Training

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

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

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

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

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

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

Other GESEA matters

2.86 The Work Plan approved in SAM/IG/28 was reviewed, and the dates of these events were confirmed, according to the review of the GESEA Plenary in coordination with RLA/06/901. The reactivation of face-to-face activities in the Regional Office is taken into account. See **Appendix E**.

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

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

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

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

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

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

2.92 It was reported that, in November 2021, the Brazilian National Telecommunications Agency (ANATEL) held the 5G auction that established the range of 3,300-3,700 MHz for the implementation of IMT/5G systems. To ensure the continuity of safe air navigation operations, DECEA held meetings with ANATEL, with the aim of identifying restrictive measures to 5G systems that guarantee the safe operation of radio altimeters, during the period of development of a new regulation and consequent modernization of radio altimeter equipment. ANATEL published the Act. No. 9064/2022, establishing the rules for antenna beams, pointing limit, maximum powers, etc.

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

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

Other matters for SAM/IG

2.95 The Meeting agreed to observe peremptory deadlines for the submission of the Notes and documents of subsequent SAM/IG meetings to the Secretariat. Project RLA/06/901 and the Regional Office have a broad set of activities (several are carried out simultaneously) for the whole year, and must plan in detail the attention and support of events within defined task deadlines. At the same time, Meeting documents should be available sufficiently in advance to allow delegates to study them to define their positions on each note. The Meeting therefore expressed its commitment to meeting deadlines to be indicated in the letters of convocation. **(2nd PERMANENT ACTION)**

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

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

2.98 The availability of tools on the UN WOMEN website (WEPS TOOL - <https://weps-gapanalysis.org/>) was outlined, which facilitates the implementation of a survey of women's participation in civil aviation organizations, air navigation providers, airports, airlines, etc. The Meeting agreed to make an ongoing effort to promote women's participation in all areas of SAM/IG and its support groups. **(3rd PERMANENT ACTION)**

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

<https://www.navisam.aero/reddig/>

<https://navisam.aero/rla06901/>

3. Suggested Action

3.1 The Meeting is invited to:

- a) Take note of the activities and deliverables provided by GESEA subgroups; and
- b) if consensus is reached, approve the Plans, Conclusions and Actions formulated in this note and its appendices.

APPENDIX A

GT FRTO ACTION PLAN

Activity	Responsible	Start Date	End Date	State	Obs
Monitor the Implementation Status of UPRs in the SAM Region	SG1/GESEA	May 23	TBD	In progress	
Monitor Strategic Direct Routing Implementation Status in the SAM Region	SG1/GESEA	May 23	TBD	In progress	Implemented in the Amazon FIR, Guayaquil, Georgetown and Recife. Implemented in most of the FIR Brasilia, Curitiba and Maiquetia. Implemented in portions of the Lima and Santiago FIR.
Monitor FRA Implementation Status in the SAM Region	SG1/GESEA	May 23	TBD	In progress	Implemented in a portion of the FIR Cayenne.
Set goal for EDE and FRA implementation in the next 5 years	SG1/GESEA	May 23	July 23	In progress	Reference: NE/47 RAAC/17 – IATA
Implement Strategic Direct Routing in airspaces where feasible	States	May 20	Nov 23	In progress	
Develop aeronautical publication model for EDE implementation	Julio Pereira Fernando Hermoza	May 20	July 20	Finalized	
Develop aeronautical publication model for UPRs implementation	Julio Pereira	May 23	July 23	In progress	
Develop a model/guide for Safety Assessment for FRTO B0/1 Implementation.	Fernando Hermoza	May 20	July 20	Finalized	
Develop a safety case based on the new operational scenario with the use of the UPR and EDE	SG1/GESEA	May 23	TBD	In progress	

Activity	Responsible	Start Date	End Date	State	Obs
Develop an educational brochure to disseminate the EDE concept for CTAs and Pilots, ARO Officers.	Rosana Baru	May 20	July 20	Finalized	
Develop a communication plan for FRTO implementation (UPR, EDE and FRA)	SG1/GESEA	May 23	TBD	In progress	
Update the operational agreement letters for the implementation of the EDE (Cross Border)	States	May 20	TBD	In progress	
Establish the requirements for implementation of FRTO B0/1 and B1/1 (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT FRTO	May 20	TBD	In progress	
Evaluate the implementation status of the requirements for FRTO B0/1 and B1/1 implementation (ATS Surveillance Coverage, VHF Coverage, MTCD, Trajectory Monitoring)	GT FRTO	May 23	TBD	In progress	
Establish key performance indicators.	Julio Pereira	May 20	TBD	In progress	
Develop Direct Routes Implementation Guide Material (EDE and UPRs)	GT FRTO	April 21	TBD	In progress	It will be supported by the RLA/06/901 project
Propose Intraregional UPRs (SAM Region)	IATA/Airlines	01 April 21	TBD	In progress	
Evaluate Intraregional UPRs	States	01 April 21	TBD	In progress	
Develop evaluation process of Interregional UPRs	GT FRTO	01 April 21	TBD	In progress	
Meeting WG FRTO/1 enablers ATM/CNS	Julio Pereira Fernando Hermoza	June 20 and 21 (13:00-16:00 UTC)		In progress	
WG FRTO/2 Meeting enablers ATM/CNS	Julio Pereira Fernando Hermoza	August 22 and 23 (13:00-16:00 UTC)		In progress	
WG FRTO/3 Meeting enablers ATM/CNS	Julio Pereira Fernando Hermoza	December 12 and 13 (13:00-16:00 UTC)		In progress	

APPENDIX B

FRTTO strategy proposed by IATA

Short term (2023/2024)

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

Medium term (2025-2027)

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

Risks, challenges and interdependencies

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

APPENDIX C

PBN IMPLEMENTATION PROGRESS IN TMA IN BRAZIL

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

APPENDIX D

Proposal of didactic content of the ATFM Workshop offered by Brazil

- 1.1 Section 1: Implementing ATFM
 - Doc. 9971;
 - ATFM Implementation Manual for SAM Region; and
 - ATFM structure.
- 1.2 Section 2: ATFM Strategic Phase
 - Notions of airspace planning (optional routes and direct routes); and
 - Capacity/Demand Analysis - Analysis of Airspace and Airports with related events.
- 1.3 Section 3: ATFM Pre-Tactical Phase
 - Pre-tactical processes;
 - Analysis of special events in Airports and Airspace;
 - Demand analysis and capacity review and upgrade;
 - Analysis of Meteorological Events with Capacity Impacts; and
 - Construction of the PDA;
- 1.4 Section 4: ATFM Tactical Phase
 - Applicability of PDA;
 - Demand and Capacity Analysis;
 - Meteorological Analysis;
 - Monitoring the operability of systems with respect to capacity;
 - Adoption of ATFM measures; and
 - Reports for post-operation analysis.
- 1.5 Section 5: Postoperative analysis
 - Analysis of operational trends or opportunities for improvement;
 - Research of the future cause and effect relationship of ATFM measures, to assist in the selection and development of future actions and strategies;
 - Collect additional information to optimize the efficiency of the ATM system, in general or for ongoing events;
 - Generation of analysis of indicators, statistical reports and feedback of the phases of the ATFM.

APPENDIX E

Integrated Work Plan 2023 - GESEA

	Activities	Dates	Objectives / Deliverables
FEBRUARY	GT XB ATFM	VIRTUAL, 14 a 15 February	VIRTUAL
	GT PLAN DCB ATFM	VIRTUAL, 27 February	VIRTUAL
MARCH	GESEA Plenary Meeting/6	Virtual, 1 to 3 March <u>Ojo 1400 – 1700 UTC</u>	Organization of the implementation of concepts according to deliverables of Subgroups 2022 Review and adjustments of the PTA. Follow-up of activities.
	Meeting GESEA SG3 ATFM GESEA/SG3/6	Virtual, <u>23 and 24 March</u>	Continuation of scheduled studies. Monitoring of implementation activities and optimization of the ATFM service.
APRIL	Runway System and ATC Sector Capability Course ATM044 and ATM 045	- Phase 1; virtual from April 3 to 14; - Phase 2: practice, FACE-TO-FACE, Rio de Janeiro, April 17 to 28.	Participants trained in performance-based demand and capacity monitoring of the ATC and airport sectors
	GT DOCS ATFM	Virtual, 10 April	Virtual
	READY. SG2 PANS OPS	Virtual, 10 April 0830 am	Virtual Review tasks and REV. Doc 9613, DTFM, etc.
	Development of regional guidance material on airspace planning regulations – Airspace implementation projects	Lima, April 17-28	Publication of Material on project management of implementation / optimization of airspace.
	GT XB ATFM	Virtual, April 17-18	
	GT PLAN DCB ATFM	Virtual, 20 April	VIRTUAL
MAY			
	Meeting GESEA SG1 /4 Airspace Planning	Virtual, May 3-5	Continuation of scheduled studies.

			Monitoring of implementation and optimization activities.
	GT DOCS ATFM	VIRTUAL, 8 MAY	VIRTUAL
	GT XB ATFM	VIRTUAL, 9 May	VIRTUAL
	SAM/IG/29 Air navigation implementation priorities considered in GREPECAS, VOL III ANP Regional programs and Regional initiatives.	Lima, May 15-19 FACE	Monitoring of the activities of Implementation and execution and optimization under the studies of GESEA. Support for the Management of the Regional Plan ANP CAR-SAM Vol. III.
JUNE	GT PLAN DCB ATFM	VIRTUAL, 5 June	VIRTUAL
	GT PLAN/LOA ATS	VIRTUAL, 5 June	VIRTUAL
	Meeting GESEA SG2 /4 PANS OPS	Virtual, June 6 and 7	Continuation of scheduled PANS OPS studies. Monitoring of implementation activities operational elements of the APTA module. Optimization of the IFPD service.
	GT DOCS ATFM	VIRTUAL, 12 JUNE	VIRTUAL
	Workshop/Meeting for the SAM Region on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in the ATM.	Lima, June 19 to 23	Analysis of the FUA implementation. Planning based on the operational element FRTO-B0/2 of the ASBU. Dissemination and analysis of the new ICAO document 10088.
	GT XB ATFM	VIRTUAL, 22 to 23 June	VIRTUAL
JULY	ATM Performance Indicators Course	Rio de Janeiro, from July 3 to 14.	It will also address the methodology and application of the GANP ATM performance indicators.
	GT PLAN/LOA ATS	VIRTUAL, July 3	VIRTUAL
	ATS Contingency Exercise (TableTOP)	VIRTUAL, 17 and 18 July	VIRTUAL Table TOP

	GT XB ATFM	VIRTUAL, 19 and 20 July	VIRTUAL
	GT PLAN DCB ATFM	VIRTUAL, July 31	VIRTUAL
AUGUST			
	GT PLAN/LOA ATS	VIRTUAL, 7 August	VIRTUAL
	GT DOCS ATFM	VIRTUAL, 14 AUGUST	VIRTUAL
	2nd Workshop for Airspace Planners – Airspace Implementation Projects.	Mission: Preparation of didactic material. Lima, August 14 to 25 Workshop: Lima, August 21-25 TBD	At least one planning specialist per Member State trained in airspace organisation and design techniques – ASM.
	GT XB ATFM	VIRTUAL, 16 to 17 August	VIRTUAL
SEPTEMBER			
	SG3/7 GESEA	4 and 5 September	VIRTUAL
	GT PLAN/LOA ATS	VIRTUAL, 04 September	VIRTUAL
	GT DOCS ATFM	VIRTUAL, 11 SEPTEMBER	VIRTUAL
	2nd Workshop/Meeting on ATFM Data Management and Regional Indicators	Lima, September 18-22	Standardization of ATFM data. Analysis of demand forecasts and indicators. Power BI app for regional and country analytics.
	SG1 X 5	25 26 27 SEPTEMBER	
OCTOBER	GT PLAN DCB ATFM	VIRTUAL, October 2	VIRTUAL
	GT PLAN/LOA ATS	VIRTUAL, 2 October	VIRTUAL
	Workshop/Meeting of the Working Group on ATFM Crossborder SAM (GT XB)	Lima, October 9-13	Planning of the implementation of the Crossborder ATFM, according to SAM Implementation Guide, based on intra-regional scenarios. Analysis of deliverables of the GT XB.
	GT DOCS ATFM	Virtual, 16 October	Virtual
	SAMIG/30	Lima, October 23-27	Monitoring of the activities of

	Air navigation implementation priorities considered in GREPECAS, VOL III ANP Regional programs and Regional initiatives		Implementation and execution and optimization under the studies of GESEA. Support for the Management of the Regional Plan ANP CAR-SAM Vol. III.
<i>NOVEMBER</i>	GT PLAN/LOA ATS	VIRTUAL, 6 November	VIRTUAL
	GT DOCS ATFM	Virtual, 13 November	Virtual
	Development of regional guidance material on implementation of the FRTTO module, and EDE and UPR concepts (AORRA). Also FRA and ROADMAP.	Lima, November 20 to December 1. 2 weeks.	Development of regional guidance material. This subject requires the support of an expert, given the complexity of the subject of enablers and relationships with other elements of the ASBU.
	GT PLAN DCB ATFM	VIRTUAL, 27 November	VIRTUAL
<i>DECEMBER</i>	GT PLAN/LOA ATS	VIRTUAL, 4 December	VIRTUAL
	GT DOCS ATFM	Virtual, 11 December	Virtual
	GT FRTTO	12 and 13 December	Virtual