



Agenda Item 2: Report of activities of GESEA and Subgroups

b) ATM implementation. Progress of the Subgroups

SG1 - AIRSPACE PLANNING ACTIVITIES

(Submitted by Secretariat)

SUMMARY

This paper aims to present the activities and progress of SG1 - GESEA Airspace Planning.

References:

- SAM/IG Meetings
- GESEA/6 Meeting

1. Background

1.1 The Airspace Study and Implementation Group – GESEA has a subgroup 1, dedicated to Regional Airspace Planning activities (SG1- Airspace Planning). From May 3 to 5, 2023, SG1 held its fourth Working Meeting (GESEA/SG1/4), to monitor and adjust the activities of the subgroup, based on the mandate of GESEA/6 and SAMIG/28. The SG1 Coordinator is Mr. Julio Pereira (IATA).

1.2 The Job Cards that are part of the SG1 work are under development with contributions from the specialists of the subgroup. Available at the following link:

https://oaci.sharepoint.com/:f/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/GESEA%20PLENARIO/GESEA_6%20MAR%202023/2.%20Material%20reunion/JOB%20CARDS%20encargo%20SAMIG28%20drafts?csf=1&web=1&e=js4e7d

1.3 The following paragraphs discuss the SG1 issues in progress, according to the outcomes of GESEA/SG1/4.

2. Analysis

2.1 In order to organize the Work Plan of SG1, GESEA/SG1/4 analyzed the progress of the initiatives and deliverables developed by SG1, while agreeing on the tasks to be executed in 2023 for the implementation of the elements of optimization of airspace and ATM, which are projected in the respective Job Cards, as described below;

Improved Operations Through Optimized Road Trajectories (FRTO)

2.2 The meeting was of the opinion that GESEA/SG1 activity related to the implementation of Strategic Direct Routing and User-Preferred Routes (UPR) should be designated as Enhanced Operations Through Optimized En-Road Trajectories (FRTO) to be in line with the Global Air Navigation Plan, as well as including preliminary studies of the implementation of the Free Route Airspace (FRA, in its acronym in English).

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

- Timeframe of EDE implementation in Brazil with the following main dates:
 - Provisional implementation (NOTAM) in the Amazon and Recife FIR – June 2020
 - Definitive Implementation (AIP) in the Amazon and Recife FIRs – 25 March 2021
 - Final Implementation (AIP) in the FIR Brasilia and Curitiba – April 21, 2022

2.4 This presentation also 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.

2.5 The 2nd presentation made by the delegates of Brazil aims to show the methodology applied in the implementation and use of the UPRs, which in Brazil 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 demands 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.

2.6 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>

2.7 The representative of Mexico has made a presentation on the implementation of the EDE in Mexican airspace involving 9 airlines, which can be found in the TEAMS channel of GESEA. The meeting was informed about the procedures applied to the DTS, which were based on those published by Brazil, which in turn used the material developed by GESEA/SG1 as a reference. To date, the benefits achieved by the EDE tests in Mexico reach approximately 500 tons of fuel and 1.6 tons of CO₂. For phase 2 of the project, SENEAM has developed a flowchart that will guide the progress in the EDE in Mexico, which will include its application in the entire airspace at night and H24 in "Super High Airspace", above FL 410.

2.8 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 fuel/1363 ton CO2

2.9 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.

2.10 The action plan has also included a key activity for the advancement of EDE implementation towards FRA, which is the need to assess 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 experts from the SAM/IG Interop WG and will also include the requirements for the implementation of the longitudinal separation of 20/10NM.

2.11 The meeting discussed the indicators to be considered in the FRTTO project. In principle, the indicators of the World Air Navigation Plan are the most appropriate for this purpose. However, there are still few ANSPs that have the necessary information to obtain such indicators. In this way, the GT FRTTO should seek to use the indicators of fuel consumption, time and flight distance of the airlines to consolidate the benefits of the FRTTO implementation.

Activities generated in GREPECAS/20. Airspace optimization

2.12 The Secretariat reported that the GREPECAS/20 Meeting held in Salvador, Brazil, between November 15 and 18, 2023, approved Decision 20/01 defining the following actions for the Secretariat:

"That:

a) The Secretariat review and amend the A1 Projects of the CAR and SAM Regions, originally defined in GREPECAS for the implementation of the PBN, with the purpose of including in their scope the development of concepts for the optimization of airspace, based on the operational modules of the GANP for enhanced arrival/departure operations (APTA) and improved operations through optimized route trajectories (FRTTO), as well as other Regional initiatives.

"(b) The Secretariat includes in these revised projects the participation and input of organizations, users and stakeholders."

2.13 The modification of the scope of the A1 project of GREPECAS and will take into account the implementation of initiatives that are currently underway in GESEA, mainly Subgroup 1, referring to the APTA module (implementation of PBN, CCO/CDO) and the FRTTO module (EDE, CIIFRA, UPR), so as to avoid duplicating efforts or delaying the deliverables of these initiatives. In a second phase, the feasibility of integrating, in a scalable way, other modules that contribute to the efficiency of navigation, for example "Cooperative separation - CSEP", could be studied. 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.

2.14 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.

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

- interoperability of CNS infrastructure, systems and services;
- provision of timely and quality aeronautical and meteorological information;
- efficient management of flight plans;
- ATS contingency plans promulgated and harmonized between adjacent ATS units;
- ATCO staff training;
- safety analysis as required at implementation stages; and
- active participation of ANSPs, airlines, industry and users.

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

2.16 See separate note in Agenda item 1.

Airspace Planning; Regional documentation and training.

2.17 See separate note in Agenda item 2.

ATS Contingency Plans.

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

2.19 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 considered 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 listed below:

- Material published in Spanish/Portuguese (Brazil) and English based on the MCATS/SAM model
- Harmonization of procedures applied by crews and dissemination by simplified specific means.

- Development of Regional Contingency Plan
- Accentuate activities with the CAR Region.

2.20 The Meeting agreed to name the Task Force "Contingency Plans and ATS (**PLAN/LOA ATS**)" and the list of specialists who will support this activity was updated. Ms. Debora Kuc (Argentina) remained in the coordination of the WG. In addition, the meeting agreed that it would be necessary to execute a *tabletop exercise* and a simulated practical training on the new contingency plans, which should also be coordinated by the WG.

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

2.21 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 because almost the entire fleet flying in Chilean airspace has GNSS and would be eligible for RNP2 approval.

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

Upcoming GTs and SG1 meetings

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

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

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

2.25 Regarding the GT PLAN/LOA ATS, monthly meetings will be held on the first Monday of each month.

3. Suggested actions.

3.1 The Meeting is invited to:

- a) analyse the information provided and make comments and/or suggestions to support or optimize the work of SG1 this year;
- b) analyze and approve the Job Cards prepared by SG1; and
- c) analyze and approve the Action Plan of the FRTO WG.

APPENDIX A

GT FRTO ACTION PLAN

REV. 05 MAY 2023.

| Activity | Responsible | Start Date | End Date | status | Obs. |
|---|-----------------------------------|------------|----------|-------------|---|
| Track the Implementation Status of UPRs in the SAM Region | SG1/GESEA | May 23 | TBD | In progress | |
| Track Strategic Direct Routing Implementation Status in the SAM Region | SG1/GESEA | May 23 | TBD | In progress | Implemented in the FIR Amazonica, Guayaquil, Georgetown, and Recife. Implemented in most of the FIR Brasilia, Curitiba and Maiquetia. Implemented in portions of the Lima and Santiago FIR. |
| Track FRA Implementation Status in the SAM Region | SG1/GESEA | May 23 | TBD | In progress | Implemented in a portion of the FIR Cayenne. |
| Set goal for EDE and FRA implementation in the next 5 years | SG1/GESEA | May 23 | Julio 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 | Mayo 20 | July 20 | Finalized | |
| Develop a safety case based on the new operational scenario with the use of the UPR and EDE | SG1/GESEA | May 23 | TBD | In progress | |
| Develop an educational brochure to disseminate the EDE concept for CTAs and Pilots, ARO Officers. | 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 | |

| Activity | Responsible | Start Date | End Date | status | Obs. |
|---|-----------------------------------|------------------------------------|----------|-------------|--|
| 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, MTCO, 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, MTCO, 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 abril 21 | TBD | In progress | |
| Develop evaluation process of Interregional UPRs | GT FRTO | 01 abril 21 | TBD | In progress | |
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| Meeting WG FRTO/1 ATM/CNS Enablers | Julio Pereira Fernando Hermoza | 20 y 21 June (13:00-16:00 UTC) | | In progress | |
| WG FRTO/2 Meeting ATM/CNS Enablers | Julio Pereira Fernando Hermoza | 22 y 23 August (13:00-16:00 UTC) | | In progress | |
| WG FRTO/3 Meeting ATM/CNS Enablers | Julio Pereira Fernando Hermoza | 12 y 13 December (13:00-16:00 UTC) | | In progress | |