



Agenda Item 3: Report on activities and deliverables of the GESEA and Subgroups

REDESIGN OF THE URUGUAYAN AIRSPACE AND IMPLEMENTATION OF UPR ROUTES TO ATTAIN FRA AIRSPACE

(Presented by Uruguay)

SUMMARY

This working paper presents the commitment to optimise airspace and implement free-route airspace according to the Global Air Navigation Plan, FRTO-B1/1

References:

- SAM/IG/29 report – Direct routing strategy for the SAM Region
- FRTO/6 GADHOC – SG1 – GESEA 26/3/2024
- Guidance material for implementation of enhanced operations through optimised en-route trajectories (FRTO)
- Doc 9750 – Global air navigation plan (GANP), seventh edition, 2022
- Performance-based optimisation of SAM airspace, CONOPS and roadmap, 2022

1. Background

1.1 The implementation of the SAM ATS route network versioning concept was approved at the SAM/IG/3 meeting (Lima, Peru, 20-24 April 2009). Its objective was to achieve integrated development, with a broader route network analysis, based on data on air traffic flow and fleet navigation capacity, aiming at the elimination of unused routes and the exclusion or reduction of "conventional" routes, in order to make way for RNAV-5 navigation in regional airspace above FL245.

1.2 At present, the use of fixed ATS routes alone can no longer provide the efficiency required for airspace users to achieve fuel savings and CO2 emission reductions. Airspace optimisation involves the implementation, in the short and medium term, of enhanced operations through optimised en-route trajectories (FRTO), as defined in the Global Air Navigation Plan (GANP).

1.3 In the course of 2020, work began bilaterally between Uruguay and Argentina to define the necessary changes in Uruguayan airspace in response to the new design of the Baires terminal. This new design offers a substantial improvement in terms of safety, efficiency and fuel savings for the trajectories to be followed within the Baires terminal.

1.4 In line with these premises, Uruguay proposes that the trajectories to be followed within its airspace should be adapted to this new scenario. With the guidance and support of DECEA experts from Brazil, new trajectories were studied at meetings held for joint analysis of opportunities for improvement.

1.5 As part of this new design, a proposal was received from DELTA AIRLINES for the study and subsequent implementation of a new UPR route for its daily flights to New York and Atlanta, in order to reduce flight time and improve efficiency.

2. Discussion

2.1 A study was carried out of the design of the Baires terminal and the new entry points, which identified the need to realign routes, create new ones and decide on the sectors where a more detailed study of the impact on safety was necessary.

2.2 In parallel, the GESEA SG1 - FRTO GADHOC has been developing a regional guide for the implementation of enhanced operations through optimised en-route trajectories (FRTO), from which the following objectives were extracted:

- a. Enhance civil aviation safety
- b. Increase the capacity and improve the efficiency of the civil aviation system
- c. Encourage the development of a robust and economically-viable civil aviation system
- d. Minimise the adverse effects of civil aviation activities on the environment.

2.3 Cross-border trajectories have been proposed, following straight lines as far as possible, in order to achieve the objectives mentioned in the GANP – FRTO:

- Block 0: En-route trajectories are improved through the use of more direct routes and collaborative airspace management processes and tools. ATCOs are supported by tools for conflict identification and compliance monitoring.
- Block 1: Initial steps towards trajectory-based operations are presented by improving block 0 processes and system support or deploying new processes and system support where necessary.

2.4 The possibility of implementing a UPR cross-border route between the SBCW FIR (Curitiba) and the SUEO FIR (Montevideo) was studied in order to offer the user the option of a direct path for the SBGR/SBGL - SAEZ flow, which accounts for almost 66% of the air operations between Brazilian airports and the Baires terminal that cross Uruguayan airspace.

2.5 Within the enablers defined for the implementation of FRTO, Communications, Navigation, ATS surveillance, ATS services and AIDC automation, MTCD, AIM, FUA, ATFM, Human factors and training, some shortcomings were detected in the communications area, which are in the process of being solved, in the implementation of AIDC, in the updating of the ATS automated system, and above all in Human factors and training. The latter due to scarce trained ATC personnel, where the vast majority of hours must be devoted to operations in direct control posts, very limited for training.

2.6 Most of the national fleet operates in lower airspace, so there is no possibility to easily generate collaboration instances that allow CDM spaces between users and the ATSP for airspace planning, taking into account user needs and the subsequent feasibility study in *e.g.* flight simulators.

2.7 The proposed new routes for the Montevideo FIR derived from the analysis are presented below.

3. **Suggested action**

3.1 In order to promote the implementation of even more direct routes, additional UPRs, airspace optimisation and the implementation of an FRA airspace in the SAM Region by 2025 according to the objectives set out in GESEA SG1, it is proposed to the Meeting to continue working on:

- a) Reactivate the regional training *ad hoc* group;
- b) continue implementation of AIDC between States with support from ICAO; and
- c) share experiences of progress in the evolution of airspace towards FRA.

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