



**Agenda Item 2: Optimization of SAM airspace**

**STRATEGY FOR THE DEVELOPMENT OF STANDARDS AND  
TRAINING OF EXPERTS IN AIRSPACE PLANNING IN THE SAM  
REGION**

(Presented by Brazil)

**SUMMARY**

This Working Paper presents the emerging needs in terms of standards and training of experts in Airspace Planning in the SAM Region and proposes the creation of two Working Groups (GT), subordinated to Subgroup 1 (SG1) of the Study Group and Implementation of SAM Airspace (GESEA).

**1. BACKGROUND**

1.1 The SAM/IG/22 agreed the following main objectives for GESEA.

- a) Coordinate the implementation of SAM route versions;
- b) Harmonize the PBN implementation in the main SAM TMA, applying the best international practices;
- c) Support SAM States in the implementation of STAR, SID and PBN-based approaches;
- d) Coordinate the migration process of RNAV nomenclature to ICAO RNP;
- e) Develop a harmonized methodology for post-implementation evaluation, with the application of key performance indicators;
- f) Support the implementation of a regulatory framework for the instrument flight procedure design service;
- g) Share best practices in the design and publication of instrument flight procedures, with a view to increasing operational safety and flight efficiency.

1.2 The creation of GESEA could be considered a framework in the SAM Region, since there was no specific forum to deal with the Airspace Planning as a whole and the issue was being addressed in forums that mostly had a PANS-OPS and PBN approach.

1.3 There is an expectation of significant progress in various points related to Airspace Planning, especially regarding the development of standards and training of human resources, once the States of the Region do not have specific regulations with respect to the airspace planning activity, nor a specific training that allows raising the level of experts beyond PANS-OPS knowledge or Air Traffic Control.

## 2. **Development of specific rules related to Airspace Planning**

2.1 Airspace Planning in the ICAO world is an area stratified in several documents and there is no specific standard that encompasses all the necessary concepts, but there are specific rules of the FAA, EUROCONTROL and DECEA that include various criteria on this subject. They are:

- a) INTERNATIONAL CIVIL AVIATION ORGANIZATION – OACI. GLOBAL AIR NAVIGATION PLAN 2016 - 2030 DOC 9750 AN/963. Fifth Edition. 2016.
- b) INTERNATIONAL CIVIL AVIATION ORGANIZATION – OACI. MANUAL ON THE USE OF PERFORMANCE-BASED NAVIGATION (PBN) IN AIRSPACE DESIGN DOC 9992 AN/424. First Edition. 2013;
- c) INTERNATIONAL CIVIL AVIATION ORGANIZATION – OACI. PERFORMANCE-BASED NAVIGATION (PBN) MANUAL DOC 9613 AN/937. Fourth Edition. 2013;
- d) INTERNATIONAL CIVIL AVIATION ORGANIZATION – OACI. CONTINUOUS CLIMB OPERATIONS (CCO) MANUAL DOC 9993 AN/495. First Edition. 2013;
- e) INTERNATIONAL CIVIL AVIATION ORGANIZATION – OACI. CONTINUOUS DESCENT OPERATIONS (CDO) MANUAL DOC 9931 AN/476. First Edition. 2010;
- f) INTERNATIONAL CIVIL AVIATION ORGANIZATION – OACI. GLOBAL AIR TRAFFIC MANAGEMENT OPERATIONAL CONCEPT DOC 9854 AN/458. First Edition. 2005;
- g) INTERNATIONAL CIVIL AVIATION ORGANIZATION – OACI. MANUAL ON CIVIL-MILITARY COOPERATION DOC 10088. Draft Version. 2017;
- h) U.S. DEPARTMENT OF TRANSPORTATION. FEDERAL AVIATION ADMINISTRATION – FAA. Version 2.1. Airspace Management Handbook. 2004;
- i) EUROPEAN COMMISSION. EUROCONTROL. EDITION JUNE. European Route Network Improvement Plan. Part 1 – European Airspace Design Methodology – Guidelines. 2016;
- j) BRASIL. COMANDO DA AERONÁUTICA. DEPARTAMENTO DE CONTROLE DO ESPAÇO AÉREO - DECEA. ICA 100-44. Airspace Concept. 2017; y
- k) BRASIL. COMANDO DA AERONÁUTICA. DEPARTAMENTO DE CONTROLE DO ESPAÇO AÉREO - DECEA. MCA 100-19. Airspace Concept - Guidelines. 2019.

2.2 Based on Brazil's experience, it should have in mind that two points are essential and should be addressed in the airspace planning standards:

- a) The airspace planning process: Which are the phases that must be executed on the development of an airspace concept? Which are the stakeholders of the various areas involved; and
- b) Airspace Planning criteria that must be observed by experts on the occasion of the development of an airspace concept, - how the flight paths should be designed; how the ATC sectors should be implemented; how the simulations should be executed in fast and real time; what are the expected results in each one; which are the indicators that should be chosen in the performance measurement plan of the new airspace concept.

2.3 In this sense, this working paper proposes the creation of the Airspace Concept Working Group (GT CEA), subordinated to GESEA Subgroup 1 (SG1), to initiate the development of the South American Region's regulations related to Airspace Planning, observing the particularities of the Region.

2.4 The GT CEA would begin its work in 2020 with two meetings on the dates proposed below and videoconferences before and after them, with the aim of presenting the first version of the draft standards in SAM/IG/26:

- a) First Meeting (GESEA/SG1/GT CEA/1): from March 9 to 13, 2020; and
- b) Second Meeting (GESEA/SG1/GT CEA/2): from September 21 to 25, 2020.

### 3. **Training in Airspace Planning**

3.1 There are currently no specific courses in the region for training human resources in Airspace Planning, and the majority of the work related to the subject is conducted by PANS-OPS experts or Air Traffic Controllers. However, the development of an Airspace Concept requires specific technical knowledge such as those cited in literal "b" of item 2.2.

3.2 It is important to note that, in an environment where studies and projects are increasingly carried out through collaborative decision-making (CDM), the training of experts is important not only for the authorities but also for the professionals of the airports and airlines that can improve their contribution with the said studies and projects.

3.3 In this sense, this Working Paper proposes the creation of the Training Working Group on Airspace Planning (GT CPEA), subordinated to Subgroup 1 of GESEA (GESEA/SG1), to initiate the development of the training of experts from States, airports and airlines, as the case may be, based on the standards developed in the GT CEA.

3.4 The GT CPEA would begin its work in 2020 with two meetings on the dates proposed below and videoconferences before and after them, with the aim of presenting in SAM/IG/26 the structure of the course and the training program for the Region, starting on 2021:

- a) First Meeting (GESEA/SG1/GT CPEA/1): from April 20 to 24, 2020; and
- b) Second Meeting (GESEA/SG1/GT CPEA/2): from October 26 to 30, 2020;

### 4. **Conclusion**

4.1 Once the standards, the structure of the course and the training program have been approved in the SAM/IG/26, the SAM Region would be able to initiate training in Airspace Planning for its experts and professionals in airports and airlines, with based on their own standards, developed according to the particularities of the Region.

### 5. **Suggested Action**

5.1 The Meeting is invited to:

- a) Take note and review the information provided in this Working Paper;
- b) Discuss and approve the creation of the Airspace Concept Working Group (GESEA/SG1/GT CEA), subordinated to Subgroup 1 of GESEA;
- c) Discuss and approve the creation of the Training on Airspace Planning Working Group (GESEA/SG1/GT CPEA), subordinated to GESEA/SG1;

- d) Appoint rapporteurs and members of interested States and International Organizations for each of the proposed Task Groups;
- e) Discuss and approve the strategy of the Airspace Concept Working Group (GT CEA) proposed in item 2.4; and
- f) Discuss and approve the strategy of the Training on Airspace Planning Working Group (GT CPEA) proposed in item 3.4.

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