



ASSEMBLY — 41ST SESSION

TECHNICAL COMMISSION

Agenda Item 30: Aviation Safety and Air Navigation Policy

30.2 Latest developments related to the Global Air Navigation Plan (GANP)

**ATM PERFORMANCE INDICATORS: DEVELOPMENT OF PERFORMANCE
MANAGEMENT AT SISCEAB**

(Presented by Brazil)

EXECUTIVE SUMMARY

This information paper presents the activities in progress on the development of performance management at SISCEAB. The main products that will be described are the air traffic management (ATM) Performance Commission; the DECEA ATM Performance Plan; the SISCEAB ATM Indicators Course; the ATM Indicators Methodology Manual; the SISCEAB ATM Performance Report; the Comparative Report between DECEA and EUROCONTROL; the Brazilian participation in the international working groups; and real-time performance monitoring tools.

<i>Strategic Objectives:</i>	This working paper relates to the Air Navigation Capacity and Efficiency Strategic Objective.
<i>Financial implications:</i>	None
<i>References:</i>	Doc 9883, <i>Manual on Global Performance of the Air Navigation System</i> Doc 9750, <i>Global Air Navigation Plan</i>

1. INTRODUCTION

1.1 Brazil, through the Department of Airspace Control (DECEA), is responsible for providing the necessary resources for airspace control and air navigation services, in a safe and efficient manner, and has been developing performance indicators, according to the criteria proposed by ICAO, which will enable management and decision-making related to air activities.

1.2 These actions are coordinated by an undertaking of the SIRIUS Brazil Program, related to the improvement of performance-based management, the main goal of which is to establish ATM performance indicators, as well as automated data collection and treatment processes, through Business Intelligence (BI), to support decision-making by DECEA and its subordinate organizations by means of performance management.

1.3 In this context, one of DECEA's goals is the implementation of a management platform, essential for decision-making and for a more efficient management of the national ATM system performance. This tool is the Performance Indicator Management System (SGID), which has been developed and applied with the aim of improving the management and decision-making process for the various members of the aeronautical community.

1.4 In addition, in December 2021, the DECEA ATM Performance Plan (PCA 100-3) was published, which established the creation of the ATM Performance Commission (CP-ATM), with the participation of representatives of DECEA, Regional Organizations responsible for the management of ATC units, the Air Navigation Management Center (CGNA) and the Airspace Control Institute (ICEA) to, among other tasks, define indicators, analyzes and other products for monitoring the performance of the Brazilian Airspace Control System (SISCEAB), thus collaborating with the optimization of performance management within the scope of DECEA.

1.5 The DECEA ATM Performance Plan has the function of directing the monitoring and measurement of the performance of the National ATM System. The proposal is to establish goals consistent with the reference periods, as a guiding tool for planning the necessary activities at the strategic and operational levels.

1.6 This initiative supports and encourages the products developed by DECEA, which are:

- a) SISCEAB ATM Indicators Course;
- b) ATM Indicators Methodology Manual;
- c) SISCEAB ATM Performance Report, as of 2019;
- d) Comparative Report between DECEA and EUROCONTROL;
- e) Brazilian participation in the international working groups; and
- f) Real-time performance monitoring tools.

1.7 Considering that the basis of the ATM is the management of information in a global, integrated and quality-assured way, providing essential information for the development of ATM system activities, the ATM community will increasingly depend on real-time, relevant, accurate, and quality information for decision-making at different levels....

2. SISCEAB ATM INDICATORS COURSE

2.1 This course aims to teach ATM performance indicators basics, as well as their classification and characteristics, providing the necessary knowledge to use tools for the production and interpretation of performance indicators results in the respective SISCEAB units.

2.2 In order to provide a new form of management, allowing decision-making processes to be based on quantifiable measures consistent with the expectations of the aeronautical community, the DECEA training plan provides that, by the end of 2022, more than 100 (one hundred) professionals will have been trained to carry out operational analyzes through the use and assessment of ATM performance indicators.

3. INDICATORS METHODOLOGY MANUAL

3.1 In order to establish the ATM indicators methodology for DECEA and the data collection process for ICAO Global Air Navigation Plan (GANP) indicators, the SISCEAB ATM Indicators Methodology Manual (MCA 100 -22) was drafted, providing knowledge about performance areas, ATM performance indicators, as well as the methodology applied according to the respective database. These indicators were established based on an institutionalized routine, necessary to perpetuate the delivery of data from these indicators.

3.2 In addition to guiding DECEA's courses, studies and research and standardizing the indicators methodology within the scope of SISCEAB, this publication also offers an important reference to the national industry regarding the development of new systems, applications and equipment that can implement the methodologies described therein and, thus, expand the offer of information to the ATM Community managers and operators.

4. SISCEAB ATM PERFORMANCE REPORT

4.1 The annual edition of the SISCEAB report is an important step in Organizational Performance Management as it reflects the knowledge produced based on commonly accepted metrics and definitions to compare, understand and improve the performance of air navigation services in Brazil.

4.2 The main objective of this publication is to present the common understanding and interpretation of performance indicators, providing information for a systematic analysis of the operational performance of the air navigation system related to air traffic management. In addition, the importance of disseminating the culture of performance management is evident, favoring transparency in the analysis of SISCEAB's performance and keeping users up to date on initiatives on ATM performance underway in Brazil.

5. COMPARATIVE REPORT BETWEEN DECEA AND EUROCONTROL

5.1 In Brazil, DECEA is responsible for implementing solutions that meet the growing demand, both from national and international air traffic, in strict compliance with the most rigorous Safety standards.

5.2 Aiming at implementing solutions that meet the demand of national and international air traffic, DECEA started working with EUROCONTROL through a cooperation agreement. One of the strategic objectives of this agreement is to promote cooperation in the area of performance measurement, with the participation of the Brazilian Liaison Office in EUROCONTROL, so as to monitor and optimize the ATM system as a whole.

5.3 As a result, DECEA and EUROCONTROL released, in August 2021, a benchmarking report on the joint operational performance of the Brazilian and European Air Navigation Systems, providing members of the international ATM community with an initial analysis associated with indicators related to operational performance of air navigation systems. This report can be accessed at: <http://especiais.decea.mil.br/performance/> or <https://ansperformance.eu/global/brazil/bra-eur/>.



6. INTERNATIONAL WORKING GROUPS

6.1 Since December 2019, Brazil has participated in the meetings of the Performance Benchmarking Working Group (PBWG), with representatives from the FAA (USA), EUROCONTROL, JANS (Japan), CAAS (Singapore) and AEROTHAI (Thailand). The PBWG aims to promote understanding of GANP performance indicators by further developing and improving operational performance analysis. With frequent meetings, a joint performance report is being developed among the participating countries, aiming at the comparison between the respective ATM systems.

6.2 In addition, Brazil is a member of the ICAO Global Air Navigation Plan – Performance Expert Group (GANP-PEG), sharing experience with ATM performance specialists aiming at the development of new indicators, as well as studies to improve the understanding of the methodology, the interpretation of the results and dissemination in the States.

7. WORKING GROUP IN THE SAM REGION

7.1 With a view of having a Working Group that would concentrate the various initiatives and actions aimed at the development and integration of the South American Region (SAM) States, the SAM Airspace Study and Implementation Group (GESEA) was created.

7.2 Among the Group's various tasks, Brazil has developed a Business Intelligence panel with demand and capacity data from the SAM Region shared by the participating countries, which allows for strategic ATFM analyzes related to peak demand hours at the main international airports, as well as optimizes the flow of information related to degradations that may affect airport or airspace capacity. As a result, the direct benefits of sharing ATM data and the exchange of experiences among professionals from South American countries are expected to enable the Region's development in performance management.

8. REAL-TIME PERFORMANCE MONITORING TOOLS

8.1 With the view to increasing the level of ATFM situational awareness at SISCEAB, DECEA has been developing applications that monitor real-time system performance through demand planning data, systems used by the Control Towers and radar data processing.

8.2 In this perspective, ATFM performance monitoring applications are in use: the in-flight holding monitoring panel; the demand projection panel in heat map format and the tactical delay and additional taxi-out time monitoring panel.

8.3 The in-flight holding monitoring application performs validation processes on the radar synthesis data generated in the control units and allows the visualization of these holdings and the basic information of the aircraft involved.

8.4 The demand projection in heat map format allows the display of future demand (up to three hours ahead), allowing the CGNA to identify with greater speed the airspace sectors with a trend of increasing demand, as well as to map the main air traffic flows in real time

9. **CONCLUSION**

9.1 The activities in progress and the main products of performance management are bringing consistent results and will continue to be developed by SISCEAB.

9.2 The Meeting is invited to take note of the information provided.

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