



**Fourth GREPECAS–RASG-PA Joint Meeting and
Twenty-second Meeting of the CAR/SAM Regional Planning and Implementation Group
(GREPECAS/22)**

Virtual Phase (Asynchronous, 16 September to 11 October 2024)

In-Person Phase (Lima, Peru, 20 to 22 November 2024)

Agenda Item 4: Global and Interregional Developments

**ATM KEY PERFORMANCE INDICATORS:
PERFORMANCE-BASED MANAGEMENT IN SISCEAB**

(Presented by Brazil)

EXECUTIVE SUMMARY

This Information Paper presents the ongoing activities on the development of performance management in the Brazilian Airspace Control System (SISCEAB) and the main actions taken to enable this approach. Performance indicators are essential for monitoring and improving the air navigation services, providing critical data that supports decision-making, aligns with the objectives of the Global Air Navigation Plan.

Action:	<p>The Meeting is invited to:</p> <p>States</p> <ul style="list-style-type: none"> a) Encourage the States of the CAR/SAM regions to share and promote their initiatives in performance-based management; and b) Appoint representatives to participate in the ATM Performance Indicators Course, to be held in 2025, at an appropriate time and according to demand. <p>ICAO</p> <ul style="list-style-type: none"> a) Promote an in-person event, with the participation of members of the aeronautical community (airports, ANSPs, universities, airlines, and companies), directly related to ATM performance, to present the work being developed and practical solutions for the region's challenges..
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<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> • Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection
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1. Introduction

1.1 As a signatory to the International Civil Aviation Organization (ICAO), 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, as established in national standards and in international agreements and treaties to which it is a party, through Standards and Recommended Practices (SARPs) contained in the Annexes to the Convention on International Civil Aviation.

1.2 Accordingly, DECEA has been developing performance indicators, according to the criteria proposed by ICAO, which will enable management and decision-making related to air activities.

1.3 These actions are coordinated through the SIRIUS Brazil program, which is an instrument aimed at the evolution of SISCEAB, structured into a set of projects grouped in different areas. One of these undertakings is responsible for establishing 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.

1.4 In this context, one of DECEA's goals is the implementation of a digital management platform, essential 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 providing an improvement in the management and decision-making process for the various members of the aeronautical community.

1.5 Furthermore, the DECEA ATM Performance Plan (PCA 100-3) is in force, which establishes 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.

2. DECEA ATM performance plan

2.1 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.

2.2 This initiative supports and encourages the products and activities developed by DECEA, which are describe below:

2.3 SISCEAB ATM Performance Report

2.3.1 The annual SISCEAB report, which has been published since 2019, represents a significant advancement in Organizational Performance Management. It reflects the knowledge generated based on widely accepted metrics and definitions, allowing for the comparison, understanding, and improvement of air navigation service performance in Brazil.

2.3.2 The primary objective of this publication is to provide information that facilitates a systematic analysis of the operational performance of the air navigation system, particularly in relation to

air traffic management. The document is structured into five chapters, beginning with an overview of performance management, the history of the Global Air Navigation Plan (GANP), performance ambitions, and the data sources utilized.

2.3.3 The second chapter outlines the characteristics of SISCEAB, with a focus on the organization of air navigation services in Brazil and provides a general comparison between the organizations that comprise the system.

2.3.4 The third chapter details the ATM indicators monitored by DECEA, as stipulated in the ATM performance plan. The 2024 edition of the report introduces KPIs 17, 18, and 19, which were developed by the Aeronautics Institute of Technology (ITA) under an agreement with DECEA to create new indicators.

2.3.5 Through KPIs 17 and 19, it was possible to assess the vertical efficiency of flight paths during the climb and descent phases, comparing the efficiency across the 20 busiest airports in Brazil.

2.3.6 Additionally, KPI 18 enabled a comparison of the maximum altitudes of flight trajectories across the 20 routes with the highest traffic volume in 2023, revealing a minimal impact of vertical restrictions during the cruise phase within Brazilian airspace.

2.3.7 The fourth and fifth chapters present the conclusions drawn from the analysis of the indicators, as well as the references used in the development of the report.

2.3.8 Furthermore, the report promotes a culture of performance management, enhancing transparency in the analysis of SISCEAB's performance and keeping stakeholders informed about ongoing ATM performance initiatives in Brazil. The report is available at: <https://performance.decea.mil.br/produtos/relatorio-performace-atm/>

2.4 **Comparative Report between DECEA and EUROCONTROL**

2.4.1 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 the agreement is to promote cooperation in performance measurement, with the participation of the Brazilian Liaison Office in EUROCONTROL, to monitor and optimize the ATM system.

2.4.2 As a result, DECEA and EUROCONTROL release, since 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.

2.4.3 The report compares the performance of the air navigation system between Brazil and Europe, covering key sections such as the introduction with context, objectives, and data sources; the characterization of air navigation services, highlighting differences and similarities between the regions; the analysis of air traffic and its evolution; the evaluation of punctuality and predictability at major airports; and the assessment of airport capacity and airspace usage. Finally, the report concludes with the main findings and suggestions for improvements in performance management.

2.4.4 In a comparison of demand between the two organizations, it is evident that Brazil recovered its air traffic levels more quickly than Europe after the pandemic, with some airports surpassing

2019 levels. Additionally, compared to Europe, a higher proportion of flights in Brazil arrived ahead of schedule.

2.4.5 The 2024 report and the previous ones can be accessed at: <http://performance.decea.mil.br> or <https://ansperformance.eu/global/brazil/bra-eur/>.

2.5 **ATM Performance Seminar**

2.5.1 The ATM Performance Seminar aims to be the main ATM Performance meeting in Brazil, supported by DECEA, focusing on encouraging research and projects in the ATM Performance area, in addition to collaboration between experts from the different areas to search practical solutions for ATM challenges.

2.5.2 The 2023 Performance Seminar, held on November 6-8, addressed the challenges and advancements in performance management led by DECEA, with participation from specialists from various fields in Brazil and around the world. The event discussed progress made in different areas, including academic presentations and case studies, which enriched the debate on innovations and practices applied in air traffic management.

2.5.3 This year the third edition of the Seminar will be held, which will feature presentations from all aviation stakeholders showing the challenges and the solution to improve the performance of air navigation systems.

2.6 **SISCEAB ATM Indicators Course**

2.6.1 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.

2.6.2 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 2023, more than 140 (one hundred and forty) professionals will have been trained to carry out operational analyzes through the use and analysis of ATM performance indicators.

2.6.3 It is worth noting that last year, the first international class was trained at the CGNA, with the countries of the SAM Region, representing an important milestone in the Region. Brazil is willing to continue offering places in its course aimed at external audiences, to expand technical cooperation.

2.6.4 This year, DECEA is also expected to use instructors for the Key Performance Indicators workshop, to be held in Mexico City, Mexico, organized by ICAO NACC.

3. **Conclusion**

3.1 DECEA has been continuously working on the implementation of performance-based management, focusing on the creation and use of indicators in decision-making to make air navigation increasingly safe, efficient, and sustainable. Through the initiatives, combined with collaboration with international organizations and other States, DECEA demonstrates an ongoing commitment to improving the management of Brazilian airspace and strengthening technical cooperation and the sharing of best practices with other nations.

4. **Suggested actions**

The Meeting is invited to:

States

- a) Encourage the States of the CAR/SAM regions to share and promote their initiatives in performance-based management; and
- b) Appoint representatives to participate in the ATM Performance Indicators Course, to be held in 2025, at an appropriate time and according to demand.

ICAO

- a) Promote an in-person event, with the participation of members of the aeronautical community (airports, ANSPs, universities, airlines, and companies), directly related to ATM performance, to present the work being developed and practical solutions for the region's challenges.

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