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Twenty-first Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/21)

Santo Domingo, Dominican Republic, 15 to 17 November 2023

Agenda Item 3:   **Global and Regional Developments**
3.3 CAR/SAM Air Navigation Services (ANS) Implementation Level

ATM Key Performance Indicators:
Performance-based management in SISCEAB

(Presented by Brazil)

EXECUTIVE SUMMARY
This Working 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. In addition, Brazil offers places in its performance indicators course, and invites member states to appoint representatives to participate in the ATM Performance Indicators Course, aiming to expand technical cooperation in the NAM/CAR/SAM regions.

Action:	The Meeting is invited to: a) Take note of the information provided in this paper; b) Disseminate initiatives in performance-based management for the knowledge of the States; c) Encourage member states to appoint representatives to participate in the ATM Performance Indicators Course, to be held in 2024, at a timely date, and according to demand.
Strategic Objectives:	• Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection
References:	

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 Brasil 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, named PFF022 (Performance-Based Management) 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.

1.6   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.

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

        a. ATM Indicators Methodology Manual;
        b. SISCEAB ATM Performance Report, as of 2019;
        c. Comparative Report between DECEA and EUROCONTROL, as of 2021;
        d. Brazilian participation in International Working Groups;
        e. Holding of the ATM Performance Seminar;
        f. Conducting the working group in the SAM Region aimed at monitoring indicators among the participating States through a Business Intelligence panel;
        g. Real-time performance monitoring tools; and
        h. SISCEAB ATM Indicators Course;

2.   ATM Indicators Methodology Manual

2.1   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.

2.2   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.

3.   SISCEAB ATM Performance Report

3.1   The annual edition of the SISCEAB report, which has been taking place since 2019, 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.

3.2   The main objective of this publication is to provide information for a systematic analysis of the operational performance of the air navigation system related to air traffic management. Furthermore, the report helps to disseminate the culture of performance management, favoring transparency in the analysis of SISCEAB's performance and keeping users up to date on initiatives on ATM performance underway in Brazil.

4.   Comparative Report between DECEA and EUROCONTROL

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 aforementioned 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.

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. This report can be accessed at: http://performance.decea.mil.br or https://ansperformance.eu/global/brazil/bra-eur/.

5.   Participation in International Working Groups

5.1   Since December 2019, Brazil has participated in meetings of the Performance Benchmarking Working Group (PBWG), with representatives from the FAA (USA), EUROCONTROL, JANS (Japan), CAAS (Singapore) and AEROTHAI (Thailand), and aims to promote understanding of GANP performance indicators by developing and further improving operational performance analysis, with benchmarking from other countries.

5.2   In addition, Brazil is a member of the ICAO Global Air Navigation Plan – Study Group (GANP-SG), which aims to develop GANP evolutions, as well as studies to improve the understanding of the methodology, the interpretation of results and dissemination in the States.

6.   ATM Performance Seminar

6.1   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 of SISCEAB and the search for practical solutions for possible national ATM challenges. This year the second edition of the Seminar will be held,

which will feature presentations from EUROCONTROL showing the challenges faced in Europe since the resumption of movements after the pandemic.

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 in SISCEAB, DECEA has been developing applications that monitor the system's performance in real time, through demand planning data, systems used by the Control Towers and radar data processing.

8.2 In this perspective, the following ATFM performance monitoring applications are in use:

   a. Holding monitoring panel;
   b. Demand projection panel in heat map format; and
   c. Tactical monitoring panel for delays and additional taxi-out time.

9. **SISCEAB ATM Indicators Course**

9.1 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.

9.2 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.

9.3 It is worth noting that, this year, the first international class was trained at the CGNA, with the countries of the SAM Region, representing an important milestone in the Region.

9.4 Brazil is willing to continue offering places in its course aimed at external audiences, to expand technical cooperation in the NAM/CAR/SAM regions. The Course will preferably be held in the second semester of 2024, at a timely date, and according to demand.

10. **Suggested Actions:**

10.1   The Meeting is invited to:

   a) Take note of the information provided in this paper;

   b) Disseminate initiatives in performance-based management for the knowledge of the States; and

   c) Appoint representatives to participate in the ATM Performance Indicators Course, to be held in 2024, at a timely date, and according to demand.

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