



FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 26 August to 6 September 2024

Agenda Item 3: Air Navigation System Performance Improvement

3.1: Proposals to improve the efficiency of air navigation services contributing to LTAG

DIGITAL AIRSPACE SYSTEM ANALYSIS (DASA)

(Presented by Brazil)

EXECUTIVE SUMMARY

This Information Paper presents the *Digital Airspace System Analysis* (DASA). This innovative tool was developed by the Department of Airspace Control (DECEA) in Brazil, to improve the analysis and management of digital airspace. This tool represents a milestone in the modernization of air control systems, providing a complete and accurate view of air operations in real time. With advanced data analysis and modeling resources, DASA provides valuable insights to optimize operational efficiency, ensure flight safety and facilitate coordination between the different actors in the aviation community in a dynamic and complex scenario such as modern air traffic. In short, DASA represents a significant step towards excellence in airspace management, contributing to safer, more efficient and sustainable aviation.

1. INTRODUCTION

1.1 The Brazilian Airspace Control System (SISCEAB), led by the Department of Airspace Control (DECEA), aims to provide the necessary means to manage airspace and air navigation services in a safe and efficient manner, as established in national regulations, and international agreements and treaties to which Brazil is a party.

1.2 To meet the growing demand for digitization and automation in the analysis of airspace use, DECEA launched the Digital Airspace System Analysis (DASA). This system was developed to meet the needs of both the State and users, integrating the facilities offered by DECEA. It aims to empower analysts to make more efficient decisions when studying and approving requests from airspace-related users.

1.3 The main objectives of the DASA are to increase the capacity for planning the use of Airspace, to improve the analysis of requests for the use of airspace, to improve air safety by identifying possible conflicts between areas and routes analyzed, automate the analyses requested and disseminate information among those responsible for different processes.

1.4 The tool has been officially designated as the exclusive channel for requests for User Preferred Routes (UPR) in Brazil, which are more direct and economical. The application process now

occurs through this system, which has become the only accepted as of April 1, 2024. Its use is integrated to avoid conflicts with Preferred Routes (PREF), which are mandatory, and also seek to facilitate flight planning by reconciling UPR routes with Direct Routes (or DCT routes) already widely used in Brazilian upper airspace.

2. DISCUSSION

2.1 The Free Route Airspace (FRA) concept is an integral part of the ICAO *Global Air Navigation Plan* (GANP, Doc 9750) and is included in the implementation of the Aviation System Block Upgrade (ASBU) Blocks, specifically in the segment of Improved Operations through Enhanced En-Route Trajectories (FRT0 B0/B1). This concept shows us the need to change the strategy of optimizing airspace in South America, allowing more efficient trajectories, saving fuel and contributing to environmental sustainability.

2.2 In March 2024, the Brazilian Association of Airlines (ABEAR) organized a Workshop on the DASA tool, with the main objective of making the system known to SISCEAB users and establishing it as the official channel for User Preferred Routes (UPR) requests. This Workshop served as a scenario update, reinforcing previous requests and improvements.

2.3 The event was attended by representatives of the national airlines LATAM, Azul and Gol, as well as representatives of international companies such as Delta Airlines, Air Canada, KLM, FedEx, JetBlue and United Airlines. During the meeting, the airlines had the opportunity to discuss with the Air Navigation Management Center (CGNA) their real needs, challenges and suggestions for improvements. Companies were also able to access the system individually to create scenarios and new User Preferred Routes (UPR) in real time, as well as contributing with new improvements.

3. CONCLUSION

3.1 Through the actions of GESEA (Study Group for Airspace Planning in South American (SAM) Region), initiatives are being developed focused on reducing flight time and fuel consumption, and providing sustainable development with lower CO₂ emissions in the atmosphere. The airspace of the SAM region is being addressed in an integrated manner, considering the joint development based on the experiences and specific characteristics of each country in the execution of its aeronautical activities.

3.2 Following this line of cooperation, Brazil, through DECEA, intends to host the DASA Workshop for the entire SAM Region, offering to make efforts to extend the tool for use throughout South American airspace. The aim is to establish and connect common User Preferred Routes (UPR) for use by all operators in the aeronautical community.

— END —