International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)

WORKING PAPER

GREPECAS/22 — WP/33
20/09/24

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 5: **CAR/SAM Air Navigation Services (ANS) Implementation**
5.1 Air Traffic Management (ATM), Airspace optimization, Air Traffic Flow Management (AFTM) and Search and Rescue (SAR)

DIGITAL AIRSPACE SYSTEM ANALYSIS (DASA)

(Presented by Brazil)

EXECUTIVE SUMMARY
The Digital Airspace System Analysis (DASA) is an innovative tool 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 the various uses of airspace at both strategic and tactical levels. With advanced data analysis and modelling resources, DASA provides valuable insights to optimize operational efficiency and facilitate coordination among the different actors in the aviation community in a dynamic and complex scenario such as modern air traffic. In summary, DASA represents a significant step towards the digitalization of airspace management, contributing to safer, more efficient, and sustainable aviation.

Action:	Availability of DASA as a tool for proposing UPR route analysis in the SAM region.
Strategic Objectives:	• Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection
References:	• INFOMARTION PAPER: ANÁLISIS DEL SISTEMA DIGITAL DEL ESPACIO AÉREO (DASA): Centralización del análisis de las solicitudes de uso del espacio aéreo brasileño (GREPECAS/21)

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 service 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 flow identifying possible conflicts between areas and routes analyzed, automate the analyses requested and disseminate information among those responsible for different processes. To enhance its analytical capabilities, DASA has been developed with consideration of the latest uses of airspace, such as UTM (Unmanned Traffic Management) and ETM (Upper Class E Traffic Management).

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 efficient. 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 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 (Doc 9750) and is included in the implementation of the ASBU Blocks, specifically in the segment of Improved Operations through Enhanced En-Route Trajectories (FRTO 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, 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.

3.3. States are invited to use DASA as a tool to propose the analysis of UPR Routes in the SAM Region.

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