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South American Regional Office
Thirty-Third Workshop/Meeting of the Implementation Group
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Agenda Item 4: Report on activities and deliverables for the GESEA and Subgroups

THE IMPLEMENTATION OF DASA (DIGITAL AIRSPACE SYSTEM ANALYSIS) FOR THE INTEGRATION OF CONTINGENCY PLANS IN THE SAM REGION

(Submitted by Brazil)

Summary

This working paper aims to present a summary of a proposal for the implementation of DASA (*Digital Airspace System Analysis*) as a conceptual tool for the integration of contingency plans in the SAM Region.

The Digital Airspace System Analysis (DASA) is a tool developed by the Brazilian Department of Airspace Control (DECEA) to improve in an integrated and efficient manner the management of UPR (User Preferred Routes), PREF (Preferred Routes), ALT (Alternate Routes), and the routes established in the contingency plans of Brazilian airspace. This technological solution is designed to strengthen the capacity for analysis, coordination, and strategic decision-making in both normal and contingency scenarios, providing an accurate and up-to-date view of available trajectories and their operational use. With advanced modelling and simulation capabilities, DASA is established as a key tool to improve air traffic flow efficiency, increase the system's resilience to disruptive events, and support the evolution of the ATFM concept within both regional and international contexts.

References:

- Guide for the Implementation of ATFM Service in the SAM Region 2021–2025
- ICAO – Global Air Navigation Plan (GANP)
- Annex 11 – Air Traffic Services
- ICAO Doc 9971 – Manual on Collaborative Air Traffic Flow Management

ICAO Strategic Objectives:	Promote operational resilience and contingency preparedness.

1 Introduction

1.1 The Brazilian Airspace Control System (SISCEAB), under the coordination of the Department of Airspace Control (DECEA), has the mission of ensuring the safe, efficient and continuous management of airspace and air navigation services, in accordance with national regulations and the commitments assumed by Brazil in international treaties and agreements.

1.2 In response to the growing need for modernization, digitalization, and automation of airspace analysis, DECEA developed the Digital Airspace System Analysis (DASA). This technological tool was designed to meet both the operational demands of the State and the needs of the users of the aeronautical system, integrating multiple functionalities already available within DECEA's technical environment. DASA enables analysts to carry out faster and more informed assessments, optimizing decision-making in the approval of requests related to routes and airspace structures.

1.3 Among its main objectives, DASA aims to strengthen the strategic planning of airspace use, enhance the analysis of route and activity area requests, automatically identify potential conflicts between airspace structures, increase operational safety, and disseminate relevant information among the various stakeholders responsible for airspace management and coordination processes.

1.4 Additionally, DASA has been designed as the main tool for the integrated and efficient management of User Preferred Routes (UPR), Preferred Routes (PREF), Alternate Routes (ALT), and the routes established in the contingency plans of Brazilian airspace. With its advanced modelling and simulation capabilities, the system enables accurate assessment of available trajectories in both normal and contingency scenarios, supporting strategic decision-making, improving air traffic flow, and increasing operational resilience. Its implementation consolidates a modern and flexible airspace management framework, aligned with the evolution of the ATFM concept in the regional and international context.

2 Analysis

2.1 Effective management of ATM contingency plans has been established as a strategic priority in the SAM Region, in line with the objectives of the GANP (Doc 9750) and the recommendations of GREPECAS. The implementation of measures that strengthen operational resilience and the continuity of air traffic services is essential in the face of events that affect airspace availability.

2.2 In response to this challenge, Brazil, through DECEA, has developed the Digital Airspace System Analysis (DASA), a tool to integrate in an dynamic and efficient manner the operational and contingency routes within the airspace. DASA enables the analysis and management of User Preferred Routes (UPR), Preferred Routes (PREF), Alternate Routes (ALT), and, notably, the routes established in the contingency plans of each FIR. This technological capability provides a comprehensive view that supports inter-institutional coordination and strategic decision-making during disruptive events.

2.3 Through the actions of GESEA, initiatives are being developed focusing on reducing flight time, fuel consumption, and promoting sustainable development with lower CO_2 emissions into the atmosphere. The airspace of the SAM Region is being addressed in an integrated manner, considering joint development based on the experiences and specific characteristics of each country in the execution of their aeronautical activities.

2.4 Within the framework of GESEA and SG1 PLANESPA, actions have been promoted to harmonize the ATS contingency plans of SAM States, in accordance with the Guide for the Preparation of Letters of Agreement and Contingency Plans approved by SAMIG/32. Although many States have already published their plans in the AIP (ENR 1.15), inconsistencies and a lack of interoperability still exist among the current documents. The need to consolidate a regional contingency route network was recognized, enabling coordinated responses in situations such as airspace closures, system failures, or natural disasters.

2.5 Following this line of cooperation, Brazil, through DECEA, proposes to take steps to extend the tool for use throughout South American airspace. The objective is to establish and connect Contingency Routes in an integrated manner, focusing on interoperability within the SAM Region airspace.

2.6 In this context, Brazil proposes the organization of a Regional DASA Workshop at the Lima Office for the SAM Region, with the objective of training planners in the use of the tool as a regional platform for the integrated management of contingency plans. This proposal, supported by

GREPECAS Conclusion 22/8 and by ongoing GESEA actions (such as Action GESEA/8/5), seeks to facilitate the establishment of common contingency routes, ensure cross-border operational continuity, and consolidate a digital infrastructure that supports the operational resilience of the entire region. This initiative represents a firm step toward the evolution of the ATFM concept under exceptional conditions, in line with ICAO's strategic objective to "promote operational resilience and contingency preparedness.

3. Suggested Actions

3.1 The States participating in the Meeting are invited to:

a) Take note of the information presented in this Working Paper;

b) analyze the creation and regional integration of Contingency Routes among stakeholders; and

c) assess the feasibility of organizing the DASA Workshop – SAM Region, with the participation of States and international operators, in 2026.

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