



ASSEMBLY — 42ND SESSION

EXECUTIVE COMMITTEE

Agenda Item 18: Capacity Development and Implementation Support - Policy and Activities

NO COUNTRY LEFT BEHIND: STRENGTHENING REGIONAL TECHNICAL SYNERGY ACROSS SAM STATES

(Presented by Brazil)

EXECUTIVE SUMMARY

As part of its commitment to strengthening regional integration and enhancing the overall performance of air navigation services in South America, Brazil has been supporting neighbouring States through targeted initiatives in key areas such as flight inspection services, ATFM implementation, airspace design, and capacity optimization. This document emphasizes these efforts, by the Department of Airspace Control (DECEA), which aim to foster harmonized regional development in line with ICAO's Global Air Navigation Plan (GANP). It also highlights the importance of regional cooperation as a key enabler to maximize results. By sharing technical expertise, conducting on-site training, and assisting in the implementation of operational improvements, Brazil aims to help build a more resilient and interoperable regional air navigation system—ultimately advancing the environmental and efficiency objectives established by ICAO.

Action: The Assembly is invited to:

- Request ICAO to discuss mechanisms to enable the continuity and long-term sustainability of technical cooperation initiatives, including the provision of strategic guidance or logistical support for international cooperation; and
- Request ICAO to enhance technical assistance for States engaging in airspace optimization projects; promote regional cooperation mechanisms for cross-border airspace optimization; and provide platforms for sharing environmental performance outcomes from operational improvements.

<i>Strategic Goals:</i>	According to ICAO Strategic Plan (2026-2050), this working paper relates to <i>Aviation is Environmentally Sustainable</i> Strategic Goal.
<i>Financial implications:</i>	The ICAO activities referred to in this paper are expected to be undertaken within the resources available in the 2026-2028 Regular Budget.

<i>References:</i>	ICAO Strategic Plan (2026-2050) 97Doc 9750, <i>Global Air Navigation Plan</i> Doc 9992, <i>Manual on the Use of Performance-based Navigation (PBN) in Airspace Design</i> Doc 9613, <i>Performance-based Navigation (PBN) Manual</i> Doc 9931, <i>Continuous Descent Operations (CDO) Manual</i> Doc 9993, <i>Continuous Climb Operations (CCO) Manual</i> Doc 9971, <i>Manual on Collaborative Air Traffic Flow Management</i>
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1. INTRODUCTION

1.1 As part of its ongoing commitment to regional integration and air navigation enhancement in South America, Brazil, through its Department of Airspace Control (DECEA), has been contributing to assist neighbouring States in strengthening their air navigation systems. This cooperation, aligned with ICAO's Global Air Navigation Plan (GANP), encompasses key service areas including capacity building, flight inspection, ATFM implementation, procedure design, and airspace optimization.

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2. TRAINING

2.1 Brazil has sought to contribute to regional capacity building through the provision of training programs to air traffic controllers, technical staff, and supervisors from countries including Paraguay, Uruguay, Argentina, and Bolivia. These programs have covered topics such as airspace and runway capacity assessment, PANS-OPS procedure design, flight inspection, airborne collision avoidance systems (ACAS), aeronautical English for TWR, APP, and ACC controllers, air traffic flow management (ATFM), and unmanned aircraft systems (UAS), among others. Conducted primarily in São José dos Campos and Rio de Janeiro, these initiatives aim to support regional harmonization, enhance technical expertise, and promote stronger collaboration among South American air navigation service providers.

2.2 As part of these ongoing efforts, DECEA recently offered specialized training in procedural approach control for Paraguayan air traffic controllers. Held in Foz do Iguaçu, the course focused on strengthening operations in non-radar environments and included instruction on ICAO-compliant separation techniques, phraseology, coordination protocols, and simulation-based exercises. This collaborative initiative supported safety, standardization, and interoperability between Brazilian and Paraguayan airspace operations.

3. FLIGHT INSPECTION SERVICES

3.1 DECEA has also supported regional partners by conducting flight inspection missions to validate and certify navigation aids and IFR procedures. These inspections, conducted by the Brazilian Flight Inspection Group (GEIV), have ensured compliance with ICAO standards and have supported the operational continuity and modernization of services.

3.2 As part of its technical cooperation with Paraguay, DECEA has conducted a series of flight inspection missions through the GEIV. These missions aimed to ensure the accuracy and operational integrity of ground-based navigation aids and associated IFR procedures. The inspections covered nav aids as NDB, PAPI, VOR/DME, ILS, and ALS, in addition to the validation of Instrument Approach Charts (IAC).

3.3 In parallel, Brazil and Uruguay have initiated coordination to carry out a flight inspection mission, also to be conducted by GEIV. The mission is expected to include the inspection and calibration of NDB, PAPI, VOR/DME, ILS, and ALS systems at several Uruguayan aerodromes.

4. IMPLEMENTATION OF ATFM SERVICES

4.1 Brazil has actively supported the implementation of Air Traffic Flow Management (ATFM) service across the South America Region. Through technical cooperation, Brazil assisted Argentina, Paraguay, and Uruguay in establishing Flow Management Positions (FMPs), assessing Air Traffic Control (ATC) sector and runway capacities, implementing pre-tactical and tactical ATFM phases, and deploying the SIGMA system – Brazil’s integrated ATFM platform.

4.2 From 2017 to 2018, the Air Navigation Management Centre (CGNA) established a technical cooperation initiative to support the implementation of ATFM service in Argentina. The project was executed in three structured phases. In the first phase, CGNA developed the Concept of Operations and the implementation plan for the Ezeiza Flow Management Position (FMP). In parallel, CGNA conducted detailed measurements of the airspace capacity of the Ezeiza FIR and the runway capacity at Ezeiza International Airport (SAEZ). Argentine professionals received hands-on training in airspace and runway capacity assessment methods, ensuring alignment with ICAO recommendations and operational best practices.

4.3 During the second phase, a dedicated ATFM course was delivered in Brazil for Argentine air traffic controllers. The training covered all phases of ATFM—strategic, pre-tactical, tactical, and post-operations—and included live observation of daily activities within the CGNA operational room. In the third and final phase, CGNA experts supported the pre-operational period in Argentina by reviewing operational documents, validating the ATFM model, and closely monitoring the first two weeks of ATFM service implementation in May 2018. This successful collaboration served as a model for further regional initiatives and demonstrated the value of international cooperation in advancing air navigation services in the SAM Region.

4.4 Brazil has also hosted regional workshops, such as the ATFM Workshop held at CGNA in 2024, which brought together participants from several South American States to discuss operational scenarios, strategic planning, and cross-border ATFM coordination. These events foster knowledge exchange and strengthen collaborative decision-making among States.

5. PROCEDURE DESIGN (PANS-OPS)

5.1 Since 2015, as part of a broader technical cooperation effort, DECEA supported the comprehensive restructuring of airspace. This initiative included the design and implementation of more than 150 PBN procedures, incorporating the concepts of Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO), aiming to enhance the efficiency, safety, and flexibility of the airspace structure. To ensure sustainability and local capacity, DECEA also provided specialized training in PANS-OPS to procedure designers, in line with ICAO standards and best practices.

6. BRAZILIAN AERONAUTICAL TECHNICAL MISSION

6.1 Brazilian Air Force maintains permanent bilateral cooperation initiatives with Paraguay and Bolivia through the Brazilian Aeronautical Technical Mission (MTAB). These missions, established under formal agreements, aim to provide continuous support for the development and modernization of the Air Traffic Management (ATM) systems and air defence capabilities of both countries. Operated by Brazilian Air Force officers, the MTAB plays a strategic role in enhancing regional interoperability, providing technical assistance, supporting regulatory and operational improvements, and contributing to the training and qualification of civil and military personnel involved in airspace control and surveillance activities.

6.2 The presence of MTAB enhances Brazil's ability to collaborate swiftly and effectively. DECEA has introduced advanced digital systems for managing aerodrome and heliport operations. Rolled out in alignment with World Environment Day, these tools streamline licensing, inspection, and analytical workflows—automating processes while improving transparency and regulatory oversight. This initiative reinforces aerodrome governance, promotes sustainable aviation growth, and aligns with broader strategy for regional technical cooperation.

6.3 DECEA supported a basic radar maintenance course, as well as the coordination of a workshop on the collection and analysis of ATM performance indicators, with the participation of military and civilian personnel.

7. CONCLUSION

7.1 Brazil's efforts in technical cooperation across South America reflect its ongoing commitment to contributing to a more harmonized regional air navigation system. Through the sharing of expertise, tools, and infrastructure, Brazil seeks to support neighbouring States in strengthening operational efficiency, safety, and environmental performance—aligning these initiatives with ICAO's strategic objectives for aviation safety.

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