



**Fifth GREPECAS–RASG-PA Joint Meeting (GREPECAS-RASG-PA/5) and
 Twenty-Third Meeting of the CAR/SAM Regional Planning and Implementation Group
 (GREPECAS/23)**

Virtual Phase (Asynchronous, 19 January to 17 February 2026)

In-Person Phase (Mexico City, Mexico, 4 to 6 March 2026)

Agenda Item 5: Assembly 42nd Results; Matters Concerning Air Navigation Initiatives

**UPDATE ON THE IMPLEMENTATION STATUS OF THE TROPICAL CYCLONE ADVISORY
 CENTER (TCAC) IN BRAZIL**

(Presented by Brazil)

EXECUTIVE SUMMARY

This information paper presents an update on the progress of the implementation of the Tropical Cyclone Advisory Center (TCAC) under the responsibility of Brazil, following the approval of the Brazilian candidacy during the 42nd Session of the ICAO Assembly. The document describes ongoing actions regarding human resources training, the development of Numerical Weather Prediction (NWP) capabilities, and coordination with national meteorological institutions, aiming to achieve full operational capability of the TCAC by December 2026.

<i>Strategic Objectives 2026-2050:</i>	<ul style="list-style-type: none"> • Every flight is safe and secure • Aviation is environmentally sustainable • Aviation delivers seamless, accessible, and reliable mobility for all • No country left behind • The International Civil Aviation Convention and Other Treaties, Laws and Regulations Address All Challenges • The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All •
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<i>References:</i>	<ul style="list-style-type: none"> • 12th Meeting of the Meteorology Panel (METP) Working Group MOG, Exeter, United Kingdom, 23 to 25 March 2020 • 22nd Meeting of the CAR/SAM Planning and Implementation Regional Group (GREPECAS/22), Lima, Peru, 20 to 22 November 2024 • PANS-MET – Procedures for Air Navigation Services — Meteorology (Doc 10157), April 2025 • Annex 3 – Meteorological Service for International Air Navigation, 21st Edition, August 2025 • 42nd Session of the ICAO Assembly, Montreal, Canada, 23 September to 03 October 2025
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1. Introduction

1.1 During the 42nd Session of the Assembly of the International Civil Aviation Organization (ICAO), held from 23 September to 03 October 2025, Brazil formally presented its proposal to establish a Tropical Cyclone Advisory Center (TCAC) for monitoring the Western South Atlantic, aiming to enhance air navigation safety in the region. The Assembly welcomed the proposal, recognizing Brazil's capacity to fill this existing gap in the global meteorological watch system.

1.2 Following the Assembly's decision, the Department of Airspace Control (DECEA), through the Integrated Center for Aeronautical Meteorology (CIMAER), initiated a comprehensive implementation plan for the TCAC. This plan foresees the participation of national meteorological institutions to ensure that the service complies with the standards established by ICAO and the World Meteorological Organization (WMO).

1.3 In this context, the present paper provides an overview of the current status and the next steps in the implementation of the TCAC at CIMAER, aimed at the monitoring and forecasting, from an aeronautical perspective, of cyclone occurrences in the South Atlantic.

2. Discussion

2.1 Brazil has established December 2026 as the target date for the TCAC to become fully operational. To meet this deadline, CIMAER, the institution designated to host the TCAC, is developing the Operational Model, defining the workflow for the detection, analysis, and dissemination of Tropical Cyclone Advisories (TCA).

2.2 DECEA recognizes that specific knowledge is required for the forecasting of tropical and subtropical cyclones. Consequently, a specialized training program for forecasters and meteorological technicians is being developed. This program aims to enhance the technical competencies of the meteorological staff, ensuring these professionals are prepared to identify precursor systems and cyclone tracks, as well as classify them according to their intensity, in adherence to international protocols.

2.3 To support the operational accuracy expected of the future TCAC, significant investments are being made in Numerical Weather Prediction (NWP):

- **MONAN Model:** the National Institute for Space Research (INPE), through the Center for Weather Forecasting and Climate Studies (CPTEC), is developing a new numerical model named MONAN (Model for Ocean-laNd-Atmosphere PredictioN). DECEA is coordinating with INPE to ensure that specific modules for tropical cyclone genesis and tracking are integrated into this model.
- **Acquisition of ECMWF Data:** simultaneously, DECEA is allocating resources to acquire data from the European Center for Medium-Range Weather Forecasts (ECMWF). Access to this high-resolution global model will serve as an essential tool for the ensemble forecasting approach required for high-impact weather events.

2.4 A collaborative framework remains a pillar of the Brazilian TCAC. Inter-institutional protocols are being developed to ensure coordinated work between CIMAER and the Navy Hydrographic Center (CHM), with support from the National Institute of Meteorology (INMET) and INPE, regarding the monitoring of cyclones in the South Atlantic.

2.5 Furthermore, INMET, representing Brazil at the World Meteorological Organization (WMO), is conducting negotiations for the inclusion of TCAC Rio de Janeiro — reflecting the city of

implementation — into the WMO Tropical Cyclone Programme (TCP), ensuring the Center is recognized within the global meteorological structure.

2.6 From a regional perspective, the establishment of a TCAC for the Western South Atlantic is expected to enhance the consistency and timeliness of tropical cyclone advisory information, improve coordination among Meteorological Watch Offices (MWO), and support harmonized and collaborative decision-making by air navigation services in the ICAO SAM Region.

2.7 In this regard, early awareness among ICAO Contracting States in the Region is considered essential in order to ensure that TCAC products, once operational, are effectively integrated into each State's aeronautical meteorological services and air traffic management systems.

3. Conclusion

3.1 Brazil is actively executing the implementation plan for TCAC Rio de Janeiro for South Atlantic monitoring, with a clear roadmap for operational status by December 2026.

3.2 Through investments in advanced numerical weather prediction (MONAN and ECMWF), specialized training for meteorological professionals, strong institutional alignment with the WMO, and partnerships with national meteorological institutions, Brazil reaffirms its commitment to meteorological watch in the South Atlantic, aiming to provide greater safety for aviation in the region.

3.3 The establishment of TCAC Rio de Janeiro represents a strategic contribution to the ICAO SAM Region by addressing a long-standing gap in tropical cyclone advisory coverage in the Western South Atlantic for aviation purposes, in accordance with ICAO and WMO provisions.