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WORKING PAPER

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Third Meeting of Rapporteurs of the North American, Central American and Caribbean Working Group (NACC/WG/RAP/03)
(ICAO NACC Regional Office, from 24 to 27 March 2025)

Agenda Item 4: **Review of GREPECAS CAR/SAM Projects, and coordinated NACC/WG planning with GREPECAS**

WORK PROGRAM AND PRIORITIES OF THE AERONAUTICAL METEOROLOGY AREA FOR GREPECAS

(Presented by MET/TF Rapporteur)

EXECUTIVE SUMMARY

This paper presents the GREPECAS/22 evaluation of the progress and challenges in the implementation of essential meteorological services in the CAR and SAM regions, emphasizing the need to accelerate the adoption of SARPs, mitigate the impact of severe meteorological events, and strengthen the verification of Basic Building Blocks (BBB). It also prioritizes the implementation of quality management systems, the exchange of OPMET messages under IWXXM format, and the harmonized provision of SIGMET messages. Furthermore, GREPECAS/22 supported the establishment of a Tropical Cyclone Advisory Center (TCAC) in the Western South Atlantic and urged the dissemination and training on Amendment 82 and the PANS-MET Document.

Action:	As enunciated in numeral 4
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency
References:	• Annex 3 – Meteorological Service for International Air Navigation Twentieth Edition, July 2018 – Amendment 80 and the proposed Amendment 81 in progress. • Twenty-Second Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/22), Asynchronous Session: September 13 to October 18, 2024 In-person Session: Lima, Peru, November 20 to 22, 2024

1. Introduction

1.1 GREPECAS/22 analyzed the status of MET initiatives in the CAR and SAM regions. This analysis was based on the results obtained from both the asynchronous phase, conducted online from September 16 to October 11, 2024, and the in-person phase, which took place from November 20 to 22, 2024, in Lima, Peru. GREPECAS/22 provides an overview of the progress and challenges in the

implementation of essential meteorological services for international air navigation. As a result of these discussions, GREPECAS/22 approved the following conclusions and decision that directly impact the work of the MET/TF:

> **Conclusion GREPECAS/22/9** - Dissemination of the impacts of severe meteorological phenomena on the safety of air operations.
> **Conclusion GREPECAS/22/10** - Periodic verification of the BBB of MET, AIM, SAR, ATM, and AGA services. **Decision GREPECAS/22/11** - Regional agreement for the implementation of a Tropical Cyclone Advisory Center (TCAC).

1.2 GREPECAS/22 has closed the MET projects considering that all the necessary documentation to support the implementation of the MET requirements had been generated and urged the Secretariat to follow up on these.

1.3 The Secretariat continues working with States and the support of other organizations on the implementation of the Standards and Recommended Practices (SARPs) contained in Annex 3 – Meteorological Service for International Air Navigation. The work of the MET/TF supports the GREPECAS initiatives in accordance with the 2023-2025 work program, as presented in NE/16.

2. Analysis and Discussion

Implementation of MET Requirements for the CAR and SAM Regions

2.1 During GREPECAS/22, the Secretariat presented a report detailing the progress in the implementation of MET requirements for the CAR and SAM regions since the previous meeting. Despite the efforts in training and dissemination, it was acknowledged that the adoption of Annex 3 SARPs by member States has been slow, due to their complexity, the lack of resources, and the need for greater training for aeronautical meteorology personnel.

2.2 In this context, GREPECAS/22, in addition to the tasks derived from the conclusions and decision listed in paragraph 1.1, established as priorities to strengthen the implementation of: a) quality management systems in MET processes, b) the exchange of OPMET messages in IWXXM format, and c) the harmonized provision of SIGMET messages. Furthermore, the importance of continuing to disseminate information on the changes in the WAFS (World Area Forecast System), which became effective in November 2024, and the evolution of QVA (Quantitative Volcanic Ash) information, scheduled for November 2025, was highlighted.

Severe Weather Phenomena on the Safety of Air Operations

2.3 At GREPECAS/22, the Secretariat presented a working paper on the growing concern regarding the increase in frequency and intensity of severe meteorological phenomena and their impact on aviation safety. The possible correlation between these phenomena and climate change was highlighted, emphasizing the urgency to address these risks. To this end, proactive actions were proposed, including data collection, improvement of forecasting systems, and international cooperation.

2.4 After evaluating the information, GREPECAS/22 approved **Conclusion GREPECAS/22/9**, which aims to address the need to: a) collect data on the impact of severe meteorological phenomena,

b) promote dissemination and training on these phenomena, c) participate in aircraft-based observation (ABO) programs, d) intensify work with groups such as PA-RAST and GTE to address risks, e) encourage collaboration between adjacent Area Control Centres and Flight Information Regions, and f) promote the development of flow control procedures. These actions seek to mitigate risks and improve the safety and efficiency of air operations in facing climate change challenges.

2.5 In this context, and thanks to the support of the activity program of Regional Project RLA/06/901, adopted at the Eighteenth Meeting of the Coordination Committee (RCC/18), the NACC and SAM Regional Offices have extended an invitation to State subject matter experts to participate in the Workshop on Severe Meteorological Events and Aviation, which will be held in Lima, Peru, from June 23 to 27, 2025. Reference is made to letter NACC115359, sent to States on March 24, 2025, and members of the Multiregional Civil Aviation Assistance Program (MCAAP) of Project RLA09801 are urged to consider supporting the participation of experts from their respective States by May 30, 2025.

Implementation of Essential Meteorological (MET) Services

2.6 GREPECAS/22 evaluated the implementation of essential meteorological (MET BBB) services for international air navigation in the CAR/SAM regions. The Secretariat presented a standardized framework to monitor and verify this implementation, which is crucial for safety and efficiency. This framework, which incorporates elements such as the structure of the BBBs and GANP guidelines, seeks to promote collaboration between Civil Aviation Authorities (CAAs), MET Authorities, and service providers.

2.7 Following the evaluation, GREPECAS/22 issued **Conclusion GREPECAS/22/10** to indicate the need to promote the periodic verification of BBBs for MET services. Furthermore, the necessity to extend this verification to AIM, SAR, ATM services and aerodrome operations was identified. A conclusion was approved urging the NACC and SAM Regional Offices to develop dashboards for these services, in coordination with States and international organizations, and to report their progress to GREPECAS/23. States were also requested to strengthen their surveillance activities and quality control processes to support this verification process.

Tropical Cyclone Advisory Center (TCAC) in the Western South Atlantic Coverage Area

2.8 During GREPECAS/22, Brazil expressed its interest in establishing a Tropical Cyclone Advisory Center (TCAC) in the Western South Atlantic, as part of the CAR/SAM Regional Air Navigation Plan. Brazil highlighted the importance of this center, recalling the occurrence of Hurricane "Katarina" in 2004 and the need to monitor cyclones, which, even if they are not hurricanes, affect operational safety. The meeting recognized the importance of international collaboration in this regard and supported Brazil's proposal.

2.9 GREPECAS/22, through **Decision GREPECAS/22/11**, supported the regional agreement for the establishment of the TCAC, requesting the Secretariat to communicate this decision to the Air Navigation Commission and coordinate the technical and administrative arrangements with the ICAO Headquarters and other multilateral organizations. It was agreed that Brazil will implement the TCAC once these processes are completed and that the Secretariat, through the SAM Regional Office, will manage the corresponding amendment to the CAR/SAM Regional Air Navigation Plan.

Dissemination of Amendment 82 to Annex 3 and the new requirements of Doc. 10157 PANS-MET

2.10 In accordance with **Conclusion GREPECAS 21/17**, the dissemination of Amendment 81 to Annex 3 and the new requirements of Doc. 10157 PANS-MET had been requested. However, this activity was only partially completed because ICAO approved only one recommended practice as Amendment 81, postponing other components and the creation of PANS-MET to November 2025, as part of Amendment 82.

2.11 In this regard, the Secretariat is considering organizing an event to disseminate and explain the changes and requirements of Amendment 82 and PANS-MET. This event would aim to train participants for effective implementation, support MET service providers, and evaluate the impact on operational safety oversight systems. States are invited to consider the possibility of sponsoring this event, thereby contributing to the dissemination and understanding of these relevant changes. Interested States should notify the NACC Regional Office.

3. Conclusions

3.1 It is evident that there is a need to expedite the implementation of Annex 3 SARPs. To achieve this, it is crucial to prioritize personnel training and the adequate allocation of resources.

3.2 In light of the increasing frequency and intensity of severe meteorological phenomena, immediate and proactive action is required. This involves strengthening data collection, improving forecasting systems, and fostering international cooperation to safeguard aviation operational safety.

3.3 The periodic verification of MET BBBs is vital to ensure the safety and efficiency of air navigation.

3.4 With the decision of GREPECAS/22 to support the establishment of the Tropical Cyclone Advisory Center (TCAC) in the Western South Atlantic, led by Brazil, the importance of strengthening monitoring and response to meteorological phenomena that may compromise operational safety is evident.

3.5 It is important to consider the dissemination of the changes and requirements of Amendment 82 to Annex 3 and the PANS-MET Document to ensure effective implementation. The need to organize training events and request the support of States for their realization was indicated.

4. Suggested Actions

4.1 The Meeting is invited to consider the following activities:

a. Urge States to confirm the participation of their experts in the "Workshop on Severe Meteorological Phenomena and Aviation", to be held in Lima, Peru, from June 23 to 27, 2025, urging members of the MCAAP Project RLA09801 to support such participation, confirming no later than May 30, 2025.

b. Consider the priorities established by GREPECAS for the MET/TF work program, urging States to expedite the implementation of quality management systems in MET processes, the exchange of OPMET messages in IWXXM format, and the harmonized provision of SIGMET messages. Additionally, urge States to strengthen their surveillance and quality control activities to ensure the periodic verification of Basic Building Blocks (BBB).

c. Consider organizing an event to disseminate the changes and requirements of Amendment 82 to Annex 3 and the PANS-MET Document, inviting States to consider their sponsorship.

d. Urge States to implement and certify MET QMS, to ensure the provision of MET data and messages that meet the required accuracy and timeliness standards. Also, consider that MET QMS should cover: the competence and qualification of meteorological personnel, the calibration and verification of observation accuracy, the validation of forecast accuracy, and the traceability of meteorological data, among other relevant aspects for the provision of MET services.

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