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INFORMATION PAPER

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**Fourth Meeting of the North American, Central American and Caribbean Working Group
Implementation of Aeronautical Meteorology (MET) Task Force
(NACC/WG/MT/TF/4)**

Mexico City, Mexico, 28 to 31 July 2026

Agenda Item 3: Follow-up on valid conclusions and decisions from previous NACC/WG and MET/TF meetings

TECHNICAL SEMINAR OUTCOMES SUPPORTING THE REVIEW OF THE MET/TF WORK PROGRAMME

(Presented by the United States and the Secretariat)

EXECUTIVE SUMMARY

This Discussion Paper summarizes the main messages presented during the Technical Seminar and is intended to support discussions under Agenda Item 3 regarding the implementation status of the MET/TF 2026 Work Programme and the identification of future priorities for the Task Force. The Technical Seminar also served to support the implementation of activities entrusted to the United States under the MET/TF Work Programme through the development and presentation of technical guidance material, awareness-building activities, implementation experiences, and emerging ICAO meteorological services and information exchange initiatives relevant to the NAM/CAR Regions.

*Strategic
Objectives:*

- Every Flight is Safe and Secure
- Aviation Delivers Seamless, Accessible, and Reliable Mobility for All
- No Country Left Behind

1. Introduction

1.1 The first day of the MET/TF/4 was dedicated to a Technical Seminar addressing recent developments in aeronautical meteorology, meteorological information exchange, emerging ICAO meteorological services, volcanic ash information services, and operational user requirements. Presentations delivered by subject matter experts from the United States, the Federal Aviation Administration (FAA), the National Oceanic and Atmospheric Administration (NOAA), the United States Geological Survey (USGS), the ICAO Meteorology Panel (METP), and AEROMEXICO, provided participants with an overview of current initiatives, implementation activities and challenges, and future developments relevant to the NAM/CAR Regions.

1.2 The Seminar highlighted the increasing importance of digital information exchange, interoperability, machine-readable meteorological information, and operationally oriented services that support aviation decision-making. Several presentations addressed implementation activities associated

with ICAO Annex 3, the PANS-MET/Doc 10157, the transition toward SWIM-enabled environments, and new services being introduced to support aviation operations.

2. Technical Seminar Presentations

2.1 WIFS API Presented by Mr. Austin Cross (Aviation Weather Center / WAFC Washington, NOAA)

2.1.1 The presentation introduced the WAFS Internet File Service (WIFS) API as the modern mechanism for accessing World Area Forecast System (WAFS) information, including OPMET data, Significant Weather (SIGWX) information and gridded forecast products. The service became operational in February 2024 and was upgraded in June 2026 to improve performance and reliability. A key message was that the legacy file-based WIFS service will remain available only until November 2028, after which users will need to access WAFS products through the API environment. The presentation demonstrated practical examples of retrieving OPMET, SIGWX IWXXM products and GRIB2 datasets, while emphasizing efficient operational use and preparation for the transition period.

2.2 ICAO Space Weather Information Service (SWIS) Presented by Ms. Karen Shelton-Mur (Federal Aviation Administration – FAA)

2.2.1 The presentation reviewed the ICAO SWIS, describing space weather as solar and space-environment phenomena capable of affecting aviation operations and technological systems. Operational impacts were presented for High Frequency (HF) communications, Global Navigation Satellite Systems (GNSS), surveillance-related functions relying on trans-ionospheric signal propagation, and radiation exposure. During the subsequent discussion, it was clarified that weather radar systems are not affected by space weather; however, ADS-B performance may be affected through the ionospheric transmission path. The presentation outlined the evolution of SWIS through Annex 3 amendments, described the network of ICAO-designated Space Weather Centres, current space weather advisories, and explained how they are produced and distributed to aviation users. Proposed amendments to the advisories for the near term and coordination and collaboration between the space weather center coordination group and the ICAO Meteorology Panel's (METP) Space Weather Work Stream as it related to ongoing improvements was also discussed. The presentation concluded with information on guidance material, user workshops, and future developments supporting operational use of the service.

2.2.2 During the discussion, it was clarified that users may access WIFS products through multiple dissemination mechanisms. Organizations with an approved WIFS account may obtain information directly through the WIFS service. In addition, distribution may also be supported through AMHS using the facility's 8-letter AFTN/AMHS address, and products continue to be available through the Satellite Broadcast Network (SBN). This flexibility provides users with multiple pathways to access WAFS information according to their operational environment.

2.3 Volcano Observatory Notice to Aviation (VONA) Presented by: Ms. Karen Shelton-Mur (Federal Aviation Administration – FAA), Dr. David Schneider (United States Geological Survey – USGS), and Mr. Jamie Kibler (Washington Volcanic Ash Advisory Centre Manager, NOAA).

- 2.3.1 The presentation explained the role of the Volcano Observatory Notice to Aviation (VONA) as the globally standardized mechanism for communicating volcanic unrest, eruptions and volcanic ash hazards to the aviation community. It highlighted the

responsibilities of State Volcano Observatories (SVOs), their interaction with Volcanic Ash Advisory Centres (VAACs) and Meteorological Watch Offices (MWOs), and the new provisions introduced through Amendment 82 to Annex 3 and the PANS-MET/Doc 10157. Particular attention was given to standardized content, aviation colour codes, dissemination arrangements, TAC and IWXXM formats, and practical implementation mechanisms for distributing VONA information through the aeronautical information network. The presentation highlighted that Amendment 82 introduced a recommendation for VONA information to be made available in IWXXM format, in addition to TAC, and disseminated over the Aeronautical Fixed Service (AFS); supporting greater digital interoperability and facilitating future integration with evolving aviation information systems. Emphasis was also placed on how SVOs can disseminate the VONA within the NAM/CAR region by developing a header and submitting the VONA to the Washington Inter-Regional OPMET Gateway (IROG) via the eMail Data Input System (ps://www.weather.gov/tg/emailingest)

2.3.2 The final portion of the presentation introduced NWSChat 2.0, a collaborative communication platform based on Slack technology that supports real-time coordination among VAACs, MWOs, State Volcano Observatories and other operational stakeholders. Examples presented during the Seminar demonstrated how rapidly information related to volcanic activity can be exchanged through the platform, supporting situational awareness, coordination and timely dissemination of operationally relevant information during volcanic events. The demonstration highlighted the capability of NWSChat to rapidly share updates received from volcano observatories and other operational partners, reinforcing the importance of real-time collaboration within the International Airways Volcano Watch (IAVW) framework.

2.4 Quantitative Volcanic Ash (QVA) Concentration Information Service Presented by: Mr. Larry Burch (AvMet Applications, Inc.)

2.4.1 The presentation introduced the QVA Information Service, a new ICAO information service designed to complement traditional volcanic ash advisories by providing quantitative volcanic ash concentration information and probabilistic data. QVA information offers operators the opportunity to move away from this traditional discernible ash criteria and instead use certified engine susceptibility for flight route planning and inflight replanning. The presentation described the technical characteristics of the service, including deterministic and probabilistic forecasts, machine-readable IWXXM products, gridded datasets, standardized concentration thresholds, and future distribution mechanisms compatible with digital information exchange environments. Emphasis was placed on the evolution from qualitative volcanic ash information toward quantitative and risk-based products intended to enhance operational decision-making.

2.4.2 The presentation highlighted that QVA information is expected to support operational decision-making, flight planning and risk assessment during significant volcanic ash events. Under Amendment 82, implementation follows a phased approach. Until 25 November 2026, QVA information may be provided by those VAACs that have already developed the capability to issue the service for significant volcanic ash clouds. From 26 November 2026 onward, it becomes a Recommended Practice for all VAACs, while beginning in November 2030 QVA it is expected to become a Standard applicable to all VAACs for significant volcanic ash clouds based on further ICAO METP discussions and arrangements. The

presentation also emphasized that successful implementation requires continued coordination among VAACs, regulators, service providers and operational users, together with appropriate training and familiarization activities.

2.5 Meteorological Information Exchange Presented by Ms. Rebecca Kotten (Federal Aviation Administration – FAA, U.S. Member of the ICAO Meteorology Panel (METP) and Co-Rapporteur of the METP Working Group on Meteorological Information Exchange (WG-MIE)).

2.5.1 The presentation provided an overview of ongoing activities undertaken by the ICAO Meteorology Panel Working Group on Meteorological Information Exchange (WG-MIE) in support of the digital transformation of aeronautical meteorology. It reviewed the global status of IWXXM implementation, noting that although IWXXM became an ICAO standard exchange format in November 2020, operational implementation and international exchange remain uneven across regions. The presentation addressed topics including IWXXM availability, operational versions, State extensions, implementation monitoring activities, and the need to improve consistency and interoperability among meteorological information exchange systems.

2.5.2 The presentation also discussed mechanisms supporting international OPMET exchange, including the development of Meteorological Notices (METNO), the use of AMHS File Transfer Body Part (FTBP) capabilities, coordination among Regional OPMET Centres (ROCs) and Regional OPMET Data Banks and the increasing role of machine-readable meteorological information. Particular attention was given to the long-term transition toward System Wide Information Management (SWIM), the evolution of API-based services, and ongoing discussions regarding the eventual removal of TAC as a standard format for international meteorological information exchange. The presentation emphasized that future aeronautical meteorological services will increasingly depend upon interoperable digital information environments supported by IWXXM and SWIM.

2.6 Operational User Perspective Presented by: Dr. Ricardo Prieto Gonzalez AEROMEXICO Operational Weather Team Lead

2.6.1 The presentation provided an operational airline perspective on the use of meteorological information in support of flight operations. It described the role of the Aeromexico Weather Team and the broad range of meteorological products used to support operational planning and decision-making before, during and after flight operations. Examples included the use of METARs, SPECIs, TAFs, SIGMETs, volcanic ash information, tropical cyclone products, space weather information, nowcasting tools, weather radar products and tailored operational forecasts. The presentation demonstrated how meteorological information contributes directly to safety, efficiency, fuel planning, crew management, disruption management and operational recovery activities.

2.6.2 The presentation also identified several opportunities for further enhancement of aeronautical meteorological services, including forecast verification, airport climatological information, improved availability of real-time observational data, and the development of products capable of supporting operational planning during significant weather events. Emphasis was placed on the importance of delivering timely, accurate and operationally relevant information that supports aviation decision-making and contributes to overall operational resilience. The presentation illustrated the growing value of integrating observational data, forecasting capabilities and historical weather information to support both strategic and tactical operational decisions

3. Key Outcomes Relevant to the Review of the 2026 Work Programme

3.1 The Technical Seminar identified actions and needs that may support the review of the 2026 Work Programme and assist in the formulation of activities for 2027. In particular, the presentations highlighted areas where the MET/TF may strengthen implementation efforts, regional coordination, user familiarization, and preparedness for emerging aeronautical meteorological services.

3.2 Regarding digital meteorological information exchange, the Seminar identified the need to continue advancing the operational implementation of IWXXM, establish METNO procedures, assess AMHS/FTBP capabilities, identify OPMET/IWXXM focal points, and progressively prepare for SWIM-enabled environments and API-based services, including the transition to WIFS API.

3.3 Regarding VONA, the presentations highlighted the need to accelerate the implementation of Amendment 82 and PANS-MET provisions, including coordination among Civil Aviation Authorities, SVOs, VAACs, MWOs and MET service providers; dissemination of VONA information in TAC and IWXXM formats; the use of mechanisms such as EDIS where direct access to AFS/AMHS is not available for backup; and the use of collaborative platforms, such as NWSChat 2.0, to strengthen operational coordination and the timely exchange of information during volcanic ash events and volcanic ash SIGMET coordination.

3.4 Regarding QVA, the Seminar identified the need to prepare States, VAACs, service providers and operational users for the progressive implementation of the service, including the interpretation of quantitative and probabilistic products, their use in flight planning and risk assessment, and the future integration of QVA information within digital and interoperable information environments.

3.5 The presentation on the ICAO Space Weather Information Service (SWIS) underscored the need to strengthen awareness and operational understanding of ICAO space weather services, particularly regarding their application to operational planning, HF communications, GNSS, surveillance functions affected by ionospheric propagation, and radiation-related considerations. This topic could remain an area of familiarization and knowledge-building within future MET/TF activities.

3.6 The operational perspective presented by AEROMEXICO reaffirmed that the Work Programme should more explicitly consider operational user needs. Relevant areas identified included TAF verification, availability of real-time observational information, access to airport climatological information, products supporting significant weather events, and the use of meteorological and climatological information to strengthen operational planning, resilience and decision-making.

3.7 Collectively, the presentations suggest that the 2026–2027 Work Programme should continue prioritizing activities related to IWXXM/METNO/SWIM implementation, VONA and QVA implementation, operational coordination mechanisms including EDIS, NWSChat and collaborative platforms supporting volcanic ash SIGMET coordination, user familiarization with emerging meteorological services, and greater integration of meteorological, observational and climatological information in support of aviation operational decision-making.

4. Action by the Meeting

4.1 The Meeting is invited to:

- a) consider the activities, needs and implementation challenges identified during the Technical Seminar in the review of the MET/TF 2026 Work Programme;
- b) identify activities that should remain active, be strengthened or be incorporated into future MET/TF work programmes; and
- c) provide guidance on additional priorities, deliverables and coordination mechanisms that may support the implementation of aeronautical meteorological services in the NAM/CAR Regions.

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