



International Civil Aviation Organization

**MIDANPIRG Meteorology Sub-Group  
Eighth Meeting (MET SG/8)**

*(Cairo, Egypt, 1 - 3 July 2019)*

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**Agenda Item 3: Global/Regional developments related to MET**

OUTCOMES OF MET PANEL AND ASSOCIATED WORKING GROUPS' MEETINGS

*(Presented by the Secretariat)*

**SUMMARY**

A summary of the MET Panel and associated Working Groups' Meetings is provided in this paper.

Action by the meeting is at paragraph 3.

**1. INTRODUCTION**

1.1 The meeting may recall the following global meetings of the Meteorology Panel (METP) and associated Working Groups were conducted this past year:

- Fourth meeting of the Meteorology Panel (METP/4) held from 10 to 14 September 2018 in Montréal;
- Fifth meeting of the ICAO Meteorology Panel Working Group on Meteorological Requirements and Integration (METP WG-MRI/5) held from 7 to 9 May 2019 in Montréal;
- Fifth meeting of the ICAO Meteorology Panel Working Group on Meteorological Information and Service Development (METP WG-MISD/5) held from 18 to 22 February 2019 in Melbourne;
- Fifth meeting of the ICAO Meteorology Panel Working Group on Meteorological Information Exchange (METP WG-MIE/5) held from 6 to 10 May 2019 in Montréal (*note that the report was not yet available at the time of writing*);
- Ninth and Tenth meetings of the ICAO Meteorology Panel Working Group (METP WG-MOG/9 and METP WG-MOG/10) held from 2 to 5 April 2019 in Toulouse (*note that this section should be well covered by the SADIS Provider presentations*); and
- Eighth meeting of the ICAO Meteorology Panel Working Group (METP WG-MOG/8) held from 12 to 14 November 2018 in Wellington.

1.2 Outcomes of these meetings, where the final reports were made available, are provided in this paper.

## 2. DISCUSSION

### 2.1 Significant outcomes from METP/4 included:

- New approach for the definition of new MET requirements consisting in the identification of three areas of information service development: long-haul flight operations, aircraft ground de-icing operations and aerodrome observations;
- Ad-hoc group composed of members from WG-MRI and WG-MIE established to assess, scope, articulate and translate into information services user requirements (operator and ATM) for using meteorological information in a SWIM environment, commencing with forecast elements in the terminal area;
- WG-MRI Rapporteur tasked to continue work on the development of the future PANS-MET based on an information centric approach, while taking account as far as possible, the needs of intended users groups to have information structured in as helpful a way as possible and the WG-MRI report back to METP/5 of delivering the finalized draft proposal for Annex 3 and PANS-MET in view of its issuance by 2022;
- Ad-hoc group tasked to review the provision of volcanic ash services to aviation with the view to harmonize the global delivery of meteorological hazards;
- Proposals for Amendment 79 to Annex 3: SIGMET information for radioactive cloud (*remove conditional statement for use of radius of up to 30 km, clarifying use of WI and STNR in these messages*); space weather information (*e.g. inclusion of SATCOM MOD under SWX EFFECT, update of flight level resolution from 30 to 10*); METAR (*ability to indicate parameters that are missing in the METAR produce with solidi “/” and update the associated guidance material – ICAO Doc 8896, 9328 and WMO-No. 306*); SIGMET for Tropical Cyclone (*use of WI of TC CENTRE and clarity on repeated elements that includes cumulonimbus clouds associated with TC (versus the TC centres)*) and Tropical Cyclone Advisories (*inclusion of changes in intensity*); use of Aeronautical Fixed Service (AFS) versus Aeronautical Fixed Telecommunications Network (AFTN) for the exchange of OPMET bulletins; MODEL VAG (volcanic ash advisory information in graphical format) and MODEL SVA (SIGMET for volcanic ash in graphical format) (*examples of Mercator and Polar stereographic projection*); re-suspended volcanic ash in VAA template; revised eddy dissipation rate (EDR) threshold values; AIRMET and GAMET information (*a recommendation that area forecasts for low-level flights in support of international air navigation prepared in accordance with regional air navigation agreement and in support of the issuance of AIRMET information should be transmitted to aeronautical fixed service Internet-based services*); update to references to quality management system guidance material (*ICAO Doc 9873 replaced by WMO-No. 1100*); inclusion of heavy dust storms (HVY DS) in special air-reports;
- Proposal for Amendment 92 to Annex 10 concerning the exchange of IWXXM over the Air Traffic Service (ATS) Message Handling Services (ATSMHS);
- Update Job Cards: – Further Development of Provisions for Information on the Release of Radioactive Material into the Atmosphere (*remove parallel efforts – use of cylinder and develop guidance for the provision of information about airspace potentially affected by the release based on airborne transport dispersion modelling using a default source term*); Development of Provisions Phenomena-based, Globally-consistent, Regional Advisory System for Select Enroute Hazardous Meteorological Conditions (*include: development of user needs and short-fall analysis, update ConOps, and development of roadmap*); Development of Provisions for Information on Space Weather to International Air Navigation (*develop version 2.0 of the Manual to support the implementation of Annex 3 provisions related to space weather information, including details and guidance how space weather information would be used by various aviation users, such as Airline operators, pilots, air navigation service providers*

(ANSP) and etc.); Inclusion of aeronautical meteorological information in the SWIM-enabled environment and further development of the SWIM concept relating to meteorology; Further development of the Secure Aviation Data Information Service (SADIS) and WAFS Internet File Service (WIFS) and Further development of the World Area Forecast System (WAFS); WAFS information; and development of cost-recovery implementation guidance and governance considerations;

- MISD/RMM complete the development of the ConOps with regard to the release of Radioactive Material into the Atmosphere;
- Temporary cessation of further development of SARPs for future Amendments to Annex 3 by the MISD RRM be applied until further refinement of the user needs and Concept of Operations for such information supporting the development of SARPs (*in light of any improvements in scientific capability that can be operationally implemented, the WG-MISD advise the Panel of any substantive Job Card update that may be appropriate*);
- METP continue to endorse the concept of regional hazardous weather advisory service and the development by the WG-MISD, of its roadmap;
- Established a coordination group to facilitate the coordination between the centres necessary to ensure the provision of consistent space weather information coincident with initiation of the ICAO space weather information service;
- Established a group to develop the initial governance necessary to provide oversight of the space weather information service;
- Published Version 1.0 of the *Manual on Space Weather information in Support of International Air Navigation*;
- Propose provisions to remove traditional alphanumeric code (TAC) forms from the Annex not later than 2026, ensuring adequate lead-time for this change in Annex 3;
- Create a roadmap document outlining the different steps to be considered so that the current legacy TAC products are no longer required to be distributed internationally after 2026;
- Determine mechanisms to ensure TAC is secondary information and promote the use of ICAO Information Meteorological Exchange Model (IWXXM) data, particularly leading up to full system-wide information management (SWIM) implementation;
- Consider what level of visualization/representation of meteorological information should be managed in a system-wide information management (SWIM) environment by ICAO and the World Meteorological Organization (WMO) when traditional alphanumeric code (TAC) is removed from Annex 3;
- Affirm METP commitment to the *ATM Information Reference Model (AIRM)* alignment and interoperability and include this activity in the work plan for the WG-MIE;
- Endorse *MET-SWIM Plan* and *MET-SWIM Roadmap* and seek further alignment of the MET-SWIM Plan and MET-SWIM Roadmap with the concepts in Doc 10039 *Manual on System Wide Information Management*;
- ICAO, WMO and other relevant stakeholders continue to work in close cooperation on the various interoperability requirements related to ICAO system-wide information management (SWIM) and the WMO Information System (WIS);
- Proposed changes to ICAO Doc 8896 – *Manual of Aeronautical Meteorological Practice*: the introduction of IWXXM elements and to distinguish between TAC and IWXXM versions of OPMET information; indicate exact pressure levels in WAFS information; update guidance on reporting of SIGWX forecast discrepancies to WAFCs;

- Proposed changes to ICAO Doc 10003 – *Manual on the Digital Exchange of Aeronautical Meteorological Information* related to IWXXM;
- Endorsed the revised *Guidelines for the Implementation of OPMET Data Exchange Using IWXXM*;
- Endorsed update to the *Regional SIGMET Guide Template*;
- Proposed update to the roadmap for the International Airways Volcano Watch (IAVW);
- Tasked the METP WG-MOG (IAVW) to further review, and, if necessary, propose an update to the VONA template and/or associated guidance within ICAO Doc 9766 in respect of the reporting of re-suspended volcanic ash and review the NOTAM format and the ASHTAM format in respect of the reporting of re-suspended volcanic ash with a view to providing a paper to the Information Management Panel (IMP) which discusses potential changes to ICAO Annex 15 – *Aeronautical Information Services*;
- WMO invited to consider the planned improvements to WAFS SIGWX forecast information and how these improvements can be enhanced with the inclusion of additional tropical cyclone advisory information provided by the TCACs, i.e. the position of tropical cyclones from T+0 to T+48 hours, at 3 hourly time-steps;
- Established ad-hoc group to review deficiencies in current cost recovery systems, how services have changed, what new cost recovery challenges have arisen, and identify possible mechanisms to recover costs in equitable manner consistent with ICAO’s key charging principles;
- Discontinued ICAO Doc 9873 – *Manual on the Quality Management System for the Provision of Meteorological Service for International Air Navigation* and that all references to ICAO Doc 9873 be replaced by WMO-No. 1100 unless for historical context; and
- Inter-Panel ad-hoc team review the provisions and information relating to special air-reports in Annex 3, Annex 11, Doc 8896 and Doc 4444 and consider whether the templates for AIREP and Special AIREP should reside in a single document without duplication, either Doc 4444 or Annex 3.

2.2 Significant outcomes from METP WG/MRI/5 included:

- Agreement to develop a detailed description and schedule of work related to the development of PANS-MET keeping in mind the goal is to have a finalized draft PANS-MET and restructured Annex 3 for presentation to METP/5 in September 2020;
- Noted that a final draft of the *Requirements for Aircraft De-Icing* should be presented to MRI/6;
- Agreed to begin a draft document *Requirements for Long-Haul Flight Operations*; and
- Agreed to continue development of a catalogue of meteorological parameters for the airport domain.

2.3 Significant outcomes from the WG/MISD/5 included:

- Agreement to update the Regional Hazardous Weather Advisory System Roadmap to meet the user needs identified in the user requirement survey;
- Identify and develop use cases to define how specific users will utilize different types of phenomena-based, globally-consistent en-route hazardous MET information and provide the use cases by December 2019;

- Finalize the Concept of Operations for Regional Hazardous Weather Advisory Service for review by WG-MISD/6 prior to endorsement at METP/5;
- Develop the service architecture, consistent with the concept endorsed at METP4, for the provision of phenomena-based, globally-consistent, en-route hazardous meteorological information, including identifying phenomenon responsibilities and area of responsibility and provide a draft recommendation for review at WG-MISD/6 prior to endorsement at METP/5;
- Agreement that the draft version 2.0 of the Concept of Operations for Radioactive Material Information Service in Support of International Air Navigation be considered the final version of the document, at this time;
- Agreement on evaluating the scientific merit and operational applicability of various modeling options as well as any other alternatives for providing RRM information for aviation decision making;
- Agreement on developing an updated roadmap for the RRM Work Stream by November 2019;
- Agreement to review the current provisions for space weather information within Annex 3 (e.g. possible inclusion of confidence within the advisory; possible provisions specific to regional centres) and report back to MISD/6 with a mature set of proposed amendments to be submitted to METP/5 for inclusion in the proposed amendments to Annex 3 (Amendment 80) with expected applicability of November 2022; and
- Agreement that the Space Weather Centre Coordination Ad-Hoc Group consider possible inclusion of initial alert advisory.

2.4 A status on METP WG/MIE/5 is not included since the report of this meeting was not yet available at the time of writing.

2.5 WAFS, SADIS and WIFS related issues will be addressed by the SADIS Provider and therefore, outcomes of METP WG-MOG/9 and METP WG-MOG/10 are not addressed here.

2.6 Significant outcomes related to volcanic ash stemming from METP WG-MOG/8 included:

- Review current Key Performance Indicators (KPIs) and propose suitable compliance and accuracy metrics for VAACs to report on by the next meeting;
- IFALPA tasked to raise the issue of the need for increased reporting and dissemination of volcanic ash reports (both NIL encounter reports and actual encounter reports) at the next IATA Flight Operations Support Task Force (FOSTF) meeting, to help the VAACs improve the quality of their advisory information;
- METP Secretariat invited to liaise with the FLTOPSP Secretariat to inform them of the need to ensure that all aircraft encounters with volcanic ash are reported using the Volcanic Activity Report (VAR) form, in accordance with PANS-ATM (ICAO Doc 4444);
- METP Secretariat requested to update Appendix F of ICAO Doc 9691 with the updated Severity Index table;

- Ad-hoc group tasked to further review and, if necessary, propose an update to the VONA template and/or associated guidance within ICAO Doc 9766 in respect of the reporting of re-suspended volcanic ash and report the results to the next meeting;
- Ad-hoc group tasked to review the NOTAM and ASHTAM format in respect of the reporting of re-suspended volcanic ash with a view to providing a paper to the Information Management Panel (IMP) which discusses potential changes to ICAO Annex 15 – *Aeronautical Information Services* and consider the utility of the ASHTAM itself amongst users and report the results to the next meeting;
- Ad-hoc group tasked to create guidance for SVOs and VAACs to ensure consistency in the creation and use of the VONA and review the VONA and consider how it (or sub-elements of it) could be put in IWXXM format and feed into the SWIM environment and report the results to the next meeting;
- WG-MOG Rapporteur prepare a WP to METP/5, for inclusion as part of Amendment 80 to Annex 3 (applicable Nov 2022) the proposed amendment to Annex 3 concerning the removal of the aviation colour code from the VAA and the elevation in the status of the VONA from a Note to a Recommended Practice;
- WG-MOG IAVW Work Stream tasked to update the ConOps and Roadmap of the IAVW, taking into account the proposed 2019 update to the GANP, and the comments provided at WG-MOG/8 as well as liaise through the METP Secretariat to ensure other METP work streams, other concerned Panels, and PIRGs are aware of this work and report back to the next meeting;
- METP WG-MISD Volcanic Ash and Sulphur Dioxide (VASD) Work Stream be invited to address the future requirements for the delivery of quantitative volcanic ash information and forecasts, including the need to provide confidence information and improved structural efficiencies, utilising the METP requirements development process; and
- Ad-hoc group tasked to pursue, in collaboration with CTBTO, the development and testing of the volcanic information system (VIS), with the objective to establish a real-time operational system for use by the VAACs and report back to the next meeting.

### **3. ACTION BY THE MEETING**

- 3.1 The meeting is invited to note the contents in this paper.