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**ICAO ACTIVITIES AND COORDINATION NEEDS**

METP/2 main outcomes, METP working group activities
and other relevant ICAO developments

*(Submitted by the ICAO Secretariat)*

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| **Summary and Purpose of Document**This document provides the CAeM Management Group with a report of the main outcomes of the Second Meeting of the ICAO Meteorology Panel (METP/2) held from 17 to 21 October 2016 in Montreal, Canada, together with an overview of recent and ongoing activities of the METP working groups and other ICAO developments of direct relevance to CAeM and other Technical Commissions. Moreover, this document highlights where coordination between ICAO and WMO is required. |

**ACTION PROPOSED**

The Management Group (MG) is invited to review the report, consider those activities/developments of direct relevance to CAeM and other Technical Commissions, discuss the identified coordination needs and, as necessary, formulate actions accordingly.

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1. **EXECUTIVE SUMMARY**

***Second Meeting of the ICAO Meteorology Panel (METP/2)***

* 1. The second meeting of the Meteorology Panel (METP) was held in the ICAO Headquarters, Montreal, Canada, from 17 to 21 October 2016. The meeting was attended by some 60 members, advisers and observers nominated by eighteen Contracting States and six international organizations.
	2. The main outcomes of the meeting include Recommendations for proposed amendments to Annex 3 — *Meteorological Service for International Air Navigation*, for inclusion in Amendment 78 aiming at 2018 applicability,and for modifications to various job cards of the METP to reflect the evolving needs and more realistic timeframes.
	3. Among the amendment proposals are those concerning the use of a circle (cylinder) in SIGMET messages, including RDOACT CLD; SARPs for the establishment of the space weather service and a template for an advisory message, and consequential amendments to Annex 15 — *Aeronautical Information Services*, PANS-ABC (Doc 8400) and PANS-ATM (Doc 4444); Note in Annex 3 referring to guidance material to improve the provision of SIGMET information; Amendment to Annex 3 regarding IWXXM standards for METAR/SPECI, TAF, SIGMET, AIRMET, volcanic ash advisories and tropical cyclone advisories; Amendment to Annex 3 regarding the Operational Status Indicators, TEST or EXERCISE in VAA, TCA and SIGMET; and changes to Annex 3, Table A2-2 (TCA) and A6-1A (SIGMET/AIRMET), particularly to indicate improvements to tropical cyclones services.
	4. Apart from the above, the METP/2 provided its four Working Groups and one AD-Hoc Group with strategic directions by endorsing various roadmaps and work plans, which will facilitate the future work of these groups.

***METP working group activities***

* 1. The working groups of the METP had made much progress in a relatively short period of time since the METP/1 (20 to 24 April 2015), which contributed significantly to the successful convening of the METP/2.
	2. Some detailed information regarding the outcomes of the METP/2, reflecting activities of different working groups as well as coordination needs between ICAO and WMO can be found in paragraph 2 below.

***Other relevant ICAO developments***

* 1. In addition to coordination with WMO, the METP work requires coordination with some other ICAO panels, including, but not limited to the Air Traffic Management Requirements and Performance Panel (ATMRPP) and the Information Management Panel (IMP). The ATMRPP will hold its second meeting (ATMRPP/2) from 14 to 18 November in Montreal, where work on job card ATMRPP.006.02 (Aeronautical meteorological information to support ATM operations from gate to gate) will be coordinated. The Third Meeting of the IMP Working Group (IMP/WG/3) will also be convened on the same dates in Montreal, which will give an opportunity for the Secretariat to coordinate work in the field of SWIM.
	2. The 39th Assembly of ICAO (27 September to 7 October 2016) endorsed the fifth edition of the Global Air Navigation Plan (GANP), including the Aviation System Block Upgrades (ASBU) framework, which is an integral part of the Plan, as the strategic direction for global air navigation. Aeronautical meteorology is an important part of the ASBU frame work.
	3. It is envisaged that the next edition of GANP will be published in 2019. ICAO is planning to convene a Global Air Navigation Industry Symposium (GANIS) in 2017 and the 13th Air Navigation Conference (AN-CONF/13) in 2018, where strategic issues on global air navigation will be discussed, which will form the basis for the future work programme of ICAO in the fields of air navigation.
1. PROGRESS/ACTIVITY REPORT

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| ***Meteorological requirements and integration*** |

* 1. Activity 1 of METP/WG-MRI, supporting the ATMRPP in finalizing the Meteorological Information Integration for Trajectory Based Operations Concept, had been concluded in December 2015. The WG-MRI suggested that the title of the Concept paper be revised to: Concept for the integration of Meteorological information for ATM.
	2. Based on the Concept for the integration of Meteorological information for ATM, activity 2 of the METP/WG-MRI will provide further detail to the requirements for MET information and the integration into ATM. A first iteration of ‘functional’ requirements for all ASBU modules identified was planned for December 2016 followed by the development of “performance requirements” over 2017.
	3. Activity 3 of the WG-MRI, related to job card METP.002.01, calls for the development of a ASBU AMET Block 2 relating to meteorology by May 2017 and an update to ASBU AMET Block 1 relating to meteorology to support ATM in the terminal area also by May 2017.
	4. With respect to the development of PANS-MET, the METP/2 concluded on a phased approach: The initial phase will undertake the transposition of the relevant existing Annex 3 SARPs into a new PANS-MET. The second phase will transform the provisions in the newly restructured Annex 3 and PANS-MET from a product-based viewpoint to an information-based viewpoint enabling the integration of meteorological information into the SWIM environment.

***Meteorological information and service development***

* 1. The MISD’s work consists of five work streams: Release of Radiological Material (RRM) Work Stream, Space Weather Information Work Stream, Volcanic Ash and Gas Information Work Stream, Regional Hazardous Weather Advisory Centre (RHWAC) Work Stream and the World Area Forecast System (WAFS) Work Stream.
	2. As a result of the work of the RRM Work Stream, the MISD submitted to METP/2 proposed amendments to Annex 3 on the use of a circle (cylinder) in SIGMET messages, including RDOACT CLD. The associated guidance material on the draft SARP will be developed by October 2017, per the work stream’s work plan.
	3. The Space Weather Work Stream had also developed proposed SARPs in Annex 3 for space weather service and associated consequential amendment to other ICAO documents, proposed criteria for space weather information providers, functional and performance requirements for space weather information, proposed guidance on the process for selecting space weather information providers, version 4.0 of the ConOps for space weather information and the draft outline for the space weather manual.
	4. WMO and ICAO will continue to need to work closely together in the establishment of space weather services supporting aviation. The METP/2 endorsed the guidance on the process for establishing the global space weather information capability, including the schedule to complete the process. The METP/2 recommended that WMO be requested to undertake site assessments and audits of prospective space weather information providers in accordance with the timeline and to provide a consequential report to ICAO, to assist ICAO in its designation of the space weather information providers.
	5. The METP/2 agreed that the WG-MISD, through its space weather work stream, develop an implementation plan for the provision of space weather services in November 2018, to be added to the work plan. This includes the completion of a manual on space weather and the completion of amendments to regional plans.
	6. The WG-MISD had developed version 2.1 of the Roadmap for the International Airway Volcano Watch (IAVW). Version 2.1 is a complete revision from version 1.0, which was presented at the 2014 MET Divisional Meeting. The roadmap was endorsed by the METP/2.
	7. The METP/2 agreed that WG-MISD take into consideration the list of requirements from IATA in the planned work to be done for the development of provisions for SO2 information.
	8. The RHWAC work stream had considered that user needs must first be defined in order to develop requirements for any hazardous weather centres and that the implementation of new hazardous weather services should be delayed until Amendment 79 to Annex 3 (expected applicability in November 2020). To address user needs in the near-term, the METP/2 agreed that Amendment 78 to Annex 3 (November 2018) should include a note to §3.4.1 on guidance to meteorological watch offices (MWO) in bilateral and multi-lateral cooperation and coordination of SIGMET information messages.
	9. Associated guidance for the draft SARP is being prepared, which will be included in Doc 8896 - Manual on Aeronautical Meteorological Practices. This guidance is based on best practices
	10. The work done by the WAFS Work Stream during the intersessional period resulted in an updated roadmap for the WAFS, a ConOps for the WAFS and a catalogue of WAFS information for the System Wide Information Management (SWIM) system.

***Meteorological information exchange***

* 1. WG-MIE mainly deals with Job Card METP.004.01 concerning the development of provisions to enable the inclusion of meteorological information in the future system-wide information management (SWIM) environment.
	2. WG-MIE created an initial draft of the MET-SWIM Plan (currently titled the *Plan for Meteorology in System Wide Information Management (SWIM)*). A separate document, the MET-SWIM Roadmap (currently titled *Roadmap for Meteorology in System Wide Information Management (SWIM)*) is also being developed. The MET-SWIM Plan supplements Doc 10039 (Manual on System Wide Information Management) and Doc 10003 (Manual on the Digital Exchange of Aeronautical Meteorological Information) with further detail on the exchange of aeronautical meteorology information within SWIM.
	3. WG-MIE had developed amendment proposals for Annex 3 on IWXXM standards for METAR/SPECI, TAF, SIGMET, AIRMET, volcanic ash advisories and tropical cyclone advisories. As regards the implementation, The METP/2 agreed that IWXXM be introduced as a standard in Annex 3 in 2018 through Amendment 78 but the applicability date be delayed until 2020. This would allow more time for ICAO/WMO to resolve technical issues and is a more realistic timeframe for implementation based on recent surveys of States readiness for IWXXM implementation. This proposal allows for a 30 month lead time for the notification to States that IWXXM will become a standard, thus allowing for better planning and budgeting for the implementation phase.
	4. On a general basis, the METP/2 agreed to a standing working practice such that, for changes that require modification of the IWXXM representations of information, the effective date is no sooner than eighteen months following publication of the amendment to Annex 3.

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| ***Meteorological operations group*** |
| * 1. The three work streams of MOG are: World Area Forecast System (WAFS) Work Stream, Secure Aviation Data Information Service (SADIS)/WAFS Internet File Service (WIFS) Work Stream and International Airways Volcano Watch (IAVW) Work Stream.
	2. Much progress had been achieved in all work streams. This includes, among others, an update to the Regional SIGMET Guide Template, which was endorsed by the METP/2; the Annual statement of operational efficacy of SADIS 2015/2016, the 2016/2017 SADIS operational efficacy questionnaire, the SADIS Inventory 2016/2017, OPMET data for non-AOP aerodromes, the cessation of SADIS-2G satellite broadcast and the Sixth Edition of the SADIS User Guide, etc.
	3. In respect of OPMET data for non-AOP Aerodromes that are being disseminated internationally, the METP/2 noted that there was no mandate under the convention to provide this data through ICAO systems. In this regard, it was suggested that IATA raise this matter formally with ICAO.
	4. The METP/2 was pleased to note the extension of the area of responsibility of VAAC Tokyo north of N6000 between E09000 and E15000. The meeting congratulated the IAVW work stream for this achievement and noted that VAAC Tokyo would be ready to provide VA advisory information on the extended area in early December 2016. It is highlighted that the International Airways Volcano Watch (IAVW) will now have global VAAC coverage which will result in improved flight safety and efficiency at the above referred area.
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| ***Cost recovery guidance and governance*** |

* 1. The Meteorological Cost Recovery Guidance and Governance (MCRGG) Ad-Hoc Group was allocated work under JC 11 - *Development of cost-recovery implementation guidance and governance considerations*.
	2. Given the significance of the MCRGG work undertaken, along with the significant MET systems additions and changes being considered, and with regard to the development of a PANS MET document, the METP recognized a critical need for some form of high-level view on where and how MET service delivery to international aviation was going to proceed well into the future.
	3. To meet this need, a first draft of a White Paper on Future Aeronautical Meteorology Information Delivery has been completed for internal consideration. It is considered that this joint METP/ET-GOV vision on the evolution of the ‘MET Eco-System’ will assist both the ICAO METP and WMO CAeM in all their forward looking activities well beyond the GANP developments also included in the paper – nominally with a 2035 horizon.
	4. A further draft of the White Paper on Future Aeronautical Meteorology Information Delivery is expected to be completed during the first quarter of 2017 and will be available to all METP members to assist in their work. It is yet to be decided how this paper should be socialized with the broader ICAO and WMO MET community in order to raise awareness and reach consensus on the envisaged changes in MET service delivery and integration into ATM.
	5. The METP Members are invited to provide their feedback on the White Paper by 30 November 2016 by using the response form made available on the METP webpages. The MCRGG, in coordination with the WMO ET-GOV, will endeavour to have a first formal iteration of the white paper ready for distribution by 27 January 2017.

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