INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY SIXTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/26)

Bangkok, Thailand, 7 – 10 September 2015

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.5 **MET**

STRENGTHENING MET/ATM COLLABORATION AND PROMOTING CROSS BORDER MET COORDINATION

(Presented by Hong Kong China, Japan, Philippines and Singapore)

SUMMARY

This paper encourages the ATM community, including Air Navigation Service Providers (ANSPs) and Civil Aviation Authorities (CAAs), to strengthen their engagement with their Aeronautical Meteorology (MET) counterparts to develop and harmonise requirements for ATM-tailored MET products. The platform for ATM to engage MET is not only limited those facilitated by ICAO. ANSPs and CAAs can engage MET at national and sub-regional level. The engagement of MET could be guided by a collaboration framework that provides a comprehensive scope to enhance MET support for ATM. Beyond this, ANSPs and CAAs could also push for greater cross border coordination and collaboration between MET service providers which contributes to safety and efficiency of air navigation in the region.

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*

B: ***Air Navigation Capacity and Efficiency****—Increase the capacity and improve the efficiency of the global aviation system*

1. INTRODUCTION

1.1 As air traffic movements in the Asia Pacific Region continue to grow in the years to come, the need for ATM and Aeronautical Meteorology (MET) communities to work together becomes an important factor to support a safe and efficient environment for airspace users to operate in.

1.2 Air Traffic Service (ATS) and Air Traffic Flow Management (ATFM) are two of the three elements of ATM that rely heavily on MET. Timely and accurate dissemination of weather information is critical to support the ATS operations to ensure air traffic controllers and pilots can make effective decisions when the airport or portions of airspace are affected by adverse weather conditions. Air Traffic Flow Management (ATFM) to balance demand and capacity would entail proactive planning that is supported by accurate MET forecast within the planning horizon for ATFM.

1.3 ICAO recognised that the advancement of MET is one of the key elements to enable the aviation industry to face the future challenge. This can be seen with the incorporation of MET elements in the latest edition of the ICAO Global Air Navigation Plan (GANP, Doc 9750) and the Aviation System Block Upgrade (ASBU) methodology. In this regard, it is essential for the ATM community, which includes Air Navigation Service Providers (ANSPs) and Civil Aviation Authorities (CAAs), to engage the MET community in developing and harmonising requirements for MET to support ATM.

2. DISCUSSION

Platforms for ATM to Collaborate with MET

2.1 APANPIRG endorsed Conclusion 25/48 which calls for ICAO, in coordination with the World Meteorological Organisation (WMO), to conduct MET/ATM Seminars. The Seminar aimed to provide the ATM and MET communities the opportunity to share ideas and experience on developments in MET to support ATM operations. At the same time, the various contributory bodies under the MET Sub Group of APANPIRG, such as the MET Requirement Task Force (MET/R TF) and the MET Hazard Task Force (MET/H TF), provides as excellent platform for ANSPs and CAAs to engage the MET community. Participation of ATM experts at these events helps to enrich discussions and make requirements clearer to the MET community.

2.2 Beyond these existing platforms which allow ATM to engage MET, ANSPs and CAAs could also explore to strengthen the engagement of the MET community at a national and sub-regional level. Engagement of MET services at the national level could form as part of a larger effort for the ANSPs and CAAs to progress with ASBU through a joint development of roadmap to enhance ATM. At the sub-regional level, engagement of MET could be achieved through focus of discussing MET related matters at bilateral and multilateral ATM Coordination forums. Participation of MET service providers at these forums would then help to create awareness on the challenges related to delivering ATM. The following draft Conclusion is proposed for the meeting's consideration:

Draft Conclusion

That, Asia Pacific States pursue to strengthen MET-ATM collaboration at national and sub-regional level, with a view to enhance MET support for ATM and develop harmonised requirements for MET to support ATM

MET-ATM Collaboration Framework

2.3 In pursuing collaboration with MET service providers, it would be a worthwhile for ANSPs and CAAs to develop a collaboration framework. Such a framework provides for a more comprehensive collaboration which is not limited to basic provision of MET services, but also establishes a commitment for both parties to continuously engage one another and also plan for future requirements. An example of a Collaboration Framework for the future ASBU environment is shown in Figure 1 below.

Figure 1. An example of a Collaboration Framework between an ANSP and MET Service Provider

2.4 The foundation of the collaboration is the service agreements for the various types of MET products that are required to support ATM. Beyond the MET products to comply with ICAO Annex 3 requirements, such agreement could also define other ATM-tailored MET products such as graphical SIGMET, regular MET brief to air traffic controllers, etc.

2.5 Regular dialogues and meetings with the MET service provider is an integral process of collaboration. Such engagements provide an opportunity for ANSP to provide feedback and inputs on MET products with a view to develop enhancements. It also allows both parties to understand the challenges and limitations that each organisation face. These could then help to galvanise both parties to work towards a reasonable solution.

2.6 At the operational level of ATS and MET forecasting, knowledge and information sharing between air traffic controllers and meteorologist could take place through seminars and exchange of technical briefs. This encourages close working relations between the two professions which could also spur innovations and development of solutions from a ground up approach.

2.7 At the apex of this framework; a common vision for the two organisations to work towards. The ICAO GANP and the ASBU methodology serve as a good guide for both parties development of joint roadmap to progress with the MET elements in ASBU. The joint roadmap enables both parties to make the necessary preparation in committing resources to implement the various modules in the block-upgrades.

Cross Border MET Coordination and Data Sharing

2.8 The cross-boundary nature of ATM would mean that close coordination between ANSPs ensures that flights traverse across boundaries in a safe and efficient manner. Close coordination between MET service providers would also contribute to enhancing safety and efficiency. Such coordination will help to align the output of graphical SIGMET for weather phenomenon that straddles across boundaries.

2.9 The future SWIM environment under ASBU presents an opportunity for MET service providers to collaborate and share real-time observation data to support ATFM and future ATM initiatives such as Trajectory Based Operations. Data sharing through collaboration is not a foreign concept in the ATM community. For instance, ANSPs in the recent years have been sharing real-time Automatic Dependent Surveillance-Broadcast (ADS-B) data to enhance safety and efficiency. MET service providers could similarly endeavour to do the same in sharing real-time MET data to enhance the accuracy of forecast. The following draft Conclusion is proposed for the meeting's consideration:

Draft Conclusion

That, States promote cross-border collaboration and coordination between Meteorological Authorities in MET support for ATM in the Asia Pacific Region.

2.10 The sharing of real-time MET data can eventually form a composite picture for the region and serve as an important tool for ATM applications such as ATFM. Such product will have widespread benefit that is not only limited to ATM but also enhance the situational awareness of aircraft operators, pilots and airspace users.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the importance for the ATM community to engage in collaborations with MET;

b) take advantage of existing platforms to develop closer collaboration between ATM and MET to enhance the identification of ATM requirements for MET community;

c) consider supporting the draft Conclusion in paragraph 2.2 and 2.9; and

d) discuss any relevant matters as appropriate.

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