



INTERNATIONAL CIVIL AVIATION ORGANIZATION

First meeting of the APIRG Infrastructure and Information Management Sub-Group (IIM/SG/1)
(Nairobi, Kenya, 27 to 30 June 2017)

- Agenda Item 4: Planning and implementation**
4.1 Aeronautical Meteorological Service
4.1.1 Aeronautical Meteorological requirements in support of ATM provision

(Presented by the Secretariat)

SUMMARY	
<p>This paper provides information MET related information in connexion of the new (fourth) edition of the Global Air Navigation Plan (GANP) in 2013 and the associated Aviation System Block Upgrades (ASBU) methodology to enhance the safety and efficiency in the next 15+ years. The ICAO Meteorology Divisional Meeting (2014) (MET/14) held in Montreal from 7 to 18 July 2014 discussed the new or improved aeronautical meteorological (MET) services under the ASBU methodology.</p>	
<p>References:</p> <ul style="list-style-type: none">• ICAO Twelfth Air Navigation Conference (AN-Conf./12) Report• Nineteenth AFI Planning and Implementation Regional Group Meeting (APIRG/19) Meeting Report• Report of Special Regional Air Navigation Meeting (SP AFI/08)• ICAO Global Air Navigation Plan (GANP, Doc 9750), Fourth Edition• Extraordinary AFI Planning and implementation Regional Group Meeting (APIRG/EO)	
Strategic Objectives	<p>This working paper is related to the following ICAO strategic objectives</p> <p>A: Enhanced Global Civil Aviation Safety B: Air Navigation Capacity and efficiency C: Environmental Protection</p>

1. INTRODUCTION

1.1. Aeronautical meteorological service provision is integral to the realization of a safer and more efficient globally interoperable air transport system. In this regard, Aeronautical Meteorology (MET) is required to provide information to satisfy the needs of the future ATM system. As the future ATM system evolves, the demands on MET will require improved or new systems, information and products to support it.

1.2. The meeting will recall that the Special Regional Air Navigation Meeting of 2008 (SP AFI/08 RAN) in November 2008 recognized the need to have a clearly defined strategy to implement Air Traffic Management (ATM) systems as well as the need to align work programmes of States, regions and ICAO Headquarters and agreed that APIRG should review its structure to determine if changes would be beneficial

in light of performance based approach to air navigation planning.

1.3. The meeting will further recall that the ICAO Twelfth Air Navigation Conference (AN-Conf./12) Recommendation 6/1–*Regional performance framework– planning methodologies and tools*, inter alia, requests that States and PIRGs finalize the alignment of regional air navigation plans with the Fourth Edition of the GANP (Doc 9750) by May 2014, and focus on implementing the ICAO Aviation System Block Upgrades (ASBUs) Block 0 Modules according to their operational needs, recognizing that these modules are ready for deployment.

1.4. The Fourth Edition of the Global Air Navigation Plan (GANP) (DOC 9750) approved by the ICAO Council and endorsed by the 38th Session of the ICAO Assembly in 2013, provides a rolling fifteen-year strategy to guide complementary and sector-wide air transport improvements up to 2028. The GANP explores the need for more integrated aviation planning at both regional and State levels, and addresses required solutions by introducing a consensus-driven Aviation System Block Upgrade (ASBU) methodology encompassing four performance areas.

1.5. The ICAO Meteorology Divisional Meeting (2014) (MET/14) was held in part conjointly with the Fifteenth Session of the Commission for Aeronautical Meteorology (CAeM) of the World Meteorological Organization (WMO) from 7 to 18 July 2014 to map out an upgrade plan of aeronautical meteorology (MET), under the ASBU methodology, for the next 15 years or more.

1.6. The Meteorology Panel (METP) was established (ANC 197-5) to define and elaborate concepts and to develop ICAO provisions for aeronautical meteorological (MET) services consistent with operational improvements envisioned by the *Global Air Navigation Plan* (GANP), (Doc 9750) and in keeping with the working arrangements between ICAO and the *World Meteorological Organization* (WMO) (Doc 7475).

1.7. The panel shall collaboratively determine operational requirements for aeronautical MET service provision as an enabling function for a future globally interoperable air traffic management system and identify solutions, in coordination with WMO, to effectively and efficiently fulfil the requirements through sound scientific and/or technological capabilities.

1.8. The meeting will note that the work programme of METP includes defining and elaborating concepts for aeronautical MET service provision consistent with the identified operational requirements, including the functions and processes necessary to provide quality assured, cost-effective aeronautical MET services and information supporting the future globally interoperable air traffic management system through system-wide information management (SWIM).

1.9. In its 20th meeting, APIRG adopted its new structure under project management approach. The new structure included the Infrastructure and Information management Sub-Group (IIM/SG), as a contributory to APIRG, made up of MET, CNS and AIM technical Areas.

1.10. Through APIRG Conclusion 20/49, the set of projects identified by previous APIRG sub groups were adopted and made applicable to the IIM/SG by the APIRG Projects and coordination committee in its first meeting held in Nairobi from 30-31 January 2017 which also formally dissolved the previously sub groups through Decision 1/01.

2. DISCUSSION

- 2.1. The IIM/SG Will note that APIRG/19 aligned the performance-based approach for regional and national air navigation planning in the AFI Region adopted by the Special Regional Air Navigation Meeting (Durban, South Africa, November 2008), with the GANP (Doc 9750).
- 2.2. In line with the new (fourth) edition of the Global Air Navigation Plan (GANP) approved by ICAO Council in 2013 and the associated Aviation System Block Upgrades (ASBU) methodology, the overarching outcome of MET/14 is that the future development of MET services shall be fully aligned and integrated into the future ATM system.
- 2.3. The meeting will further note that several other ICAO documents were available to support the planning process including the Manual on Air Traffic Management System Requirements (Doc 9882) which converted the overall vision of the operational concept into material specifying the functional evolution of ATM, and the Manual on Global Performance of the Air Navigation System (Doc 9883) which provided a broad overview of the tasks that needed to be undertaken to transition to such a system
- 2.4. The ICAO MET Divisional Meeting made significant recommendations including;
 - WAFS to become global ATM and TBO database
 - Advancement of the International Airways **Volcano** Watch to new capabilities
 - Development of provisions for **Space Weather** forecasts
 - Develop capability to provide release of **radioactive** material forecasts (e.g., radioactive cloud SIGMET)
 - Implementation of a **regional advisory** system (SIGMETs)
 - Development of provisions for aeronautical MET services in the context of **CDM** and common situational awareness
 - Ensure that all MET services are integrated into the System-Wide Information Management (**SWIM**) environment
 - Restructure Annex 3 and develop a new PANS-MET
- 2.5. The ICAO Council established the Meteorology Panel (METP) in order to determine operational requirements for aeronautical MET service provision as an enabling function for a future globally interoperable air traffic management system.
- 2.6. Future and ongoing work on METP include the World Area Forecast System (WAFS), space weather, the release of radioactive material into the atmosphere, regional advisory system for hazardous meteorological conditions and integration of meteorological information to support the Aviation System Block Upgrades (ASBU) implementation, Trajectory-Based Operations (TBO) and the future System-Wide Information Management (SWIM) environment, which would in turn guide the necessary regional objectives and implementation timelines. In view of the on going activities at global level, the meeting may wish to formulate the following Draft Decision

Draft Decision 1/xxxx **Monitoring of development of global provisions for aeronautical service**

That,

The secretariat continues monitoring the development of global provisions, through METP reports, for aeronautical services with a view to formulating regional action.

- 2.7. With regard to MET, APIRG 20 meeting adopted the MET projects listed below

- a) Implementation of information concerning en-route weather phenomena which may affect the safety of aircraft operations (SIGMET), Quality Management System for aeronautical meteorology (QMS/MET) service, in the AFI Region (SIGMET, QMS/MET, MET/Deficiencies, Digital OPMET Projets).
- b) Implementation of Terminal Area Warnings and Forecasts, Provision of WAFS Forecasts and Optimization of OPMET data exchanges in the AFI Region (AD WRNG, WS WRNG, WAFS including IAVW and VACP, and AMBEX Projects).

Details on the projects are at **Appendices 1 and 2**, respectively of this working paper.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
 - a) Note the information provided in this paper;
 - b) decide on the draft Decision proposed for the Sub-Group's consideration.

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