



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**Sixth Meeting of the APIRG Infrastructure and Information Management Sub-Group
(IIM/SG6)***(Nairobi, 31 July – 3 August 2023)***Agenda Item 3: Achievements in AIM, CNS and MET****3.2. Implementation of ASBU elements and Achievements of IIM Projects****WP3.2M Implementation of Annex 3 provision relating to space weather requirements within the AFI Region***(Presented by MET 3 Project team)***SUMMARY**

This working paper provides the progress of MET 3 project “Implementation of Annex 3 provision relating to space weather requirements within the AFI Region” and the challenges encountered.

Action by the meeting in paragraph 3

REFERENCE(S):

- Global air navigation plan (Doc 9750)
- Global Air Traffic Management Operational Concept (Doc 9854)
- Doc 10100, *Manual on Space Weather Information in Support of International Air Navigation*
- Annex 3 amendment 78
- APIRG/25 Report- Appendix 3G6

This working document relates to **ICAO Strategic Objectives: Safety and capacity and efficiency**

KPIS and concerned ASBU B1 Modules: AMET-B1/1, AMET-B1/2, AMET-B1/3 and AMET B1/4 related to space weather

1. INTRODUCTION

- 1.1 The Africa-Indian Ocean (AFI) Planning and Implementation Regional Group (APIRG) during its twenty-third meeting (APIRG23), agreed on the establishment of a new space weather project on meteorology under its Information and Infrastructure Management Sub-Group (IIMSG).
- 1.2 During the APIRG Information and Infrastructure Subgroup meeting (IIM/SG) held in person in Rwanda from 7-11 November 2022 in Kigali Rwanda, the IIM/SG the RO responsible for the different project under IIM/SG presented the reframed project plan that was approved by APIRG and is shown in APIRG/25 report Appendix 3G6 for the MET 3 project. This is the project plan that needs to be utilized since the beginning of 2023 until the life cycle of the project is complete.

1.2. The project objectives are to:

- a) To assist AFI States with the development of action plans for the implementation of Annex 3 space weather requirements.
- b) To assist AFI States with implementing the requirements for the provision of space weather information services to support international air navigation in accordance with Annex 3.
- c) To create awareness on the space weather information requirement within the aviation sector in the AFI region.
- d) To engage with the States to ensure government support for the provision of space weather for the safety of aircraft operations.

1.3. The details of the deliberations during the Project meetings and the challenges faced are contained in Section 2 of this Paper.

2. DISCUSSIONS

Base on the reframed project plan that was approved during APIRG/25, the MET project 3 has to review the status of the WACFAF and ESAF state in terms of their implementation status of the ASBU element that are related to space weather as identified and presented during IIM/SG24 meeting last year.

2.1. The AMET ASBU elements that have been identified to be relevant to space weather are as follow:

- a) AMET-B1/1 Meteorological observations Information (Space weather events)
- b) AMET-B1/2 Meteorological forecast and warning information (Space weather events)
- c) AMET-B1/3 Climatological and historical meteorological Information (Enhanced
- d) climatological data)
- e) AMET-B1/4 Dissemination of meteorological Information ((Space weather events)

2.2. The project deliverables have been revised and are as follows:

- a) Coordination of the Project and implementation guidance material
- b) Status of implementation ASBU elements, Gaps analysis and development implementation Action Plan
- c) Monitoring the and assist State in the Implementation of State Action Plan

2.3. Action plan and implemetation status

2.3.1. The project has not started to provide assistance to the different states as the collection of the ASBU data was done starting early this year 2023. The PTC has received the information from 25 different state indicating their implementation status of the ABSU element B1 relating to space weather. Base on the results provided there is a need to do more awareness and a gap analysis is necessary to be able to identify the deficiencies from the different state and how to best assist them going forward. This align well with project deliverable 1.3 (See attached excel sheet)

2.3.2. In terms of deliverable 1.3 which is about training and hosting workshops, the project since its inception in 2021 has conducted three workshop aimed at creating awareness and educating the different stakeholders and AFI member states. The two were Virtual session in August 2021 and October 2022 with the first in-Person workshop held in June 2023. For 2024 the idea is to host two in-person workshop one targeted at covering the WACAF state and another covering the ESAF state and ASCENA.

2.4. Status of air navigation deficiencies

Within the AFI region, majority of the state have not yet started with the implementation of the Annex 3 amendment 78 that deals with the aspect of space weather. MET 3 project team working together with the assistance of the regional officer responsible for MET in addressing this deficiency.

2.5. Challenges and Conclusions

2.5.1. Majority of the state within their national regulations have not yet included the amendment 78 of Annex 3 which speaks to including the space weather information as part of flight planning.

This led to those state when completing their ASBU data mentioned that the space weather issue is not applicable or has not started.

2.5.2. Most of the state still do not fully understand the potential risk cause by space weather to their operational environment and safety and hence there is need for awareness and training.

2.5.3. Not all state has nominated the experts to be part of the MET project 3 and as such It presents a challenge in terms of interacting with these particular states.

3. ACTIONS BY THE MEETING

3.1 The meeting is invited to take note of the progress made by the project team and formulate the following conclusion/decision:

3.2 Draft Conclusion /Decision 6/xx : Regulatory framework of the implementation of space weather related requirements

That;

- a) Concerned States and Organizations take appropriate actions to support their nominated experts appointed to MET Project 3;**
- b) States are requested to develop regulatory frameworks and action plans for the implementation of the ICAO Annex 3 space weather.**

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