



INTERNATIONAL CIVIL AVIATION ORGANIZATION

Fourth Meeting of the APIRG Infrastructure and Information Management Sub-Group  
(IIM/SG4)

(Virtual, 31 August - 3 September 2021)

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**Agenda Item 4.3: Update on the Regional Project implementation: Aeronautical Meteorology (MET) Projects**

**MET Project 3: Implementation of Annex3 provisions relating to space weather requirements within the AFI Region**

(Presented by South Africa...)

SUMMARY
<p>This paper provides the progress report on the implementation of the APIRG IIM SG Meteorology Project 3. It highlights the different project activities since its inception and the challenges encountered for consideration by the meeting. It also includes the project initiation documents for approval by the meeting.</p> <p><b>Action by the meeting is in paragraph 3:</b></p>
<p><b>REFERENCE(S):</b></p> <ul style="list-style-type: none"><li>▪ APIRG Conclusion A23/29</li><li>▪ Doc 9750, <i>Global Air Navigation Plan</i></li><li>▪ Doc 10100, <i>Manual on Space Weather Information in Support of International Air Navigation</i></li><li>▪ ICAO State Letter reference ES AN 8/15- 0032</li><li>▪ IIM/SG Third Meeting Report, Decision ???</li></ul>
<p>This working document relates to ICAO Strategic Objectives: .....</p> <p><b>Related ICAO Strategic Objective (s):</b></p> <p>A - <i>Aviation Safety</i> B - <i>Air Navigation Capacity and Efficiency</i></p> <p><b>Related ASBU KPIs &amp; B0 Modules:</b> <i>All applicable to AIM, and MET</i></p>

## 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). The main objectives of the Project being:

- 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) Create awareness on the space weather information requirement within the aviation sector in the AFI region.
- d) Engage with the States to ensure government support for the provision of space weather for the safety of aircraft operations.

1.2 South Africa was nominated as the Project-Team Coordinator (PTC) and additionally as the designated Regional Space Weather Centre (*through the South African National Space Agency -SANS*A). The Secretariat submitted SL Ref: ES AN 8/15 -0032 dated 4 February 2021 requesting for nominations for Team Members for MET Project 3. The list of experts nominated by the AFI States is contained in Appendix A to this Paper.

1.3 Since the inception of the project in February 2021, three virtual meetings were conducted to address the Project objectives and tasks. The frequency of meetings is included in the Project's Terms of References contained in Appendix B to this Paper.

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

## 2 DISCUSSIONS

The first meeting of Met Project 3 was held on xx March 2021 and a summary of the activities of the Project is provided in the below:

### *Outcomes of MET Project 3 meetings and activities*

2.1 The meeting may recall that Conclusions 23/29 and 23/30 of the IIM SG/3 proposed the establishment of the Regional Space weather Project and called for the development of action plans for the implementation of space weather requirements. The Project would effectively provide assistance to the States with the implementation of the ICAO Annex 3 requirements for the provision of space weather. In this regard, the MET Project 3 has undertaken several activities as part of the implementation of its tasks as shown in the table below.

NO	TASK	RESPONSIBLE PERSON	PLANNED DATE	COMMENTS/STATUS
1.	Development of the Project initiation documents	South Africa (PTC)	Xxx Dec 2020	Completed- South Africa submitted the initial project initiation documents to the Secretariat on xxxx Dec 2020
2.	Project Team activities	PTC and Team Members	Ongoing	Project had conducted three virtual meetings since the inception of the project
3.	Project Initiation Documents (Terms of Reference and Project, scope, objectives, tasks	PTC and team Members	29 March 2021	Completed- The documents developed by South Africa (PTC) were discussed by the Project and submitted for the IIMSG/4 meeting to approve these documents
4.	Project questionnaire	PTC and Team Members	21 May 2021	Completed- the Project developed a questionnaire which was submitted to the Secretariat. (distributed to the States through SL ESAN/815/15/ 0149 dated xxx)
5.	Raise awareness on space weather information	PTC and Team members	July 2021	Workshop conducted for the AFI Region (28-29 July 2021

*IIM SG Met Project 3 questionnaire*

2.2 The MET Project 3 team managed to prepare one questionnaire to AFI States for the development of action plans for the implementation of space weather requirements. Through the Secretariat, the Project managed to distribute this questionnaire which was also related to the readiness of Member States to implement the space weather requirements and to gauge the overall understanding and knowledge of the Annex 3 requirements that will come into effect by 05 November 2022. Additionally, the questionnaire assessed the readiness of States with regards to the related technological systems.

2.3 Only twelve (12) out of forty-eight (48) States responded to the survey. Based on the analysis of these 12 States:

2.3.1 a majority of States are aware of Amendment 78 to Annex 3 and the associated dates.

2.3.2 Half of the States are committed to support the provision of space weather information and they have nominated national agencies/organisation to assist with implementing the space weather requirements.

2.3.3 Half of the States have systems to receive the space weather advisory information and disseminate it in IWXXM GML.

2.3.4 Most of the States know that South Africa through SANS<sup>1</sup> is the Regional Space Weather Centre designated by ICAO.

2.3.5 Most of the States have not assessed the risks that space weather poses to the local technological infrastructure.

2.4 Regarding the knowledge about the space weather impacts on the technological systems that are utilised by the aviation industry, a majority of AFI states are aware of the space weather impacts and in cases where there are knowledge gaps, the States are willing to receive training.

*Space Weather Training seminars/workshops*

2.5 In accordance with APIRG 23 Conclusion 23/30, the Secretariat, with the support of the designated Regional Space Weather Centre (SANS<sup>1</sup>), was tasked to take appropriate actions to assist States to meet the space weather implementation requirements. The meeting is invited to also recall Conclusion APIRG20/29 which called for the conduct of training/seminars/workshops on space weather in the AFI Region to increase knowledge and understanding of the ICAO Annex 3 space weather requirements.

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<sup>1</sup> South African National Space Agency

2.5 The meeting is invited to note that the first AFI Workshop on the Guidance on ICAO Annex 3 Space Weather Requirements was conducted virtually from 28-29 July 2021. The outcomes.....xxxxxx

*IIM SG Met Project 3 deliverables*

2.6 The draft project tasks and deliverables are attached (Appendix B) for consideration by the meeting.

*Challenges and conclusion*

2.7 The IIM SG MET Project 3 encountered several challenges during the implementation of its activities. These are listed below:

- a) Out of the 48 ESAF and WACAF States only 12 States responded and nominated an expert to participate in MET Project 3;
- b) The rate of participation of the nominated experts in the activities of the Met Project 3 was not satisfactory;
- c) The low response rate to the Project questionnaire by AFI States is noted as delaying the work of the project.

**3 ACTION BY THE MEETING**

3.1 The meeting is invited to take note of the information presented in this paper and formulate the following conclusion/decision:

*Draft Decision 4/xx : Adoption of the MET Project 3 Terms of Reference and the Project deliverables for 2021-2022*

**That;**

- a) **APIRG IIM/SG/4 considers and adopts the proposed MET Project 3 Terms of References and its associated project deliverables as contained in Appendices A and B.**

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