



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****3.5 Other Air Navigation Initiatives****WP3.5A Outcomes of the Second Meeting of the Regional VOLCEX
(VOLCEX/SG2)***(Presented by Kenya)***SUMMARY**

This paper provides an update on the outcomes of the AFI Volcanic Ash Exercise and calls for consideration of the lessons learned and recommendations to improve the conduct of the 2023 VOLCEX.

Action by the meeting in paragraph 3

REFERENCE(S):

- APIRG/25 Report
- AFI VOLCEX 21/01 Report
- Doc 9766 Handbook on the IAVW
- ToR of AFI VOLCEX SG

Related ICAO Strategic Objective(s):

- **A** – Safety, **B** – Air Navigation Capacity and Efficiency

1. INTRODUCTION

- 1.1 The Second meeting of the AFI Volcanic Ash (VA) Exercise Steering Group (AFI VOLCEX/SG2) was held virtually on 18 July 2023.
- 1.2 The AFI VOLCEX/SG2 discussed five (5) agenda items. Thirty-one participants representing ten (10) States, IFALPA and ICAO attended the meeting. The meeting agreed upon actions to be taken in preparation of the 2023 VA exercise.

2. DISCUSSION

- 2.1 The AFI VOLCEX/SG2 was updated on the outcomes of the first VA exercise conducted in the region in November 2021. From the lessons learnt from that exercise, the meeting formulated recommendations for the improvement of the second edition of the VA exercise.
- 2.2 The meeting also discussed the aims and objectives of the upcoming 2023 VA exercise and provided guidance to the Exercise Leader State, Democratic Republic of Congo to expedite the coordination and the development of the 2023 VA exercise directives and schedule.

2.3 The meeting then agreed on the following actions.

- a) **VolcexSG2 Action 1** : Senegal and Cabo Verde to finalize agreement on volcanic ash events management
- b) **VolcexSG2 Action 2** : Democratic Republic of Congo (DRC), in collaboration with the Secretariat, to coordinate with neighbouring States to the to ensure their participation in the 2023 exercise.
- c) **VolcexSG2 Action 3** : The DRC, with the support of the Secretariat and Cabo Verde the lead State of the 2021 exercise , to develop a comprehensive list of participating agencies and establish the he Directing Staff.
- d) **VolcexSG2 Action 4** : DRC will communicate the precise date of the exercise that is scheduled in the second week of December 2023.
- e) **VolcexSG2 Action 5** : DRC, in collaboration VAAC Toulouse and the Directing Staff Members, to develop the 2023 VOLCEX scenario directives” and resubmit to the Steering Group for consideration by the end. of August 2023.

3. ACTIONS BY THE MEETING

3.1. The meeting is invited to:

- a) Note the information in this paper.
- b) Encourage DRC and all stakeholders to work together to prepare the 2023 VA exercise.

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Appendix A – WAFS gridded data sets available from November 2023.

Fixed valid times of available WAFS upper-air gridded forecasts with a horizontal resolution of 0.25° of latitude and longitude:

<i>Upper-air gridded forecasts</i>	<i>1-hourly intervals</i>	<i>3-hourly intervals</i>	<i>6-hourly intervals</i>
Wind, temperature, geopotential altitude	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24 hours*	27, 30, 33, 36, 39, 42, 45 and 48 hours*	54, 60, 66, 72, 78, 84, 90, 96, 102, 108, 114 and 120 hours*
Flight level and temperature of tropopause			
Direction, speed and flight level of maximum wind			
Humidity			
Horizontal extent, and flight levels of base and top, of cumulonimbus clouds	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24 hours*	27, 30, 33, 36, 39, 42, 45 and 48 hours*	Not provided
Icing			
Turbulence			

* after the time (0000, 0600, 1200 and 1800 UTC) of the synoptic data on which the forecasts were based. *Note WAFS London data will only be available out to 66 hours for the 0000 and 1200 data.*

Availability (marked by X) of WAFS upper-air gridded forecasts with a horizontal resolution of 0.25° of latitude and longitude as a function of flight level

<i>Flight Level</i>	<i>ICAO Standard Atmosphere pressure level (hPa)</i>	<i>Geopotential Altitude</i>	<i>Wind</i>	<i>Temperature</i>	<i>Turbulence</i>	<i>Icing</i>	<i>Humidity</i>
FL 050	843.1	X	X	X	—	X	X
FL 060	812.0	X	X	X	—	X	X
FL 070	781.9	X	X	X	—	X	X
FL 080	752.6	X	X	X	—	X	X
FL 090	724.3	X	X	X	—	X	X
FL 100	696.8	X	X	X	X	X	X
FL 110	670.2	X	X	X	X	X	X
FL 120	644.4	X	X	X	X	X	X
FL 130	619.4	X	X	X	X	X	X
FL 140	595.2	X	X	X	X	X	X
FL 150	571.8	X	X	X	X	X	X
FL 160	549.2	X	X	X	X	X	X
FL 170	527.2	X	X	X	X	X	X
FL 180	506.0	X	X	X	X	X	X
FL 190	485.5	X	X	X	X	X	—
FL 200	465.6	X	X	X	X	X	—
FL 210	446.5	X	X	X	X	X	—
FL 220	427.9	X	X	X	X	X	—
FL 230	410.0	X	X	X	X	X	—
FL 240	392.7	X	X	X	X	X	—

<i>Flight Level</i>	<i>ICAO Standard Atmosphere pressure level (hPa)</i>	<i>Geopotential Altitude</i>	<i>Wind</i>	<i>Temperature</i>	<i>Turbulence</i>	<i>Icing</i>	<i>Humidity</i>
FL 250	376.0	X	X	X	X	X	—
FL 260	359.9	X	X	X	X	X	—
FL 270	344.3	X	X	X	X	X	—
FL 280	329.3	X	X	X	X	X	—
FL 290	314.9	X	X	X	X	X	—
FL 300	300.9	X	X	X	X	X	—
FL 310	287.4	X	X	X	X	—	—
FL 320	274.5	X	X	X	X	—	—
FL 330	262.0	X	X	X	X	—	—
FL 340	250.0	X	X	X	X	—	—
FL 350	238.4	X	X	X	X	—	—
FL 360	227.3	X	X	X	X	—	—
FL 370	216.6	X	X	X	X	—	—
FL 380	206.5	X	X	X	X	—	—
FL 390	196.8	X	X	X	X	—	—
FL 400	187.5	X	X	X	X	—	—
FL 410	178.7	X	X	X	X	—	—
FL 420	170.4	X	X	X	X	—	—
FL 430	162.4	X	X	X	X	—	—
FL 440	154.7	X	X	X	X	—	—
FL 450	147.5	X	X	X	X	—	—
FL 460	140.6	X	X	X	—	—	—
FL 470	134.0	X	X	X	—	—	—
FL 480	127.7	X	X	X	—	—	—
FL 490	121.7	X	X	X	—	—	—
FL 500	116.0	X	X	X	—	—	—
FL 510	110.5	X	X	X	—	—	—
FL 520	105.3	X	X	X	—	—	—
FL 530	100.4	X	X	X	—	—	—
FL 540	95.7	X	X	X	—	—	—
FL 550	91.2	X	X	X	—	—	—
FL 560	87.0	X	X	X	—	—	—
FL 570	82.8	X	X	X	—	—	—
FL 580	79.0	X	X	X	—	—	—
FL 590	75.2	X	X	X	—	—	—
FL 600	71.7	X	X	X	—	—	—

Availability (marked by X) of WAFS upper-air gridded forecasts with a horizontal resolution of 1.25° of latitude and longitude as a function of flight level

WAFS forecasts with a horizontal resolution of 1.25° will be provided for users unable to process WAFS forecasts with a horizontal resolution of 0.25°.

<i>Flight Level</i>	<i>ICAO Standard Atmosphere pressure level (hPa)</i>	<i>Geopotential Altitude</i>	<i>Wind</i>	<i>Temperature</i>	<i>Humidity</i>
FL 050	843.1	X	X	X	X
FL 080	752.6	X	X	X	X
FL 100	696.8	X	X	X	X
FL 140	595.2	X	X	X	X
FL 180	506.0	X	X	X	X
FL 210	446.5	X	X	X	—
FL 240	392.7	X	X	X	—
FL 270	344.3	X	X	X	—
FL 300	300.9	X	X	X	—
FL 320	274.5	X	X	X	—
FL 340	250.0	X	X	X	—
FL 360	227.3	X	X	X	—
FL 390	196.8	X	X	X	—
FL 410	178.7	X	X	X	—
FL 450	147.5	X	X	X	—
FL 480	127.7	X	X	X	—
FL 530	100.4	X	X	X	—

** after the time (0000, 0600, 1200 and 1800 UTC) of the synoptic data on which the forecasts were based.*

Fixed valid times of available WAFS upper-air gridded forecasts with a horizontal resolution of 1.25° of latitude and longitude

<i>Upper-air gridded forecasts</i>	<i>3-hourly intervals</i>
Wind, temperature, geopotential altitude	6, 9, 12, 15, 18, 24, 27, 30, 33 and 36 hours*
Flight level and temperature of tropopause	
Direction, speed and flight level of maximum wind	
Humidity	

** after the time (0000, 0600, 1200 and 1800 UTC) of the synoptic data on which the forecasts were based*