

INTERNATIONAL CIVIL AVIATION ORGANIZATION

**Fourth meeting of the AFI Volcanic Ash Exercises Steering Group
(AFI VOLCEX/SG4)***(Virtual, 1 April 2025)***Agenda Item 1: Update on the AFI Exercise VOLCEX 23/01****WP1.1 Update on the AFI VOLCEX 2023/01 exercise***(Presented by the Secretariat)*

SUMMARY
<p>This paper provides an update on the outcomes of the second volcanic ash exercise conducted in December 2023 under the leadership of the Democratic Republic of Congo.</p> <p>Action by the meeting in paragraph 3</p>
<p>REFERENCE(S):</p> <ul style="list-style-type: none">▪ APIRG/27 Report▪ AFI VOLCEX 23/01 Report▪ AFI VA Exercises Directive for Exercise VOLCEX 21-01 Rev0.1▪ AFI VAA Exercises Operational Instructions VOLCEX OPINS Rev0.1▪ Terms of Reference of the AFI VOLCEX Steering Group
<p>Related ICAO Strategic Objective(s):</p> <ul style="list-style-type: none">• A – <i>Safety</i>, B – <i>Air Navigation Capacity and Efficiency</i>

1. INTRODUCTION

- 1.1 The meeting may recall that the APIRG/25 meeting, held in Kigali, Rwanda from 7 to 11 November 2022, through Decision 25/18, endorsed the report of the first AFI volcanic ash exercise (VOLCEX 21/01) conducted in November 2021 under the leadership of Cabo Verde as the Exercise Leader State.
- 1.2 The meeting may also note that the APIRG/26 meeting, after taking note of the outcomes of the first volcanic ash exercise as presented by the Volcanic Ash Exercise Steering Group (VOLCEX/SG), approved the schedule of the second volcanic ash exercise (VOLCEX 23/01) to be conducted in December 2023 by the Democratic Republic of Congo (DRC) as Leader State.
- 1.3 This working paper presents the outcomes of the volcanic ash exercise led by DRC.

2. DISCUSSION***Volcanic ash exercise scenario and Exercise Leader***

- 2.1 The AFI second volcanic ash exercise was conducted on 7 December 2023. It simulated the eruption of Nyiragongo volcano (volcano number: 223030, position Lat: 1° 31' S; Long: 29° 15' E) located on Goma, Democratic Republic of the Congo (DRC), Central African Region.

- 2.2 The simulated high level volcanic ash cloud contaminated eleven FIRs, affecting major air traffic routes in Kinshasa; Brazzaville; Libreville; Douala; Bangui; Dar Es Salam; Entebbe; Kigali ; Luanda ; Bujumbura and Nairobi FIRS.
- 2.3 The exercise was led by the Goma Volcanological Observatory (OVG), the Air Navigation Services Provider/the Airways Authority (RVA); and the Civil Aviation Authority (CAA) of the Democratic Republic of Congo was the Exercise Leader.
- 2.4 The exercise involved participants from some agencies in Burundi, Cabo Verde;, Democratic Republic of Congo; Congo; Gabon; Cameroon; Central African Republic; Kenya; Rwanda; Senegal; Tanzania; and Uganda. The Bulletin Compiling Centre (Kenya); the Dakar and Pretoria Regional OPMET Data Bank (RODB Dakar and RODB Pretoria); IATA and the ICAO WACAF and ESAF Regional Offices.

Exercise Objectives

- 2.5 The objectives of the exercise include:
- Demonstrate coordination procedures between all participating parties (ANSPs; ATM; Centres ; AIS ; VO ; VAACs ; MWOs ; SAR ; Military ; Users).
 - Timely distribution of messages including AIS and MET VONA; VAA/VAG; SIGMET; NOTAM; AIREP messages.
 - Ensure the operational status of telecommunications networks.
 - Evaluate the effectiveness of the team in managing a contingency related to volcanic ash.
 - Check the effectiveness of agreements between neighboring States that may face issues related to volcanic ash when relevant regarding the provision of information on the volcanic eruption.
 - Demonstrate information timely sharing via telecommunications network and internet-based services.
 - Demonstrate transmission of air-reports on volcanic ash in accordance with Annex 3 (Aircraft -> ACC -> MWO -> VAAC).
 - Provide recommendations for amendment of the procedures based on lessons learned and conclusions formulated.

Exercise conduct and Participating agencies

- 2.6 The exercise was conducted on a regional basis, from 09:30 to 15:00 UTC on 7 December 2023. The followings were achieved:
- Representatives from five (5) Volcano Observatory States, MET Watch Offices of four (4) impacted States, Notam Offices from four (4) impacted States, ACCs from four (4) impacted States, representatives from ANSP (ASECNA), Two airlines, IATA and representatives from Civil Aviation Authorities of five (5) impacted States participated in the exercise.

Achievements

- 2.7 The main achievements include:
- Satisfactory coordination procedures between participating parties (ANSPs; ATM ; Centres ; AIS ; VO ; VAACs ; MWOs ; SAR).
 - Satisfactory distribution of volcanic ash related messages including VONA; VAA/VAG; SIGMET; NOTAM and AIREPs.

- Activation of volcanic ash contingency plans in impacted States and good interaction of Rescue Coordination Centres Search and Rescue Centres.

2.8 Aspects that need to be improved include:

- Need to improve the formats of the NOTAM messages;
- Challenges related to the missing of the ARS from South African /Ethiopian airlines. Need to ensure that airlines are onboard;
- System of some MWOs States is set for SIGMET related to Thunderstorm and doesn't allow SIGMET WV;
- Exercise should focus on the phraseology to ensure the effective application;
- Need to have official notices to have key stakeholders involved in the exercise;
- Need to provide clarity on the role of all key stakeholders, including SAR entities;
- Delay in receiving some messages, including SIGMET was experienced;
- List of distribution should be extended to cover all the relevant recipients; and
- Failure of some key stakeholders, including RODBs to participate in the exercise/Teleconference.

2.9 The report providing details of the outcomes of the AFI VOLCEX/SG3 is provided in **Appendix A** to this working paper.

3. ACTIONS BY THE MEETING

3.1. The meeting is invited to:

- a) Note the information in this paper; and
- b) provide guidance as appropriate.

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