ICAO

Twenty Second Meeting of the Africa-Indian Ocean Planning and Implementation Regional Group (APIRG/22)
(Accra, Ghana, 29 July – 02 August 2019)

Agenda Item 2: Update on Air Traffic Management & Search and Rescue Matters

2.2 Presentation of Draft AFI Regional ATM Contingency Plan

(Presented by Nigeria)

EXECUTIVE SUMMARY
This paper presents a draft AFI Regional ATM Contingency Plan developed by ESAF and WACAF Region in accordance with Paragraph 2.31 of Annex 11 that requires Air traffic services authorities to develop and promulgate contingency plans for implementation in the event of disruption, or potential disruption, of air traffic services and related supporting services in the airspace for which they are responsible for the provision of such services. Such contingency plans are required to be developed with the assistance of ICAO as necessary, in close coordination with the air traffic services authorities responsible for the provision of services in adjacent portions of airspace and with airspace users concerned.
REFERENCE (S): Annex 11 paragraph 2.31 on ATM Contingency Plan and APIRG 21 Resolution 21/05 **that** mandated States to develop National ATM Contingency Plans.
Related ICAO Strategic Objective(s): **A** – *Safety*, **B** – *Air Navigation Capacity and Efficiency, D – Economic Development of Air Transport,*

1. INTRODUCTION

1.1. It would be recalled that APIRG/21 reported the lack, incomplete, uncoordinated, or non-publication of CPs was a long standing deficiency in the AFI Region and noted that in 2015 the ESAF Regional Office conducted implementation workshops for ESAF FIRs and ANSPs as well as some assistance to FIRs in the ESAF/WACAF interface to develop Contingency Plans (CPs) required under Annex 11 to the Chicago Convention, and to coordinate the related contingency routes.

1.2. APIRG/21 further noted that the partial progress made in the ESAF region should encourage States and FIRs in the WACAF area to develop CPs as a matter of priority in order to accelerate completion of the AFI Regional CP.

1.3. It was reported that the AAO/SG had urged update or development of CPs, incorporating provisions for Public Health Emergency (PHE) and Volcanic Ash Contingency (VACP) by 31st August 2017, and to publish the updated CPs. The meeting was informed that not much progress had been made in this regard and accordingly concerned States were urged to include the said provisions as soon as practical.

1.4. APIRG/21 further noted that the AAO/SG had deliberated on the differences between the CPs required under Annex 11 to the Chicago Convention, and the aerodrome emergency plans required under Annex 14. Some States had therefore, not prioritized the development of CPs, on account that they had developed aerodrome emergency plans. The Group recalled that there were overlaps of certain requirements and events. Amongst others, there could be emergency occurrences at an aerodrome, which affect air traffic services (ATS) facilities located at the aerodrome, resulting in the unavailability ATS in the concerned FIR. Similarly, PHE issues could also overlap and affect both the aerodrome and the airspace far beyond.

1.5. Accordingly, APIRG/21 adopted Conclusion 21/05 which states inter alia:

IMPLEMENTATION OF CONTINGENCY PLANS

That,

a) States develop or update Contingency Plans (CPs) that include Public Health Emergencies (PHE) and Volcanic Ash (VA) provisions and publish them as soon as practical; and

b) ICAO provide assistance to States in the development and coordination of the CPs to enable their publication and completion of the Regional CP.

2. DISCUSSION

2.1. The meeting is invited to take note that recent developments globally and within the AFI Region had exposed the vulnerability of the region to contingency events that are capable of disrupting the provision of air traffic services.

2.2. Pursuant to the implementation of APIRG 21/05 the ICAO WACAF office organized a one-week ATM Contingency Planning Workshop at Accra, Ghana in October 2018 for States and FIRs in the WACAF area to provide assistance in the development, coordination and finalization of national CPs which incorporated VACP and PHE, and pave way for the development of an AFI regional CP.

2.3. Furthermore, ICAO with the support of IATA and ATNS, South Africa organized an AFI Regional workshop from 20th – 24th May 2019, at the ATNS, Johannesburg, South Africa. for the development of an AFI regional CP ATM Contingency Plan. The workshop was attended by representatives from 32 AFI States, 6 international organisation and 3 airlines. The above workshops enabled States to develop National ATM Contingency Plans as well as availed them with the opportunity to coordinate and collaborate with adjacent States. This effort led to the successful development and publication of National ATM Plans by many States.

2.3 The regional workshops also availed the States the opportunity to establish and agree on Contingency Routes and Flight Level Allocation Schemes for channeling the flow of traffic during contingency.

2.4. The workshops facilitated the development of an AFI Regional ATM Contingency Plan that is aimed at providing regional procedures for the management of international air traffic flow in the event of a contingency affecting one or more FIR(s) or States.

2.5. ESAF and WACAF ATM Contingency Planning Teams, during the Johannesburg workshop in May 2019, embarked on the harmonization of the WACAF and ESAF Sub-regional plans into a single AFI Region ATM Contingency Plan.

2.6. For effective planning, coordination and management of contingencies, the establishment of a Regional Contingency Coordination Team (CCT) was recommended as well as a Central Coordination Committee (CCC) at the State level.

2.7. Contingency Routes established by States/FIRs were integrated into ESAF and WACAF sub-regional contingency routes, and finally into a single AFI Regional Contingency Route Network that would ensure safety, efficiency and continuity of international flight operations in the event of a contingency affecting the provision of safe or secure air navigation services.

2.8. The Draft AFI Regional ATM Contingency Plan which is presented as **Appendix** to this working paper defined three (3) levels of contingencies as follows:

a) **Level 1 Contingency:** Partial system failure or degradation of ATM system that can be managed within the FIR or ACC with the local contingency plan or facilities. For example, the failure of a Surveillance system backed up by the provision of procedural control services.
b) **Level 2 Contingency:** Total failure of the entire ATM system or air navigation system requiring the assistance or intervention of adjacent FIR(s) for the provision of ATS. For example, the total failure or shut down of an entire ATM system due to industrial action by ATCs, thus requiring the delegation of authority to adjacent ACC or FIR to provide limited ATS over the affected airspace or State.
c) **Level 3 Contingency:** Total failure of the entire ATM system or air navigation system requiring the avoidance of the concerned FIR or portion of airspace.

For example, the outbreak of war or military activities resulting in unsecure airspace over a State, thus necessitating the avoidance of such airspace or State.

2.9. Level 2 Contingency Routes are defined as routes designated by a State, FIR, or ACC for channeling the flow of traffic during level 2 contingency to facilitate the provision of limited ATS by over an affected airspace or State.

2.10. Level 3 Contingency Routes are defined as routes designated by a State, FIR, or ACC to facilitate the avoidance of an adjacent airspace, FIR or State under a level 3 contingency.

2.11. The Regional ATM Contingency Plan also includes Volcanic Ash Contingency Procedures and Public Health Emergencies.

2.12. The Draft Regional ATM Contingency Plan also contains a template memorandum of understanding (MOU) between States/FIRs or ANSPs for the delegation of the provision of ATS during level 2 contingencies.

3. ACTION BY THE MEETING

3.1. The meeting is invited to:

a) consider and approve the classification of contingencies into level 1, 2 and level 3 contingencies;
b) consider and approve the proposed Regional Contingency Routes for level 2 and level 3 contingencies;
c) consider and approve the Draft AFI Regional ATM Contingency Plan for implementation; and
d) consider and approve the establishment of an AFI Regional Contingency Coordination Team (AFI CCT) with the responsibility of coordinating the management of any level 2 or 3 contingencies within the AFI Region. Membership of the CCT shall include Focal Points from each AFI State.

DRAFT AFRICA AND INDIAN OCEAN REGION (AFI)

AIR TRAFFIC MANAGEMENT (ATM)

CONTINGENCY PLAN

1.0 Foreword

The AFI Regional ATM Contingency Plan is intended to provide guidelines to states (FIRs) and facilitate timely and effective action by all airspace users, air navigation service providers, as well as civil aviation authorities within the AFI Region for the purpose of ensuring safe, effective, and secure flow of international air traffic in the event of any disruption in the provision of air traffic services or supporting services, in order to preserve the availability of major world air routes in the global air transport system.

Regulatory materials relating to the AFI Regional aircraft operation are contained in relevant ICAO Annexes, PANS/ATM (Doc.4444), Regional Supplementary Procedures (Doc.7030), States AIPs and current NOTAMs, which should be read in conjunction with the material contained in this Document.

Guidelines for contingency measures for application in the event of disruptions of air traffic services and related supporting services were first approved by the Council on 27 June 1984 in response to Assembly Resolution A23-12, following a study by the Air Navigation Commission and consultation with States and international organizations concerned, as required by the Resolution. The guidelines were subsequently amended and amplified in the light of experience gained with the application of contingency measures in various parts of the world and in differing circumstances.

The purpose of the guidelines is to assist in providing for the safe and orderly flow of international air traffic in the event of disruptions of air traffic services and related supporting services and in preserving the availability of major air traffic routes within the air transportation system in such circumstances.

This Contingency Plan has been developed with the approval of the AFI Planning and Implementation Regional Group (APIRG); the AFI region air navigation planning and implementation body established under the auspices of the International Civil Aviation Organization (ICAO).

APIRG is responsible for developing the required operational procedures; specifying the necessary services and facilities and; defining the aircraft and operator approval standards employed in the AFI Region.

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This Document will be made available to users from a number of web sites including the ICAO ESAF/WACAF website.

1.1 Document Amendment Procedures

The Regional ATM Contingency Procedures may be amended by a meeting facilitated by an APIRG contributing body responsible for ATM. However, an amendment of a State ATM contingency plan may also necessitate the amendment of the relevant portion of the State plan as contained in the AFI Regional ATM Contingency Plan.

Procedures for Review or Amendment of Contingency Plan

The Regional Contingency Plan requires regular updating to accommodate changes in contingency arrangements and contact details. Updating of the State plans that form the appendices of the Regional Plan shall be implemented by the ICAO ESAF and WACAF Regional Offices on receipt of updates from States, and is not dependent on APIRG prior approval. It is intended that APIRG and its contributory bodies conduct a complete review of the Plan every three years, or at shorter intervals as determined by APIRG.

State or FIR Contingency Plans may be reviewable every two or three years, and all major amendments promptly published and forwarded to the Regional Office for amendment in the Regional plan as appropriate.

Details of all such amendments shall be recorded as follows:

RECORD OF AMENDMENTS

Amendment No.	**Effective Date**	**Initiated by:**	**Paragraph/ Reference**	**Remarks**

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1.3 Executive Summary

The AFI Regional ATM Contingency Plan is designed to provide guidance materials for States within the region to enhance uniformity in the development and implementation of State ATM

Contingency plans in accordance with the Standards and Recommended Practices provided in Annex 11, Appendix C.

The document also provides common definitions of the different levels of contingency within the AFI Region, as well as recommended procedures for handling contingencies such as volcanic ash, public health emergencies, civil or industrial unrest, military conflicts, national security – normally political decisions, war, etc.

Guidance materials on the recommended structure of the State plans, template for publication of national plans as well as Memorandum of Understanding between states for the delegation of the provision of ATS during contingencies, are provided herein. Contingency Routes designated and agreed between States/ACCs/FIRs, as well as contingency procedures for the control, coordination and transfer of flights during level 2 or 3 contingencies are well enumerated.

1.4 Abbreviations/Acronyms

S/No.	Abbreviation	Meaning
1	ACAS	Airborne Collision Avoidance System
2	ACC	Area Control Centre
3	ADS-B	Automatic Dependent Surveillance-Broadcast
4	ADS-C	Automatic Dependent Surveillance-Contract
5	AFTN	Aeronautical Fixed Telecommunication Network
6	AFI CCT	AFI Regional Contingency Coordinating Team
7	AIDC	ATS Inter-facility Data Communications
8	AIM	Aeronautical Information Management
9	AIRAC	Aeronautical Information Regulation and Control
10	AMHS	ATS Message Handling System
11	ANSP	Air Navigation Service Provider
12	AN-Conf	Air Navigation Conference
13	APIRG	AFI Planning and Implementation Regional Group
14	ASBU	Aviation System Block Upgrade
15	ASECNA	Agency for the Safety of Air Navigation in Africa and

		Madagascar
16	ATC	Air Traffic Control
17	ATFM	Air Traffic Flow Management
18	ATIS	Automatic Terminal Information Service
19	ATS	Air Traffic Services
20	ATM	Air Traffic Management
21	ACDM	Airport Collaborative Decision-Making
22	AOCG	ATM Operational Contingency Group
23	CCC	Central Coordinating Committee
24	CCT	Contingency Coordination Team
25	CFIT	Controlled Flight into Terrain
26	CLAM	Cleared Level Adherence Monitoring
27	CNS	Communications, Navigation, Surveillance
28	CPDLC	Controller Pilot Data-link Communications
29	CTA	Control Area
30	CTR	Control Zone
31	DME	Distance Measuring Equipment
32	FIR	Flight Information Region
33	FLAS	Flight Level Allocation Scheme
34	FUA	Flexible Use Airspace
35	GANP	Global Air Navigation Plan
36	GASP	Global Aviation Safety Plan
37	IATA	International Air Transport Association
38	IFALPA	International Federation of Airline Pilots' Association
39	IFATCA	International Federation of Air Traffic Controllers' Association
40	ICAO	International Civil Aviation Organization
41	IMC	Instrument Meteorological Conditions
42	MET	Meteorological
43	METAR	Meteorological Aerodrome Report
44	MLAT	Multilateration
45	PBN	Performance-based Navigation
46	RAM	Route Adherence Monitoring

47	RANP	Regional Air Navigation Plan
48	RNAV	Area Navigation
49	RNP	Required Navigation Performance
50	RVSM	Reduced Vertical Separation Minimum
51	SAR	Search and Rescue
52	SBAS	Space Based Augmentation System
53	SIGMET	Significant Meteorological Information
54	STCA	Short Term Conflict Alert
55	SUA	Special Use of Airspace
56	SWIM	System-Wide Information Management
57	TAF	Terminal Area Forecast
58	TMA	Terminal Control Area
59	TBO	Trajectory Based Operations
60	TCAS	Traffic Collision Avoidance System
61	TOC	Transfer of Control
62	VHF	Very High Frequency
63	VNAV	Vertical Navigation
64	VAAC	Volcanic Ash Advisory Centre
65	VMC	Visual Meteorological Conditions
66	VOLMET	Meteorological Information for Aircraft in Flight
67	VOR	Very High Frequency Omni-directional Radio Range
68	WACAF	West and Central African Region
69	WAFC	World Area Forecast Centre

1.5 Definition of Terms

Aircraft: Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

c) The aircraft is missing or is completely inaccessible.

AIRPROX: The code word used in an air traffic incident report to designate aircraft proximity.

Air Navigation Services: Services provided to air traffic during all phases of operations including air traffic management (ATM), communication, navigation and surveillance (CNS), meteorological services for air navigation (MET), search and rescue (SAR) and aeronautical

information services (AIS).

Airspace of a Sovereign State

Sovereign airspace refers to airspace as established over the sovereign territory of a state or an FIR boundary as established by ICAO under the management or control of a State.

Airspace Over the High Seas

Airspace Over the High Seas refers to airspace over international waters and delegated to a state by ICAO for the provision of air traffic services or air navigation services.

Airspace of Undetermined Sovereignty

Airspace of Undetermined Sovereignty refers to airspace over a disputed territory or international waters that authority for the control or provision of air traffic services is not agreed on or is in dispute.

Air Traffic: All aircraft in flight or operating on the manoeuvring area of an aerodrome.

Air Traffic Control Service: A service provided for the purpose of:

a) Preventing collisions:

1) Between aircraft, and

2) On the manoeuvring area between aircraft and obstructions; and

b) Expediting and maintaining an orderly flow of air traffic.

Air Traffic Flow Management (ATFM): A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.

Air Traffic Management (ATM): The dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions.

Delegated or Assigned Airspace of a Sovereign State

Delegated airspace refers to airspace for which the provision of air traffic services or air navigation services have been delegated to a state or FIR either by ICAO or by a state due to contingency.

Incident: An occurrence, other than an accident, associated with the operation of an aircraft

that affects or could affect the safety of operation.

Level 1 Contingency: Partial system failure or degradation of ATM system that can be managed within the FIR or ACC with the local contingency plan or facilities.

Level 2 Contingency: Total failure of the entire ATM system or air navigation system requiring the assistance or intervention of adjacent FIR(s) for the provision of ATS.
Level 3 Contingency: Total failure of the entire ATM system or air navigation system requiring the avoidance of the concerned FIR or portion of airspace.

NOTAM: A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

Primary Surveillance Radar (PSR): A surveillance radar system which uses reflected radio signals.
Secondary Surveillance Radar (SSR): A surveillance radar system that uses transmitters/receivers (interrogators) and transponders.

Safety Management System: A system for the management of safety at aerodromes including the organization structure, responsibilities, procedures, process and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for the control of safety at, and the safe use of the aerodrome.

Safety: The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

State Safety Programme (SSP): An integrated set of regulations and activities aimed at improving safety.

1.6 Objectives of Regional ATM Contingency Plan

The objectives of the Regional Contingency Plan are to:

i). Provide a contingency response framework for AFI States to ensure the safe,

expeditious, effective and secure management of aircraft operations in affected FIRs, including transiting between other FIRs, during contingency events;

ii). Ensure timely, harmonized and appropriate responses to all events resulting in disruption to the provision of Air Traffic Services (ATS), or in which ATS is involved, and hence to normal aircraft movement; and

iii). Provide a greater degree of certainty for airspace and aerodrome users during contingency operations.

iv). Provide a common framework for States to adopt in order to enhance standardization and uniformity in the management of contingencies.

1.7 Regulatory Requirements for Implementation of Contingency Plans

Annex 11 to the Convention on International Civil Aviation requires that Air Traffic Services authorities shall develop and promulgate contingency plans for implementation in the event of disruption, or potential disruption, of air traffic services and related supporting services in the airspace for which they are responsible for the provision of such services. Such contingency plans shall be developed with the assistance of ICAO as necessary, in close coordination with the air traffic services authorities responsible for the provision of services in adjacent portions of airspace and with airspace users concerned.

The APIRG 21 meeting that held in Nairobi, Kenya in 2017, noted with concern, the lack, incomplete, uncoordinated or non-publication of ATM Contingency Plans that has been a longstanding deficiency in the AFI Region.

Therefore, the APIRG 21 Conclusion 21/05 states that:

a) States develop or update Contingency Plans (CPs) that include Public Health Emergencies (PHE) and Volcanic Ash (VA) provisions and publish them as soon as practical; and

b) ICAO provides assistance to States in the development and coordination of the CPs to enable their publication and completion of the Regional CP.

1.8 Scope of the Regional Contingency Plan

The AFI Regional Contingency Plan is structured to provide contingency measures or procedures to manage the following contingencies:

i). Breakdown or interruption of ATM system (Communication, Navigation,

Surveillance, ATM Operations and Human Factors);

ii). Natural Disasters (Volcanic Eruption, Earthquake, Tsunami, Extreme Weather, etc.);

iii). Industrial Action or Labour Unrest affecting Air Navigation Services;

iv). Security Challenges affecting Air Navigation System (Military Conflict, Acts of Unlawful Interference, Conflict Zones, etc.),

v). Public Health Emergency;

vi). Facilitate waivers or timely approvals of over-flight permit or clearance during contingency,

vii). Facilitate the exchange of safety critical or operational information between affected States/FIRs and users,

viii). State exercising its sovereignty, sanctions over a state or territory, etc.

The Plan is also structured to provide:

a) Regional ATFM planning principles;
b) Regional contingency planning elements;
c) Analysis of the current Regional contingency planning status;
d) A performance improvement plan;
e) Considerations for research and future development; and
f) Milestones, timelines, priorities and actions.

2.0 Introduction to Regional ATM Contingency Plan

2.1 This document is produced in accordance with the requirement of ICAO Annex 11 – Air Traffic Services, Chapter 2, paragraph 2.32 to the Convention on International Civil Aviation Air Traffic Services.

2.2 The Air Traffic Management (ATM) Contingency Plan (referred herein as 'The Plan') contains details of the arrangements in place to ensure, to the extent possible and as far as practicable, the continued safety of air navigation in the event of partial or total disruption of Air Traffic Services within the AFI Region.

2.3 The plan may also be activated in cases when airspace users decided to circumnavigate airspace(s) due to conflict zones, weather, etc. which might significantly increase the air traffic flow in other airspace(s), thereby constraining ATC facilities in those

airspace(s).

2.4 The plan details common procedures throughout AFI Region, as well as additional procedures that are specific to individual ANSPs/States may be found in the requisite State publications.

2.5 For each of the Flight Information Regions (FIRs), a set of Contingency Routes (CRs) have been developed and are contained in the State's Plan, based on the major air traffic flows patterns in the AFI Region.

2.6 The Plan is designed to provide alternative routes for the traffic flows between the AFI Region and neighbouring ICAO Regions i.e. MID, NAT, SAT, APAC and EUR, due to disruption or potential disruption to air traffic services and related supporting services with minimum disruption to users.

2.7 The alternative routes (Contingency Routes – CRs) are based mainly on existing routes network. However, States, in consultation with airspace users, may establish temporary routes to be able to accommodate extra traffic in a safe and expeditious manner.

2.8 ICAO may temporarily assign responsibility for providing air traffic services in airspace over the high seas in the event of a contingency or potential contingency to another State. Such decisions shall be taken in consultation with adjacent States and users.

2.9 ICAO will initiate and coordinate appropriate contingency action in the event of disruption of air traffic services and related supporting services affecting international civil aviation operations provided by a State wherein, for some reason, the authorities cannot adequately discharge the responsibility.

2.10 ICAO will also initiate and coordinate appropriate contingency action at the request of States.

2.11 It is recognised that operators may incur economic penalties during the application of the contingency plan. All necessary measures shall be taken to reduce this to the minimum.

2.12 The ICAO ESAF/WACAF Regional Office will coordinate with ICAO HQ and other

relevant Regional Offices any amendment to the Regional Contingency Plan and will also distribute this contingency plan to all relevant States and international organizations within their regions. All AFI States Contingency Plans will be posted in ICAO website.

3.0 Structure of the AFI Regional Contingency Plan

The AFI Regional Contingency Plan consist of:

i) ICAO ESAF/WACAF Regional Offices,

ii) AFI Contingency Coordination Team,

iii) IATA Regional Offices,

iv) State/FIR Central Coordinating Committee (CCC),

v) State/FIR ATM Operations Coordination Group (AOCG),

vi) States/FIRs ATM Contingency Focal Points.

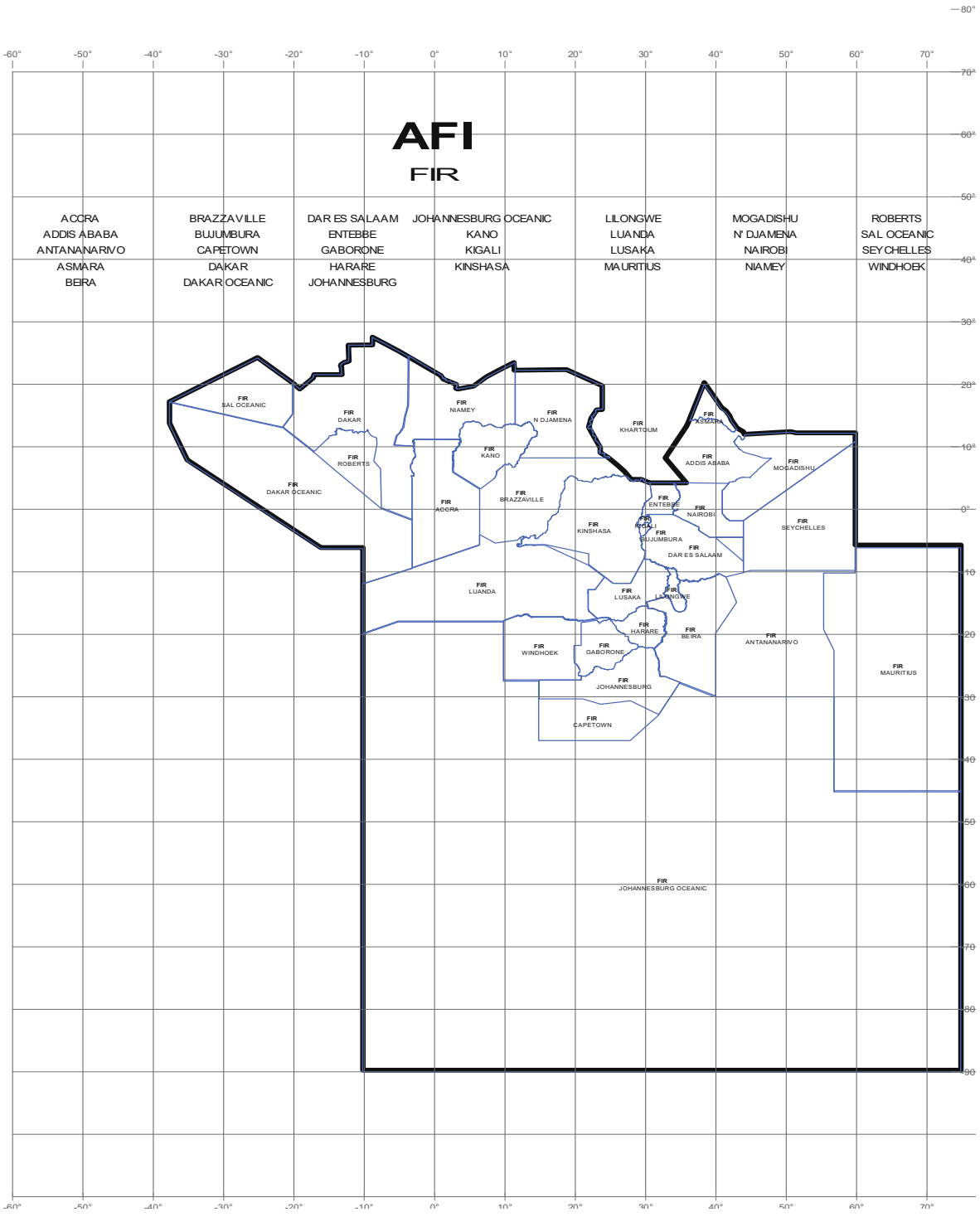
The Organogram of the AFI CCT is in Appendix S

3.1 List of States/FIRs in the AFI Regional ATM Contingency Plan

The following FIRs/ACCs Constitute the AFI Regional Contingency Planning Group:

1. ACCRA
2. ADDIS ABABA
3. ANTANANARIVO
4. ASMARA
5. BEIRA
6. BRAZZAVILLE
7. BUJUMBURA
8. CAPE TOWN
9. DAKAR
10. DAKAR OCEANIC
11. DAR ES SALAAM
12. ENTEBBE
13. GABORONE
14. HARARE
15. JOHANNESBURG
16. JOHANNESBURG OCEANIC
17. KANO

18. KIGALI
19. KINSHASA
20. LILONGWE
21. LUANDA
22. LUSAKA
23. MAURITIUS
24. MOGADISHU
25. NAIROBI
26. N' DJAMENA
27. NIAMEY
28. ROBERTS
29. SAL OCEANIC
30. SEYCHELLEYS
31. WINDHOEK



Map showing AFI FIRs

3.2 AFI States/FIRs Level 2 & 3 Contingency Routes Structure

In the event of disruption of Air Traffic Services provided in any FIR within the AFI Region, contingency routes as established by the affected FIRs and coordinated with adjacent FIRs, will be activated to ensure safety of flight and to facilitate limited flight operations commensurate with the prevailing conditions. Existing Regional routes will normally form the basis of the contingency routes to be used. A Simplified Route Network (SRN) through the airspace concerned, if it is available, together with a Flight Level Allocation Scheme (FLAS) to ensure lateral and vertical separation, and a procedure for adjacent area control centres to establish longitudinal separation at the entry point and to maintain such separation through the airspace. SRN may be used to provide tactical separation at crossing points of ATS Routes to minimize potential points of conflict under reduced air traffic services.

The contingency routes for each State/FIR in the event of a Level 2 or 3 Contingency for international flights are detailed in the appendices to this document**.** Additional contingency routes will be introduced as and when necessitated by circumstances, such as in the case of volcanic ash clouds formation, as contained in Regional Contingency Plan for Volcanic Ash in the Appendices to this document.

In the event of a level 2 or 3 contingency, ONLY published Contingency Routes shall be available for operations. However, where new waypoints are required to be established for contingency routes, or transfer of control points, 5-letter name codes (5LNC) or waypoint names for ATS contingency routes must be drawn from the ICAO International Codes and Route Designators (ICARD) Database.

In regard to domestic operations, if circumstances dictate, all flights shall be temporarily suspended until a full assessment of the prevailing conditions has been determined and sufficient Air Traffic Management capacity restored. A decision to curtail or restart domestic operations will be made by the Central Coordinating Committee.
Aircraft on long-haul international flights and special operations (e.g. Search and Rescue (SAR), State aircraft, humanitarian flights, etc.) shall be accorded priority as necessary.

Contingency Routes for any State/FIR shall be established and published after due coordination with adjacent States/FIRs. These Contingency Routes shall be specified in the State/FIR ATM

Contingency Plan. The Contingency Routes for the AFI States/FIRs are contained in **Appendix E – K (WACAF) & Appendix L – M (ESAF).**

4.0 AFI Regional ATM Contingency Coordination Team (AFI CCT) Arrangements

The potentials of occurrence of contingencies has necessitated the need for a centralized team at the AFI Regional Level to coordinate and facilitate the exchange of information at strategic level from affected States/FIRs to airspace users as well as international organizations such as IATA, IFALPA, IFATCA, etc. Thus, the need for the establishment of an //////////////////AFI Regional Contingency Coordination Team with membership drawn from all FIRs within the AFI Region and international organizations such as IATA, IFALPA and IFATCA. The AFI Regional Contingency Coordination Team (AFI CCT) shall coordinate closely with the State Central Coordinating Committee (CCC) in the event of a contingency affecting a particular State or FIR. The Regional Contingency Coordinating Team shall also coordinate with the adjacent FIR(s) delegated to provide air traffic services by the affected State or FIR.

The AFI CCT shall function as follows:

i). Facilitate the Review of State or FIR Contingency Plans and ensure Effective Coordination of such plans with adjacent FIRs.

ii). Facilitate the development of Contingency Routes by FIRs, as well as the coordination of such Contingency Routes between adjacent FIRs.

iii). Collation of FIR Contingency Routes into a Single AFI Regional Contingency Routes Network.

iv). Identify any deviations from the AFI Regional Air Navigation Plan.

v). Serve as a Framework for the coordination, monitoring, control and reporting of contingencies within the AFI Region.

vi). To develop a Memorandum of Understanding (MOU) template for the guidance of states/FIRs in the event of delegation of the provision of ATS during Contingency.

vii). To develop NOTAM Templates for the Issuance of Trigger NOTAM for activation and deactivation of State/FIR Contingency Plans.

viii). To develop AIP Supplement Template for the publication of State/FIR Contingency Plans.

ix). Coordinate the publication of all State/FIR Contingency Plans.

x). Regularly Review the Regional Contingency Plan.

xi). Provides uniform policy and guidance for responding to reasonably foreseeable

operational restrictions, including short, medium and long term actions, prevention of overload of the contingency system and guidance for implementation and resumption.

xii). Review the status of ATM Contingency Plans and contingency preparedness of AFI Region States;

xiii). Identify areas where ATM contingency planning requires improvement to comply with ICAO Standards and Recommended Practices defined in Annex 11 Air Traffic Services and accepted best practices;

xiv). Analyse contingency procedures in use in other ICAO Regions and harmonize where practicable with similar procedures in adjacent airspaces within the AFI Region;

xv). Determine the varying levels of contingency response necessary for various levels or types of contingencies such as, but not limited to, severe meteorological and geological phenomena, public health emergencies, national security, unlawful interferences, military conflicts and industrial relations issues;

xvi). Provide principles for ATM contingency planning;

xvii). Provide contingency planning templates for States; and

xviii). Facilitate the coordination of State Contingency Plans with adjacent states;

xix). Facilitate the coordination of State Contingency Plan with users.

5.0 State/FIR Central Coordinating Committee (CCC)

Each State shall establish a Central Coordinating Committee (CCC) that shall be responsible for the development and maintenance of contingency plan, activation and deactivation of contingency plan, conduct of contingency plans, as well as formation of an ATM Operational Contingency Group (AOCG).

The Central Coordinating Committee membership should include relevant representation from the Regulatory Authority, Air Navigation Service Provider, Military Authority, Other relevant national authorities, airspace user representatives, airport authorities, meteorological authority, and other relevant authorities and agencies.

The CCC shall have the primary responsibility of convening the ATM Operational Contingency Group (AOCG) at the state level in the event of a contingency occurring affecting the state or FIR. Thus, the CCC has the responsibility of overseeing the day to day operations

under the contingency arrangements, and coordinate operational ATS activities, 24 hours a day, throughout the contingency period. The terms of reference of the AOCG shall be determined by the CCC.

6.0 State/FIR ATM Operational Contingency Group (AOCG)

The ATM Operational Contingency Group (AOCG) shall be established by the States for the tactical or operational management of the contingencies affecting a state or FIR.

The functions of the AOCG shall include but not limited to the following:

i). Review and update of the Contingency Plan as required;

ii). Keep up to date at all times of the contingency situation;

iii). Organize contingency teams in each of the specialized areas;

iv). Keep in contact with and update all affected airspace and system users, customers and other relevant stakeholders;

Note: Annex 11 provides guidelines for coordination of contingency matters with ICAO as follows:

i). Exchange up-to-date information with the adjacent ATS authorities to be affected by the contingency activities;

ii). Notify the designated organizations of the contingency situation sufficiently in advance and/or as soon as possible thereafter;

iii). Take necessary action for issuing NOTAMs in accordance with the contingency plan or as otherwise determined by the particular contingency situation. Where the contingency situation is sufficiently foreseeable the relevant NOTAMs should be issued 48 hours in advance of the contingency events, using templates provided in the appendices contained herein.

Membership of the AOCG should include any necessary specialist input from the following disciplines:

I. Air Traffic Control (ATC)

II. Aeronautical Telecommunication (COM)

III. Surveillance and Navigation

IV. Aeronautical Meteorology (MET)

V. Aeronautical Information Services (AIS).

7.0 State/FIR ATM Contingency Plan Focal Point

Each State/FIR shall appoint a Focal Point and an Alternate Focal Point for purpose of liaising with ICAO AFI Contingency Coordinating Team (CCT), ICAO Regional Office, as well as IATA or other airline operators, etc.

The State/Focal Point shall serve as representatives of the States/FIRs in the ICAO AFI CCT.

7.1 Contingency Coordination Airlines Working Group (CCAWG)

The purpose of the group is to provide airlines with a platform to identify lessons learned during a contingency, undertake review of the planning, pre-activation, activation and post activation phases of the contingency and to contribute to the enhancement of the functions of the AFI Contingency Coordination Team (CCT), as well as safety and efficiency of flight operations.

The Terms of Reference of the working group is attached at Appendix R.

8.0 Levels of ATM Contingency

The following are levels of ATM contingencies that determine the planning for the effective management of contingencies:

8.1 Level 1 Contingencies: This refers to partial system failure or degradation of ATM system that can be managed within the FIR or ATS unit with the local contingency plan or facilities.

States are required to develop contingency measures to internally address level 1 contingencies such as failure of primary communication, navigation, surveillance or ATM system not requiring intervention of adjacent FIR or State.

State with more than one FIR shall be considered to be in level 1 contingency if the intervening ATS Unit is from the same State.

FIR consisting of more than one State shall be considered to be in level 1 contingency if the intervening ATS Unit is from one state contained within the same FIR.

In level 1 contingency, users may expect to fly within the affected airspace but with limited ATS such as no surveillance services, limited voice communication, increased separation, delays or application of ATFM measures.

8.2 Level 2 Contingencies: This refers to total failure of an entire ATM system or air navigation system requiring the assistance or intervention of an ATS Unit located in another State for the provision of ATS.

Under Level 2 Contingencies, the concerned airspace or FIR is considered safe, but the responsible ATS Unit is unable to provide adequate ATS due to contingency events such as industrial action, public health emergency, earthquake, nuclear emergency, etc.

In level 2 contingency users may expect to fly within the affected airspace but with limited ATS within specified contingency routes or Simplified Route Network with the application of flight level allocation scheme.

8.3 Level 3 Contingencies: Total unavailability of the affected airspace or FIR requiring the avoidance of the concerned FIR or portion of airspace.

Under level 3 contingency, the airspace is closed and users are required to avoid the affected airspace.

Level 3 contingencies may include:

i) Airspace Not Safe, due to causal events such as industrial action, earthquake, nuclear emergency, etc. affecting the provision of ATS.
ii) Airspace Not Secured due to contingency events such as military activity, military conflict, war, terrorist activities, unlawful interference, etc. necessitating the avoidance of such airspace.
iii) Airspace Not Available, due to causal events such as national security-political decisions, civil unrest, imposition of sanctions, etc. necessitating the avoidance of such airspace.

9.0 Guidelines for Level 1 Contingency for States or FIRs

9.1 Each State shall establish internal procedures for management of level 1 or domestic contingencies that may not require the intervention of adjacent FIRs.

9.2 Each State shall provide for the establishment and operation of an ATM Operational Contingency Coordination Group (AOCG) and a Central Coordinating Committee (CCC) responsible for the development, maintenance, activation and conduct of

contingency plans.

9.3 Contingency Arrangements and procedures for the activation of the ATM Operational Contingency Group (AOCG) function should be developed and included in the State or FIR contingency plan.

9.4 States shall develop Level 1 contingency plans for contingency events, conforming with the principles and the Basic Elements of the Regional ATM Contingency Plan.

9.5 Human performance-based training and procedures for response to ATM contingency operations for all staff providing related ATS, Flight Information, Aeronautical Information, Aeronautical Telecommunication and CNS equipment maintenance staff should be developed and implemented.

9.6 Programs for regular desktop and inter-unit coordinated exercises of all Level 1 contingency plans should be developed and implemented.

9.7 Processes should be implemented to ensure the outcomes of any testing, pre-activation or activation of a contingency plan or any contingency exercise are reviewed and analysed, and lessons learned incorporated into contingency procedures and training.

9.8 NOTAM issuance on level 1 contingency shall indicate the ATS services available and the applicable separation minima, as well as airspace classification.

9.9 Relevant sections of contingency plans that may have an effect on international flights should be made available to airspace users on the public internet website of the ANSP, and the hyperlink provided to ICAO WACAF/ESAF Regional Office for inclusion into the Regional ATM Contingency Plan.

Note: A single combined document comprising information from all relevant Level 1 contingency plans may be suitable for this purpose.

10.0 Guidelines for Level 2 Contingencies (Temporary Delegation of Provision of ATS)

10.1 Each State shall establish internal procedures for management of level 2 contingencies requiring delegation of the provision of ATS to adjacent States/FIRs.

10.2 Sovereign airspace can be used only with the consent of the authorities of the State concerned regarding such use. State Contingency Plans must include statements to confirm the availability of its airspace for contingency.

10.3 The delegation of airspace or FIR under level 2 contingency shall be in accordance with an MOU between concerned States in line with the template provided under Appendix A.

10.4 States shall develop Level 2 contingency plans conforming with the Principles and the

Basic Elements of the Regional ATM Contingency Plan.

10.5 Human performance-based training and procedures for response to ATM contingency operations for all staff providing related ATS, Flight Information, Aeronautical Information, Aeronautical Telecommunication and CNS equipment maintenance staff should be developed and implemented.

10.6 Programmes for regular desktop and inter-unit coordinated exercises of all Level 2 contingency plans should be developed and implemented.

10.7 Processes should be implemented to ensure the outcomes of any testing, pre-activation or activation of a contingency plan or any contingency exercise are reviewed and analysed, and lessons learned incorporated into contingency procedures and training.

10.8 Details of contingency ATS routes and associated flight level allocation schemes should be published in State AIP (Section ENR 3.5).

10.9 Operational personnel such as ATC, AIS, Flight Dispatchers and Flight Crew should be sensitized on the published Contingency Routes.

10.10 Relevant sections of contingency plans that may have an effect on international flights should be made available to airspace users on the public internet website of the ANSP, and the hyperlink provided to ICAO ESAF/WACAF Regional Office for inclusion into the Regional ATM Contingency Plan.

10.11 States shall develop and implement Level 2 contingency arrangements and should be formalized through an MOU for all cases where the pre-activation or activation of a Level 2 contingency plan would impact upon ATS within the area of responsibility of a neighbouring State/FIR.

10.12 Details of contingency ATS routes and flight level allocation scheme should be published in State AIP.

10.13 Where practicable, each State should harmonize its Contingency ATS Route and FLAS structures with those of all neighbouring States or FIRs.

11.0 Guidelines for Level 3 Contingencies Requiring Avoidance of State/FIR

11.1 States shall develop and implement Level 3 contingency arrangements, and should be formalized for all cases where the pre-activation or activation of a Level 3 contingency plan would impact upon ATS within the area of responsibility of a neighbouring State.

11.2 Level 3 contingency arrangements should include procedures for the tactical definition and promulgation by NOTAM of contingency ATS routes to avoid airspace affected by contingency requiring the avoidance of the affected airspace/ACC/FIR.

11.4 Adjacent States affected by level 3 contingency rerouting and traffic overload may apply appropriate ATFM measures to accommodate the increased traffic flow, where applicable.

11.5 Human performance-based training and procedures for response to ATM contingency operations for all staff providing related ATS, Flight Information, Aeronautical Information, Aeronautical Telecommunication and CNS equipment maintenance staff should be developed and implemented.

11.6 Programs for regular desktop and inter-unit coordinated exercises of all Level 3 contingency plans should be developed and implemented.

11.7 Processes should be implemented to ensure the outcomes of any testing, pre-activation or activation of a contingency plan or any contingency exercise are reviewed and analysed, and lessons learned incorporated into contingency procedures and training.

11.8 Details of contingency ATS routes and associated flight level allocation schemes should be published in State AIP (Section ENR 3.5).

11.9 State publication of Contingency Routes in the State AIP shall only include ATS Routes within the State concerned and not inclusive of any ATS Route in adjacent FIR or State, unless prior coordinated and agreed upon.

11.10 States shall ensure that their National ATM Contingency Plans indicate where applicable, elements of deviation from the Regional Air Navigation Plan that will require the approval of the ICAO Council President. Such deviations may include delegation of the provision of ATS to adjacent State/FIRs, newly established Contingency Routes, etc.

12.0 Procedures for Activation and Deactivation of Contingency Plan

National Contingency Plans shall provide procedures for activation or initiation of Contingency Plans as well as procedures for termination of such plans. The activation and termination of such plans shall be via NOTAM issued by the state concerned.
The CCC shall inform ICAO, the AFI CCT and adjacent FIR as appropriate.

This NOTAM shall be issued at least 48 hours prior to the commencement of the contingency operations, where practicable. However, where the state activating the contingency is unable to issue NOTAM due to the failure or degradation of the AIM system, then the State delegated to provide the Air Traffic Services shall issue the NOTAM activating the contingency plan.

In the event that ATS cannot be provided in the concerned or affected FIR:

i) The affected FIR, where practicable, shall issue NOTAM for the activation of the Contingency Plan after due consultations by the Central Coordinating Team, or the appropriate ATS Authority.

ii) The adjacent FIR assigned or delegated to provide ATS in the Contingency Plan, shall after due notification by appropriate ATS authority of the affected FIR, issue a NOTAM for the activation of the Contingency Plan.

iii) Affected states in adjacent FIRs can inform ICAO to request them to issue a NOTAM activating the Contingency Plan.

A NOTAM shall be issued indicating the following, as a minimum requirement:

a) Time and date of the beginning of the contingency measures;

b) Airspace available for landing and overflying traffic and airspace to be avoided;

c) Details of the facilities and services available or not available and any limitations on ATS provision (e.g., ACC, APP, TWR and FIC),

d) Duration of the contingency or an expected date of restoration of services if available;

e) Flight level allocation scheme (FLAS) if different from those defined in **Appendix C and D** to this document;

f) Information on the provisions made for alternative services;

g) Any changes to the ATS contingency routes contained in this Plan;

h) Any special procedures to be followed by neighbouring ATS units not covered by this Plan;

i) Any special procedures to be followed by pilots; and

j) Any other details with respect to the disruption and actions being taken that aircraft operators may find useful.

In the event that an FIR International NOTAM Office is unable to issue the NOTAM, the (alternate) International NOTAM Office at adjacent FIRs will take action to issue the NOTAM pertaining to the status or closure of airspace upon notification by affected FIR or ICAO WACAF/EASAF Regional Office.

13.0 Flight Level Allocation Scheme

Each State/ACC/FIR shall develop a Flight Level Allocation Scheme (FLAS) for inclusion in her national or FIR Contingency Plan. The FLAS shall provide strategic separation for aircraft operations within an airspace affected by a level 2 or 3 contingency. The objective of a FLAS is to de-conflict operations on crossing or converging contingency routes. Where possible, aircraft on long-haul international flights shall be given priority with respect to the assignment of cruising levels.

14.0 Transfer of Control Points

The Transfer of Control Points between an ACC/FIR and adjacent ACCs/FIRs in a level 2 or 3 contingency shall be the existing or designated Transfer of Control Points on the contingency routes. However, operational capacity may necessitate the designation of new transfer of control points during a contingency.

15.0 Seamless SSR Codes Allocation Scheme

The State/FIR/ATS Unit delegated to provide ATS within a contingency airspace shall be responsible for the assignment of SSR Codes for flights operating in, out or over the affected State, FIR or ATS Unit.

The SSR Codes to be assigned to flights into, out of, or over a contingency airspace or FIR shall be in accordance with any existing Seamless SSR Codes Allocation Scheme between the affected ACC/FIR and adjacent ACC/FIR, provided the delegated ACC/FIR has radar coverage over the affected airspace or FIR. However, where contingency SSR Codes assignment is provided in the MOU between the affected ACC/FIR and the delegated ACC/FIR, then the SSR Codes contained in the MOU shall supersede other SSR allocation schemes.

16.0 Over-flight Approval

Aircraft operators are required to obtain over-flight approval from States responsible for such airspaces in accordance with the procedures and requirements of such States.

However, in a level 2 contingency situation, the delegating State/FIR may through an MOU, delegate the approval for over-flight requests to the State/FIR delegated to provide ATS over the affected State/FIR. In this case, the delegation should be indicated in the published Contingency Plan of the affected State/FIR.

The AFI CCT shall facilitate waiver or expeditious approval of over-flight permit or clearance in level 3 contingency with the other FIRs affected by deviations or re-routings.

Aircraft operators should note however that over-flight approval remains the responsibility of the State whose territory is to be overflown, except delegated to adjacent State.

17.0 Notification Procedures During Level 1, 2 & 3 Contingency Operations

In the event of activation of level 1, 2 or 3 contingency procedures, the affected State/FIR shall where practicable, notify ICAO, AFI CCT, all affected agencies, ACCs, FIRs and operators as appropriate. However, where this is not practicable due to the level of the contingency, then the delegated State/FIR shall notify ICAO, AFI CCT, all affected ACCs, FIRs and operators as appropriate.

In level 1 and 2 contingency events resulting in Limited Service situations, the CCC will decide upon the level of notification necessary and take action as required to disseminate the information.

In a level 2 and 3 contingency event resulting in no service situations, the AOCG will issue NOTAMs and broadcast on appropriate frequencies that contingency procedures have been initiated or activated. The notification process employed by individual States/FIRs shall be detailed in the national contingency plans of respective States.

IATA member airlines and other operators encountering contingency events within a State/FIR affecting safety or security of flight operations are required to immediately report such events or occurrences to the ICAO Regional Office or IATA Regional Office for immediate mitigation action and dissemination to other airspace users and affected States/FIRs.

Additional guidance materials on reporting procedures by IATA, operators and other service providers that are relevant to safety of flight operations, are contained in Appendix Q.

The follow**ing are examples of the type of information that may be broadcasted to alert users on the activation of level 2 or 3 contingencies:**

"Due to (type of contingency) affecting (ACC or FIR ---) all ATC services are terminated. Flights within (ACC or FIR ---) should continue as cleared and contact the next ATC unit in adjacent ACC or FIR, as soon as possible. Flights not in receipt of an en-route clearance should land at an appropriate airfield or request clearance to fly contingency route or avoid affected (ACC or FIR). Flights should monitor (defined frequencies ---)."

Broadcast an evacuation message on appropriate frequencies:
"All aircraft on (ACC Frequency ---) be informed that due to the activation of contingency plan no air traffic control service will be provided by (ACC or FIR). All affected aircraft should exercise caution and monitor (control frequencies ---), emergency frequencies and air to air frequencies, as well as contact the next air traffic control unit in adjacent (ACC or FIR ---) as soon as possible".

Procedures by flights approaching an Airspace Under Contingency

Aircraft Not in Receipt of an En-route Clearance:

In the event of activation of a level 2 or 3 contingency, only aircraft with received and acknowledged en-route clearances shall be permitted to transit through an affected ACC or FIR.

If unable to obtain or acknowledge an en-route clearance, flights should plan to re-route around the affected ACC or FIR, or proceed to land at an en-route alternate aerodrome. However, such flights may proceed along designated contingency routes if so cleared by adjacent ACC that has been so delegated to provide ATS over the affected airspace or FIR.

Aircraft In receipt of acknowledged En-route Clearance outside Contingency FIR:

Aircraft operating with a received and acknowledged en-route clearance can, at pilot's discretion, continue flight along designated contingency routes, but should expect a limited ATC service within the contingency FIR.

18.0 IATA in Flight Broadcast Procedures (IFBP)

In the event of level 1, 2 or 3 contingency events resulting in limited air – ground communication services, operators shall implement IFBP as contained in Appendix P.

Note: IFBP is widely used by airspace users in the AFI Region.

19.0 Contingency Implementation Monitoring

The AFI Region Contingency Coordination Team (AFI CCT) headed by the relevant ICAO ATM/SAR Regional Officer shall be responsible for the coordination and monitoring of the implementation of contingency procedures as published by the affected State or FIR. The AFI CCT shall maintain close liaison with the Point of Contact designated by the affected State/FIR, as well as adjacent State/FIR designated or delegated to provide ATS on behalf of the affected state/FIR.

IATA representative in the CCT shall be responsible for the exchange and dissemination of safety critical information between operators and the CCT.

In a contingency situation whereby the affected State/FIR is unable to activate the contingency (level 2 or 3), the AFI CCT in coordination with adjacent States/FIRs, can advise the ICAO Regional Office and ICAO Headquarters Montreal, on the possibility of designating or delegating the provision of ATS in the affected State/FIR by an adjacent State/FIR or as stipulated in the contingency plan of the affected State/FIR.

The AFI CCT shall continuously coordinate with the Central Coordinating Committee at the State/FIR level. The AFI CCT shall also ensure the timely dissemination of information to all airspace users, especially international operators, through the IATA Representative in the AFI CCT, etc.

20.0 Reporting Procedures During and After Contingency Operations

The Point of Contact at the State/FIR level shall ensure timely provision of updates or progress reports to the AFI CCT during and after the contingency situation. Thus, the affected State/FIR shall submit a comprehensive report to the relevant Regional Office detailing volume of traffic operations over the contingency airspace, operational challenges encountered, safety reports, as well as recommended action.

21.0 Switchover Plan for transition from Normal provision of ATS to Delegated Provision of ATS

States/FIRs, where practicable, are encouraged to develop Switchover Plans for transition from normal provision of ATS to delegated provision of ATS, and back to normal provision of ATS, in the event of a level 2 or 3 contingency.

The switchover plan shall where practicable, indicate the switchover date, switchover time, affected airspace/FIR, controlling authority, communication frequencies, contingency routes, transfer of control points, etc.

22.0 **Promulgation and Status Reporting of State ATM Contingency Plans**

22.1 National ATM Contingency Plans should be promulgated on the website of the Air Navigation Service Providers.

22.2 States should report the status of their contingency planning to the ICAO ESAF/WACAF Regional Office, as follows:

1. Promulgation of the national ATM Contingency Plan, together with the hyperlink to the website location of the Plan;
2. State Contingency Points-of-Contact
3. The establishment of contingency arrangements with each neighbouring State.

Note 1: Information of a sensitive nature such as that related to matters of national security need not be included in promulgated contingency plans.

Note 2: The Regional List of State Contingency Points-of-Contact is provided at Appendix XX.

Note 3: APIRG Air Navigation Deficiencies may be raised against the provisions of Annex 11 paragraph 2.32 for States that do not report promulgation of their national ATM contingency plan.

22.3 States should report the status of implementation of the performance expectations of the Regional ATM Contingency Plan at least once annually, but not later than 31st May each year, using the Regional ATM Contingency Plan Monitoring and Reporting Form.

22.4 ATM Contingency Plan Evaluation

Note: States and users are encouraged to ensure the conduct of simulation or regular exercises to test the operational effectiveness of ATM Contingency plans.

23.0 Memorandum of Understanding (MOU) for Delegation of Provision of ATS

It is necessary that in addition to the development and publication of State Contingency Plan, a Memorandum of Understanding (MOU) be developed and signed between States where delegation of the provision of air traffic services by an adjacent FIR is anticipated on behalf of an affected FIR. The MOU should provide an avenue for such

States or FIRs to clearly stipulate additional details not contained in the Contingency plan. The MOU may contain the following details:

i) Regulatory Requirements for Establishment of Contingency Plan

ii) Objectives of the MOU

iii) Conduct of Regular Contingency Exercises

iv) Re-currency Trainings for ATCs on Contingency Procedures.

v) Authorization of ATCs to provide ATS in adjacent FIR under assignment or delegation.

vi) Responsibility for Search and Rescue Under Contingency.

vii) Responsibility for granting over-flight clearance

viii) Responsibility for En Route Navigation Charges Under Contingency.

ix) Class of airspace, Type of Separation and type of ATS to be provided.

x) Procedures for Amendment of Contingency Plans and MOUs.

xi) CNS/ATM Capacity of the FIR assigned or delegated to provide ATS in the designated airspace.

xii) Clear description of the airspace or sector or FIR or Route to be delegated.

xiii) Responsibility for issuance of NOTAM for initiation and termination of the contingency plan.

xiv) Air Traffic Flow Management, etc.

xv) A template of the MOU is provided at Appendix XXX.

APPENDICES:

Appendix A: MOU TEMPLATE FOR DELEGATION OF PROVISION OF ATS

Memorandum of Understanding Between (Name of State/FIR/ACC) and (Name of State/FIR/ACC) for the Implementation of Level 2 and 3 Contingency Plan Requiring the Delegation of Provision of ATS

Article 1: Regulatory Requirements for Establishment of Contingency Plan

Annex 11 of ICAO Attachment C requires States, ACCs or FIRs to develop and publish ATM Contingency Plan for the management of level 2 and 3 contingencies that may require the delegation of the provision ATS by the affected State/FIR/ACC to an adjacent State/FIR/ACC.

Similarly, (Name of State or Civil Aviation Regulations) requires that the ANSP shall develop contingency plan to mitigate the possible disruption in the provision of air navigation services.

Article 2: Objective of the MOU

The objective of this MOU is to provide an instrument for the delegation of the provision of ATS by (Name of Delegating State/FIR/ACC) to (Name of Delegated State/FIR/ACC) for the provision of ATS over (Name of State/FIR/ACC or ATS Route).

Article 3: Effective Date of the MOU

The MOU between (State/FIR/ACC) and (State/FIR/ACC) shall take effect from (Date and Time in UTC) or whenever a level 2 contingency occurs that requires intervention from adjacent State/FIR/ACC.

Article 4: Authorization of ATCs to provide ATS in adjacent FIR under assignment

(Name of Delegating State/FIR/ACC) hereby authorizes (Name of Delegated State/FIR/ACC) to provide (type of air traffic service) within (Name of State/FIR or airspace). The applicable longitudinal separation standard shall be (---- time or ---- Nautical Miles).

Article 5: Responsibility for granting of over-flight clearance

(Name of State/FIR/ACC) shall be responsible or is delegated to grant approval for the overflight over (Name of State/FIR or airspace) during the period of level 2 contingency.

Article 6: Responsibility for Search and Rescue Under Contingency

The responsibility for the conduct of search and rescue shall be vested in (Name of

State/FIR/ACC) during level 2 contingency.

Article 7: Procedures for Amendment of Contingency Plans and MOUs

The MOU between (Name of State/FIR/ACC) and (Name of adjacent State/FIR/ACC) shall remain in force from ---------- to ----------. However, any of the parties to the MOU can request for a review or termination of the MOU at any point in time after prior notification of the other party, and without jeopardizing safety and efficiency of flight operations.

Article 8: Conduct of Regular Contingency Exercises

(Name of State/FIR/ACC) and (Name of State/FIR/ACC) shall ensure regular conduct of ATM contingency exercises at least once yearly. The objective of the exercise is to ensure that both parties are adequately sensitized on the contingency procedures.

Article 9: Re-currency Trainings for ATC on Contingency Procedures

Each State/FIR/ACC shall ensure regular training and retraining of her ATCOs on ATM contingency procedures as well as contingency routes.

Article 10: CNS/ATM Capacity of (State/FIR/ACC) assigned to provide ATS in the designated airspace

The delegated state (Name of delegated State/FIR/ACC) hereby confirms that she has capacity to provide ATS (ATC Service, Flight Information Service, Alerting Service) in the affected State/FIR or airspace.

Article 11: Responsibility for issuance of NOTAM for activation and termination of the contingency plan

(State/FIR/ACC) shall be responsible for the issuance of NOTAM for commencement or activation and deactivation of a contingency plan.

Article 12: Responsibility for En Route Navigation Charges Under Contingency

The responsibility for the collection of en-route navigation charges shall lie with (Name of State/FIR/ACC) during the period of level 2 contingency.

Article 13: Clear description of the airspace or sector or FIR or Route to be delegated

The affected airspace or airspace under contingency as described below shall be delegated to (Name of State/FIR/ACC):

i) Coordinates, boundary points,
ii) Vertical and lateral limit
iii) Upper or lower airspace
iv) Type of flight operations (VFR, IFR or both),
v) ATS Routes or Contingency Routes, etc.

Article 14: Implementation of Air Traffic Flow Management

(Name of Delegated State/FIR/ACC) shall where practicable, activate the ATFM or flow control measures during level 2 contingency when traffic volume is expected to exceed ATM capacity.

Article 15: Authorization of MOU for Implementation

(Name of State/FIR/ACC) and (Name of second State/FIR/ACC) hereby authorize the implementation of contingency plan in accordance with this MOU in the event of a level 2 contingency.

(Name of State/FIR/ACC)	**(Name of State/FIR/ACC)**
Name ----------	**Name----------**
Designation ----------	**Designation ----------**
Date ----------	**Date ----------**

APPENDIX B: ATM CONTINGENCY PLANNING PRINCIPLES

1. All ATS units, including ATC Sectors, Units, Centres and supporting Flight Information and Briefing Offices should have a Level 1 Contingency Plan to ensure the safe transit of international traffic in the event of disruption or withdrawal of ATS, or unsafe airspace conditions such as volcanic ash cloud, nuclear emergency or national security responses.

2. The overriding principle is that safety has primacy over efficiency and optimal levels and routes;
3. Contingency Operations will necessitate lower than normal airspace capacity to ensure safety.
4. System and ATC service redundancy is the most effective contingency capability.
5. All Contingency Plans should define the following where applicable:
   - i) A Contingency Route Structure supported by a Flight Level Allocation Scheme (FLAS) and minimum navigation and height-keeping (e.g. RVSM or non-RVSM) capability for access;

   - ii) Note: Contingency Route Structures and/or FLAS need not be defined where the

     Contingency Plan states that all routes and/or levels remain available during contingency operations.
   - iii) Provisions for tactical definition and coordination of additional routes/FLAS and priority for access to accommodate selected non-scheduled operations such as humanitarian, medical evacuation and flood and fire relief (FFR) flights;
   - iv) Priority determination for routine scheduled and non-scheduled flights;
   - v) Flights excluded from operations in contingency airspace, and minimum navigation and height keeping (RVSM) capability required for access to the contingency airspace;
   - vi) Specified minimum longitudinal spacing between consecutive aircraft entering the contingency airspace on non-separated ATS contingency routes;
   - vii) Contingency communication arrangements including means of communication within contingency airspace and communications transfer arrangements for aircraft entering and leaving the airspace;
   - viii) Details of delegation of air traffic services arrangements (if any);

ix) Contingency points of contact

6. Level 2 Contingency Arrangements (arrangements between neighbouring administrations) should be included in bi-lateral or multi-lateral agreements between States in all cases where activation of any Level 1 Contingency Plan will impact upon a neighbouring State's ATSU.
7. Level 1 Contingency Plans should include, either in detail or by reference, any relevant Level 2 Contingency Arrangements.
8. Close cooperation between neighbouring administrations, together with supporting mechanisms for the tactical definition and promulgation of contingency routes for the avoidance of Category B and C contingency airspace.
9. Collaborative Air Traffic Flow Management Measures should be the first priority response to Category A contingency events, and for the management of deviating traffic during Category B and C events.
10. Contingency routes must be vertically separated whenever lateral route separation is less than the minimum specified by the State for contingency operations.
11. Contingency Flight Level allocation scheme planning should include consideration of allocating the optimum flight levels to routes used by long haul aircraft, depending on the traffic density on the route, wherever practicable.
12. Contingency ATS routes should provide minimum lateral separation or longitudinal separation of 15minutes between aircraft that are not vertically separated under a FLAS, except where the minimum aircraft navigational capability specified in the contingency plan permits reduced lateral separation specified in ICAO Doc 7030 Regional Supplementary Procedures Section 6.2 or ICAO Doc. 4444 PANS-ATM. States should specify any necessary buffers to minimum lateral separation requirements where meteorological phenomena may require aircraft to deviate from the ATS route to maintain flight safety. Information on the buffers should be provided in operational information provided on pre-activation or activation of the contingency plan.
13. Minimum longitudinal spacing between aircraft operating on the same contingency route and not vertically separated should be 15 minutes or 120 NM. However, this may be reduced to 10 minutes or 80 NM in conjunction with application of the Mach number technique where authorized by the relevant authority and agreed in the appropriate LOA or other Contingency Arrangement.
14. Contingency ATS routes and FLAS, and contingency procedures, should be agreed

between geographically grouped neighbouring States to form sub-regional contingency plans.

15. Contingency ATS routes should be published in State AIP to permit the storing of route details in airspace users' navigation databases.
16. Airspace classifications for ICAO Classes A, B and C airspace should remain unchanged during contingency operations to facilitate managed access to the airspace in accordance with the contingency plan. Classes D and E airspace may be reclassified as Class C or higher where necessary to preclude VFR operations.
17. Define ground and airborne navigation requirements if necessary
18. Alternate aerodromes should be specified where necessary in Level 1 contingency plans for airport control towers and terminal airspace.
19. Aircraft operators are required by ICAO Annex 6 – Operation of Aircraft to implement appropriate mitigation measures for volcanic ash in accordance with their safety management system (SMS), as approved by the State of the Operator/Registry.
20. Airspace affected by volcanic ash cloud should not be closed to international civil aviation.
21. Amended ATS routes, whether published or promulgated ad-hoc, may be prescribed as part of the air traffic flow management (ATFM) response to expected demand and capacity imbalance caused by aircraft avoiding volcanic ash cloud.
22. Aerodromes should only be closed by NOTAM for periods of observed volcanic ash contamination of the surface of the aerodrome movement area;
23. Closure of airports affected by volcanic ash deposition should be supported by a safety assessment conducted in collaboration between airport operator, aircraft operators and the air navigation service provider, in accordance with their respective safety management systems.

APPENDIX C: BASIC CONTINGENCY PLANNING ELEMENTS

Element 1: Administration

a) Record of signatories, version control and records of amendment.

b) Definition of the objectives, applicable airspace and operations, and exclusions.

Element 2: Plan Management

c) List of States and FIRs affected, and the agreed methods of notification in the event of

pre-activation, activation and termination of the plan. Contingency events may arise with insufficient advance notice to permit pre-activation of contingency plans

d) Details of the arrangements in place for management of the plan, including:
   i. provisions for a Central Coordinating Committee to authorize and oversee the activation of the plan and arrange for ATS restoration in the event of an extended outage;
   ii. ATM Operational Contingency Group for 24 hour coordination of operational and supporting activities under the plan, and
   iii. the terms-of-reference, structure and contact details for each.

e) Details of testing, review and reporting actions:
   i. Schedule of desktop and simulator testing;
   ii. Post-Activation Review (PAR) requirements:
   Completion of a preliminary PAR report within 28 days of any activation or testing of contingency plans, including any recommendations to address deficiencies and implement improvements in contingency plans, arrangements, procedures and training.

   1. A more comprehensive PAR report should be prepared for major contingency events, or any contingency event involving an air safety incident investigation.
   2. A full PAR analysis of major events could take many months to complete.
   3. Input to the PAR from all parties affected by or involved in the response to the contingency is actively sought and considered;
   4. Bi-lateral or multi-lateral PAR for activation or testing of Level 2 contingency arrangements;
   5. Timely reporting to ICAO and other affected States of anticipated or experienced disruptions requiring activation of contingency plans.
   6. Note: Annex 11 states that: States anticipating or experiencing disruption of ATS and/or related supporting services should advise, as early as practicable, the ICAO Regional Office and other States whose services might be affected. Such advice should include information on associated contingency measures or a request for assistance in formulating contingency plans.

f) Inclusion of contingency plans/procedures in ATS training and refresher training

programs.

Element 3: Airspace

g) Procedures and determinants for implementation and activation of Special Use Airspace including, where necessary, Restricted or Prohibited Areas in territorial airspace, or Danger Areas over the high seas.

h) Criteria for airspace classification changes and associated separation and CNS requirements

i) Collaborative Trajectory Options for Category A, B and C events, and for Large Scale Weather Deviations (LSWD)

Element 4: ATM Procedures

j) Details of re-routing to avoid the whole or part of the airspace concerned, normally involving establishment of:

   i. Strategic and Tactical Collaborative Trajectory Options providing additional routes or route segments with associated conditions for their use; and/or

   ii. A simplified route network through the airspace concerned, together with a Flight Level Scheme, to ensure that a standard minimum vertical separation is applied where less than a specified minimum lateral separation exists between routes.

k) Details of how domestic traffic, departing and arriving flights and SAR, humanitarian and State aircraft flights will be managed during the contingency period.

l) Procedures for transition from normal services levels to contingency services, and resumption of normal service.

m) Procedures for joining or departing a contingency route.

n) Details of reduced levels of service, if any, within the affected airspace.

Establishment of arrangements for controlled access to the contingency area to prevent overloading of the contingency system, utilizing allocated airspace entry times or, where ATFM capability exists, tactical ATFM measures.

NB. Where static Local ATFM measures or airspace restrictions are seen to potentially introduce safety concerns in terms traffic flow, complexity and overloading of the contingency system, Local ATFM measures may be suspended or relaxed in order to

alleviate any “hotspots”, safety concerns and/or deficiencies.

o) Procedures for adjacent service providers to establish longitudinal spacing at the entry point, and to maintain such separation through the airspace;

p) Reassignment of responsibility for providing air traffic services, to the extent possible, in non-sovereign airspace and to international aircraft transiting sovereign airspace; and/or

q) Coordination and communications transfer procedures for aircraft entering and leaving the affected airspace.

Element 5: Pilot/Operator Procedures

r) Requirements for flight plan submission during the contingency period, including contingency route planning requirements, and arrangements if airspace is restricted or not available and no contingency route is available;

s) Emergency procedures, including In-flight requirements for broadcast of position and other information, and for continuous listening watch, on specified pilot-pilot and GUARD VHF frequencies;

t) Requirements for display of navigation and anti-collision lights;

u) Requirements for climbing and descending well to the right of the centerline of specifically identified routes;

v) Requirements for all operations to be conducted in accordance with IFR, including operating at IFR flight levels from the relevant Table of Cruising Levels in Appendix 3 of Annex 2, except where modified by a Flight Level Allocation Scheme.

Element 6: Communications Facilities and Procedures

w) Provision and operation of adequate air-ground communications, AFTN and ATS direct speech links;

x) Specification of radio frequencies to be used for particular contingency routes.

y) Log-on and connection management for CPDLC aircraft, where appropriate;

z) Use of ADS-C automatic position reporting in lieu of voice position reporting to ATS.

Element 7: Aeronautical Support Services including AIS and MET

aa) AIP Information regarding the Contingency Planning, and notification by NOTAM of anticipated or actual disruption of air traffic services and/or supporting services, including associated contingency arrangements, as early as practicable and, in the case of foreseeable disruption, not less than 48 hours in advance.

Reassignment to adjacent States of the responsibility for providing meteorological information and information on status of navigation aids.

Element 8: Contact Details

bb) Contact details for the RCC responsible for the affected FIR, and coordination arrangements.

cc) Contact details of adjacent States ANSPs and other international organisations participating in the contingency plan.

dd) Prior notification requirements for adjacent FIR activation of Level 2 contingency arrangements.

Note: The first priority response to any short notice contingency response should be the immediate handling of the air situation, followed by the activation of the contingency plan.

APPENDIX D: Contact Details of the AFI CCT members

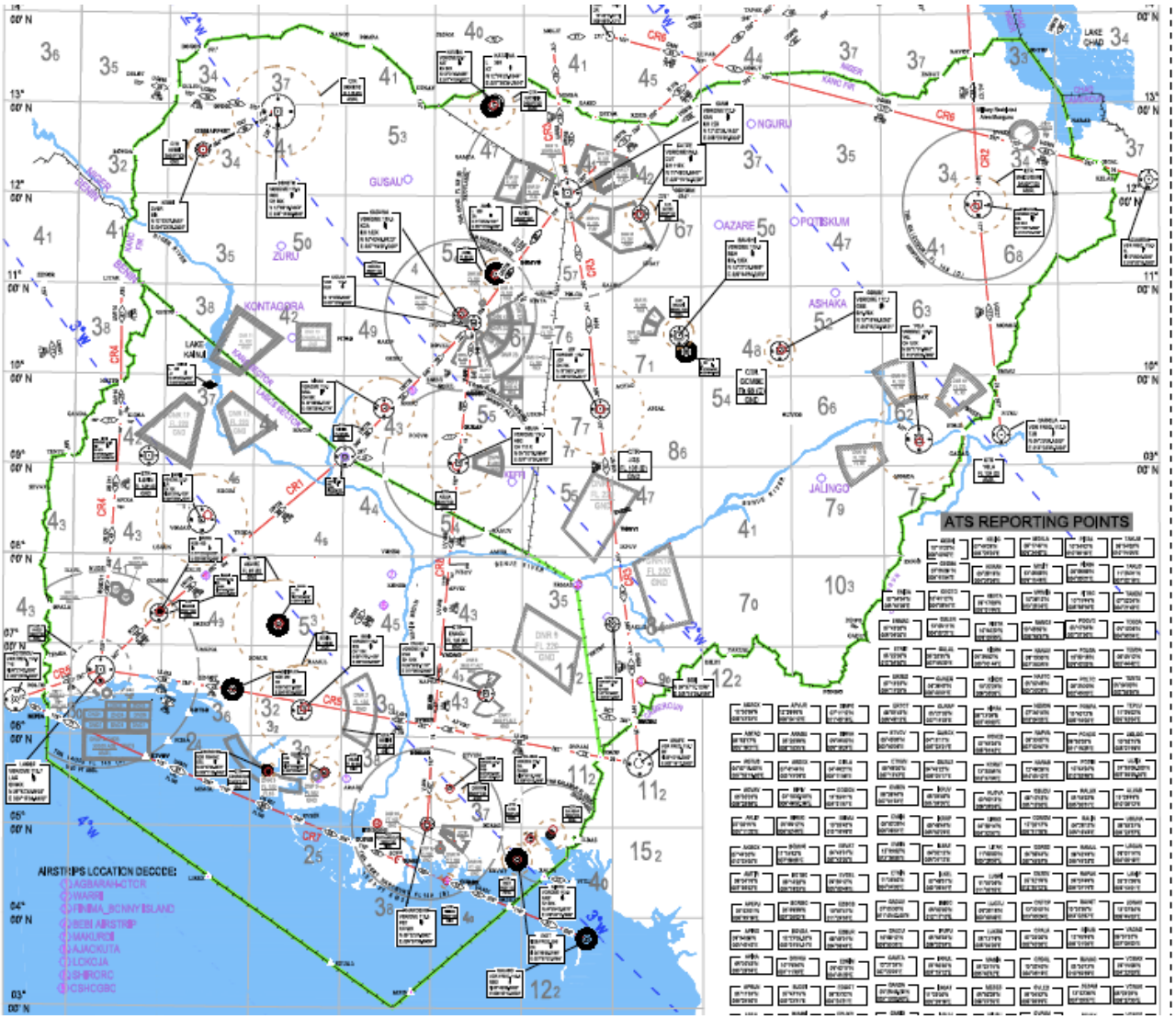
State/ Organization	Point of contact	Telephone	E-mail
Kano FIR	***Director of Operations, NAMA***	**Tel: +2348050786333**	**mpwajok@nama.gov.ng**
Accra			
Niamey			
Ndjamena			
Brazzaville			
Dakar			

Roberts FIR			
SAL FIR			
Johannesburg			
Johannesburg Oceanic			
Cape Town			
Nairobi			
Luanda			
Lusaka			
Entebbe			
Dares Salam			
Antananarivo			
Bujumbura			
Asmara			
Beira			
Lilongwe			
Kigali			
Gaborone			
Harare			

Mauritius			
Mogadishu			
Seychelles			
Sal Oceanic			
Windhoek			
ICAO WACAF	***RO ATM/SAR*** ***Albert Aidoo Taylor***	**Tel: +221776141116** **Fax:**	**Ataylor.icao.int**
ICAO ESAF	***RO ATM/SAR*** ***Keziah Ogutu***		
IATA Rep.	***Designation:*** ***Name:***	**Tel:** **Fax:**	

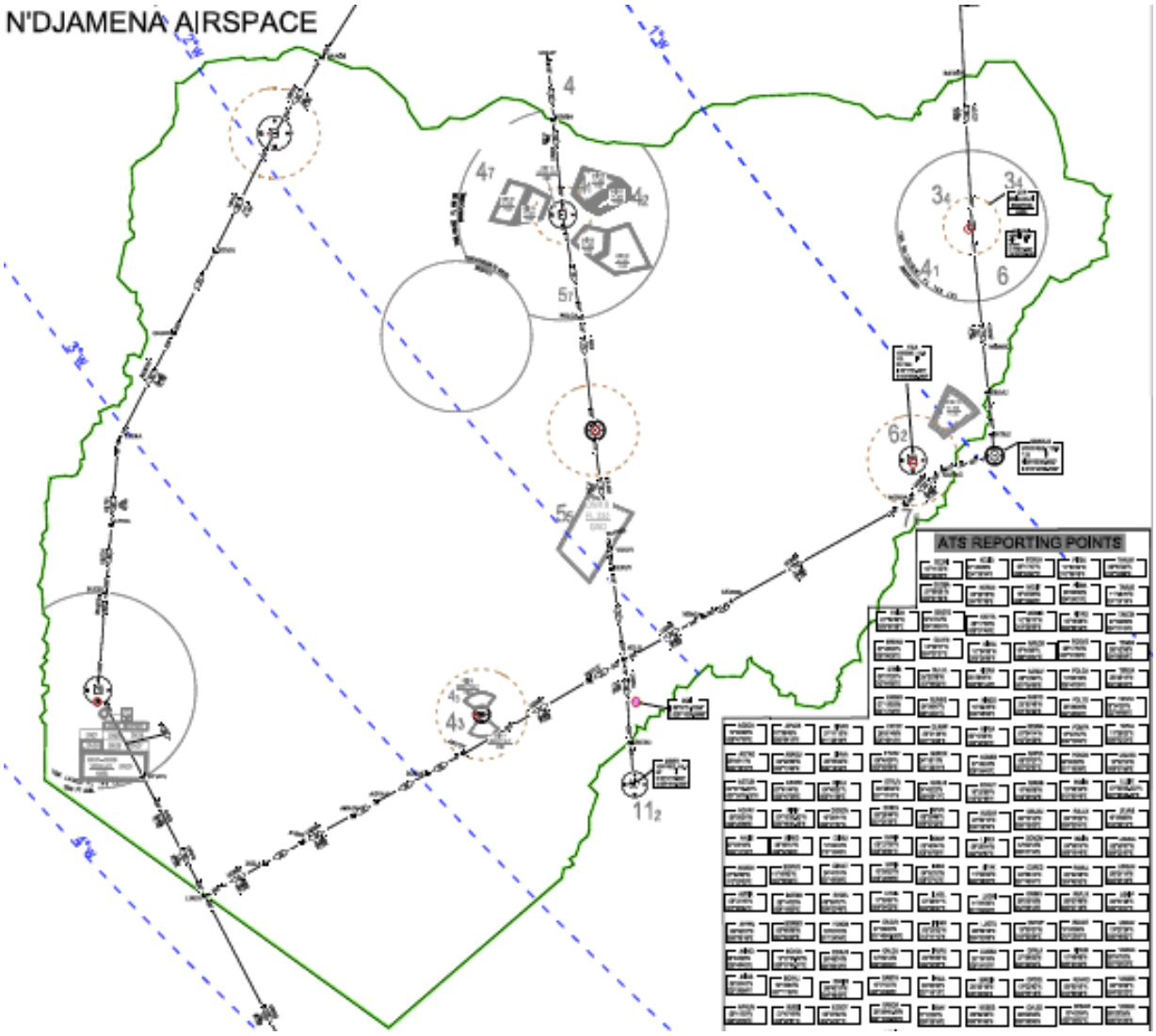
APPENDIX E (1): Contingency Route Structure during partial or Total Unavailability of the Kano FIR

Present ATS Route	Contingency Route Number	Contingency Routings	FLAS	Minimum Longitudinal Separation	ACC in Charge	Crossing Point
L/UL433, R/UR778	***CR1***	POLTO – 'LAG' – 'IBA' – 'BDA' – 'KUA' – 'KAN' – RISUB	EAST BOUND (FL330 & Below) WESTBOUND (FL340 & Below)	15 minutes	Lome, & Niamey	UA604 (KAN); UB731 (LAG)
G/UG727	***CR2***	RAVOT – 'MIU' – EBIMU – 'TJR'.	EAST BOUND (FL350 & Above) WESTBOUND (FL360 & Above)	15 minutes	Ndjamena,	UG854 (MIU TMA)
A/UA604	***CR3***	OBUDU – AKLIS – 'JOS '– 'KAN' – MIMBA	EAST BOUND (FL350 & Above) WESTBOUND (FL360 & Above)	15 minutes	Kano Niamey	UR778 (KAN)
UM114, B/UB731,	***CR4***	LITAK, NASTO, KIGRA – UB731 – 'LAG' – UR603 – ETVOV – LIREX.	EAST BOUND (FL350 & Above) WESTBOUND (FL360 & Above)	15 minutes	Lome & Accra	UR778 (LAG)
L/UL433,	***CR5***	IKROP – APVOT – EVBEN – 'LAG' - POLTO.	EAST BOUND (FL350 & Above) WESTBOUND (FL360 & Above)	15minutes	Lome & Douala	UR778 (LAG)
UG854	***CR6***	'FL' – SIGAL – UG854 – KORUT	EAST BOUND (FL330 & Below) WESTBOUND (FL340 & Below)	15 minutes	Ndjamena	UG727 (MIU TMA)
UA601	***CR7***	ARDEX – UA601 – KIPSAS	EAST BOUND (FL330 & Below) WESTBOUND (FL340 & Below)	15 minutes	Douala & Lome	UR603 (NAROM)
UV456	***CR8***	BIPIV – 'POT' – UV456 – 'ABC' – 'KUA' – 'KT' – MOLIT – UA604	EAST BOUND (FL350 & Above) WESTBOUND (FL360 & Above)	15 minutes	Douala & Niamey	UA601 (GUNEC) UL433 (POTGO) UR778 (KUA) UA604 (GANLA)


ATS REPORTING POINTS
AIRSTRIPS LOCATION DECODE:
GUSAU
ZURU
KONTAGORA
NGURU
AZARE
POTISKUM
ASHAKA
JALINGO

APPENDIX E (2): Level 3 Contingency Route Structure Requiring Total Avoidance of Adjacent FIR (Accra, Niamey, Ndjamena and Brazzaville FIR) By Kano FIR

Present ATS Route	Contingency Route Number	Contingency Routings	FLAS	Minimum Longitudinal Separation	ACC in Charge	Remarks
B/UB731 R/UR603	***CR10***	NANOS – UB731 - KIGRA – 'LAG' – UR603 – ETVOV – LIREX.	NIL FLAS	10 NM Radar Separation	Lagos & Kano ACC	For Avoidance of Accra/Lome
Q/UQ589	***CR11***	LIREX – UQ589 – MOBDA – 'TJR' – UG727 – 'MIU' – RAVOT	NIL FLAS	10 NM Radar Separation	Lagos & Kano ACC	For Avoidance of Brazzaville/ Douala
A/UA604	***CR12***	OBUDU – UA604 – 'JOS' - 'KAN' – MIMBA	NIL FLAS	10 NM Radar Separation	Lagos & Kano ACC	For Avoidance of Ndjamena FIR



APPENDIX E (3): Level 3 Contingency Route Structure Requiring Avoidance of Kano FIR

Present ATS Route	Contingency Route Number	Contingency Routings	FLAS	Minimum Longitudinal Separation	ACC in Charge	Remarks
G/UG859 A/UA603	***CR13***		NIL FLAS	1O NM Radar Separation by Lome ACC & Accra	Lome ACC & Accra ACC	For Avoidance of Kano FIR By Accra/Lome
G/UG857	***CR14***	LV – DLA - FL	NIL FLAS	1O NM Radar Separation By Douala	Brazzaville, Douala, Ndjamena	For Avoidance of Kano FIR By Douala and Ndjamena

Appendix F: Niamey FIR Contingency Routes

Contingency Routes Network – Niamey UIR

5.2. Contingency routes and flight level allocation scheme

5.2.1. NORTHBOUND/SOUTHBOUND TRAFFIC

The northbound/southbound traffic will route via the following contingency routes and in accordance with the flight level allocation scheme indicated in order to provide strategic separation in the FIR:

NYCR11: - UM114 (LITAK – ZAWAT)

Northbound: FL250 – 310 – 330 – 370

Southbound: FL280 - 340-360-380

NYCR12: - UA608 / UM608 (TATAT - NIAMEY – TERAS)

Northbound: FL 330 – 370- 390-410

Southbound: FL 280 - 320- 360- 380

NYCR13: - UA603 (PINGO – GAO)

Northbound: FL 330 - 350

Southbound: FL 280 – 320- 360- 380

NYCR14: - UG859 (MOKAT – GAO)

Northbound: FL 270–290– 310- 330 – 350- 370 -410

Southbound: FL 280 – 320 -360- 380

NYCR18: - UG859 (Limit UTA OUAGA – GAO)

Northbound: FL 270 - 310- 370 - 410

Southbound: FL 280 – 320 – 360- 380

NYCR15: - UB735 / UM108 (POTOL – USRUT)

Northbound: FL 250 – 270 – 290 – 330 – 370 - 410

Southbound: FL 260 – 280 – 320 – 360

NYCR16: - UA604 (EREBO – AS - GANLA – MIMBA)

Northbound: FL 260 – 300 – 360 - 380

Southbound: FL 270 – 310 - 330 – 350 - 390

NYCR17: - UA614 (TAVOT – IPOBA)

Northbound: FL 330 -350 - 370 - 410

Southbound: FL 280 - 360

5.2.2. EASTBOUND/WESTBOUND TRAFFIC FLOW

The eastbound/westbound traffic will route via the following contingency routes and in accordance with the flight level allocation scheme indicated in order to provide strategic separation in the FIR:

NYCR 5: - UG 660 (NIAMEY – GULEN)

Eastbound: FL270 – 290

Westbound: FL260 - 300

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AMDT 04/13 AÉRONAUTIQUE - A S E C N A

AIP 12 ENR 1-8-03

ASECNA NIGER 30 MAI 2013

SERVICE DE L'INFORMATION

AÉRONAUTIQUE - A S E C N A AMDT 06/13

NYCR6: - UG854 (OUAGA UTA boundaries – NIAMEY)

South West bound: FL270 – 290

North East bound: FL260 – 300

NYCR7: - UG 858 (DETAR - ZR – Limit FIR N'djamena -ENORA)

North East bound: FL250 – 290 – 370 - 410

South West bound: FL260- 300-360 – 380

NYCR8: - UR 778 (SABSI – RISUB)

North Eastbound: FL250 –270 – 290 – 310 - 330 – 370 – 410

South Westbound: FL260- 320 - 340

NYCR9: - UB 731 (BIRNI – AGADES – TOBUK)

North Eastbound: FL250 – 290 – 370 - 410

South Westbound: FL320 - 340

NYCR10: - UB 727 (OPULU – TAVIL – TERAS)

North Eastbound: FL 250- 390

South Westbound: FL 260 - 340

NYCR19: - UR866 (OPULU - NUREX)

South East bound: FL 270 – 310

North West bound: FL 260 – 300 – 340

Appendix G: Ndjamena Contingency Routes

Ndjamena Contingency Route Network

Contingency Routes code	Contingency Routes name	Flight level allocation scheme
NDCR1	UG858: DEKIL – RAKOM	southwest bound: flight level 300-340 northeast bound: flight level 350-390
NDCR2	UR778: SABSI - EDARA - DINTA - ILDOR – TONBA	northeast bound: flight level 290-350 southwest bound: flight level 280-340
NDCR3	UG660: GNA - FL – KELAK	westbound: flight level 280-340 eastbound: flight level ~~290~~-310-350-430
NDCR4	UB730 : DIR-RAKOM	northbound: flight level 300-380 southbound: flight level 310-370
NDCR5	UA607: DIR – FL – RULDO	northbound: flight level 300-380 southbound: flight level 290 -370
NDCR6	UG727 : TJN – TJR – PITRU – EBIMU – DIR – DEKIL	northbound: flight level 320-340-360 southbound: flight level 330-390
NDCR7	UG857: INASU - TJR – FL	southwest bound: flight level 280-340 northeast bound: flight level 310-350
NDCR8	UG655: GARIN – ONUDA	northbound: flight level 260-320 southbound: flight level 250-330
NDCR9	UA410: ONUDA – KAFIA	northeast bound: flight level 270-310-350 southwest bound: flight level 280-340
NDCR9	UM 215: TONBA – ARBEG – ONUDA	northbound: flight level 380-400 Southbound: flight level 370-390
NDCR10	UB736: MONAN - GUNEB - NUROK - MEKAL - TJR – ETRIS	westbound: flight level 300-320-360 eastbound: flight level 310-330-370-410

Appendix H: Kinshasa Contingency Routes

Allocation Of Routes, Flight Levels And Contingency Frequencies
ATS Contingency Routes For Aircrafts Overflying Kinshasa FIR (FZZA)

- LUANDA FIR (FNAN) to KINSHASA FIR (FZZA) ;
- ENTEBBE FIR (HUEN) to KINSHASA FIR (FZZA) ;
- BRAZZAVILLE FIR (FCCC) to KINSHASA FIR (FZZA);
- DAR-ES-SALAM FIR (HTDC) to KINSHASA FIR (FZZA);
- KARTHOUM FIR (HSSS) to KINSHASA FIR (FZZA);
- LUSAKA (FLFI) to KINSHASA FIR (FZZA);

Contingency Routes
Considering the major traffic flows through Kinshasa FIR, contingency routes in Democratic Republic of the Congo for international air traffic are set as follows:

Flights originating from North to South of Kinshasa (FZZA) airspace						
MAXIMUM CAPACITY OF THE ROUTE					**FREQUENCIES**	
Contingency ATS Route	**ENTRY POINT**	**EXIT POINT**	**FLIGHT LEVELS**	**MINIMUM SEPARATION**	**VHF**	**HF**
UM998	MERON	INUGA	FL 300 FL 310 FL 370	15 Minutes	Kinshasa ACC 126.1 MHz Lubumbashi ACC 126.3 MHz	
UM731	EMSAT	BUSIV	FL 320 FL 380 FL 390	15 Minutes	Kinshasa ACC 126.1 MHz Lubumbashi ACC 126.3 MHz	
UM216	KINPA	OVPAP	FL 290 FL330 FL350 FL340 FL360 FL400		Kinshasa ACC 126.1 MHz Lubumbashi ACC 126.3 MHz.	
UM215	NOTAM	AMSIK	FL			

Appendix I (1): Brazzaville FIR Contingency Routes

Brazzaville FIR Contingency Plan Routes (Contingency Routes)

1. Level 2 contingency plan

Contingency routes	Delegated centers	Means of communication	Flight levels assignment	Entering /Exit point	Adjacent FIR
UR984-UP685 (MPK-DEREP-ARDEX)	Ndjamena/ (Douala)	CPDLC, HF/ VHF	Westbound: FL300-FL400 Eastbound: FL290-FL390	MPK/ARDEX	Kinshasa/ Lagos
UG727 (BZ–TJN)	Ndjamena	CPDLC, HF	Northbound: FL340-FL360 Southbound:FL330-FL350 FL370	BZ/TJN	Kinshasa/ Ndjamena
UA607 (MPK–RULDO)	Ndjamena	CPDLC, HF	Northbound: FL340-FL360 Southbound:FL330-FL350-FL370	MPK/RULDO	Kinshasa/ Ndjamena
UM215 (ONUDA–MERON)	Ndjamena	CPDLC, HF	Northbound:FL300-FL340-FL360-FL400 Southbound:FL330-FL350-FL370-FL390	ONUDA/ MERON	Ndjamena/ Kinshasa
UG856 (BZ-LV-ERAVA)	Libreville	HF	Northbound: FL300-FL400 Southbound: FL290-FL390	BZ/ ERAVA	Kinshasa/ Lagos
UG861 (DLA-IT-LIKAD)	Libreville	HF	Northbound: FL340-FL360 Southbound:FL330-FL350-FL370	LIKAD	Luanda
UA410 (BZ–MPK–ONUDA)	Ndjamena	CPDLC, HF	Northbound:FL270-FL310-FL410 Southbound:FL280-FL320-FL380	BZ/ ONUDA	Kinshasa/ Ndjamena
UG857 (DLA-DELOR–INASU)	Ndjamena	CPDLC, HF	Northbound: FL270-FL310 Southbound: FL280-FL320	INASU	Ndjamena

Appendix I: (2) Level 3 Contingency Plan Routes

UNAVAILABILITY OF STATE AIRSPACE IN BRAZZAVILLE FIR

STATE	AVOIDANCE ROUTING	FIR CONCERNED	COMMENT
CONGO	UR984	Brazzaville FIR (Douala)	Westbound: FL300-FL400 Eastbound: FL290-FL390
	UA607	Ndjamena FIR/Kinshasa FIR	Northbound: FL340-FL360 Southbound: FL330-FL350-FL370
	UA400	Brazzaville FIR (Sao Tomé)	
GABON	UL434	Brazzaville FIR (Douala, Brazzaville)	
	UG727	Brazzaville FIR (Brazzaville)	

	UA400	Brazzaville FIR (Sao-Tomé, Brazzaville)	
CAMEROON	UM731	Brazzaville FIR (Brazzaville)	
	UT143	Brazzaville FIR (Libreville, Brazzaville)	
	JOS-KUSVA-UG856	Kano FIR, Brazzaville FIR (Libreville, Brazzaville)	
REPUBLIC OF CENTRAL AFRICA	UG727	Brazzaville FIR (Brazzaville)	
	UL434	Brazzaville FIR (Brazzaville)	
EQUATORIAL GUINEA	UT143	Brazzaville FIR (Brazzaville, Libreville)	
	UR986	Brazzaville FIR (Brazzaville, Douala)	
	UQ582	Brazzaville FIR (Brazzaville, Douala)	

Appendix J: Lome ACC Contingency Routes

LOME ACC Contingency Route And Flight Level Structure

1.1. **ATS Routes To Be Temporarily Unavailable**

The Following ATS Routes Will Be Temporarily Unavailable For Over Flight Traffic:

- UR984
- UR 981
- UB 726
- UR 983
- UM 566
- UA 601

1.2. **Contingency routes and flight level allocation scheme**

1.2.1. NORTHBOUND/SOUTHBOUND TRAFFIC

The northbound/southbound traffic will route via the following contingency routes and in accordance with the flight level allocation scheme indicated in order to provide strategic separation in the UTA:

- LMCR 1: UA 608 (EPITI-TATAT)

Northbound: FL 370-390

Southbound: FL 360-380

- LMCR 2: UM 114 (NASTO)
  Northbound: FL 330-370
  Southbound: FL 340-360-380

NB: Transfer of communication and Control is made on LMCR 2 between NIAMEY ACC (131.3 MHZ/6586Khz) and LAGOS ACC (127.3 MHZ) at NASTO.

1.2.2. EASTBOUND / WESTBOUND TRAFFIC FLOW

The EASTBOUND/WESTBOUND traffic will route via the following contingency routes and in accordance with the flight level allocation scheme indicated in order to provide strategic separation in the UTA:

- LMCR 3 : UL 433 (KETAT-MONOS)
  Eastbound : FL 250-270-290-310-330-350
  Westbound : FL 260-280-300-320-340

- LMCR 4 : UL 683 (GANDA-ILORI)
  Eastbound : FL 350
  Westbound : FL 400

Aircraft on long-haul international flights and special operations (e.g. Search and Rescue (SAR), State aircraft, humanitarian flights, etc.), shall be afforded priority for levels at FL290 and above. For flight planning purposes, domestic operators should plan on the basis that FL290 and above may not be available.

Appendix K: (1) Accra FIR Contingency Routes

Level 2 Contingency Route structure in event of unavailability of Accra

Appendix K (2): Level 3 contingency route for avoidance of adjacent FIR

CONTINGENCY ROUTE	ROUTE NAME	FLAS	ADJACENT FIR/ATS UNIT	COMMUNICATION
CR1-UA560	INAKA-MEPON-ACC	FL290/310/370/390 FL320/340/360/380	ABIDJAN	121.1MHz, 121.9MHz HF 8861KHz
CR2-UL433	ACC-LM	FL210/250/330/350 FL220/260/320/340	LOME ABIDJAN	124.6MHz 121.9MHz
CR3-UA601/UL683	NANGA-TLE-IPORI	FL270/310/350/410 FL280/320/400	LOME OUAGA	124.6MHz 120.3MHz
CR4-UB600	AFO-ACC	FL210/250/330/350 FL220/260/320/340	LOME ABIDJAN	124.6MHz 121.9MHz, HF8861KHz
CR5-UG855	TUSEK-SN-TLE-GAPAG	FL230/290/370 FL220/260/300	NIAMEY ABIDJAN	131.3MHz 121.9MHz
CR6-UR979	SESIG-INOSA	FL290/330/370 FL300/340/360	SAO TOME ABIDJAN	127.5MHz 121.9MHz
CR7-UR991	EMTAL-GAPEL	FL350/370/410 FL340/360/400	LUANDA ABIDJAN	CPDLC, HF8KHZ 121.9MHz, HF8861KHZ
CR8-UG853	RASAD-TERBA	FL290/310/370 FL280/340/400	LUANDA ABIDJAN	CPDLC, HF8903KHZ 121.9MHZ, HF8861KHZ

FIR	ROUTE	NAME	COMMUNICATION
ABIDJAN SUB	UA601 UA560	PAMPA-NANGA ACC-INAKA	126.7MHZ 130.9MHZ
LOME UTA	UG855 UP685	TUSEK-GAPAG ACC-LIREX	126.7MHZ 130.9MHZ
OUAGA SUB	UA603 UP685	ACC-ENOXO ACC-ANUVO	130.9MHZ,126.7MHZ 130.9MHZ
LUANDA	UR991	EMTAL-GAPEL	CPDLC,HF8903KHZ
BRAZAVILLE	UG853	RASAD-TERBA	CPDLC,HF8903KHZ
NIAMEY	UR982	ACC-NANGA	130.9MHZ,126.7MHZ

Appendix L: ESAF ATM Contingency Routes for Avoidance Action

UNAVAILABILITY OF ADDIS FIR						
NORTH/SOUTH	ZIZAN - UB413 - EGTUL	CAR…	FPL FL	AS PER LOP	OYSC, HCSM	
	AVEDA-UB400-MOGDU				HCSM	
	NV-UN556-NAK-UB612-TAPOS-MLK				HKNA, HSSS	
EAST/WEST	MOGDU-UG450-EPLAV-UL303-NV	CAR…	FPL FL	AS PER LOP	HCSM, HKNA, HSSS	
UNAVAILABILITY OF HKNA (NAIROBI FIR) – EXCLUDING AIRSPACE OVER HIGH SEAS						
FROM MIDDLE EAST TO SOUTH AFRICA	MOGDU-UB400-DV	CAR…	FPL FL	AS PER LOP	HCSM, HTDC	
FROM WEST AFRICA TO ASIA AND THE EAST	B535-SAGBU-JUB-APKOD-GWZ	CAR…	FPL FL	AS PER LOP	HUEC, HSSS, HAAA	
FROM THE EAST TO THE WEST	RAGGS-UB400-DV	CAR…	FPL FL	AS PER LOP	HCSM, HTDC, HUEC	
FROM THE SOUTH TO THE NORTH	MB-UG656-NN-UG656-JUB	CAR…	FPL FL	AS PER LOP	HTDC, HUEC, HSSS	
FROM SOUTH EAST TO NORTH WEST	DV-NN	CAR…	FPL FL	AS PER LOP	HTDC, HUEC	
UNAVAILABILITY OF HTDC						
EAST/WEST	SOLAL-UR782-DVL	CAR…	FPL FL	AS PER LOP	FMMM, FQBE, FWLL	
NORTH/SOUTH	DVL-UR984-MOMAX-UA618-APOXO	CAR…	FPL FL	AS PER LOP	FZZA, FLFI, FWLL	
EAST/WEST	APOXO-UL434-NN-UL433-NV-ATUDU-Q135-EGVOM-MOV-UL433-NIDED	CAR…	FPL FL	AS PER LOP	HUEC, HKNA	
NORTH/SOUTH	NIDED-DCT-SOLAL	CAR…	FPL FL	AS PERLOP	HKNA, FMMM	
UNAVAILABILITY OF HUEC						
EAST/WEST	NV-KNM-GOM-KGI	CAR 1	FPL FL	AS PER LOP	HKNA, HTDC	
NORTH/SOUTH	NV-NAK-LOV-DCT-TAPOS	CAR 2	FPL FL	AS PER LOP	HKNA, HAAA, HSSS	
NORTH/SOUTH	JUB-SAGBU-DCT-EDGOX-DCT-GOM	CAR 3	FPL FL	AS PER LOP	HSSS, FZZA, HTDC	
NORTH	KGI-JUB	CAR 4	FPL FL	AS PER LOP	FZZA, HSSS	
UNAVAILABILITY OF HRYR						
EAST/WEST	NN-MEVAR	CAR…	FPL FL	AS PER LOP	FZZA, HUEC	
EAST/WEST	MV-UG450-BJA	CAR…	FPL FL	AS PER LOP	HTDC	
NORTH/SOUTH	NN-DCT-GETAB	CAR…	FPL FL	AS PER LOP	HUEC, HTDC	
UNAVAILABILITY OF HBBA						
NORTH SOUTH	KNM-BKV-UA618	CAR…	FPL FL	AS PER LOP	FZAA, HUEN	
EAST/WEST	MV-KNM-BKV	CAR…	FPL FL	AS PER LOP	HTDC, FZZA	
NORTH/SOUTH	DIMKO-DCT-KMI	CAR…	FPL FL	AS PER LOP	HTDC, FZZA	
UNAVAILABILITY OF FYWH						
RSA	CTV-UVGOD-DCT-DIMIX	CAR 1	FPL FL	AS PER LOP	FAJA, FYWH	
FBGR	VLI-UR779-MNV-UT950-UZ38-AVUSA	CAR 2	FPL FL	AS PER LOP	FAJA, FBGR, FNAN	
FNAN TO FAJA	VLI-UB528-VUE-UA400F-VNA-	CAR 3	FPL FL	AS PER LOP	FAJA, FBGR, FNAN	

	UW784F-VMO-DCT-DIMIX					
FNAN TO FACT	AVUSA-UPV-DCT-AGV-DCT-UVGOD	CAR 4	FPL FL	AS PER LOP	FAJA, FNAN	
UNAVAILABILITY OF FBGR						
FROM FAOR TO EAST AFRICA	GWV-UA405-UTRUK-DCT-ETBUX-AVUSA-UDLON	CAR…	FPL FL	AS PER LOP	FVHF, FAJA	The route continues to UTRUK to avoid crossing many routes
TFC FROM LUANDA	UPV-UT686/UT396-UDLON-WHV-ANVAG	CAR…	FPL FL	AS PER LOP	FYWH, FAJA, FNAN	
UNAVAILABILITY OF FVHA						
FROM SOUTH AFRICA TO EAST AFRICA	WIV-EPSEK-UM307-VBR	CAR…	FPL FL	AS PER LOP	FAJA, FQBE	
NORTH SOUTH	VBR-UW13-VTZ-UG656-DVL	CAR…	FPL FL	AS PER LOP	FQBE, FWLL	
EAST WEST	DVL-DCT-VLS-UT358-IMLAM	CAR…	FPL FL	AS PER LOP	FWLL, FLFI, FBGR	
FROM SOUTH AFRICA TO CENTRAL AFRICA	RUDAS-KSV-VLS-(OR) UM214-IXATA	CAR…	FPL FL	AS PER LOP	FAJA, FBGR, FLFI	
UNAVAILABILITY OF FLFI						
FROM SOUTH TO EAST AFRICA	MNV-UA404-VSB-UL437-DVL-UW601-VKA-DCT-MB-DCT-BJA	CAR…	FPL FL	AS PER LOP	FBGR, FVHF, FWLL, HTDC	
EAST AFRICA TO ANGOLA	BJA-UM306/UG450F-VNA	CAR…	FPL FL	AS PER LOP	HTDC, FZZA, FNAN	
SOUTH TO WEST AFRICA	MNV-UT941-VNA	CAR…	FPL FL	AS PER LOP	FBGR, FNAN	
UNAVAILABILITY OF FWLL						
EAST AFRICA TO SOUTH	DV-UM310-VBR	CAR…	FPL FL	AS PER LOP	HTDC, FQBE	
NORTH SOUTH	KMI-UA408/UL432-VSB	CAR…	FPL FL	AS PER LOP	FZZA, FVHF, FLFI	
EAST AFRICA TO SOUTH WEST	MAGAD-UT252-LUB (OR) OKLOM-UN308/UB530-VND	CAR…	FPL FL	AS PER LOP	HTDC, FLFI	
UNAVAILABILITY OF FAJA AND FACA FIRS CARs TO AVOID RSA AIRSPACE EXCLUDING AIRSPACE OVER THE HIGH SEAS						
FROM LUANDA TO MAPUTO	UT942-MNV-UY93-OKLAP-KURA-UB529-VMA	CAR…	FPL FL	AS PER LOP	FNAN, FVHF, FBGR, FQBE	
FROM WINDHOEK TO MELBOURNE	WHV-UM438/UT356-VSB-UG652-VBR-UG652-WPT (TOLIARY)	CAR…	FPL FL	AS PER LOP	FYWH, FBGR, FVHF, FMMM	
UNAVAILABILITY OF LESOTHO AIRSPACE						
FROM JO'BURG TO DURBAN	JSV-GEROX-UQ28-GETOK	CAR…	FPL FL	AS PER LOP	FAJA	
FROM BLOEMFONTEIN TO DURBAN	BLV-UZ36-WRV-UG853-PMV-TGV	CAR…	FPL FL	AS PER LOP	FAJA	
FROM DURBAN TO CAPETOWN	TGV-PMV-UZ3-OKTED	CAR…	FPL FL	AS PER LOP	FAJA, FACA	
UNAVAILABILITY OF SWAZILAND AIRSPACE						
FROM JO'BURG TO MAPUTO	JSV-PKV-UT125-ANVAK-UG745/UT125-VMA	CAR…	FPL FL	AS PER LOP	FQBE, FAJA	

FROM HARARE TO DURBAN	UT915-PKV-UZ36-WRV-TGV	CAR…	FPL FL	AS PER LOP	FVHF, FAJA	
FROM JO'BURG TO DURBAN ROUTE 2	JSV-APDAK-UQ48-AVAVA-UQ48-APMAT-TGV	CAR…	FPL FL	AS PER LOP	FAJA	
FROM JO'BURG TO AUSTRALIA/ NEW ZEALAND	JSV-APDAK-UQ48-AVAVA-UZ8-RBV	CAR…	FPL FL	AS PER LOP	FAJA	
UNAVAILABILITY OF ANTANANARIVO FIR EXCLUDING THE AIRSPACE OVER THE HIGH SEAS						
FROM THE NORTH AND EAST AFRICA TO REUNION	UL433-ATOLA-UL433-BIRAL-IXEBU-UN304-SDG	CAR…	FPL FL	AS PER LOP	FSSS, FMMM	
FROM THE NORTH AND EAST AFRICA TO MAURITIUS	UL433-ATOLA-UL433-BIRAL-IXEBU-TSARA-UA665-PLS	CAR…	FPL FL	AS PER LOP	FSSS, FMMM, FIMM	
FROM THE NORTH AND EAST AFRICA TO THE SOUTH EAST OF THE INDIAN OCEAN	ANY ENTRY POINT FROM SOLAL SOUTHWARDS-DCT-KEDOM-DCT-AXOTA-DCT-TO ANY OTHER POINT EAST	CAR…	FPL FL	AS PER LOP	FMMM, FIMM	
UNAVAILABILITY OF MAURITIUS FOR EXCLUDING THE AIRSPACE OVER THE HIGH SEAS						
FROM SOUTHERN AFRICA TO MELBOURNE	UG661-NIBIS-DCT-IXABI-DCT-DODON-UG594F	CAR…	FPL FL	AS PER LOP	FMMM, FIMM	Correct point DONON to read DODON on the UG594F
	SDG-DCT-MABAD-YMMM UPR	CAR…	FPL FL	AS PER LOP	FMMM, FIMM	
FROM SOUTHERN AFRICA TO SOUTH EAST ASIA	UA402-PASAR-DCT-IXABI-DCT-PEDPI-UN633	CAR…	FPL FL	AS PER LOP	FMMM, FIMM, YMMM-UPR	
UNAVIALABILITY OF REUNION AIRSPACE EXCLUDING THE AIRSPACE OVER THE HIGH SEAS						
FROM SOUTHERN AFRICA TO SOUTH EAST ASIA AND AUSTRALIA	UA402-GETIR-DCT-KINIX-DCT-TO ANY EXIT POINT INTO UPR	CAR…	FPL FL	AS PER LOP	FMMM, FIMM, YMMM-UPR	TANA TO CONFIRM
FROM EASTERN AFRICA TO SOUTH AUSTRALIA/ NEW ZEALAND	TNV-UA400-PLS-DCT-TO ANY EXIT POINT INTO UPR	CAR…	FPL FL	AS PER LOP	FMMM, FIMM, YMMM-UPR	TANA TO CONFIRM
UNAVIALABILITY OF COMOROS AIRSPACE EXCLUDING THE AIRSPACE OVER THE HIGH SEAS						
FROM SOUTHERN AFRICA TO ASIA	UG465/UM703-ENDEL-DCT-SOAVI-DCT-NESAM-UG465	CAR…	FPL FL	AS PER LOP	FMMM, FSSS	TANA TO CONFIRM
	UG465/UM703-ENDEL-DCT-SOAVI-DCT-MIROV-UB459	CAR…	FPL FL	AS PER LOP	FMMM, FSSS	TANA TO CONFIRM
FROM EASTERN AFRICA TO ANTANANARIVO, REUNION, MAURITIUS, AUSTRALIA AND NEW ZEALAND	KINAN-DCT-MAROF-UG661-PLS-DCT-TO ANY EXIT POINT INTO THE UPR ZONE	CAR...	FPL FL	AS PER LOP	FMMM, FIMM	TANA TO CONFIRM
	KINAN-DCT-ENDEL-DCT-SDG-DCT-TO ANY EXIT POINT INTO THE UPR ZONE	CAR…	FPL FL	AS PER LOP	FMMM, FIMM	TANA TO CONFIRM

UNAVAILABILITY OF FZZA						
EAST AFRICA TO SOUTH WEST	VND-DCT-IXATA-UA400/UA400F-VNA-UA400-ARAKI	CAR…	FPL FL	AS PER LOP	FLFI, FNAN	
SOUTH EAST TO NORTH	VLS-DCT-MB-NN-JUB-MLK	CAR…	FPL FL	AS PER LOP	FLFI, HTDC, HUEC, HSSS	
NORTH SOUTH	VNA-ARAKI-LIKAD	CAR…	FPL FL	AS PER LOP	FNAN, FCCC,	
SOUTH WEST TO NORTH	FRV-MOROS-ERNEV-UQ583-KITEK-DCT-MLK	CAR…	FPL FL	AS PER LOP	FCCC, HSSS	
UNAVAILABILITY OF FNAN						
SOUTH EAST TO WEST	UM214-AMROV-TKP-BZ-MONAL-DCT-ENINA	CAR…	FPL FL	AS PER LOP	FZZA, FCCC	
SOUTH WEST TO EAST AFRICA	VSB-UT356/UM438-WHV-IBLOK	CAR…	FPL FL	AS PER LOP	FVHF, FYWH, FBGR	
SOUTH TO WEST AFRICA	IBLOK-DCT-DIMIX-DCT-ARAKI	CAR…	FPL FL	AS PER LOP	FNAN, FCCC, FYWH	
UNAVAILABILITY OF FSSS						
EAST AFRICA TO THE EAST	CLAVA TO OTKIR	CAR…	FPL FL	15 MIN	HKNA, VABF	
NORTH SOUTH	AXINA-UR401-IMKOT-DCT-ATUTI-DCT-ALRAN	CAR 3	FPL FL	15 MIN	HCSM, FIMP	
SOUTH AFRICA TO MIDDLE EAST	MIROV-DCT-OTKIR	CAR 4	FPL FL	15 MIN	FMMM, VABF	
UNAVAILABILITY OF HCSM						
NORTH TO EAST AND EAST TO SOUTH	DTI-UM997-WAV-UR611-MOV	CAR…	FPL FL	AS PER LOP	HSSS, HKNA	
WEST EAST	ITMAR DCT EMALU DCT SUHIL	CAR…	FPL FL	AS PER LOP	HKNA, OYSC	

Appendix M: ESAF ATM Contingency Routes for Level 2

Appendix N: Regional ATM Contingency Plan Template

ATM REGIONAL CONTINGENCY PLAN TEMPLATE FOR CTA/UTA/FIR

OBJECTIVE: This contingency plan contains arrangements to ensure the continued safety of air navigation in the event of partially or total disruption of air traffic services (ATS) and is related to ICAO Annex 11- *Air Traffic Services* Chapter 2, paragraph 2.28. The contingency plan should be designed to provide alternative routes, using existing airways in most cases, which will allow aircraft operators to fly through or avoid airspace within the (*XXX*) CTA/UTA/FIR.

AIR TRAFFIC MANAGEMENT

ATS Responsibilities

Tactical ATC considerations during periods of overloading may require re-assignment of routes or portions thereof.

Alternative routes should be designed to maximize the use of existing ATS route structures and communication, navigation and surveillance services.

In the event that ATS cannot be provided within the (*XXX*) CTA/UTA/FIR, the Civil Aviation Authority shall publish the corresponding NOTAM indicating the following:

a) Time and date of the beginning of the contingency measures;

b) Airspace available for landing and overflying traffic and airspace to be avoided;

c) Details of the facilities and services available or not available and any limits on ATS provision (e.g., ACC, APP, TWR and FIS), including an expected date of restoration of services if available;

d) Information on the provisions made for alternative services;

e) ATS contingency routes;

f) Procedures to be followed by neighbouring ATS units;

g) Procedures to be followed by pilots; and

h) Any other details with respect to the disruption and actions being taken that aircraft operators may find useful.

In the event that the CAA is unable to issue the NOTAM, the (alternate) CTA/UTA/FIR will take action to issue the NOTAM of closure airspace upon notification by corresponding CAA or the ICAO ESAF/WACAF Regional Office.

Separation

Separation criteria will be applied in accordance with the *Procedures for Air Navigation Services-Air Traffic Management* (PANS-ATM, Doc 4444) and the *Regional Supplementary Procedures* (Doc 7030).

Level Restrictions

Where possible, aircraft on long-haul international flights shall be given priority with respect to cruising levels.

Other measures

Other measures related to the closure of airspace and the implementation of the contingency scheme with the (*XXX*) CTA/UTA/FIR may be taken as follows:

a) Suspension of all VFR operations;

b) Delay or suspension of general aviation IFR operations; and

c) Delay or suspension of commercial IFR operations.

TRANSITION TO CONTINGENCY SCHEME

During times of uncertainty when airspace closures seem possible, aircraft operators should be prepared for a possible change in routing while en-route, familiarization of the alternative routes outlined in the contingency scheme as well as what may be promulgated by a State via NOTAM or AIP.

In the event of airspace closure that has not been promulgated, ATC should, if possible, broadcast to all aircraft in their airspace, what airspace is being closed and to stand by for further instructions.

ATS providers should recognize that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. ATC should be alert to respond to any request by aircraft and react commensurate with safety.

TRANSFER OF CONTROL AND COORDINATION AND DELEGATION OF RESPONSIBILITY IN THE PROVISION OF AIR TRAFFIC SERVICES WITHIN [AIRSPACE AFFECTED]

The transfer of control and communication should be at the common FIR boundary between ATS units unless there is mutual agreement between adjacent ATS units. ATS providers should also review current coordination requirements in light of contingency operations or short notice of airspace closure.

The responsibility for ensuring the provision of air traffic services within [AIRSPACE AFFECTED] is transferred to [ACC ADJACENT] according to the following considerations [MOU].

PILOTS AND OPERATOR PROCEDURES

Pilots need to be aware that in light of current international circumstances, a contingency routing requiring aircraft to operate off of normal traffic flows, could result in an intercept by military aircraft. Aircraft operators must therefore be familiar with international intercept

procedures contained in ICAO Annex 2 –*Rules of the Air*, paragraph 3.8 and Appendix 2, Sections 2 and 3.

Pilots need to continuously guard the VHF emergency frequency 121.5 MHz and should operate their transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes. Transponders should be set on a discrete code assigned by ATC or select code 2000 if ATC has not assigned a code.

If an aircraft is intercepted by another aircraft, the pilot shall immediately:

a) Follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with international procedures;

b) Notify, if possible, the appropriate ATS unit;

c) Attempt to establish radio communication with the intercepting aircraft by making a general call on the emergency frequency 121.5 MHz and 243 MHz if equipped; and

d) Set transponder to code 7700, unless otherwise instructed by the appropriate ATS unit.

If any instructions received by radio from any source conflict with those given by the intercepting aircraft, the intercepted aircraft shall request immediate clarification while continuing to comply with the instructions given by the intercepting aircraft.

OVERFLIGHT APPROVAL

Aircraft operators should obtain over-flight approval from States/Territories/International Organizations for flights operating through their jurisdiction of airspace, where required. In a contingency situation, flights may be rerouted at short notice and it may not be possible for operators to give the required advanced notice in a timely manner to obtain approval.

States/Territories/International Organizations responsible for the airspace in which contingency routes are established should consider making special arrangements to expedite flight approvals in these contingency situations.

PUBLIC HEALTH EMERGENCIES

[STATE ACC], upon receipt of information from a pilot or another ATS unit, regarding suspected case(s) of communicable disease, or other public health risk, on board the aircraft, shall forward a message as soon as possible and using the most expeditious means of communication, to the ATS unit serving the destination / departure, unless procedures exist to

notify the appropriate authority designated by the state and the aircraft operator or its designated representative.

To avoid misunderstanding that may result in inappropriate reaction from the stakeholders including air operators, information provided by the Health Sanitary Board (HSB) should be obtained in written form and relayed to air operators in written form. Where communication means do not enable relay of written text, the information shall be read verbatim.

VOLCANIC ASH CONTINGENCY PLAN (VACP)

If a volcanic ash cloud is reported or anticipated in [AIRSPACE STATE], [STATE ACC] should take the following actions:

a) Immediately transmit relevant information to the flight crews of potentially affected aircraft to ensure that they are aware of the current position and expected position of the cloud and the concerned flight levels;

b) Respond to requests for a course change or a level change as far as possible;

c) Propose a route change to avoid or leave the reported or predicted areas of presence of the volcanic ash cloud when requested by the pilot or as the controller deems it necessary; and

d) Where possible, request a special flight report when the flight route enters or anticipates the planned volcanic ash cloud and transmit the report to the appropriate agencies.

10.2 When a flight crew informs [STATE ACC] that they have inadvertently entered a cloud of volcanic ash, [STATE ACC] should:

a) Respect measures applicable to an aircraft in an emergency, and;

b) Alter the assigned route or level only if the pilot requests so or if the airspace or traffic conditions require it.

CONTINGENCY UNIT

The ATM national contingency unit assigned the responsibility of monitoring developments that may dictate the enforcement of the contingency plan and coordination of contingency arrangements is:

Name of Agency:

Contact Person:

Telephone:

Fax:

Email:

During a contingency situation, the National Contingency Unit will liaise with the involved

FIRs through the ICAO ESAF/WACAF Regional Office.

The ICAO ESAF/WACAF Office will:

a) closely monitor the situation and coordinate with all affected States/Territories/International Organizations and the IATA Regional Office, so as to ensure air navigation services are provided to international aircraft operations in the AFI Region;

b) take note of any incidents reported and take appropriate action;

c) provide assistance as required on any issue with the Civil Aviation Administrations involved in the contingency plan; and

d) keep the President of the Council of ICAO, the Secretary General, C/RAO, D/ANB and C/ATM continuously informed on developments, including activation of the contingency plan.

REROUTING SCHEME

In the event of closure the (*XXX*) CTA/UTA/FIR, aircraft operators should file their flight plans using the alternative contingency routes listed in the scheme below in order to ensure avoidance in that airspace (CTA/UTA/FIR).

Present ATS ROUTE	**CONTINGENCY ROUTINGS**	**FIRs INVOLVED**
In lieu of:	**(ATS unit)** provides ATC on the following routings: ***CR1:*** ***CR2:*** ***CR3:***	**XXX: In coordination with XXX**
In lieu of:	**(ATS unit)** provides ATC on the following routing: ***CR4:***	**XXX: In coordination with XXX**

All aircraft should establish and maintain contact on published VHF or HF frequencies with the (*XXX*) ATS unit (APP/ACC/FIC) responsible for the airspace being traversed.

List of points of contact of all concerned States/Territories/International Organizations, IATA and ICAO ESAF/WACAF Office.

State/Organization	***Point of contact***	**Telephone**	**e-mail**

ICAO/ESAF	Barry Kashambo, Regional Director	Tel.: +254 20 762 2395 Cell+ 254 714 606 338 Fax: +254 20 762 1092	bkashambo@icao.int
	Arthemon NDIKUMANA Deputy Regional Director	Tel: +254 20 762 2370 Cell: +254 706 394 739 Fax: +254 20 762 1092	ANdikumana@icao.int
	Keziah Ogutu RO ATM & SAR	Tel.: +254 20 762 2372 Cell: +254 722 386 001 Fax: +254 20 762 1092	KOgutu@icao.int
ICAO/WACAF	Mam Sait, JALLOW Regional Director	Tel.: +221 33 869 2401 Cell: +221 77 450 5692 Fax: +221 33 869 3723	MJallow@icao.int
	Prosper Zoomintoo Deputy Regional Director	Tel.: +221 33 839 9389 Cell: +221 78 539 2028 Fax: +221 33 869 3723	pzoomintoo@icao.int
	Albert Aidoo Taylor RO ATM/SAR	Tel.: +221 33 869 2413 Cell: +22177614 1116 Fax: +221 33 869 3723	ATaylor@icao.int

Note:
For each contingency plan, information relating to communication with ICAO Regional Office will depend on the Regional Office that is accredited to the specific State.

APPENDIX O: Volcanic Ash Contingency Plan

VOLCANIC ASH CONTINGENCY PLAN

AFRICA AND INDIAN OCEAN REGION

Proposed improvements to AFI VACP

Edition XX — September 2017

AFI VOLCANIC ASH CONTINGENCY PLAN

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FOREWORD

Within and adjacent to the Africa and Indian Ocean (AFI) Region) there are areas of volcanic activity which are likely to affect flight in the AFI Regions. The major volcanoes in the region are located in the following States:

Algeria, Cameroon, Cape Verde Islands, Chad, Comoros Island, Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, France (Reunion Island), Kenya, Madagascar, Mali, Niger, Nigeria, Rwanda, Sao Tome and Principe, Spain (Canary Islands, Madeira), Sudan, Tanzania and Uganda. The names of the concerned volcano are listed in appendix A**.**

This document is the AFI Air Traffic Management (ATM) Volcanic Ash Contingency Plan which sets out standardized guidelines and procedures for the provision of information to airlines and en-route aircraft before and during a volcanic eruption. Volcanic contamination, of which volcanic ash is the most serious, is a hazard for safe flight operations. Mitigating the hazards posed by volcanic ash in the atmosphere and/or at the aerodrome cannot be resolved in isolation but through collaborative decision-making (CDM) involving all stakeholders

concerned. During an eruption volcanic contamination can reach and exceed the cruising altitudes of turbine-powered aircraft within minutes and spread over vast geographical areas within a few days.

This plan sets out standardized guidelines for the coordination of information and the alerting of aircraft before and during a volcanic eruption and procedures to be followed. Volcanic ash is a hazard to flight operations. It is important to note that other contaminants are also associated with volcanic activity. To mitigate the hazards of volcanic contamination aircraft operators, need to obtain information and support from many different sources including Air Traffic Management (ATM). The management of air traffic will be impacted proportionally to the extent and nature of the contamination. The issue cannot be resolved by individual stakeholders in isolation but needs collaborative decision making (CDM) involving all entities concerned.

Contingency planning for major service disruptions, such as that caused by volcanic ash, needs to encompass the whole ATM Community2 as defined in ICAO's *Global Air Traffic Management Operational Concept* (Doc 9854). While general provisions exist for ATM Contingency Planning in Annex 11 [*Air Traffic Services*] and in the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444), and some aspects are addressed in the *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds* (Doc 9691 and in the *Handbook on the International Airways Volcano Watch* (IAVW Handbook, Doc 9766), ICAO's International Volcanic Ash Task Force (IVATF) developed comprehensive Guidance Material for ATM Volcanic Ash Contingency Planning in the form of a template.

This document is based on all of these sources and the needs and experience of the members of the ATM community in the AFI Regions of ICAO. While it focuses on the provision of ATM related services to airspace users within the frameworks of International Airways Volcano Watch (IAVW). It also establishes the connection to all relevant interfaces, such as the International Airways Volcano Watch, Meteorological Services, Flight Operations and Aerodromes. Wherever possible, duplication of text from other ICAO and industry documents is avoided by reference to the source.

The airspace users have (full and final) responsibility for the safety of flight operations in accordance with their Safety Risk Assessment (SRA) as accepted by their State's authority. This includes the decision about operation in airspace where volcanic ash is present or forecast (Annexes 6 [*Operation of Aircraft*], and 19 [*Safety Management*]; *Manual on Flight Safety and Volcanic Ash* (Doc 9974) refer).

The Air Navigation Service Providers (ANSP) act to achieve the objectives of the *Air Traffic Services* (Annex 11), which are (inter alia) to:

a) prevent collisions between aircraft;

b) expedite and maintain an orderly flow of air traffic;

c) provide advice and information useful for the safe and efficient conduct of flights.

This document is an ATM contingency plan including its interfaces with supporting services such as Aeronautical Information Service (AIS) and Meteorological (MET) services and that the plan therefore primarily addresses the provider States. Distribution of applicable AIS and MET messages related to volcanic ash are set out in relevant ICAO Annexes– namely *Annex 15– Aeronautical Information Services and Annex 3 – Meteorological Service for International Air Navigation*. Further principles of this contingency plan are that a cautious approach in case of limited information is adopted; and responses are scaled proportionally to the prevailing conditions. When limited information is available, the initial procedures are conservative. With increasing amount of and confidence in the information the constraints on flight operations can be relaxed based on appropriate risk management.

Small eruptions might only need a local response, while significant or major eruptions are likely to trigger national, sub-regional, Regional or even global activities. The contingency plan aims to ensure the highest level of service possible, to support safe and efficient flight operations in adverse conditions. This contingency plan is written to give sufficient background information and guidance to operational personnel, describing the end-to-end processes and information flows and referencing relevant Standard and Recommended Practices (SARPs) and Guidance Material.

While it is firmly rooted in the ICAO SARPs, this contingency plan is intended to provide the enabling support structure to implement best practices that serve the needs of the ATM Community. Desired developments (e.g. an action plan on arrangements that still need to be

implemented) may be listed as an attachment to support the planning of amendments and improvements.

The guidelines provided in this document assume that the operators follow the ICAO requirements regarding Safety Management Systems (SMS). Detailed guidance on Safety Risk Assessments (SRAs) for flight operations with regard to volcanic ash contamination can be found in the *Manual on Flight Safety and Volcanic Ash* (ICAO Doc 9974) with examples given in appendix B.

Volcanic ash can also affect the operation of aircraft at aerodromes. Volcanic ash deposition at an aerodrome, even in small amounts, can result in the closure of the aerodrome until all the deposited ash has been removed. In extreme cases, the aerodrome may no longer be available for operation at all, resulting in repercussions on the ATM system, e.g. diversions, revised traffic flows, congestion at alternate aerodromes etc.

1. VOLCANIC ASH HAZARD

During an eruption volcanic ash can reach and exceed the cruising altitudes of turbine-powered aeroplanes within minutes and spread over vast geographical areas within a few days. Encounters with volcanic ash may result in one or more of the following and other problems:

a) malfunction, or failure, of one or more engines leading not only to reduction, or complete loss, of thrust but also to failures of electrical, pneumatic and hydraulic systems;

b) blockage of pitot and static sensors resulting in unreliable airspeed indications and erroneous warnings;

c) windscreens rendered partially or completely opaque;

d) smoke, dust and/or toxic chemical contamination of cabin air requiring crew use of oxygen masks, thus impacting communications; electronic systems may also be affected;

e) erosion of external and internal aircraft components;

f) reduced electronic cooling efficiency leading to a wide range of aircraft system failures;

g) aircraft need to be manoeuvred in a manner that conflicts with other aircraft;

h) deposits of volcanic ash on a runway degrading braking performance, most significantly if the ash is wet; in extreme cases, this can lead to runway closure.

It should be noted that some aircraft types or engine technologies are more vulnerable to volcanic contaminants; any specific measures to be applied by the regulatory authorities for flight operations, would therefore need to take into account these differences.

Considering that a turbine-engine aircraft travels about 150 km (80 NM) in 10 minutes and that volcanic ash can rise to flight levels commonly used by these aircraft in half that time, a timely response to volcanic eruptions and volcanic ash in the atmosphere is essential. It is therefore imperative that information on the volcanic activity is disseminated as soon as possible.

In order to ensure the smooth implementation and effectiveness of the contingency plan in case of an actual volcanic eruption, volcanic ash training and exercising should be conducted. ICAO DOC 9766 Appendix M [*VOLCEX Arrangements*] contains information on the regional and/or sub-regional volcanic ash exercise arrangements that can be used during this training.

ICAO has set up the International Airways Volcano Watch (IAVW) to provide near-real-time information on the largest possible number of volcanic events that affect aviation. State volcano observatories (VO) shall monitor active or potentially active volcanoes and shall provide information to Area Control Centres (ACC), Meteorological Watch Offices (MWO) and Volcanic Ash Advisory Centres (VAAC). It should be noted that currently not all active or potentially active volcanoes are actually monitored. VAACs detect the existence and extent of discernible volcanic ash in the atmosphere in their area of responsibility and issue advisory information regarding the extent and forecast movement of the volcanic ash cloud.

Special air-reports on volcanic activity (prescribed in PANS-ATM – Doc 4444) and the information collected by the IAVW (detailed in IAVW Handbook – Doc 9766) in accordance with SARPs of ICAO Annex 3 are elements of the input for the generation of volcanic ash advisories in alphanumeric (VAA) and graphic (VAG) forms. VAAs/VAGs are used by

a) MWOs to derive Significant Meteorological information (SIGMET)

b) airspace users for flight planning

c) Air Traffic Service (ATS) units for contingency planning

ATM operations in AFI require a well-coordinated and controlled actions to deal effectively and efficiently with volcanic ash in the airspace.

The Flight Information Centre (FIC)/ACC unit serves during a volcanic eruption as the critical communication link between affected aircraft in flight and the information providers. Commercial operators will coordinate actions with their flight crews en-route and affected air traffic services units. As this all results in increased workload for the ATS personnel involved, local procedures should address how this situation should be handled.

The provisions of Annexes 3 [*Meteorological Services for International Air Navigation*], 15 [*Aeronautical Information Services*] (AIS), and related documents are the basis of the detailed instructions contained in this contingency plan. Airspace users need as much advance notification as possible on the status of a volcano and/or volcanic ash airspace contamination and/or volcanic ash deposition at airports for strategic planning and the execution of flights to ensure the safety of the flying public.

This contingency plan provides Regional guidance on airspace management measures that might be taken by competent authorities (e.g. the establishment and withdrawal of Danger Areas); and the creation and dissemination of Notices to Airmen (NOTAM)/ASHTAM and special air-reports on volcanic activity. Examples of NOTAM/ ASTAM are contained in appendix K (***Regional Information Flow Arrangements and Model Templates)***

The contingency plan, including its Appendices contains the organization of the information flow as per Annex 3 [*Meteorological Services for International Air Navigation*] and the information flow relating to supplementary information.

2. REGIONAL PREPARATION

The successful operation of air traffic in case of a volcanic ash event depends on coordinated arrangements.

2.1 INTERNATIONAL AIRWAYS VOLCANO WATCH (IAVW)

Annex 3 [*Meteorological Services for International Air Navigation*], Chapter 3 obliges States to arrange the monitoring of active and potentially active volcanoes by selected State volcano observatories.

The IAVW Handbook (Doc 9766) details the responsibilities of volcano observatories.

In areas where volcanoes are not adequately monitored by volcano observatories, remote sensing technologies, such as observation by satellites, and pilot reports serve as the main sources of information about eruptions and volcanic ash. Annex 3 [*Meteorological Services for International Air Navigation*], paragraphs 4.8, 5.5 and 5.9 refer.

Flight crews are required to report observations of volcanic activity by means of a special air-report. Arrangements should be put in place to ensure that such information is transferred without delay to the appropriate agencies. Instructions for air reporting of volcanic activity and the special air-report of volcanic activity form (Model VAR) can be found in Appendix 1 of PANS-ATM (Doc 4444).

Special air-reports on volcanic activity are necessary to improve the knowledge base of the VAACs. The communication and dissemination of pilot reports on volcanic activity is described in Appendix E [*Pilot Reports*].

Volcanic Ash Advisory Centres (VAAC) are established in the UK (London VAAC) and in France (Toulouse VAAC) serving the eastern part of the NAT, most of Europe and **AFI region**; and in Montreal and Washington for the western part of the NAT; the far eastern part of the EUR Region is served by VAAC Tokyo and VAAC Anchorage. Their area of responsibility and cooperation with other VAACs is described in Doc 9766 (Handbook on the IAVW). The VAACs follow a best practices approach agreed among them that aims to achieve global harmonization of their services.

2.1.7 VAACs provide approved and recognized information as defined in Annex 3 [*Meteorological Services for International Air Navigation*] that supports the SRA methodology applied by airspace users. Additionally, MET Offices collocated with VAACs London and Toulouse provide supplementary information8. Appendix D [*Description of* Selected VA Products] contains explanatory information about both Annex 3 [*Meteorological Services for International Air Navigation*], VA products, and supplementary information; this enables airspace users to understand the limitations of the products, and sources of information, when developing their SRAs and operational planning (Appendix F [*VAAC Checklist]* refers).

To keep information about affected airspace as accurate as possible, so that restrictions to flight operations can be limited as much as possible, the VAACs should have arrangements with those States having suitable infrastructure (LIDAR networks, aircraft to provide in-situ

measurements, etc.) to allow the use of relevant data for the verification of actual volcanic ash (horizontal and vertical extent).

VAAC products should be amended as appropriate once information on observed volcanic ash has been verified. Appendix G contains the Regional monitoring capabilities and arrangements.

2.2 INFORMATION FLOW

Information on areas of observed and/or forecast volcanic ash shall be disseminated in accordance with Annex 3 [*Meteorological Services for International Air Navigation*] and Annex 15 [*Aeronautical Information Services*]. The details of all communication channels need to be established in advance and be available in local contingency arrangements. Telephone numbers, e-mail addresses, URLs of websites etc. should be kept up-to-date and saved on electronic systems for easy use (e.g. electronic phone book, internet browser bookmarks).

Templates for required messages and all relevant information for their completion shall be available locally.

Regional arrangements and example templates are available, as appropriate, in Appendix K [*Regional Information Flow Arrangements and Model Templates*] (e.g. teleconference procedures).

2.3 INFORMATION CONTROL

While the availability of required information is crucial for planning and execution of ATM operations and flight operations, recent events have shown that information overload can result from the inappropriate application of communication requirements.

Regional arrangements should be made to ensure availability of the necessary information in accordance with Annexes 3 [*Meteorological Services for International Air Navigation*] and 15 [*Aeronautical Information Services*].

States are encouraged to ensure the availability of guidance and procedures, on the range of information that may be used for the planning and execution of operations in their airspace (Appendix H [*State Checklist*]. and Appendix I [*ANSP Checklist*] refer). Appendix I contains

sample of Regional arrangements and agreements for information service provisions while Appendix J contains action taken by MWO in the event of a volcanic eruption.

2.4 AIRSPACE MEASURES

The Chicago Convention reserves each contracting State the right, in the interest of public safety, temporarily to restrict or prohibit flying over the whole or any part of its territory

Annexes 11 [*Air Traffic Services*] and 15 [*Aeronautical Information Services*] define Restricted, Prohibited and Danger Areas and specify requirements for their identification and promulgation. Neither the Convention, nor any of the Annexes provide detailed guidance on the conditions that would necessitate the establishment of such areas, nor on specific procedures for their use. By inference of Article 12 of the Convention, over the High Seas only Danger Areas can be established. This is based on the United Nations Convention on the Law of the Sea (Montego Bay 1982).

In a volcanic ash scenario, the State should ensure that the authority which is responsible for determining the need for and extent of Danger Area should have the appropriate competencies, including on flight operations. The facility should be available permanently.

Whereas Danger Areas traditionally were absolutely avoided by aircraft, current safety management practices might allow the operation of (certain) aircraft in accordance with an appropriate Safety Risk Assessment (SRA). Although ATM normally expects aircraft to avoid Danger Areas established in connection to a volcanic ash event, the final decision regarding the route to be flown, whether it will be to avoid or proceed through an area of volcanic ash or activity, is the flight crew's responsibility. Appendix L [*Guidance on the Establishment, Amendment and Withdrawal of Danger Areas*] describes the procedures for the use of Danger Areas.

2.5 AIR TRAFFIC FLOW MANAGEMENT – ATFM

Annex 11 [*Air Traffic Services*] paragraph 3.7.5 states that Air Traffic Flow Management shall be implemented for airspace where air traffic demand at times exceeds, or is expected to exceed, the declared capacity of the air traffic control services concerned.

Volcanic ash in airspace may result in a significant number of aircraft being re-routed into adjacent, non-affected areas. Regional arrangements should aim to provide sufficient capacity to safely and efficiently accommodate the revised traffic flow.

Regional ATFM units should be the ideal information pools and communication nodes for contingency situations and could be set up to support collaborative decision making (CDM) between ANSPs, Civil Aviation Authorities (CAA), VAACs, Meteorological Watch Offices (MWO) and airspace users.

Where permanent ATFM arrangements do not exist or cannot cope with the consequences of disruption caused by volcanic ash, contingency measures should be developed and agreed between the ANSPs and the airspace users. Appendix M [*Air Traffic Flow Management arrangements*] contains some existing Regional and sub-regional ATFM arrangements.

2.6 CRISIS MANAGEMENT ARRANGEMENTS

The nature of extraordinary contingency situations might require decision-making on a higher level than that of normal operations and beyond ATM. Arrangements should be in place to share information with national, Regional and sub-regional disaster management services that may have been implemented to address the crisis. These measures are to assure the delivery of essential goods through alternative means of transport in case of prolonged non-availability of airspace or airports, or the evacuation of humans from hazardous areas. Regional and/or sub-regional crisis management arrangements are detailed in Appendix N [*Crisis Management Arrangements*].

2.7 TRAINING AND EXERCISING

It is important to appropriately train personnel that may be involved in volcanic ash contingency operations, so that they have the necessary competency of their own area of responsibility, and have awareness of the information needs and the impact on stakeholders.

System-wide response to volcanic ash events shall be tested by the conduct of regular exercises. Doc 9766 contains *Guidance for conducting volcanic ash exercises in ICAO Regions*. The collection and documentation of relevant data on system performance is a key objective of exercising. Subsequent analysis of exercises and actual events should be used to develop improvements to the Regional and global volcanic ash contingency procedures.

2.8 REGULATIONS, MEANS OF COMPLIANCE AND GUIDANCE MATERIAL

States shall determine which Regulations and Directives they need to implement to ensure compliance with the global and Regional requirements. Prerequisite *Regional Regulations, Means of Compliance and Guidance Material* shall be developed from respective state guidance material.

2.9 OPERATORS FROM OUTSIDE THE REGION

Regional contingency planning (if developed) should be transparent to all users, and take account, as far as practical, of operators from outside the Region to ensure that they are familiar with the Regional operations.

3. RESPONSE TO A VOLCANIC ASH EVENT

3.0 PHASES OF AN EVENT

The response to a volcanic event that impacts air traffic has been divided into four distinct phases in this document — a Pre-Eruption Phase, a Start of Eruption Phase, an On-going Eruption Phase, and a Recovery Phase — as follows:

3.1 PRE-ERUPTION PHASE (when applicable):

General

The initial response, "raising the alert", commences when a volcanic eruption is expected. It should be noted that sometimes volcanoes erupt unexpectedly without any alert being raised; hence the pre-eruption phase may be omitted. Emphasis in this phase is placed on raising awareness of the potential hazard and to protect aircraft in flight. The actions shall be based on well-prepared, well-exercised contingency plans and standard operating procedures.

This phase is frequently characterized by a very limited availability of information on the potential extent and severity of the impending eruption. Notwithstanding the potentially limited extent of information available, the pre-eruption phase actions described below should be carried out for every expected eruption.

Volcano observatories shall provide the information on the state of the volcano showing pre-eruptive activity and notify their associated ACC, MWO and VAAC in form of the Volcano Observatory Notice for Aviation (VONA), as described in Appendix E of ICAO Doc 9766 (IAVW Handbook); Annex 3 [*Meteorological Services for International Air Navigation*], Appendix 2 para 4.1 refers.

If volcano observatories, VAACs or MWOs suspect volcanic activity in an area, they could request the appropriate ATS unit(s) to solicit Special air-reports on volcanic ash from suitable aircraft (route and altitude) at appropriate time intervals (e.g. every half hour).

Initial awareness of the event may be provided by means of a Special AIREP, VONA, satellite data, as well as other remote sensors. This information may lead to the production of the initial SIGMET, VAA/VAG, NOTAM as per the On-Going Eruption Phase. States should ensure that alerting information is distributed expeditiously by the most appropriate means to allow for the early warning of aircraft in flight.

VAACs should consider whether the information warrants the issuance of an initial Volcanic Ash Advisory (VAA).

Air operators and flight crews are expected to consider the potential effect of an eruption based on the operator's Safety Risk Assessment and standard operating procedures or to avoid the affected area.

Originating ACC/FIC Actions (eruption expected in its own FIR)

In the event of pre-eruption volcanic activity, which could pose a hazard to aviation, an ACC or FIC when appropriate, on receiving information of such an occurrence, should carry out the following:

a) ensure that appropriate AIS messages are originated in accordance with Annex 15 [*Aeronautical Information Services*]. These must provide as precise information as is available regarding the activity of the volcano. It is imperative that this information is issued by the international NOTAM office and disseminated as soon as possible in accordance with the provisions of Annex 15;

b) when so required by the State, define an initial, precautionary danger area in accordance with established local procedures. The size of the danger area should encompass a volume of airspace around the volcano in accordance with the information available, aiming to avoid undue disruption of flight operations;

i) if no such local procedures have been established, the danger area should be defined as a circle with a radius of 110 km (60 NM). The circle should be centered on the estimated or known location of the volcanic activity; in case of wind speeds exceeding 30 kts the danger area should be extended downwind by maximum half an hour of wind influence;

ii) ATC would not normally initiate a clearance through a danger area, it will inform aircraft about the potential hazard and continue to provide normal services. It is the responsibility of the pilot-in-command to determine the safest course of action.

c) advise the associated MWO and MET service provider(s) in accordance with national/Regional arrangements (unless the initial notification originated from such provider(s)), who will then inform the associated Volcanic Ash Advisory Center (VAAC);

d) alert flights already within the area concerned and offer assistance to enable aircraft to exit the area in the most expeditious and appropriate manner. Flight crews should be provided with all necessary information required to make safe and efficient decisions in dealing with the hazards in the defined area. Aircraft that are close to the area should be offered assistance to remain clear of the area;

e) immediately notify other affected ACCs/FICs of the event and the location and dimensions of the area concerned. The ACC should provide information on potential implications on traffic flow and its capability to handle the expected traffic. Adjacent ACCs may be asked to reroute flights not yet coordinated to keep them clear of the area. It should be noted that flight crews make the decision whether or not to completely avoid the area based on, for example, visual observations;

f) review the local contingency plan;

g) where applicable advice the appropriate ATFM unit(s) and coordinate and implement ATFM measures if necessary to maintain the required level of safety; and

h) relax airspace restrictions when possible to facilitate efficient traffic flow.

In order to assist staff in expediting the process of composing the AIS messages, a series of templates should be available for this stage of the volcanic activity

In addition to sending the relevant AIS messages to the normal distribution list, they will be sent to the relevant MWO(s), all VAACs, SADIS and the WIFS gateway.

Adjacent ACC/FIC actions

During the pre-eruption phase, ATS units will inform aircraft about the potential hazard and continue to provide normal services. Adjacent ACCs/FICs should take the following action to assist:

i) gain and maintain awareness of the affected area and inform pilots that will or might be affected;

j) when requested by pilots of aircraft advised that they will be affected by the area, re-clear flights to which control services are being provided after coordination with other affected ACCs; and

k) unless otherwise instructed, continue normal operations and;

l) if future traffic is affected by the area, consider the potential impact and the necessity for ATFM measures where applicable.

ATFM Unit actions where applicable

Where an ATFM unit is established, it should, upon receipt of preliminary information on volcanic activity from an ACC or the lead VAAC, initiate actions in accordance with its procedures to ensure exchange of information in order to support CDM between air navigation service providers (ANSPs), meteorological watch offices (MWOs), VAACs and aircraft operators concerned.

3.2 START OF ERUPTION PHASE (when applicable):

The start of eruption phase commences when information about the outbreak of a volcanic eruption becomes available.

General

This phase commences when information about the outbreak of a volcanic eruption becomes available, with volcanic ash being ejected into the atmosphere. The focus of the processes in this phase is to protect aircraft in flight and at aerodromes from the hazards associated with the eruption through the collection and dissemination of information.

When an eruption does not impact the airspace above and around the volcano (e.g. lava flow) the processes described in the pre-eruption phase may be applicable.

Volcano observatories should assess the information on the state of the volcano showing eruptive activity and provide notification to their associated ACC, MWO and VAAC in form of the *Volcano Observatory Notice for Aviation* (VONA), as described in Appendix E of the IAVW Handbook (Doc 9766) (Annex 3 [*Meteorological Services for International Air Navigation*], Appendix 2 para 4.1 refers).

VAACs should collect all relevant information and act in accordance with paragraph 4.5 of the IAVW Handbook (Doc 9766).

Major activities of the start of eruption phase are: issuance of relevant AIS and MET messages in accordance with Annexes 15 [*Aeronautical Information Services*] and 3 [*Meteorological Services for International Air Navigation*], respectively (as detailed in the IAVW Handbook (Doc 9766), paragraphs 4.3 and 4.4); as well as provision of information and assistance to airborne traffic.

As appropriate, danger areas may be declared by the authority which is responsible for determining the need for and extent of Danger, Prohibited or Restricted Areas, and published via NOTAM (in accordance with the "*Airspace Measures*" section of this contingency plan).

Originating ACC/FIC actions (eruption in its own FIR)

The ACC/FIC providing services in the FIR within which the volcanic eruption takes place should act in accordance with the ATS contingency procedures contained in the PANS–ATM (Doc 4444), paragraph 15.8 and the guidance in paragraph 4.2 of the IAVW Handbook (Doc 9766) and inform flights about the existence, extent and forecast movement of volcanic ash and provide information useful for the safe and efficient conduct of flights.

If necessary, rerouting of traffic should commence immediately or may be in progress if the alerting time has been sufficient to activate the pre-eruption phase. The ACC should assist in rerouting aircraft around the affected and/or danger area as expeditiously as possible. Adjacent ACCs should also take the affected and/or danger area into account and give similar assistance to aircraft as early as possible.

During the start of eruption phase, although ATC will not normally initiate a clearance through a danger area, it will inform aircraft about the hazard and will continue to provide normal services. It is expected that aircraft will attempt to remain clear of the danger area; however, it is the responsibility of the pilot-in-command to determine the safest course of action.

During the start of eruption phase the ACC/FIC should:

a) ensure that a NOTAM is originated to define a Danger Area delineated cautiously so as to encompass a volume of airspace in accordance with the limited information available. Until reliable information on the extent of the eruption is available, the guidance for precautionary Danger Areas should be followed. In determining the area, information on upper winds should

be taken into account. The purpose is to ensure safety of flight in the absence of any prediction from a competent authority on the extent of volcanic ash in the airspace;

b) maintain close liaison with MWOs and, where appropriate, VAACs, who should issue appropriate MET messages in accordance with Annex 3 [*Meteorological Services for International Air Navigation*];

c) solicit as far as practicable special air-reports on volcanic activity from aircraft in the area concerned to enlarge the knowledge about volcanic ash in the airspace; and

d) devise, implement and update ATFM measures where necessary to ensure safe and efficient flight operations, based on MET observations and forecasts in cooperation with aircraft operators and the adjacent ACCs using the CDM process;

e) ensure that reported differences between published information and observations (pilot reports, airborne measurements, etc.) are forwarded as soon as possible to the appropriate authorities to ensure revision of incorrect information and its dissemination to all concerned;

f) begin planning for the on-going eruption phase in conjunction with the aircraft operators, the appropriate ATFM unit and ACCs concerned; and

g) initiate appropriate AIS messages in accordance with Annex 15 [*Aeronautical Information Services*] and the IAVW Handbook (Doc 9766), should significant reductions in intensity of volcanic activity take place during this phase and evidence confirms that the airspace is no longer contaminated by volcanic ash. Otherwise, begin CDM planning for the on-going eruption phase in conjunction with aircraft operators, the appropriate ACCs and where applicable the ATFM unit serving the affected ACCs.

Adjacent ACC/FIC actions

During the start of eruption phase, adjacent ACCs/FICs should take the following actions:

a) gain and maintain awareness of the affected area and inform flights that will or might be affected; and

b) maintain a close liaison with the originating ACC/FIC ATFM unit, aircraft operators and appropriate ATFM where applicable so as to devise, implement and update flow of traffic and where applicable ATFM measures (including relaxation of airspace restrictions) which will enable safe and efficient flight operations; and

c) begin planning for the on-going eruption phase in conjunction with the aircraft operators, the appropriate ACCs/FICs unit and ATFM where applicable.

ATFM Unit actions (Where applicable)

During the start of eruption phase, depending on the impact and/or extent of the volcanic ash cloud, the appropriate ATFM unit should organize the exchange of latest information on the developments with the associated VAACs, ANSPs, MWOs and operators concerned in order to support CDM.

The ATFM unit will apply ATFM measures on request of the ANSPs concerned. The measures should be reviewed and updated in accordance with latest information. Airspace measures should be relaxed as soon as the situation allows.

3.3 ON-GOING ERUPTION PHASE:

The on-going eruption phase commences with the issuance of the first complete volcanic ash advisory (VAA) containing information on the extent and forecast movement of the volcanic ash cloud.

General

The on-going eruption phase commences with the issuance of the first complete (i.e. including forecasts) volcanic ash advisory (VAA) by the responsible VAAC that contains information on the extent and expected movement of the volcanic ash cloud in accordance with Annex 3 [*Meteorological Services for International Air Navigation*] provisions. It may take up to 3 hours after start of eruption to issue this first complete VAA.

Volcanic ash advisory information in graphical format (VAG) should also be issued by the VAAC, containing the same information as its text-based VAA equivalent. (Doc 9766, paragraph 4.5.1).

The VAA/VAG should be used to:

a) prepare appropriate AIS and MET messages in accordance with Annex 15 [*Aeronautical Information Services*] and Annex 3 [*Meteorological Services for International Air Navigation*] provisions, respectively; and

b) plan the provision of air traffic services, including the application of appropriate ATFM measures.

ACC/FIC Actions

Volcanic ash may affect any combination of airspace; therefore, it is not possible to prescribe measures to be taken for all situations. The following guidance therefore may prove useful during the on-going eruption phase, but should not be considered mandatory or exhaustive:

a) The ACC/FIC will continue to act in accordance with the ATS Contingency Procedures contained in PANS-ATM (Doc 4444) Chapter 15.8

b) ACCs/FICs affected by the movement of the volcanic ash shall ensure that appropriate AIS messages are originated in accordance with Annex 15 [*Aeronautical Information Services*]. ACCs/FICs concerned and the appropriate ATFM unit should continue to publish details on measures taken to ensure dissemination to all concerned;

c) the ACC/FIC should solicit special air-reports on volcanic activity if so requested by the appropriate VAAC;

d) ACCs/FICs and ATFM units should be aware that for the purposes of flight planning and execution, operators could treat the horizontal and vertical extent of the volcanic ash contaminated area to be over-flown as if it were mountainous terrain; and

e) any reported differences between published information and observations (pilot reports, airborne measurements, etc.) should be forwarded as soon as possible to the appropriate authorities to ensure revision of any incorrect information and its dissemination to all concerned.

ATFM Unit actions (Where applicable)

The ATFM units will continue to apply ATFM measures on request of the ANSPs concerned. The measures should be reviewed and updated (including relaxation of airspace measures) in accordance with latest information. Depending on the impact and/or extent of the volcanic ash, the appropriate ATFM unit may take the initiative to organize teleconferences to exchange the latest information on the developments, in order to support CDM, with the VAACs, ANSPs and MWOs and operators concerned. Attached, please find operators checklist guidance on action to be taken in appendix P

3.4 RECOVERY PHASE:

The recovery phase commences with the issuance of the first VAA containing the statement "NO VA EXP" (i.e. "no volcanic ash expected") which normally occurs when it is determined that no volcanic ash is expected in the atmosphere and the volcanic activity has reverted to its non-eruptive state.

The Handbook on the International Airways Volcano Watch (Doc 9766) does not differentiate consistently between these different phases, which are functionally quite different. The Regional VA Contingency Plan lists the appropriate actions in the respective sections.

The recovery phase commences with the issuance of the first VAA/VAG containing the statement "NO VA EXP" (i.e. "no volcanic ash expected") — which normally occurs when it is determined that the volcanic activity has reverted to its non-eruptive state and the airspace is no longer affected by volcanic ash. Consequently, appropriate MET and AIS messages should be issued in accordance with Annex 3 [*Meteorological Services for International Air Navigation*] and Annex 15 [*Aeronautical Information Services*], respectively.

ACCs/FICs and ATFM units should revert to normal operations as soon as practical.

Although the four distinct phases herein describe actions to be undertaken during an actual volcanic event, they are based on a theoretical scenario. Actual eruptions may not always be distinct with respect to ATM actions to be undertaken. Similarly, an eruption may occur without any pre-eruptive activity, or may cease and restart more than once. Hence, the first observation may be the presence of an ash cloud, which is already some distance away from the volcano. It is essential that the contingency planning prepares the ATM system for an appropriate response depending on the actual conditions.

APPENDIX P: IATA In-flight Broadcast Procedure (IFBP) AFI Region

Broadcasts Intervals

A broadcast should be clearly pronounced in English:

a) 10 minutes before, entering FIR within the IFBP region;
b) Upon entering and FIR within the IFBP region
c) as soon as practicable when departing from an aerodrome located within the IFBP region;
d) 10 minutes prior to crossing or joining, an ATS route or crossing and airway or waypoint;
e) at not less than 20-minute intervals;
f) before a change in flight level
g) upon reaching the intended flight level;
h) at any other time considered necessary by the pilot.

Note 1: In the interest of reducing congestion on the IFBP frequency, pilots may exercise discretion to omit closely spaced repetitive IFBP reports, however broadcast intervals should not exceed 20 minutes

Note 2: The IFBP frequency must be closely monitored at all time when in the region; i.e. do not turn off or reduce volume levels on the transmitting/receiving frequency

Broadcast Procedure

A broadcast message should be structured as follows:
‘ALL STATIONS’
‘THIS IS AZ… (flight number) IN THE XXXX (FIR name) FIR

Position AAAAA (current position)	at … : … UTC	FL … (Altitude maintaining)
'North-East Bound' (direction)	on XXnnn (airway)	
Estimating BBBBB (next position; waypoint or crossing airway if no waypoint)	at … : … UTC	
CCCCC NEXT (subsequent position; waypoint or crossing airway if no waypoint)		

AZ… (flight number) at FL … (altitude maintaining) North-East Bound (direction) IN THE XXXX (FIR name) FIR

Listening Watch

A listening watch should be maintained on the designated frequency (126.9MHz), 10 minutes before entering the designated airspace until leaving this airspace.

For an aircraft taking off from an aerodrome located within the lateral limits of the designated airspace, listening watch should start as soon as appropriate and be maintained until leaving the airspace.

Additional Operating Procedures

Changes of Cruising Level

Changes of Cruising Level are considered necessary by pilots to avoid traffic conflicts, for weather avoidance, or for other valid operational reasons;

When cruising level changes are unavoidable, all available aircraft lighting, which would improve the visual detection of the aircraft, should be displayed while changing levels.

Collision Avoidance

If, on receipt of a traffic information broadcast from another aircraft, a pilot decides that immediate action is necessary to avoid an imminent collision risk to his aircraft, and this cannot be achieved in accordance with the right-of-way provisions of Annex 2, he should:

a) unless an alternative maneuver appears more appropriate, climb or descent 500ft;
b) display all available aircraft lighting which would improve the visual detection of the aircraft;
c) as soon as possible reply to the broadcast advising action being taken;

d) notify the action taken on the appropriate ATS frequency; and
e) as soon as situation has been rectified, resume normal flight level, notifying the action on the appropriate ATS frequency.

Normal Position Reporting Procedures

Normal position reporting procedures should be continued at all times, regardless of any action taken to initiate or acknowledge a traffic information broadcast.

Operation of Transponders

Pilots shall ensure that transponder procedures as contained in ICAO PANS OPS Doc 8168 are complied with and in the absence of other directions from ATC, operate the transponder on Mode A and C Code 2000.

Note: Pilots shall ensure operation of transponders even when outside radar coverage in order to enable TCAS equipped aircraft to identify conflicting traffic.

Use of TCAS

In accordance with ICAO Regional Supplementary Procedures (Doc 7030), ACAS II shall be carried and operated in the AFI Region by all civil fixed-wing turbine-engine aircraft having a maximum take-off mass exceeding 5 700 kg or maximum approved passenger seating configuration of more than 19.

IATA therefore promotes the use of a working TCAS for aircraft when operating within the AFI Region; and pilots shall select TA/RA mode at maximum range.

Use of SLOP

SLOP is promoted in AFI region.

Appendix Q: IATA Notification/Coordination Procedures

Table 1: Notification/Coordination Process

Airspace Avoidance				
Airlines	**Airline Actions**	**IATA Actions**	**ICAO ESAF/WACAF Office**	**States/ANSP**

Monitor global activities that have an effect on flight operations. (currently in place)	**NONE**	**NONE**	**NONE**	**NONE**
Review state activity that requires airline safety and security review (currently in place)	**Notify IATA as to effected FIR' and factors under review. (security and or safety)**	**When more than (30%) of airlines reporting, notify ICAO ESAF/WACAF**	**Call for the Contingency Coordination Team (CCT)**	**NONE**
Identify specific Factors and pending trigger events (currently in place)	**inform IATA on review findings and possible trigger events**	**Inform CCT on findings and number of airlines reporting**	**Notify effected states/ANSP on number of airlines reviewing current activity**	**NONE**
Event triggered: reviewing avoidance options and select avoidance scenario	**Inform IATA of selected scenario and volume/initial timelines.**	**Inform CCT**	**Notify effected States/ANSP scenario and volume/timelines**	**Review scenario and give feedback on feasibility**
48 Hours prior to activation of planned avoidance re-routes	**Notify IATA**	**Notify CCT**	**Notify effected states/ANSP**	**Prepare NOTAMS and avoidance scenario**
24 Hours prior to activation of planned avoidance re-routes	**Notify IATA**	**Notify CCT**	**Notify effected states/ANSP**	**Publish NOTAMs**

Appendix R: TORs for Contingency Coordination Airlines Working Group (CCAWG)

Contingency Coordination Airline Working Group (CCAWG)

Purpose / role of the group:

- The purpose of the group is to identify lessons learned in the current process, undertake review of requirements during the planning, activation and post event phases of the CCT,
- To contribute to the enhancement of the of the functions of the Contingency Coordination Team (CCT)

- Take the lessons learned from previous regional events that constituted the activation of the CCT and action areas of improvements in communications, proactive planning and tactical response

Membership:

- The members of the group should comprise of RCG members,
- Airline representatives other than IATA members may be invited on a need basis,
- The WG chair shall be rotated after every six (6) months,
- The group should be kept to a maximum of seven (7) persons,
- At least one representative should come from IATA AME office,
- RCG Observers and/or airline safety and security representatives can be invited on an ADHOC basis as determined by the group,
- ICAO AFI and MID office can be invited as determined by the group,
- Other organizations may be invited from time whenever considered necessary.

Accountability:

- IATA will coordinate all conclusions and or recommendations from the WG with ICAO
- IATA will coordinate cross regional meetings as recommended by the WG

Meetings:

- Meetings will be conducted on a quarterly review basis to discuss proactive vs reactive enhancements
- IATA will chair the meetings and the teleconferences
- AD HOC teleconferences will be conducted as needed
- When possible WG meetings will be coordinated with other meetings that facilitate at least 3 members of the WG
- Any member can call for meeting when deemed necessary

- information will be shared via email and if needed formal meetings

Definition of terms

- CCT- Contingency Coordination Team
- RCG- Regional Coordination Group

ADHOC- meeting formed for a particular reason

Appendix S: Organogram of AFI ATM Contingency Coordination Team (AFII CCT)

