

ENR 1.8
*ATM CONTINGENCY PLAN APPLICABLE TO ANTANANARIVO FIR***FOREWORD**

This Contingency Plan will come into effect as determined by the Civil Aviation of Madagascar (ACM), who is the authority responsible for civil aviation operations in Madagascar.

The Plan has been prepared in coordination with the International Civil Aviation Organization (ICAO) to meet the provisions of ICAO Annex 11 – Air Traffic Services Chapter 2 (2.30), to provide for the safe and orderly continuation of international flights through the Antananarivo FIR.

The Plan has been developed in coordination with the Madagascar airspace management stakeholders and with the close co-operation and collaboration with IATA and the civil aviation authorities and air navigation service providers (ANSPs) responsible for the adjacent FIRs.

Arrangements have been made with civil aviation authorities responsible for adjacent airspaces, and action on their part in the event of activation of the Plan will be in accordance with operational Letters of Agreement (LOAs) established between Madagascar and adjacent States concerned. Aircraft flying through the Antananarivo FIR during activation and operation of the Antananarivo Contingency Plan are expected to comply with the requirements of this Plan and to cooperate with other airspace users as necessary for continued safety of air navigation.

It is to be understood that contingency arrangements that constitute a temporary deviation from the approved Regional Air Navigation Plan are subject to approval as necessary, by the President of the ICAO Council on behalf of the Council.

ATM CONTINGENCY PLAN FOR INTERNATIONAL FLIGHTS TO TRANSIT THE AIRSPACE OF THE ANTANANARIVO FIR**I. OBJECTIVE**

- 1.1 This Air Traffic Management (ATM) Contingency Plan contains arrangements to ensure the continued safety of air navigation in the event of partial or total disruption of air traffic services in the Antananarivo FIR in accordance with ICAO Annex 11 – Air Traffic Services, Chapter 2, Section 2.30. The Contingency Plan provides the ATS procedures and contingency route structure using existing airways in most cases that will allow aircraft operators to transit the Antananarivo FIR.
- 1.2 This Contingency Plan does not address arrangements for aircraft arriving and departing at airports within Madagascar, or for domestic flight operations within the territory of Madagascar.

2. STATES AND FLIGHT INFORMATION REGIONS AFFECTED

- 2.1 In the event that the Civil Aviation Authority for Madagascar (ACM) activates this Contingency Plan, adjacent States and civil aviation authorities responsible for air navigation services in the adjacent FIRs will be notified in accordance with the Letters of Agreement established between Antananarivo and adjacent FIRs concerned. The adjacent States' FIRs and ATS units directly affected by this Contingency Plan are as follows:

State	Name of airspace	Name of ATS unit
Tanzania	Dar Es Salaam FIR	Dar Es Salaam ACC
Mozambique	Beira FIR	Beira ACC
South Africa	Johannesburg FIR	Johannesburg ACC – Oceanic
Seychelles	Seychelles FIR	Seychelles ACC
Mauritius	Mauritius FIR	Mauritius ACC
La Réunion	TMA La Réunion	Roland GARROS APP
Comoros	TMA Moroni	Moroni APP

- 2.2 The contact details of the civil aviation authority and organizations concerned are contained in Appendix A to this document. These details will be kept up to date in accordance with Letters of Agreement and the Contingency Plan shall be updated accordingly.

3. MANAGEMENT OF THE CONTINGENCY PLAN

- 3.1 The contingency measures set out in this Plan are based on known, foreseeable or probable impact of interruptions in ATS, caused by natural occurrences or other circumstances, which, in one way or another may partially or totally disrupt the provision of ATS and/or related support services in the Antananarivo FIR, or make the airspace unavailable or unsafe for use.
- 3.2 The following arrangements have been put in place to support management of the Contingency Plan in order to ensure that international flights may continue in a safe and orderly manner through the Antananarivo FIR.



Central Coordinating Committee

- 3.3 Whenever circumstances permit, as soon as practicable in advance of, or after a contingency event has occurred, the Project Coordinator of ASECNA shall convene the Central Coordinating Committee (CCC) comprising representatives from:
- 1) The Civil Aviation Authority (ACM);
 - 2) ICAO ESAF Regional Office;
 - 3) ATS providers within Antananarivo FIR;
 - 4) Representative from the airlines;
 - 5) Other UN agencies and stakeholders considered necessary.
- 3.4 The Central Coordinating Committee (CCC) shall oversee the conduct of the Contingency Plan and in the event that the Antananarivo ACC premises are out of service for an extended period, make arrangements for and facilitate the temporary relocation of the Antananarivo ACC at the Temporary Moroni APP and the restoration of ATS services. The terms of reference for the CCC will be determined by the Civil Aviation Authority of Madagascar (ACM) in consultation with applicable stakeholders and will be updated periodically and circulated to members of the CCC.
- 3.5 Contact details of the CCC members are provided in Appendix B to this document.

Antananarivo ATM Operational Contingency Group

- 3.6 The Antananarivo ATM Operational Contingency Group (AOCG) will be convened by the CCC with a primary responsibility to oversee 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 will be determined by the CCC. The AOCG will include specialized personnel from the following disciplines:
- Air traffic services (ATS)
 - Aeronautical telecommunication (COM)
 - Aeronautical meteorology (MET)
 - Aeronautical information services (AIS)
 - Communication, navigation and surveillance (CNS)
- The tasks of the AOCG shall include taking the following action:
- i. review and update of the Antananarivo Contingency Plan as required;
 - i. keep up to date at all times of the contingency situation;
 - i. organize contingency teams in each of the specialized areas;
 - i. keep in contact with and update the ICAO ESAF Regional Office, operators and the IATA Regional Office;
 - i. exchange up-to-date information with the adjacent ATS and ATS providers within the Antananarivo FIR authorities concerned to coordinate contingency activities;
 - i. notify the designated ATM organizations in Tanzania, Mozambique, Seychelles, Mauritius, Comoros, La Reunion and South Africa of the contingency situation sufficiently in advance and/or as soon as practical thereafter; and
 - i. issue NOTAMs according to the corresponding contingency situation related to this plan or as otherwise required. If the situation is foreseeable sufficiently in advance, a NOTAM will be issued at least 48 hours in advance.

4. CONTINGENCY ROUTES STRUCTURE

4.1 PROCEDURES FOR ATS UNITS

In the event of disruption of air traffic services provided by Antananarivo ACC, contingency routes will be introduced to ensure safety of flights and to facilitate limited flight operations commensurate with the prevailing conditions. Existing ATS routes form the basis of the contingency routes to be used, and a flight level assignment scheme shall be introduced to minimize potential points of conflict and to limit the number of aircraft operating simultaneously in the system under reduced air traffic services, including surveillance.;

- 4.2 The contingency route structure for international flights is detailed in Appendix C to this document. Additional contingency routes will be introduced as and when circumstances require, such as in the case of volcanic ash clouds formation.
- 4.3 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 services restored. A decision to curtail or restart domestic operations will be made by the CCC.;
- 4.4 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 starting from FL290 and above
- 4.5 International and domestic operators affected by the suspension of all operations from major airports in Madagascar will be notified by civil aviation authority of Madagascar (ACM) when operations may be resumed, and flight planning information will be made available pertaining to those airports.



- 4.6 International operators may elect to route around the Antananarivo FIR if this will satisfy operational requirements of their companies. In such instances, the contingency routes to be used will be provided by the ATS providers in the adjacent FIRs concerned.

5 AIR TRAFFIC MANAGEMENT AND CONTINGENCY PROCEDURES

Reduced ATS and provision of flight information services (FIS) :

- 5.1 During the contingency critical period, air traffic services (ATS), including air traffic control (ATC) may not be available, particularly with regard to availability of communications and surveillance services. In cases where such services are not available, a NOTAM will be issued by ASECNA or adjacent ACCs, providing the relevant information, including an expected date and time of resumption of services. The Contingency Plan provides for limited flight information and alerting services to be provided by adjacent ACCs.
- 5.2 Flight information service (FIS) and flight monitoring will be provided by the designated ATS authorities for the adjacent FIRs on the contingency routes that enter their respective FIRs. A chart depicting the airspace arrangement is provided in Appendix D to this document.
- 5.3 The primary means of air-ground communication will be by HF radio except for aircraft operating automatic dependent surveillance (ADS) and controller/pilot data link communication (CPDLC) systems where this has been established and is fully operational. Where CPDLC has been established, this will become the primary means of communication, with HF as secondary. In the case of automatic position reporting, this will replace voice position reporting and CPDLC and/or HF will become the secondary means of communication.

ATS Responsibilities

- 5.4 During the early stages of a contingency event, the Antananarivo ACC may become overloaded which may require tactical action to be taken in order to re-route aircraft on alternative routes that are not included in this Plan.
- 5.5 In the event that ATS cannot be provided in the Antananarivo FIR, 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 limits on ATS provision (e.g. ACC, APP, TWR and FIS) including an expected date of restoration of services if available;
 - d) flight level allocation scheme (FLAS) if different from those defined in Appendix C and D to this document;
 - e) information on the provisions made for alternative services;
 - f) any changes to the ATS contingency routes contained in this Plan;
 - g) any special procedures to be followed by neighbouring ATS units not covered by this Plan;
 - h) any special procedures to be followed by pilots; and
 - i) any other details with respect to the disruption and actions being taken that aircraft operators may find useful.
- 5.6 In the event that the Antananarivo International NOTAM Office is unable to issue the NOTAM, the (alternate) International NOTAM Office at Dakar and/or Brazzaville will take action to issue the NOTAM pertaining to the closure of airspace upon notification by ASECNA or ICAO ESAF Regional Office. Sample NOTAMs are at Appendix E

Aircraft Separation

- 5.7 Aircraft separation criteria will be applied in accordance with the Procedures for Air Navigation Services-Air Traffic Management (PANS-ATM, Doc 4444), the Regional Supplementary Procedures (Doc 7030) and the RAM 7.07 volume 3.
- 5.8 The minimum longitudinal separation applicable will be 15 minutes.
- 5.9 The route structure provides for a minimum lateral separation of 50 nautical miles. In cases where this is, and for crossing routes, standard vertical separation shall be applied between all aircraft transiting the Antananarivo FIR.

Flight level restrictions

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

Operational restrictions.

- 5.11 VFR flights shall not operate in the Antananarivo FIR if there are extensive disruptions to ATS facilities, except in special cases such as State aircraft, MEDEVAC flights, and any other essential flights authorized by the Civil Aviation Authority of Madagascar (ACM).
- 5.12 IFR General Aviation flights will receive a lower priority than all other flights and may be suspended depending on circumstances.
- 5.13 IFR commercial flights will receive a high priority together with State and MEDEVAC flights

Other measures

- 5.14 Other measures related to the limited availability of airspace and the implementation of the contingency scheme within the Antananarivo FIR may be taken as follows:
- 5.14.1 Suspension of all VFR operations;



5.14.2 Delay or suspension of general aviation IFR operations; and

5.14.3 Delay or suspension of commercial IFR operations.

Aircraft position reporting

5.15 Pilots will continue to make routine position reports in line with normal ATC reporting procedures. Pilots shall also use the IFBP VHF frequency 126.9 MHz when making routine position reports.

Procedures to be followed by Antananarivo ACC and adjacent ATS Units

- 5.16 Antananarivo ACC and adjacent ATS units will follow their emergency operating procedures and activate the appropriate level of contingency procedures in line with operational Letters of Agreement. These procedures shall include the following:
- a) the Antananarivo ACC, on determining that air traffic services may be reduced due to a contingency event, will inform pilots accordingly. In the event of incapacitation of the operations room/building, the appropriate emergency procedures will apply and time permitting, controllers will make an emergency evacuation transmission on the radio frequency or frequencies in use providing pilots with alternate means of communication;
 - b) during the period when the contingency procedures are in effect, flight plan messages must continue to be transmitted by operators to the Antananarivo ACC via the AFTN using normal procedures;
 - c) on notification of a contingency situation by Civil Aviation Authority of Madagascar (ACM), ICAO or the appropriate alternate authority of an adjacent FIR, the ATS authorities operating the ACCs of the adjacent FIRs will activate the contingency procedures in accordance with their respective Letters of Agreement.
 - d) the adjacent ACCs responsible for aircraft entering and transiting the Antananarivo FIR must communicate to concerned ATS units not less than 30 minutes beforehand, the estimated time over the Antananarivo FIR boundary entry points;
 - e) the adjacent ACCs responsible for aircraft entering the Antananarivo FIR will instruct pilots to maintain the last flight level assigned and speed (Mach number technique if applicable) or as per flight level scheme allocation in force while overflying the Antananarivo FIR;
 - f) the adjacent ACCs responsible for aircraft entering the Antananarivo FIR will not authorize any change in flight level or speed (Mach number technique, if applicable) later than 10 minutes before the aircraft enters the Antananarivo FIR, except in the case specified in (h) below;
 - g) the adjacent ACCs responsible for aircraft entering the Antananarivo FIR will inform all aircraft, prior to entering the Antananarivo FIR, that they must communicate with the next (downstream) ATC unit at least 10 minutes before the estimated time over the Antananarivo FIR boundary exit points, or as may be agreed by the accepting ATS unit downstream; and
 - h) operators may also choose to route around the Antananarivo FIR, and the controlling authorities of the neighboring FIRs concerned will provide alternative contingency routes as appropriate.

Note : ATS units should recognize that when closures of airspace or airports are promulgated, individual airlines might have different company requirements regarding alternative routing arrangements. ATS units should endeavour to accommodate such requests within the confines of safety rules and procedures.

Transition to contingency scheme

- 5.17 During times of uncertainty (severe weather, volcanic ash, reported seismic activity, etc) when airspace closure seems most likely, aircraft operators should be prepared for a possible change in routing while en-route, familiarization with the alternative routes outlined in this Contingency Plan, as well as those which may be promulgated by Antananarivo via NOTAM or other form of aeronautical information.
- 5.18 In the event of airspace closure that has not been promulgated, Antananarivo ACC and adjacent ATS units should, to the extent possible, broadcast to all aircraft under their jurisdiction, what airspace is being closed and to standby for further instructions.
- 5.19 If circumstances lead to the closure of the Antananarivo FIR and no contingency routes are available throughout that FIR, aircraft will be required to route around the Antananarivo FIR. As much warning as possible will be provided by ASECNA in the event of the complete closure of Antananarivo FIR.

Adjustment of Coordination Requirements

5.20 Antananarivo and adjacent ATS providers concerned will review the effectiveness of current coordination requirements and procedures in light of contingency operations or airspace closure, and make any necessary adjustments to the Antananarivo FIR Contingency Plan.

6. PUBLIC HEALTH EMERGENCIES

- 6.1 In the event of a Public Health Emergency, such as disease outbreak, ATC should verify procedures to be followed related to the specific emergency as provided by the Ministry of Health in collaboration with the civil aviation authority (ACM) and should advise the operators as soon as practicable. (CF. APPENDIX H)
- 6.2 ATC should also ensure that contact details relating to the Focal Points of Contact for specific outbreaks are updated regularly.
- 6.3 Should a Public Health Emergency necessitate the closure of the Antananarivo FIR and its aerodromes, then specific procedures to be followed will be published by NOTAM.

7. VOLCANIC ASH CONTINGENCY PLAN (VACP)

In the event of volcanic ash activity affecting the whole or part of the Antananarivo FIR, detailed contingency arrangements specifically related to volcanic ash are contained in Appendix G to this document.



8. PILOT AND OPERATOR PROCEDURES**Filing of flight plans**

- 8.1 Flight planning requirements for the Antananarivo FIR are to be followed in accordance with the ICAO the PANS-ATM (Doc 4444) and with RAM 7.07 volume 3.

Overflight approval

- 8.2 In a contingency situation, flights may be re-routed at short notice and it may not be possible for operators to give the required advanced notice in a timely manner to obtain overflight approval. However, the current requirements and procedures for overflight approval of the Antananarivo FIR as provided by the concerned Civil Aviation Authorities (ACM) shall continue to be applicable.
- 8.3 With regard to other FIRs, aircraft operators are to obtain overflight approval from States responsible for such airspaces in accordance with the procedures and requirements of such States.
- 8.4 Coordination for special arrangements to expedite flight approvals for aircraft transiting the Antananarivo FIR in a contingency situation may be coordinated with Antananarivo ACC and adjacent ATS units on a case by case basis, as addressed in the Letters of Agreement.
Aircraft operators should note however that overflight approval remains the responsibility of the State whose territory is to be overflown.

Pilot operating procedures

- 8.5 Aircraft overflying the Antananarivo FIR shall follow the following procedures:
- all aircraft proceeding along the ATS routes established in this Contingency Plan will comply with the instrument flight rules (IFR) and will be assigned a flight level in accordance with the flight level allocation scheme (FLAS) applicable to the route(s) being flown as specified in Appendix C to this document;
 - flights are to file flight plans using the Contingency Routes specified in Appendix C to this document, according to their airport of origin, routing and destination;
 - pilots are to keep a continuous watch on the specified contingency radio frequencies as specified in the Letters of Agreement and transmit position information and estimates in accordance with normal ATC position reporting procedures using the English language;
 - pilots are to maintain during their entire flight time within Antananarivo FIR, the flight level last assigned by the last ACC or ATS unit responsible for the provision of ATC service, prior to the aircraft entering the Antananarivo FIR. In the event that the last assigned flight level does not correspond to the flight level allocation scheme (FLAS) applicable to the Antananarivo Contingency Plan, the pilot should establish contact with the ATS unit responsible for the provision of service to clarify, and if unable, shall adjust to the FLAS as soon as possible once in the contingency airspace. The pilot shall, under no circumstances, change this level and Mach number, except in cases of emergency and for flight safety reasons. In addition, the last SSR transponder assigned shall be maintained or, if no transponder has been assigned, transmit on SSR code 2000;
 - aircraft are to reach the flight level last assigned by the responsible ACC at least 10 minutes before entering the Antananarivo FIR or as otherwise instructed by the appropriate ATC unit in accordance with the Letters of Agreement;
 - pilots are to include in their last position report prior to entering the Antananarivo FIR, the estimated time over the entry point of the Antananarivo FIR and the estimated time of arrival over the relevant exit points of the Antananarivo FIR;
 - pilots are to contact the next adjacent ACC as soon as possible, and at the latest, 10 minutes before the estimated time of arrival over the FIR boundary exit points of Antananarivo FIR;
 - whenever in-flight emergencies and/or flight safety reasons make it impossible to maintain the flight level assigned for transit of Antananarivo FIR, pilots are to climb or descend well to the right of the centerline of the contingency route, and if deviating outside the Antananarivo FIR, to immediately inform the ACC responsible for that airspace. Pilots are to make blind transmissions on 121.5 Mhz and 126.9 Mhz of the relevant emergency level change message, indicating the aircraft call sign, the aircraft position, the flight levels being vacated and crossed, etc);
 - recognizant of the fact that not all operational circumstances can be addressed by this Contingency Plan, pilots are to maintain a high level of alertness when operating in the Antananarivo contingency airspace and take appropriate action to ensure safety of flight; and
 - Pilots should maintain continuous listening watch on VHF emergency frequency 121.5 MHz and IFBP frequency 126.9 MHz at all times when operating in the Antananarivo contingency airspace.

Interception of civil aircraft

- 8.6 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 to the Chicago Convention –Rules of the Air, paragraph 3.8 and Appendix 2 or RAM 7.07 volume 1 paragraph 3.8 Appendix 2.
- 8.7 Should conditions prevailing in the airspace over the territory and territorial waters of Madagascar during contingency period result in the interception of civil aircraft by military aircraft, the pilot shall immediately take the following action:
- follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with international procedures;
 - notify, if possible, the appropriate air traffic services unit;
 - attempt to establish radio communication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight. If no contact has been established and if practicable, repeat this call on the emergency frequency 243 MHz;



- d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit;
- e) if equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit;
- f) if any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals or by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual or radio instructions given by the intercepting aircraft.

NOTE: The above interception procedures are consistent with provisions contained in Annex 2 (Section 3.8) to the Chicago Convention.

9. COMMUNICATION PROCEDURES

Procedures for Reduced/Loss of Radio Communication

- 9.1 When operating within the contingency airspace of Antananarivo FIR, pilots should use normal radio communication procedures where ATS services are available or as otherwise notified by NOTAM.
- 9.2 If communication is lost on the normal ATS frequencies allocated, pilots should try the next applicable frequency, e.g. if en-route contact is lost then try the next appropriate handover frequency. It should be expected that loss of communication may be temporary. As such, if following the loss of communication pilots are still unable to establish two-way radio communication on other frequencies, pilots should consider periodic attempts on the frequency on which two-way radio communication was lost. In any case, in the absence of two-way communication with ATC, pilots should continue to make routine position reports on the appropriate frequencies, and broadcast positions on the specified contingency frequencies.

Communication frequencies

- 9.3 A list of frequencies to be used for the contingency routes for the Antananarivo FIR is detailed at Appendix F to this document.

10. AERONAUTICAL INFORMATION SUPPORT SERVICES

Aeronautical Support Information Services (AIS)

- 10.1 NOTAM services will be used optimally to mitigate against loss of radio and other forms of communication in Antananarivo FIR. NOTAMs will be used as necessary to support coordination and operational procedures that would be established before, during and after any contingency phase.
- 10.2 In the event of unavailability of AIS services for Antananarivo, NOTAM services will be provided by Dakar NOTAM services or Brazzaville NOTAM services.

Meteorological Services (MET)

- 10.3 It is expected that the Antananarivo MET services would continue to be available in the event of an ATS contingency situation. However, should ATS services for the Antananarivo FIR be withdrawn, timely MET information may not be immediately available to aircraft in flight. Alternative means of obtaining up to date MET information concerning the Antananarivo FIR will be provided to the extent possible through Moroni Approach or the adjacent ATS authorities.

11. SEARCH AND RESCUE

Notification and Coordination

- 11.1 The SAR operation responsible for the Antananarivo SRR is:
- 11.2 Name: Joint Rescue Coordination Centre Antananarivo (JRCC ANTANANARIVO)
Address: JRCC Antananarivo BP: D – Ivato Aéroport
Tel/Inmarsat : + (261) 34 13 742 47, +(261).32.11.257.43 / NIL
Fax: NIL
AFTN: FMMIYCYX
E-mail: jrccmadivato@gmail.com
- 11.3 The SAR Point of Contact (SPOC) is:
Name: Joint Rescue Coordination Centre Antananarivo (JRCC ANTANANARIVO)
Address: JRCC Antananarivo BP: D – Ivato Aéroport
Tel/Inmarsat : +(261) 34 13 742 47, +(261) 32 11 257 43 / NIL
Fax: NIL AFTN: FMMIYCYX
E-mail: jrccmadivato@gmail.com
- 11.4 In the event that the JRCC Antananarivo is not available to coordinate a given SAR operation, coordination for special arrangements to coordinate SAR Operation in the Antananarivo SRR in a contingency situation may be coordinated with JRCC Antananarivo and adjacent RSCs and/or RCCs units on a case by case basis, as addressed in the SAR Letters of Agreement. The responsibility for coordination will be undertaken by The Civil Aviation Authority of Madagascar (ACM), in close coordination with the ICAO ESAF Regional Office in Nairobi.

12. RESPONSIBILITY OF THE ACCREDITED ICAO REGIONAL OFFICE (ESAF)

The ICAO ESAF Regional Office which is accredited to the State of Madagascar will:

- a) Closely monitor the situation and coordinate with all affected States and organizations including the IATA Regional Office, so as to ensure to the extend practical the continuity of air navigation and the provision of air navigation services to international air traffic in the AFI Region area of accreditation;
- b) Note any incidents reported and provide support to Antananarivo in taking appropriate action;



- c) Provide assistance as necessary on any issues with the Civil Aviation Administrations involved with and supporting the Antananarivo Contingency Plan; and
- d) Keep the President of the Council of ICAO, the Secretary General, Director Air Navigation Bureau, and Chief Air Traffic Management in Montreal continuously informed on developments, including activation and termination of the Antananarivo Contingency Plan.



APPENDIX A : Contact details for all concerned States, IATA and accredited ICAO Regional Office.

State/ Organization	Point of contact	Telephone	E-mail
Tanzania	Dar Es Salaam ACC	+ 255 222110254 +255 754 211 254 +255 22 2110409	tcaadia@taa.go.tz
Madagascar	Antananarivo ACC	+261 20 22 581 13	NIL
Mozambique	Beira ACC	+258 23 301626 +258 23 301071 +258 23 301072	Adm.civ@aerportos.com.mz
Seychelles	Seychelles ACC	+ 248 4 38 41 93 +248 437 40 51 +248 437 36 49	atcc@scaa.sc
Mauritius	Mauritius ACC	+230 6032070	fdo@govmu.org ais@govmu.org
South Africa	Johannesburg ACC	+27 11 928 6452 +27 11 928 6454 +27 11 928 6439	francoisb@atns.co.za
La Réunion	Roland Garros APP	+262 72 88 40	gillot.bria@aviation-civile.gov.fr
Comoros	Moroni APP	+269 775 40 22	

APPENDIX B : Contact details of the CCC members

State/ Organization	Point of contact	Telephone	E-mail
Madagascar ACM	ANDRIANINISOA Sitraka Safety oversight Director	+ 261 34 05 743 09	sitraka.andrianonisoa@acm.mg
Madagascar ASECNA	Representative of ASECNA in Madagascar	+261 20 22 581 13	MadagascarBia@asecna.org
Madagascar Air Madagascar	RABESAOTRA Felina ERP Responsible	+ 261 38 22 222 45	Felina.Rabesaotra@ madagascarairlines.com



APPENDIX C : CONTINGENCY ROUTE STRUCTURE DURING PARTIAL OR TOTAL UNAVAILABILITY OF THE ANTANANARIVO FIR

Present ATS Route	Contingency Routing	FLAS		Minimum Longitudinal Separation	FIRs Concerned
		Westbound	Eastbound		
CR1:UB790	DAR-LA REUNION KINAN-DOBUT	320 360	310 350	15 minutes	Dar Es Salaam FIR UTA La Réunion Mauritius FIR
CR2:UL433	NAIROBI-PLAISANCE ATOLA-APKOT	340 360	350 370	15 minutes	Seychelles FIR UTA La Réunion Mauritius FIR
CR3:UA665	ADDIS-PLAISANCE ANKOR-AMBOD	280 300 320	290 310 330	15 minutes	Seychelles FIR Mauritius FIR
CR4:UN305	MALAWI-SEYCHELLES SOLAL-BERIL	380 400	390 410	15 minutes	Beira FIR Seychelles FIR
CR5:UB536/ UR348	MAPUTO-PLAISANCE EROPA-UB536-TNV- UR348 - RUPIG	380 400	390 410	15 minutes	Beira FIR Mauritius FIR
CR6:UM307	BEIRA-SEYCHELLES ENDEL-NESAM	380 400	390 410	15 minutes	Beira FIR Seychelles FIR
CR7:UG653	MAPUTO-LA REUNION SUNIR-GERAG	320 360	310 350	15 minutes	Beira FIR UTA La Réunion Mauritius FIR
CR8:UA402	BEIRA – LA REUNION ETGUN-GETIR	340 380 400	330 370 390	15 minutes	Beira FIR UTA La Réunion Mauritius FIR
CR9:UA400/ UA401	BEIRA-LA REUNION GADNO-UA400-TNV-TE-UA401- UNKIK	300 340	290 330	15 minutes	Beira FIR UTA La Réunion Mauritius FIR

SPECIFIC CASE: CONTINGENCY ROUTE STRUCTURE DURING UNAVAILABILITY OF MADAGASCAR TERRITORIAL AIRSPACE

FROM NORTH EAST AFRICA TO FMEE OR INDIAN OCEAN	TABNO OR ANOTHER WAYPOINT-DCT-BIRAL -DCT- IXEBU-(UN304)	CAR...	FPL FL	AS PER LOP	HTDC/FMEE/FSSS
FROM NORTH EAST AFRICA TO FIMP OR INDIAN OCEAN	TABNO OR ANOTHER WAYPOINT-DCT-BIRAL -DCT-IXEBU-TSARA-(U A665)	CAR...	FPL FL	AS PER LOP	HTDC/FIMM/FSSS
FROM EAST AFRICA TO SOUTH EAST OF INDIAN OCEAN	ANY ENTRY POINT-DCT-KEDOM-DC T-AXOTA-DCT-GETIR OR GERAG	CAR...	FPL FL	AS PER LOP	FQBE/FMEE/FIMM

APPENDIX D : Graphical Representation OF ATS CONTINGENCY Routes

See AIP CHART



APPENDIX E : SAMPLE NOTAMS

ANTANANARIVO FIR CONTINGENCY NOTAM

SCENARIO 1: PARTIAL UNAVAILABILITY OF THE AIRSPACE UNAVAILABILITY OF AIRSPACE IN ANTANANARIVO FIR

Axxxx/YY NOTAMN

Q) FMMM/QPCCA/IV/NBO/AE/000/999/1848S04731E999

A) FMMM

B) [Effective date]

C) [End date]

E) AIRSPACE UNAVAILABLE WITHIN THE ANTANANARIVO FLIGHT INFORMATION REGION. ALL FLIGHTS SHALL COMPLY WITH THE REQUIREMENT TO SELECT SPECIFIC CONTINGENCY ROUTES AND FLIGHT LEVELS APPLICABLE TO THE CONTINGENCY ROUTES AS DETAILED HERE BELOW. ADJACENT AREA CONTROL CENTRES OF DAR ES SALAAM, BEIRA, SEYCHELLES, MAURITIUS, LA REUNION AND JOHANNESBURG WILL ALLOCATE ONLY THE CONTINGENCY ROUTES AND FLIGHT LEVELS SPECIFIED AS FOLLOWS:

A) CR1 (UA401) (insert description)

B) CR2 (UB790) (insert description)

C)...

PILOTS WHO HAVE BEEN ASSIGNED WITH A FLIGHT LEVEL NOT IN ACCORDANCE WITH THE FLAS, SHOULD TRY TO ESTABLISH CONTACT WITH THE ATS UNIT RESPONSIBLE FOR THE PROVISION OF SERVICE TO CLARIFY, AND IF UNABLE, ADJUST TO THE FLAS AS SOON AS POSSIBLE ONCE IN THE CONTINGENCY AIRSPACE.

SCENARIO 2: PARTIAL UNAVAILABILITY OF THE AIRSPACE UNAVAILABILITY OF AIRSPACE IN ANTANANARIVO FIR SUD

Axxxx/YY NOTAMN

Q) FMMM/QPCCA/IV/NBO/AE/000/999/1848S04731E999

A) FMMM

B) [Effective date]

C) [End date]

E) SOUTHERN AIRSPACE UNAVAILABLE WITHIN THE ANTANANARIVO FLIGHT INFORMATION REGION. ALL FLIGHTS SHALL COMPLY WITH THE REQUIREMENT TO SELECT SPECIFIC CONTINGENCY ROUTES AND FLIGHT LEVELS APPLICABLE TO THE CONTINGENCY ROUTES AS DETAILED HEREBELOW. ADJACENT AREA CONTROL CENTRES OF DAR ES SALAAM, BEIRA, SEYCHELLES, MAURITIUS AND JOHANNESBURG WILL ALLOCATE ONLY THE CONTINGENCY ROUTES AND FLIGHT LEVELS SPECIFIED AS FOLLOWS:

A) CR1 (UA401) (insert description)

B) CR2 (UB790) (insert description)

C)...

PILOTS WHO HAVE BEEN ASSIGNED WITH A FLIGHT LEVEL NOT IN ACCORDANCE WITH THE FLAS, SHOULD TRY TO ESTABLISH CONTACT WITH THE ATS UNIT RESPONSIBLE FOR THE PROVISION OF SERVICE TO CLARIFY, AND IF UNABLE, ADJUST TO THE FLAS AS SOON AS POSSIBLE ONCE IN THE CONTINGENCY AIRSPACE.

SCENARIO 3: PARTIAL UNAVAILABILITY OF THE AIRSPACE UNAVAILABILITY OF AIRSPACE IN ANTANANARIVO FIR SOUTH OF LATITUDE 18 50 00S

Axxxx/YY NOTAMN

Q) FMMM/QPCCA/IV/NBO/AE/000/999/1848S04731E999

A) FMMM

B) [Effective date]

C) [End date]

E) AIRSPACE SOUTH OF LATITUDE 18 50 00S UNAVAILABLE WITHIN THE ANTANANARIVO FLIGHT INFORMATION REGION. ALL AIRCRAFT SHALL COMPLY WITH THE REQUIREMENT TO SELECT SPECIFIC CONTINGENCY ROUTES AND FLIGHT LEVELS APPLICABLE TO THE CONTINGENCY ROUTES AS DETAILED HEREBELOW. ADJACENT AREA CONTROL CENTRES OF DAR ES SALAAM, BEIRA, SEYCHELLES, MAURITIUS AND JOHANNESBURG WILL ALLOCATE ONLY THE CONTINGENCY ROUTES AND FLIGHT LEVELS SPECIFIED AS FOLLOWS:

A) CR...

B) CR...

PILOTS WHO HAVE BEEN ASSIGNED WITH A FLIGHT LEVEL NOT IN ACCORDANCE WITH THE FLAS, SHOULD TRY TO ESTABLISH CONTACT WITH THE ATS UNIT RESPONSIBLE FOR THE PROVISION OF SERVICE TO CLARIFY, AND IF UNABLE, ADJUST TO THE FLAS AS SOON AS POSSIBLE ONCE IN THE CONTINGENCY AIRSPACE.



SCENARIO 4: PARTIAL UNAVAILABILITY OF THE AIRSPACE UNAVAILABILITY OF AIRSPACE IN ANTANANARIVO FIR NORTH

Axxxx/YY NOTAMN

Q) FMMM/QPCCA/IV/NBO/AE/000/999/1848S04731E999

A) FMMM

B) [Effective date]

C) [End date]

E) NORTHERN AIRSPACE UNAVAILABLE WITHIN THE ANTANANARIVO FLIGHT INFORMATION REGION. ALL AIRCRAFT SHALL COMPLY WITH THE REQUIREMENT TO SELECT SPECIFIC CONTINGENCY ROUTES AND FLIGHT LEVELS APPLICABLE TO THE CONTINGENCY ROUTES AS DETAILED HEREBELOW. ADJACENT AREA CONTROL CENTRES OF DAR ES SALAAM, BEIRA, SEYCHELLES, MAURITIUS AND JOHANNESBURG WILL ALLOCATE ONLY THE CONTINGENCY ROUTES AND FLIGHT LEVELS SPECIFIED AS FOLLOWS:

A) CR...

B) CR...

PILOTS WHO HAVE BEEN ASSIGNED WITH A FLIGHT LEVEL NOT IN ACCORDANCE WITH THE FLAS, SHOULD TRY TO ESTABLISH CONTACT WITH THE ATS UNIT RESPONSIBLE FOR THE PROVISION OF SERVICE TO CLARIFY, AND IF UNABLE, ADJUST TO THE FLAS AS SOON AS POSSIBLE ONCE IN THE CONTINGENCY AIRSPACE.

SCENARIO 5: UNAVAILABILITY OF ATS IN ANTANANARIVO FIR

Axxxx/YY NOTAMN

Q) FMMM/QPCCA/IV/NBO/AE/000/999/1848S04731E999

A) FMMM

B) [Effective date]

C) [End date]

E) ANTANANARIVO FIC TEMPORARILY UNABLE TO PROVIDE AIR TRAFFIC SERVICE IN THE ENTIRE AIRSPACE WITHIN THE ANTANANARIVO FIR. ALL AIRCRAFT SHALL CONTACT MORONI APPROACH ON FREQUENCY 8879 KHZ AND COMPLY WITH REQUIREMENT TO SELECT SPECIFIC CONTINGENCY ROUTES AND FLIGHT LEVELS APPLICABLE TO THE CONTINGENCY ROUTES IN ACCORDANCE WITH THE FLIGHT LEVEL ALLOCATION SCHEME (FLAS) DETAILED HEREBELOW. ADJACENT AREA CONTROL CENTRES OF DAR ES SALAAM, BEIRA, SEYCHELLES, MAURITIUS AND JOHANNESBURG WILL ALLOCATE ONLY THE CONTINGENCY ROUTES AND FLIGHT LEVELS SPECIFIED AS FOLLOWS:

A) CR...

B) CR...

PILOTS WHO HAVE BEEN ASSIGNED WITH A FLIGHT LEVEL NOT IN ACCORDANCE WITH THE FLAS, SHOULD TRY TO ESTABLISH CONTACT WITH THE ATS UNIT RESPONSIBLE FOR THE PROVISION OF SERVICE TO CLARIFY, AND IF UNABLE, ADJUST TO THE FLAS AS SOON AS POSSIBLE ONCE IN THE CONTINGENCY AIRSPACE.

APPENDIX F List of Frequencies to be used

A list of frequencies to be used for the contingency routes or the Antananarivo FIR is as follows:

Antananarivo Flight Information Centre (ACC)

a) Day: HF 8879 Khz or 5634 Khz ; VHF 128.9MHz

b) Night: HF 3476 Khz or 8879 Khz or 5634 Khz ; VHF 128.9MHz

Moroni Approach (During time of unavailability ATS services of Antananarivo ACC)

a) 8879KHz



APPENDIX G Volcanic Ash Contingency Plan (VACP)

1. AIR TRAFFIC CONTROL PROCEDURES

If volcanic ash is reported or forecast in the FIR for which the Antananarivo ACC is responsible, the following procedures should be followed:

- a) Relay all available information immediately to pilots whose aircraft could be affected to ensure that they are aware of the horizontal and vertical extent of the ash contamination;
- b) Advise the meteorological services if the information is issued by other unit or services;
- c) If requested, suggest appropriate rerouting to assist flights to avoid areas of known or forecast ash contamination;
- d) When appropriate, remind pilots that volcanic ash cannot be detected by ATC radar systems;
- e) Normally, ATC will not initiate a clearance through a danger area during the pre-eruption phase and the start of eruption phase; however, on the explicit request of a flight crew, a clearance could be provided. The existence of a danger area due to the presence of volcanic ash indicates the presence and extent of the hazard, hence ATC will inform aircraft about the hazard and will continue to provide normal services. It is then the responsibility of the pilot-in-command to determine the safest course of action in accordance with the operator's SRA;
- f) Assistance to enable an aircraft to exit a danger area in the most expeditious and appropriate manner should be provided; and
- g) If the ACC has been advised by an aircraft that it has entered an area of ash contamination and indicated that a distress situation exists, consider the aircraft to be in an emergency situation and
 - i) do not initiate any climb clearances to turbine-powered aircraft until the aircraft has exited the area of ash contamination; and
 - ii) do not attempt to provide vectors without pilot concurrence
- h) Solicit pilot reports for the characteristics of the ash cloud including cloud base, top, layers and the presence of sulphur, file "VAR model" AIREPs and transmit it to the Met unit;
- i) Relay all necessary and required information immediately to pilots permitting them to make appropriate and efficient decisions according to the hazard in the defined area;
- j) Immediately notify the concerned ATS units by the hazard, about the location and the size of the danger area. Route clearances or amended route clearances (for prior coordinated aircraft) shall be issued by arrangement in order to avoid flight through the danger area. If necessary, ATFM can be set between adjacent ATS units.

The recommended escape manoeuvre for an aircraft which has encountered volcanic ash is to reverse its course and begin a descent (if terrain permits). However, the final responsibility for this decision rests with the pilot.

2. PRE-ERUPTION PHASE

a. METEOROLOGICAL SERVICES ACTIONS DURING PRE-ERUPTION PHASE

In the event of a pre-eruption volcanic activity, a volcanic eruption occurring, or a volcanic ash cloud being reported which could pose a hazard to aviation, met services with the collaboration of the observation center, should carry out the following:

- i) Define an initial, precautionary danger area. The size of the danger area should encompass a volume of airspace in accordance with the information available, aiming to avoid undue disruption of flight operations. If the eruption has not commenced or if no information on upper winds is available, the circle should be centered on the estimated location of the volcanic activity.
- ii) Notify the NOF of Antananarivo or Dakar to issue a NOTAM accordingly.

b. ADJACENT ATS units ACTIONS DURING PRE-ERUPTION PHASE

Adjacent ATS units will, when advised,

- i) Initiate plotting of the affected area;
- ii) If one or more routes are affected by the danger area, suggest reroutings to the affected aircraft onto routes of the danger area;
- iii) Maintain close liaison with the Antananarivo ACC and the affected adjacent ATS units in order to exchange information for a collective decision making if necessary.

3. ERUPTION PHASE

A. ORIGINATING ACC ACTIONS DURING ERUPTION PHASE

During the start of eruption phase the Antananarivo Area Centre should:

- i) 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. In determining the area, information on upper winds should be taken into account, if available. The purpose is to ensure safety of flight in the absence of any prediction from a competent authority of the extent of contamination.
- ii) Maintain close liaison with the met services, who should issue appropriate MET messages in accordance with Annex 3;
- iii) Based on these forecasts and in cooperation with aircraft operators and the Area Control Centre using the CDM (Collaborative Decision Making) process, ATFM measures should be devised and updated when necessary to ensure safety of flight operations.



- iv) Ensure that reported differences between published information and observations (pilot reports, airborne measurements, etc.) are forwarded as soon possible to the appropriate authorities to ensure its dissemination to all concerned.
- v) Begin planning for the ongoing eruption phase in conjunction with the aircraft operators, the appropriate ATFM unit and ACCs concerned.
- vi) Should significant reductions in intensity of volcanic activity take place during this phase and the airspace no longer is contained by volcanic ash , appropriate AIS messages should be issued in accordance with Annex 15 .

B. ADJACENT ACC ACTIONS DURING ERUPTION PHASE

During the start of eruption phase adjacent ACCs should take the following action :

- i) Maintain close liaison with the appropriate ATS units and the concerned ACC to design, implement and keep up to date ATFM measures which will enable aircraft to ensure safety of flight operations.
- ii) Maintain plotting of the affected area.
- iii) Begin planning for the ongoing eruption phase in conjunction with the aircraft operators, the appropriate ATFM unit and ACCs concerned.
- iv) During the start of eruption phase , depending on the impact of the volcanic ash, the aircraft operators and the adjacent ATS units should organize the exchange of latest information on the developments in order to support CDM.

The recovered phase commences with the issuance of the first VAA/VAG containing a statement that "NO VA EXP" i.e no volcanic ash expected) with normally occurs when it is determined that the volcanic activity has reverted to its non-erupting state and the airspace is no longer effected by volcanic ash contamination . Consequently, appropriate AIS messages should be issued in accordance with Annex 15.

Area Control Centre units should revert to normal operations as soon as practical.

Appendix H : INSTRUCTIONS IN CASE OF EPIDEMIC OR PANDEMIC DISEASE

I. In flight and before landing

Crew members of international flights to Madagascar are requested to:

- distribute to passengers individual health records and give explication about the importance and obligation to complete them correctly;
- inform and warn passengers of the existence of a compulsory health inspection device on arrival, before the immigration and customs formalities;

advise and urge passengers to :

- comply with the sanitary control systems in force in Madagascar airports;
- Respect the seat number according to their boarding pass and not to change seats;
- Use soap or antiseptic solution or disinfectant (alcohol-based solutions) to wash hands every time after using the bathroom or toilet on the airplane;
- Inform passengers by sharing the real situation of the PHEIC in Madagascar ;

monitor and be alert of all changes and / or discomfort that may occur in one of the passengers on board:

- Pay attention to passenger with a sign suggesting of Public Health Emergency of International Scope (PHEIC)(severe vomiting, diarrhea and high fever...);
- Any illness or condition, on board an aircraft, must be reported to the captain;
- If possible, move the passenger concerned to a seat at the rear of the plane, away from other passengers and preferably near a toilet that will be reserved for his exclusive use and require him/her to remain in place until the landing of the aircraft;
- Limit contact with the sick passenger to the minimum necessary;
- Ensure that only one agent (steward or stewardess) aircrew will take care of the sick passenger, using a universal prevention kit and washing hands with soap after any direct or indirect contact with the sick passenger;
- Monitor the health evolution of the sick passenger and to record in the "General Declaration" report by the pilot-in-command;
- Immediately notify the representative of the Civil Aviation of Madagascar (ACM) and the authorities of the airport of destination, in accordance with procedures promulgated by the International Civil Aviation Organization (ICAO).

II. After landing at the tarmac:

After the immobilization of the aircraft, the health service at the airport has the responsibilities to:

collect the health report (Declaration General) form the pilot-in-command and take information about:

- All details of the clinical signs and the measures taken in case of a suspected situation;
- The flight trip (country or airport of departure, country and / or airport (s) of transit).
- give advice of "no objection" on the disembarkation of the passengers, the luggage, cleaning and emptying of the aircraft operations...
- disembark suspected passenger at the last time following a special circuit towards the CSF isolation center.

III. At the desk and "box" health control

- Carry out further medical investigation to anyone with a temperature above 37.5 ° C, in an area already dedicated.
- Direct any person showing the sign of a disease to the CSF isolation center to be under surveillance at airports.
- Check and control the individual health record of each passenger track the visited and / or transit countries in their passport.
- Call the police in case of difficulty (eg. refusal of suspected passengers to submit to the obligation of sanitary control or to move to the CSF isolation center...).
- manage the passenger flow in case of simultaneous disembarkation of two or more international flights (signs)
- Identify, record, archive the precise coordinates (home address or hotel , company address or registered office , telephone number, seat number, ...) of the passenger who was subject to further health investigation; and forward the information to the epidemiological surveillance team and/or the in charge group, according the situation, for systematic and continuous passengers health monitoring .

IV. Procedures to be followed in any suspected cases and / or probable case of a disease USPPi type

After the load-off the suspected passenger

- Carry out disinfection measures of the aircraft and luggage before disembarking, according to the technical standards required by WHO.
- Collect and disinfect the personal belonging of the suspected passenger (sheets, clothing, cutlery and used cloths and any other object come in contact with bodily fluids of the patient).
- Notify the airliner about the treatment of passenger suspected luggage and communicate them his baggage coupon references.



Once in the isolation room

- Protect oneself if necessary with PPE (Personal Protective Equipment) in compliance with the clothing steps and procedures.
- Confirm the alert and sharing information with the team of epidemiological surveillance service, and notify / report to the chain of command.
- Accurately file the alert form and summarize the situation in Time, Place, and Person "canvas".
- Contact the Institut Pasteur of Madagascar (IPM) for sampling.
- Report the case to the highest commandment and to WHO (if the case is confirmed).
- Identify and list all potential contacts.
- Disinfect all surfaces contaminated by infected fluids.
- Take off the PPE (according to standards).
- Call the ambulance to transfer the passenger to the support site.
- Put the case and contacts into the CSF records, mention them in red, establish a linear list of cases.
- Promptly report the event to Hierarchy, the Chief of SVSF, the Airport Manager and the ACM Representative.



PAGE LAISSÉE INTENTIONNELLEMENT VIDE



MADAGASCAR CONTINGENCY ROUTES PLAN

Aeronautical information related to non ASECNA members are extracted from documents edited by their origin countries. Those data are delivered without prejudice.

Before using this documents, please, refer NOTAM with aeronautical information organism

OBSERVATIONS :
EFFECTIVE DATE : 03 NOVEMBRE 2022

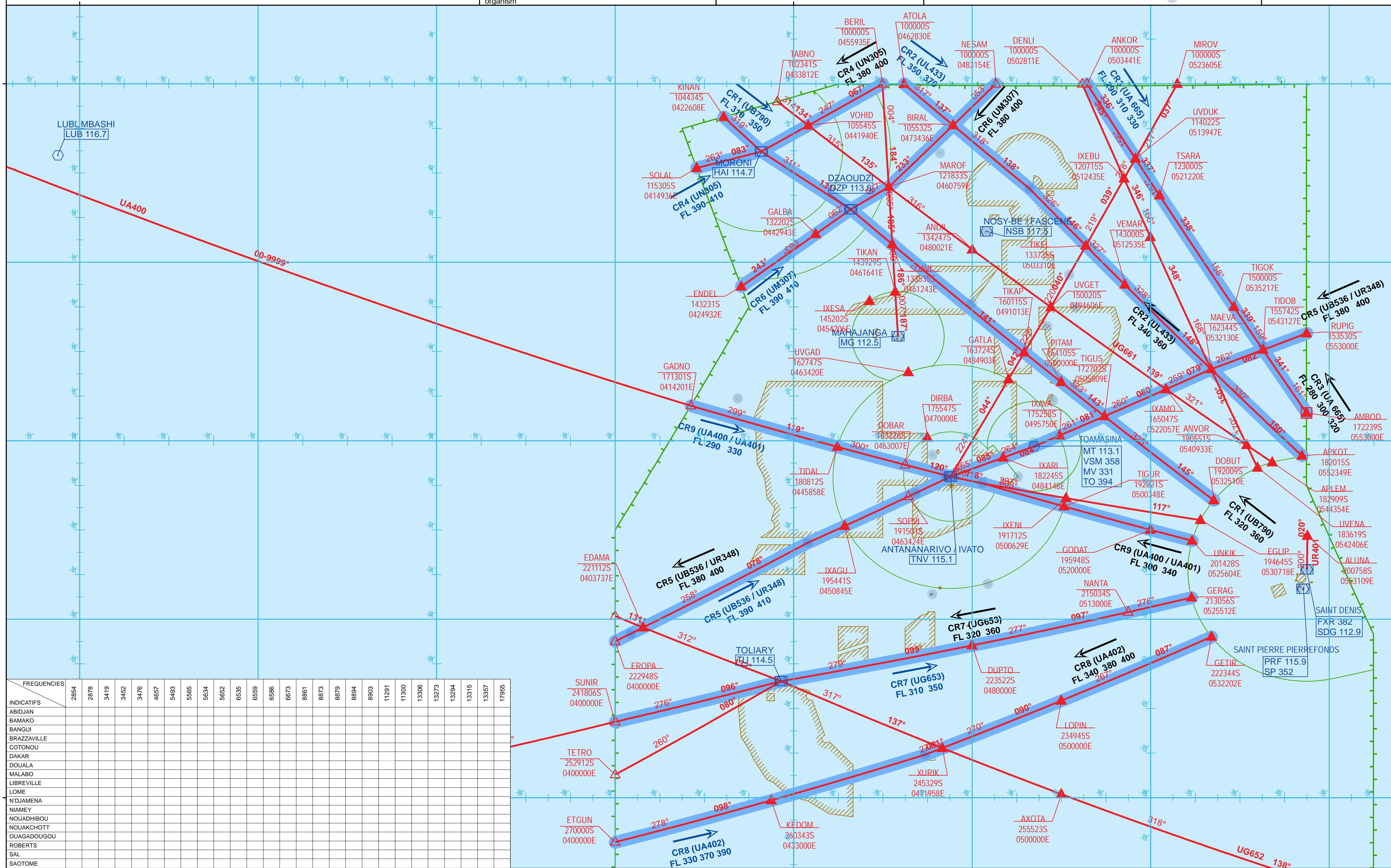
(120.5) VHF ACC Frequency
 FL 245 Upper Limit
 LL FL 245 Upper/Lower Limit

Bearing in Magnetic Degrees.
 Distance in Nautical Miles.
 Isogonic Lines : 2020
 Scale : 1:5.000.000 on equator

ASECNA FIR
 A Airspace
 Zones P, D, R
 FIR Boundaries
 Airways
 Contingency Route

ATSMET mandatory report
 ATS mandatory report
 ATS non mandatory report
 VOR-DME
 VOR
 NDB

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FREQUENCIES	2854	2878	3419	3452	3476	4657	5483	5565	5634	5652	6535	6559	6586	6673	8861	8873	8879	8894	8903	11281	11300	13306	13273	13284	13315	13357	17955		
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