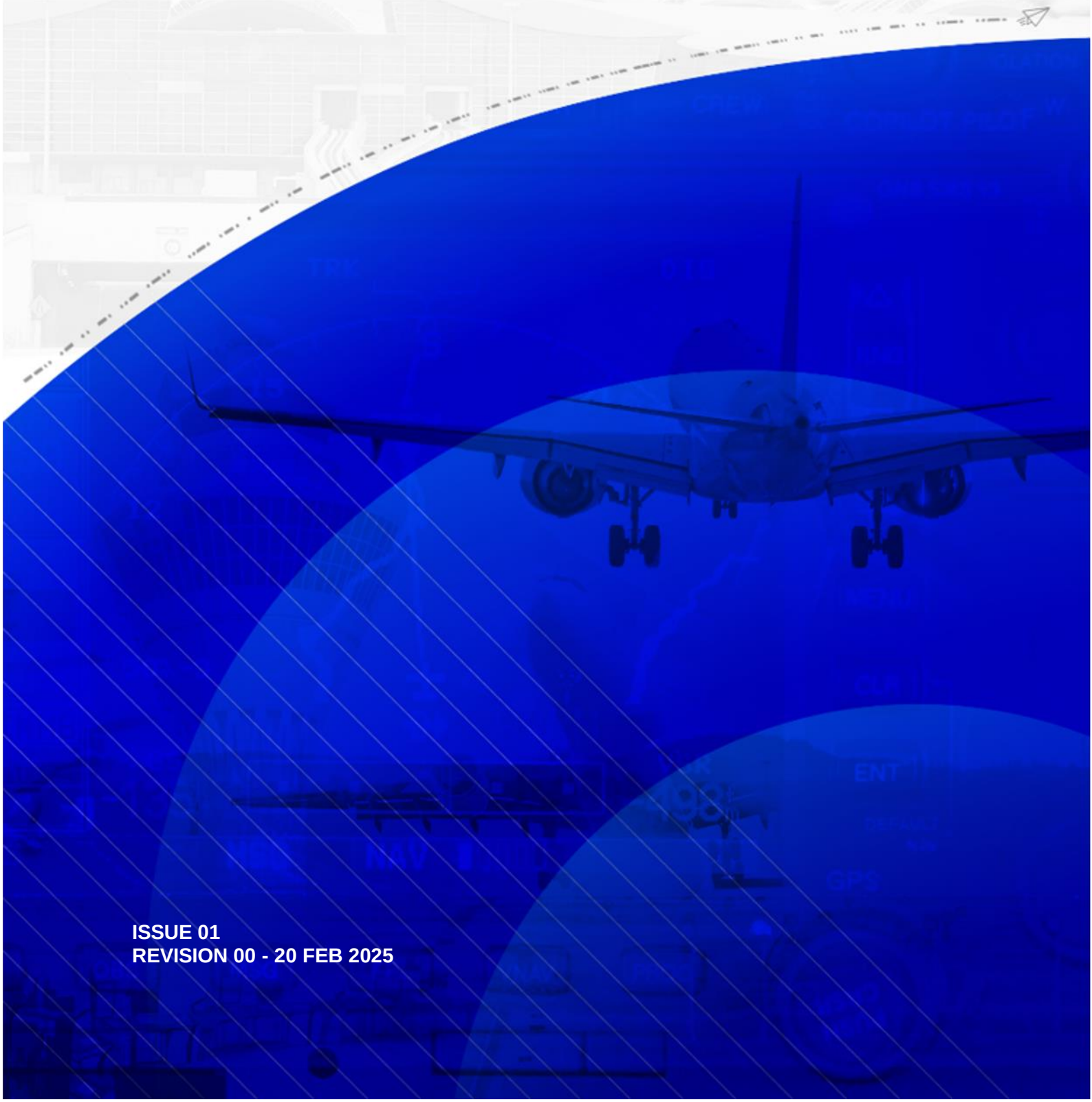
AIR NAVIGATION SERVICES IMPLEMENTATION PLAN – 1 VOLUME I

MALAYSIA ATM CONTINGENCY LEVEL 1 THE PLAN

CIVIL AVIATION AUTHORITY OF MALAYSIA



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Introduction

The Malaysia Air Traffic Management (ATM) Level 1 The Plan is one of a series of Air Navigation Services Implementation Plan (ANSIP) issued by the Air Navigation Services Divisions. It contributes to the national contingency planning for Malaysia in alignment with the provisions of Annex 11 and Civil Aviation Authority Malaysia (CAAM) Civil Aviation Directives (CAD) 11 to the Convention on Civil Aviation, as well as ICAO Doc 9426 (ATS Planning Manual) and Doc 9673 (Asia and Pacific Regions Air Navigation Plan), including the Asia/Pacific Region ATM Contingency Plan. This Plan, along with any necessary activation, is authorized by the CAAM.

This Malaysia ATM Contingency Level 1 The Plan (herewith designated as ANSIP 1 Volume I - The Plan or simply the Plan / this Plan) provides for the safe continuation of domestic and international air traffic movement through Kuala Lumpur Flight Information Region (FIR), Kota Kinabalu FIR and/or airspace where Air Traffic Service (ATS) is provided by Malaysia (see ENR 2.1) during periods when ATS may be disrupted or unavailable, or when airspace may be affected by volcanic ash clouds, radioactive clouds, severe weather events or military activity.

The Plan has been developed in close cooperation and collaboration with airspace users and military authorities for KL FIR, KK FIR and/or airspace where ATS is provided by Malaysia (see ENR 2.1). This Plan provides the ATS procedures and contingency route structure using existing airways in most cases that will allow for domestic flight operations within the jurisdiction of the KL FIR, KK FIR and/or airspace where ATS is provided by Malaysia (see ENR 2.1).

(Dato' Captain Norazman Bin Mahmud)
Chief Executive Officer
Civil Aviation Authority of Malaysia

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Record of Revisions

Revisions to this document shall be made by authorised personnel only. After inserting the revision, enter the required data in the revision sheet below. The 'Initials' must be signed off by the personnel responsible for the change.

Iss/Rev No.	Revision Date	Revision Details	Initials

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Summary of Changes

Iss/Rev No.	Item No.	Revision Details

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1 General

1.1 Objective

1.1.1 This Plan details arrangements to ensure the continued safety of air navigation in the event of partial disruption of air traffic services in the Kuala Lumpur (KL) Area Control Centre (ACC) area of responsibility Kota Kinabalu (KK) Area Control Centre (ACC) area of responsibility and/or Kuching (KCH) Area Control Centre (ACC) area of responsibility, in accordance with ICAO Annex 11 / CAAM CAD 11 - Air Traffic Services.

1.1.2 This Plan provides the ATS procedures, where practicable, that will allow aircraft operators to operate within KL FIR, KK FIR and/or airspace where ATS is provided by Malaysia (see ENR 2.1) during the contingency period.

1.1.3 This Plan relates to area control service (i.e. air traffic control service for controlled flights in control areas) within the jurisdiction of the KL FIR, KK FIR and/or airspace where ATS is provided by Malaysia (see ENR 2.1).

1.2 Description of Changes

1.2.1 In the event of disruption of the Air Traffic Control (ATC) services provided by KL ACC, KK ACC and/or KCH ACC, respective Air Traffic Services Unit (ATSUs) Business Continuity Plans shall be carried out.

1.2.2 Subject to the mitigation and its needs, airspace/area of responsibility may be delegated to all ATSUs (under its jurisdiction) to ensure safety of flight and to facilitate flight operations with the prevailing conditions.

1.3 Level of ATM Contingency

1.3.1 This Plan has little or no effect on external air navigation service providers.

1.4 Plan Testing and Review

1.4.1 This Plan shall be tested in tabletop exercises, where necessary including telephone or web-based conference facilities, at least once per three (3) years.

1.4.2 ATC simulation testing of the plan should occur at least once per three (3) years and whenever required by the ATM Contingency Group (ACG).

1.4.3 A full review of this plan shall be conducted at least once per three (3) years. Provisions for the review of airspace, ATS route, co-ordination and communications details of the Plan shall be included in relevant ATS airspace, data and facility implementation plans.

1.4.4 A preliminary Post Activation Review (PAR) report within 28 days of any activation or testing of contingency plans, including any recommendations to address deficiencies and implement improvements in the contingency plan.

1.4.5 A more comprehensive PAR report should be prepared for major contingency events, or any contingency event involving an air safety incident investigation.

1.5 Definition of Terms

Air Traffic Controller or simply Controller is variously used to mean all Air Traffic Control Officers, Assistant Air Traffic Control Officers and Trainee Air Traffic Controllers.

SIGMET (Significant Meteorological Information) is a weather advisory issued by meteorological authorities to provide critical information about significant weather phenomena that could affect aviation safety. It typically includes details about severe turbulence, thunderstorms, volcanic ash, and other hazardous conditions over a specified area. SIGMETs are essential for pilots and air traffic control to ensure safe flight operations.

1.6 Acronyms and Abbreviations

ACC = Area Control Centre

ACG = ATM Contingency Group

AIP = Aeronautical Information Publication

AIS = Aeronautical Information Service

ANS = Air Navigation Services

ANSIP = Air Navigation Services Implementation Plan

ANSP = Air Navigation Services Provider

APAC = Asia and Pacific

ARCC = Aeronautical Rescue Coordination Centre

ARSC = Aeronautical Rescue Sub-Coordination Centre

ATC = Air Traffic Control

ATCC = Air Traffic Control Centre

ATM = Air Traffic Management

ATS = Air Traffic Services

ATSU = Air Traffic Services Unit

CAAM = Civil Aviation Authority Malaysia

CAD = Civil Aviation Directives

CCC = Contingency Coordination Committee

CCT = Contingency Coordination Team

CEO = Chief Executive Officer

CNS = Communication, Navigation and Surveillance

CPDLC = Controller Pilot Data Link Communication
DCS = Digital Communication System
FIR = Flight Information Region
FIS = Flight Information Services
GNSS = Global Navigation Satellite System
HF = High Frequency
IATA = International Air Transport Association
ICAO = International Civil Aviation Organization
IDD = International Direct Dialling
JAMCC = Joint Air Management and Coordination Centre
JATCC = Joint Air Traffic Control Centre
KCH = Kuching
KK = Kota Kinabalu
KL = Kuala Lumpur
MET = Meteorological Department
MWO = Meteorological Watch Office
NOTAM = Notice to Airmen
OCC = Oceanic Control Centre
PAR = Post Activation Review
POC = Point of Contact
RO = Regional Office
RTF = Radiotelephony
RVSM = Reduced Vertical Separation Minima
SAR = Search and Rescue
SRR = Search and Rescue Region
SSR = Secondary Surveillance Radar
TMA = Terminal Area Approach
VAC = Volcanic Ash Cloud
VHF = Very high Frequency

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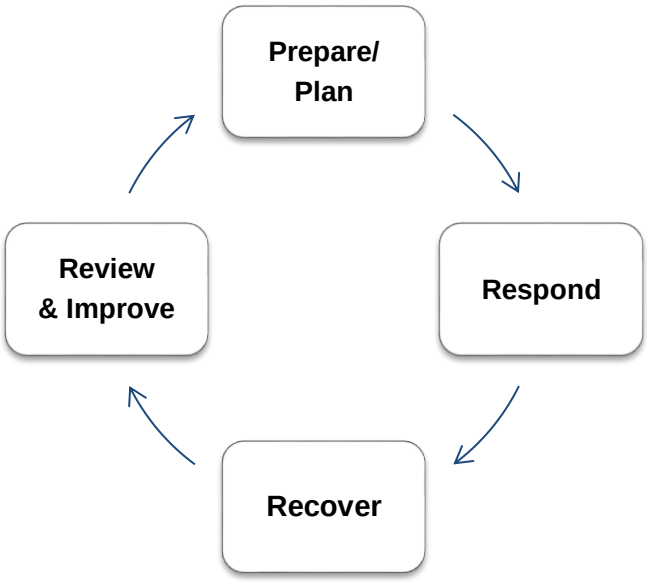
2 ATM Contingency Management Cycle

2.1 Overview

2.1.1 There are four primary criteria within the ATM Contingency Management cycle that is specified for this Plan.



2.1.2 The Plan will address the planning and preparation to:

a) Develop, authorise and agree between related states;

a) Collaborate with airspace users, military authorities, and adjacent FIRs; and

b) Ensure the continuity of the safe and orderly flow of international air traffic.

2.1.3 This Plan will address the timely response such as:

a) Airspace arrangements;

b) ATS Contingency Procedures;

c) Pilots and Operator Procedures;

d) Communication Procedures;

e) Aeronautical Support Services; and

f) Controller readiness/training.

2.1.4 This Plan will address the recovery procedure/process during the contingency period.

2.1.5 This Plan will address the Review and Improvement process such as:

a) Post Activation Review (PAR); and

b) Revision of Contingency Arrangements and Procedures for Improvement.

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3 Contingency Management Structure

3.1 Overview

3.1.1 The Plan measures set out in this document are applicable in cases of foreseeable events caused by unexpected interruptions in ATS caused by natural occurrences or other circumstances, which, in one way or another, may impair or disrupt the provision of ATS and/or of the related support services in KL FIR, KK FIR and/or airspace where ATS is provided by Malaysia (see ENR 2.1).

3.2 ATM Contingency Group (ACG)

3.2.1 ACG may comprise the following members:

No	Function	Organisation/Representatives
1	ANSP (CAAM) - Leader	Deputy CEO (Operations)
		ANS Regulatory Division: 1. Director 2. Deputy Director ANSA
		ANS Operations Division: 1. Director 2. Deputy Director KLACC 3. Deputy Director AIS 4. Deputy Director SAR
		Sabah Regional: 1. Director 2. Deputy Director Operations
		Sarawak Regional: 1. Director 2. Deputy Director Operations
		Semenanjung Regional: 1. Director 2. Deputy Director Operations
		ANS Technical Division: 1. Director 2. Deputy Director CNS 3. Deputy Director ATM 4. State ICAO Contingency Coordination Team (CCT) Point of Contact (POC)
		Director ANS Safety Division:
		Duty Watch Manager(s)
		Duty Watch Supervisor(s)

2	Military Liaison Officer	Royal Military Airforce: 1. JAMCC 2. JATCC
3	CNS/ATM equipment maintenance service provider	Advanced Air Traffic Systems (M) Sdn. Bhd. (AAT)
		TM Technology Services Sdn. Bhd. (TM)
		Novatis Resources Sdn. Bhd.
		Crystal Solaris Sdn. Bhd.
4	Meteorological Service provider	MET Malaysia - National Aviation Meteorological Centre (PMPN)
		Pusat Operasi Cuaca dan Geofizik Nasional (POCGN)
5	Airport Operators	Malaysia Airports Holdings Berhad (MAHB)
		Senai Airport Terminal Services (SATS)
6	Airlines Operator	TBC
		TBC

3.2.2 ACG functions should include but not be limited to the following:

a) Convene rapidly to exchange information to support the assessment of the situation responding to a contingency event;

b) Identify the playbook and contingency level to apply and activate the contingency plan;

c) Initiate the implementation of the associated contingency plan and procedures;

d) Advise and coordinate with adjacent ACCs, the ICAO Asia and Pacific (APAC) Regional Office (RO), and airspace users;

e) Inform the Contingency Coordination Committee (CCC) of the situation and indicate actions required from the CCC, if any;

f) Carry out activities and planning set by CCC (if required);

g) NOTAMs issuance in accordance with this Plan or as otherwise required by the particular contingency situation. NOTAMs should be issued 48 hours in advance if the contingency situation is sufficiently foreseeable;

h) Keep updated on the contingency situation at all times to the relevant stakeholder(s) and organisation(s);

i) Responsible for overseeing daily operations during contingency plan activation;

j) Review and update the contingency management, as required;

k) Exchange up-to-date information with the adjacent ATS authorities concerned to coordinate contingency measures;

l) Notify the designated organisations of the contingency situation sufficiently in advance and/or as soon as possible thereafter;

m) Prepare actions for the recovery-getting back to normal operations;

n) Assess and confirm if the situation is rectified and normal operations can be resumed;

o) Initiate the deactivation of the contingency plan or advise the CCC, if established, to do so; and

p) Cancel NOTAMs related to the contingency situation.

3.3 Contingency Coordination Committee (CCC)

3.3.1 CCC Representatives are as follows:

No	Organisation	Representatives
1	CAAM - Leader	Chief Executive Officer
2	Ministry of Transport Malaysia (MOT)	Under Secretary (Aviation)
3	Malaysian Armed Forces	Chief of Air Force
4	Malaysian Meteorological Department (MET Malaysia)	Director

3.3.2 CCC functions should include but not be limited to the following:

a) Convene rapidly to exchange information and provide high-level support to the ACG in responding to and managing contingencies, as required;

b) Take actions, such as mobilising resources or means, for the provisions of ATS (i.e. relocation of staff, disaster management etc);

c) Facilitate coordination between civil and military for the management of the airspace;

d) Coordinate internally and with the States and International Organizations concerned for actions that require high-level decision-making (i.e. airspace closure), as necessary.

3.4 Miscellaneous

Note. - The detailed contact list can be found in Appendix A, Appendix B and Appendix C.

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4 Regional and National ATM Contingency Framework

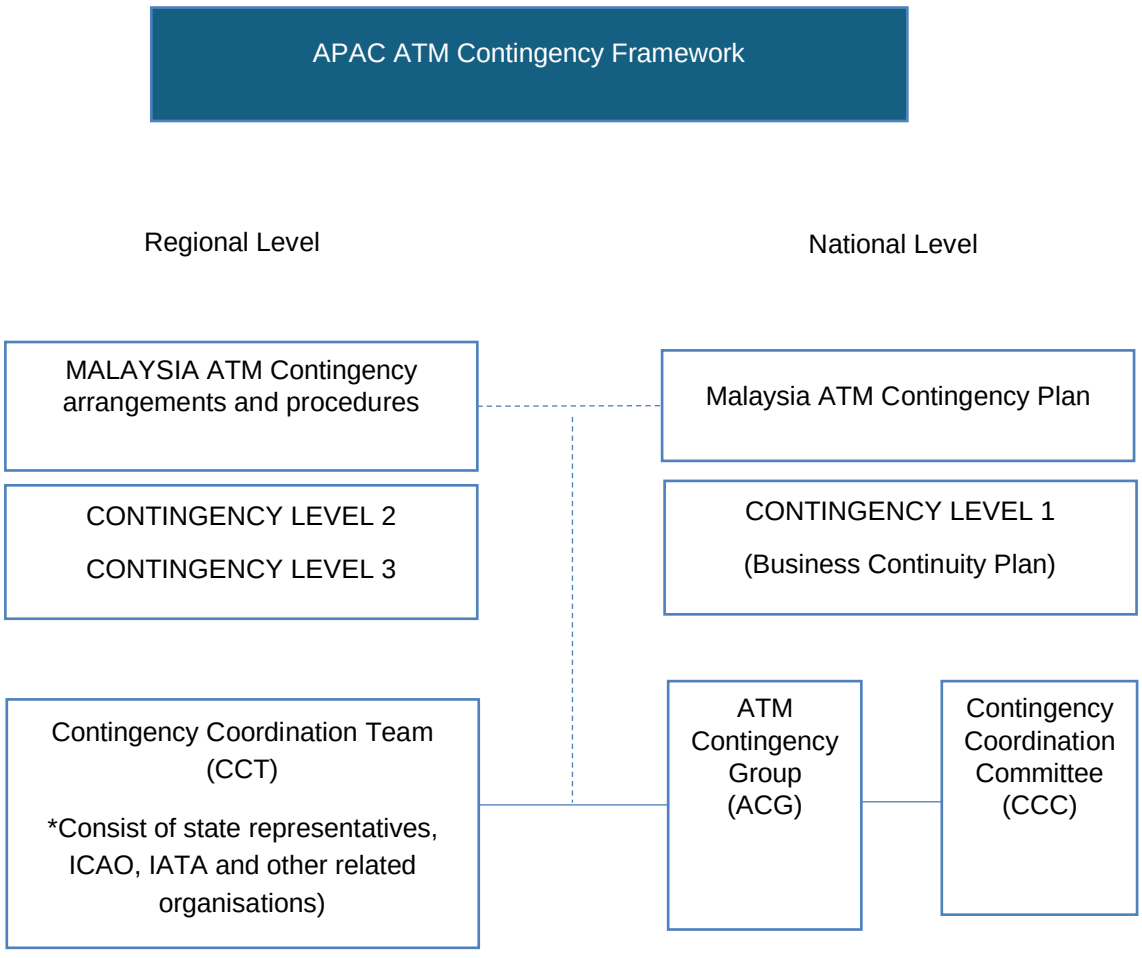
4.1 Overview

4.1.1 Scope and scale of contingency response and event:

a) Contingency Level 1 - contingency within the State's delineated FIR(s) that can be managed locally;

b) Contingency Level 2 - cross-border contingency requiring collaboration between two adjacent States; and

c) Contingency Level 3 - sub-regional or regional contingency requiring collaboration of more than two States.



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5 Contingency Matrix Table

5.1 Overview

5.1.1 Contingency matrix table is indicated as follows:

	ATS Normal	**ATS Degraded**	**No ATC** (Only FIS Available)	**No ATS**
Airspace Available	Normal Operation	PLAYBOOK 1	PLAYBOOK 4	PLAYBOOK 5
Airspace Limited	PLAYBOOK 2	PLAYBOOK 3		
Airspace Not Available	PLAYBOOK 6			

5.1.2 Examples of contingency events according to the playbook are as follows:

5.1.2.1 Playbook 1 (traffic will have access to the whole FIR; however, ACC will have a limitation in providing services as normal):

a) Industrial action

b) Pandemic;

c) Earthquake;

d) Nuclear emergency;

e) Adverse weather;

f) ATM system failure;

g) GNSS spoofing; and

h) Any other events that are deemed appropriate.

5.1.2.2 Playbook 2 (traffic would not have access to the affected portion of the airspace):

a) Volcanic Ash;

b) Nuclear emergencies;

c) Military activity;

d) Weather condition; and

e) Any other events that are deemed appropriate.

5.1.2.3 Playbook 3 (the need to circumnavigate traffic away from the affected airspace taking into consideration the limitation of the ATS):

a) Volcanic Ash;

b) Nuclear emergencies;

c) Military activity

d) ATM system failure;

e) Adverse weather; and

f) Any other events that are deemed appropriate.

5.1.2.4 Playbook 4 (Airspace is available or limited but no ATC, only flight information services can be provided. Provision of air traffic control is affected, but other ATS will remain available or arranged for):

a) Pandemic;

b) National security;

c) Industrial action;

d) ATM system failure; and

e) Any other events that are deemed appropriate.

5.1.2.5 Playbook 5 (no ATS could be provided, however, traffic might still have access or operate within, to or from the affected FIR):

a) Complete loss of facility operational capability;

b) Total loss of manpower; and

c) Any other events that are deemed appropriate.

5.1.2.6 Playbook 6 (Airspace is not available or avoided - Airspace Closure):

a) Adverse weather;

b) Military activities;

c) Natural disaster; and

d) Any other events that are deemed appropriate.

6 Probability - Impact Matrix Table

6.1 Overview

6.1.1 Probability - Impact Matrix table is a visual tool used to prioritise potential risks based on their level of probability and impact.

6.1.2 This table is an essential tool to be used by ACG and CCC during risk assessment processes to systematically evaluate and manage the situation appropriately. Using this tool, ACG and CCC will be able to appropriately evaluate the level of contingency plan to activate.

IMPACT \ LIKELIHOOD	Unlikely	Possible	Likely	Very Likely
Catastrophic	M	H	C	C
Significant	M	M	H	C
Moderate	L	M	M	H
Low	L	M	M	M

Note1. -
Catastrophic: ATS Service not Available/ ANS Service could not be provided
Significant: ATS Service is severely impacted, limited ATS Service available (Less than 30%)
Moderate: ATS Service available but noticeably impacted, limited ATS Service available (30-70%)
Low: ATS Service available and mildly impacted, limited ATS service available (not less than 70%)

Note2. -
Unlikely: Low/very slim chances for this risk to occur
Possible: Fifty-fifty chances for this risk to occur.
Likely: Good chances for this risk to occur
Very likely: You can bet this risk will occur at some point

Note3. -
L: LOW (ATM Contingency Level 1)
M: MEDIUM (ATM Contingency Level 1/Level 2)
H: HIGH (ATM Contingency Level 1/Level 2)
C: CRITICAL (ATM Contingency Level 2)

6.2 Example: Playbook 4 (ATM system failure)

6.2.1 ACG will evaluate the situation using the Probability - Impact Matrix table to determine the appropriate level of contingency.

6.2.2 If the ATM system failure is expected to recover and the risk is MEDIUM, Contingency Level 1 could be activated by ACG.

6.2.3 If the ATM system failure is expected to be prolonged and degrade, and evaluation of the risk is CRITICAL, Contingency Level 2 should be activated by ACG.

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7 ATM and Contingency Procedures

7.1 Reduced ATS and Provision of Flight Information Services (FIS)

7.1.1 During the activation of this Plan period, limitation of airspace usage and unavailability, as well as of ATS may be degraded or unavailable (particularly communications and ATS surveillance services).

7.1.2 This condition warrants NOTAM issuance and shall consist of relevant information.

7.1.3 During the early stages of a contingency event, whereby KL ACC, KK ACC and/or KCH ACC are unable to provide ATS (including ATC), some areas within the designated airspace may be delegated to relevant ATSUs for the provision of ATS to temporarily provide recovery services to aircraft at the immediate onset of a contingency situation.

7.2 ATS Responsibilities

7.2.1 During the early stages of a contingency event, ATC unit workload may be increased, and tactical action may be temporarily taken.

7.2.2 The following flow and capacity mitigation may be applied during the activation of the contingency plan.

a) Issuing NOTAM;

b) Re-routing;

c) Separation - Miles-in-trail (MIT);

d) Separation - Minutes-in-trail (MINIT);

e) Level Restrictions;

f) Airborne Holding;

g) Ground Stop (GS);

h) Ground Delay Program (GDP);

i) Tunnelling;

j) Fix Balancing;

k) Airspace Classification; or

l) any other tactical action deemed suitable.

7.2.3 NOTAM

7.2.3.1 In the event that ATS cannot be provided, a NOTAM shall be issued indicating the following:

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

b) Airspace available for 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, APPROACH, TOWER and FIS), including an expected date of restoration of services if available;

d) Information on the provisions made for alternative services;

e) Applicable ATS routes, AIP-published contingency routes, or tactically defined contingency routes;

f) Any special procedures to be followed by neighbouring ATSUs not covered by this Plan;

g) Any special 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.

7.2.3.2 NOTAM samples are provided in Appendix F.

7.2.3.3 The International NOTAM Office at WMKKYNYM and/or WMKKYNYN will take action to issue the contingency NOTAM upon notification by ATSUs.

7.2.4 Aircraft Separation

7.2.4.1 Aircraft separation criteria, where applicable, will be in accordance with the Procedures for Air Navigation Services - Air Traffic Management (PANS-ATM, ICAO Doc 4444) and the Regional Supplementary Procedures (ICAO Doc 7030).

7.2.4.2 The minimum longitudinal separation will be subjected to the degree of disruption and subject to the flow and capacity mitigation applied during the contingency period.

7.2.4.3 The minimum vertical separation of 1,000 FT will be applied. Non RVSM-approved aircraft shall not operate in contingency airspace.

7.2.5 Flight Level Restrictions

7.2.5.1 Where possible, special operations (e.g. Search and Rescue (SAR) flights, state aircraft, humanitarian flights, etc) shall be given priority with respect to cruising levels.

7.2.6 Airspace Classifications

7.2.6.1 Depending on the degree of disruption, airspace classifications may be changed to reflect the reduced level of services.

7.2.6.2 Changes to airspace classification will be notified by NOTAM.

7.2.7 Aircraft Position Reporting

7.2.7.1 The primary means of communication will be by VHF or HF radio.

7.2.7.2 CPDLC will become the secondary means of communication for aircraft with Automatic Dependent Surveillance - Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC) systems.

7.2.7.3 Pilots will continue to make routine position reports in line with normal ATC reporting procedures.

7.2.8 Visual Flight Rule (VFR) Operations

7.2.8.1 VFR flights may still operate in KL FIR, KK FIR and/or airspace where ATS is provided by Malaysia (see ENR 2.1) depend on subject of APP-TMA concerned, including special cases such as state aircraft, medivac flights, and any other essential flights authorised by the CEO.

7.2.9 Procedures for ATSUs

7.2.9.1 The ATSUs providing ATC services will follow their respective unit emergency operating procedures and activate the appropriate level of contingency procedures in line with the Plan.

7.2.9.2 These procedures include the following:

a) Where ATS provided by the KL ACC, KK ACC and/or KCH ACC may be reduced or disrupted by a short-notice contingency event, the ATC unit will inform pilots of the emergency condition and provide appropriate information pending the issuance of NOTAM;

b) In the event of it becoming necessary to evacuate the ACC building, the ACC unit evacuation procedures will be activated, and time permitting, controllers will make an emergency evacuation transmission on the radio frequency in use providing pilots with alternate means of communication;

c) During the period the contingency procedures are in effect, flight plan and other aircraft movement messages must continue to be transmitted by operators to KL ACC, KK ACC and/or KCH ACC via the Aeronautical Fixed Telephony Network (AFTN) using normal procedures; and/or

d) Prior to entry to KL FIR, KK FIR and/or airspace where ATS is provided by Malaysia (see ENR 2.1) during contingency operations, prior authorisation must be obtained from CAAM, and flights must comply with instructions issued by the ATSUs responsible for the contingency airspace.

7.2.10 Transition to and from Contingency Operations

7.2.10.1 During times of uncertainty when airspace closures seem possible, aircraft operators should be prepared for a possible change in routing as well as those which may be promulgated by ATSUs concerned via NOTAM or AIP.

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

7.2.10.3 ATSUs concerned should recognise that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. Air traffic controllers should be alert to respond to any request by aircraft and react commensurate with safety.

7.2.11 Transfer of Control and Coordination

7.2.11.1 Unless otherwise specified, transfer of control and communication should be at the common TMA/ Control Zone (CTR) /FIR boundary between ATSUs/ANSP unless there is a mutual agreement and authorisation given to use the alternative transfer of control points.

7.2.11.2 The ATSUs concerned should review the effectiveness of current coordination requirements and procedures in light of contingency operations or short notice of airspace closure and make any necessary adjustments.

7.2.12 Coordinated Recovery from ATS Contingency Operations

7.2.12.1 The recovery from any contingency operation can be just as difficult to safely manage as the initial onset of the contingency situation, particularly when involving multiple ANSPs/FIRs. To avoid ad hoc recovery actions that place aircraft and/or the service provided by adjacent ATSUs in an unsafe or unmanageable situation, it is important to consider, coordinate and agree on recovery actions.

7.2.12.2 Establishing, in coordination with the ANSPs responsible for the identified Core Contingency FIRs (i.e. those FIRS that have responded to the contingency situation by making changes to traffic flows, use of ATS routes, Flight Level Allocation Schemes (FLAS) and separation minima or spacing, or other procedures) an agreed time of resumption of normal operations or agreed resumption time (i.e. the common time on any day when the traffic situation is most suitable for contingency recovery);

7.2.12.3 Providing prior notification of resumption of normal operations at the agreed resumption time via NOTAMs promulgated not less than 6-12 hours (or longer where necessary) before the resumption time, noting that aircraft operators are normally flight planning six hours or more before flight, although there is a need to take into account any long haul and ultra long haul flights that may be already airborne). The NOTAM template for notification of resumption is included in Appendix

7.2.12.4 Specify, through coordinated contingency recovery planning and associated NOTAMS that:

a) the only that may plan via non-contingency routes are those flights that:

i. with Expected Off-Block Times (EOBT) after the agreed resumption time; or

ii. that will enter the first of any of the Core Contingency FIRs at or after the agreed resumption time;

b) no re-filing of FPL routes or requests for direct tracking are to be made by airborne flights within the Core Contingency FIRs at the time of resumption to normal operations, although ATC may tactically offer improved tracking; and

7.2.12.4.2 Ensure the ATC service in each Core Contingency FIR is prepared for any 'mixed mode' (contingency route/level and non-contingency route/level) operations in the same airspace during the transition to full normal operations.

7.3 Pilots and Operator Procedure

7.3.1 Filing of Flight Plans

7.3.1.1 Flight planning requirements outlined in the Malaysia AIP remain applicable during contingency operations, except when modified by contingency ATS routes, Flight Level Allocation System (FLAS) specified by ATSUs, or in NOTAM.

7.3.2 CNS Capability

7.3.2.1 Flights operating within KL FIR and/or KK FIR shall be equipped with the following minimum communications, navigation and surveillance capability:

a) Appropriate communications and navigation equipment enabling them to maintain two-way communication with the appropriate ATSU. The radio communication equipment shall provide for communications on the aeronautical emergency frequency 121.5 MHz. The minimum requirement is VHF RTF equipment suitable for communicating on ATC frequencies;

b) Navigation equipment which continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track and to navigate in accordance with ATC instructions. The minimum requirement is aircraft is equipped with one radio compass;

c) The vertical navigation performance capability that satisfies the Altimetry System requirement for operations in RVSM airspace; and

d) Pressure altitude reporting secondary surveillance radar (SSR) transponder and any other SSR transponder capability required for the route being flown.

7.3.3 Interception of Civil Aircraft

7.3.3.1 Pilots need to be aware that a contingency routing (if any) requiring aircraft to operate off normal traffic flows may result in interception by military aircraft. Aircraft operators must therefore be familiar with international intercept procedures contained in CAAM CAD 2 and ICAO Annex 2 - Rules of the Air.

7.3.3.2 Pilots are to comply with instructions given by the pilot of the intercepting aircraft. In such circumstances, the pilot of the aircraft being intercepted shall broadcast information on the situation.

7.3.3.3 If circumstances lead to the closure of KL FIR and/or KK FIR and no contingency routes are available, aircraft will be required to remain clear of KL FIR and/or KK FIR.

7.3.3.4 Pilots shall continuously guard the VHF emergency frequency 121.5 MHz and should operate their transponder at all times during the flight, regardless of whether the aircraft is within or outside airspace where SSR is used for ATS purposes. Transponders should be set on the last discrete code assigned by ATC unit or select code A2000 if no code was assigned.

7.4 Communication Procedure

7.4.1 Degradation of Communication - Pilot Radio Procedure

7.4.1.1 When operating within the contingency airspace, pilots should use normal radio communication procedures where ATS are available. Where limited or no ATS is available communications will be conducted in accordance with the procedures in this Plan, or as otherwise notified by NOTAM.

7.4.1.2 If communications are lost unexpectedly on the normal ATS frequencies, pilots should try the next applicable frequency, e.g. if en-route contact is lost then try the next appropriate frequency, that is, the next normal handover frequency. Pilots should also consider attempting to contact ATC unit on the last frequency where two-way communication had been established. In the absence of communication with the ATC unit, the pilot should continue to make routine position reports on the assigned frequency, and also broadcast positions in accordance with the communication failure procedures.

7.4.2 Communication Frequencies

7.4.2.1 Existing sector frequency shall be used during contingency activation.

7.4.2.2 In the event of a change in frequency use deviating from the AIP publication, notification to pilot and airspace users must be disseminated via direct radio communication, notification to adjacent ANSP, or through NOTAM dissemination (whichever is applicable).

7.5 Aeronautical Support Services

7.5.1 Aeronautical Information Services (AIS)

7.5.1.1 The Aeronautical Information Service is responsible in ensuring the flow of information necessary for the safety, regularity and efficiency of international and national air navigation within its area of responsibility. It consists of AIS Unit, International NOTAM Office (NOF) and AIS units established at certain aerodromes as listed below:

AIS Unit	
Name	Aeronautical Information Services
Address	Civil Aviation Authority of Malaysia, Air Traffic Control Tower West, KL International Airport, 64000 KLIA Sepang Selangor Darul Ehsan Malaysia
Telephone	(+60) 3 87784106
Fax	NIL

International NOTAM Office (NOF)	
Telephone	(+60) 3 87784100/87784101
Fax	(+60) 3 87784104
AFS	WMKKYNYM WMKKYNYN

7.5.2 Meteorological Services (MET)

7.5.2.1 Meteorological Watch Offices (MWO) are designated to provide meteorological services for Air Traffic Services within the Flight Information Region or Control Terminal Area.

7.5.2.2 The MWO provide the following types of information for the use of meteorological service for ATS:

a) METAR;

b) Aerodrome Forecast (TAF);

c) Landing Forecasts (Trend Forecast);

d) Forecasts for Take Off;

e) Area QNH;

f) Aerodrome Warnings;

g) Tropical Cyclone Advisory Bulletins;

h) Volcanic Ash Advisory Bulletins;

i) SIGMET Info;

j) AIRMET Info;

k) Wind Shear Alerts & Wind Shear Warnings;

l) Area Forecast (ARFOR) & Route Forecast ROFOR;

m) Forecast of Upper Winds (Local area);

n) Domestic Significant Weather Chart (Local area);

o) WAFS Products (Flight Plan & Flight Doc);

p) WAFS Significant Weather Chart;

q) WAFS Wind & Temp Chart;

r) Briefing & Consultation;

s) Display of Met Info (Aviation Briefing Terminal, ABT);

t) Radar Imageries;

u) Satellite Imageries; and

v) Meteorological Information for SAR.

7.6 Search and Rescue (SAR) Alerting

7.6.1 Notification and Coordination

7.6.1.1 SAR services are available for aircraft in distress within the Kuala Lumpur and Kota Kinabalu Search and Rescue Regions (SRRs), with the related Aeronautical Rescue Co-ordination Centre (ARCC) or Aeronautical Rescue Sub Centre (ARSC) being activated. The following are the ARCC/ARSC address and additional details:

Kuala Lumpur SRR	
Name	Kuala Lumpur ARCC
Address	Kuala Lumpur Air Traffic Control Centre Jalan CTA 3 (KLIA) Lapangan Terbang Antarabangsa Kuala Lumpur 64000 KLIA, Sepang, Selangor Darul Ehsan.

Telephone	(+60) 3 8787 8601/8602
Telefax	(+60) 3 8787 8600
AFS	WMKKYCYX
Email	klarcc@caam.gov.my

Kota Kinabalu SRR	
Name	Kota Kinabalu ARCC
Address	Civil Aviation Authority of Malaysia, ATCC Building, Jalan Kepayan, 88618 Kota Kinabalu, Sabah
Telephone	(+60) 8 8224 403
Telefax	(+60) 8 8219 280
AFS	WBKKYCYX
Email	kkarcc@caam.gov.my
Kota Kinabalu SRR	
Name	Kuching ARSC
Address	Civil Aviation Authority of Malaysia Kuching International Airport P.O Box 1359 93728 Kuching Sarawak, Malaysia
Telephone	(+60) 8 245 3928
Telefax	(+60) 8 257 1526
AFS	WBGGZTZX
Email	kcharsc@caam.gov.my

8 Appendices

8.1 Appendix A - Contact Details CCC

Organisation/ Division/Unit	Contact details		
Ministry of Transport Malaysia	Under Secretary Aviation Division No. 26, Jalan Tun Hussein, Presint 4, 62100 Putrajaya		
	Tel	(+60) 3 8892 1408	
	Fax	(+60) 3 8888 0158	
	Email	Primary	aduan@mot.gov.my
		Secondary	Mohamad Radzuan Bin Mazlan radzuan@mot.gov.my
Civil Aviation Authority of Malaysia	Chief Executive Officer Civil Aviation Authority of Malaysia No. 27, Persiaran Perdana, Aras 1-4, Blok Podium, Presint 4, 62618 Wilayah Persekutuan Putrajaya, Putrajaya, Malaysia		
	Tel	(+60) 3 8871 4000	
	Fax	(+60) 3 8890 1640	
	Email	Primary	ceo.office@caam.gov.my
		Secondary	Dato' Capt. Norazman Bin Mahmud norazman.mahmud@caam.gov.my
Air Operations Command Headquarters, Royal Malaysian Air Force	Air Operations Command Headquarters (MPOU), d/a Pangkalan Udara Subang, 40000 SHAH ALAM, Selangor		
	Tel	(+60) 3 4017 1836	
	Fax	(+60) 3 7841 7061	
	Email	Primary	potu@mod.gov.my
		Secondary	mouranopsisopda@gmail.com
Meteorological Department Malaysia	Pusat Meteorologi Penerbangan Nasional, Jabatan Meteorologi Malaysia, Aras 1, Pusat Pengurusan Lapangan Terbang, 64000 Selangor Darul Ehsan.		
	Tel	(+60) 387872390	
	Fax	(+60) 387871019	
	Email	klia@met.gov.my	

8.2 Appendix B - Contact Details ACG (KL FIR)

Organisation/ Division/Unit	Representative		Contact details
CAAM (DCEO Operations)	Primary	Deputy Chief Executive Office	Email : dceooperations@caam.gov.my
	Secondary	Zainul Abidin Bin Maslan Deputy Chief Executive Officer (Operations)	Tel : (+60) 3 8529 1200 Email : luniaz@caam.gov.my
CAAM (ANS Standard)	Primary	ANS Standards Office	Email : ansa@caam.gov.my
	Secondary	Raja Amsyar Hillman Bin Raja Badrul Hisham Director ANS Standard	Tel : (+60) 19 381 1209 Email : r.amsyarhillman@caam.gov.my
CAAM (ANS Operations)	Primary	ANS Operation Division Office	Email : bopnu@caam.gov.my
	Secondary	Khairul A'amali Bin Ismail Director ANS Operations Division	Tel : (+60) 11 6504 8177 Email : khairulamali@caam.gov.my
CAAM (Aeronautical Information Services)	Primary	AIS Unit	Email : ais@caam.gov.my
	Secondary	Sahrol Nizal Bin Ab Rashid Deputy Director ANS Operations Division	Tel : (+60) 12 224 2276 Email : sahrol@caam.gov.my
	Third	Mohd Rahimi bin Jamaludin Principal Assistant Director ANS Operations Division	Tel : (+60) 13 7702445 Email : rahimi@caam.gov.my
CAAM (Search and Rescue)	Primary	Search and Rescue Unit	Tel : (+60) 3 8529 1225 Email : sar.hq@caam.gov.my
	Secondary	Mohammad Khairul B. Abu Yamin Deputy Director ANS Operations Division (A)	Tel : (+60) 10-225 5491 Email : khairul@caam.gov.my
	Third	Dayang Zarina Binti Abang Alli Deputy Director (KL ATCC)	Tel : (+60) 13-864 5376 Email : dygzarina@caam.gov.my

Organisation/ Division/Unit	Representative		Contact details
CAAM (ANS Technical Division)	Primary	ANS Technical Division Office	Email : btpnu@caam.gov.my
	Secondary	Mohd Fitri Bin Ishak Director ANS Technical Division	Tel : (+60) 17 433 6486 Email : fitri@caam.gov.my
	Third	Muhammad Firdaus Bin Ismail Deputy Director ANS Technical Division ATM	Tel : (+60) 12 257 7628 Email : firdaus.ismail@caam.gov.my
		Mohd Fitri Bin Ishak Deputy Director ANS Technical Division CNS	Tel : (+60) 17 433 6486 Email : fitri@caam.gov.my
	Fourth	Nur A`fifah Binti Mansor ICAO CCT Point of Contact	Tel : (+60) 12 279 9875 Email : afifah@caam.gov.my
CAAM (ANS Safety Division)	Primary	ANS Safety Division Office	Email : bkpnu@caam.gov.my
	Secondary	Md Nastain Bin Mahazur Deputy Director ANS Technical Division	Tel : (+60) 19 391 2524 Email : mdnastain@caam.gov.my
CAAM (KL ATCC)	Primary	KLATCC	Tel : (+60) 3 8539 1200 Email : klatccwm@caam.gov.my klatcc@caam.gov.my
	Secondary	Dayang Zarina Binti Abang Alli Deputy Director (KL ATCC)	Tel : (+60) 13-864 5376 Email : dygzarina@caam.gov.my
CAAM (Regional Office Peninsular)	Primary	Regional Office Peninsular	Email : pws.group@caam.gov.my
	Secondary	Mohd Rodzi Bin Salleh Director Regional Peninsular	Tel : (+60) 19 232 9486 Email : rodzi@caam.gov.my
	Third	Irman Bin Ridwan Depuy Director Regional Peninsular	Tel : (+60) 19 213 8773 Email : irman.ridwan@caam.gov.my
Royal Malaysian Air Force - JAMCC	Primary	Pusat Operasi Tentera Udara	Email : potu@mod.gov.my

Organisation/ Division/Unit	Representative		Contact details
	Secondary	Lt Kol Mohamad Nor Azlan bin Ab Rahim Ketua Cawangan KLLU, JATCC	Tel : (+60) 11 3373 7673 Email : azlan.rahim@airforce.mil.my
	Third	Mej Haniz bin Yahya Pegawai TMK, JAMCC	Tel : (+60) 19 941 3297 Email : haniz8001@gmail.com
Meteorological Department Malaysia	Primary	Ketua Operasi	Tel : (+60) 12 744 2388 Email : klia@met.gov.my
	Secondary	Muhammad Nazri Bin Noordin Ketua Penolong Pengarah	Tel : (+60)12 670 6170 Email : mnazri@met.gov.my
Airport Operator	Primary	Malaysia Airport Holding Berhad/ Malaysia Airports Sepang Sdn. Bhd.	Shahrunnizam Abd Jamil General Manager, Malaysia Airports Sepang Sdn. Bhd. Tel : (+60) 12 203 7834 Email : shahrun@malaysiaairports.com.my
	Secondary		Ahmad Harris Azizool Arif Senior Manager Malaysia Airports Sdn. Bhd. Tel : (+60) 17 660 3900 Email : harris@malaysiaairports.com.my
	Primary	Senai Airport Terminal Services Sdn Bhd (SATSSB)	Aerodrome Admin Email : adadmin@senaiairport.com

Organisation/ Division/Unit	Representative		Contact details
	Secondary		Mohd Farhan Mohd Fauzi Senior Manager Tel : (+60) 19-406 2663 Email : farhan@senaiairport.com
	Third		Aswad Asady Naemat Senior Executive Tel : (+60) 197441304 Email : aswad@senaiairport.com
CNS/ATM provider	Primary	Advanced Air Traffic Systems (M) Sdn. Bhd. (AAT)	Unit Operasi CNS AAT KLATCC Tel : 019-3772779 Email : cnsklatcc@aat.my
	Secondary		W Ahmad Akhirey Bin W Abd Rahman Site Manager KLATCC Tel : (+60) 19 219 9856 Email : akhirey@aat.my
	Third		Mohd Hakim Bin Sepihie Assist. Site Manager KLATCC Tel : 019- 6171716 Email : hakim@aat.my

Organisation/ Division/Unit	Representative		Contact details
	Primary	Government Specialised Services, TM Techology Sdn Bhd	GSS HELPDESK, Specialised Expert Team Tel : 1-800-22-0046 / : 1-800-22-0024/ : 1-800-22-0032 Email : snsh@tm.com.my
	Secondary		Ahmad Razaleigh Bin Mohd Ghastu Tel : (+60) 13 856 8575 Email : arazaleigh@tm.com.my
	Primary	Crystal Solaris Sdn. Bhd.	TBD
	Secondary		Wan Mohammad Norsafrin Bin Ab Rasip Project Leader Tel : (+60) 19 661 1780 Email : norsafrin@crystalsolaris.com
	Third		Helmi Bin Hashim (Subang & KLATCC) System Engineer Tel : (+60) 19 2640585 Email : helmi@crystalsolaris.com Ahmad Safwat Bin Abd Majid (KLIA & Johor) System Engineer Tel : (+60) 12 6253448 Email : safwat@crystalsolaris.com

Organisation/ Division/Unit	Representative		Contact details
			Abdul Al-Alim Bin Ismail (Borneo) System Engineer Tel : (+60) 14 9775079 Email : alim@crystalsolaris.com Hasrul Bin Ismail (Penang & Langkawi) System Engineer Tel : (+60) 16 2956475 Email : hasrul@crystalsolaris.com
	Fourth		Nur Afrina Elyia Binti Muhamad Ghazali (AIS LAB) System Engineer Tel : (+60) 19 2640585 Email : afrina@crystalsolaris.com
Airlines representative	-	TBD	Tel : (+60) Email :
	-	TBD	Tel : (+60) Email :

8.3 Appendix C - Contact Details ACG (KK FIR)

Organisation/ Division/Unit	Representative		Contact details
CAAM (DCEO Operations)	Primary	Deputy Chief Executive Office	Email : dceooperations@caam.gov.my
	Secondary	Zainul Abidin Bin Maslan Deputy Chief Executive Officer (Operations)	Tel : (+60) 3 8529 1200 Email : luniaz@caam.gov.my
CAAM (ANS Standard)	Primary	ANS Standards Office	Email : ansa@caam.gov.my
	Secondary	Raja Amsyar Hillman Bin Raja Badrul Hisham Director ANS Standard	Tel : (+60) 19 381 1209 Email : r.amsyarhillman@caam.gov.my
CAAM (ANS Operations)	Primary	ANS Operation Division Office	Email : bopnu@caam.gov.my
	Secondary	Khairul A'amali Bin Ismail Director ANS Operations Division	Tel : (+60) 11 6504 8177 Email : khairulamali@caam.gov.my
CAAM (Aeronautical Information Services)	Primary	AIS Unit	Email : ais@caam.gov.my
	Secondary	Sahrol Nizal Bin Ab Rashid Deputy Director ANS Operations Division	Tel : (+60) 12 224 2276 Email : sahrol@caam.gov.my
	Third	Mohd Rahimi bin Jamaludin Principal Assistant Director ANS Operations Division	Tel : (+60) 13 7702445 Email : rahimi@caam.gov.my
CAAM (Search and Rescue)	Primary	Search and Rescue Unit	Tel : (+60) 3 8529 1225 Email : sar.hq@caam.gov.my
	Secondary	Mohammad Khairul B. Abu Yamin Deputy Director ANS Operations Division (A)	Tel : (+60) 10-225 5491 Email : khairul@caam.gov.my
	Third	Dayang Zarina Binti Abang Alli Deputy Director (KL ATCC)	Tel : (+60) 13-864 5376 Email : dygzarina@caam.gov.my

Organisation/ Division/Unit	Representative		Contact details
CAAM (ANS Technical Division)	Primary	ANS Technical Division Office	Email : btpnu@caam.gov.my
	Secondary	Mohd Fitri Bin Ishak Director ANS Technical Division	Tel : (+60) 17 433 6486 Email : fitri@caam.gov.my
	Third	Muhammad Firdaus Bin Ismail Deputy Director ANS Technical Division ATM	Tel : (+60) 12 257 7628 Email : firdaus.ismail@caam.gov.my
		Mohd Fitri Bin Ishak Deputy Director ANS Technical Division CNS	Tel : (+60) 17 433 6486 Email : fitri@caam.gov.my
	Fourth	Nur A`fifah Binti Mansor ICAO CCT Point of Contact	Tel : (+60) 12 279 9875 Email : afifah@caam.gov.my
CAAM (ANS Safety Division)	Primary	ANS Safety Division Office	Email : bkpnu@caam.gov.my
	Secondary	Md Nastain Bin Mahazur Deputy Director ANS Technical Division	Tel : (+60) 19 391 2524 Email : mdnastain@caam.gov.my
CAAM (Regional office Sabah)	Primary	KK ATCC	Tel : (+60) 88 224404 Email : kkatcc@caam.gov.my
	Secondary	Mohd Razi Bin Abu Samah Regional Director, Sabah	Tel : (+60) 12 345 0464 Email : razi@caam.gov.my
	Third	Osman Bin Md Salleh Deputy Director (Operations) KK ATCC, Sabah	Tel : (+60) 19 840 1330 Email : osman@caam.gov.my
CAAM (Regional office Sarawak)	Primary	Kuching ATCC	Tel : (+60)82 455572 Email : atcckuching@caam.gov.my
	Secondary	Hajijah Binti Mohd Bujang RegionaL Director, Sarawak	Tel : (+60) 11 1568 9497 Email : hajijah@caam.gov.my

Organisation/ Division/Unit	Representative		Contact details
	Third	Noorashikin Binti Haron Deputy Director (Operation) Kuching ATCC, Sarawak	Tel : (+60) 19 818 8617 Email : noorashikin@caam.gov.my
Royal Malaysian Air Force – JATCC	Primary	Pusat Operasi Tentera Udara	Email : potu@mod.gov.my
	Secondary	Lt Kol Noor Hayusri bin Noordin Pegawai Memerintah JATCC Kota Kinabalu	Tel : (+60) 19 473 3676 Email : haziqhannah2528@gmail.com
	Third	Mej Adi Sofian bin Md Yusof Pegawai P4, JATCC Kota Kinabalu	Tel : (+60) 16 718 7545 Email : yanzsophillea@gmail.com
Meteorological Department Malaysia	Primary	Ketua Operasi	Tel : (+60)159 211 9849 Email : rfokkinabalu@met.gov.my
	Secondary	Dr Chai Mui Fat Ketua Penolong Pengarah	Tel : (+60)17 412 8981 Email : chai@met.gov.my
Airport Operator	Primary	Malaysia Airports Sdn. Bhd.	Ahmad Harris Azizool Arif Senior Manager Tel : (+60) 17 660 3900 Email : harris@malaysiaairports.com.my
CNS/ATM provider	Primary	Advanced Air Traffic Systems (M) Sdn. Bhd. (AAT)	Unit Operasi CNS AAT Kota Kinabalu Tel : (+60) 19 271 7160 Email : cnskk@aat.my
	Secondary		Shahril Amry Site Manager Tel : (+60) 19 248 2979 Email : shahril@aat.my

Organisation/ Division/Unit	Representative		Contact details
	Primary	Government Specialised Services, TM Techology Sdn Bhd	GSS HELPDESK, Specialised Expert Team Tel : 1-800-22-0046 / : 1-800-22-0024/ : 1-800-22-0032 Email : snsh@tm.com.my
	Secondary		Awg Nasradi Awg Ali Manager, Sabah Region Tel : (+60) 13 864 4020 Email :nasradi@tm.com.my
	Third		Mad Saidin Samshuddin Assistant Manager Sabah Region Tel : (+60) 13 801 3029 Email : saidin.samshuddin@tm.com.my
	Primary	Novatis Resources Sdn. Bhd.	Tel : (+60) 88 273 044 Email : katoc@novatis.com.my
	Secondary		Mohd Yusof Bin Abdul Razak Tel : (+60)14 505 9433 Email : yusof@novatis.com.my
	Primary	Crystal Solaris Sdn. Bhd.	TBD
	Secondary		Wan Mohammad Norsafrin Bin Ab Rasip Project Leader Tel : (+60) 19 661 1780 Email : norsafrin@crystalsolaris.com

Organisation/ Division/Unit	Representative		Contact details
	Third		Helmi Bin Hashim (Subang & KLATCC) System Engineer Tel : (+60) 19 2640585 Email : helmi@crystalsolaris.com Ahmad Safwat Bin Abd Majid (KLIA & Johor) System Engineer Tel : (+60) 12 6253448 Email : safwat@crystalsolaris.com Abdul Al-Alim Bin Ismail (Borneo) System Engineer Tel : (+60) 14 9775079 Email : alim@crystalsolaris.com Hasrul Bin Ismail (Penang & Langkawi) System Engineer Tel : (+60) 16 2956475 Email : hasrul@crystalsolaris.com
	Fourth		Nur Afrina Elyia Binti Muhamad Ghazali (AIS LAB) System Engineer Tel : (+60) 19 2640585 Email : afrina@crystalsolaris.com
Airlines representative	-	TBD	Tel : (+60) Email :
	-	TBD	Tel : (+60) Email :

8.4 Appendix D - Contact Details Adjacent States & ICAO

8.4.1 Existing DCS/IDD at Controller Work Position (CWP) or Supervisor Position in Air Traffic Control Centre (ATCC) shall be used as the main means of communication with adjacent ANSP.

8.4.2 Listed below are the alternative contacts to communicate with adjacent ANSP:

NO	CONTACT DETAILS
1	Indonesia/Jakarta ACC Tel : +62 21 550 5302 Fax : +62 21 550 5302 Email : TBC ATFN : WIIFZQZX Indonesia/Jakarta Upper ACC Tel : +62 21 550 6582 Fax : +62 21 550 5302 Email : TBC ATFN : WIIFZQZX Indonesia/Ujung Pandang ACC Tel : +62 41 1481 3223 Fax : TBC Email : deputyops.matsc@airnavindonesia.co.id ace.matsc@airnavindonesia.co.id ATFN : WAAAZRZX
2	India/Chennai OCC Tel : +91 44 2256 1283 Fax : +91 44 2256 1365 Email : vomm.wsi@aai.aero ATFN : VOMFZQZX
3	Singapore/Singapore ACC Tel : TBC Fax : +65 6441 0221 Email : TBC ATFN : WSJCZQZX
4	Philippines/Manila ACC Tel : +63 2 944 2235 Fax : TBC Email : TBC ATFN : RPHIZRZX

NO	CONTACT DETAILS
5	Thailand/Bangkok ACC Tel : +66 2 285 9111 Fax : +66 2 285 9077 Email : TBC ATFN : VTBBZRZX
6	Vietnam/Ho Chi Minh ACC Tel : +84 283 844 1153 Fax : +84 283 844 3774 Email : TBC ATFN : VVTSZRZX, WTSZQZX

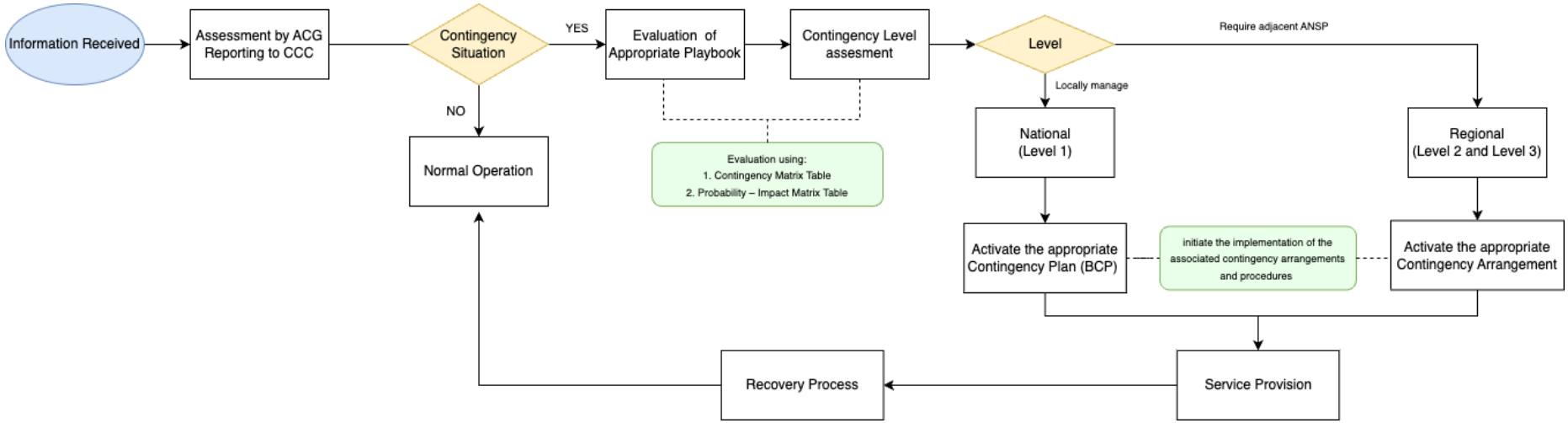
8.4.3 ICAO Asia and Pacific (APAC) Regional Office (RO)

NO	CONTACT DETAILS
1	ICAO APAC Regional Office Tel : (+66) 2 537 8189 Fax : (+66) 2 537 8199 Email : apac@icao.int

8.4.4 ICAO Contingency Coordination Team (CCT)

NO	CONTACT DETAILS
1	ICAO APAC Regional Office Tel : (+66) 2 537 8189 ext. 159 Fax : (+66) 2 537 8199 Email : htakata@icao.int * msallehhuddin@icao.int * * refer to APAC ICAO ATM POC list for any revision/updates

8.5 Appendix E - Activation Process Flowchart



8.6 Appendix F - Specimen NOTAM

8.6.1 Airspace available, Degraded ATS/No ATC:

NOTAM _____ DUE TO ANTICIPATED DISRUPTION OF ATS IN KUALA LUMPUR FIR ALL ACFT ARE ADVISED THAT THERE WILL BE LIMITED ATS. PILOTS MAY EXPERIENCE DLA AND OVERFLIGHTS MAY CONSIDER AVOIDING AIRSPACE.

NOTAM _____ TRAFFIC NOT WISHING TO ADHERE TO THE CONTINGENCY PLAN SHALL AVOID THE KUALA LUMPUR FIR.

8.6.2 Airspace available, No ATS:

NOTAM _____ DUE TO DISRUPTION OF ATS IN KUALA LUMPUR FIR ACFT WISHING TO TRANSIT THROUGH THE FIR SHALL STRICTLY ADHERE TO FOLLOWING CONTINGENCY FL ALLOCATION SCHEME AND ADHERE TO THE ATS CONTINGENCY PLAN FOR KUALA LUMPUR FIR

8.6.3 Airspace limited:

NOTAM _____ DUE TO VOLCANIC ASH IN KUALA KINABALU FIR ALL ACT ON ATS ROUTE _____ EXPECT REROUTE _____

8.6.4 Avoidance of airspace (Airspace not Available):

NOTAM _____ DUE TO TOTAL DISRUPTION OF ATS IN KUALA LUMPUR FIR ALL ACT ARE ADVISED TO AVOID THE FIR.

8.6.5 Non-adherence to the Contingency Plan

NOTAM _____ OPERATORS NOT ABLE TO ADHERE TO THE CONTINGENCY PLAN SHALL AVOID THE *(BANGKOK/ KUALA LUMPUR)* FIR.

8.6.6 Resumption to Normal Operation (during KL/KK FIR Contingency or other states contingency activation)

The following sample NOTAMN Field E text is provided to facilitate harmonized information in affected Contingency FIRs.

[KL/KK] FIR CONTINGENCY – RECOVERY TO NORMAL OPERATIONS

TRANSITION TO NORMAL OPERATIONS IN THE [XXXX] FIR/S WILL COMMENCE AT [TIME] ALL FLIGHTS OPERATING IN THE [XXXX FIR/S] PRIOR TO [TIME] SHALL FLIGHT PLAN AND OPERATE IN

ACCORDANCE WITH THE REQUIREMENTS PROMULGATED IN [LIST OF EXISTING CONTINGENCY ROUTE NOTAMS FOR THE FIR/S].

FLIGHTS PLANNED TO OPERATE IN THE [XXXX FIR/S] AT OR AFTER [TIME] SHALL FLIGHT PLAN VIA STANDARD NON-CONTINGENCY ATS ROUTES AS PUBLISHED IN [STATE NAME] AIP. LEVEL AND ROUTE RESTRICTIONS MAY BE TACTICALLY APPLIED DURING THE TRANSITION TO NORMAL OPERATIONS. OPERATORS SHOULD CONSIDER THE CARRIAGE OF ADDITIONAL FUEL.

FLIGHTS OPERATING WITHIN [XXXX] FIR/S SHALL NOT SUBMIT IN-FLIGHT RE-FILE OF FLIGHT PLANS OR REQUEST TACTICAL RE-ROUTING TO NORMAL ROUTES OR TRACK SHORTENING, EXCEPT ONLY IN CASES OF EMERGENCY OR DIVERSION FOR LANDING AT AERODROMES OTHER THAN FLIGHT PLANNED.

ATC MAY TACTICALLY OFFER IMPROVED ROUTES OR FLIGHT LEVELS WHERE AVAILABLE.

FLIGHT CREWS SHOULD BE AWARE THAT THERE MAY BE MIXED CONTINGENCY ROUTE/LEVEL AND NON-CONTINGENCY ROUTE/LEVEL OPERATIONS IN THEIR VICINITY DURING THE TRANSITION TO NORMAL OPERATIONS.

8.7 Appendix G - Contingency Form Template

CONTINGENCY FORM			
☐ Kuala Lumpur ACC ☐ Kota Kinabalu ACC ☐ Kuching ACC			
☐ Playbook 1 ☐ Playbook 2 ☐ Playbook 3 ☐ Playbook 4 ☐ Playbook 5 ☐ Playbook 6			
Name:		**Date:**	**Time:**
Contingency Type: ☐Communication ☐Facility ☐Surveillance ☐Staffing ☐Natural Disaster ☐Others			
Contingency Events: ☐ATM system failure ☐Volcanic Ash ☐Industrial action ☐Pandemic ☐Facility incidents ☐Military activity ☐Nuclear emergency ☐ Cyber attack ☐Adverse weather ☐GNSS spoofing/interference ☐Others (specify) _____			
Details:			
Contingency Level: ☐ Level 1 – National Level (Business Continuity Plan) ☐ Level 2 – Regional Level ☐ Level 3 – Regional Level			
States Involved: ☐ WSJC ☐ VTBB ☐ VOMF ☐ VVHM ☐ WIIF ☐ WAAF ☐ RPHI ☐ Brunei TMA ☐ ____ ☐ ____			
Notification		**Actions**	
States/organisation	**PIC**	**Status**	**Details**
WSJC	ACG	Yes / No	
VTBB		Yes / No	
VOMF		Yes / No	
VVHM		Yes / No	
WIIF		Yes / No	
WAAF		Yes / No	
RPHI		Yes / No	
Brunei TMA		Yes / No	
ICAO APAC RO	State CCT Representative	Yes / No	
CCT		Yes / No	

ATS Operational procedure and flow/capacity management mitigation		
Action(s) taken		**Details**
Issuing NOTAM	☐	
Re-routing	☐	
Separation - Miles-in-trail (MIT)	☐	
Separation - Minutes-in-trail (MINIT)	☐	
Level Restrictions	☐	
Airborne Holding	☐	
Ground Stop (GS)	☐	
Ground Delay Program (GDP)	☐	
Tunnelling	☐	
Fix Balancing	☐	
Airspace Classification	☐	
Others (specify)	☐	
TRANSFER OF CONTROL		
Action(s) taken		**Details (if applicable)**
Position Reporting	☐	
Instructions for Overflying traffic	☐	
Procedures for flights to/from airports within Kuala Lumpur FIR/ Kota Kinabalu FIR	☐	
Filing of flight plans	☐	
Pilot operating procedures	☐	
Collision Avoidance	☐	
OVERFLIGHT PERMISSION		
Prior Permission Required (PPR) if any	☐	
INTERCEPTION OF CIVIL AIRCRAFT	☐	
SEARCH AND RESCUE	☐	

8.8 Appendix H - Specimen Volcanic Ash Cloud (VAC) Contingency Form Sample

8.8.1 Details and elaboration of VAC can be found in Volcanic Ash Cloud (VAC) Contingency document.

8.8.2 VAC Contingency event could be considered a part of Playbook 2 and this may escalate to another Playbook depending on the evaluation of the situation as per guidance in Paragraph 4. The level of contingency shall be determined accordingly as per guidance in Paragraph 5.

8.8.3 Sample contingency form for VAC:

CONTINGENCY FORM		
☐ Kuala Lumpur ACC ☒ Kota Kinabalu ACC ☐ Kuching ACC		
☐ Playbook 1 ☒ Playbook 2 ☐ Playbook 3 ☐ Playbook 4 ☐ Playbook 5 ☐ Playbook 6		
Name:	**Date:**	**Time:**
Contingency Type: ☐Communication ☐Facility ☐Surveillance ☐Staffing ☒Natural Disaster ☐Others		
Contingency Events: ☐ATM system failure ☒Volcanic Ash ☐Industrial action ☐Pandemic ☐Facility incidents ☐Military activity ☐Nuclear emergency ☐ Cyber attack ☐Adverse weather ☐Volcanic Ash ☐GNSS spoofing/interference ☐Others (specify) _____		
Details: Eruption of MT Ruang. Volcanic Ash Cloud (VAC) to FL630 moving West at 15 KTS and intensify.		
Contingency Level: ☒ Level 1 – National Level (Business Continuity Plan) ☐ Level 2 – Regional Level ☐ Level 3 – Regional Level		
States Involved: ☒ WSJC ☐ VTBB ☐ VOMF ☐ VVHM ☐ WIIF ☒ WAAF ☐ RPHI ☒ Brunei TMA ☐ ____ ☐ ____		

Notification		Actions	
States/organisation	**PIC**	**Status**	**Details**
WSJC	ACG	Yes / No	NOTAM XXXX Notified via DCS/IDD
VTBB		Yes / No	Not applicable (N/A)
VOMF		Yes / No	N/A
VVHM		Yes / No	N/A
WIIF		Yes / No	N/A
WAAF		Yes / No	Originator
RPHI		Yes / No	N/A
Brunei TMA		Yes / No	NOTAM XXXX Notified via DCS/IDD
ICAO APAC RO	State CCT Representative	Yes / No	Notified by email
CCT		Yes / No	Notified by email

ATS Operational procedure and flow/capacity management mitigation		
Action(s) taken		**Details**
Issuing NOTAM	☒	NOTAM XXXX
Re-routing	☒	Impacted routes: M646, M522, M754 Traffic to be reroute to the east around the ash cloud.
Separation - Miles-in-trail (MIT)	☒	Extended longitudinal separation. 50NM to 10 mins MNT procedural separation on ATS route L649, M772
Separation - Minutes-in-trail (MINIT)	☐	Normal procedure
Level Restrictions	☐	N/A
Airborne Holding	☐	N/A
Ground Stop (GS)	☒	Subject to Operator Operational requirement
Ground Delay Program (GDP)	☐	N/A
Tunnelling	☐	N/A
Fix Balancing	☐	N/A
Airspace Classification	☐	N/A
Others (specify)	☐	N/A
TRANSFER OF CONTROL		
Action(s) taken		**Details (if applicable)**
Position Reporting	☐	Normal Procedure
Instructions for Overflying traffic	☐	Normal Procedure
Procedures for flights to/from airports within Kuala Lumpur FIR/ Kota Kinabalu FIR	☐	Normal Procedure
Filing of flight plans	☐	Normal Procedure
Pilot operating procedures	☐	Normal Procedure
Collision Avoidance	☐	Normal Procedure

OVERFLIGHT PERMISSION		
Prior Permission Required (PPR) if any	☐	Normal Procedure
INTERCEPTION OF CIVIL AIRCRAFT	☐	Normal Procedure
SEARCH AND RESCUE	☐	Normal Procedure

Sample SIGMET:

WBFC SIGMET 1 VALID 300605/301020 WBKK- WBFC KOTA KINABALU FIR VA ERUPTION MT RUANG PSN N218 E12522 VA CLD OBS AT 0420Z WI

N0400 E11916 - N0435 E11916 - N0441 E11931 - N0400 E 12000 - N0400 E11916 SFC/FL630 MOV W 15KT INTSF

WBFC SIGMET 5 VALID 300750/301310 WBKK- WBFC KOTA KINABALU FIR VA ERUPTION MT RUANG PSN N218 E12522 VA CLD OBS AT 0420Z WI N0400 E12000 - N0400 E11854 - N0427 E11941 - N0400 E12000 SFC/FL630 MOV W 15KT INTSF

Sample NOTAM:

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(A0207/10 NOTAMN
Q)WBFX/QWWXX/IV/AE/000/200
A) WBPX B) 2405190700 C) 2405191300
E) DUE TO VOLCANIC ASH AREA OF MEDIUM CONCENTRATION REPORTED
IN AREA 0704N11750E 0639N11554E 0506N11528E 0359N12008E, THE
ATS ROUTES AFFECTED ARE:
M522 – MAY REROUTE VIA MAMOK M768 BRU M754 VINIK
M646 – MAY REROUTE VIA VINIK M754 BRU M768 MAMOK
A341 – MAY REROUTE VIA VINIK M754 ADLEX Y446 ASISU
F) SFC
G) FL350)
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