



THE JAKARTA FIR AIR TRAFFIC MANAGEMENT CONTINGENCY PLAN LEVEL 2

Version 2.0

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SIGNING PAGE

By the grace of God Almighty, the Directorate General of Civil Aviation and the Indonesian Aviation Navigation Service Provider Corporation (Airnav Indonesia), released the Indonesia Air Traffic Management Contingency Plan Level 2 Document for the Jakarta FIR as a functional manual for setting up Aviation Navigation Services in the event of contingency conditions.

Tangerang, 19 Januari 2024

Approved by

DIRECTOR OF OPERATION
AIRNAV INDONESIA



BAMBANG RIANTO

Jakarta, 22 Januari 2024

Acknowledged by

DIRECTOR OF AIR NAVIGATION
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FOREWORD

This is the second edition of the Indonesian Air Traffic Management (ATM) Contingency Plan for Air Traffic Services (ATS) for the Upper Airspace of the Jakarta Flight Information Region (FIR). This Contingency Plan for Air Traffic Services (ATS) forms part of overall national contingency planning for the Jakarta Flight Information Region (FIR), in accordance with the provision of annex 11 to the convention on civil aviation, ICAO Doc. 9462 *ATS Planning Manual* and Doc. 9673 *Asia and Pacific region air navigation plan*, and the *Asia/Pacific region ATM Contingency Plan*. The Contingency Plan will come into effect as determined by the Director General of the Directorate General of Civil Aviation (DGCA), who is the authority for civil aviation operations in Indonesia.

This Contingency Plan (the Plan) is provided for the contingency arrangements to be introduced to permit the continuance of international flights to transit the Jakarta FIR, in the event that the air traffic and support services normally undertaken by the Ujung Pandang Area Control Centre (ACC) should become partially or totally unavailable due to any occurrence that restricts flight operations

This Contingency plan is provided for the contingency criteria Level 2, for coordinated (inter-State/FIR) contingency plans involving two or more States/FIRs; and as Category A – Airspace Safe, but Restricted or No ATS, due to causal events such as industrial action, unlawful interference, pandemic, earthquake, nuclear emergency affecting the provision of ATS, or ATM system failure or degradation. Category B – Airspace Not Safe, due to causal events such as Volcanic Ash Cloud (VAC), military activity; Category C – Airspace Not Available, due to causal events such as pandemic, national security – normally a political decision.

This Plan has been developed in close co-operation and collaboration with the civil aviation authorities responsible for the adjacent FIRs and representatives of the users of the airspace. The Indonesian Air Force also has been consulted and recognizes the requirement for the Plan and the civil aviation procedures that apply there to.

The Plan will be activated by promulgation of a NOTAM issued by the Indonesia International NOTAM Office (INO) or AIS Regional Office Makassar as far in advance as is practicable. However, when such prior notification is impracticable for any reason, the Plan will be put into effect on notification by the designated authority, as authorized by the DGCA. It is expected that the civil aviation authorities concerned, and the airline operators will fully cooperate to implement the Plan as soon as possible.

This Plan has been prepared in coordination with the International Civil Aviation Organization (ICAO) to meet the requirements in ICAO Annex 11 – *Air Traffic Services* to provide for the safe and orderly continuation of international flights through Indonesian airspace.

Any proposed amendments to this plan shall be forwarded to:
Director General
Directorate General of Civil Aviation
Jl. Medan Merdeka Barat No. 8
Gedung Karsa Lt. 5
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**THE JAKARTA FIR
ATM CONTINGENCY PLAN LEVEL 2
FOR TRANSITTING FLIGHT IN JAKARTA FIR
TO TRANSIT ON THE UPPER AIRSPACE**

1. OBJECTIVE

- 1.1 The Jakarta Air Traffic Management (ATM) Contingency plan contains arrangements to ensure continuation safety of air navigation in the event of partial or total disruption of air traffic services in the Jakarta FIR in accordance with ICAO Annex 11 – *Air Traffic Services*, The Plan consist of the ATS procedures and contingency route structure using existing airways in most cases that will allow aircraft operators to transit the Jakarta FIR.
- 1.2 This plan meet with the contingency criteria Level 2, for coordinated (inter-FIR) and as Category A – Airspace Safe, but Restricted or No ATS, due to causal events such as industrial action, unlawful interference, pandemic, earthquake, nuclear emergency affecting the provision of ATS, or ATM system failure or degradation. Category B – Airspace Not Safe, due to causal events such as Volcanic Ash Cloud (VAC), pandemic, military activity. Category C – Airspace Not Available, due to causal events such as pandemic, national security – normally a political decision.
- 1.3 This Contingency Plan addresses for transiting flight above F280 and does not address arrangements for aircraft arriving and departing at airport within Jakarta FIR.
- 1.4 CRIDN01 (southwest bound) established FL280 to accommodate regional contingency plan need. It is also considered this route is remote from domestic route system.

2. STATES AND FIR's AFFECTED

- 2.1 In the event that the Director General, DGCA activates this Contingency Plan, the civil aviation authorities of the adjacent FIRs will be notified in accordance with the Operation Coordination Agreement (OCA) established between the States concerned. The adjacent States, FIR's and ACCs directly affected by this Contingency Plan are as follows:
 - a. Australia
Melbourne FIR (ACC)
 - b. India
Chennai FIR (ACC)
 - c. Malaysia
Kota Kinabalu FIR (ACC)
Kuala Lumpur FIR (ACC)
 - d. Singapore
Singapore FIR (ACC)
 - e. Sri Lanka
Colombo FIR (ACC)
 - f. Indonesia
Ujung Pandang FIR (ACC)

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- 2.2 The contact details of the civil aviation authorities and organizations concerned are contained in **Appendix 2A**. These details should be kept up to date and relevant information provided to the DGCA as soon as practicable.

3. TYPE OF CONTINGENCY PLAN

3.1 Level of contingency plans:

This is ATM State Contingency Plan Level 2, for coordinated (inter-State/FIRs) contingency plans involving two or more States/FIRs;

3.2 Categories of contingency plans:

- a. Category A – Airspace Safe, but Restricted or No ATS, due to causal events such as industrial action, unlawful interference, pandemic, earthquake, nuclear emergency affecting the provision of ATS, or ATM system failure or degradation;

*All flights should follow the Contingency Requirement according to the **Appendix 2D**;*

*Public Health Risk (Pandemic) Procedure are provided at **Appendix 2J***

- b. Category B – Airspace Not Safe, due to causal events such as Volcanic Ash Cloud (VAC), military activity;

when partially, All flights should avoid affected area and flight information service will be given by Jakarta ACC like to relevant source of information (e.g ASHTAM);

When totally, all flight should avoid affected area and flight information service will be given by Ujung Pandang ACC or others relevant source of information (e.g. ASHTAM);

*Volcanic ash contingency plan are provided at **Appendix 2I**.*

- c. Category C – Airspace Not Available, due to causal events such as pandemic, national security – normally a political decision.

All flights may elect to avoid the Jakarta FIR and re-route to the west or east around the Jakarta FIR via the Melbourne and Colombo FIRs to the Chennai and Kuala Lumpur FIRs and vice versa or through Ujung Pandang FIR. The contingency routes to be used in this scenario will be provided by the ATS authorities concerned.

4. MANAGEMENT OF THE CONTINGENCY PLAN

- 4.1 The contingency measures set out in this Plan 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 totally disrupt the provision of ATS and/or of the related support services in the Jakarta FIR.

- 4.2 The following arrangements have been put in place to ensure that the management of the Contingency Plan provides for international flights to proceed in a safe and orderly flow through the Upper Airspace of the Jakarta FIR.

Central Coordinating Committee

- 4.3 The Central Coordinating Committee (CCC) function shall oversee the conduct of the Contingency Plan and in the event that Area Control Service is disrupted for an extended period, make arrangements for and facilitate the temporary relocation of the Area Control Service to the all ATS Unit under jurisdiction of Jakarta ACC and the restoration of Area Control Service. The terms of reference for the CCC will be determined by DGCA, DGCA shall convene the Central Coordinating Committee (CCC) comprised of representatives from:
- a. Directorate General of Civil Aviation;
 - b. Ministry of Defense;
 - c. Indonesian Air Force;
 - d. Meteorological, Climatological and Geophysical Agency (MCGA);
 - e. Center of Volcanology and Geological Hazard Mitigation (PVMBG);
 - f. Search and Rescue (SAR) Agency;
 - g. National Disaster Management Agency (BNPB);
 - h. Air Navigation Indonesia (Perum LPPNPI);
 - i. Airport business entity or Airport Management Unit;
 - j. Representative from the air transportation business committee;
 - k. Representative from the airlines operators;
 - l. Other participants as required.
- 4.4 Term of reference for the CCC and the contact detail of its members are provided in **appendix 2A**.
- 4.5 Under the circumstances described and when deemed necessary by the Indonesian DGCA (or under the circumstances described in its Terms of Reference and when deemed necessary) and as soon as practicable in advance of, or after the commencement of a contingency event causing disruption to Jakarta ACC has occurred, the Indonesian DGCA shall convene the Central Coordinating Committee, by the most expeditious means appropriate for the situation, e.g. by telephone or web-based conference.

ATM Operational Contingency Group

- 4.6 The 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:
- a. Airport Authority;
 - b. Air Traffic Service (ATS);
 - c. Communication, Navigation, Surveillance and Data Processing (CNSD);
 - d. Meteorology, Climatology and Geophysics (MET);
 - e. Aeronautical Information Service (AIS);
 - f. Search and Rescue (SAR);
 - g. Others participants as required.
- 4.7 Term of Reference (TOR) for the AOCG and the contact detail of its members are provided in **Appendix 2 B**.

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- 4.8 The function of the AOCG shall include:
- a Review and update of the Contingency Plan as required;
 - b Keep up to date at all times of the contingency situation;
 - c Organize contingency teams in each of the specialized areas;
 - d keep in contact with and update all affected airspace and system users, customers and other relevant stakeholders;
 - e Exchange up-to-date information with the adjacent ATS authorities concerned to coordinate contingency activities;
 - f Notify CCC the contingency situation sufficiently in advance and/or as soon as possible thereafter;
 - g Issue NOTAMs or relevant information by Indonesian International NOTAM Office or AIS Regional Office Makassar (**reff point 8**) according to the corresponding contingency situation, this plan or as otherwise needed. If the situation is foreseeable sufficiently in advance, a NOTAM or relevant information provided by Indonesian International NOTAM Office or AIS Regional Office Makassar (**reff point 8**) will be issued 48 hours in advance (example NOTAMS are provided in **Appendix 2 C**).
 - h Maintain an activity log using the report form.

5. CONTINGENCY ROUTE STRUCTURE

- 5.1 In the event of disruption of the ATC services provided by Jakarta ACC, contingency routes will be introduced to ensure safety of flight and to facilitate limited flight operations commensurate with the prevailing conditions. Existing ATS routes form the basis of the contingency routes are to be used, and a flight level assignment scheme introduced to minimize potential points of conflict and to limit the number of aircraft operating simultaneously in the system under reduced air traffic services. The contingency route structure for international flights is detailed in **Appendix 2D**. Additional contingency routes will be introduced as and when circumstances require, such as in the case of volcanic ash clouds forming.
- 5.2 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 are restored. A decision to curtail or restart domestic operations will be made by the CCC.
- 5.3 Aircraft on long-haul international flights and special operations (e.g., Search and Rescue (SAR), State aircraft, humanitarian flights, etc.), shall be afforded priority for levels at FL290 and above. For flight planning purposes, domestic and regional operators should plan on the basis that FL290 and above **may not be available**.
- 5.4 International operators affected by the suspension of all operations from Indonesian airports will be notified by the relevant airport authority when operations may be resumed, and flight planning information will be made available pertaining to that airport. International flights who have received such approval may be required to flight plan via domestic routes to joint international contingency routes.

5.5 Contingency Routes Structure

- a. CRIDN01 (POVUS P627 NIXUL) FL390 **North East Bound** Flight and FL280 **South West Bound**;
- b. CRIDN02 (ANSAX P574 PUGER) FL320 for **North West Bound** and FL370 **South East Bound** ;
- c. CRIDN03 (NISOK P756 MABIX P570 PKU R469 TAROS) FL340 **West Bound** and FL370, FL410 **East Bound**;
- d. CRIDN04 (ATMAL N752 PLB G579 PARDI) FL300 and FL340 **North West Bound**;
- e. CRIDN05 (ANITO B470 PKP L511 MMIX L895 SAPDA) FL290 and FL330 **South East Bound**;
- f. CRIDN06 (SURGA M635 TAVIP) FL310 and F350 **South East Bound**;
- g. CRIDN07 (TANUR M774 KADAR) FL320 and F360 **North West Bound**.

6. AIR TRAFFIC MANAGEMENT AND CONTINGENCY PROCEDURES

Reduced ATS and provision of flight information services (FIS)

- 6.1 During the contingency critical period, ATS including ATC services partially or totally may not be available, particularly with regard to availability of communications and radar services. In cases where services are not available, a NOTAM will be issued providing the relevant information, including an expected date and time of resumption of service. The contingency plan provides for limited flight information and alerting services to be provided by adjacent ACCs.
- 6.2 In the event that the Jakarta ACC as partially in Contingency condition, ATS services may be still given by Jakarta ACC, but when premises are totally out of service for an extended period, make arrangements for and facilitate the temporary relocation of the Jakarta ACC at the Ujung Pandang ACC and the restoration of ATS services. All the International Flight who will flight transit through the Jakarta FIR shall make a contact to Ujung Pandang ACC or Ujung Pandang FIC Makassar sector.
- 6.3 The flight monitoring will be provided by the Ujung Pandang ACC or Ujung Pandang FIC Makassar sector. A chart depicting the airspace arrangement is provided in **Appendix 2E**.
- 6.4 The primary means of communication will be by VHF or HF radio except for aircraft operating automatic dependent surveillance (ADS) and controller/pilot data link communication (CPDLC) systems. When CPDLC has been authorized for use by the relevant ATC authority, this will become the primary means of communication with HF as secondary. In the case of ADS automatic position reporting, this replaces voice position reporting and CPDLC or HF will become the secondary means. Details of the communication requirements are provided in **Appendix 2F**.

ATS Responsibilities

- 6.5 During the early stages of a contingency event, ATC may be overloaded and tactical action taken to reroute aircraft on alternative routes not included in this Plan.
- 6.6 In the event that ATS cannot be provided in the Jakarta FIR a NOTAM shall be issued indicating the following:
- a. Time and date of the beginning of the contingency measures;
 - b. Airspace available for landing and overflying traffic and airspace to be avoided;
 - c. Details of the facilities and services available or not available and any limits on ATS provision (e.g., ACC, APPROACH, TOWER and FIC), including an expected date of restoration of services if available;
 - d. Information on the provisions made for alternative services;
 - e. Any changes to the ATS contingency routes contained in this Plan;
 - f. Any special procedures to be followed by neighbouring ATS units not covered by this Plan;
 - g. Any special procedures to be followed by pilots;
 - h. Any other details with respect to the disruption and actions being taken that aircraft operators may find useful.
- 6.7 In the event that the Indonesia International NOTAM Office is unable to issue the NOTAM, the (alternate) AIS Regional Office Makassar will take action to issue the NOTAM of closure airspace upon notification by the DGCA or its designated authority, e.g., the ICAO Asia and Pacific Regional Office.

Aircraft Separation

- 6.8 Aircraft separation criteria will be applied in accordance with the *Procedures for Air Navigation Services-Air Traffic Management* (PANS-ATM, Doc 4444) and the *Regional Supplementary Procedures* (Doc 7030).
- 6.9 The longitudinal separation may be reduced to RNAV/RNP 10 separation in conjunction with application RNAV/RNP 10. In lieu of developments and as authorized by the DGCA or by the appropriate OCA
- 6.10 The route structure provides for lateral separation of 100 NM and in cases where this is less, and for crossing routes, a minimum vertical separation of 2000 ft will be applied.

Flight level restrictions

- 6.11 Where possible, aircraft on long-haul international flights shall be afforded priority for cruising levels assigned in accordance with the (FLAS).

Airspace Classifications

- 6.12 If ATC services become unavailable during the interruption of air traffic services, and depending on the level of service and anticipated outage of facilities, airspace classifications may be changed to reflect the reduced level of services. Changes to

airspace classification will be notified by NOTAM.

Aircraft position reporting

- 6.13 Pilots will continue to make routine position reports in line with normal ATC reporting procedures.
- 6.14 The primary means of communication will be by HF radio except for aircraft operating Automatic Dependent Surveillance - Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC) systems. When CPDLC has been authorized for use by the relevant ATC authority this will become the primary means of communication, with HF as secondary. ADS-C shall replace any requirement for voice position reporting to ATC for aircraft so equipped, and in this case CPDLC or HF will be the secondary means of communication
- 6.15 Traffic Information Broadcast by Aircraft (TIBA) procedures shall apply. Details of TIBA procedures and communications requirements are provided in **Appendix 2H**

VFR operations

- 6.16 VFR flights shall not operate in the Jakarta FIR if there are extensive disruptions to ATC facilities, except in special cases such as State aircraft, Medivac flights, and any other essential flights authorized by the DGCA.

Procedures for ATS Units

- 6.17 The ATS units providing ATC services will follow their unit emergency operating procedures and activate the appropriate level of contingency procedures in line with the Operational Coordination Agreement. These procedures include the following:
- a. The Jakarta ACC on determining that ATS may be reduced due to a contingency event, will inform pilots by the controller responsible of the emergency condition and advise if it is likely that the ACC will be evacuated and ATS suspended. In the event of it becoming necessary to evacuate the ACC building, the 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;
 - b. During the period the contingency procedures are in effect, flight plan messages must continue to be transmitted by operators to the Jakarta ACC and to the Ujung Pandang ACC via the AFTN using normal procedures;

Note: Depending on the phase of emergency and circumstances, the Indonesian INO may be suspended and alternative AFTN service introduced, e.g. At the Jakarta Airport Tower and Ujung Pandang ACC. Also, the INO of adjacent ATS authorities may be used to issue Indonesian NOTAMs.

- c. On notification by DGCA, Indonesia, the ATS authorities operating the ACCs of the adjacent FIRs, viz. Brisbane, Chennai, Colombo, Kota Kinabalu, Kuala Lumpur, Ujung Pandang, Melbourne, and Singapore will activate the contingency procedures in accordance with their respective Operational Coordination Agreement;

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- d. Prior to entry to the Jakarta FIR under the contingency arrangement, prior authorization must be obtained by operators to overfly the Jakarta FIR, and ATC approval granted by Ujung Pandang as the adjacent ATC authority (ACC);
 - e. The adjacent ACC responsible for aircraft entering for transit of the Jakarta FIR must communicate via ATS coordination circuits, and not less than 30 minutes beforehand, the estimated time over the reporting point for entry into the next FIR after the Jakarta FIR;
 - f. The ACC responsible for aircraft entering the Jakarta FIR will instruct pilots to maintain the last flight level assigned and speed (Mach number if applicable) while overflying the Jakarta FIR;
 - g. The ACC responsible will not authorize any change in flight level or speed (Mach number, if applicable) later than 10 minutes before the aircraft enters the Jakarta FIR, except in the case **specified in h below**:
 - h. To facilitate arrival and departures at Singapore on the following route sectors, aircraft may climb and descend under the control of Singapore ACC in line with normal operating procedures:
 - i. R469 - From Pekanbaru (PKU) to TAROS;
 - ii. G579 - From Palembang (PLB) to PARDI; and
 - iii. B470 - From ANITO to Pangkal Pinang (PKP).
 - i. To facilitate arrival and departures at Kuala Lumpur on the following route sectors, aircraft may climb and descend under the control of Kuala Lumpur ACC in line with normal operating procedures:
 - i. P574 - From ANSAX to PUGER vv.
 - j. the ACC responsible prior to aircraft entering the Jakarta FIR will inform aircraft that they must communicate with the next (downstream) ATC unit 10 minutes before the estimated time of entry into the next FIR; and
 - k. aircraft may also choose to avoid the Jakarta FIR, and the controlling authorities of the FIRs concerned will provide alternative contingency routes as appropriate and these will be published by NOTAM.

Transition to contingency scheme

- 6.18 During times of uncertainty when airspace closures seem possible, aircraft operators should be prepared for a possible change in routing while en-route, familiarization of the alternative routes outlined in this Contingency Plan, as well as those which may be promulgated by a State via NOTAM or AIP.
- 6.19 In the event of airspace closure that has not been promulgated, ATC should, if possible, broadcast to all aircraft in their airspace, what airspace is being closed and to stand by for further instructions.
- 6.20 ATS providers should recognize that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. ATC should be alert to respond to any request by aircraft and react commensurate with safety.

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- 6.21 In the event Jakarta ATS resume its capability to provide the services, these procedures should be followed subsequently:
- a. AOCG report to CCC, the readiness of Jakarta ATS, after full assessments to the facilities, personnel and procedures to resume the service.
 - b. CCC instruct to AOCG Makassar to starting transition process.
 - c. AOCG makassar in the event of transition process :
 - i. Publish a NOTAM Jakarta ATS unit resume normal operation;
 - ii. Inform to all ATS unit involved in Contengency Plan Level 2 for Jakarta FIR and instruct to handover traffic back to Jakarta ATS;
 - iii. Report to CCC when all transition process complete.
 - d. After reported by AOCG Makassar transition process complete, CCC should be terminated contingency plan.
 - e. A NOTAM shall be issued indicating the following:
 - i. Time and date of the end of the contingency measures;
 - ii. Contengency plan level 2 for Jakarta FIR terminated.

Transfer of control and coordination

- 6.22 The transfer of control and communication should be at the common FIR boundary between ATS units unless there is mutual agreement between adjacent ATS units and authorization given to use alternative transfer of control points. These will be specified in the respective OCAs.
- 6.23 The ATS providers concerned should review the effectiveness of current coordination requirements and procedures in line of contingency operations or short notice of airspace closure, and make any necessary adjustments to the Contingency Plan and OCAs.

7. PILOTS AND OPERATOR PROCEDURES

Filling of flight plans

- 7.1 Flight planning requirements for the Jakarta FIR are to be followed in respect to normal flight planning requirements contained in the Indonesia Aeronautical Information Publication (AIP) and as detailed at **Appendix 2G**.

Overflight approval

- 7.2 Aircraft operators must obtain overflight approval from the DGCA, Indonesia prior to operating flights through the Jakarta FIR. During the period of activation of this Contingency Plan, when ATS is not being provided by Jakarta ACC, the Ujung Pandang as the adjacent ATS authority will approve aircraft to enter the Jakarta FIR on the basis that operators have obtained prior approval, and the responsibility remains with the operator to ensure such approval has been obtained.
- 7.3 Flights operating through the Jakarta FIR shall be equipped with the following minimum communications, navigation and surveillance capability

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- a VHF Radio Communication Equipment – Two-Way Communication;
 - b HF Radio Communication Equipment – Two-Way Communication;
 - c Pressure – Altitude Reporting Transponder;
 - d Airborne Collision Avoidance System (ACAS II);
 - e Emergency Locator Transmitter (ELT).

Pilot operating procedures

- 7.4 Aircraft overflying the Jakarta FIR shall follow the following procedures:
- a. 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 applicable to the route(s) being flown as specified in **Appendix 2D**;
 - b. flights that are intended to light plan using the Contingency Routes specified in **Appendix 2D**, according to their airport of origin and destination;
 - c. aircraft operate as close as possible to the center line of the assigned contingency route;
 - d. pilots are to keep a continuous watch on the specified contingency frequency as specified in **Appendix 2F** and transmit the aircraft's position in line with normal ATC position reporting procedures;
 - e. Pilot keep navigation and anti-collision lights on while overflying within Jakarta FIR;
 - f. During their entire flight time within Jakarta FIR, the flight level last assigned by the last ACC responsible prior to the aircraft entering the Jakarta FIR, and 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;
 - g. The aircraft should reach the last flight level assigned by the responsible ACC at least 10 minutes before entering the Jakarta FIR or as otherwise instructed by the ATC unit in accordance with the LOCA with Jakarta ACC;
 - h. Pilots should include in their last position report prior to entering the Jakarta FIR, the estimated time over the entry point of the Jakarta FIR and the estimated time over the relevant exit point of Jakarta FIR;
 - i. Pilots should contact the next adjacent ACC as soon as possible, and no later than, ten (10) minutes before the estimated time of arrival over the relevant exit point of Jakarta FIR;
 - j. Pilots should strictly adhere to the ICAO Traffic Information Broadcasts by Aircraft (TIBA) procedure (reproduced in **Appendix 2H**, and maintain a continuous listening watch on the inter-pilot air to air VHF frequency 123.45 MHz, as well as on the specified VHF and HF frequencies listed in **Appendix 2F**. When necessary, in emergency conditions, pilots should transmit blindly on these frequencies, their current circumstances and the commencement and completion of any climb and descent or deviation from the cleared contingency route;
 - k. Whenever emergencies and/or flight safety reasons make it impossible to maintain the flight level assigned to transit in Jakarta FIR, pilots are supposed to climb or descend well to the right of the centerline of the contingency route, and if deviating outside the Jakarta FIR, to inform immediately the ACC responsible for that airspace. Pilots are to make blind broadcast on the IATA in-Flight Broadcast Procedure (IFBP) VHF frequency 126.9 MHz of the relevant emergency level

change message (comprising the aircraft call sign, the aircraft position, the flight levels being vacated and crossed, etc.);

- l. Pilots are to maintain own longitudinal separation of 15 minutes from preceding aircraft at the same cruising level; and
- m. Not all operational circumstances can be addressed by this Contingency Plan and pilots are to maintain a high level of alertness when operating in the contingency airspace and take appropriate action to ensure safety of flight.

Interception of civil aircraft

- 7.5 Pilots need to be aware that in light of current international circumstances, a contingency routing requiring aircraft to operate off normal traffic flows, could result in an interception by military aircraft. Aircraft operators must therefore be familiar with international interception procedures contained in ICAO Annex 2 –*Rules of the Air*, paragraph 3.8 and Appendix 2, Sections 2 and 3.
- 7.6 The Indonesian Air Force may intercept civil aircraft over the territory of Indonesia in the event that a flight may not be known to and identified by the military authority. In such cases, the ICAO intercept procedures contained in Annex 11 and doc.9433-AN926 *Manual Concerning Interception of Civil Aircraft*, will be followed by the Indonesian Air Force, and 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.
- 7.7 If circumstances lead to the closure of the Indonesian airspace and no contingency routes are available through the Jakarta and Ujung Pandang FIRs, aircraft will be required to re-route around the Indonesian airspace. As much warning as possible will be provided by the appropriate ATS authorities in the event of the complete closure of Indonesian airspace.
- 7.8 Pilots need to continuously guard the VHF emergency frequency 121.5 MHz and should operate their transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes. Transponders should be set on a discrete code assigned by ATC or select SSR code 2000 if ATC has not assigned a code.

8. COMMUNICATION PROCEDURES

Degradation of Communication - Pilot Radio Procedures

- 8.1 When operating within the contingency routes of the Jakarta FIR, pilots should use normal radio communication procedures where ATS services 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.
- 8.2 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 on the last frequency where two-way communication had been established. In the absence of no communication with ATC,

the pilot should continue to make routine position reports on the assigned frequency, and also broadcast positions in accordance with the ICAO TIBA procedure.

Communication frequencies

- 8.3 A list of frequencies to be used for the contingency routes and the ATS units providing FIS and air-ground communication monitoring for the Jakarta FIR is detailed at Appendix 2F

9. PERSONNEL IMPROVEMENT PLAN

- 9.1 Human performance-based training and procedures for response to ATM contingency operations for all staff providing related ATS, including ATC, Flight Information, Aeronautical Information, Aeronautical Telecommunication and ATS equipment maintenance, MET, SAR should be developed and implemented,
- 9.2 Personnel training including any testing, familiarization Personnel, pre-activation or activation of a contingency plan or any contingency exercise are reviewed and analyzed, and lessons learned incorporated in contingency procedures.

10. AERONAUTICAL SUPPORT SERVICES

Aeronautical Information Services (AIS)

- 10.1 A NOTAM contingency plan or relevant information provided by Indonesia International NOTAM Office will be developed to ensure continuation of the NOTAM service for the Jakarta FIR in support of contingency operations. The NOTAMs or relevant information provided by Indonesia international NOTAM office will establish the actions to be taken in order to reduce the impact of the failures in the air traffic services. The NOTAMs will also establish the necessary coordination and operational procedures that would be established before, during and after any contingency phase.
- 10.2 In the event that the Indonesian International NOTAM Office is unable to issue the NOTAM, the relevant information will be provided by AIS Regional office Makassar.
- 10.3 NOTAM templates are provided at **Appendix 2C** and the content shall include the following item refers to **point 6.6**

Meteorological Services (MET)

- 10.4 The Indonesian Meteorological, Climatological and Geophysical Agency (MCGA) is the designated meteorological authority of Indonesia. MCGA is also the provider of meteorological services for the international and domestic air navigation. In order to comply with Civil Aviation Safety Regulation (CASR) *Part 174 – Aeronautical Meteorological Information Services*, MCGA should ensure regular provision of the following products and services:
- a. Aerodrome observations and reports – local MET REPORT and SPECIAL, as well as WMO-coded METAR and SPECI; METAR and SPECI should be provided for all international aerodromes listed in the AOP Table of ASIA/PAC Basic ANP and FASID Table MET 1A;

-
- b. Terminal aerodrome forecast - TAF as per the requirements indicated in FASID Table MET 1A;
 - c. SIGMET for the two Indonesian FIRs – Jakarta and Ujung Pandang; SIGMET should be issued by the meteorological watch offices (MWO) designated in FASID Table MET 1B – WIII and WAAA;
 - d. Information for the ATS units (TWR, APP, ACC, FIC) as agreed between the meteorological authority and the ATS units concerned;
 - e. Flight briefing and documentation as per CASR Part 174.
- 10.5 It is expected that the Indonesia MET services would continue to be available in the event of an ATS contingency situation. whenever ATS services for the Jakarta FIR be withdrawn, timely MET information may not be immediately available to pilots in flight. Alternative means of obtaining up to date MET information concerning the Jakarta FIR will be provided to the extent possible through the Meteorological Watch Office (MWO) Jakarta.
- 10.6 In the event MWO Jakarta not available, MWO Makassar will take responsibility.

11. SEARCH AND RESCUE

Notification and Coordination

- 11.1 All ATS units affected involved in this Contingency Plan are required to assist as necessary to ensure that proper Search and Rescue (SAR) authorities are provided with the information necessary to support downed aircraft or aircraft with an-in-flight emergency in respect to Jakarta FIR.
- 11.2 The SAR authority responsible for the Jakarta FIR is the INDONESIA Rescue Coordination Centre (INDONESIA RCC)
- IDD : 62-21-65867510 and 62-21-65867511
Fax : 62-21-65867512
AFTN : WIIIYCYL
Email : rcc.indonesia@basarnas.go.id or kagahar@gmail.com
- 11.3 All ATS Units (under jurisdiction of Jakarta ACC) shall assist as necessary in the dissemination of INCERFA, ALERFA and DETRESFA in respect to incidents in Jakarta FIR.
- 11.4 In the event that the Jakarta ACC is not available, the responsibility for coordinating with the Indonesia RCC for aircraft emergencies and incidents involving in the Jakarta FIR will be undertaken by the ATS Units (under jurisdiction of Jakarta ACC) concerned. The CCC will take appropriate steps to ensure that SAR information is made available to the Indonesia RCC. The AOCG will also oversee SAR coordination and disseminate relevant contact information.
- 11.5 In the event that Jakarta ACCs are not available, there are 24 hour-alert SAR Offices (Indonesia RCCs) throughout Jakarta FIR, coordinated by the National SAR Agency (BASARNAS) to ensure the provision of SAR services in the Jakarta FIR.

11.6 In the event that both Indonesia RCC are not available, Makassar RSC will take responsibility as Indonesia RCC.

Contact detail for Makassar RSC :

ID : 62-411-555515 and 62-411-550024

Fax : 62-411-554852

Email : sar.makassar@basarnas.go.id or kansar_makassar@yahoo.co.id

APPENDIX 2A

TERM OF REFERENCE
CENTRAL COORDINATING COMMITTEE
(CCC)

DIRECTORATE GENERAL OF CIVIL AVIATION

1. Background

Every contracting state of ICAO, especially the ICAO Regional, must comply with the rules set by ICAO and possess the required documents. Indonesia, as one of them, is expected to comply with the existing rules, particularly in providing air traffic services to users, both during normal conditions and contingency situations, in accordance with standards and in harmony with neighboring countries.

Indonesia has designed a procedure related to contingency situations outlined in the Air Traffic Management (ATM) Contingency Plan. This document must always be updated, practical, dynamic, effective, and efficient. The ATM Contingency Plan is a procedure designed to anticipate failures and potential disruptions in providing air traffic services and other supporting services for arriving and departing aircraft, as well as overflying aircraft, caused by various factors such as pandemics, earthquakes, major floods, tsunamis, volcanic ash, nuclear impacts, military conflicts, and non-conducive national security conditions.

ICAO has established three (3) levels of ATM Contingency Plan as follows:

- a. ATM Contingency Plan Level 1 is a contingency plan for disruptions and potential disruptions in the provision of Air Traffic Management services and other supporting services in the airspace under its responsibility to ensure the continuity of domestic flight services.
- b. ATM Contingency Plan Level 2 is a contingency plan for disruptions and potential disruptions in the provision of Air Traffic Management services and other supporting services in the airspace under its responsibility to ensure the continuity of overflying flight services.
- c. ATM Contingency Plan Level 3 is a contingency plan jointly developed by countries in a regional or sub-regional area to ensure the continuity of international flight services within a regional or sub-regional area.

In order to support the implementation of the ATM Contingency Plan in the Jakarta and Ujung Pandang FIR, the Directorate General of Civil Aviation has established a Central Coordination Committee (CCC). The members of this committee include all relevant stakeholders in the field of aviation. The committee's tasks include forming, activating, and deactivating the ATM Operational Coordination Group (AOCG), as well as overseeing, coordinating, and evaluating the implementation of air traffic services during contingency conditions.

For the implementation of CCC and AOCG activities, a Terms of Reference (TOR) document has been developed. This document serves as a reference for all relevant stakeholders involved, ensuring that the implementation of the ATM Contingency Plan aligns with the specified provisions.

The Terms of Reference (TOR) document for the Central Coordination Committee (CCC) and ATM Operational Coordination Group (AOCG) will be incorporated as part of the ATM Contingency Plan for Jakarta FIR and Ujung Pandang FIR.

2. Reference

The legal basis that can be used as a reference in the preparation of the Terms of Reference for the Central Coordination Committee (CCC) is as follows:

- a. Law of the Republic of Indonesia Number: 1 of 2009 concerning Aviation;
- b. Law of the Republic of Indonesia Number: 11 of 2020 concerning Job Creation;
- c. Government Regulation Number: 3 of 2001 concerning Aviation Safety and Security;
- d. Government Regulation Number: 77 of 2012 concerning Public Companies (Perum) Indonesian Aviation Navigation Service Organizing Institutions;
- e. Government Regulation Number: 32 of 2021 concerning the Implementation of the Aviation Sector;
- f. Regulation of the Minister of Transportation Number PM 55 of 2016 concerning the National Aviation Navigation Order as last amended by Regulation of the Minister of Transportation number: PM 9 of 2022;
- g. Minister of Transportation Regulation Number: PM 65 of 2017 concerning Civil Aviation Safety Regulations Part 170 (Civil Aviation Safety Regulation Part 170) concerning Aviation Traffic Regulations as last amended by Minister of Transportation Regulation Number: PM 10 of 2022;
- h. Minister of Transportation Regulation Number: PM 95 of 2018 concerning Civil Aviation Safety Regulations Section 174 concerning Aviation Meteorological Information Services;
- i. Minister of Transportation Regulation Number: PM 29 of 2021 concerning Civil Aviation Safety Regulations Section 172 concerning Aviation Traffic Management and Telecommunications Service Providers;
- j. Minister of Transportation Regulation Number: PM 9 of 2023 concerning Civil Aviation Safety Regulations Section 175 concerning Aeronautical Information Service Provider;
- k. Minister of Transportation Regulation Number: PM 10 of 2023 concerning Civil Aviation Safety Regulations Section 176 concerning Search and Rescue in Aircraft Accidents;
- l. Regulation of the Director General of Civil Aviation Number: SKEP/25/II/2009 concerning Manual of Air Traffic Services Operational Procedures (Advisory Circular part 170 – 02);
- m. Regulation of the Director General of Civil Aviation Number: KP 565 of 2015 concerning Operational Technical Guidelines Part 170-03 (Advisory Circular Part 170-03) Preparation of Air Traffic Management Contingency Plans in Indonesia (Indonesia Air Traffic Management Contingency Plan) as last amended by the Director's Regulation General of Civil Aviation Number: KP 47 of 2021;
- n. Document Indonesia ATM Contingency Plan level 1 and level 2 for Jakarta and Ujung Pandang FIR.

3. Purpose and Objectives

The purpose and objectives of preparing the Terms of Reference for the Central Coordination Committee (CCC) is to serve as the foundation for the CCC in carrying out tasks and responsibilities related to the series of activities of the Air Traffic Management function during Contingency Level 1 and Level 2 in Jakarta FIR or Ujung Pandang FIR. This is to ensure that Air Traffic Services for aircraft flying within the Jakarta FIR and Ujung Pandang FIR airspace can be provided by other ATS units during contingency conditions.

4. Scope

The scope of activities includes assessment, planning, supervision, operational,

coordination, evaluation, and information exchange activities related to air traffic services during contingency conditions in Jakarta FIR and Ujung Pandang FIR. This is to provide contingency handling in the air traffic management services within Ujung Pandang FIR and Jakarta FIR.

5. Organization

5.1. Central Coordinating Committee (CCC)

5.1.1. The Central Coordinating Committee (CCC) is the central coordination and national command committee for contingency planning in the field of Air Traffic Management in the Jakarta FIR and/or Ujung Pandang FIR airspace, involving the leadership of several relevant ministries/agencies/entities.

5.1.2. CCC consist of:

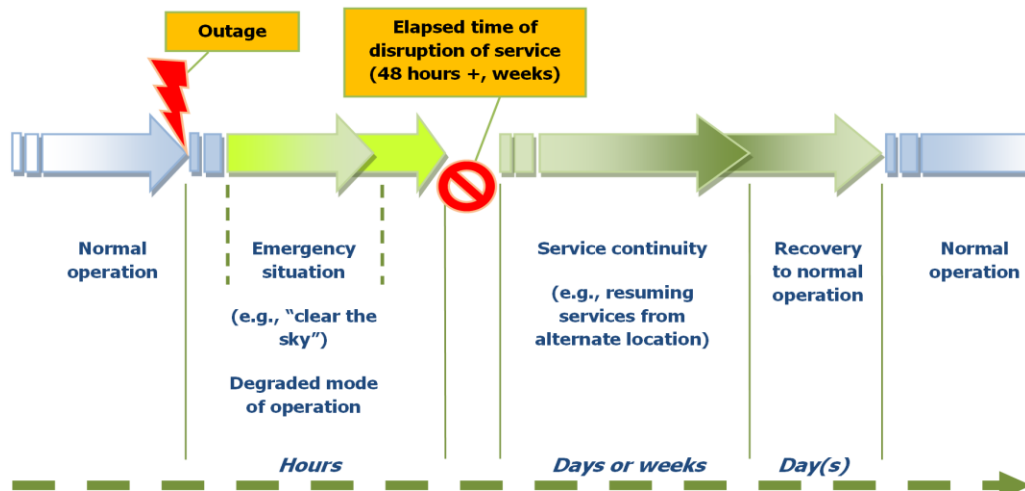
- a. Directorate General of Civil Aviation;
- b. Ministry of Defense;
- c. Indonesian Air Force;
- d. Meteorological, Climatological and Geophysical Agency (MCGA);
- e. Center of Volcanology and Geological Hazard Mitigation (PVMBG);
- f. Search and Rescue (SAR) Agency;
- g. National Disaster Management Agency (BNPB)
- h. Air Navigation Indonesia (Perum LPPNPI);
- i. Airport business entity or Airport Management Unit;
- j. Representative from the air transportation business committee;
- k. Representative from the airline operators;
- l. Other participants as required.

5.1.3. The duties and responsibilities of CCC are as follows:

- a. Conduct an analysis/assessment of the level and category of contingency conditions and determine operational handling plans in accordance with the ATM Contingency Plan Level 1 and 2 documents as a reference for AOCG's work;
- b. Activate the ATM Operational Contingency Group (AOCG);
- c. Activate the ATM Contingency Plan operations;
- d. Conduct coordination meetings among CCC members to update the ongoing contingency conditions and contribution factors from their respective areas;
- e. Monitor the implementation of emergency situations carried out by affected ATS units;
- f. Supervise and evaluate the implementation of the takeover of Air Traffic Management functions by other ATS Units periodically and continuously, following the ATM Contingency Plan or other supporting documents;
- g. Coordinate periodically with ICAO Regional, aircraft operators, IATA regional offices, and other relevant stakeholders;
- h. Determine the end of contingency conditions;
- i. Deactivate the ATM Operational Contingency Group (AOCG);
- j. Prepare documentation and reports to the Minister of Transportation and other relevant ministries/agencies.

5.1.4. CCC will carry out its duties and responsibilities from the receipt of information about the occurrence of contingency conditions impacting the transfer of air traffic management functions until the return of air traffic management functions to normal operations within one (1) contingency life cycle.

5.1.5. The Contingency Life Cycle is a condition where the Air Traffic Management functions initially operate normally, then transition into emergency situations, degraded modes of operation, service continuity, recovery, and ultimately return to normal operational conditions.



5.2. CCC Coordinator

The CCC Coordinator is the Director General of Civil Aviation at the Ministry of Transportation.

5.2.1. The duties and responsibilities of the CCC Coordinator include:

- a. Receive information from the Chief Executive of Perum LPPNPI or the Head of the Flight Meteorology Center - BMKG or the Head of PVMBG or other relevant ministries/agencies regarding the occurrence of disasters such as earthquakes, tsunamis, floods, volcanic ash, disease outbreaks/pandemics, military activities (war), nuclear disasters/radiation, demonstrations, ATM system degradation/failure, national security issues, or political conditions, actions against the law that may potentially disrupt and pose the possibility of disruption to the provision of Air Traffic Services and other supporting services in Indonesian airspace, potentially rendering Indonesian airspace unsafe or unavailable;
- b. Activate the CCC and designate the Command Center location as the center for coordinating and nationally controlling the implementation of the contingency plan;
- c. Activate the air traffic contingency within a specific airspace affected, after going through coordination and assessment stages by all CCC members;
- d. Periodically and continuously receive contingency condition reports from ministries/agencies that are members of the CCC;
- e. Make policy-oriented decisions or provide guidance to AOCG in the contingency management plan for the affected Air Traffic Management, after going through coordination and assessment stages by all CCC members;

-
- f. Deactivate the contingency management plan for air traffic within a specific affected airspace after conducting comprehensive coordination meetings and evaluations of air traffic management functions that have transitioned (recovered) towards normal conditions;
 - g. Deactivate the CCC.

5.3. Duties of the member

5.3.1. Duties and Responsibilities of Perum LPPNPI (AirNav Indonesia):

- a. Report to the Director General of Civil Aviation when an ATS unit experiences an emergency condition transitioning to a contingency condition;
- b. Prepare personnel, procedures, and facilities for taking over air traffic management functions during contingency conditions;
- c. Analyze and inventory the impacts of contingency conditions and identify possible mitigations;
- d. Publicize the occurrence of contingency conditions to users of Indonesian airspace.

5.3.2. Duties and Responsibilities of Disbangops - Indonesian Air Force:

- a. Analyzing and evaluating the causal factors of contingency conditions related to military activities (war), demonstrations, national security issues, or political conditions, and actions against the law, then periodically and continuously reporting to the Coordinator and other CCC members;
- b. Mobilizing Indonesian Air Force personnel to assist in the mobilization of personnel in response to contingency conditions related to military activities (war), demonstrations, national security issues, or political conditions, and actions against the law.

5.3.3. Duties and Responsibilities of the Ministry of Defense:

- a. Monitor the security of Indonesian airspace during the implementation of the ATM Contingency Plan and subsequently report periodically and continuously to the Coordinator and other CCC members.

5.3.4. Duties and Responsibilities of Search and Rescue Agency:

- a. Implementing internal contingency plans/implementation procedures for Search and Rescue (SAR) operations;
- b. Providing support for the preparation of personnel and SAR service facilities during contingency conditions.

5.3.5. Duties and Responsibilities of MCGA:

- a. Implementing internal contingency plans;
- b. Providing meteorological information, including METAR/SPECI, SIGMET, Volcanic Activity Report, Aerodrome Warning, etc., periodically and continuously.

5.3.6. Duties and Responsibilities of PVMBG:

- a. Providing Volcano Observatory Notice for Aviation (VONA) information periodically and continuously;
- b. Providing information related to CCTV images and/or photos.

5.3.7. Duties and Responsibilities of National Disaster Management Agency (BNPB):

- a. Coordinating the implementation of disaster response activities in a planned, integrated, and comprehensive manner;
- b. Providing guidance and direction for disaster response efforts, including disaster prevention, emergency response, rehabilitation, and reconstruction in a fair and equitable manner.

5.3.8. Duties and Responsibilities of Airport Business Entity or Airport Management unit:

- a. Analyzing and evaluating airport conditions during contingency conditions, then reporting periodically and continuously to the coordinator and other CCC members;
- b. Implementing provisions stated in the Aerodrome Emergency Procedure at the affected airports;
- c. Preparing alternative airports in terms of personnel sufficiency, facilities, and other supporting factors.

5.3.9. Duties and Responsibilities of Airlines Operators:

- a. Implementing internal contingency plans;
- b. Analyzing and inventorying the impact of contingency conditions on flight schedules, the use of contingency routes, and reporting any PIREP and other important information periodically and continuously to the coordinator and other CCC members.

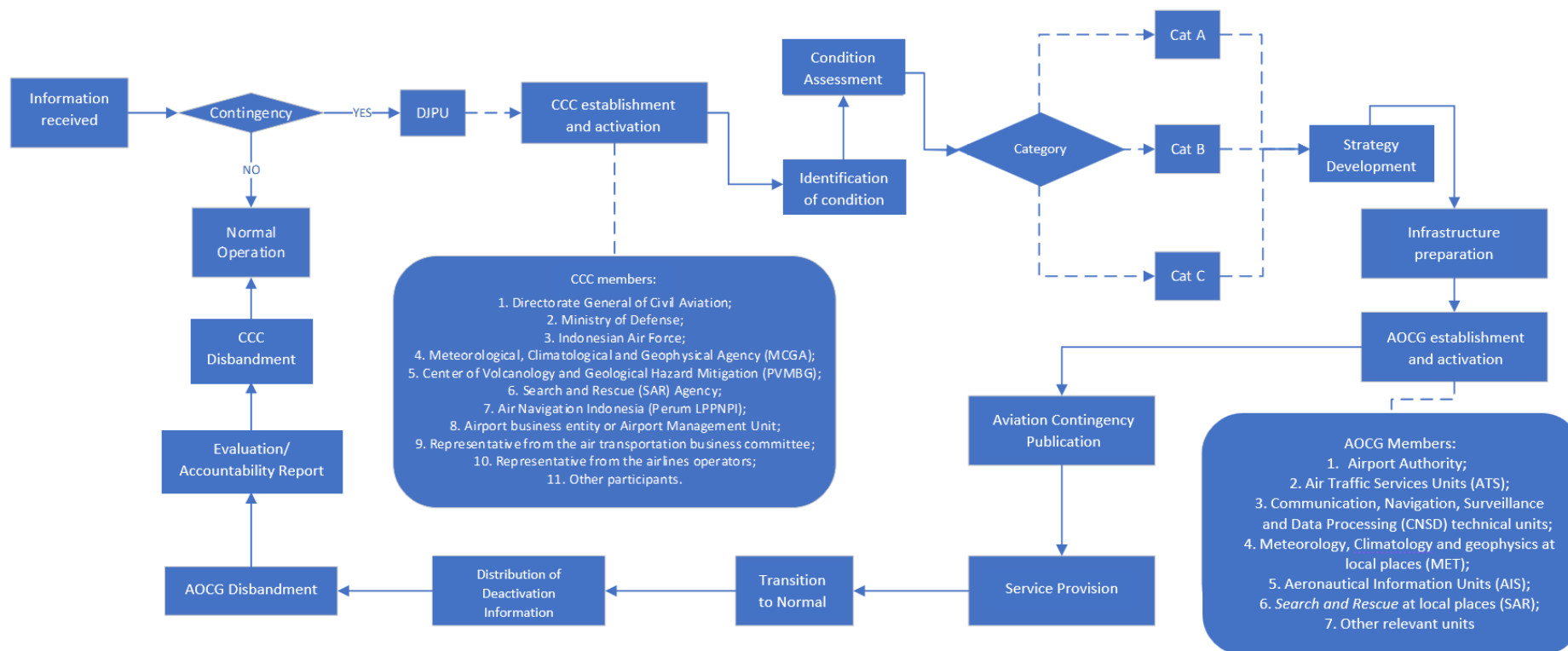
6. Contact detail CCC

POSITION	ADDRESS
Directorate General of Civil Aviation	Jl. Medan Merdeka Barat No.8 Gedung Karsa Lt.5 Kemenhub Jakarta. 10110 Email: sekretariatdju@gmail.com
Directorate of Air Navigation	Jl. Medan Merdeka Barat No.8 Gedung Karya Lt.22 Kemenhub Jakarta. 10110 Phone: +62 8156508802 email: sekdir.dnp@gmail.com
Directorate of Airport Coordinator of Certification and Aiprort Safety Monitoring	Jl. Medan Merdeka Barat No.8 Gedung Karya Lt.22 Kemenhub Jakarta. 10110 Phone: +62 877-1970-1973
Directorate of Aviation Security, Coordinator of Standardization	Jl. Medan Merdeka Barat No. 8 Gedung Karya Lt.24 Kemenhub Jakarta. 10110 Phone: +62 852 17648234

Ministry of Defense Kasubdit Wilud Ditwilhan Ditjen Strahan	Kementerian Pertahanan Republik Indonesia – Direktorat Strategi Pertahanan Gedung Ahmad Yani, jalan Medan Merdeka Barat No. 13-14 Jakarta Pusat, 10110 Mobile: +62 81281911944 Phone: +62 21 – 3828548 Email: strahan@kemhan.go.id or sotardd73@gmail.com
Indonesian Air Force Kadisbangopsau / LLU	Disbangopsau – Mabes TNI Cilangkap. Mobile: +62 8119446712 Phone: + 62 21 – 8709235
Meteorological, Climatological and Geophysical Agency (MCGA)	Jl. Angkasa I no. 2 Kemayoran, Jakarta Pusat Mobile: +62 81347362299 +62 82334588233 (PMG) +62 85215039595 (PMG) Phone: +62 21 – 4246321 Fax: +62 21 – 4246703
Center of Volcanology and Geological Hazard Mitigation (PVMBG);	Jl. Diponegoro No. 57 Bandung - Jawa Barat 40122 Indonesia Telepon 1: +62227271402 Telepon 2: +62227272606 Fax: +62227202761 Email: pvmgb@esdm.go.id
National Disaster Management Agency (BNPB)	Gedung Graha BNPB, Jl.Pramuka Kavling 38, Jakarta Timur 13120 Mobile : +628122640173 Telepon : +622129827766 Email : -
AirNav Headquarter President Director	Perum LPPNPI Kantor Pusat Gedung AirNav Indonesia Jl. Ir. H. Juanda Tangerang, 15121 Phone: +62 21- 55915000 Fax: +62 21-55915100 Mobile: +62 812-9000-4970 Email: du@airnavindonesia.co.id

Indonesia Rescue Coordination Centre	Jl. Angkas Blok B. 15 Kav. 2-3 Kemayoran Jakarta Pusat Phone: +62-21-65867510 and +62-21-65867511 Fax: + 62-21-65867512 AFTN: WIIICYL Email: rcc.indonesia@basarnas.go.id or kagahar@gmail.com
Airport Compliance, Performance & Quality Assurance Departement Head PT. Angkasa Pura I (Persero) Deputi Direktur Pelayanan Bandara PT. Angkasa Pura II (Persero)	Kota Baru Bandar Kemayoran Blok B12 Kav.2 Jakarta Pusat Phone: +62 21 – 6541961 ext 2116 Fax: +62 21 – 6541514 Email: humas@angkasapura1.co.id Bandara Soekarno-Hatta Gd. 600 PO BOX 1001/BUSH Jakarta 19120 Phone: +62 811984138 Call center: +62 138 Email: contactcenter@angkasapura2.co.id
Representative of Airline Operator: Special Staff of Chairman Indonesia National Air Carriers Senior Manager Navigation Support Garuda Indonesia Senior Manager Ops. Support PT. Citilink	Mobile: +62 811-993-690 Email: dwiyanto.ambarhidayat@gmail.com Mobile: +62 817 666 2207 Phone: + 21 – 25601712 Email: ernato_w@garuda-indonesia.com Mobile: +62 81808967036 Phone: - Email: deni@citilink.co.id

Activating Process of Central Coordination Committee (CCC) and ATM Operational Contingency Group (AOCG) on ATM Contingency Plan



APPENDIX 2B

TERM OF REFERENCE

ATM OPERATIONAL CONTINGENCY GROUP

(AOCG)

DIRECTORATE GENERAL OF CIVIL AVIATION

1. Background

Every contracting states of ICAO, particularly in the ICAO Regional, is required to comply with the rules set by ICAO and possess the required documents. Indonesia, as one of them, is expected to adhere to the existing rules, especially in providing air traffic services to users, both during normal conditions and in contingency situations, in accordance with standards and in harmony with neighboring countries.

Indonesia has developed a procedure related to contingency conditions outlined in the Air Traffic Management (ATM) Contingency Plan. This document must always be current, applicable, dynamic, effective, and efficient. The ATM Contingency Plan is a procedure designed to anticipate failures and potential disruptions in providing air traffic services and other supporting services for arriving and departing aircraft, as well as overflying aircraft. These disruptions may be caused by factors such as pandemics, earthquakes, major floods, tsunamis, volcanic ash, nuclear impacts, military conflicts, and non-conducive national security conditions.

ICAO has established 3 (three) levels of ATM Contingency Plan as follows:

- a. ATM Contingency Plan Level 1 is a contingency plan for disruptions and potential disruptions in the provision of Air Traffic Management services and other supporting services in the airspace under its responsibility to ensure the continuity of domestic flight services.
- b. ATM Contingency Plan Level 2 is a contingency plan for disruptions and potential disruptions in the provision of Air Traffic Management services and other supporting services in the airspace under its responsibility to ensure the continuity of overflying flight services.
- c. ATM Contingency Plan Level 3 is a contingency plan jointly developed by countries in a regional or sub-regional area to ensure the continuity of international flight services within a regional or sub-regional area.

In order to support the implementation of the ATM Contingency Plan in the Jakarta and Ujung Pandang FIR, the Directorate General of Civil Aviation has established a Central Coordination Committee (CCC). The members of this committee include all relevant stakeholders in the field of aviation. The committee's tasks include forming, activating, and deactivating the ATM Operational Coordination Group (AOCG), as well as overseeing, coordinating, and evaluating the implementation of air traffic services during contingency conditions.

For the implementation of CCC and AOCG activities, a document called the Term of Reference (TOR) has been prepared. This document serves as a reference for all relevant stakeholders

involved, ensuring that the implementation of the ATM Contingency Plan can proceed according to the specified provisions.

The Term of Reference (TOR) document for the Central Coordination Committee (CCC) and ATM Operational Coordination Group (AOCG) will subsequently be incorporated as part of the ATM Contingency Plan documents for Jakarta FIR and Ujung Pandang FIR.

2. Reference

The legal basis that can be used as a reference in the preparation of the Terms of Reference for the ATM Operational Contingency Group (AOCG) is as follows:

- a. Law of the Republic of Indonesia Number: 1 of 2009 concerning Aviation;
- b. Law of the Republic of Indonesia Number: 11 of 2020 concerning Job Creation;
- c. Government Regulation Number: 3 of 2001 concerning Aviation Safety and Security;
- d. Government Regulation Number: 77 of 2012 concerning Public Companies (Perum) Indonesian Aviation Navigation Service Organizing Institutions;
- e. Government Regulation Number: 32 of 2021 concerning the Implementation of the Aviation Sector;
- f. Regulation of the Minister of Transportation Number PM 55 of 2016 concerning the National Aviation Navigation Order as last amended by Regulation of the Minister of Transportation number: PM 9 of 2022;
- g. Minister of Transportation Regulation Number: PM 65 of 2017 concerning Civil Aviation Safety Regulations Part 170 (Civil Aviation Safety Regulation Part 170) concerning Aviation Traffic Regulations as last amended by Minister of Transportation Regulation Number: PM 10 of 2022;
- h. Minister of Transportation Regulation Number: PM 95 of 2018 concerning Civil Aviation Safety Regulations Section 174 concerning Aviation Meteorological Information Services;
- i. Minister of Transportation Regulation Number: PM 29 of 2021 concerning Civil Aviation Safety Regulations Section 172 concerning Aviation Traffic Management and Telecommunications Service Providers;
- j. Minister of Transportation Regulation Number: PM 9 of 2023 concerning Civil Aviation Safety Regulations Section 175 concerning Aeronautical Information Service Provider;
- k. Minister of Transportation Regulation Number: PM 10 of 2023 concerning Civil Aviation Safety Regulations Section 176 concerning Search and Rescue in Aircraft Accidents;
- l. Regulation of the Director General of Civil Aviation Number: SKEP/25/II/2009 concerning Manual of Air Traffic Services Operational Procedures (Advisory Circular part 170 – 02);
- m. Regulation of the Director General of Civil Aviation Number: KP 565 of 2015 concerning Operational Technical Guidelines Part 170-03 (Advisory Circular Part 170-03) Preparation of Air Traffic Management Contingency Plans in Indonesia (Indonesia Air Traffic

Management Contingency Plan) as last amended by the Director's Regulation General of Civil Aviation Number: KP 47 of 2021;

- n. Document Indonesia ATM Contingency Plan level 1 and level 2 for Jakarta and Ujung Pandang FIR.

3. Purpose And Objective

The purpose and objectives of preparing the Term of Reference for AOCG are as the foundation for AOCG in carrying out tasks and responsibilities related to the series of activities of the Air Traffic Management function during Contingency Level 1 and Level 2 in Jakarta FIR or Ujung Pandang FIR. This is to ensure that Air Traffic Services for aircraft flying within the Jakarta FIR and Ujung Pandang FIR airspace can still be provided by other ATS units.

4. Scope

The scope of activities includes all assessment, planning, supervision, operational, coordination, evaluation, and information exchange activities related to air traffic services during contingency conditions in Jakarta FIR and Ujung Pandang FIR. This is to provide contingency handling in the air traffic management services within Ujung Pandang FIR and Jakarta FIR.

5. Organization

5.1. ATM Operational Contingency Group (AOCG)

5.1.1. AOCG is the Operational Contingency Group for day-to-day operational implementation based on Contingency regulations and coordinates ATS operational activities, 24 hours a day or as needed throughout the emergency period.

5.1.2. AOCG is coordinated by the Head of Airport Authority for Region I or the Head of Airport Authority for Region V.

5.1.3. Members of the AOCG consist of:

- a. Airport Authority;
- b. Air Traffic Services (ATS) Units;
- c. Communication, Navigation, Surveillance and Data Processing (CNSD) technical unit;
- d. Meteorology, Climatology and geophysics (MET) at local places;
- e. Aeronautical Information Service (AIS) Units;
- f. Search and Rescue (SAR) at local places;
- g. Other participants as required.

5.2. Duties and responsibilities of AOCG in general include the following:

- a. Reviewing and updating contingency plans as needed;

-
- b. Monitoring developments and obtaining the latest information on contingency conditions;
 - c. Organizing contingency teams in each area;
 - d. Exchanging up-to-date information with relevant air traffic service units to coordinate contingency activities;
 - e. Coordinating and updating contingency information to all system users and other relevant airspace users;
 - f. Notifying the Central Coordinating Committee (CCC) promptly about the contingency situation;
 - g. Publishing NOTAM or other information through the Aeronautical Information Service provider regarding contingency conditions.
- 5.3. Duties and responsibilities of the Head of the Airport Authority Office are as follows:
- a. Acting as the coordinator for the implementation of tasks by AOCG members;
 - b. Analyzing and ensuring the readiness of personnel, facilities, and other supporting facilities needed to carry out the delegation of air traffic management functions and the implementation of provisions stated in the Air Traffic Management Contingency Plan (ATM Contingency Plan);
 - c. Reporting the readiness of AOCG members to the CCC coordinator;
 - d. Periodically and continuously reporting the implementation of operational delegation of air traffic management functions and provisions stated in the ATM Contingency Plan to the CCC;
 - e. Reporting to the CCC coordinator when contingency conditions gradually improve and return to normal.
- 5.4. The Air Traffic Service (ATS) unit referred to has the following responsibilities:
- a. Ensuring the readiness of personnel in terms of quantity and capability to implement the Contingency Plan;
 - b. Conducting intensive coordination with stakeholders according to the prevailing dynamic developments;
 - c. Implementing the contingency plan in accordance with the procedures in the ATM CP Level 1 and 2 documents or other supporting documents.
- 5.5. Communication, Navigation, Surveillance and Data Processing (CNSD) technical units referred to has the following responsibilities:
- a. Ensuring the readiness of personnel in terms of quantity and capability for contingency conditions;
 - b. Maintaining the readiness of CNSD facilities and infrastructure to face contingency conditions;

-
- c. Conducting intensive coordination with stakeholders according to the prevailing dynamic developments.
- 5.6. The duties and responsibilities of the Local Airport Meteorology, Climatology, and Geophysics Agency (MET) are as follows:
- a. Providing necessary Meteorology, Climatology, and Geophysics information for aviation, especially for the implementation of air traffic management functions during contingency conditions, periodically and continuously;
 - b. Adhering to the provisions stated in the LOCA between the Meteorology Station and the Air Navigation Service Provider;
 - c. Actively participating in the coordination process and exchanging up-to-date information among AOCG members.
- 5.7. The duties and responsibilities of the Aeronautical Information Service (AIS) Units are as follows:
- a. Preparing draft of NOTAM to be subsequently submitted to the Notam Office (NOF) related to activation, deactivation, and other information related to contingency conditions, such as available and unavailable airspace, facilities and services, alternative services, contingency routes, special procedures for neighboring ATS units, special procedures for pilots, potential changes in airspace classification, and other contingency information;
 - b. NOF issues and distributes NOTAM conveyed by the AIS related to contingency conditions and the implementation of the contingency plan according to the ATM CP Document;
 - c. The AIS Regional Office in Makassar will take over the functions of the Jakarta NOF in the event that the Jakarta NOF is affected by contingency conditions;
 - d. Actively participating in the coordination process and exchanging up-to-date information among AOCG members.
- 5.8. The duties and responsibilities of the Search and Rescue at the local airport (SAR) are as follows:
- a. Conducting SAR operations in accordance with existing SAR SOP;
 - b. Providing periodic and continuous information related to SAR operations;
 - c. Adhering to the provisions stated in the LOCA between the Meteorology Station and the Air Navigation Service Provider;
 - d. Actively participating in the coordination process and exchanging up-to-date information among AOCG members.
- 5.9. The duties and responsibilities of other relevant units are to provide necessary information and prepare personnel who can participate as members of AOCG.

6. Contact detail AOCG

6.1. Contact Detail AOCG Jakarta FIR

POSITION	ADDRESS
Head of Airport Authority Region I - Jakarta	Jl. C.2 Gedung Kantor Otoritas bandar udara Wilayah I- Kelas Utaman Soekarno - Hatta Banten 19110 Phone : +62 21 55912648 / +62 21 55912649, (021) 55912650 Mobile : +62 81218573737 +62 82124051255 Email : Sekreotban@gmail.com
General Manager of AirNav Indonesia JATSC	JATSC Building 611 Soekarno Hatta Airport Jakarta Phone : +62 21-5506112 Mobile : +62 8111138851 +62 87876761108 Email : generalmanagerjatsc@gmail.com
Deputy GM of operation of AirNav Indonesia JATSC	JATSC Building 611 Soekarno Hatta Airport Jakarta Phone : +62 21-5506112 Mobile : +62 8111138851 Email : jatsc.deputyops@gmail.com
Operation Manager of ACC JATSC	JATSC Building 611 Soekarno Hatta Airport Jakarta Phone: +62 21-5506582 : +62 811113881 Email : jatsc.managerops@gmail.com
Jakarta NOF	Perum LPPNPI (AirNav Indonesia) Soekarno – Hatta International Airport Building 611 – Jakarta Air Traffic Service Centre (JATSC) Jakarta Indonesia – 19120 Mobile: +62 21-55910631 Email : notamoffice@airnavindonesia.co.id

GM of ATS Medan	Gedung ATS Bandar Udara Kualanamu Deliserdang , Sumatera Utara Phone : +62 8155787957 +62 8116353939 Email : wahyutirtaji@airnavindonesia.co.id
Operation Manager Medan	Gedung ATS Bandar Udara Kualanamu Deliserdang , Sumatera Utara Phone : +62 81222685229 Email : medan@airnavindonesia.co.id
GM of ATS Pekanbaru	Gedung Radar Bandar Udara SSK II Jalan Perhubungan-KP 28284 ,Riau Phone : +62 761-7876278 Mobile : +62 8127402502 +62 819807229 Email : airnav.pku@gmail.com
GM of ATS Palembang	Gedung Radar Bandar Udara SMB II Palembang, Sumatera Selatan Phone : +62 8129434898 Email : shellya.yunita@airnavindonesia.co.id gm.palembang@airnavindonesia.co.id
ATS Operation Coordinator Palembang	Gedung Operasi / APP Bandar Udara SMB II Palembang , Sumatera selatan Phone : +62 711-385008 Email : operationplb@gmail.com
GM of ATS Pontianak	Jalan Adi Sucipto KM 15 Pontianak, Kalimantan Barat Phone : +62 8115620070 Email : adm.airnavpontianak@gmail.com manops.airnavpnk@gmail.com pontianak@airnavindonesia.co.id

GM of ATS Yogyakarta	Gedung Operasi Bandara Adi Sucipto Yogyakarta Phone : +62 811168717 +62 8112246144 Email : zaenal.arifin@airnavindonesia.co.id
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6.2. Contact Detail AOCG Ujung Pandang FIR

POSITION	ADDRESS
Head of Airport Authority Region V - Makassar	Jl. Otoritas Bandara No. 5, Maros, Sulawesi Selatan, 90552 Phone: +62 411 3656222 Mobile: +62 813 1869 0666 Email: otban_wil.v@dephub.go.id or obu5.mks@gmail.com
MWO Ujung Pandang	Jl. Bandara International Sultan Hasanuddin, Maros, Sulawesi Selatan, 90552 Phone: +62 411 4831296 Mobile: +62 85399271060 Email: stamet.hasanuddin@bmkgo.go.id hndforecaster@yahoo.co.id
General Manager of AirNav Indonesia MATSC	MATSC Building Hasanuddin Airport Makassar – Indonesia, 90552 Phone: +6281144602012 +62411-4813718 +62411-4813210 ext 1134 Email: gm.matsc@airnavindonesia.co.id
Deputy GM of operation of AirNav Indonesia MATSC	Mobile: +624114813210 Ext 3104 +628114408992 Email: deputyops.matsc@airnavindonesia.co.id
Manager of operation of AirNav Indonesia MATSC	Phone: +62411-4813228 Mobile: +628114408991 Email: acc.matsc@airnavindonesia.co.id

AIS Regional Office in Makassar	Kantor Cabang Perum LPPNPI (Airnav Indonesia) MATSC Building Jl. Bandara Baru Makassar PO BOX 90552- Indonesia Phone: +62 411 4813210 Ext. 2058 Mobile: +62 811 4612 017 Email: ais.makassar@airnavindonesia.co.id
General Manager of AirNav Indonesia Denpasar Manager of operation of AirNav Indonesia Denpasar	Operation Building, I GustiNgurah Rai Airport Phone: +62 361-9351011 ext 5011 Email: gm.denpasar@airnavindonesia.co.id Mobile: +62 361-9355140 Email: atscoordinator.ngurahrai@gmail.com
General Manager of AirNav Indonesia Balikpapan Manager of operation AirNav Indonesia Balikpapan	Jl. Marsma R. Iswahyudi, Gedung Operasi Bandara Sultan Aji Muhamad Sulaiman Sepinggan, Balikpapan, Kaltim Phone: +62-542-7570016 ext. 100 Mobile: +62-82255210201 Email: gm.balikipapan@airnavindonesia.co.id
General Manager of AirNav Indonesia Surabaya Manager of operation of AirNav Indonesia Surabaya	Bandara Internasional Juanda Surabaya Phone: +62 8126529423 Email: gm.surabaya@airnavindonesia.co.id Phone: +62-0312986517 Email: atscoordinator_surabaya@yahoo.com
General Manager of AirNav Indonesia Jayapura	Jln.Yabaso No.76 Sentani Jayapura Papua Phone: 62-967-592152 Mobile: +62-811483619 Email: gm.jayapura@airnavindonesia.co.id
General Manager of AirNav Indonesia Ambon	Kantor Cabang Airnav Indonesia Ambon Jl. Dr. J. Leimena Bandara Pattimura Ambon. Phone: +62 91122028 Ext. TWR 222 Mobile: +62-85197376423 +62-8127350737 Email: dm.ambon@airnavindonesia.co.id

General Manager of AirNav Indonesia Banjarmasin	Perum LPPNPI Jl. A. Yani KM 24,5 Landasan Ulin Banjarbaru 70724 Phone: +62-551-4705774 Email: dm.banjarmasin@airnavindonesia.co.id Phone: +62 511 4705172 Mobile: +62 8115134640 Email: banjarapproach@gmail.com
General Manager of AirNav Indonesia Manado	Operation Building Airnav Manado Jln. A. A. Maramis 95374 Manado Phone: +62-431-818056 Fax: +62-431-818057 Phone: +62-431813252 Email: dm.manado@airnavindonesia.co.id
General Manager of AirNav Indonesia Kupang	Branch Office AirNav Kupang Jln. Adi Sucipto Terminal B Kupang Phone: +62-380-881307 Mobile: +62-811383040 Mobile: +62-813 39311777 Email: dm.kupang@airnavindonesia.co.id
General Manager of AirNav Indonesia Tarakan	Branch Office AirNav Tarakan Jln. Mulawarman No.1 Bandara Juwata Tarakan – Kaltara Phone: +62-551-2026388 Mobile: +62 81362385588 Email: atsopstarakan@gmail.com
General Manager of AirNav Indonesia Sorong	Branch Office Airnav Sorong Jln.BasukiRahmat Km 8 Sorong Papua Mobile: +62-81248665711 Email: royleiwa67@gmail.com
General Manager of AirNav Indonesia Merauke	Branch Office Airnav Merauke Phone: Mobile: +6281242523825 Email: airnavmerauke@gmail.com

General Manager of AirNav Indonesia Kendari	Kantor Cabang Pratama Kendari Gedung Tower Bandara Haluoleo Kendari Sulawesi Tenggara Phone: +62 4013127869 Mobile: +62 85340515863 +62 8163133429 Email: airnavkdi@gmail.com
Head of sub-branch of AirNav Indonesia Biak	Jln. Moh Yamin No 1B Gedung ATS Operation Bandara Frans Kaisiepo Phone: +62-981-22555 ext.209 Mobile: +62 8114877040 Mobile: +62 8114875746 Email: biak.airnav@gmail.com
Head of sub-branch of AirNav Indonesia Palu	Kantor KPNP Palu Bandar Udara Mutiara Sis al jufri Palu Phone: +62 451- 487222 Mobile: +62 858 2507 0150 Email: kpnppalu@gmail.com
Head of sub-branch of AirNav Indonesia Ternate	Bandara Sultan Babullah Jln.Bandara Ternate Maluku Utara 97700 Mobile: +62-81340773288 +62- 81333064482 Email: airnav.tte@gmail.com
Head of sub-branch of AirNav Indonesia Pangkalan Bun	Kantor KPNP Pangkalan bun Bandar Udara Iskandar Pangkalan bun Kalteng Mobile: +62 81225092254 +62 82153655901
Head of sub-branch of AirNav Indonesia Gorontalo	Kantor KPNP Gorontalo Bandar Udara Jalaludin Gorontalo Jl. Satria Angkasa No.274 Gorontalo Mobile: +62-8134009247 Mobile: +62-82333331830 Email: airnav.gorontalo@yahoo.com

NOTAMS

2C.1 NOTAM SPECIFICATIONS

2C.1.1 NOTAM Series, Numbering and Identifier

Each NOTAM must consist of a series identified by letters and 4 (four) digit numbers for numbers, followed by slashes and 2 (two) digit numbers for the year.

“Example: A0123 / 13, where A represents the NOTAM series, 0123 states the NOTAM number and 13 is Year (2013)”.

2.C.1.2 NOTAM Series

NOTAM series distributed by NOF can be classified as follows:

A- NOTAM

containing information on long-distance or medium-range flights, and for national and international distribution.

B-NOTAM

which contains complete information for all airports / heliports, facilities and procedures available that are used in international civil aviation and for limited national and international distribution of neighboring countries and other countries on request.

C- NOTAM

which contains information on domestic flights and for national distribution only.

S-NOTAM

issued in SNOWTAM format regarding the presence or elimination of hazard conditions due to snow, mud or ice at the airport / heliport. Related to puddles published through NOTAM (for series based on the location of airports affected by puddles).

V-NOTAM

published in ASHTAM format regarding the occurrence of pre-eruption volcanic activity, or significant operational changes in volcanic activity, location, date and time of volcanic eruption and horizontal and vertical levels of volcanic ash clouds, including direction of movement, flight levels and routes or parts of the route that can be affected.

2C.1.3 If NOTAM is issued in more than one series, each series must be identified separately by letters A, B, C, V with the exception of S and T.

2C.1.4 Numbers must be sequential and based on the calendar year.

2C.1.5 The numbering of each NOTAM series will begin on January 1st, of each year with the number 0001

2C.1.6 NOTAM identifier consists of:

- a. NOTAMN for NOTAM that contains new information.
“Example: A0123 / 13 NOTAMN”
- b. NOTAMR for NOTAM that replaces the previous NOTAM, followed by the series and number / year of the NOTAM that was replaced.
“Example A0125 / 13 NOTAMR A0123 / 13”.
- c. NOTAMC for NOTAM that canceled the previous NOTAM, followed by the series and number / year of the canceled NOTAM.
“Example: A0460 / 13 NOTAMC A0456 / 13”.

2C.2 SAMPLE NOTAMS FOR CONTINGENCY PLAN

a) **Avoidance of Airspace**

NOTAM.....DUE TO DISRUPTION OF ATS IN [AFFECTED] FIRS, DOMESTIC FLIGHTS ARE DELEGATED TO ATS UNITS UNDER JURISDICTION OF [AFFECTED] ACC AND [ADJACENT] FIC WITH LEVEL ALLOCATED NOT ABOVE FL.280

b) **Airspace Available Limited ATS**

NOTAMDUE TO ANTICIPATED DISRUPTION OF ATS IN THE JAKARTA FIR ALL ACFT ARE ADVISED THAT THERE WILL BE LIMITED ATS. PILOTS MAY EXPERIENCE DLA AND OVERFLIGHTSMAY CONSIDER AVOIDING THE AIRSPACE.

c) **Non adherence to the Contingency Plan**

NOTAM OPERATORS NOT ABLE TO ADHERE TO THE CONTINGENCY PLAN SHALL AVOID THE JAKARTA FIRS.

d) **Termination contingency plan**

NOTAM..... JAKARTA FIR RESUME NORMAL OPERATION AND CONTINGENCYPLAN LEVEL 1 FOR JAKARTA FIR HAS TERMINATED

f) Contingency plan activated and deactivated

NOTAM	
Number NOTAM	:
Location	:
Subject	:
NOTAM Summary	:

WIIF – JAKARTA FIR

ATS ROUTE CONTINGENCY PLAN WIIF

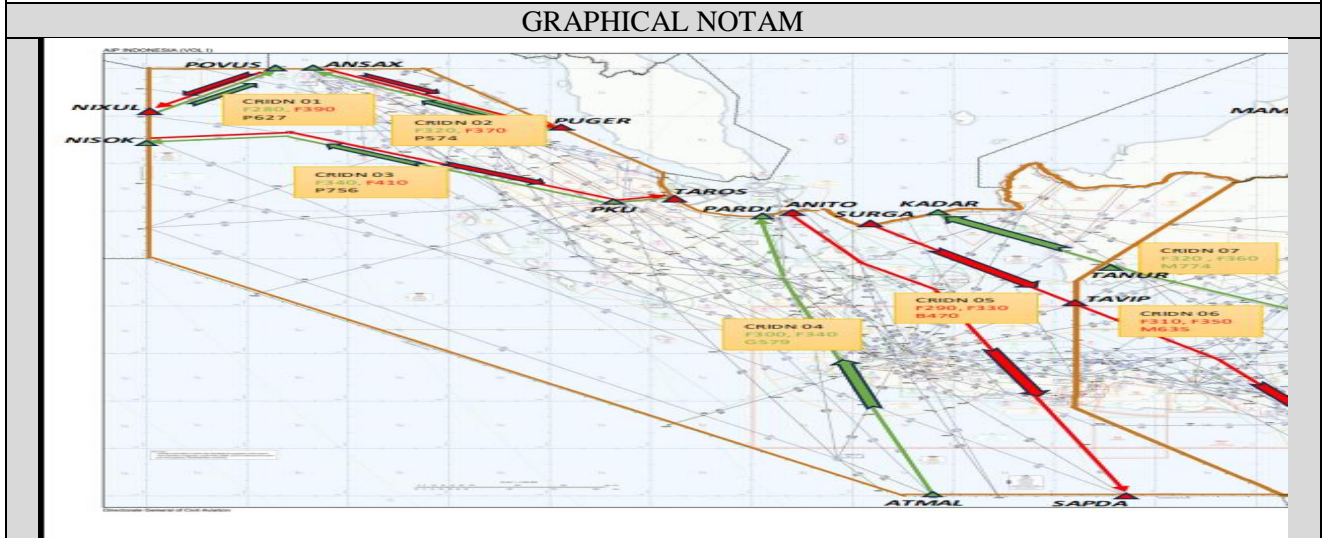
AVAILABILITY ROUTE FOR CONTINGENCY PLAN IN JAKARTA FIR

Text Notam

REF AIP SUPP NrDUE TO DISRUPTION OF ATS IN JAKARTA FIR ALL ACT ARE ADVISED THAT THE INDONESIAN INTERNATIONAL CONTINGENCY PLAN FOR ACFT INTENDING TO OVERFLY THESE FIRS IS IN EFFECT. FLIGHT PLANNING MUST BE IN ACCORDANCE WITH THE CONTINGENCY ROUTES LISTED AND FL ASSIGNMENT DETAILED HERE BELOW :

- A. CRIDN01 (P627)
POVUS-NIXUL :
TWO – WAY SOUTHWEST FL280 AND NORTHEAST FL390
- B. CRIDN02 (P574)
ANSAX-PUGER :
TWO – WAY NORTHWEST FL320 AND SOUTHEAST FL370
- C. CRIDN03 (P756 P570 R469)
NISOK-P756-MABIX-P570-PKU-R469-TAROS :
TWO – WAY EAST FL370 FL410 AND WEST FL340
- D. CRIDN04 (N752 G579)
ATMAL-N752-PLB-G579-PARDI :
ONE – WAY FL300 AND FL340
- E. CRIDN05 (B470 L511 L895)
ANITO-B470-PKP-L511-MIMIX-L895-SAPDA :
ONE - WAY FL290 AND FL330
- F. CRIDN06 (M635)
SURGA-M635-TAVIP :
ONE – WAY FL310 AND FL350
- G. CRIDN07 (M774)
TANUR-M774-KADAR :
ONE – WAY FL320 AND FL360

PILOTS MUST STRICKLY ADHERE TO THE CONTINGENCY PROCEDURES. ONLY APPROVED INTERNATIONAL FLIGHTS ARE PERMITTED TO OVERFLY INDONESIAN AIRSPACE



NOTAM		
Nomor NOTAM	:	
Lokasi	:	WIIF – JAKARTA FIR
Perihal	:	<i>CANCELED CP</i>
Ringkasan Isi NOTAM	:	<i>CANCELED CP JAKARTA FIR</i>
Text Notam		
NOTAM JAKARTA FIR RESUMED NORMAL OPERATION AND CONTINGENCY PLAN LEVEL 2 FOR JAKARTA FIR HAS TERMINATED		
GRAPHICAL NOTAM		

2C.3 Coordinated Recovery from ATS Contingency Operations

2C.3.1 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 ATS units in an unsafe or unmanageable situation, it is important to consider, coordinate and agree on recovery actions.

2C.3.1.2 States coordinating the recovery from contingency operations should:

1. establish, 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);

-
2. provide prior notification of resumption of normal operations at the agreed resumption time via NOTAMs promulgated not less than 6-12 hours (or longer agreed prior notification time, 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).
 3. 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
 4. 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.

2C.4 Promulgation of Information supporting Natural Disaster Humanitarian Aid Operations

2C.4.1 Aircraft operators supporting humanitarian aid organizations responding to natural disasters and other incidents requiring their intervention require ready access to up-to-date operational information. In many cases, NOTAMs referring to ATS units, aerodromes, communications and navigations facilities and infrastructure may be domestically distributed only.

2C.4.2 There is also a need to ensure that contact details for the ATS unit or organization providing the AOCG function (paragraph 5.10 iv) are provided to enable ready access to information necessary to plan humanitarian aid operations.

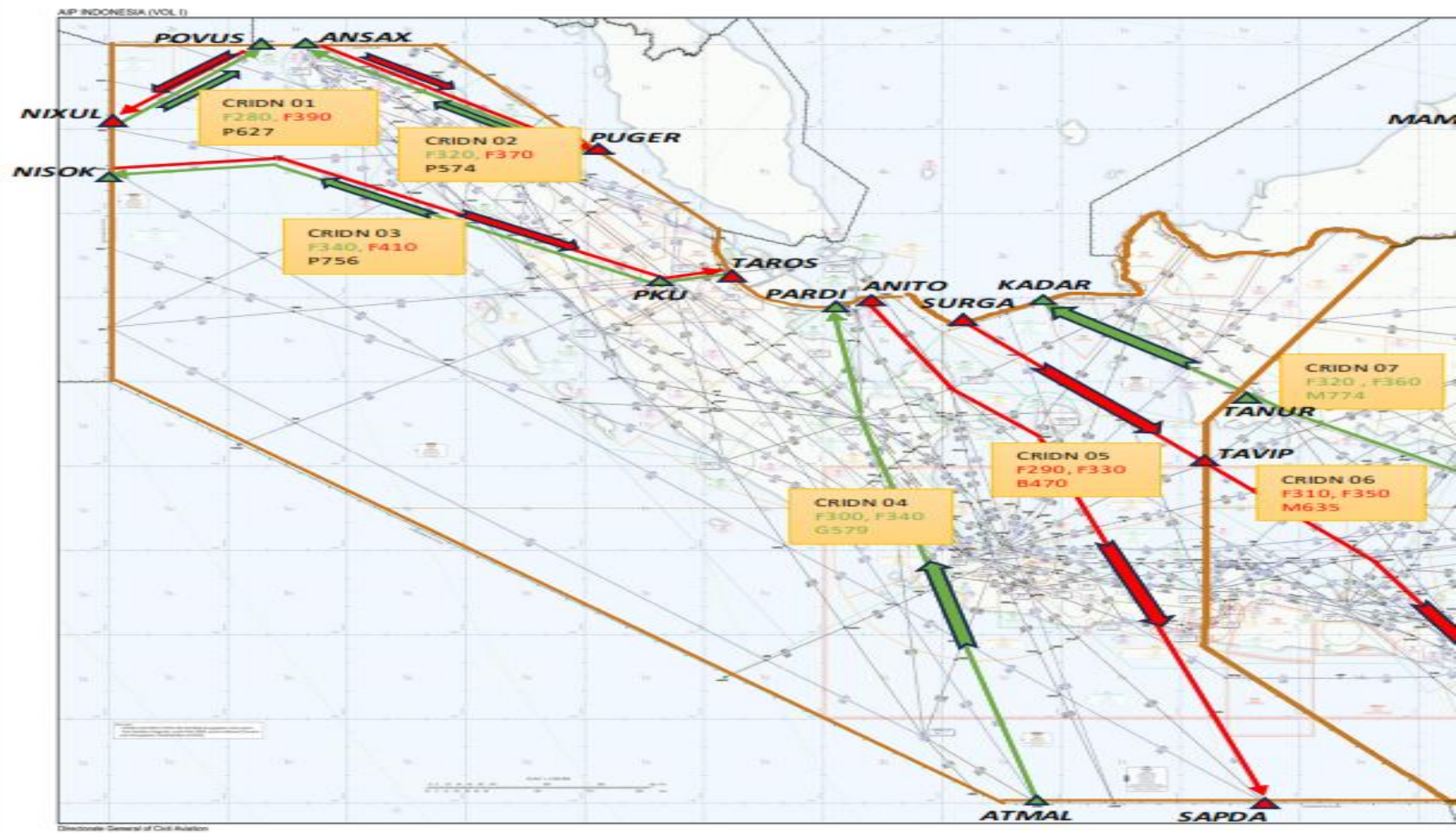
2C.4.3 States should ensure that NOTAM relating to the contingency situation are temporarily included in the international NOTAM distribution for the FIR/s concerned. NOTAM providing contact details for the ATS unit or other organization providing the AOCG function should also be promulgated.

CONTINGENCY ROUTE STRUCTURES WITHIN JAKARTA FIR

VHF Air to Air Frequency: 123.45MHz

Contingency Route Indonesia (CRIDN)	ATS Routes	Direction	FLAS	ACCs
CRIDN01	POVUS-P627-NIXUL	Bidirectional	Southwest bound: FL280 Notheast bound: FL390	Ujung Pandang
CRIDN02	ANSAX-P574-PUGER	Bidirectional	Northwest bound: FL320 Southeast bound: FL370	Ujung Pandang
CRIDN03	NISOK-P756-MABIX-PKU-R469-TAROS	Bidirectional	East bound: FL370 FL410 West bound: FL340	Ujung Pandang
CRIDN04	ATMAL-N752-PLB-G579-PARDI	Unidirectional	Northwest bound: FL300 FL340	Ujung Pandang
CRIDN05	ANITO-B470-PKP-L511-MIMIX-L895-SAPDA	Unidirectional	Southeast bound: FL290 FL330	Ujung Pandang
CRIDN06	SURGA-M635-TAVIP	Unidirectional	Southeast bound: FL310 FL350	Ujung Pandang
CRIDN07	TANUR-M774-KADAR	Unidirectional	Northwest bound: FL320 FL360	Ujung Pandang

CHART OF CONTINGENCY ROUTE WITHIN JAKARTA FIR



**CONTINGENCY FREQUENCIES FOR CONTROL AND/ OR
FLIGHT MONITORING SERVICES**

CONTINGENCY ROUTE INDONESIA (CRIDN)	ATS Route	ACC	Communication (Frequency Details in Appendix)	Adjacent
CRIDN01	POVUS-P627-NIXUL	Ujung Pandang	HF 11309/8918/11396/5550/3416 ADS/CPDLC: Logon WAAF	Povus : kualalumpur ACC 133.4 Nixul : Colombo Radio Hf 11285/ Hf 56770
CRIDN02	ANSAX-P574-PUGER	Ujung Pandang	HF 11309/8918/11396/5550/3416 ADS/CPDLC: Logon WAAF	Ansaxs : kualalumpur ACC 133.4 Puger : kualalumpur ACC 133.7 kualalumpur ACC 132.8
CRIDN03	NISOK-P756-MABIX-PKU-R469-TAROS	Ujung Pandang	HF 11309/8918/11396/5550/3416 ADS/CPDLC: Logon WAAF	Nisok : Colombo Radio Hf 11285 Hf 56770 Taros : Singapore ACC 133.25
CRIDN04	ATMAL-N752-PLB-G579-PARDI	Ujung Pandang	HF 11309/8918/11396/5550/3416 ADS/CPDLC: Logon WAAF	Atmal : Brisbane Radio hf13306/8879/17961 Pardi : Singapore ACC 134.4
CRIDN05	ANITO-B470-PKP-L511-MIMIX-L895-SAPDA	Ujung Pandang	HF 11309/8918/11396/5550/3416 ADS/CPDLC: Logon WAAF	Anito : Singapore ACC 134.4 Sapda : Brisbane Radio HF 13306/8879/17961
CRIDN06	SURGA-M635-TAVIP	Ujung Pandang	HF 11309/8918/11396/5550/3416 ADS/CPDLC: Logon WAAF	Surga : Singapore ACC 134.4 Tavip : Ujung Pandang ACC 134.1
CRIDN07	TANUR-M774-KADAR	Ujung Pandang	HF 11309/8918/11396/5550/3416 ADS/CPDLC: Logon WAAF	Tanur : Ujungpandang ACC 134.1 Kadar : Singapore ACC 134.4

* Next ACC not providing FIS in the Jakarta FIR for these routes

The adjacent ATS provider HF primary and secondary are interchangeable subject to climatic conditions. When CPDLC is being used, this will be the primary means of communication and HF will be secondary. When ADS is being used for automatic position reporting, pilots are not required to report position on CPDLC or HF unless requested by ATC. The frequencies to be used are contained in Appendix xx

*) addressee for ADS/CPDLC must be re-confirmed

FLIGHT PLANNING REQUIREMENT

Airline operators are expected to familiarize themselves with the Regional Contingency Plan as well as Contingency Plans Jakarta FIR and the activation times. For aircraft intending to operate in areas during periods when the contingency plans are activated, the operators shall plan the flight to conform with the activation times of the Contingency Plans. Airline operators shall ensure that flights are established on contingency routes prior to entering an area which is under Contingency Plan procedure.

The flight planning requirements during the contingency period will be in accordance to ICAO Annex 2 *Rules of The Air*, Doc 4444 *Air Traffic Management* and CASR Part 170 *Air Traffic Services*. Additional information, will, however, be required, to indicate that the flight will operate in airspace where the contingency plan is active. This information is to be indicated in the 'RMK/' field of item 18 of the ICAO flight plan, for example “**RMK/CRIDN03**” in the event that Ujung Pandang ACC has taken over the air traffic services for Jakarta ACC. (Remarks/aircraft will be operating on contingency routes in the Jakarta FIR).

Airline operators are required to file flight plans in accordance with the contingency flight planning procedures. Flight plans should be filed at least 12 hours in advance in order to allow sufficient time for manual processing.

ICAO TRAFFIC INFORMATION BROADCASTS BY AIRCRAFT (TIBA) PROCEDURES

1.1.1 Changes to In-Flight Procedures

Introduction of ICAO TIBA Procedures

TIBA Procedures.

1. Special procedures have been developed for pilot use in active contingency zones if communications are significantly degraded or unavailable. These TIBA procedures supersede and take the place of lost communication procedures that are outlined in PANS-ATM (DOC 4444, Part III, para. 17) and will enable traffic information broadcasts by aircraft (TIBA) to be made as well as providing collision hazard information. When aircraft will enter designated airspace in which it is known in advance that normal communication is not available, pilots should maintain a listening watch on the TIBA frequency 10 minutes prior to entering that airspace.

Times of Broadcast.

2. When a loss of normal communications requires TIBA procedures to be implemented, pilots shall make broadcasts **in English** on 123,45 MHz as follows:
 - a) At the time the loss of normal communications is recognized;
 - b) 10 minutes before entering a designated airspace when it is known in advance that normal communications will not be available within that airspace or, for a pilot taking off from an aerodrome located within the lateral limits of the designated airspace, as soon as appropriate after take-off;
 - c) 10 minutes prior to crossing a reporting point;
 - d) 10 minutes prior to crossing or joining an ATS route;
 - e) at 20-minute intervals between distant reporting points;
 - f) 2 to 5 minutes, where possible, before a change in flight level;
 - g) at the time of a change in flight level; and
 - h) at any other time considered necessary by the pilot.

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

Broadcast Format

3. TIBA broadcasts should be made using the following phraseology:

- a) For other than those indicating changes in flight level:

ALL STATIONS (call sign) FLIGHT LEVEL (number) [or CLIMBING TO FLIGHT LEVEL (number)] (direction) (ATS route) [or DIRECT FROM (position) TO (position) POSITION] (position) AT (time) ESTIMATING (next reporting point, or the point of crossing or joining a designated ATS route) AT (time) (call sign) FLIGHT LEVEL (number) (direction)

Example: “ALL STATIONS WINDAR 671 FLIGHT LEVEL 380 NORTHWEST BOUND B472 POSITION 80 MILES SOUTH EAST OF SELSO AT 2358 ESTIMATING SURAH AT 0020 WINDAR 671 FLIGHT LEVEL 380 NORTHWEST BOUND OUT”

Note: For broadcasts made when the aircraft is not near an ATS significant point, the position should be given as accurately as possible and in any case to the nearest 30 minutes of latitude and longitude.

b) Before a change in flight level:

ALL STATIONS (call sign) (direction) (ATS route) [or DIRECT FROM (position) TO (position)] LEAVING FLIGHT LEVEL (number) FOR FLIGHT LEVEL (number) AT (position and time)

c) At the time of a change in flight level:

ALL STATIONS (call sign) (direction) (ATS route) [or DIRECT FROM (position) TO (position)] LEAVING FLIGHT LEVEL (number) NOW FOR FLIGHT LEVEL (number)

followed by:

ALL STATIONS (call sign) MAINTAINING FLIGHT LEVEL (number)

d) When reporting a temporary flight level change to avoid an imminent collision risk:

ALL STATIONS (call sign) LEAVING FLIGHT LEVEL (number) NOW FOR FLIGHT LEVEL (number)

followed as soon as practicable by:

ALL STATIONS (call sign) RETURNING TO FLIGHT LEVEL (number) NOW

4. TIBA broadcasts should not be acknowledged unless a potential collision risk is perceived.

Cruising level changes

5. Cruising level changes should not be made within the designated airspace, unless considered necessary by pilots to avoid traffic conflicts, to climb to minimum en route or safe altitudes, to overcome operational limitations, to avoid adverse weather, or in response to an operational emergency.
6. When cruising level changes are unavoidable, all available aircraft lighting which would improve the visual detection of the aircraft should be displayed while changing levels.

Collision avoidance

7. If, on receipt of a traffic information broadcast from another aircraft, a pilot decides that immediate action is necessary to avoid an imminent collision risk, and this cannot be achieved in accordance with the right-of-way provisions of Annex 2 to the Chicago Convention, the pilot should:
- unless an alternative maneuver appears more appropriate, immediately descend 150 m (500 ft), or 300 m (1 000 ft) if above FL 290 in an area where a vertical separation minimum of 600 m (2 000 ft) is applied;
 - display all available aircraft lighting which would improve the visual detection of the aircraft;
 - as soon as possible, reply to the broadcast advising action being taken;
 - notify the action taken on the appropriate ATS frequency; and
 - as soon as practicable, resume normal flight level, notifying the action on the appropriate ATS frequency.

Operation of Transponders

8. When implementing TIBA procedures, pilots shall operate aircraft transponders on Modes A and C at all times. In the absence of alternative instructions from the appropriate ATS unit, aircraft not assigned a discrete code should squawk code 2000.

Operation of TCAS

9. Unless otherwise directed by an appropriate authority, pilots should operate TCAS in TA/RA Mode at maximum range setting during the cruise phase of flight and at a range setting appropriate to the traffic situation when in the departure or terminal phases of flight.

Special Operations

10. Specific aircraft may need to be involved in special operations during the period when a FIR is an activated contingency zone. These aircraft may therefore be unable to utilize the contingency route structure for a significant period of their flights. Aircraft that will be classified as special operations are as follows:
 - a) Special operations of State aircraft
 - b) Aircraft in emergency situations or operating with significant reduction in operating efficiency
 - c) Mercy flights and aircraft engaged in search and rescue, medical evacuation, and coastal surveillance operations.

Activation and Cancellation of TIBA Procedures

11. This procedure shall be included in State AIP Supplements or NOTAM on TIBA procedures and will be cancelled by NOTAM.
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AIR TRAFFIC MANAGEMENT VOLCANIC ASH CONTINGENCY PLAN JAKARTA AIR TRAFFIC SERVICES CENTRE

1. TERMINOLOGY

1.1. AREAS OF CONTAMINATION

1.1.1. Information on areas of observed and/or forecast volcanic ash in the atmosphere is provided by means of appropriate MET messages in accordance with CASR 173 – *Meteorological Service for International Air Navigation*.²

1.2. DANGER AREAS

1.2.1. If it is considered that the volcanic event could pose a hazard to aviation, a danger area³ may be declared by NOTAM; however, this option should only be applied over and in the proximity of the volcanic source. Normally, clearances will not be issued through the danger area unless explicitly requested by the flight crew. In this context it should be noted that the final responsibility for aircraft safety rests with the flight crew. Therefore, the final decision regarding route, whether it will be to avoid or proceed through an area of volcanic activity, is the flight crew's responsibility. Wherever this document discusses the possible establishment of danger areas, States are not prevented from establishing restricted or prohibited areas over the sovereign territory of the State if considered necessary by the State concerned.

1.2.2. Although it is the prerogative of the provider State to promulgate a danger area in airspace over the high seas, it should be recognized that restrictions to the freedom of flight over the high seas cannot be imposed in accordance with the United Nations Convention on the Law of the Sea (Montego Bay 1982).

1.3. PHASES OF AN EVENT

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

- a) **PRE-ERUPTION PHASE** (when applicable): The initial response, “raising the alert”, commences when a volcanic eruption is expected.
 - 1) Appropriate AIS and MET messages may be issued in accordance with CASR 175 and CASR 174 respectively, and disseminated to affected aircraft in flight by the most expeditious means. It should be noted that, sometimes volcanoes erupt unexpectedly without any alert being raised, hence the pre-eruption phase may be omitted.
- b) **START OF ERUPTION PHASE** (when applicable): The start of eruption phase commences at the outbreak of the volcanic eruption and entrance of volcanic ash into the atmosphere and mainly pertains to aircraft in flight.

² Principally this will include volcanic ash advisory messages (issued by volcanic ash advisory centres) and SIGMET information on volcanic ash (issued by meteorological watch offices).

³ Depending on the State's regulation, the area may be established as a “danger area”, “restricted area” or “prohibited area”. Over the high seas only “danger area” may be established.

Appropriate AIS and MET messages may be issued as appropriate in accordance with CASR 175 and CASR 174 respectively, and a danger area may be declared by NOTAM. Normally, clearances will not be issued through the danger area unless explicitly requested by the flight crew.

- c) **ON-GOING ERUPTION PHASE:** The on-going eruption phase commences with the issuance of the first volcanic ash advisory (VAA) containing information on the extent and movement of the volcanic ash cloud following completion of the previous reactive responses. Appropriate AIS and MET messages may be issued as appropriate in accordance with CASR 175 and CASR 174 respectively.
- d) **RECOVERY PHASE:** The recovery phase commences with the issuance of the first VAA containing a statement that “NO VA EXP” (i.e. “no volcanic ash expected”) which normally occurs when it is determined that no volcanic ash is expected in the atmosphere and the volcanic activity has reverted to its pre-eruption state.

Note: These descriptions are amplified in Chapter 3 of this document.

1.3.2. Although the four distinct phases herein describe actions to be undertaken during an actual volcanic event, they are **based on a theoretical scenario**. Actual eruptions may not always be distinct with respect to ATM actions to be undertaken. Similarly, an eruption may occur without any pre-eruptive activity, or may cease

and restart more than once. Hence, the first observation may be the presence of an ash cloud which is already some distance away from the volcano. It is essential that the contingency planning prepares the ATM system for an appropriate response depending on the actual conditions. Therefore, the “Pre-Eruption Phase” and “Start of Eruption Phase” described in this document are annotated “when applicable” in order to provide for flexibility in the application of the contingency plan in those parts of the world with insufficient volcano monitoring and alerting.

- 1.3.3. Flight crews are required to report observations of volcanic activity by means of a special air-report (Special AIREP). Arrangements should be put in place to ensure that such information is transferred without delay to the appropriate aeronautical institutions responsible for subsequent action. The communication and dissemination of pilot reports on volcanic activity is described in Appendix C.

2. PRE-ERUPTION PHASE

2.1. GENERAL

- 2.1.1. Where flight informations are planned in area that are susceptible to volcanic eruptions, Jakarta ACC may expect to receive from flight crews the ICAO Volcanic Activity Report (VAR) form (published in the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, AC 170-02) Appendix 1).
- 2.1.2. The focus of this phase is to gain early recognition of volcanic events. This phase is frequently characterized by a very limited availability of information on the potential extent and severity of the impending eruption. The priority is to ensure the continued safety of aircraft in flight, and there is therefore a requirement to promulgate information as a matter of urgency. Notwithstanding the potentially limited extent of information available, the pre-eruption phase actions described below should be carried out for every expected eruption.
- 2.1.3. The initial response, “raising the alert”, commences when the volcanic eruption is expected. Initial awareness of the event may be by the means of a Special AIREP/VAR and/or from information provided by meteorological or volcanological agencies. Arrangements in each State between designation volcano observatories, meteorological and air traffic management agencies should ensure that alerting information is provided expeditiously by the most appropriate means to provide continued safety of flight.
- 2.1.4. Emphasis is placed on raising awareness of the hazard and to protect aircraft in flight. The actions are based on well-prepared, well-exercised contingency plans and standard operating procedures. Aircraft are expected to clear or avoid the volcanic ash affected area based on standard operating procedures.

2.2. ORIGINATING ACC ACTIONS

- 2.2.1. In the event of significant pre-eruption volcanic activity, which could pose a hazard to aviation, Jakarta ACC, on receiving information of such an occurrence, should carry out the following:
- a) Ensure that appropriate AIS messages are originated in accordance with CASR 175. These must provide as precise information as is available regarding the activity of the volcano. It is imperative that this information is issued by the international NOTAM office and disseminated as soon as possible in accordance with the provisions of CASR 175;
 - b) When so required by the State, define an initial, precautionary danger area in accordance with established procedures. 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;
 - 1) If no such procedures have been established, the danger area should be defined as a circle with a radius of 111 km (60 NM). The circle should be centred on the estimated or known location of the volcanic activity;
 - 2) Although ATC would not normally initiate a clearance through a danger area, it will inform aircraft about the potential hazard and continue to provide normal services. It is the responsibility of the pilot-in-command to determine the safest course of action.
 - c) Advise the BMKG (MWO Soekarno Hatta) in accordance with national/regional arrangements (unless the initial notification originated from such provider(s)), who will then inform the appropriate air traffic flow management (ATFM) units;
 - d) Alert flights already within the area concerned and offer assistance to enable aircraft to exit the area in the most expeditious and appropriate manner. Flight crews should be provided with all necessary information required to make safe and efficient decisions in dealing with the hazards in the defined area. Aircraft that are close to the area should be offered assistance to remain clear of the area. Flights which would be expected to penetrate the area should be re-cleared onto routes that will keep them clear; and
 - e) Immediately notify other affected ACCs of the event and the location and dimensions of the area concerned. The ACC should also negotiate any re-routings necessary for flights already coordinated but still within adjacent flight information regions (FIRs) and provide any information on potential implications on traffic flow and its capability to handle the expected

traffic. It is also expected that adjacent ACCs will be asked to reroute flights not yet coordinated to keep them clear of the area. It should be noted that flight crews may make the decision not to completely avoid the area based on, for example, visual observations; and

- f) Implement flow management measures if necessary to maintain the required level of safety.

Note 1. — In order to assist staff in expediting the process of composing the AIS messages, a series of templates should be available for this stage of the volcanic activity.

2.2.2. In addition to sending the relevant AIS messages to the normal distribution list, it will be sent to the relevant meteorological facilities.

2.3. ADJACENT ACC ACTIONS

2.3.1. During the pre-eruption phase, ATC will not normally initiate clearances through a danger area; however, it will inform aircraft about the potential hazard and continue to provide normal services.

Adjacent ACCs should take the following action to assist:

- a) When advised, re-clear flights to which services are being provided and which will be affected by the area; and
- b) Unless otherwise instructed, continue normal operations and:
 - 1) If one or more routes are affected by the area, suggest re-routings to the affected aircraft onto routes clear of the area; and
 - 2) Maintain awareness of the affected area.

2.4. ATFM UNIT ACTIONS

2.4.1. The ATFM unit and the associated volcanic ash advisory centre (VAAC) will determine how their initial communications will take place on the basis of bilateral agreements. Upon reception of preliminary information on volcanic activity from the lead VAAC, the ATFM unit should initiate actions in accordance with its procedures to ensure exchange of information in order to support CDM between air navigation service providers (ANSPs), meteorological watch offices (MWOs), VAACs and aircraft operators concerned.

3. START OF ERUPTION PHASE

3.1. GENERAL

3.1.1. This phase commences at the outbreak of a volcanic eruption, with volcanic ash being ejected into the atmosphere. The focus of the processes in this phase is to protect aircraft in flight and at aerodromes from the hazards of the eruption through the collection and use of relevant information.

3.1.2. In addition to relevant actions described under the pre-eruption phase, major activities of the start of eruption phase are: Issuance of relevant AIS and MET messages in accordance with CASR 175 and CASR 174 respectively; as well as provision of information and assistance to airborne traffic. As appropriate, danger areas will be declared via NOTAM. This phase will last until such time as the on-going eruption phase can be activated.

3.2. ORIGINATING ACC ACTIONS (Jakarta FIR)

3.2.1. The Jakarta ACC providing services in the Jakarta FIR within which the volcanic eruption takes place should inform flights about the existence, extent and forecast movement of volcanic ash and provide information useful for the safe and efficient conduct of flights.

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

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

3.2.4. During the start of eruption phase the Jakarta ACC should:

- a) Ensure that a NOTAM is originated to define a danger area delineated cautiously so as to encompass a volume of airspace in accordance with the limited information available. 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;
- b) Maintain close liaison with BMKG (MWO Soekarno Hatta) facilities, who should issue appropriate MET messages in accordance with CASR 174;
- c) Devise and update ATFM measures when necessary to ensure safety of flight operations, based on these forecasts and in cooperation with aircraft operators and the adjacent of Jakarta ACC using the CDM process;
- d) Ensure that reported differences between published information and observations (pilot reports, airborne measurements, etc.) are forwarded as soon as possible to the appropriate authorities to ensure its

- dissemination to all concerned;
- e) Begin planning for the on-going eruption phase in conjunction with the aircraft operators, the appropriate ATFM unit and ACCs concerned (Jakarta ACC); and
- f) Issue appropriate AIS messages in accordance with CASR 175, should significant reductions in intensity of volcanic activity take place during this phase and the airspace no longer is contaminated by volcanic ash. Otherwise, begin CDM planning for the on-going eruption phase in conjunction with aircraft operators, the appropriate ATFM unit and the affected ACCs (Jakarta ACC).

3.3. ADJACENT ACC ACTIONS

3.3.1. During the start of eruption phase, adjacent ACCs should take the following actions:

- a) Maintain a close liaison with the appropriate ATFM unit and the originating ACC to design, implement and keep up to date ATFM measures which will enable aircraft to ensure safety of flight operations;
- b) The adjacent ACC, in cooperation with the originating ACC and aircraft operators, should impose as required additional tactical measures to those issued by the appropriate ATFM unit;
- c) Maintain awareness of the affected area; and
- d) Begin planning for the on-going eruption phase in conjunction with the aircraft operators, the appropriate ATFM unit and ACCs concerned.

3.4. ATFM UNIT ACTIONS

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

4. ON-GOING ERUPTION PHASE

4.1. The on-going eruption phase commences with the issuance of the first volcanic ash advisory (VAA) by the lead VAAC which contains information on the extent and movement of the volcanic ash cloud in accordance with CASR 174 provisions.

Note. — Volcanic ash advisory information in graphical format (VAG) may also be issued by the VAAC, containing the same information as its text-based VAA equivalent.

4.2. The VAA/VAG should be used to:

- a) Prepare appropriate AIS and MET messages in accordance with CASR 175 and CASR 174 provisions respectively; and
- b) Plan and apply appropriate ATFM measures.

4.3. The volcanic contamination may affect any combination of airspace; therefore, it is not possible to prescribe measures to be taken for all situations. Furthermore, it is not possible to detail the actions to be taken by Jakarta ACC. The following guidance therefore may prove useful during the on-going eruption phase but should not be considered mandatory or exhaustive:

- a) Jakarta ACC affected by the movement of the volcanic ash should ensure that appropriate AIS messages are originated in accordance with CASR 175. Jakarta ACC and the appropriate ATFM unit should continue to publish details on measures taken to ensure dissemination to all concerned;
- b) Depending on the impact and/or extent of the volcanic ash, the appropriate ATFM unit may take the initiative to organize teleconferences to exchange the latest information on the developments, in order to support CDM, with the VAACs, JATSC and MWO Soekarno Hatta and operators concerned;
- c) Jakarta ACC and ATFM units should be aware that for the purposes of flight planning, operators could treat the horizontal and vertical extent of the volcanic ash contaminated area to be over-flown as if it were mountainous terrain; and
- d) any reported differences between published information and observations (pilot reports, airborne measurements, etc.) should be forwarded as soon as possible to the appropriate authorities (see Appendix C).

5. RECOVERY PHASE

5.1. The recovery phase commences with the issuance of the first VAA/VAG containing a statement that “NO VA EXP” (i.e. “no volcanic ash expected”) — which normally occurs when it is determined that the volcanic activity has reverted to its pre-eruption state and the airspace is no longer affected by volcanic ash contamination. Consequently, appropriate AIS messages should be issued in accordance with CASR 175.

5.2. 6. Jakarta ACC and ATFM units should revert to normal operations as soon as practical.

6. AIR TRAFFIC CONTROL PROCEDURES

6.1. unit is responsible, the following actions should be taken:

If a volcanic ash cloud is reported or forecasted in the Jakarta FIR for which the ATS Unit (Jakarta ACC) Should:

- a) Relay all pertinent information immediately to flight crews whose aircraft could be affected to ensure that they are aware of the ash cloud's position and levels affected;
- b) Request the intention of the flight crew and endeavour to accommodate requests for re-routing or level changes;
- c) Suggest appropriate re-routing to the flight crew to avoid an area of reported or forecast ash clouds; and
- d) Request a special air-report when the route of flight takes the aircraft into or near the forecast ash cloud and provide such special air-report to the appropriate agencies.

Note 1.— The recommended escape manoeuvre for an aircraft which has encountered an ash cloud is to reverse its course and begin a descent if terrain permits.

Note 2. — The final authority as to the disposition of the aircraft, whether it be to avoid or proceed through a reported or forecast volcanic ash cloud, rests with the flight crew.

6.2. When advised by the flight crew that the aircraft has inadvertently entered a volcanic ash cloud, the ATS unit (Jakarta ACC) should:

- a) Take such action applicable to an aircraft in an emergency situation; and
- b) Not initiate modifications of route or level assigned unless requested by the flight crew or necessitated by airspace requirements or traffic conditions.

Note 1.— General procedures to be applied when a pilot reports an emergency situation are contained in Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, AC 170-02) Chapter 15, 15.1.1 and 15.1.2.

Note 2.— Guidance material concerning the effect of volcanic ash and the impact of volcanic ash on aviation operational and support services is provided in Chapters 4 and 5 of the Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691).

7. ATFM PROCEDURES

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

7.2. The ATFM unit will apply ATFM measures on request of the ANSPs concerned. The measures should be reviewed and updated in accordance with updated information. Operators should also be advised to maintain watch for relevant AIS and MET messages for the area.

ATTACHMENT A
GENERAL CONSIDERATIONS DURING THE DEVELOPMENT OF AN ATM CONTINGENCY PLAN
FOR VOLCANIC ASH

1. In a contingency plan relating to volcanic ash contamination, certain steps need to be taken to provide a coordinated and controlled response for dealing with an event of this nature. Responsibilities should be clearly defined to ATS personnel. The plan should also identify the officials who need to be contacted, the type of messages that are to be created, the proper distribution of the messages and how to conduct business.
2. ATS personnel need to be trained and be made aware of the potentially hazardous effects if an aircraft encounters a volcanic ash cloud. Some particular aspects include:
 - a) Volcanic ash contamination may extend for hundreds, or even thousands of miles horizontally and reach the stratosphere vertically;
 - b) Volcanic ash may block the pilot-static system of an aircraft, resulting in unreliable airspeed indications;
 - c) Braking conditions at aerodromes where volcanic ash has recently been deposited on the runway will affect the braking ability of the aircraft. This is more pronounced on runways contaminated with wet ash. Flight crews and ATS personnel should be aware of the consequences of volcanic ash being ingested into the engines during landing and taxiing. For departure, it is recommended that pilots avoid operating in visible airborne ash; instead they should allow sufficient time for the particles to settle before initiating a take-off roll, in order to avoid ingestion of ash particles into the engine. In addition, the movement area to be used should be carefully swept before any engine is started;
 - d) Volcanic ash may result in the failure or power loss of one or all engines of an aircraft; and
 - e) Aerodromes with volcanic ash deposition may be declared unsafe for flight operations. This may have consequences for the ATM system.
3. The Jakarta ACC in conjunction with ATFM units serves as the critical communication link between affected aircraft in flight and the information providers during a volcanic eruption. During episodes of volcanic ash contamination within the flight information region (FIR), the Ujungpandang ACC has two major communication roles. First and most important is its ability to communicate directly with aircraft en-route which may encounter the volcanic ash. Based on the information provided in SIGMET information for volcanic ash and volcanic ash advisories (VAAs), and working with MWOs, ATS personnel should be able to advise the flight crew of which flight levels are affected by the volcanic ash and the forecast movement of the contamination. Through the use of various communication means, ATS units have the capability to coordinate with the flight crew alternative routes which would keep the aircraft away from the volcanic ash cloud.
4. Similarly, through the origination of a NOTAM/ASHTAM for volcanic activity the Jakarta ACC can disseminate information on the status and activity of a volcano even for pre-eruption increases in volcanic activity. NOTAM/ASHTAM and SIGMET, together with AIREPs, are critical to dispatchers for flight planning purposes. Operators need as much advance notification as possible on the status of a volcano for strategic planning of flights and the safety of the flying public. Dispatchers need to be in communication with flight crews en-route so that a coordinated decision can be made between the flight crew, the dispatcher and ATS regarding alternative routes that are available.
5. The Ujungpandang ACC should advise others the ATS unit concerning the availability of alternative routes. It cannot be presumed, however, that an aircraft which is projected to encounter ash will be provided with the most desirable route to avoid the contamination. Other considerations have to be taken into account such as existing traffic levels on other routes and the amount of fuel reserve available for flights which may have to be diverted to other routes to allow for the affected aircraft to divert.
6. The NOTAM/ASHTAM for volcanic activity provides information on the status of activity of a volcano when a change in its activity is, or is expected to be, of operational significance. They are originated by the ACC and issued through the respective international NOTAM office based on the information received from any one of the observing sources and/or advisory information provided by the associated Volcanic Ash Advisory Centre (VAAC). In addition to providing the status of activity of a volcano, the NOTAM/ASHTAM also provides information on the location, extent and movement of the ash contamination and the air routes and flight levels affected. NOTAM can also be used to limit access to the airspace affected by the volcanic ash. Complete guidance on the issuance of NOTAM and ASHTAM is provided in CASR 175 — *Aeronautical Information Services*. Included in CASR 175 is a volcano level of activity colour code chart. The colour code chart alert may be used to provide information on the status of the volcano, with “red” being the most severe, i.e. volcanic eruption in progress with an ash column/cloud reported above flight level 250, and “green” at the other extreme being volcanic activity considered to have ceased and volcano reverted to its normal pre-eruption state. It is very important that NOTAM for volcanic ash be cancelled and ASHTAM be updated as soon as the volcano has reverted to its normal pre-eruption status, no further eruptions are expected by volcanologists and no volcanic ash is detectable or reported within the FIR concerned.
7. It is essential that the procedures to be followed by ATS personnel during a volcanic eruption, as well as supporting

services such as MET, AIS and ATFM, should be translated into local staff instructions (adjusted as necessary to take account of local circumstances). It is also essential that such local staff instructions form part of the basic training for all ATS, AIS, ATFM and MET personnel whose jobs would require them to take action in accordance with the procedures. Background information to assist the ACC or flight information centre (FIC) in maintaining an awareness of the status of activity of volcanoes in their FIR(s) is provided in the monthly Scientific Event Alert Network Bulletin published by the United States Smithsonian Institution and sent free of charge to ACCs/FICs requesting it.

ATTACHMENT B
ANTICIPATED FLIGHT CREW ISSUES WHEN ENCOUNTERING VOLCANIC ASH

1. ATS personnel should be aware that flight crews will be immediately dealing with some or all of the following issues when they encounter volcanic ash:
 - a) Smoke or dust appearing in the cockpit which may prompt the flight crew to don oxygen masks (could interfere with the clarity of voice communications);
 - b) Acid odour similar to electrical smoke;
 - c) Multiple engine malfunctions, such as stalls, increasing exhaust gas temperature (EGT), torching, flameout, and thrust loss causing an immediate departure from assigned altitude;
 - d) On engine restart attempts, engines may accelerate to idle very slowly, especially at high altitudes (could result in inability to maintain altitude or Mach number);
 - e) At night, St. Elmo's fire/static discharges may be observed around the windshield, accompanied by a bright orange glow in the engine inlet(s);
 - f) Possible loss of visibility due to cockpit windows becoming cracked or dis-coloured, due to the sandblast effect of the ash;
 - g) Because of the abrasive effects of volcanic ash on windshields and landing lights, visibility for approach and landing may be markedly reduced. Forward visibility may be limited to that which is available through the side windows; and/or
 - h) Sharp distinct shadows cast by landing lights as compared to the diffused shadows observed in clouds (this affects visual perception of objects outside the aircraft).
2. Simultaneously, ATS personnel can expect flight crews to be executing contingency procedures such as the following:
 - a) if possible, the flight crew may immediately reduce thrust to idle;
 - b) exit volcanic ash cloud as quickly as possible. The shortest distance/time out of the ash may require an immediate, descending 180-degree turn (terrain permitting);
 - c) don flight crew oxygen masks at 100 per cent (if required);
 - d) Monitor airspeed and pitch attitude. If unreliable airspeed is suspected, or a complete loss of airspeed indication occurs (volcanic ash may block the pitot system), the flight crew will establish the appropriate pitch attitude;
 - e) Land at the nearest suitable aerodrome; and
 - f) Upon landing, thrust reversers may be used as lightly as feasible.

ATTACHMENT C

COMMUNICATION AND DISSEMINATION OF PILOT REPORTS OF VOLCANIC ACTIVITY

1. INTRODUCTION

- 1.1 CASR 174 — *Meteorological Service for International Air Navigation* (paragraph 5.5, g) and h)) prescribes that volcanic ash clouds, volcanic eruptions and pre-eruption volcanic activity, when observed, shall be reported by all aircraft. The *Procedures for Air Navigation Services – Air Traffic Management* (AC 170-02) contain detailed provisions on this special air report requirement in paragraphs 4.12.3 and 4.12.5, and the Volcanic Activity Report form in Appendix 1.
- 1.2 Experience has shown that reporting and sharing of information on volcanic ash encounters in accordance with the above mention provisions (in-flight and post-flight) varies across the world. The efficiency and quality of reporting currently depends heavily on regional characteristics and the level of regional integration. A high level of global harmonization is essential to achieve the desired level of implementation and consistency of the information.

2. PURPOSES OF VOLCANIC ASH REPORTING AND DATA COLLECTION

- 2.1 The main purposes for volcanic ash reporting and data collection are to:
- a) Locate the volcanic hazards;
 - b) Notify immediately other aircraft (in-flight) about the hazard;
 - c) Notify other interested parties: ANSPs (ATC, AIS, ATFM), VAACs, MWO, etc to ensure the consistent production of appropriate information and warning products in accordance with existing provisions;
 - d) Analyze collected reports from the post-flight phase in order to:
 - 1) Identify areas of concern;
 - 2) Validate and improve volcanic ash forecasts;
 - 3) Improve existing procedures;
 - 4) Assist in defining better airworthiness requirements; and
 - 5) Share lessons learned, etc.

3. PHASE OF OPERATIONS

- 3.1 The roles and responsibilities of the participants in the collection, exchange and dissemination of the volcanic information are distinctly different in two distinct phases:
- a) In-flight; and
 - b) Post-flight.
- 3.2 The following section analyses these separately.

4. PARTICIPANTS IN THE REPORTING PROCESS, THEIR ROLES AND RESPONSIBILITIES

- 4.1 Identification of the participants as well as their roles and responsibilities in general, but specifically during the two different phases of operations, is an important element in improving collection, exchange and dissemination of volcanic information. The number of participants and their roles and responsibilities depends on the phase of operations (in-flight, post-flight), their position in the information chain within one of these two phases and national/regional arrangements. One of the main issues regarding participants' roles and responsibilities is that each of them is, at one time or another, both a data/information provider and user of the information.

4.2 *In-Flight Phase*

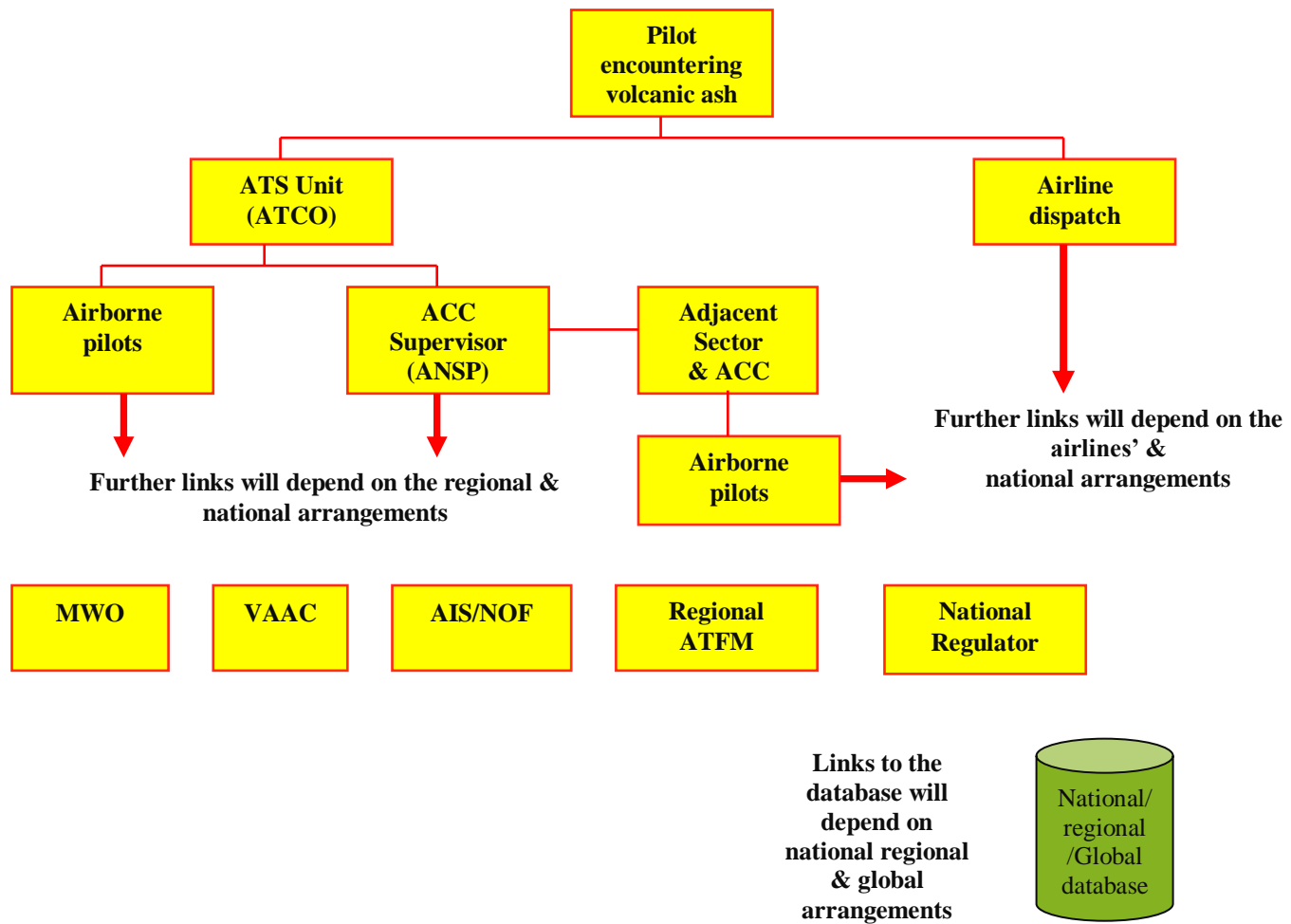
Participants	Roles & Responsibilities
Pilots, civil and/or military, observing and/or encountering volcanic activity	To provide as much detailed information as possible about the type, position, colour, smell, dimensions of the volcanic contamination, level and time of the observation and forward V AR (Volcanic activity Report) Part I immediately to the ATS unit with which the pilot is in radiotelephony (R/T)

	<p>communication. Record the information required for VAR Part II on the appropriate form as soon as possible after the observation or encounter, and file the report via data link, if available.</p>
ATS unit receiving the information from the pilot encountering volcanic event	To ensure that information received by an air traffic controller from the pilot has been copied, clarified (if necessary) and disseminated to other pilots as well as to the ACC Supervisor. In addition, air traffic controllers could ask other pilots flying within the same area if they have observed any volcanic activity.
ATS unit/ACC Supervisor (if applicable) or other responsible person within the Air Navigation Service Provider	To use all means of communication and available forms to ensure that the information received from the air traffic controller has been: passed on to the associated Meteorological organizations in accordance with national/regional arrangements; fully and immediately disseminated across the organization, in particular to adjacent sectors and the associated International NOTAM Office (NOF); passed on to the neighbouring sectors and ACCs (if necessary); passed on to the regional ATFM centre if existing (e.g. CFMU in Europe); passed on to the national/regional authority responsible for the handling of contingency situations.
Neighbouring ANSPs (ACCs etc)	To ensure that information is provided to flight crews flying towards the area affected by the volcanic contamination; disseminated across the organization and the system prepared to cope with the possible changes of the traffic flows; and that the information is provided to the national authority responsible for the handling of contingency situations and passed on to the NOF and MWO as required.
MET Watch Office	To use the information originated by flight crews and forwarded by the ATS unit which received the information in accordance with CASR 174.
VAAC	To use the information originated by flight crews, MWOs and other competent sources in accordance with CASR 174
AIS / NOF	To publish appropriate AIS messages in accordance with CASR 175
ATFM unit or centre (if existing)	<p>To ensure that information received is stored and made available for information to all partners in its area of responsibility (ANSPs, airlines, VAAC, MET etc.).</p> <p>As part of the daily activity, coordinate ATFM measures with ACCs concerned.</p>

4.2.1 Participants, Roles & Responsibilities

4.2.2 *In-flight reporting – Sample Flow Chart of the volcanic ash information*

4.2.2.1 The chart below is a graphical representation of a possible path of the in-flight volcanic ash information and may differ between regions depending on regional arrangements. It also gives the position of the volcanic ash participants in the reporting chain. The flow chart is not exhaustive and the path of the information can be extended and new participants could be added depending of the national and regional requirements.



4.3 *Post-Flight Operations Roles & Responsibilities and order of reporting*

No.	Participants	Roles & Responsibilities
1.	Civil and/or military pilots/airlines having observed or encountered an eruption or volcanic contamination	To file the volcanic ash report with as much detailed information as possible about the volcanic activity and/or encounter (position, colour, smell, dimensions, FL, time of observation, impact on the flight, etc.). Ensure that the VAR is filed and transmitted to the relevant recipients as soon as possible after landing (if not filed via datalink already during the flight). Make an entry into the Aircraft Maintenance Log (AML) in case of an actual or suspected encounter with volcanic contamination.

2.	ANSP	To provide a summary report of effects of the volcanic activity that affected its operations at least once per day to the national authority with as much detailed information as possible about the number of encounters, impact on air traffic management, etc.).
3.	AOC Maintenance – Post flight Inspection	To report about the observation of the aircraft surfaces, engine, etc, and to provide the information to the national (or regional or global, where applicable) central data repository.
4.	Investigation Authority	All aeronautical service providers (including operators, ANSPs, airports, etc) shall investigate the effects of a volcanic activity, analyze the information and search for conclusions; and report the investigation results and relevant information to the national supervisory authority and any central data repository.
5.	National Authority	To handle the national central data repository and report to the regional/global central data repository if any. To analyze reports from its aeronautical service providers and take action as appropriate.
6.	Regional Central Data Repository	To collect the national data and make them available to interested stakeholders under agreed conditions.
7.	MWO	To use the national and regional information coming from national and regional central data repositories.
8.	VAAC	To use the information originated by flight crews, and other competent sources to: a) validate its products accordingly and; b) improve the forecast.
9.	Global Data Repository (and research institutes – where appropriate)	To analyse the information stored in the regional central data repository and provide the research outcomes for lessons learnt process.
10.	Knowledge management (e.g. SKY brary)	To use the post-flight lessons learnt and disseminate them to interested stakeholders.
11.	ICAO	To review/revise ATM volcanic ash contingency plans.

4.4 Tools for presenting and sharing the volcanic ash information

4.4.1 To report, transmit and disseminate the volcanic ash encounter information, different types of tools can be used. The list below is provided to give ideas as to what tools can be used. It could also be split into regulatory and general information tools. At any case, it is not an exhaustive list and can be updated with new elements depending on regional experiences.

- a) Radiotelephony and Data link Communications
- b) VAR (Volcanic Activity Report By PVMBG)
- c) NOTAM/ASHTAM
- d) SIGMET

- e) VAAC
- f) Central data repository e.g. CFMU Network Operations Portal (NOP)
- g) Centralized web-based sites with the regularly updated information and maps – e.g. EVITA - <http://www.eurocontrol.int/services/evita-european-crisis-visualisation-interactive-tool-atfcm>
- h) Teleconferences
- i) Periodic Bulletins with the set of information defined by the data providers and data users; e.g. Smithsonian Institution Weekly Bulletin.
- j) Centralized internet-based sites for the sharing of lessons learned (Knowledge management –e.g. SKYbrary http://www.skybrary.aero/index.php/Main_Page)

ATTACHMENT D**ACTION TAKEN BY METEOROLOGICAL WATCH OFFICES (MWO) IN THE EVENT OF A VOLCANIC ERUPTION**

1. On receipt of information of a volcanic eruption and/or the existence of volcanic ash, the MWO will:
 - a) Notify, if necessary, the VAAC designated to provide VAA/VAG for the FIR for which the MWO is responsible that a volcanic eruption and/or ash has been reported. In the event that the MWO becomes aware, from a source other than an UPG ACC, of the occurrence of pre-eruption activity, a volcanic eruption or ash from any other source, the information will be passed with all available relevant details on the extent, forecast movement and concentration of volcanic ash immediately to the ACC and to the designated VAAC;
 - b) Reported differences between ash encounters by aircraft and the information published in VAA/VAG, SIGMET or NOTAM/ASHTAM received by an ACC shall be made available as soon as possible to the respective MWO, preferably in the form of an AIREP. The MWO will relay the information to the respective originators of the published information;
 - c) Notify adjacent MWOs designated to provide SIGMET that a volcanic eruption and/or ash cloud has been reported, provide available relevant details on the extent, forecast movement and (if known) concentration of volcanic ash. In the event that any other MWO becomes aware of the occurrence of volcanic ash cloud from any source other than the VAAC, the information should be passed immediately to the VAAC and any adjacent MWO(s) downstream of the moving ash cloud;
 - d) As soon as practicable, advise the ACC and the VAAC whether or not the volcanic ash is identifiable from satellite images/data, ground based or airborne measurements or other relevant sources;
 - e) Issue SIGMET relating to the horizontal and vertical extent of volcanic ash cloud and its expected movement for a validity period of up to 6 hours. The SIGMET shall include an observed (or forecast) position of the ash cloud at the start of the period of validity, and a forecast position at the end of the period of validity. The SIGMET should be based on the advisory information provided by the VAAC. Include in the SIGMET distribution list the MWO Jakarta dan MWO Makassar and the VAAC concerned. As well as inter-regional distribution, the ROCs will ensure dissemination of the SIGMET to all MWO;
 - f) Provide information to assist with the origination of NOTAM by ACCs and maintain continuous coordination with ACCs, adjacent MWOs and the VAAC concerned to ensure consistency in the issuance and content of SIGMET and NOTAM/ASHTAM; and
 - g) Provide, if possible, regular volcanic briefings, based on the latest available ash observations and forecasts, to ACCs, ATFM units, Airport Operators and aircraft operators concerned, giving an outlook for beyond T+12 hours.

ATTACHMENT E**ACTION TO BE TAKEN BY THE VOLCANIC ASH ADVISORY CENTRE (VAAC) IN THE
EVENT OF A VOLCANIC ERUPTION**

1. On receipt of information from a MWO or any other source, of significant pre-eruptive/eruption activity and/or a volcanic ash cloud observed, the VAAC should:
 - a) Initiate the volcanic ash computer trajectory/dispersal model in order to provide advisory information on volcanic ash trajectory to MWOs, ACCs, ATFM units and operators concerned;
 - b) Review satellite images/data and any available pilot reports of the area for the time of the event to ascertain whether a volcanic ash cloud is identifiable and, if so, its extent and movement;
 - c) Inform the appropriate ATFM unit of the volcanic ash activity;
 - d) Prepare and issue advisories on the extent, and forecast trajectory, of the volcanic ash contamination in message format for transmission to the MWOs, ACCs, ATFM units and operators concerned in the VAAC area of responsibility, and to the two MWO's in Indonesia.
 - e) Monitor subsequent satellite information or other available observations to assist in tracking the movement of the volcanic ash;
 - f) Continue to issue advisory information (i.e. VAA/VAG) for validity periods T+0, T+6, T+12 and T+18 hours after data time, to MWOs, ACCs, ATFM units and operators concerned at least at 6 hour intervals, and preferably more frequently, until such time as it is considered that the volcanic ash is no longer identifiable from satellite data, no further reports of volcanic ash are received from the area and no further eruptions of the volcano are reported; and
 - g) Maintain regular contact with other VAACs and meteorological offices concerned, and, as necessary, the Smithsonian Institute Global Volcanism Network, in order to keep up to date on the activity status of volcanoes in the VAAC area of responsibility.

ATTACHMENT F**RECOMMENDED ACTIONS BY STATES OF THE OPERATOR/REGISTRY WITH REGARDS TO
AIRCRAFT OPERATIONS IN THE EVENT OF A VOLCANIC ERUPTION****Safety Risk Assessments For Flights In Airspace Proximate To Volcanic Ash**

- 1 Introduction
 - 1.1 It is recommended that States of the Operator/Registry as appropriate which intend to allow operators under their jurisdiction to operate in areas of volcanic ash contamination consider requiring operators to carry out a safety risk assessment prior to carrying out such operations.
 - 1.2 Safety risk assessments should be completed prior to planned operations in airspace or to/from aerodromes which may be contaminated by volcanic ash.
- 2 Applicability
 - 2.1 All operators conducting flights in airspace and/or to/from aerodromes which could be affected by volcanic ash.
- 3 Recommendations
 - 3.1 In accordance with ICAO Annex 6, Chapter 3, paragraph 3.3-Safety Management, it is recommended that States of the Operator/Registry as appropriate require all operators, planning to operate in areas where the presence of volcanic ash is forecast, to carry out a safety risk assessment prior to planned operations. The safety risk assessment should include a requirement for the operator to:
 - a) Conduct their own risk assessment and develop operational procedures to address any remaining risks;
 - b) Put in place appropriate maintenance ash damage inspections; and
 - c) Ensure that any ash related incidents are reported by AIREP and followed up by a Volcanic Activity Report (VAR).
 - 3.2 Guidance in the preparation of such a safety risk assessment is provided in Appendix F of this document.

ATTACHMENT G**EXAMPLE SAFETY RISK ASSESSMENT PROCESS**

- 1 Introduction
 - 1.1 The safety risk assessment process is described in the Safety Management Manual (Doc 9859). The process involves identifying the hazards associated with the activity (in this case airspace proximate to volcanic ash or flying to and from aerodromes affected by volcanic ash), considering the seriousness of the consequences of the hazard occurring (the severity), evaluating the likelihood or probability of it happening, deciding whether the consequent risk is acceptable and within the organisation's safety performance criteria (acceptability), and finally taking action to reduce the safety risk to an acceptable level (mitigation).
- 2 Hazard Identification
 - 2.1 A hazard is any situation or condition that has the potential to cause adverse consequences. A suggested list of topics, that is not necessarily exhaustive, to be considered is attached at Appendix I
- 3 The Safety Risk Assessment
 - 3.1 Risk is an assessment of the likelihood and the severity of adverse consequences resulting from a hazard.
 - 3.2 To help an operator decide on the likelihood of a hazard causing harm, and to assist with possible mitigation of any perceived safety risk, all relevant stakeholders should be consulted.
 - 3.3 The safety risk from each hazard should be assessed using a suitably calibrated safety risk assessment matrix. An example risk assessment matrix is given in Safety Management Manual (Doc 9859) but an alternative which aligns with an organisation's own Safety Management System (SMS) would be equally appropriate. The safety risk should be derived by considering the severity of the safety outcome arising from the hazard, together with the likelihood of the outcome.
 - 3.4 The severity of any adverse consequences resulting from a particular hazard should be assessed using a suitably calibrated severity scale. Example scales are given in Safety Management Manual (Doc 9859) but an alternative, which aligns with an organisation's own SMS, would be equally appropriate. Note that, for any flight, the safety outcome of a volcanic ash encounter may be significant.
 - 3.5 Risk Likelihood
 - 3.5.1 The likelihood or probability of adverse consequences resulting from a particular hazard should then be assessed. The likelihood should be agreed using a suitably calibrated likelihood or probability scale. An example probability scale is given in Safety Management Manual (Doc 9859), but an alternative which aligns with an organisation's own SMS would be equally appropriate.
 - 3.5.2 When assessing likelihood or probability the following factors should be taken into account:
 - The degree of exposure to the hazard.
 - Any historic incident or safety event data relating to the hazard. This can be derived from data from industry, regulators, other operators, Air Navigation Service Providers, internal reports etc.
 - The expert judgement of relevant stakeholders.
 - 3.5.3 The results of the assessment should be recorded in a hazard log, sometimes referred to as a risk register. An example of a hazard log is at Appendix I.
 - 3.6 Risk Tolerability
 - 3.6.1 At this stage of the process the safety risks should be classified in a range from acceptable to unacceptable. A suitable set of definitions for Risk Classification is given in Safety Management Manual (Doc 9859).
 - 3.6.2 Appropriate mitigations for each identified hazard should then be considered, recorded on the hazard log and implemented. Mitigations must be adopted in order to reduce the safety risks to an acceptable level, but additional mitigation wherever reasonably practicable should also be

considered where this might reduce an already acceptable safety risk even further. Thus, the mitigation process should reduce the safety risk to be as low as reasonably practicable.

- 3.6.3 Not all hazards can be suitably mitigated in which case the operation should not proceed.
- 3.7 Mitigating Actions
- 3.7.1 Mitigating actions by themselves can introduce new hazards. Where an organisation has an effective SMS then procedures will exist for continual monitoring of hazard, risk and involvement of qualified personnel in accepting the mitigating actions or otherwise. Operators without an effective SMS should repeat the safety risk assessment following any mitigation process and at regular intervals as the circumstances on which the original assessment was predicated may have changed. This ensures ongoing safety management or monitoring.
- 3.8 Records
- 3.8.1 The results of the safety risk assessment should be documented and promulgated throughout the organisation and submitted to the operator's national safety authority. Actions should be completed and mitigations verified and supported by evidence prior to the start of operations.
- 3.8.2 Any assumptions should be clearly stated and the safety risk assessment reviewed at regular intervals to ensure the assumptions and decisions remain valid.
- 3.8.3 Any safety performance monitoring requirements should also be identified and undertaken through the organisation's safety management processes.

ATTACHMENT H

EXAMPLE TABLE OF CONSIDERATIONS
FOR PLANNED OPERATIONS IN
AIRSPACE OR TO/FROM AERODROMES WHICH MAY BE CONTAMINATED
BY VOLCANIC ASH.

Considerations	Guidance
Operator Procedures	
Type Certificate Holder Guidance	Operators must obtain advice from the Type Certificate Holder and engine manufacturer concerning both operations in potentially contaminated airspace and/or to/from aerodromes contaminated by volcanic ash, including subsequent maintenance action.
Guidance for Company Personnel	<p>Publish procedures for flight planning, operations and maintenance.</p> <p>Review of flight crew procedures for detection of volcanic ash and associated escape manoeuvres.</p> <p>Type Certificate Holder advice on operations to/from aerodromes contaminated by volcanic ash including performance.</p>
Flight Planning	<p>These considerations will be applicable to all flights that plan to operate in airspace or to/from aerodromes which may be contaminated by volcanic ash.</p> <p>The operator must closely monitor NOTAM and ASHTAM to ensure that the latest information concerning volcanic ash is available to crews.</p>
NOTAM and ASHTAM	<p>The operator must closely monitor SIGMETs to ensure that the latest information concerning volcanic ash is available to crews</p>
SIGMETs	<p>Degree of contamination, additional performance, procedures and maintenance consideration.</p> <p>Shortest period in and over contaminated area.</p>
Departure, Destination and any Alternates	<p>Maximum allowed distance from a suitable alternate.</p> <p>Availability of alternates outside contaminated area.</p>
Routing Policy	<p>Diversion policy after an ash encounter</p>
Diversion Policy	<p>Consider additional restrictions for dispatching aircraft:</p> <ul style="list-style-type: none"> • air conditioning packs; • engine bleeds; • air data computers; • standby instruments;

Minimum Equipment List / Dispatch Deviation Guide	<ul style="list-style-type: none"> • navigation systems; • Auxiliary Power Unit (APU); • Airborne Collision Avoidance System (ACAS); • Terrain Awareness Warning System (TAWS); • provision of crew oxygen; and • supplemental oxygen for passengers. (This list is not necessarily exhaustive.)
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Considerations	Guidance
Operator Procedures	
Provision of Enhanced Flight Watch	Timely information to and from crew of latest information.
Fuel Policy	Consideration to the carriage of extra fuel

Considerations	Guidance
Crew Procedures	These considerations will be applicable to all flights that plan to operate in airspace or to/from aerodromes which may be contaminated by volcanic ash.
Pilot Reports	Requirements for reporting in the event of an airborne encounter. Post- flight reporting.
Mandatory Occurrence Reports	Reminder regarding the necessity for filing MORs following an encounter.
Standard Operating Procedures	Review changes to normal and abnormal operating procedures: <ul style="list-style-type: none"> • pre-flight planning; • operations to/from aerodromes contaminated with volcanic ash; • supplemental oxygen; • engine-out procedures; and • escape routes. (This list is not necessarily exhaustive.)
Technical Log	Any actual or suspected volcanic ash encounter will require a tech log entry and appropriate maintenance action prior to subsequent flight. Penetration (detail and duration) of airspace or operations to/from aerodromes which may be contaminated by volcanic ash will require a tech log entry.

Considerations	Guidance
Maintenance Procedures	Operators, who are operating in areas of ash contamination, are recommended to enhance vigilance during inspections and regular maintenance and potentially adjust their maintenance practices, based upon the observations, to prevent unscheduled maintenance. Observations should include signs of unusual or accelerated

	<p>abrasions, corrosion and / or ash accumulation. Operator co-operation is requested in reporting to manufacturers and the relevant authorities their observations and experiences from operations in areas of ash contamination. If significant observations are discovered beyond normal variations currently known, manufacturers will share these observations, and any improved recommendations for maintenance practices, with all operators and the relevant authorities</p>
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Note: The above list is not necessarily exhaustive and operators must make their own assessments of the hazards on the specific routes they fly.

ATTACHMENT I

EXAMPLE OF A HAZARD LOG (RISK REGISTER)

HAZARD		Incident sequence Description	Existing Controls	Outcome (Pre-mitigation)			Additional Mitigation Required	Outcome (Post-mitigation)			Actions and Owner	Monitoring and Revis Requirements
No.	Description			Severity	Likelihood	Risk		Severity	Likelihood	Risk		

ATTACHMENT J
EXAMPLE SIGMET, NOTAM, ASHTAM

Guidance on WMO headers referred to in Alerting Phase, paragraph 1.2.2 refers can be found in WMO No.386 Volume I (Manual of Global Telecommunications System) Part II (Operational Procedures for the Global Telecommunications System).

NOTAM Offices are reminded that ASHTAM (or NOTAM for volcanic ash) should be distributed via AFTN to their associated MWO and all the VAACs, in accordance with guidelines contained in ICAO Doc 9766 Chapter 4 paragraph 4.3. (CASR 175)

1. SIGMET
WAAF SIGMET A02 VALID 280715/281315 WAAA-
WAAF UJUNG PANDANG FIR VA ERUPTION MT RAUNG S0807 E11402
VA CLD OBS AT 0715Z
VA NOT IDENTIFIABLE FM SATELLITE DATA
WIND SFC/FL110 100/20KT
FCST VA CLD 28/1315Z=

2. (A1507/15 NOTAMN
Q)WAAF/QARCR/IV/NBO/E/000/200/0723S11247E999
A)WAAF
B)1507232300
C)1507242359
E)DUE TO VOLCANIC ASH ALL FLT DO NOT USE ATS ROUTE :
- W33 SEGMENT SBR-BLI VV
AND CONTINGENCY ROUTE :
- SBR-W45-ENTAS-BLI VV
F)SFC
G)FL200)

3. NOTAM establishing Danger Area to include Area of High or High/Medium or High/Medium/Low] Contamination
(A1508/15 NOTAMN
Q)WAAF/QARCR/IV/NBO/E/000/220
A) WAAF B) 1005182300 C) 1005190500
E) TEMPORARY DANGER AREA HAS BEEN ESTABLISHED FOR VOLCANIC ASH AREA OF HIGH CONTAMINATION IN AREA 0712S00611E 0718S00216E 0752S00426E 0729S00652E
F) SFC
G) FL220)

4. NOTAM to define Area of Medium Contamination for which a Danger Area has not been established (A0207/10 NOTAMN
Q) WAAF/QARCR/IV/NBO/E/000/200
A) WAAF B) 1005190700 C) 1005191300
E) VOLCANIC ASH AREA OF MEDIUM CONTAMINATION FORECAST IN AREA 0743S00853E 0730S00618E 0750S00829E
F) SFC
G) FL200)

5. VAWR0188 WAAF 07280206
ASHTAM 0188
A)WAAF

B)07280130
C)RAUNG 60334
D)S0807 E11402
E)ORANGE ALERT
F)SFC/FL110 S0805 E11410 - S0740 E11330 - S0805 E11330 - S0815 E11405
- S0805 E11410
G)MOV NW 15KT
H)W33
I)NIL
J)HIMAWARI-8
K)VA TO FL110 OBS EXT 20NM TO NW AT 28/0050Z
FCST VA CLD +6HR: 28/0730Z
SFC/FL110 S0805 E11410 - S0815 E11405 - S0805 E11330 -
S0740 E11330 - S0805 E11410
FCST VA CLD +12HR: 28/1330Z
SFC/FL110 S0805 E11410 - S0815 E11405 - S0805 E11330 -
S0740 E11330 - S0805 E11410
FCST VA CLD +18HR: 28/1930Z
SFC/FL110 S0805 E11410 - S0815 E11405 - S0805 E11330 -
S0740 E11330 - S0805 E11410
RMK: HEIGHT BASED ON IR TEMPERATURE AND 27/1200Z SURABAYA SOUNDING

6. ASHTAM alerting eruptive activity
VAWR0024 WAAF 07261650 ASHTAM 015/15
A) WAAF B) 07261650 C) 07271700 D) 0744S01500E
E) RED ALERT F) AREA AFFECTED S0805 E11410 - S0740 E11330 - S0805 E11330 - S0815 E11405-
S0805 E11410 SFC/22000FT G) NE 20KT H) ROUTES AFFECTED WILL BE NOTIFIED BY ATC
J) VULCANOLOGICAL AGENCY
7. ASHTAM alerting reduction in eruptive activity
VAWR0035 WAAF 06300350 ASHTAM 020/15
A) WAAF B) 06300350 C) 07010500 D) 0744S01500E
E) YELLOW ALERT FOLLOWING ORANGE J) VULCANOLOGICAL AGENCY

ATTACHMENT K
LIST OF VOLCANO IN JAKARTA FIR

NO.	VOLCANO NUMBER	VOLCANO NAME	COORDINATES
1.	601-03	PUET SAGUE	04.55.3 N 096.19.5 E
2	601-05	BUR NI TELONG	04.45.4 N 096.48.3 E
3	601-07	SIBAYAK	03.12.3 N 098.27.4 E
4	601-12	SORIK MARAPI	00.41.1 S 099.32.1 E
5	601-14	MARAPI	00.22.5 S 100.28.2 E
6	601-15	TANDIKAT	00.25.6 S 100.19.0 E
7	601-16	TALANG	00.58.4 S 100.40.0 E
8	601-17	KERINCI	01.41.3 S 101.15.4 E
9	601-18	SUMBING	02.24.4 S 101.43.5 E
10	601-22	KABA	03.30.4 S 102.36.4 E
11	601-23	DEMPO	04.01.5 S 103.07.5 E
12	601-25	BESAR	04.25.5 S 103.39.4 E
13	601-27	SUOH	05.15.0 S 104.15.4 E
14	602-00	ANAK KRATATAU	06.06.1 S 105.25.2 E
15	603-03	KIARA BERES-GAGAK	06.43.5 S 106.39.0 E
16	603-05	SALAK	06.42.4 S 106.43.5 E
17	603-06	GEDE	06.46.5 S 106.58.5 E
18	603-09	TAKUBAN PERAHU	06.46.1S 107.36.0 E
19	603-10	PAPANDAYAN	07.18.4 S 107.43.5 E
20	603-13	GUNTUR	07.07.5 S 107.49.5 E
21	603-14	GALUNGGUNG	07.15.0 S 108.03.0 E
22	603-17	CEREMAI	06.53.3 S 108.24.0 E
23	603-18	SLAMET	07.14.3 S 109.12.3 E
24	603-20	DIENG VOLCANO COMPLEX	07.12.0 S 109.55.1 E

ATTACHMENT L
LOCA BETWEEN VAAC WITH ANSP
“(Prepared by Headquarter of Airnav Indonesia/DNP)”

ATTACHMENT M

MOU BETWEEN MWO SOEKARNO HATTA AND JATSC

”(See doc. MOU between MWO Soekarno Hatta and JATSC)”

ATTACHMENT N

LOCA BETWEEN JAKARTA ACC WITH UJUNGPANDANG ACC

”(See doc. LOCA BETWEEN JAKARTA ACC WITH UJUNGPANDANG ACC)”

ATTACHMENT O**VOLCANIC ASH INCIDENTS CONTINGENCY PLAN**

- 1.1 The volcanic ash incidents contingency plan consists of a teleconference between nominated Point-Of-Contacts (POCs) from participating States where real time information will be shared for collaborative decision making to be affected.
- 1.2 Each participating State will be required to provide a POC so that sub-regional coordination arrangements can be set up among the States in the event of a severe volcanic eruption which may disrupt air traffic flow. The participating States are as follows:
 - Indonesia
 - Malaysia
 - Philippine
 - Singapore
 - Thailand
 - Brunei darusalam
- 1.3 The Incident Manager would be the affected State with the significant volcanic eruption. As such, the Incident Manager may convene a teleconference among the participating States and invitations to the teleconference will be issued by email.
- 1.4 Volcanic Ash Teleconference Agenda
 - 1.4.1 The following is the agenda for the volcanic ash incident teleconference;
 - a) The Incident Manager will run through the list of participants. The Incident Manager will confirm the latest volcanic ash advisory information from relevant Volcanic Ash Advisory Centre (VAAC) or any MET information (MET assessment from State MET services, pilot reports and any other sources of information) to ensure all participants have up-to-date information.
 - b) The ANSP where the volcano is located will update participants on any changes or predicted changes to the plan and how they are dealing with their traffic.
 - c) The Incident Manager will:
 - i. Inform the participants of the current ATFM situation and events which may impact it.
 - ii. Advise how the ash cloud is predicted to affect the ATFM situation throughout the day.
 - iii. Remind ACCs and/or ATFM Centres to send their requests for ATFM measures to the Incident Manager by fax.
 - d) Those ACCs and/or ATFM Centres concerned may inform the group of their intentions and discuss the anticipated effect of any ATFM measures. Other ACCs and/or ATFM Centres may wish to share and discuss any perceived impact to operations, at airports and air routes, on-load effect and changes in traffic patterns.
 - e.g. ATFM Centres: ‘flow measures applied in sectors ...; offloaded traffic from sectors A, B and C will be accepted in sectors D, E and F’
 - e.g. ACCs: ‘sectors A, B and C contaminated; traffic expected to reroute via...’
 - e) Participants will discuss and agree on;
 - i. Area affected by the volcanic ash that should be avoided by flights
 - ii. Routes affected
 - iii. Alternate routes to circumnavigate the affected area and the impact to capacity on these routes.
 - iv. Establishment of ad-hoc routes and horizontal separation minima for these routes if required.
 - v. Interim coordination arrangements and follow-up reporting frequency.
 - vi. Any other comments/matters
 - f) The Incident Manager will summarise conclusions of the teleconference and confirm any actions agreed. Moreover, Incident Manager will stress that if the need arises it may organise another teleconference. Invitation will be issued by email to participants.

ATTACHMENT P
LIST POINT OF CONTACT (POC)

JATSC	<p>1. GENERAL MANAGER</p> <p>2. PIC VOLCANO ASH CP</p> <p>3. AIS OFFICER</p>	<p>Phone : 62 21 5506131 Fax : 62 21 5506135</p> <p>Email : brats@yahoo.co.id gm.jatsc@airnavndonesia.co.id</p> <p>Deputy GM of operation of AirNav Indonesia JATSC</p> <p>Phone: +62 21-5506112 Mobile: +62 8111138851 Email: jatsc.deputyops@gmail.com</p> <p>Head Unit of AIS Regional Office in Jakarta Phone: +62 21- 5506111, 55910871, 5505420 Email: ais.jakarta@airnavindonesia.co.id</p>
MWO Soekarno Hatta	KEPALA STASIUN METEOROLOGI KELAS I SOEKARNO HATTA	<p>KEPALA STASIUN</p> <p>Phone: +62 21-5506116, 5506206 Email: forecastsoetta@yahoo.co.id Stamet.cengkareng@bmet.go.id</p>

— END —

PUBLIC HEALTH RISK (PANDEMIC) PROCEDURE**1. Pilot in command action**

The pilot in command of an aircraft may take emergency measures in flight as may be necessary for the health and safety of travellers on board.

He/she shall inform air traffic control, as early as possible before arrival, of any cases of illness indicative of a disease of an infectious nature or evidence of a public health risk on board. This information must be relayed immediately/as soon as possible by air traffic control to the competent authority for the destination airport.

The flight crew of the transitting aircraft shall, upon identifying a suspected case(s) of communicable disease, or other public health risk, on board the aircraft, promptly notify the Air Traffic Service (ATS) unit with which the pilot is communicating, the information listed below:

- a. aircraft identification;
- b. departure aerodrome;
- c. destination aerodrome;
- d. estimated time of arrival;
- e. number of persons on board; and
- f. number of suspected case(s) on board; and
- g. nature of the public health risk.

2. ATS Unit action

In the event of ATM Contingency Plan activated, the ATS unit concern shall provide the air traffic services to transitting aircraft from pandemic area with following procedure:

If known The ATS unit, upon receipt of information from a pilot regarding suspected case(s) of communicable disease, or other public health risk on board the aircraft, shall forward a message as soon as possible to the adjacent ATS unit, unless procedures exist to notify the appropriate authority designated by the State, and the aircraft operator or its designated representative.

3. In summary:

When a report of a suspected case(s) of communicable disease or other public health risk, on board an aircraft, pilot shall report to ATC as listed below:

- a. Pilot reports to Air Traffic Services (ATS) Unit
- b. ATS Unit shall forward the messages to next ATS unit

4. In the event Aeronautical Information Circular (AIC) already published by DGCA for response of global health emergency alert from WHO (World Health Organization) operator which depart from pandemic area shall be follow the Aeronautical Information Circular (AIC)

Flow Chart of Coordination

