



Collaborative ATM **Contingency** Response to Volcanic Eruption Events: Indonesia's Experience

13 July 2026



REGULATORY FRAMEWORK

AVIATION LAW NUMBER 1 YEAR 2009

MINISTER REGULATION NUMBER 10 YEAR 2022

CASR PART 170

AIR TRAFFIC RULES

MINISTER REGULATION NUMBER 29 YEAR 2023

CASR PART 172

AIR TRAFFIC SERVICE PROVIDER

MINISTER REGULATION NIUMBER 95 YEAR 2018

CASR PART 174

AIRONAUTICAL METEOROLOGICAL INFORMATION SERVICES

DIRECTORATE GENERAL REGULATION

Nr. 565 YEAR 2015 and Nr. 47 YEAR 2021, AC PART 170-03

INDONESIA AIR TRAFFIC MANAGEMENT CONTINGENCY PLAN

THE USE OF THE I-WISH PLATFORM

DIRECTOR GENERAL REGULATION NR.153 YEAR 2019



INDONESIA ACTIVE VOLCANOS

Source: iwish.kemenuh.go.id





OFFICIAL CLASSIFICATION USED BY PVMBG



PVMBG classifies Indonesia's **127** active volcanoes into:

TYPE		DESCRIPTION		NUMBER
A	Type A		Erupted since 1600 AD	76
B	Type B		No eruption since 1600 AD but still shows volcanic activity	30
C	Type C		No known historical eruption but exhibits fumaroles/ solfatara activity	21
	TOTAL	ACTIVE VOLCANOES		127



SOURCE:

Centre for Volcanology and Geological Hazard Mitigation (PVMBG)
Geological Agency, Ministry of Energy and Mineral Resources (ESDM), Indonesia



PVMBG: Monitoring Volcanoes,
Mitigating Hazards, Protecting Lives



Volcanic Activity Statistics | *example*



LEWOTOBI LAKI-LAKI MT. ERUPTION - 2025

ERUPTION TOTAL IN 2025

PERIOD	STATUS	TOTAL ERUPTION
Q1	ORANGE	166
Q1	RED	2
Q2	ORANGE	167
Q2	RED	5
Q3	ORANGE	116
Q3	RED	8
Q4	ORANGE	11
Q4	RED	5

ERUPTION GRAPH IN 2025

TOTAL DETAIL



IBU MT. ERUPTION - 2025

ERUPTION TOTAL IN 2025

PERIOD	STATUS	TOTAL ERUPTION
Q1	ORANGE	579
Q1	RED	1
Q2	ORANGE	295
Q2	RED	1
Q3	ORANGE	180
Q3	YELLOW	1
Q4	ORANGE	139

ERUPTION GRAPH IN 2025

TOTAL DETAIL



SEMERU MT. ERUPTION - 2025

ERUPTION TOTAL IN 2025

PERIOD	STATUS	TOTAL ERUPTION
Q1	ORANGE	1419
Q1	RED	2
Q2	ORANGE	903
Q2	RED	1
Q3	ORANGE	658
Q3	RED	0
Q4	ORANGE	685

ERUPTION GRAPH IN 2025

TOTAL DETAIL





I-WISH : Integrated Web-Based Aeronautical Information System Handling

for the management of the impact of volcanic ash on flight operations.

Information and coordination mechanism through **I-WISH** using the **Volcano** and **Collaborative Decision Making (CDM)** modules.

Authority of stakeholders involved in volcanic ash impact management, their respective responsibilities in disseminating information, and the types of volcanic ash information to be provided

Regulated as Frame Work by :
MINISTRY OF TRANSPORTATION, DIRECTORATE GENERAL OF CIVIL AVIATION
, DIRECTOR GENERAL OF CIVIL AVIATION REGULATION, **NUMBER KP 153 OF 2019**
ON
PROCEDURES AND GUIDELINES FOR COLLABORATIVE DECISION MAKING (CDM)
IN MITIGATING THE IMPACT OF VOLCANIC ASH ON FLIGHT OPERATIONS
USING THE INTEGRATED WEB-BASED AERONAUTICAL INFORMATION SYSTEM HANDLING (I-WISH)



iwish.kemenhub.go.id/home



Work

Finish up

AirNav

IWISH INDONESIA

UNIT KERJA

NAMA :

NIP :

DASHBOARD

Volcano & CDM

Volcano

Eruption Statistics

Eruption Ash Statistics

Interactive

Airspace 3D View

Publication Analysis

PIB

GPS RAIM PREDICTool

E-AIP PAGE

e-AIP

CUSTOMER PAGE

Welcome, Danan Suseno

Aeronautical Information Management System Overview

Latest VONA

Volcano Observatory Notice for Aviation

ORANGE 5

SEMERU

2026SMR1224 · 1h ago

ORANGE

SEMERU

2026SMR1223 · 6h ago

ORANGE

SEMERU

2026SMR1222 · 6h ago

ORANGE

SEMERU

2026SMR1221 · 6h ago

ORANGE

SEMERU

2026SMR1220 · 13h ago

ORANGE

Latest ASHTAM

Ash Advisories for Aviation

ORANGE 5

DUKONO

VAWR8434 · Just now

ORANGE ALERT

DUKONO

VAWR8434 · Just now

ORANGE ALERT

SEMERU

VAWR8433 · Just now

ORANGE ALERT

SEMERU

VAWR8433 · Just now

ORANGE ALERT

SEMERU

VAWR8433 · Just now

ORANGE ALERT

Latest NOTAMs

Notice to Airmen

BLUE 4

WAAF Unknown Airport

NEW B0710 Missile/Gun/Rocket Firing Will Take Place

18 Jun 2026, 23:50 UTC - 19 Jun 2026, 10:00 UTC

WAAF Unknown Airport

NEW A2173 Missile/Gun/Rocket Firing Will Take Place

22 Jun 2026, 03:00 UTC - 22 Jun 2026, 05:00 UTC

WAMG DJALALUDDIN

NEW C0889 Aerodrome Other Plain Language

19 Jun 2026, 02:00 UTC - 19 Jun 2026, 02:45 UTC

WAAF Unknown Airport

NEW A2172 Unmanned Aircraft Will Take Place

23 Jun 2026, 01:00 UTC - 16 Jul 2026, 10:00 UTC

Latest Publications

AIP AMDT
2026-05-28

3 NR

AIP SUP
2026-05-28

6 NR

AIC
2026-04-02

1 NR

e-AIP



MECHANISM OF INFORMATION AND COORDINATION FOR MANAGING THE IMPACT OF VOLCANIC ASH ON FLIGHT OPERATIONS

VALIDATION AND ANALYSIS

1. Airspace Observation
2. Aerodrome Observation



MINISTRY OF TRANSPORTATION
DIRECTOR GENERAL OF CIVIL AVIATION



DIRECTORATE OF AIR NAVIGATION



AIRPORT AUTHORITY

NOTAM
OFFICE

ISSUED
NOTAM

AFFECTED



AERODROME
CLOSED



AIRSPACE LIMITED /
AD WITH CAUTION



NOT AFFECTED
AREA



AERODROME /
AIRSPACE NORMAL
OPERATION

AIRSPACE OBSERVATION

AERODROME OBSERVATION

1

AIRSPACE
LIMITED



AirNav

AIREP and
Visual Report



Airline Staff

Aircraft



Local

Area
Observation



Airport

Paper Test
on air side



MET Office

Wind chart
& METAR



Observation Office

Volcano
Parameters

YES

Airspace
Affected?

NO

AIRSPACE NORMAL OPERATION



VA Observed?

NO

AERODROME NORMAL OPERATION



2

YES

RECOMMENDATION
OF NOTAM
AD CLOSED

1

LEGEND / ABBREVIATIONS

AD : Aerodrome
AIREP : Air Report
METAR : Meteorological Aerodrome Report
NOTAM : Notice to Airmen
VA : Volcanic Ash

1 Observes per hour
until VA Not Observed

2 Forecast +2 hours
Reports per 6 hours



User Roles in I-WISH



- **Super Administrator (Directorate of Air Navigation)**

Provides overall supervision, oversees information dissemination, and ensures stakeholders perform their roles throughout the CDM process.

- **Administrator (Airport Authority Office)**

Leads the CDM process, manages participants, validates information, communicates decisions, and activates or terminates CDM activities.

- **Contributors**

Provide volcanic, meteorological, operational, and aeronautical information required for decision making.

- a. INMC;
- b. Geological Agency;
- c. Meteorological Watch Office (MWO);
- d. Area Control Center (ACC);
- e. Flow Control Unit (Air Traffic Flow Management Unit – ATFM Unit);
- f. Cartography;
- g. NOTAM Office;
- h. Airport Authority Office;
- i. Air Transport Business Entities (Airlines); and
- j. Airport Business Entities.

- **Observers**

Provide observations and analysis. may include MWO personnel, airlines, BPBD, and Fire Department.

- **General User**



VOLCANIC ASH INFORMATION

The types of volcanic ash information that shall be submitted through the I-WISH platform include:

- a. Volcano Observatory Notice for Aviation (VONA);
- b. Significant Meteorological Information (SIGMET);
- c. ASHTAM (Special NOTAM for Volcanic Activity);
- d. NOTAM (Notice to Airmen);
- e. Air Report Special (AIRS);
- f. METAR (Meteorological Aerodrome Report);
- g. SPECI (Special Meteorological Aerodrome Report);
- h. Aerodrome Warning;
- i. Modelled Ash Concentration Chart;
- j. Volcanic Activity Report (VAR);
- k. ATS Route Contingency; and
- l. Paper Test.



The CDM Group automatically activated within the I-WISH platform when a VONA with a Yellow, Orange, or Red alert level is received.

The CDM Group automatically deactivated within the I-WISH platform upon receipt of a VONA with a Green alert level.



STATE

magma.vsi.esdm.go.id Ministry of Energy and Mineral Resources of the Republic of Indonesia



Work

MAGMA Indonesia

Home

VONA

Press Release

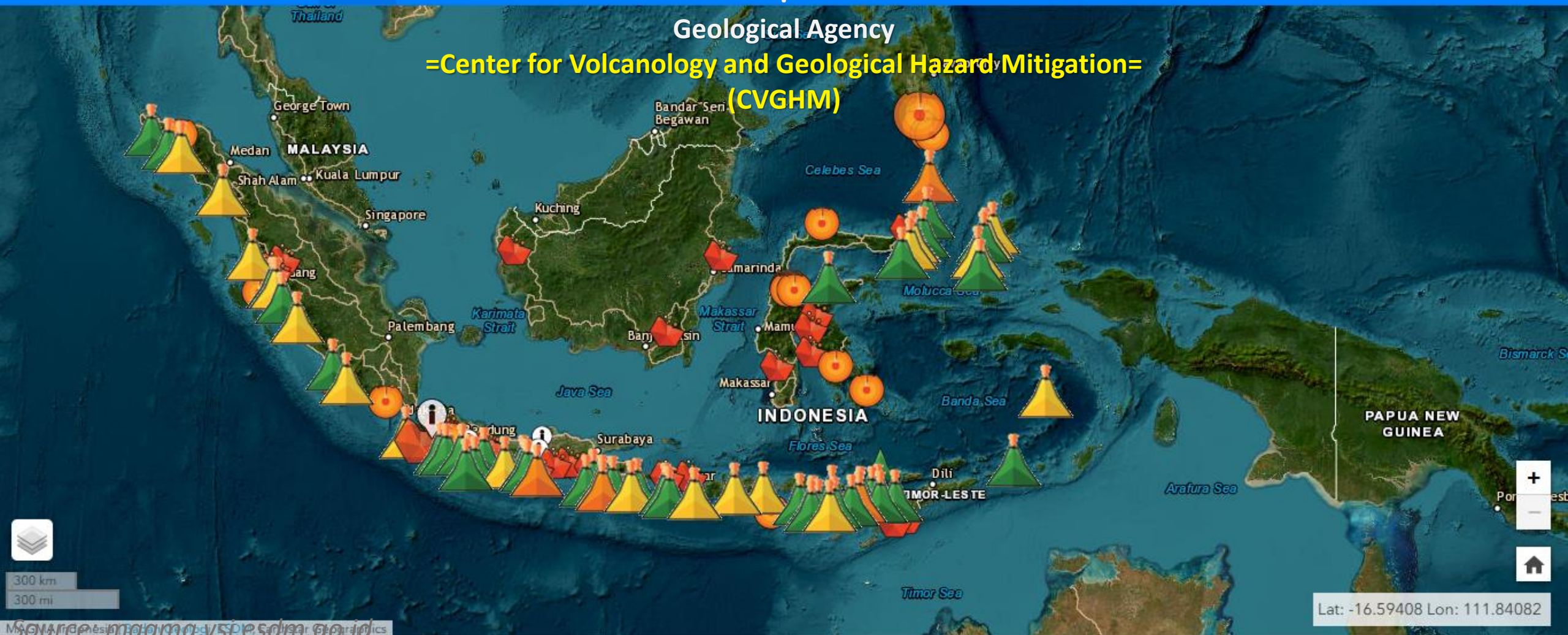
Tentang Magma

Legenda

Live Seismogram

Versi 2 (Beta)

Staff Login





INMC

Indonesia Network Management Center

=AirNav Branches=
28 Operation Managers

=ATS=

Air Traffic Service

- Manage & monitor
- Disruption management
- Contingency management

=ATFM=

Air Traffic Flow Management

- Multi-nodal Coordinator
- Indonesia ATFM
- A-CDM Coordinator

=ASM=

Airspace Management

- Airspace Management
- Drone operation
- UPR Management

=AIM=

Aeronautical Information Management

- AIM Center
- Notam Office
- FPL Center

BEST PRACTICE



Operational Frame Work ...



- **Early Detection :**
 - WA Group of **Volcanic Ash Indonesia**, with key members including: DGCA, AirNav, Airports, CVGDM, VAAC Darwin, MWO, Airlines;
 - I-Wish Indonesia;
 - Magma Indonesia;
 - PIREP coordination by Operations Managers.
 - WA Group of **INMC – OPS CABANG**
- **Analysis The Impact :**
 - ASHTAM-VAAC-MWO-IWISH-PIREP-other information related -> Creating suggestion alternate routes <ATS Manual>.
- **Disseminate The Information**
 - AFTN, email : ASHTAM, NOTAM, IWISH, suggestion alternate route.
 - WA Group of **INMC Daily Ops Coordination**, with key members including: INMC, AirNav Operation Managers, MWO, Airlines, Airports, NOF, FPL Center;
 - Twice-daily INMC teleconferences are held at 08:00 WIB and 14:15 WIB with Operations Managers from 28 AirNav Branches, the NOF, and the FPL Center. WMO, airport, and airline representatives join the morning session. Additional teleconferences are convened whenever urgent operational coordination is required.



Operational Frame Work



- **Operational Handling**

- Provide ASHTAM/ NOTAM
- Suggest alternate routes;
- Vectoring;
- UPR/ User Preferred Route;
- Supported facilities :
 - 95% airspace under surveillance,
 - ATFM : measurable/ predictable traffic density of a sector, Ground Delay Program (special spacing between departure, stop departure),
 - Safety tool/ nets : FPCP, FPCW, DIAW, STCA.

- **Monitoring**



Early Detection | Volcanic Ash Indonesia WAG



Volcanic Ash Indonesia
24 online



Volcanic Ash Indonesia
20 online



Volcanic Ash Indonesia
16 online



Volcanic Ash Indonesia
22 online



~ Notam Office

+62 877-7177-7082



ASHTAM VAWR8541 SEMERU
242240.pdf

4 pages • 2.9 MB • PDF

07:35



~ Heruningtyas DP

+62 857-2417-2717

Forwarded



.... MAGMA-VEN
::Volcanic Eruption Notice::

INFORMASI ERUPSI G. SEMERU

Telah terjadi erupsi G. Semeru, Jawa Timur pada tanggal 25 Juni 2026 pukul 06:36 WIB dengan tinggi kolom abu teramati ± 900 m di atas puncak (± 4.576 m di atas permukaan laut). Kolom abu teramati berwarna putih hingga kelabu dengan intensitas sedang condong ke arah barat daya. Erupsi ini terka-

C

~ Catur

+62 812-9102-1474

Forwarded



PIREP 24/12/2024 03:48 SJV 370
rute WIII-WADY ATA 03:56, VA
reported at FL150 10nm on the left
side when leaving Movmo

11:35



~ Notam Office

+62 877-7177-7082



ASHTAM VAWR1148
RAUNG 240350.pdf



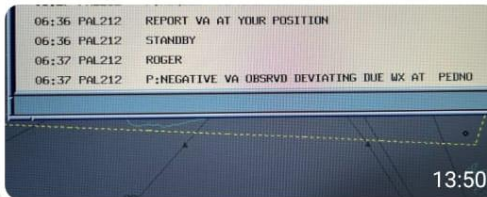
Man Ops MATSC

Forwarded



Man Ops MATSC

Forwarded



Pirep PAL212 YSSY-RPLL F380

13:52



Dina DNP

Man Ops MATSC

Photo

Noted Pak Wawan,
Tks infonya

13:53



~ Notam Office

+62 877-7177-7082



~ MO JOGYIA

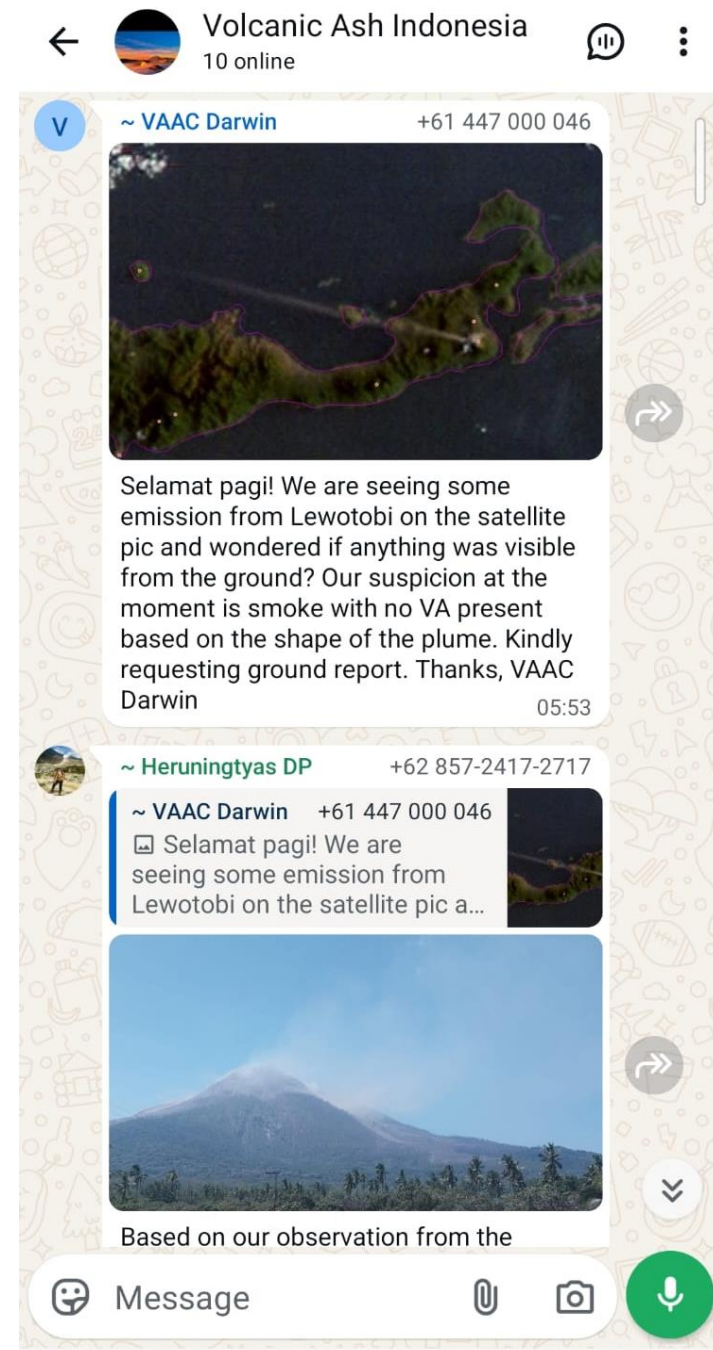
+62 811-2644-194

Rekap pirep 03 Maret 2020

1. Pirep LNI274 AT 22.55 Z KETINGGIAN ASAP FL120 TO SE ..
2. Pirep LNI670 AT 23.54 Z VA UP FL100 MOVE SOUTH EAST
3. CTV785 AT 00.34 Z ALT 9000FT position 12nm South off SO REPORTED MERAPI Berawan VA not reported
4. WON1917 AT 00.37 Z alt 5000 position 9 nml north off SO merapi not insight due to cloud..
5. 00:45 UTC CTV772 FL230 Positio "OF" negative insight merapi activity
6. 00: 47 utc GIA223 A105 R340/15 NM from "SO" negative insight merapi activity
7. 00:51 UTC GIA667 fl140 Position 14 nm North East "OF" negative merapi activity
8. 00:56 UTC XAR831 track Purwo - 'SO'-'OF' FL190 - A090 position abeam Klaten Clear of VA
9. 01:20 UTC AWQ8441 position RAD 060 29 NM "JOG" VOR FL145 negative activity merapi and clear of VA (Volcanic Ash)
10. 029 UTC TNU904 position R310/ 8 NM JOG A070 Reported VA from Surface Up FL 100 Moving to east
11. 01.35 UTC LNI561 route WAHQ-WIII after airborne Track SO - OF up FL100 VA at this track..at FL130 clear off VA
12. 01.36 UTC ARUNA 69 area 08 M CLEAR OFF VA



Early Detection | Volcanic Ash Indonesia WAG





- Early Detection |
INMC – OPS CABANG
WAG

← **INMC - OPS CABANG**
5 online

📌 reminding kepada seluruh MO agar mengisi lapo..

November 30, 2025

~ **MO JOGYIA** +62 811-2644-194
🚫 This message was deleted 07:18

**PIREP FORM REPORT AIRNAV
YOGYAKARTA**

DATE TIME (UTC): 30 November 2025 ,
time 23.57 UTC.

CALLSIGN : FHS201

A/C: AT75/PKFJA

ROUTE : WAAA- WAHH

POSITION: 15 NM North East of "OF"
Visual VA Merapi Mountain on the right
side about at Alt 10.000ft .

=MOD= 07:19

INMC AirNav
 Meet
Real-time meetings by G...
meet.google.com

INMC: INMC DAILY
TELECONFERENCE
October 20, 2025, 08.00 am –
December 31, 2025, 09:30am ·
Time zone: Asia / Jakarta

← **INMC - OPS CABANG**
3 online

📌 reminding kepada seluruh MO agar mengisi lapo..

Jemput jack 17:44

INMC AirNav
Assalamualaikum wrwb
Selamat sore pak DO dan pak EVP
Berikut kami sampaikan PIREP terkait
volcanic ash di approach surabaya sbb:

PIREP VA SEMERU

1. 09.45 UTC: GIA349 WADD WARR
position btw RUJAK APAMU report VA;
2. 09.49 UTC SJV703 WADD WARR
position btw RUJAK APAMU report VA;

Mitigasi manager operasi surabaya sbb:
STAR yang melalui rute selatan Surabaya
sementara di tutup, traffic incoming melalui
rute utara.

Demikian disampaikan. Terimakasih 18:24

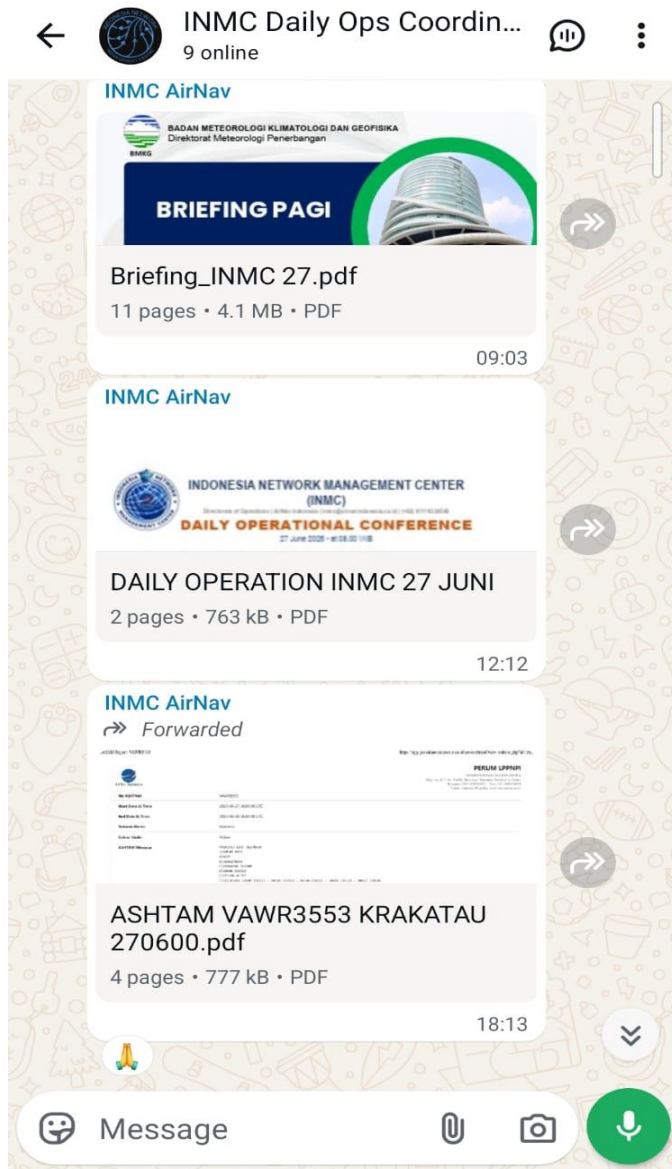
INMC AirNav
➡ Forwarded



Disseminate The Information |



INMC Daily Ops Coordination WAG



INMC Teleconference

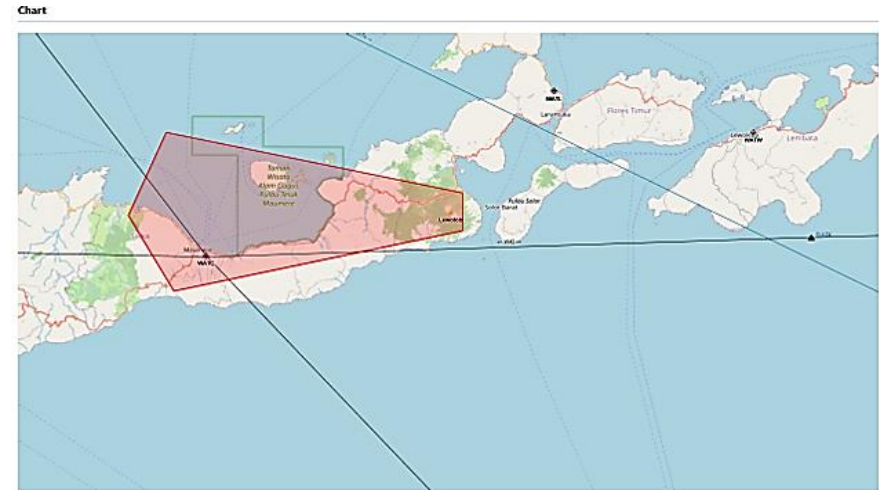




Operational Handling | Providing ASHTAM

PERUM LPPNPI
INTERNATIONAL NOTAM OFFICE
Gedung 611 Air Traffic Services, Bandara Soekarno-Hatta
Telepon: 021-55910631 | Fax: 021-55910659
Email: notamoffice@airnavindonesia.co.id

No ASHTAM	VAWR8539
Start Date & Time	2026-06-24 21:30:00 UTC
End Date & Time	2026-06-25 21:30:00 UTC
Volcano Name	Lewotobi
Colour Code	Orange
ASHTAM Message	VAWR8539 WAAF 06242130 (ASHTAM 8539 A)WAAF B)2606242010 C)LEWOTOB I 264180 D)S0833E12246 E)ORANGE ALERT F)SFC/FL070 S0835 E12248 - S0843 E12210 - S0833 E12204 - S0822 E12209 - S0830 E12248 - S0835 E12248 G)MOV W 10KT H)W35 I)NIL J)CVGHM, HIMAWARI-9 K)VA TO FL070 REP AT 24/2010Z MOV W. VA NOT IDENTIFIABLE ON CURRENT SAT IMG DUE TO MET CLOUD, DARKNESS, AND DIFFUSE ASH. REGULAR INTERMITTENT ERUPTIONS ARE EXPECTED TO CONTINUE. VA HEIGHT AND MOVEMENT BASED ON GROUND REPORTS AND MODEL GUIDANCE.)



Affected FIR

FIR Name

FIR UJUNG PANDANG

Affected Aerodrome

Designator	Airport Name
WATC	Fransiskus Xavierius Seda

Nearest Aerodrome

Designator	Airport Name	Distance (NM)
WATL	Gewayantana	19
WATE	Haji Hasan Aroeboesman	30
WATW	Wunopito	40

Affected Route

Route	Segment
W35	NETTO - MOF
W35	MOF - KPG



Operational Handling | Providing NOTAM_Route



AirNav Indonesia

PERUM LPPNPI
Unit PIA Wilayah Makassar
Gedung MATSC
Jl. Bandara Baru Gedung MATSC - 90552
Tlp. (0411) 4813210, Fax. (0411) 4813717



NOTAM	
Nomor NOTAM	A0422/20 NOTAMR A0405/20
Lokasi	WAAF – UPG FIR
Perihal	TEMPORARY CONTINGENCY ROUTE UPG FIR
Ringkasan Isi NOTAM	TEMPORARY CONTINGENCY ROUTE AVAILABLE IN UJUNG PANDANG AIRSPACE TO ALL FLIGHT AFFECTED BY ERUPTION OF MT. TAAL

Text Notam
A0422/20 NOTAMR A0405/20 Q)WAAF/QXXXX/IV/NBO/E/000/999/0503511933E999 A)WAAF B)2002121127 C)2002130100EST E)FOLLOWING B0400/20 NOTAM REPLACE B0390/20 RPHI. TEMPORARY CONTINGENCY ROUTE AVAILABLE IN UJUNG PANDANG AIRSPACE TO ALL FLIGHT AFFECTED BY THE ERUPTION OF MT. TAAL. ALL OPERATORS ARE REQUIRED TO FILE FLIGHT PLAN ACCORDING TO THE DESIRED ROUTE AND ADDRESS TO WAAAZQZX AND WAAFZIZE

Location : RPHI [-]

B0400/20 NOTAMR B0390/20 [Significant volcanic activity]
Q)RPHI/QWWLW/IV/NBO/W/000/040/1400N12059E010
A)RPHI B)2002120148 C)2002130100EST
E)DUE TO TAAL VOLCANO (14 00N 120 59E) ON ALERT LVL 3 (DECREASED TENDENCY TOWARDS HAZARDOUS ERUPTION), FLT OPR ARE ADZ TO AVOID FLYING CLOSE TO THE VOLCANO (WI 5NM RADIUS FM THE CRATER) AS AIRBORNE ASH AND BALLISTIC FRAGMENTS FM SUDDEN EXPLOSIONS AND WIND-REMOBILIZED ASH MAY POSE HAZARD TO ACFT.
ROUTES AFFECTED:
A461: MIA VERDE
ALTN ROUTES AVBL:
SOUTHBOUND: MIA BUCAL OLRAX W3 SAJ.
F)SFC G)4000FT AMSL



Operational Handling | Providing NOTAM_Aerodrome Closed / Resume Normal



AirNav Indonesia

Perum LPPNPI
Unit Pelayanan Informasi Aeronautika
NOTAM OFFICE
Gedung 611 Air Traffic Services Bandar
Udara Soekarno-Hatta
Telp: 021-55910631
Email: notamoffice@airnavindonesia.co.id

NOTAM	
Nomor NOTAM	C0729/26 NOTAMC C0727/26
Lokasi	WATC - MAUMERE / Fransiskus Xaverius Seda
Informasi Isi NOTAM	Aerodrome - Resumed normal operation
Text NOTAM	
C0729/26 NOTAMC C0727/26 Q) WAAF/QFAAK/IV/NBO/A/000/999/0838S12214E005 A) WATC B) 2606260247 E) AD RESUMED NML OPS) ☐	
Visualisasi NOTAM	
(Visualisasi ini merupakan tambahan informasi NOTAM dan bukan bagian dari NOTAM)	
-	

*Disclaimer : Informasi yang terdapat dalam NOTAM ini bersifat dinamis, untuk menjamin validitas informasi dapat mengakses <https://pia.airnavindonesia.co.id/>.



AirNav Indonesia

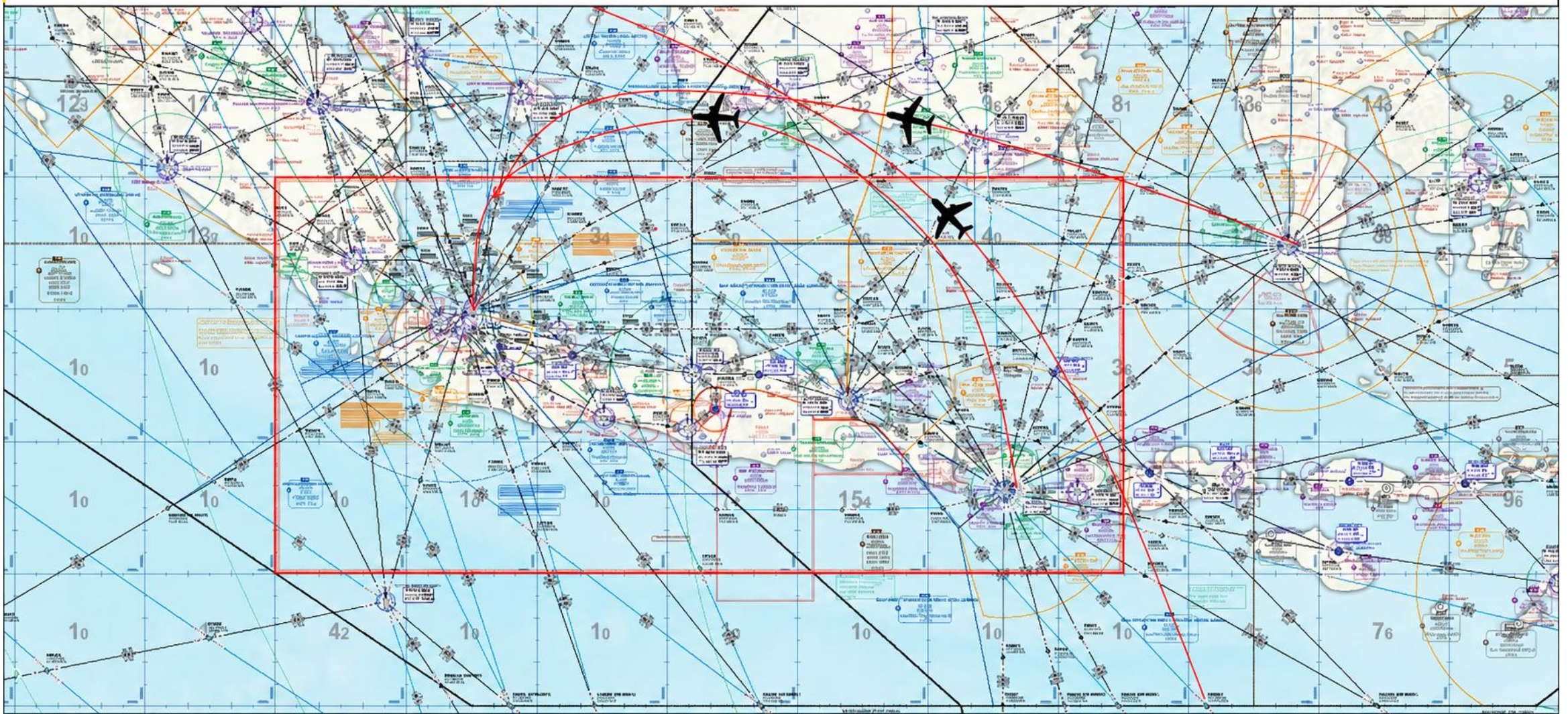
Perum LPPNPI
Unit Pelayanan Informasi Aeronautika
NOTAM OFFICE
Gedung 611 Air Traffic Services Bandar
Udara Soekarno-Hatta
Telp: 021-55910631
Email: notamoffice@airnavindonesia.co.id

NOTAM	
Nomor NOTAM	C0721/26 NOTAMN
Lokasi	WATC - MAUMERE / Fransiskus Xaverius Seda
Informasi Isi NOTAM	Aerodrome - Closed
Text NOTAM	
C0721/26 NOTAMN Q) WAAF/QFALC/IV/NBO/A/000/999/0838S12214E005 A) WATC B) 2606242346 C) 2606252200EST E) AD CLSD DUE TO LEWOTOBI VOLCANIC ASH) ☐	
Visualisasi NOTAM	
(Visualisasi ini merupakan tambahan informasi NOTAM dan bukan bagian dari NOTAM)	
-	

*Disclaimer : Informasi yang terdapat dalam NOTAM ini bersifat dinamis, untuk menjamin validitas informasi dapat mengakses <https://pia.airnavindonesia.co.id/>.



Operational Handling | Vectoring / UPR

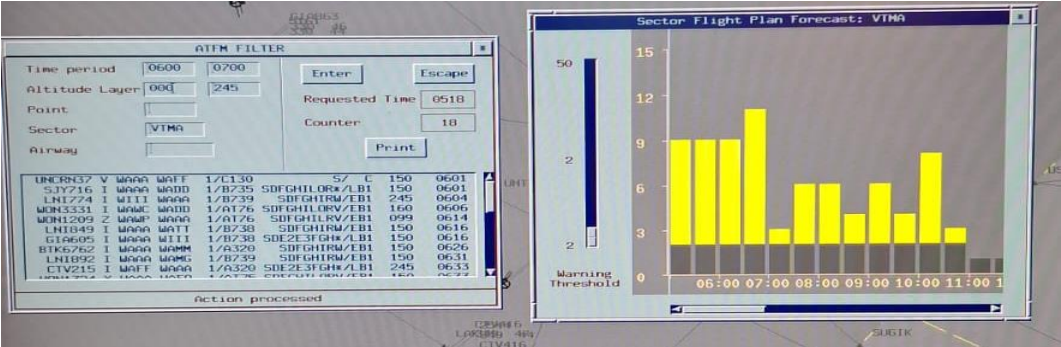




Operational Handling | Supported Facilities



Surveillance coverage



Sector traffic forecast

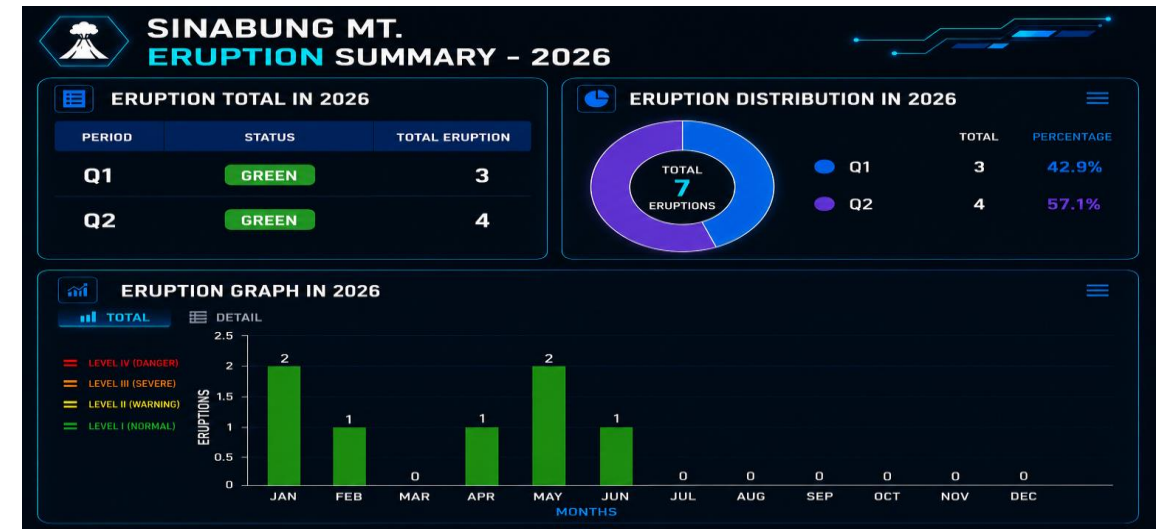
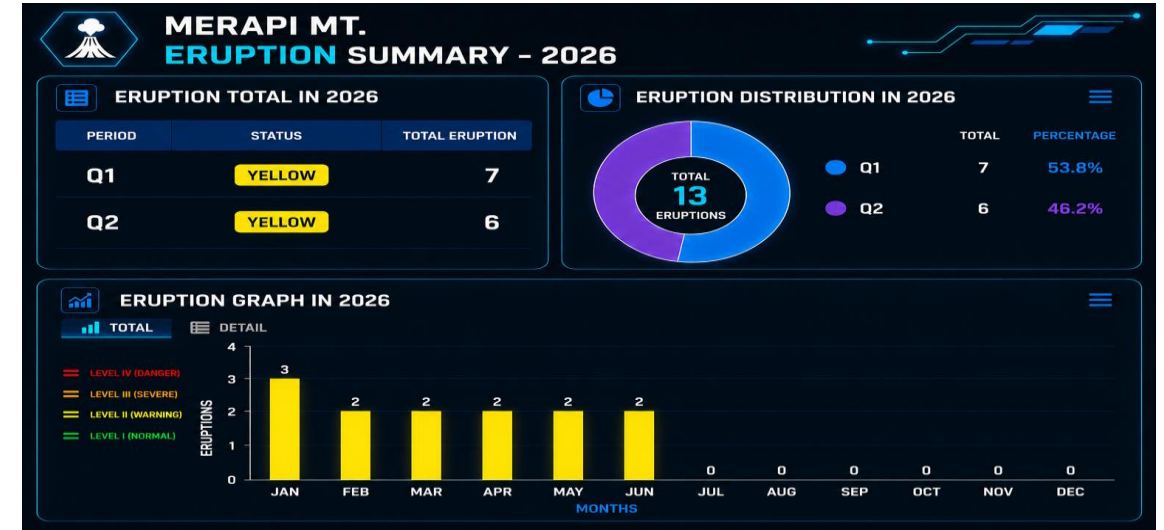
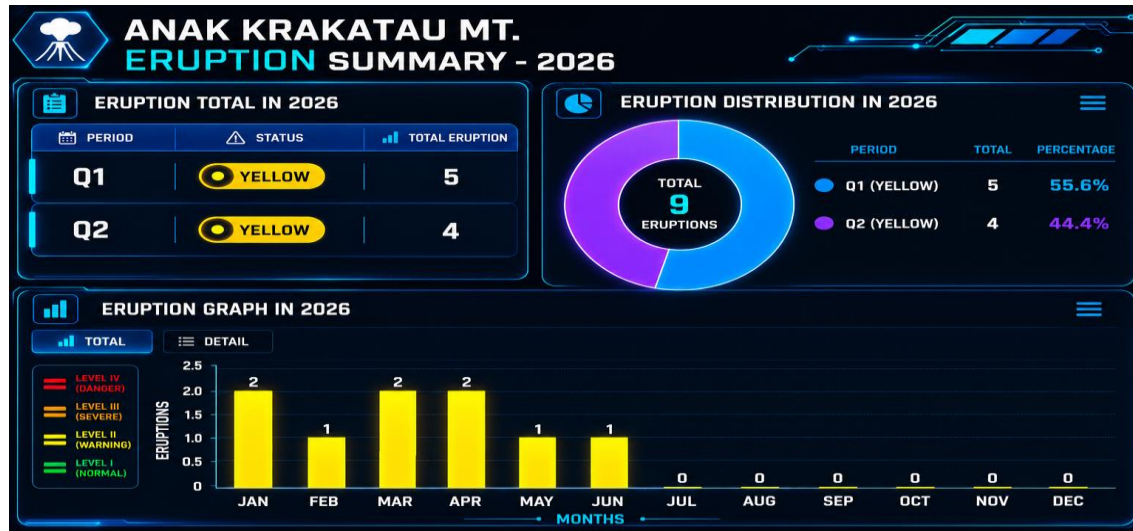


Safety nets | potential traffic conflict detection

SECTOR CONFLICT			
SOLVED (1)		60	
1051	ANZ6	FPCF1	
1103	ANZ6	FPCF2	
1103	FPCF1	FPCF2	



Volcanic Activity Statistics | *need to be monitored closely*





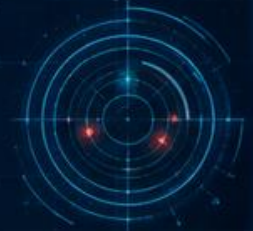
KELUD MT. ERUPTION

13-14 FEBRUARY 2014

CASE STUDY

COORDINATES
7.936° S
112.313° E

ELEVATION
1,731 M



ALERT LEVEL
SIAGA



ERUPTION OVERVIEW

-  **VOLCANO**
GUNUNG KELUD
-  **DATE**
13-14 FEBRUARY 2014
-  **VEI**
2
-  **LOCATION**
KEDIRI, EAST JAVA
INDONESIA

KEY FACTS

- ERUPTION TYPE
PHREATIC
- MAX ASH HEIGHT
~8 KM
- IMPACT AREAS
KEDIRI, MALANG,
BLITAR, TULUNGAGUNG
- STATUS
MONITORED



ACTIVITY TIMELINE

-  **13 FEB 2014**
22:50 WIB Initial eruption
Ash column observed
-  **14 FEB 2014**
06:00 WIB Increased activity
Ashfall in surrounding areas



MONITORING
PVMBG - INDONESIA



Indonesian volcano erupts

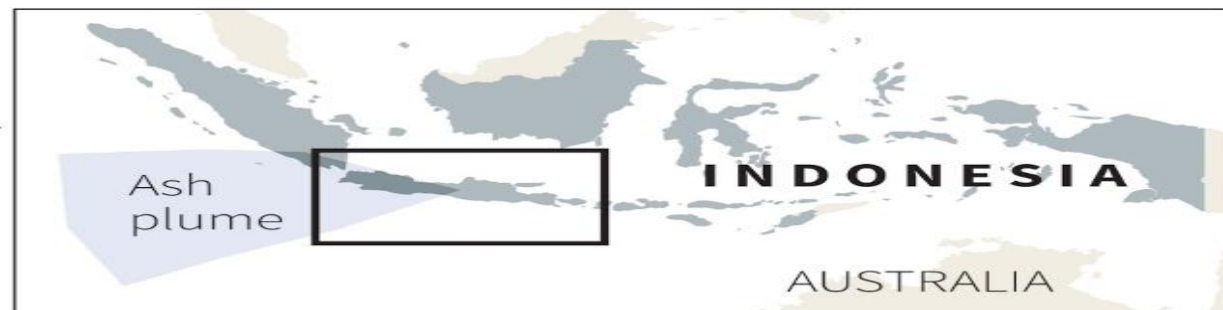
A volcano erupted on the heavily populated Indonesian island of Java, sending a huge plume of ash and sand 17 km into the air and forcing the evacuation on Friday of more than 70,000 people and closure of seven airports.

● Volcano with seismic activity ● Inactive volcanoes □ Airport closed ▲ Ash cloud



Note: Ash cloud forecast for Feb. 15, 0330 GMT.

Sources: Global Volcanism Program, Smithsonian Institution; Darwin Volcanic Ash Advisory Centre





AIR TRAVEL DISRUPTED • FLIGHTS CANCELED • AIRPORTS AFFECTED







ATM VOLCANIC ASH CONTINGENCY PLAN

Objective: To provide standardized procedures for managing air traffic during volcanic eruptions and volcanic ash events to ensure aviation safety.



TRIGGER

1 PHASE 1 PRE-ERUPTION



Early recognition of volcanic activity and rapid dissemination of information.

Objective

Early recognition of volcanic activity and rapid dissemination of information.

Key Actions (ATS)

- Issue NOTAM and AIS information immediately.
- Establish a precautionary danger area around the volcano (Default radius: 111 km / 60 NM if no specific procedure exists).
- Coordinate with MWO.
- Alert aircraft operating near the area.
- Offer rerouting assistance.
- Coordinate with adjacent ACCs.
- Coordinate with volcanological agencies and military authorities if required.
- Apply ATFM measures if required.



ADJACENT ACCs

- Re-clear affected flights.
- Suggest alternative routes.
- Maintain awareness of affected airspace.



ATFM UNIT

- Coordinate information exchange between:
 - VAAC
 - ANSP
 - MWO
 - Airlines

ERUPTION BEGINS

2

PHASE 2 START OF ERUPTION



Protect aircraft during the initial eruption.

Objective

Protect aircraft during the initial eruption when ash enters the atmosphere.

Key Actions (ATS)

- Inform aircraft about:
 - Location of ash cloud
 - Forecast movement
 - Hazard information
- Issue NOTAM establishing danger area.
- Coordinate closely with MWO.
- Implement rerouting procedures.
- Develop and update flow-management measures.
- Begin planning for the ongoing eruption phase.



ADJACENT ACCs

- Coordinate reroutes.
- Support ATFM measures.
- Maintain awareness of contamination areas.
- Participate in planning for subsequent phases.



ATFM UNIT

- Facilitate Collaborative Decision Making (CDM).
- Coordinate latest information among:
 - VAAC
 - ANSP
 - MWO
 - Operators

INMC-WMO-CVGHM-VAAC ISSUES FIRST VAA / VAG

3

PHASE 3 ONGOING ERUPTION



Manage air traffic using detailed volcanic ash forecasts.

Objective

Manage air traffic using detailed volcanic ash forecasts.

Key Actions (ATS)

- Use VAA/VAG information to:
 - Issue AIS messages.
 - Issue MET products.
 - Plan ATFM measures.
- Continue dissemination of volcanic ash information.
- Conduct regular coordination among stakeholders.
- Treat contaminated airspace similar to mountainous terrain during flight planning.
- Forward pilot observations and airborne measurements (AIREPs) to relevant authorities.

INMC-WMO-CVGHM-Airport-VAAC DECLARES "NO VA EXP"

4

PHASE 4 RECOVERY



Return operations to normal.

Objective

Return operations to normal.

Key Actions (ATS)

- Issue cancellation or update NOTAMs.
- Restore normal traffic flow.
- Resume standard ATS and ATFM operations as soon as practical.



KEY ACTION AIRPORT

- Airport check facilities with result safe from volcanic ash.
- Paper test with result negative volcanic ash.



OPERATIONAL CHALLENGES

SINABUNG MT. / ANAK KRAKATAU MT. ERUPTION??

- Early volcanic ash detection.
- Rapid dissemination of VAA, SIGMET, and NOTAM information.
- Coordinated ATFM measures.
- Dynamic rerouting across Jakarta, Singapore, and Kuala Lumpur FIRs.
- Continuous collaboration among ANSPs, VAAC Darwin, meteorological agencies, airports, and airlines
- Managing diversions.
- Fuel planning.
- Ground congestion at alternate airports.





THANK YOU