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# TSP Indonesia Report

**Yedi Dermadi**
*Vice Chair, WG-2*

*Directorate for Earthquake and Tsunami, BMKG*
*yedi.dermadi@bmkg.go.id*

# Outline

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1. TSP Indonesia Performance 2024-2025
2. TSP Indonesia Development Since Last ICG
3. TSP Indonesia Future Development and Plan

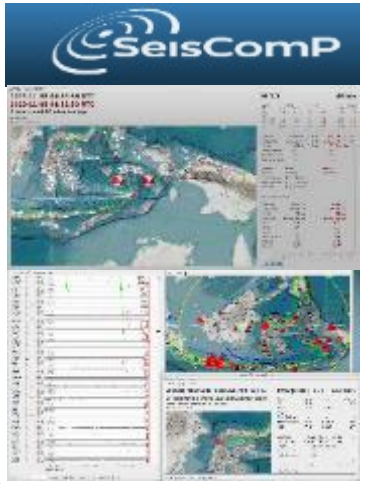
# TSP Indonesia Development Since Last ICG

## Earthquake and Tsunami Processing System

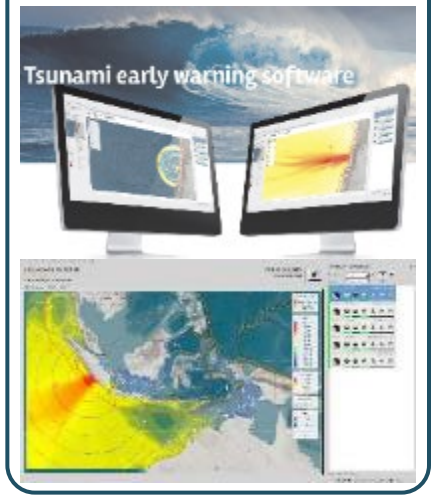
Main System (JAKARTA)


Backup System (BALI)

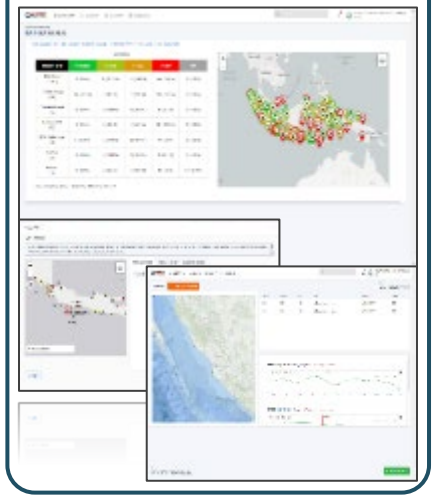
**SEISCOMP**




**TOAST**




**InaTNT**



24/7 communication and coordination with the local BMKG directly as part of the confirmation process of earthquake events and the coordination with the InaTEWS operational system (Jakarta and Bali).

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## Command Center of InaTEWS

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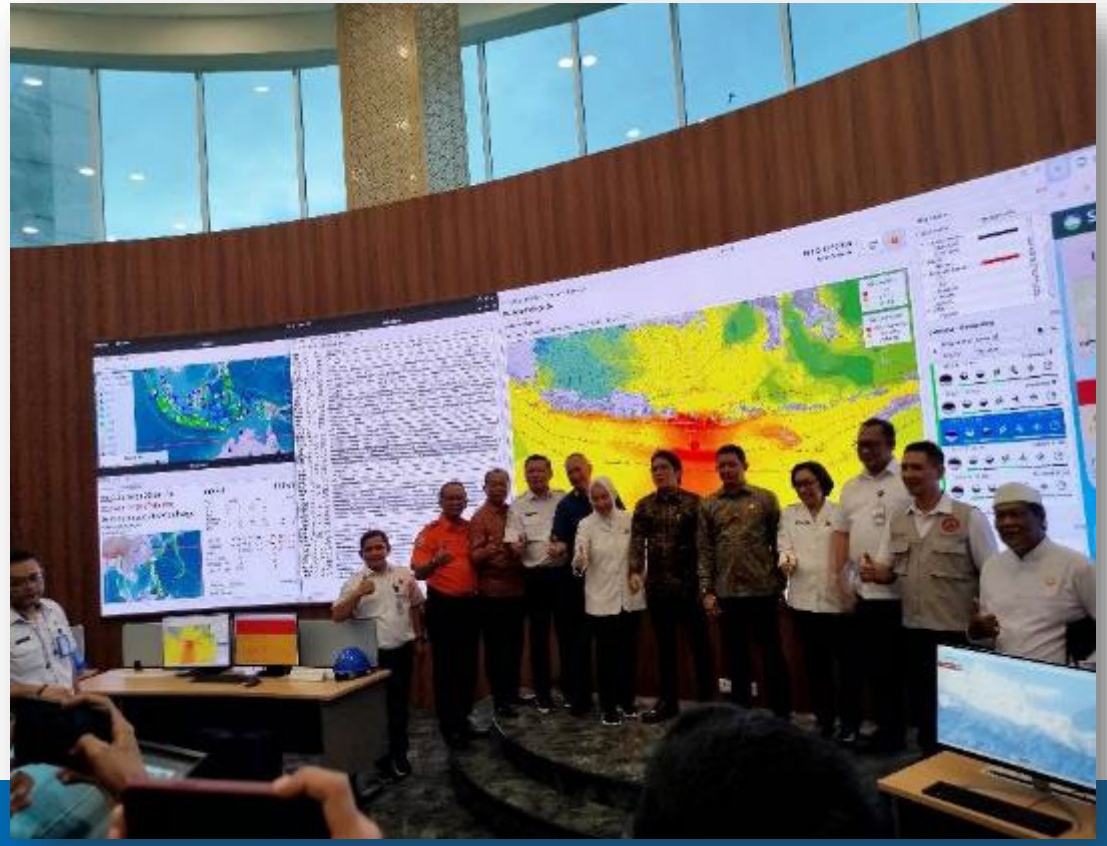
The new Operational Center for InaTEWS in **Bali** and **Jakarta** was inaugurated on **June 14, 2025**, and **July 21, 2025**.



BMKG has led the way in implementing earthquake-resistant building construction with the latest **Base Isolator Technology** in the InaTEWS Building located in Jakarta and Bali, aiming to protect structures from damage caused by earthquake shocks.

# TSP Indonesia Development Since Last ICG

## Earthquake and Tsunami Monitoring System

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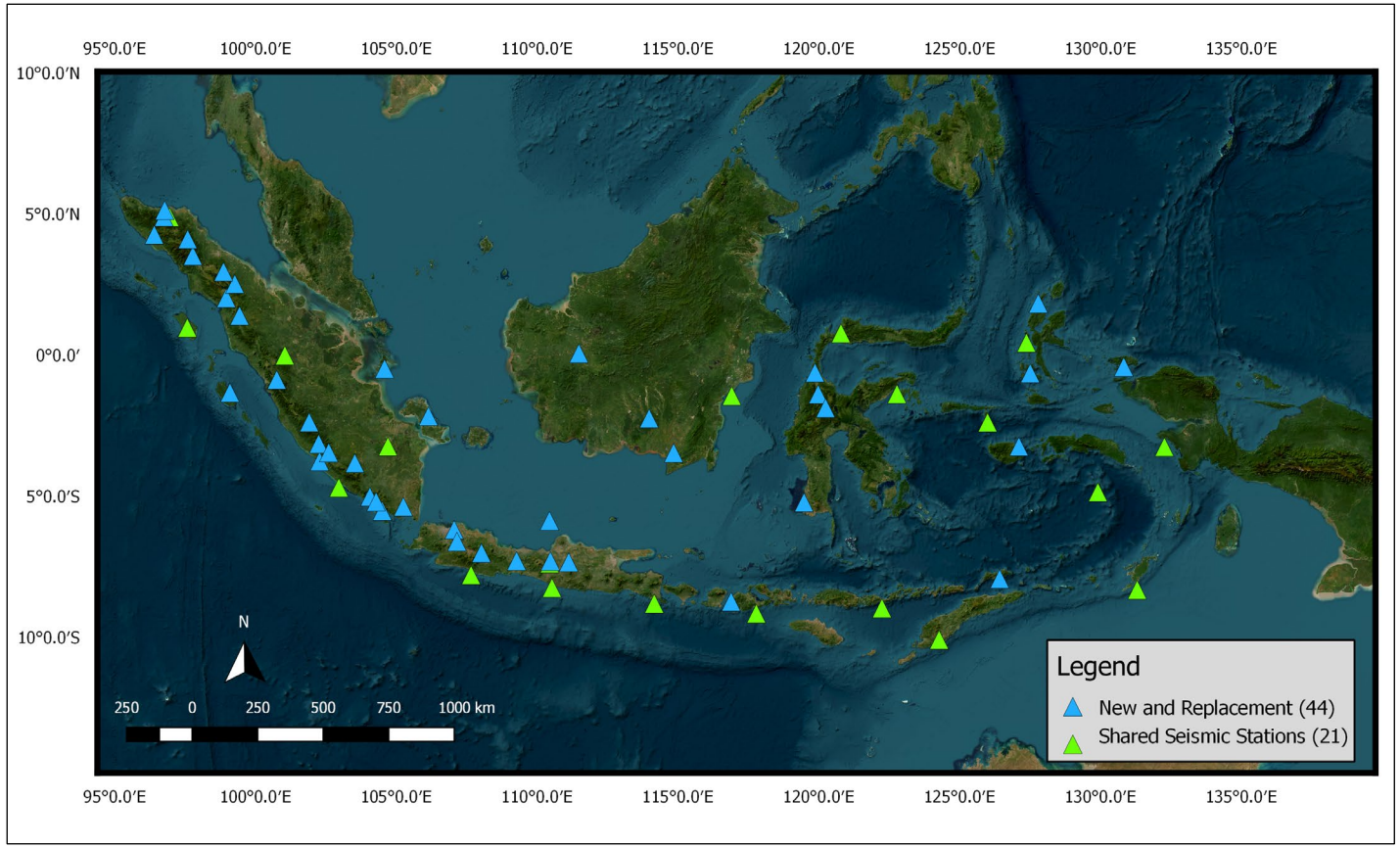
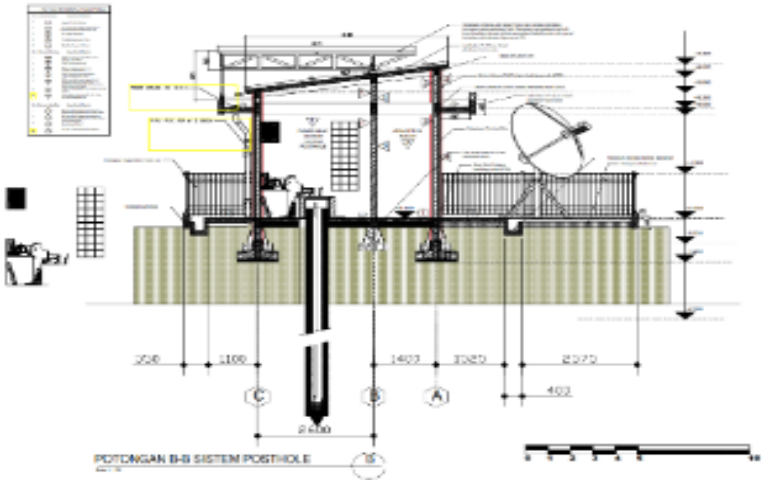
## 20 New Seismic Stations Installed & 24 Existing Stations Replaced




Shared 21 Broadband Seismic Stations

# TSP Indonesia Development Since Last ICG

## Earthquake and Tsunami Monitoring System

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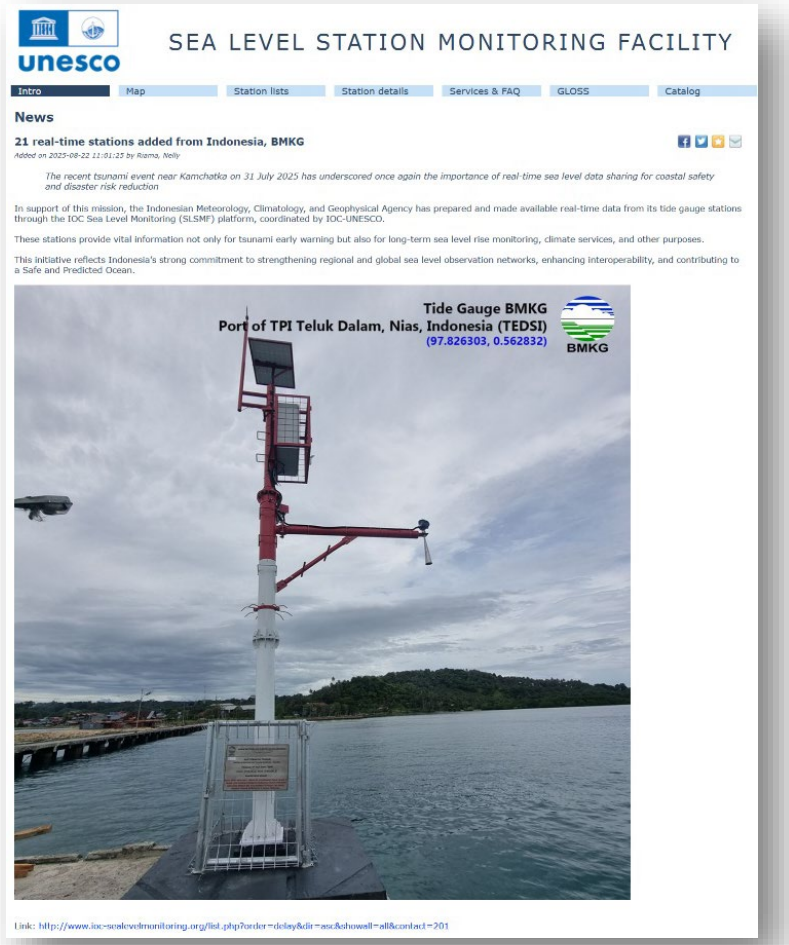
## Successfully installed 100 Tsunami Gauge Stations (2025)

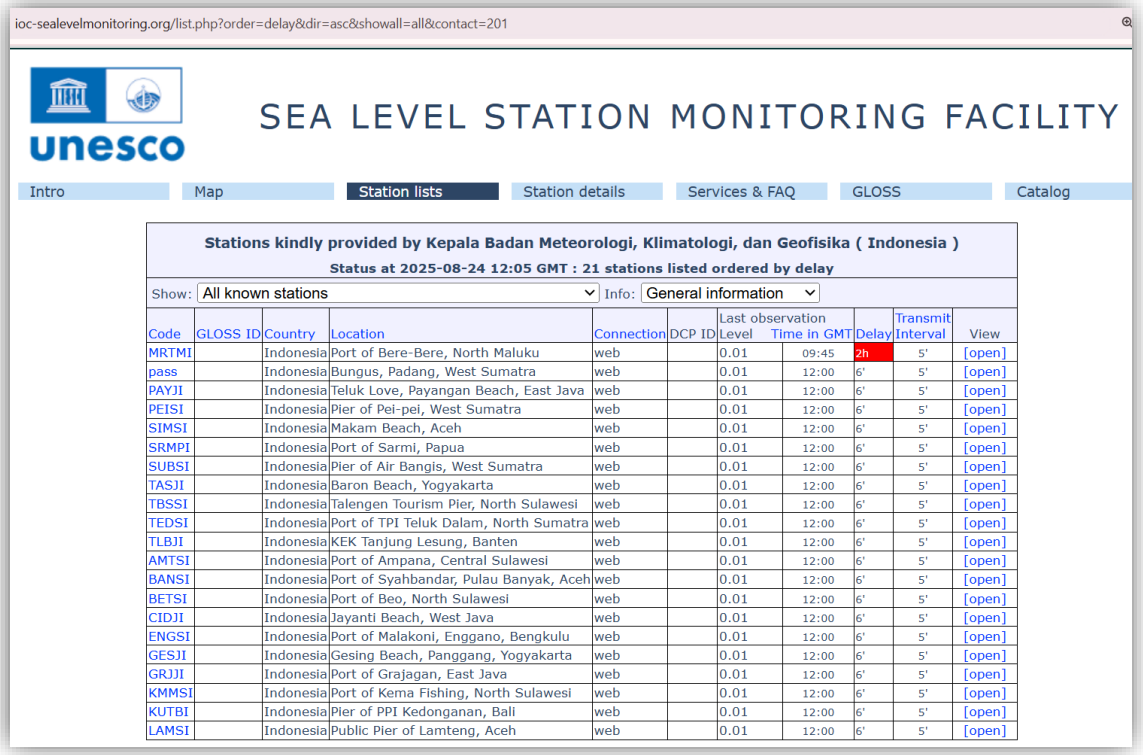



**MAIN SENSOR**

**Coastal Cam/CCTV**


**Air Pressure Sensor**

Meteotsunami shockwace detection




Stations kindly provided by Kepala Badan Meteorologi, Klimatologi, dan Geofisika ( Indonesia )

Status at 2025-08-24 12:05 GMT : 21 stations listed ordered by delay

Show: All known stations  Info: General information

| Code | GLOSS ID | Country | Location | Connection | DCP ID | Last observation Level | Last observation Time in GMT | Delay | Transmit Interval | View |
|---|---|---|---|---|---|---|---|---|---|---|
| MRTMI | | Indonesia | Port of Bere-Bere, North Maluku | web | | 0.01 | 09:45 | 2h | 5' | [open] |
| pass | | Indonesia | Bungus, Padang, West Sumatra | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| PAYJI | | Indonesia | Teluk Love, Payangan Beach, East Java | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| PEISI | | Indonesia | Pier of Pei-pei, West Sumatra | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| SIMSI | | Indonesia | Makam Beach, Aceh | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| SRMPI | | Indonesia | Port of Sarmi, Papua | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| SUBSI | | Indonesia | Pier of Air Bangis, West Sumatra | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| TASJI | | Indonesia | Baron Beach, Yogyakarta | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| TBSSI | | Indonesia | Talengen Tourism Pier, North Sulawesi | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| TEDSI | | Indonesia | Port of TPI Teluk Dalam, North Sumatra | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| TLBJI | | Indonesia | KEK Tanjung Lesung, Banten | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| AMTSI | | Indonesia | Port of Ampana, Central Sulawesi | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| BANSI | | Indonesia | Port of Syahbandar, Pulau Banyak, Aceh | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| BETSI | | Indonesia | Port of Beo, North Sulawesi | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| CIDJI | | Indonesia | Jayanti Beach, West Java | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| ENGSI | | Indonesia | Port of Malakoni, Enggano, Bengkulu | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| GESJI | | Indonesia | Gesing Beach, Panggang, Yogyakarta | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| GRJJI | | Indonesia | Port of Grajagan, East Java | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| KMMSI | | Indonesia | Port of Kema Fishing, North Sulawesi | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| KUTBI | | Indonesia | Pier of PPI Kedonganan, Bali | web | | 0.01 | 12:00 | 6' | 5' | [open] |
| LAMSI | | Indonesia | Public Pier of Lamteng, Aceh | web | | 0.01 | 12:00 | 6' | 5' | [open] |

**Shared 21 Tsunami Gauges data** to IOC Sea Level

# TSP Indonesia Development Since Last ICG

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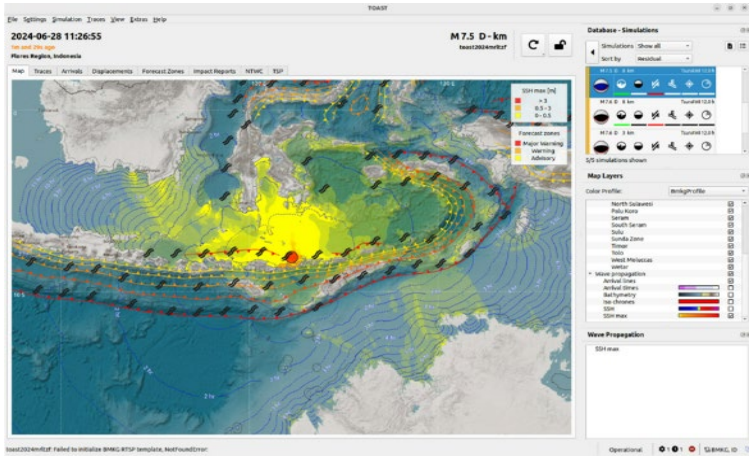
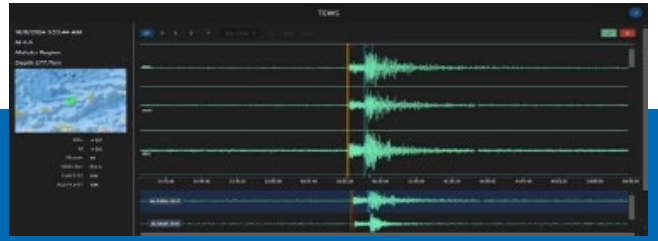
## Strengthening and developing the Earthquake Early Warning System

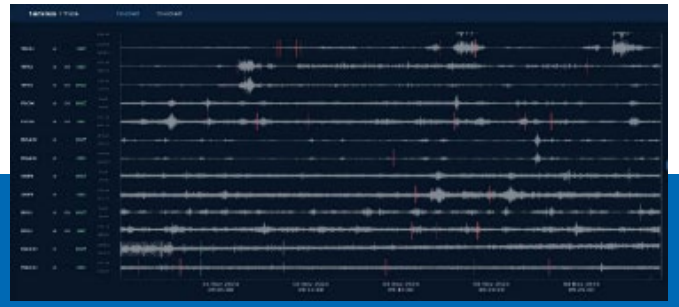


## Integration of the New 4000 TsunAWI Scenarios Into TOAST

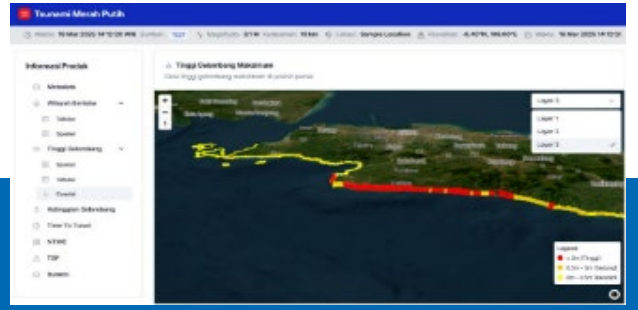
### AI-Based Earthquake Processing

### Conventional Earthquake Processing



### Comprehensive Tsunami Processing



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## Develop a New Magnitude Formula Mbmkg

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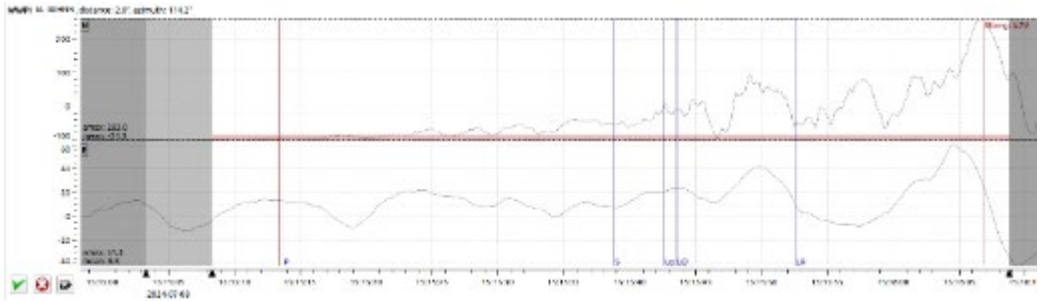
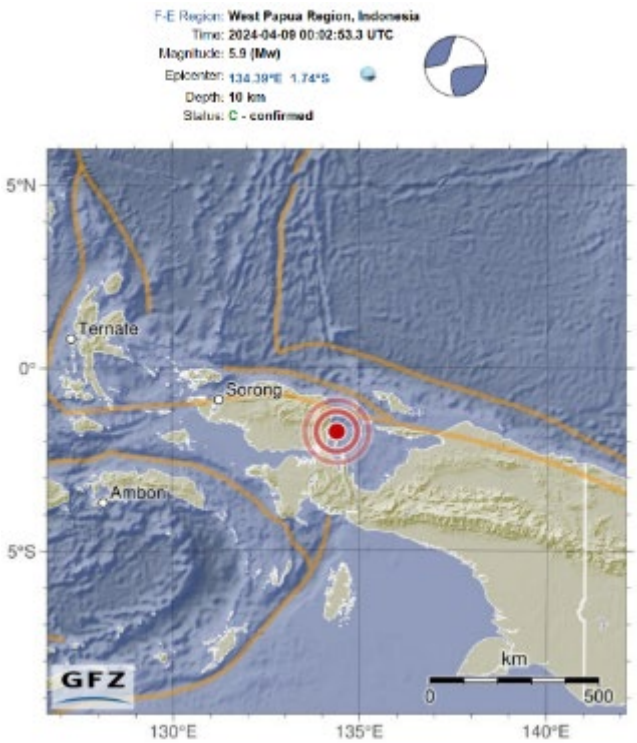
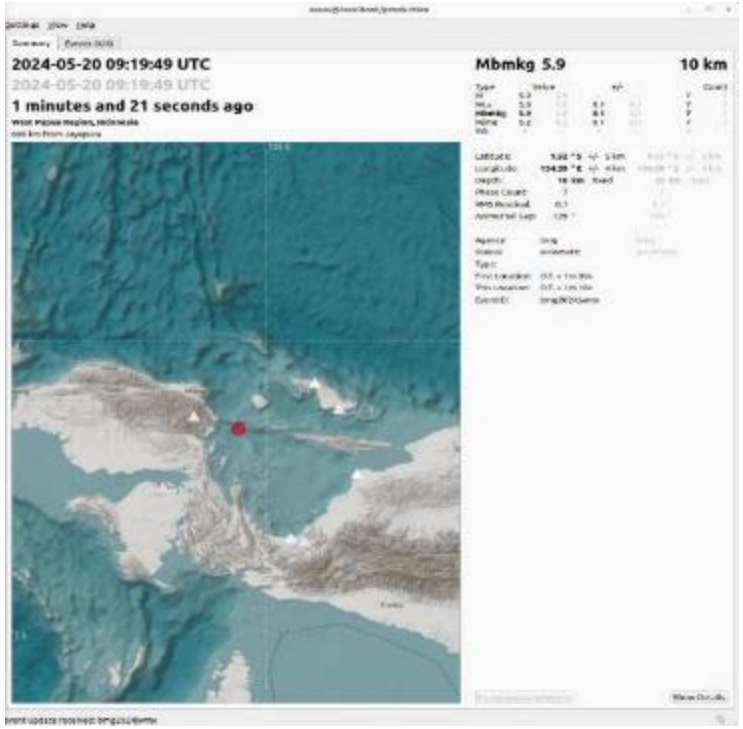
Develop a new magnitude formula suitable for local and regional tsunami strong motion data.






## Mbmkg Formula:

$$Mbmkg = \log(Amax) + 1.342 * \log(R) + 0.0002305 * R - 1.353$$

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## On the Job Training For the Indian Ocean Member State OMAN and Timor Leste – 2024


# TSP Indonesia Future Development and Plan

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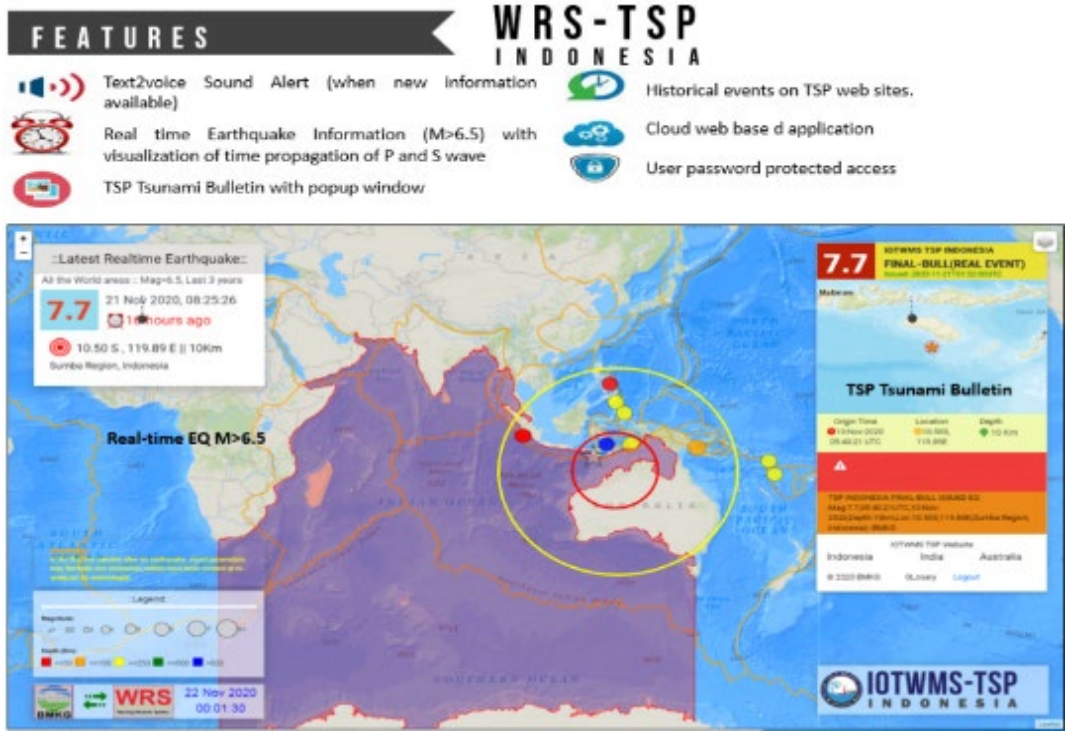
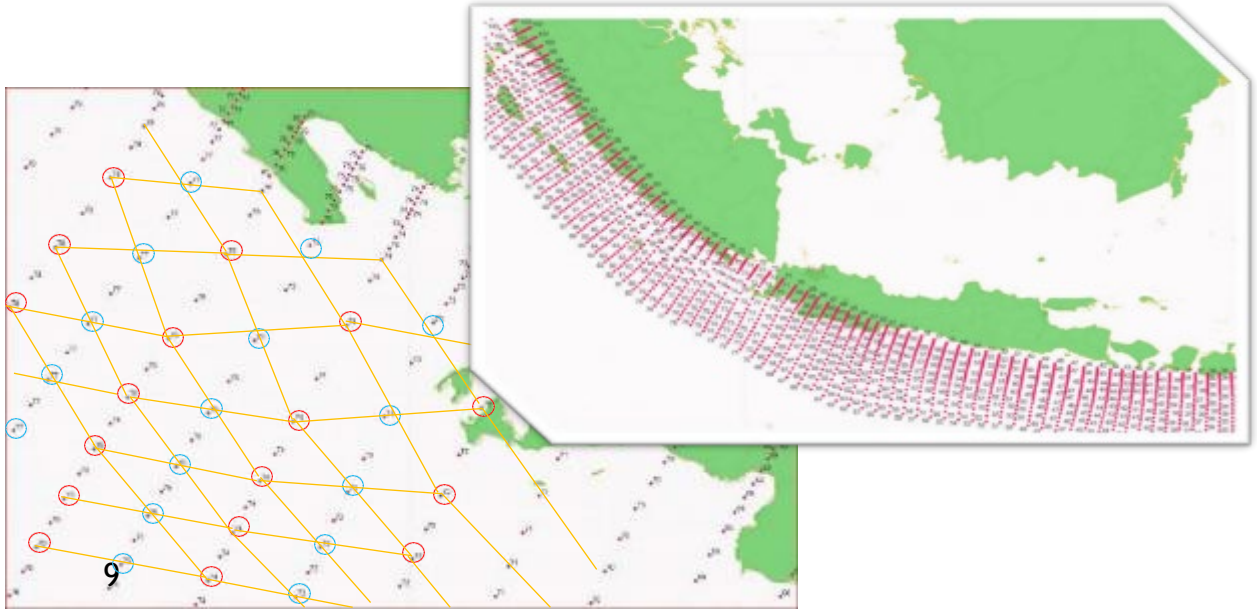
## Continuing the contribution of WRS-TSP Indonesia as a real-time system to alert NTWCs




*https://inatews.bmkg.go.id/wrs/tsp/index.html*




## Expanding Pre-Calculated Tsunami Database

# TSP Indonesia Future Development and Plan

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## Participation on the Regular IOTWMS Communication Test and IOWAVE Exercise

Preparation

Coordination

Execution

2009 IOWave09

2011 IOWave11

2014 IOWave14

2016 IOWave16

2018 IOWave18

2020 IOWave20

2023 IOWave23

*Upcoming*

2025 IOWave25

# TSP Indonesia Future Development and Plan

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- Continue to do the research on non-seismic tsunami and SOP.
- Continue to work on developing maritime product for NAVAREAs.
- Continue to support on job training for the IO member states.

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# THANK YOU