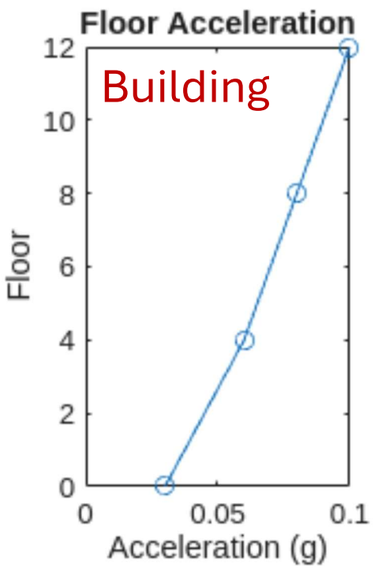
รู้ก่อน **RUGON: R**eal-time **U**biquitous **G**round-shaking **O**bservation **N**etwork

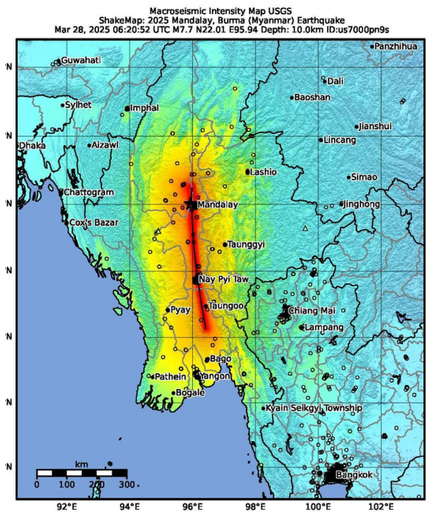
Sense then share

Aggregation
Analysis
Visualization

Rapid impact assessment



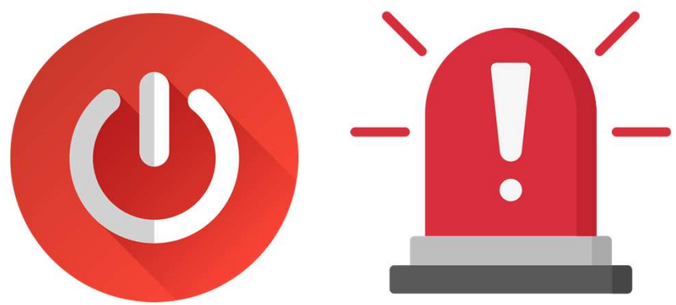
ShakeMap (USGS)



Early Warning and Alert

8/16/25 10:18 AM
Strong earthquake detected in northern Thailand and can affect your site. ETA = 60s. Seek shelter around you.

Automation



RUGON
Sense then share

CHULA ENG

 Tel/WA: +66-891033993 Line: aruangra

รู้ก่อน
RUGON

Real-time **U**biquitous **G**round-shaking **O**bservation **N**etwork

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Professor, Chulalongkorn University

Managing Director, RUGON Co.,Ltd.

RUGON
Sense then share

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CU ENGINEERING ENTERPRISE

Timeline of an Earthquake and Proactive Actions

Before an earthquake

- Warning before the arrival of earthquakes → Networked horizontally, Notification
- Shut down some critical equipment in advance → Automation

During an earthquake

- Detect vibration → Monitoring and recording
- Detect the end of vibration to alert to evacuate → Notification
- Set off the alarm for evacuation → Automation

After an earthquake

- Rapid safety assessment to resume building use → Networked vertically
- Vibration data available for detailed assessment → Data analytics

OpenAPI for Country Earthquake Preparedness

Before an earthquake

- Industries – halt critical operation. hazmat handling
- Construction – halt crane operation
- Offices – save data
- Buildings – stop lifts at the closest floor
- Hospitals – pause surgical procedures
- Households – terminate fire hazard activities
- Trains – stop or slow down
- Airport – halt landing

Earthquake Early Warning (EEW) → **TMD** (กรมอุตุนิยมวิทยา)

After an earthquake

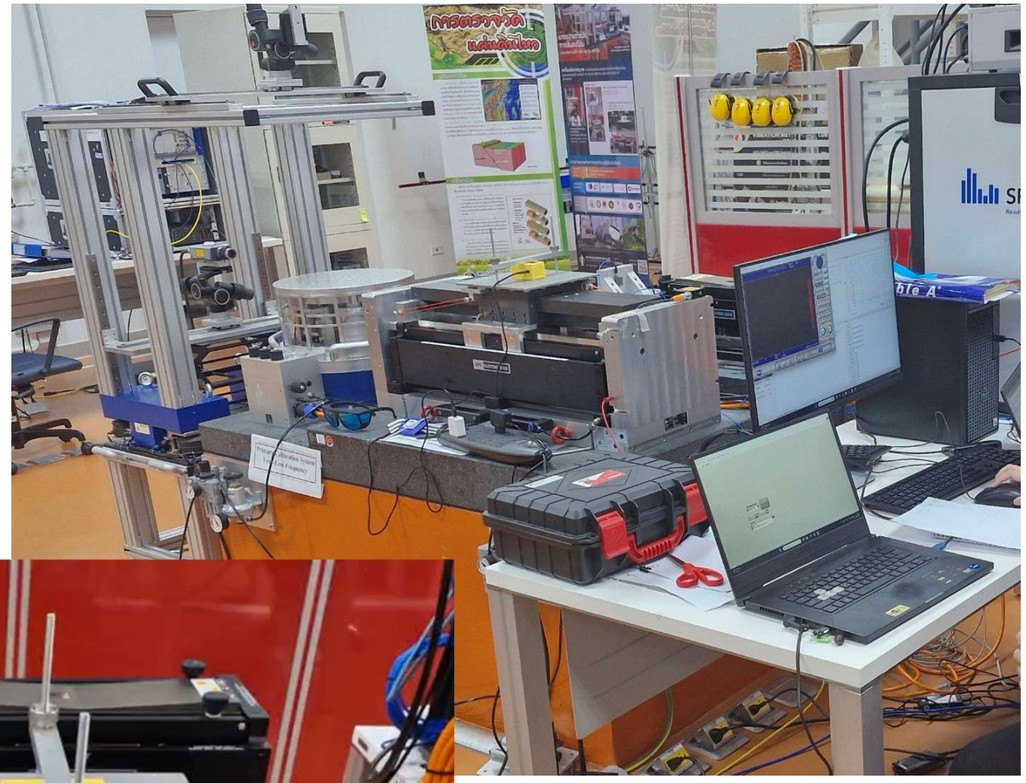
- Disaster and emergency response agencies
- Road and highway operators
- Critical structures

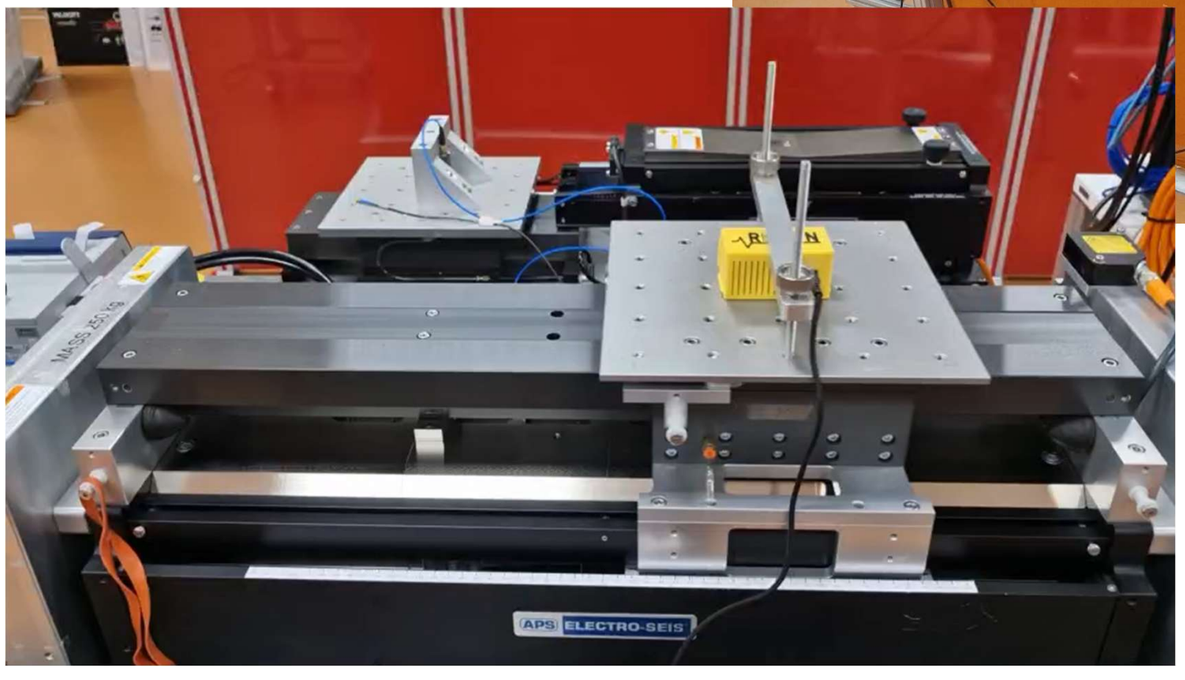
ShakeMap → **DDPM** (ปภ.)

About RUGON

Dimension: 4cm x 4cm x 8cm
Weight: < 100 g
Installed on a wall or a slab using a bracket
Powered by a 5V 2A USB Type-C cable
Wi-Fi 2.4 GHz and 5 GHz
9-yr IoT cellular data

Calibration by ISO17025-Certified Laboratory

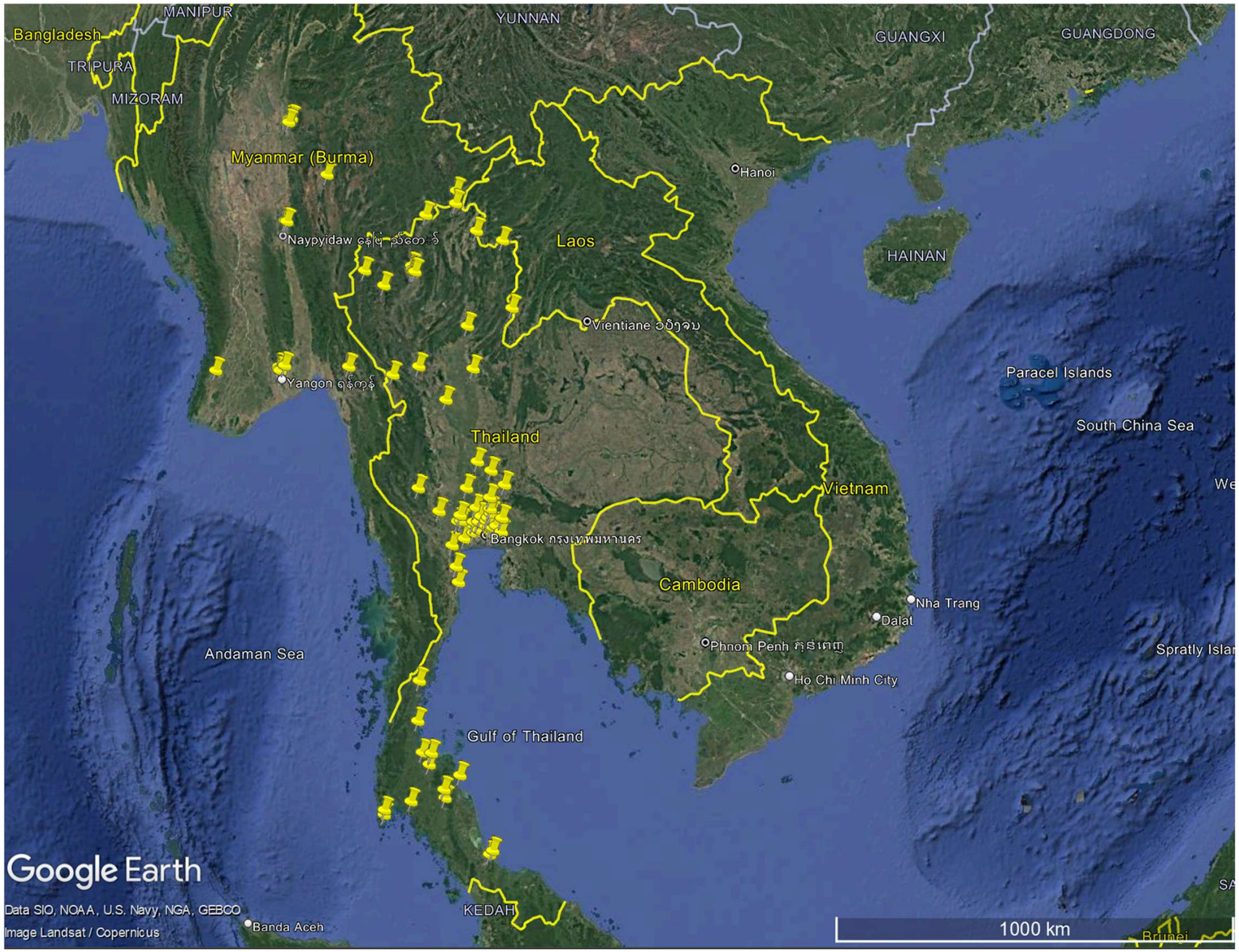




National Institute of Metrology (Thailand)

Ministry of Higher Education, Science, Research and Innovation

Initial Sensor Network for Earthquake Early Warning



Thailand base stations

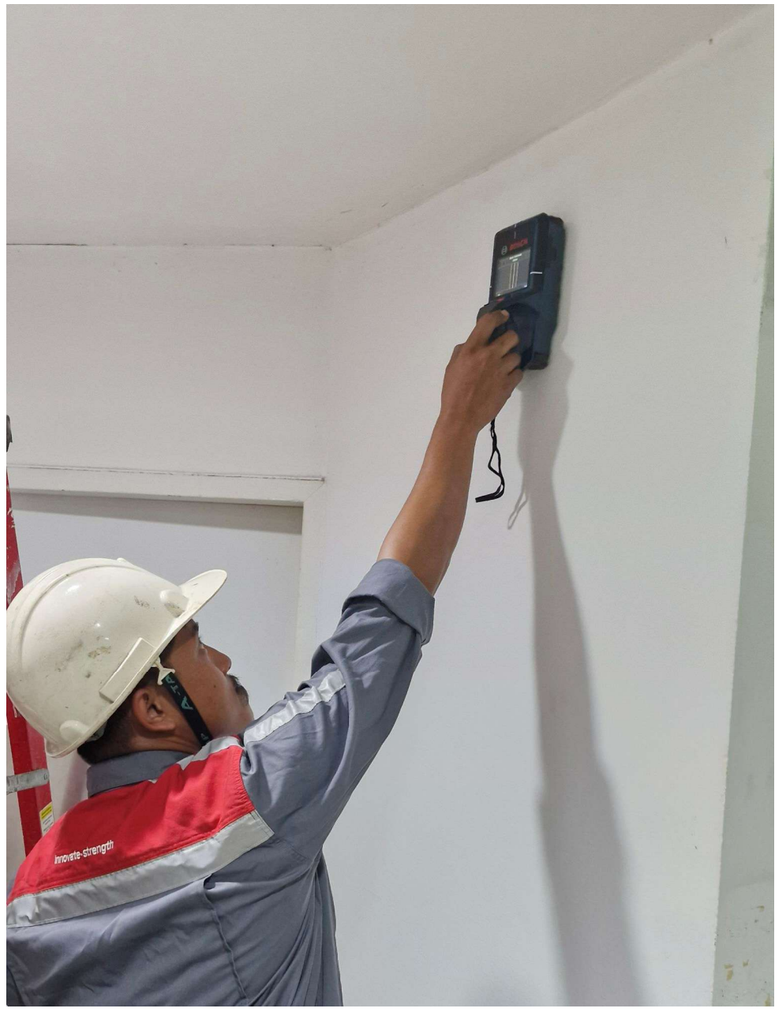
- Nationwide
- About 80 sites

Myanmar base stations

- 20 sites

Pictures of Installation

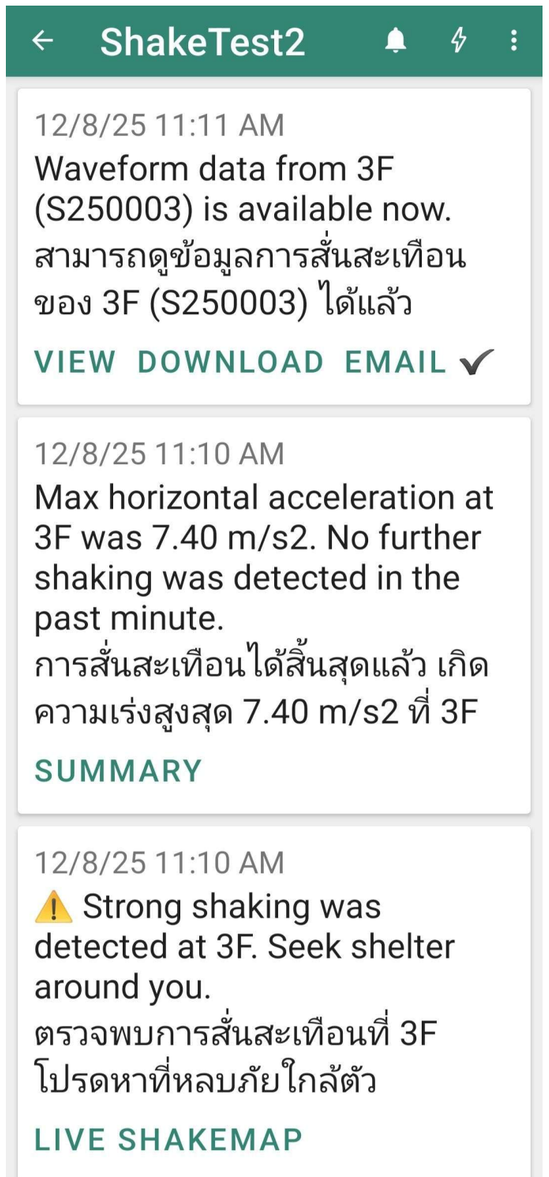
Wall scan before drilling



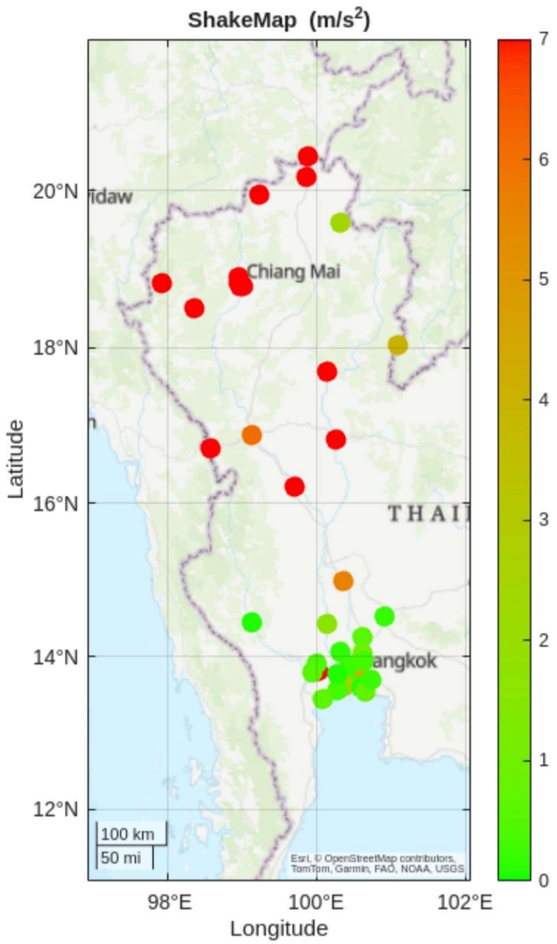
Sensor

Notifications and Reports

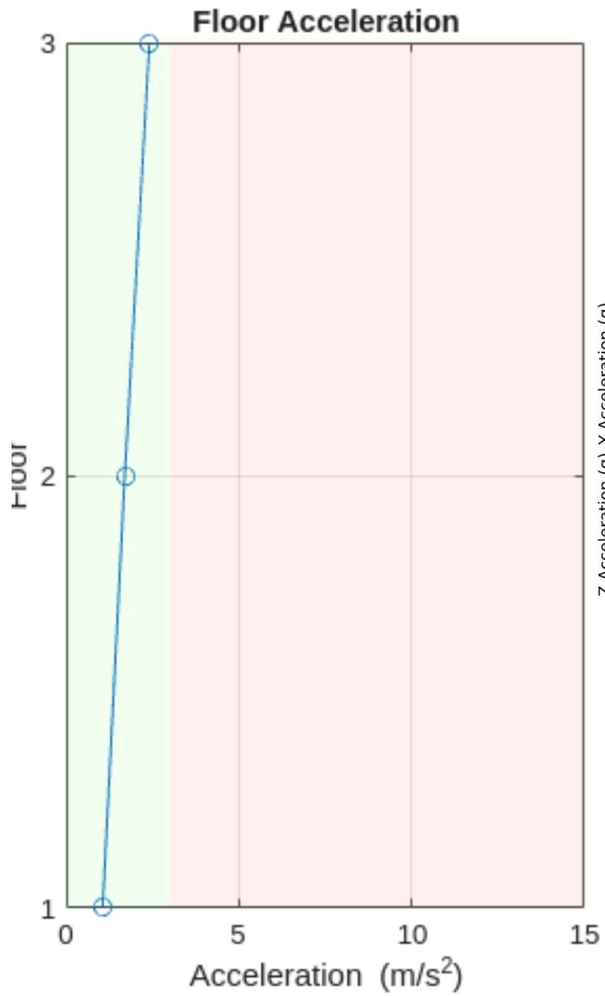
Notifications



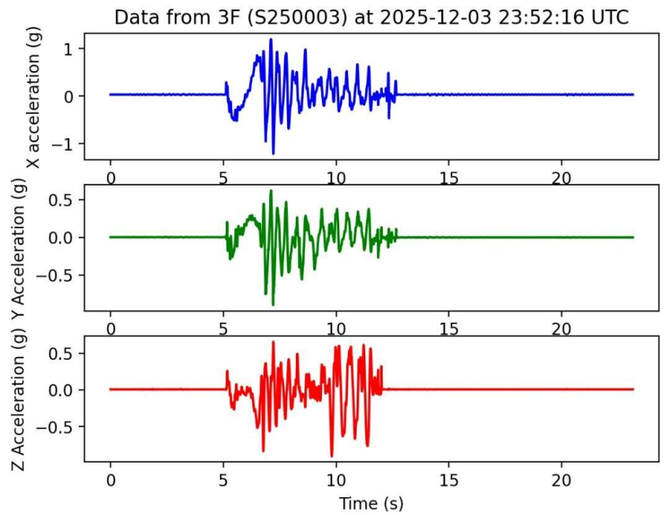
Live ShakeMap



Assessment



Waveform data



Thank you

Contact

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