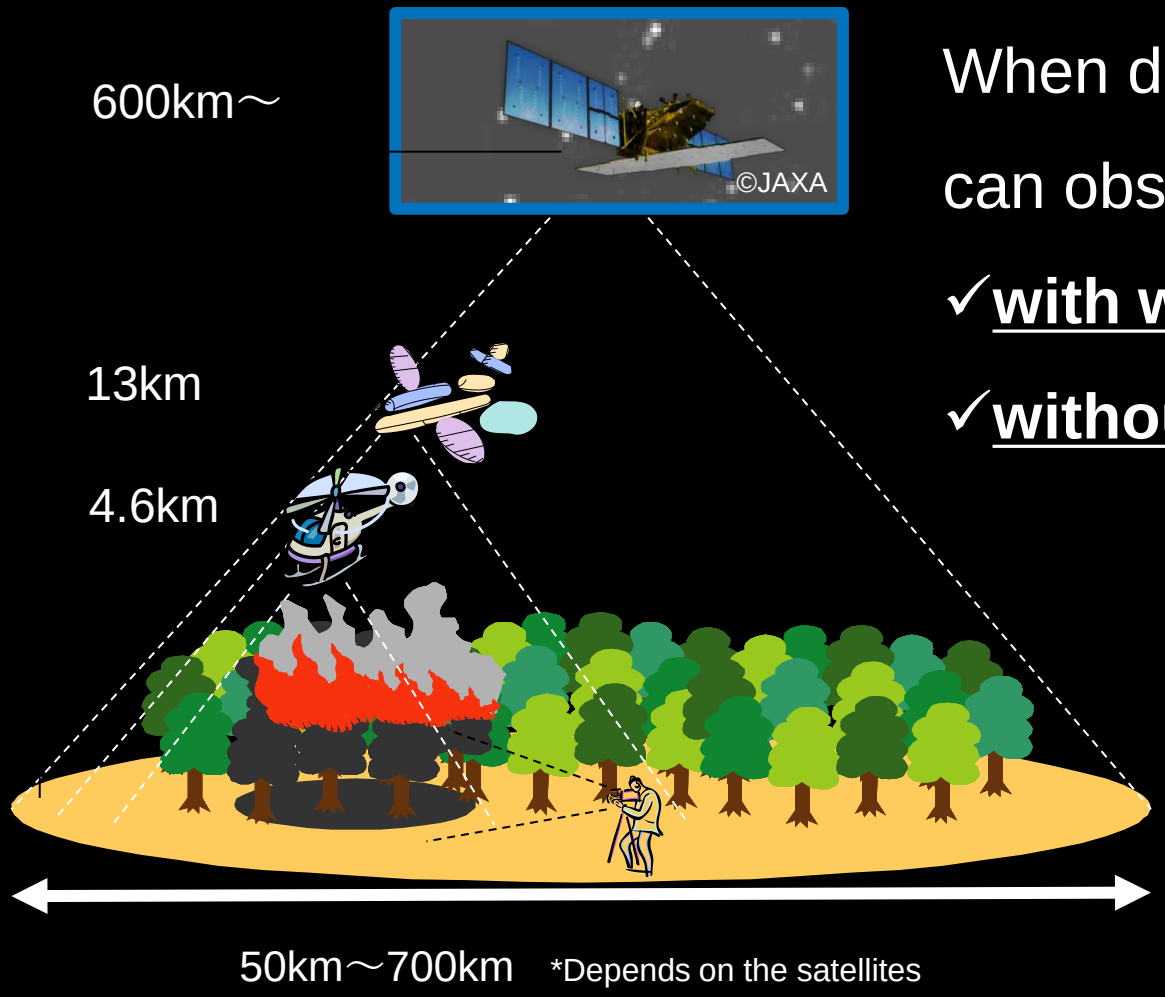
Sentinel Asia
Space-based international cooperation for disaster management in the APAC region

Why space matters for Disaster Management?



When disaster happens, Earth observation satellite can observe disaster affected area:

✓**with wide coverage**

✓**without visiting the site (safely)**

Types of Satellite Data and their uniqueness

Optical Satellite Data

Radar Satellite Data

Sentinel Asia Supports Disaster Management Cycle

MITIGATION
- Hazard Map
- Early Warning
- Success Story
- Pre-disaster monitoring

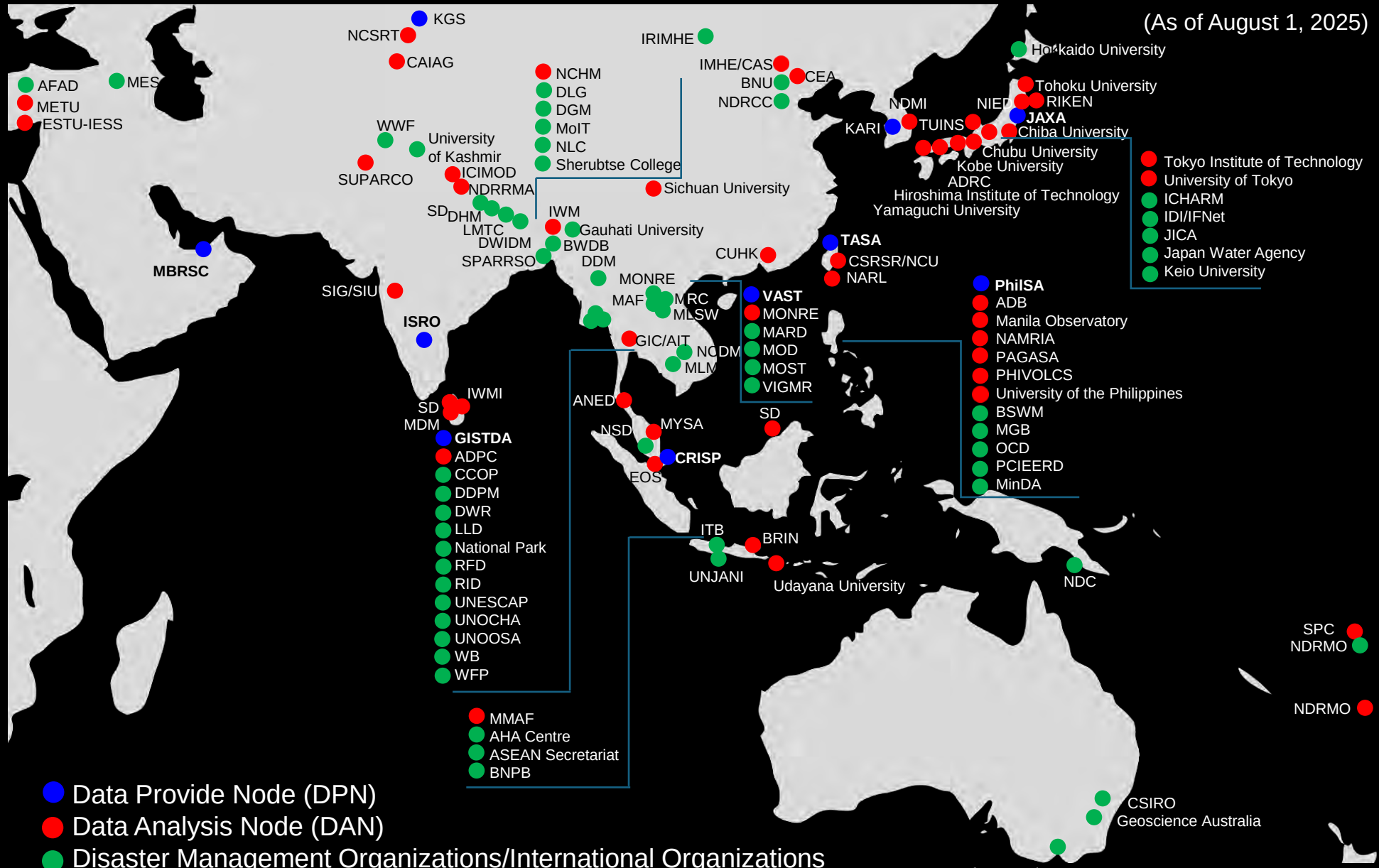
PREPAREDNESS
- Training
- Capacity Building
- Standard Operating Procedure （SOP)

RECOVERY
- Mid/Long-term monitoring
- Recovery Status

RESPONSE
- Emergency Observation
- Data Analysis
- Damage Assessment

Our Members are **127 organizations** in the Asia-Pacific region

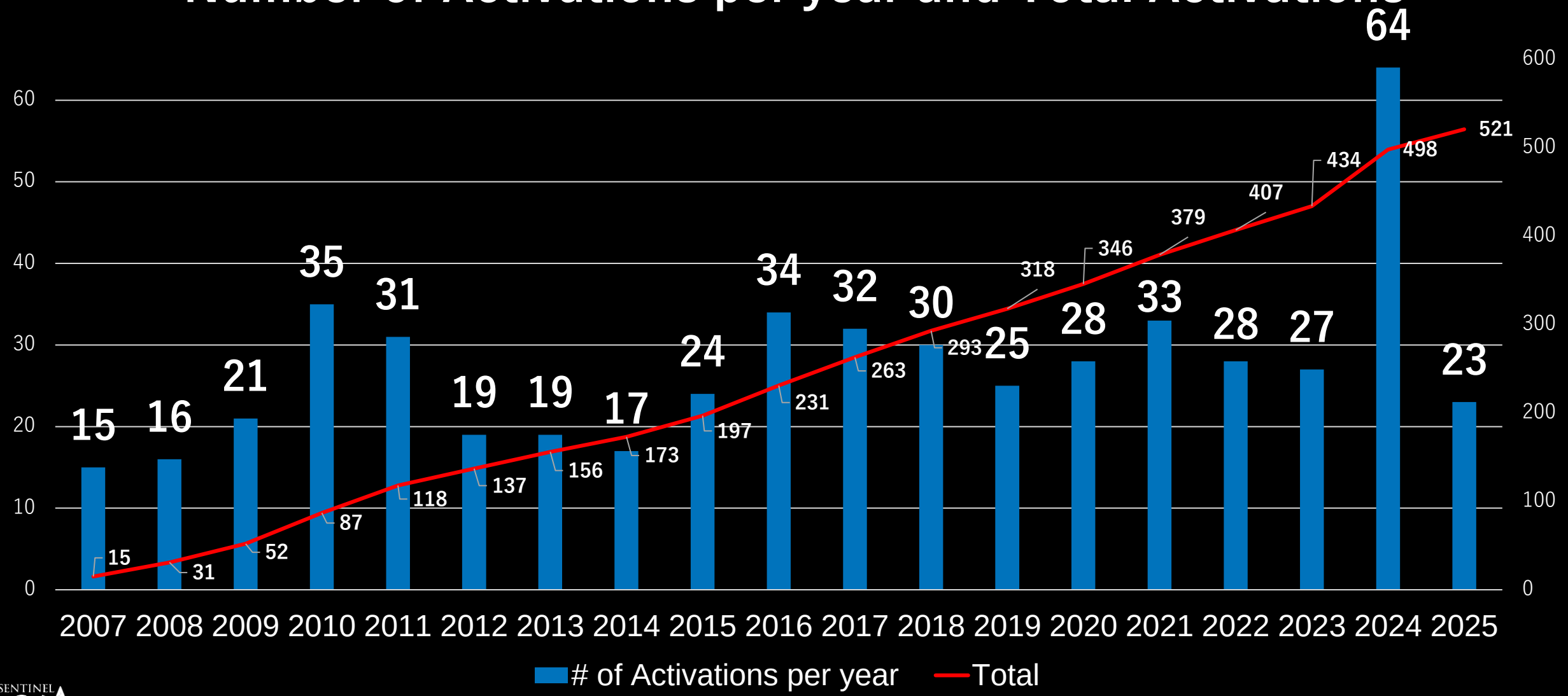
(As of August 1, 2025)

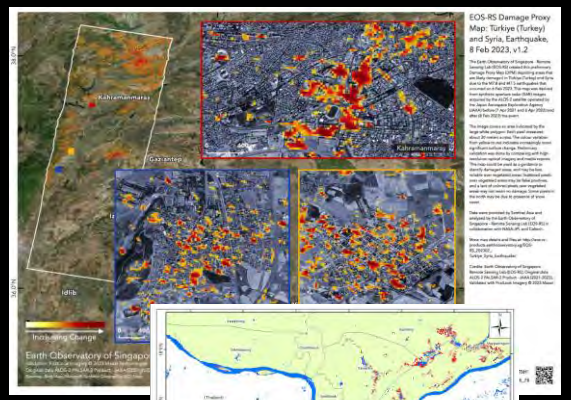


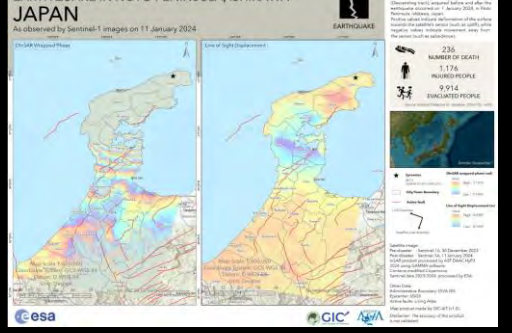
- Data Provide Node (DPN)
- Data Analysis Node (DAN)
- Disaster Management Organizations/International Organizations

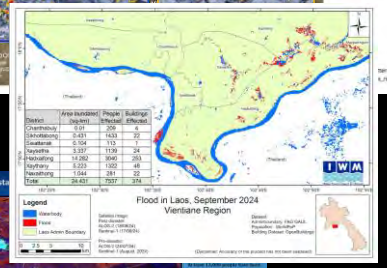
Steady Activations Over the Years

Number of Activations per year and Total Activations

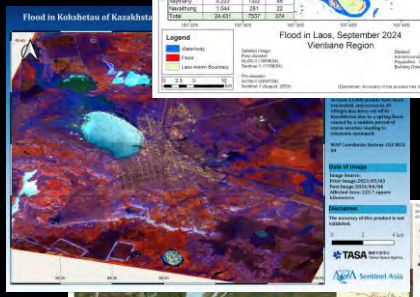


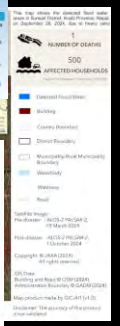


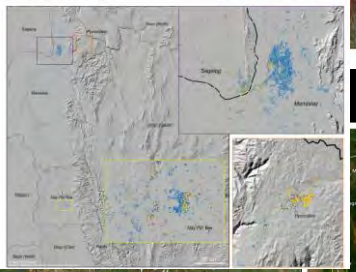


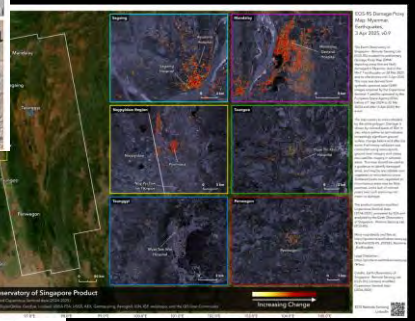


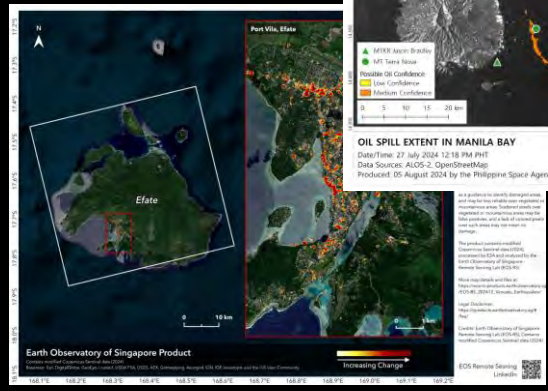
>500 activations and >2000 disaster assessment maps since 2007

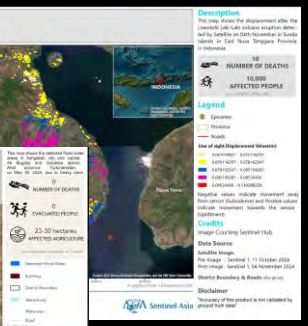


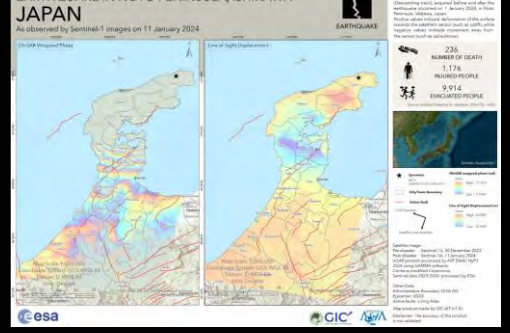






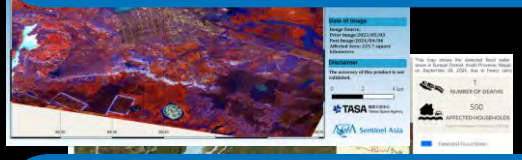




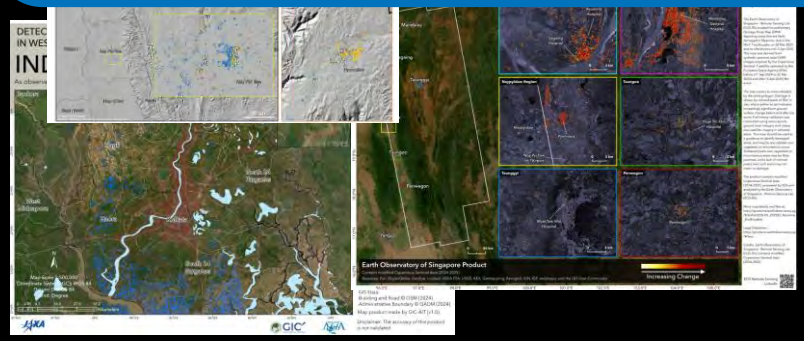


All activities are on a voluntary basis

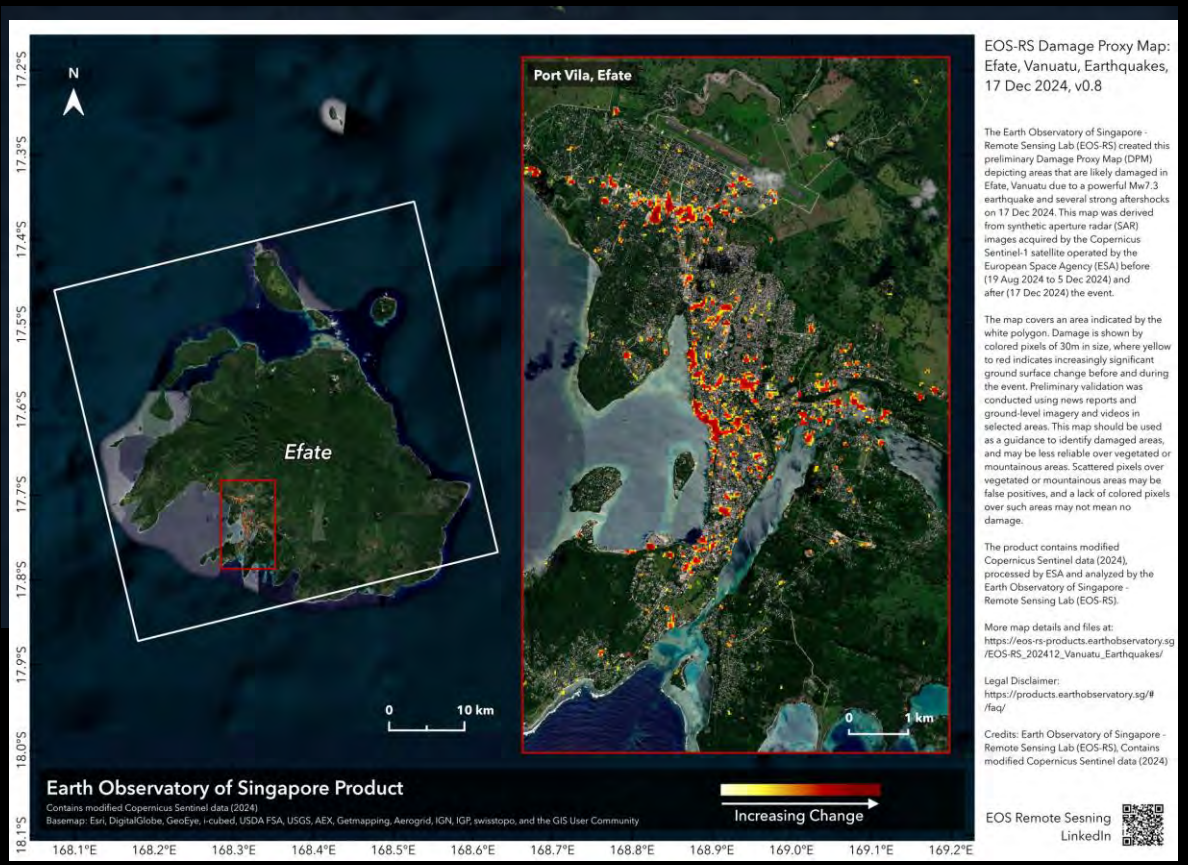
>2000



Members can escalate the request to International Disaster Charter



Earthquake in Vanuatu December 2024



Dec 17 01:47UTC

M7.6 earthquake happened in Vanuatu

Dec 17 11:07 UTC

Sentinel Asia was activated by the Pacific Community, SPC

Dec 17 07:13UTC

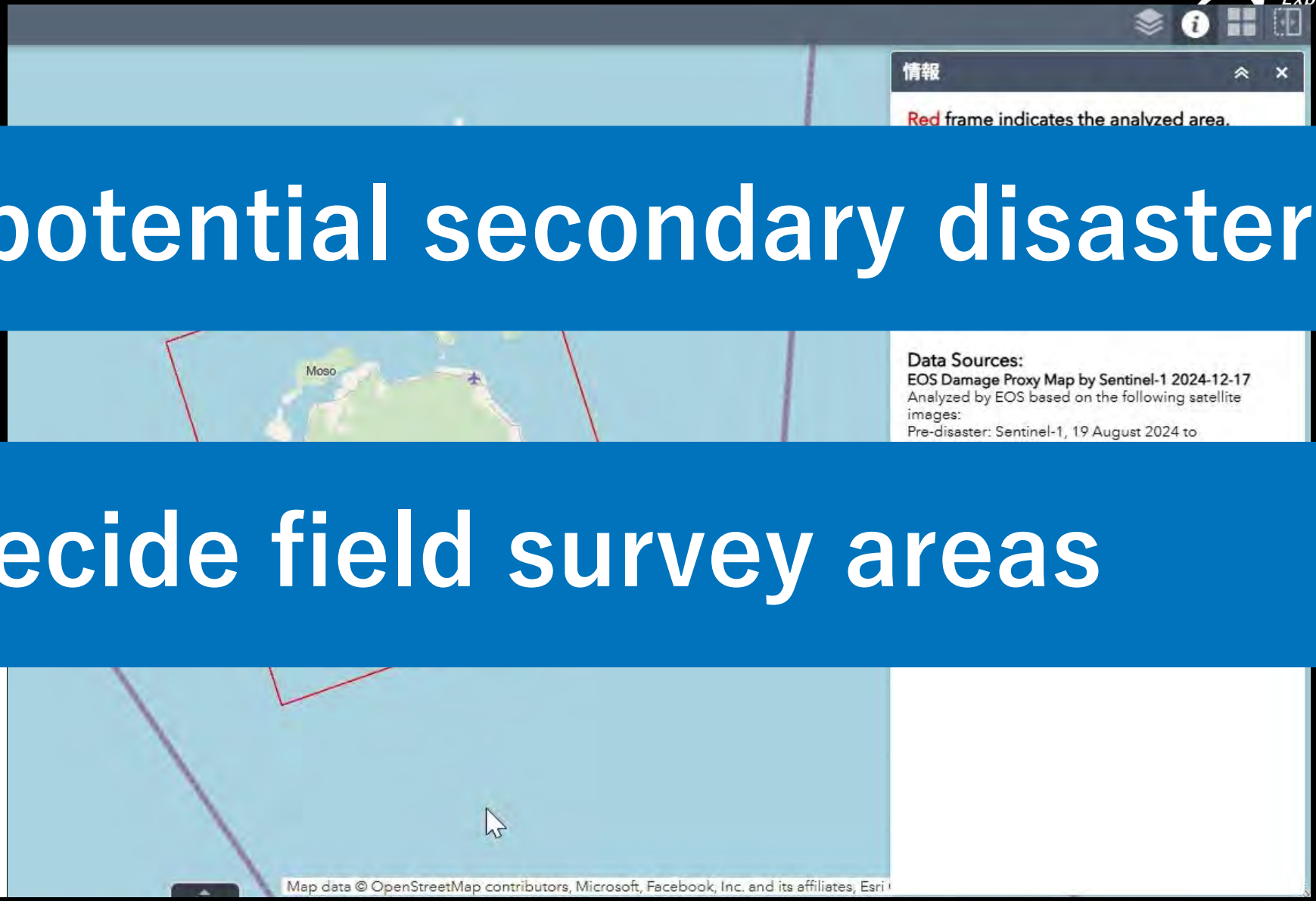
European Space Agency observed Vanuatu by Sentinel-1

Dec 17 18:57UTC

Data Analysis Node uploaded disaster assessment maps

Earthquake in Vanuatu December 2024

Explore to Realize



Check potential secondary disasters

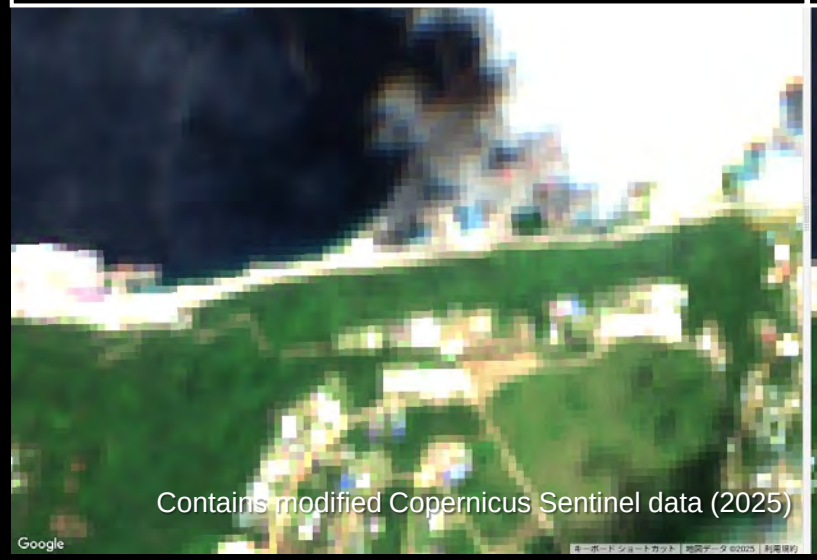
Decide field survey areas

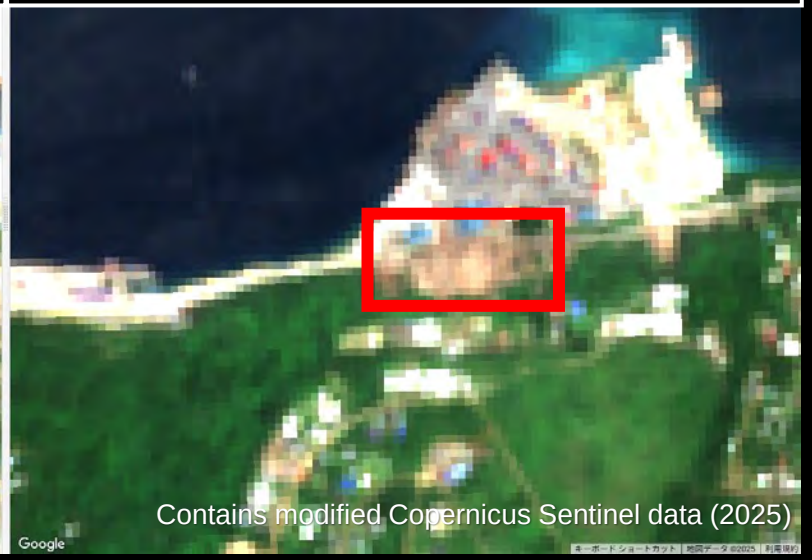
SENTINEL ASIA

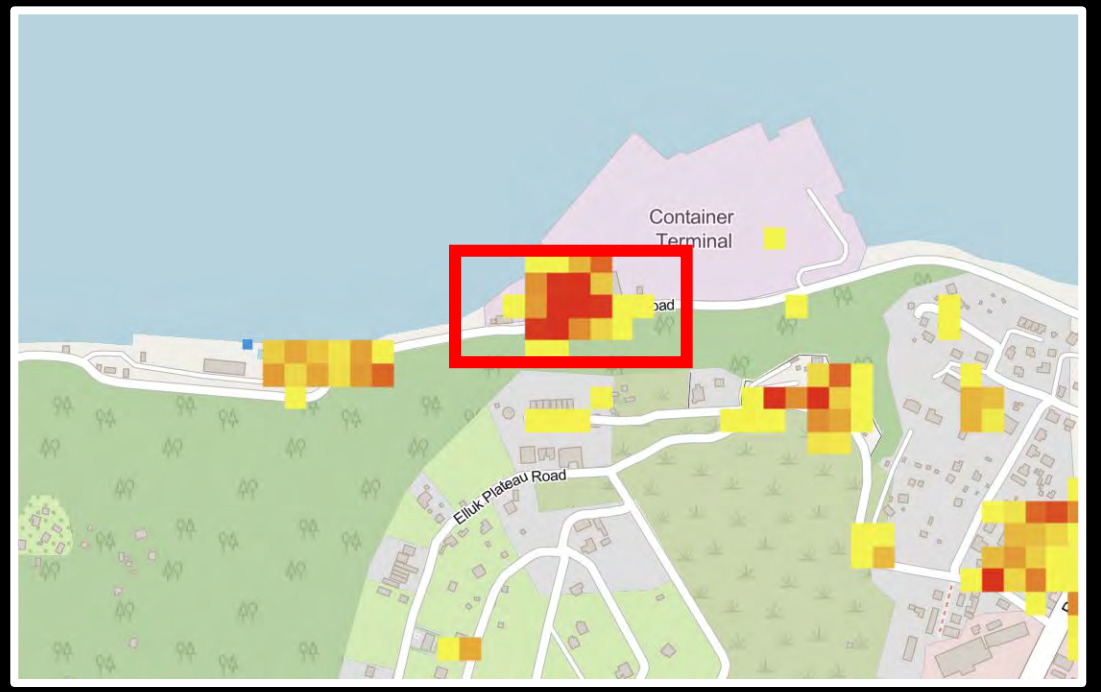
Earthquake in Vanuatu December 2024

Damage Proxy Map (WebGIS)

Nov. 10, 2024 (**Before** an earthquake)	Jan. 29, 2025 (**After** an earthquake)

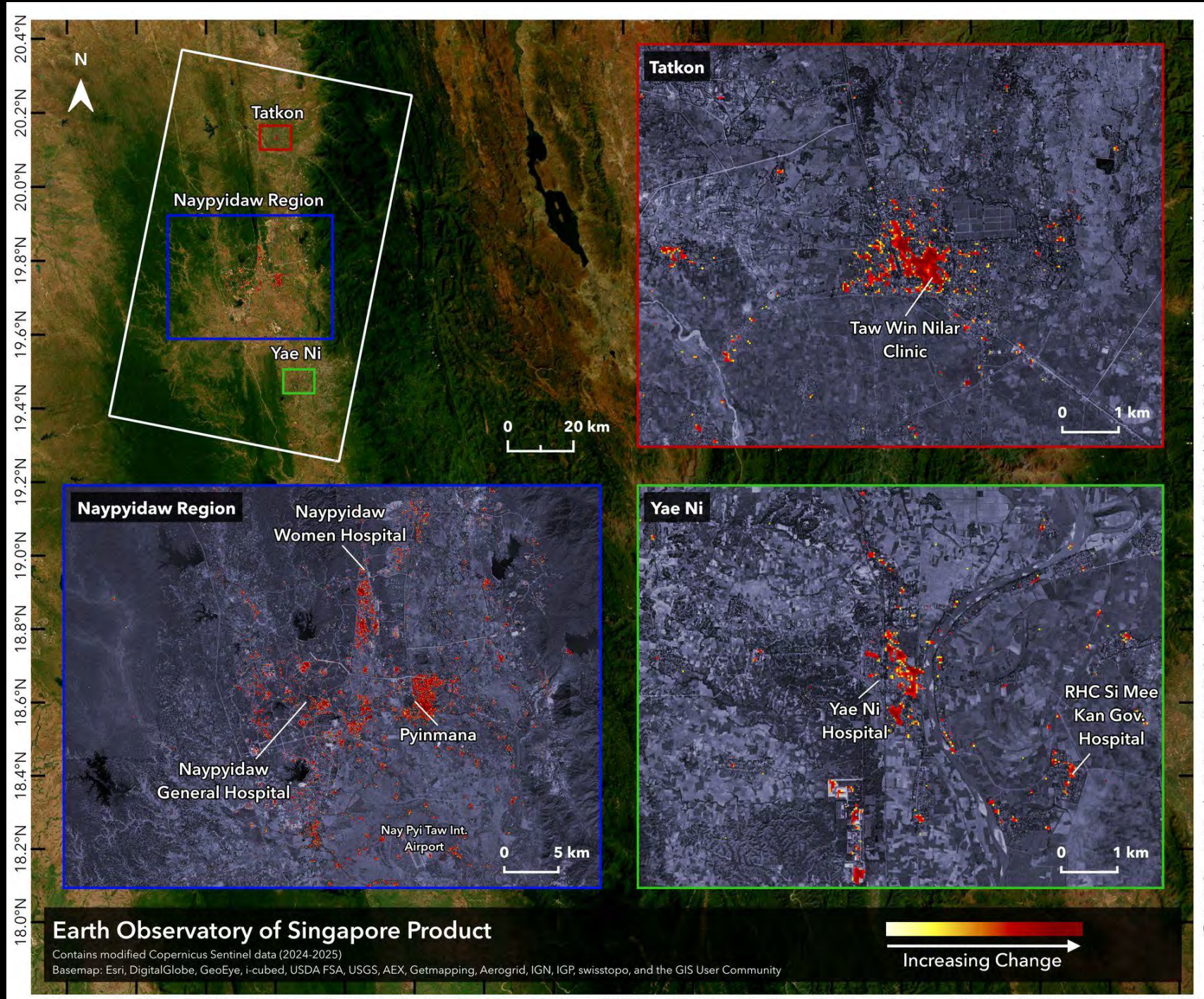






Earthquake in Myanmar March 2025

Damage Proxy Map (PDF)



EOS-RS Damage Proxy Map: Naypyidaw Vicinity, Myanmar, Earthquakes, 05 Apr 2025, v0.9

The Earth Observatory of Singapore - Remote Sensing Lab (EOS-RS) created this preliminary Damage Proxy Map (DPM) depicting areas that are likely damaged in the vicinity of Naypyidaw, Myanmar, due to the Mw7.7 earthquake on 28 Mar 2025 and its aftershocks until 5 Apr 2025. This map was derived from synthetic aperture radar (SAR) images acquired by the Copernicus Sentinel-1 satellite operated by the European Space Agency (ESA) before (27 Jul 2024 to 24 Mar 2025) and after (05 Apr 2025) the event.

The map covers an area indicated by the white polygon. Damage is shown by colored pixels of 30m in size, where yellow to red indicates increasingly significant ground surface change before and after the event. Preliminary validation was conducted using news reports, ground-level and satellite aerial imagery in selected areas. This map should be used as a guidance to identify damaged areas, and may be less reliable over vegetated or mountainous areas. Scattered pixels over vegetated or mountainous areas may be false positives, and a lack of colored pixels over such areas may not mean no damage.

The product contains modified Copernicus Sentinel data (2024-2025), processed by ESA and analyzed by the Earth Observatory of Singapore - Remote Sensing Lab (EOS-RS).

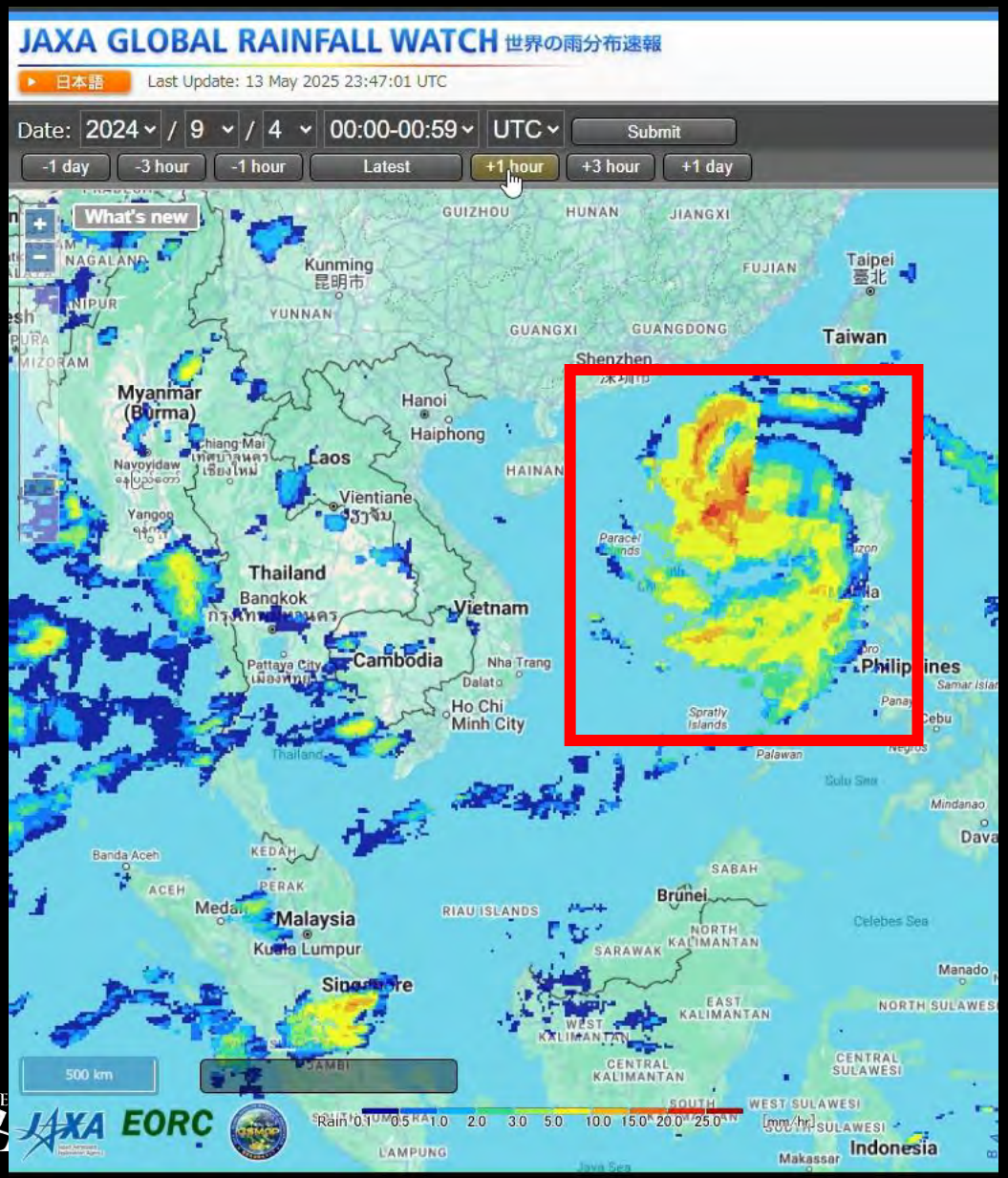
More map details and files at: https://products.earthobservatory.sg/#/leaflet/EOS-RS_202503_Myanmar_Earthquakes

Legal Disclaimer: https://products.earthobservatory.sg/#/faq/

Credits: Earth Observatory of Singapore - Remote Sensing Lab (EOS-RS), Contains modified Copernicus Sentinel data (2024-2025)

EOS Remote Sensing LinkedIn

Typhoon YAGI
September 2024



Sep 4 00:00UTC

Sentinel Asia was activated based on the forecast

Sep 8 00:00 UTC

Typhoon YAGI was predicted to make landfall in Vietnam

Sep 8 17:00UTC

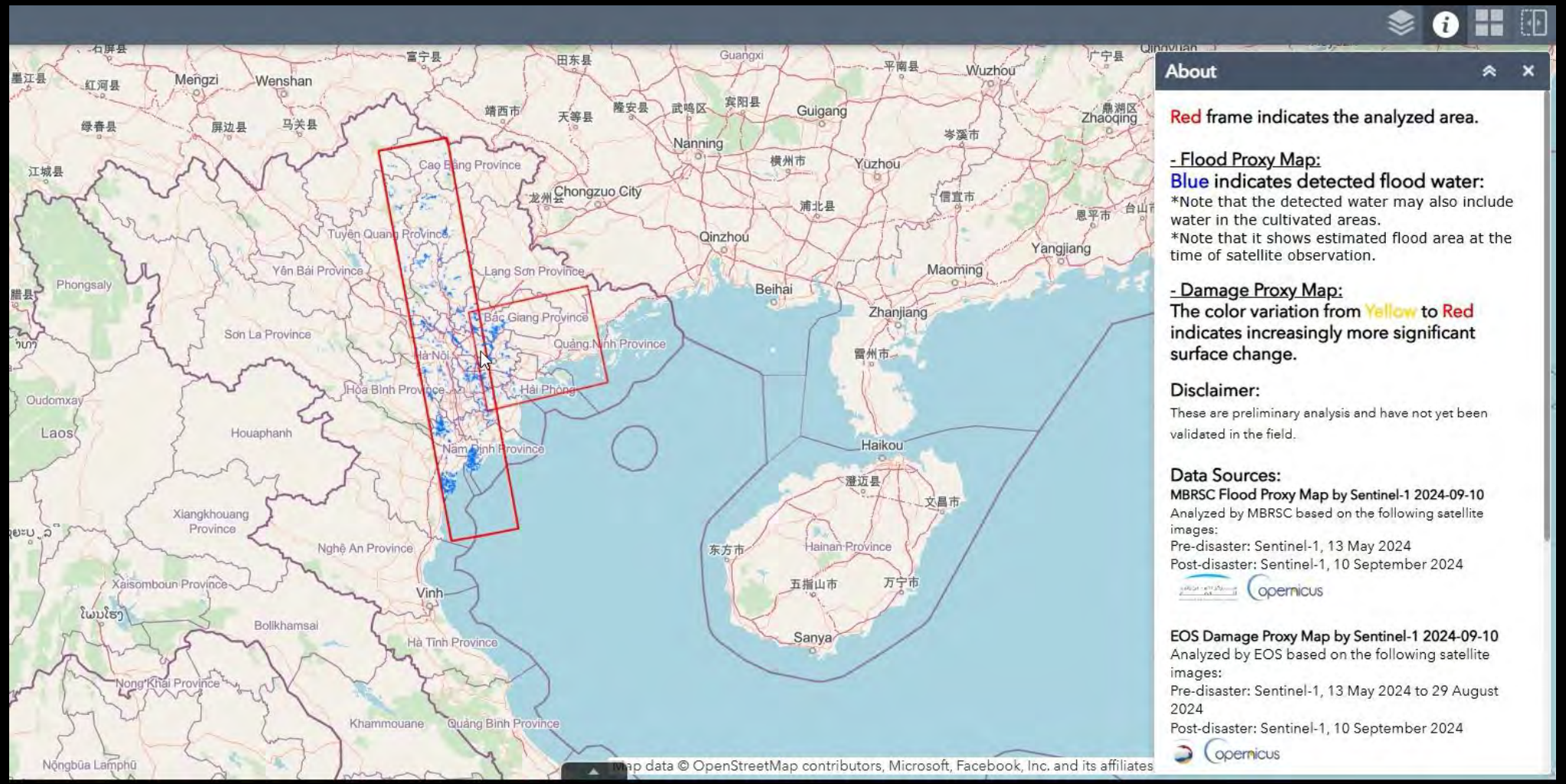
JAXA conducted an emergency observation by ALOS-2

Sep 10-11

Data Analysis Node uploaded disaster assessment maps

Typhoon YAGI
September 2024

Detected Flood Water Area (Web-GIS)

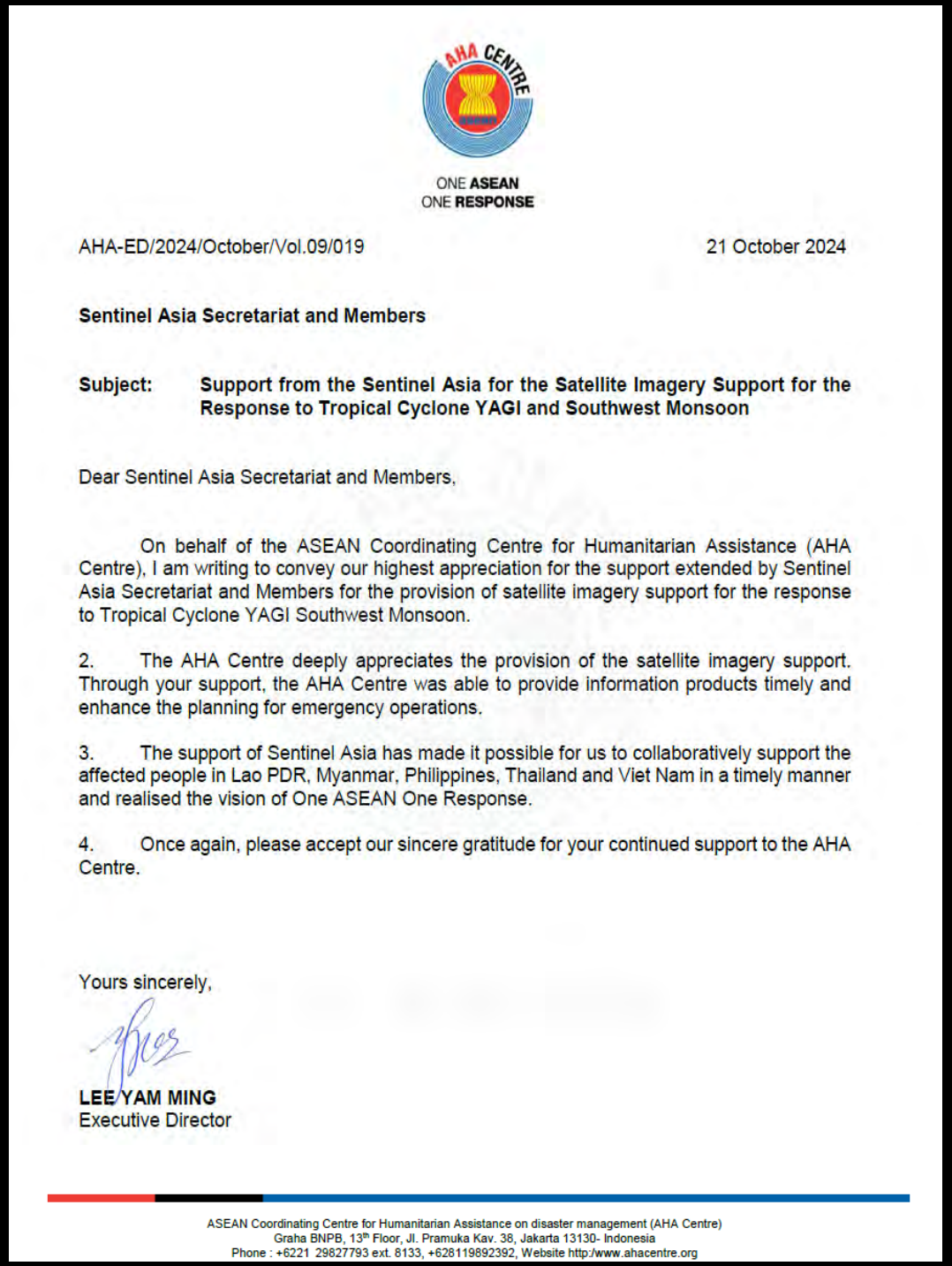


September 2024
Typhoon YAGI

Appreciation letter from AHA Centre

"The AHA Centre deeply appreciates the provision of the satellite imagery support. Through your support, **the AHA Centre was able to provide information products timely and enhance the planning for emergency operations."**

ASEAN Coordinating Centre for Humanitarian Assistance on disaster management



ONE **ASEAN**
ONE **RESPONSE**

AHA-ED/2024/October/Vol.09/019 21 October 2024

Sentinel Asia Secretariat and Members

Subject: **Support from the Sentinel Asia for the Satellite Imagery Support for the Response to Tropical Cyclone YAGI and Southwest Monsoon**

Dear Sentinel Asia Secretariat and Members,

On behalf of the ASEAN Coordinating Centre for Humanitarian Assistance (AHA Centre), I am writing to convey our highest appreciation for the support extended by Sentinel Asia Secretariat and Members for the provision of satellite imagery support for the response to Tropical Cyclone YAGI Southwest Monsoon.

2. The AHA Centre deeply appreciates the provision of the satellite imagery support. Through your support, the AHA Centre was able to provide information products timely and enhance the planning for emergency operations.

3. The support of Sentinel Asia has made it possible for us to collaboratively support the affected people in Lao PDR, Myanmar, Philippines, Thailand and Viet Nam in a timely manner and realised the vision of One ASEAN One Response.

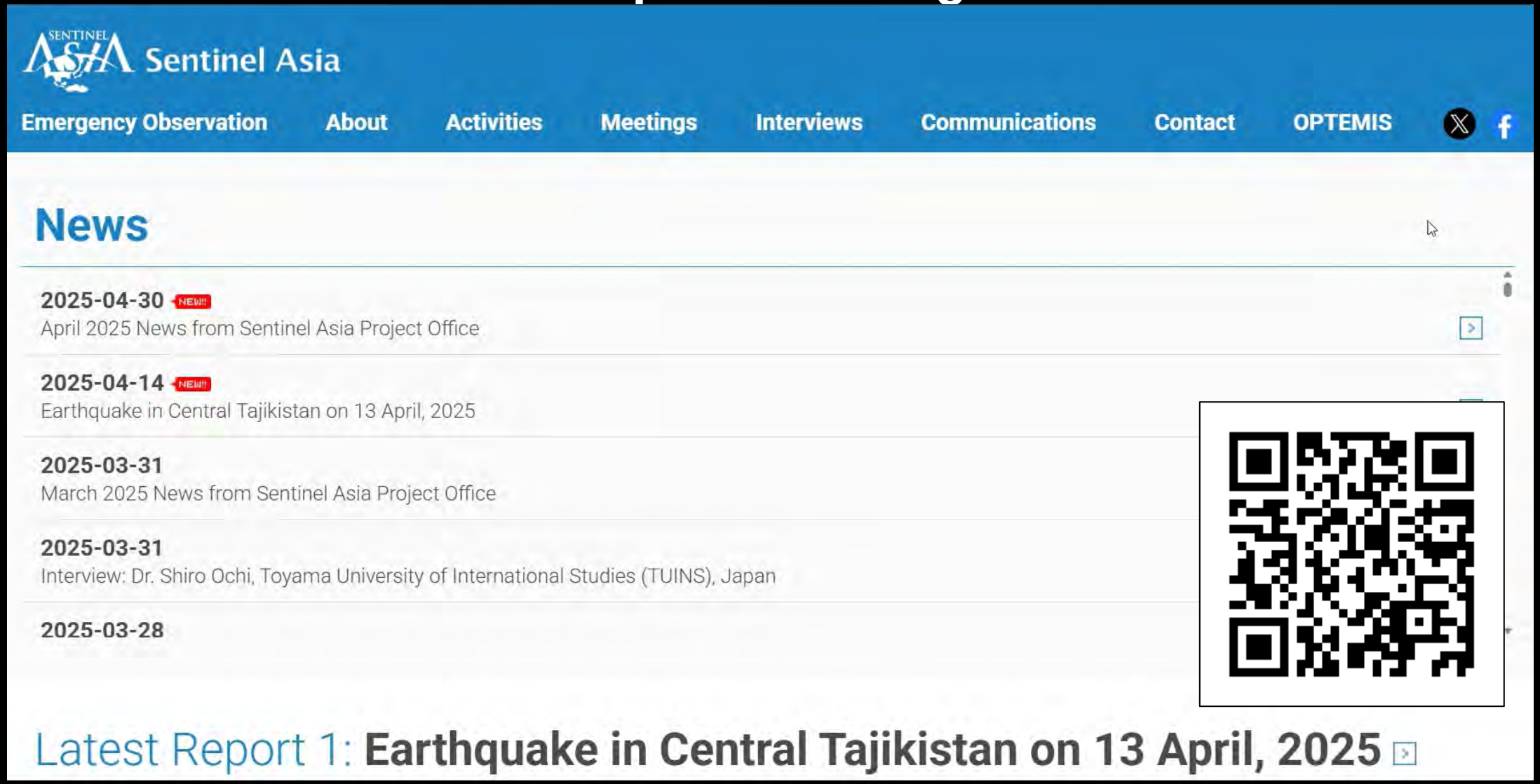
4. Once again, please accept our sincere gratitude for your continued support to the AHA Centre.

Yours sincerely,

LEE YAM MING
Executive Director

ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre)
Graha BNPB, 13th Floor, Jl. Pramuka Kav. 38, Jakarta 13130- Indonesia
Phone : +6221 29827793 ext. 8133, +628119892392, Website http:/www.ahacentre.org

Information in various formats (Web-GIS, GIF, SHP, KMZ etc.) is available to the public through the website



Covering the Entire Disaster Management Cycle

MITIGATION
- Hazard Map
- Early Warning
- Success Story
- Pre-disaster monitoring

PREPAREDNESS
- Training
- Capacity Building
- Standard Operating Procedure （SOP)

RECOVERY
- Mid/Long-term monitoring
- Recovery Status

RESPONSE
- Emergency Observation
- Data Analysis
- Damage Assessment

Capacity Building Opportunities for Sentinel Asia Members

PREPAREDNESS

- Capacity Building
- Standard Operating Procedure (SOP)

- **May 2025:**
  - **Capacity buildings using satellite data and review of past Sentinel Asia activation with forecasters in Pacific region (19 countries)**

- **[Upcoming] November 2025:**
  - **Training on how to use and interpret disaster assessment maps created from satellite data for disaster response activity**
  - **Sharing experiences and insights from various roles in disaster management**

Space unites us
— satellites for shared safety —