



7th Prague Space Security Conference

Building Friendships Through Space Information Exchange

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2024. 6. 17

TASA

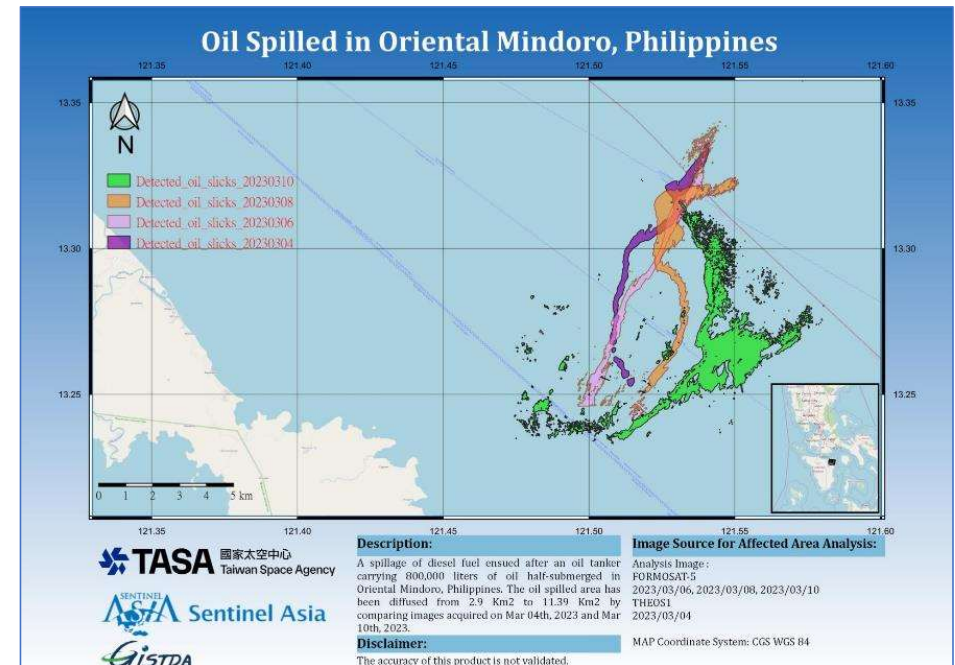
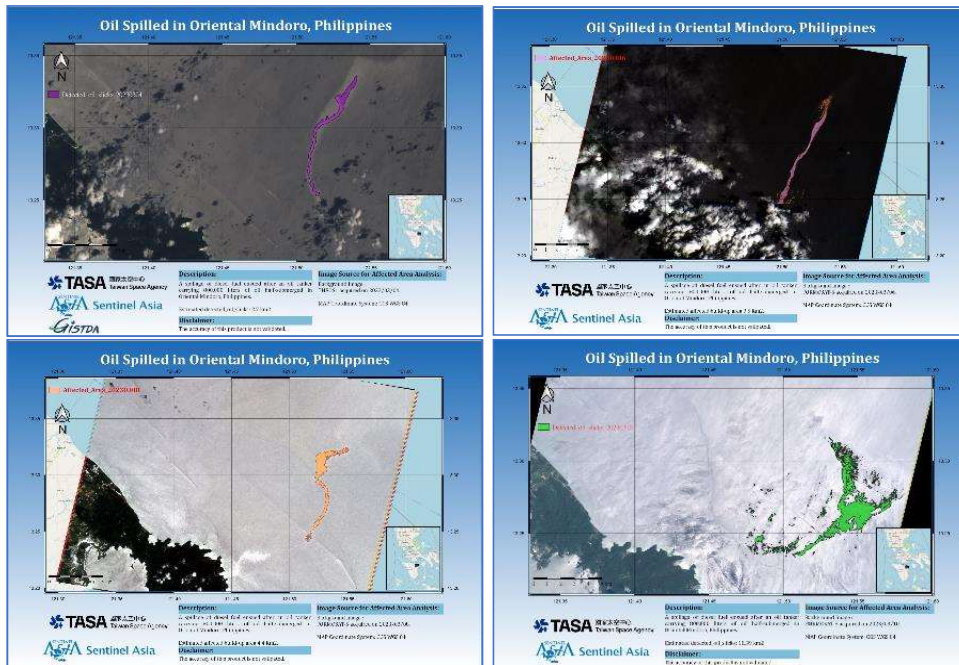
Space Development
Information Fuels Exploration

The importance of space information sharing

- **The key to enhance security: sharing space intelligence**
- **TAIWAN CAN HELP:**
Taiwan has made significant contributions to space information sharing

- TASA has joined Sentinel Asia since 2010 as Data Provider Node
- TASA has become Data Analysis Node since 2022
- FORMOSAT sat imagery: Supporting an ~29 disaster events annually

e.g., oil spill in Philippines observed by FORMOSAT-5 on February 28, 2023.

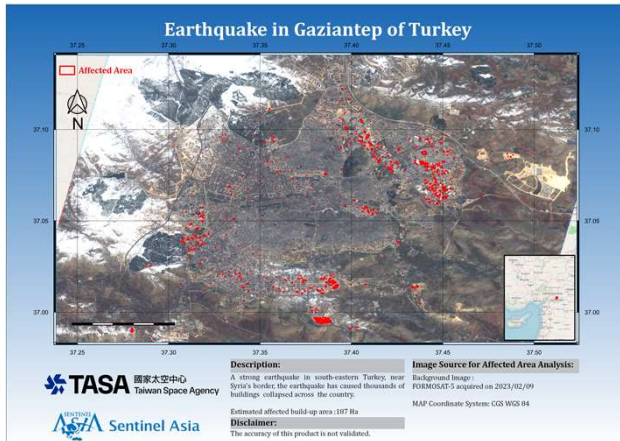


▲ Oil spill detection reports @ different days

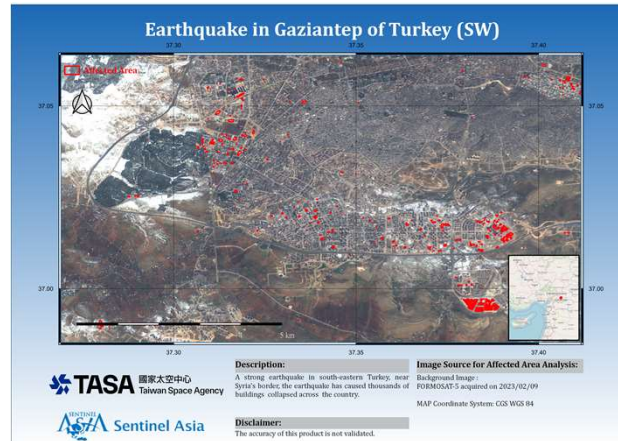
▲ Overall oil spill detection report

Sentinel Asia

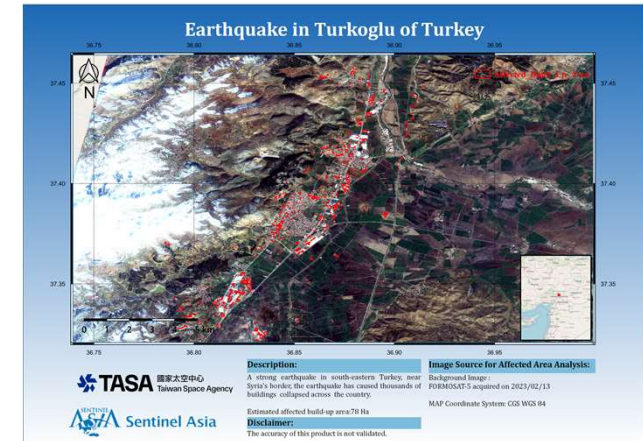
e.g., earthquake in Turkey observed by FORMOSAT-5 on February 06, 2023.



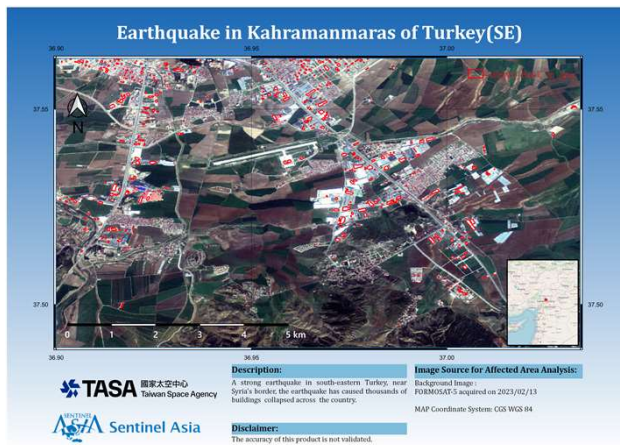
▲ Earthquake In **Gaziantep** (2023.02.09)



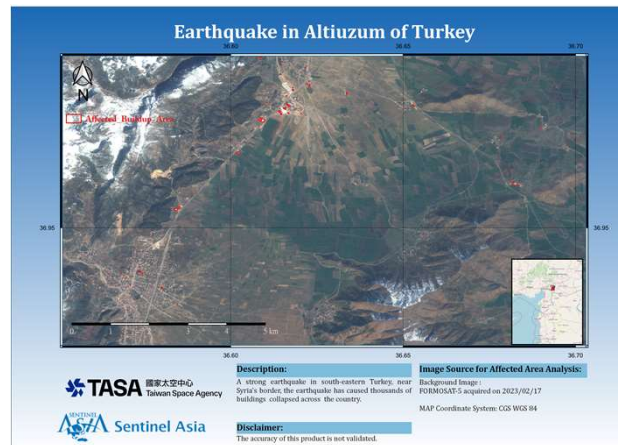
▲ Earthquake In **Gaziantep** (SW) (2023.02.09)



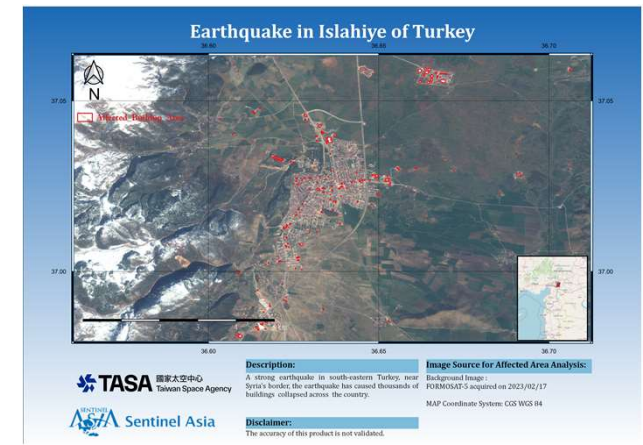
▲ Earthquake In **Turkoglu** (2023.02.13)



▲ Earthquake In **Kahramanmaras** (SE) (2023.02.13)



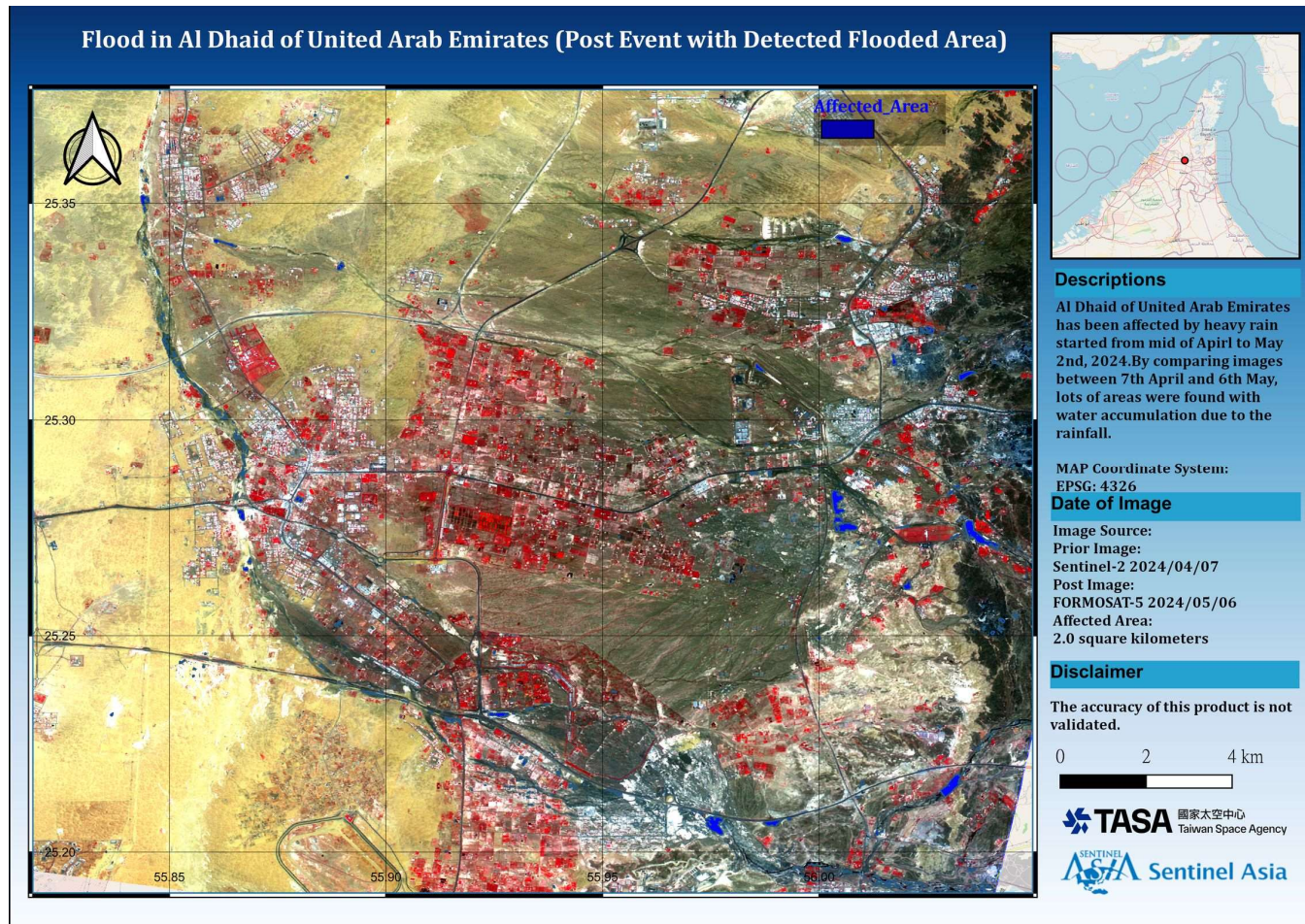
▲ Earthquake In **Altiumuz** (2023.02.17)



▲ Earthquake In **Islahiye** (2023.02.17)

Sentinel Asia

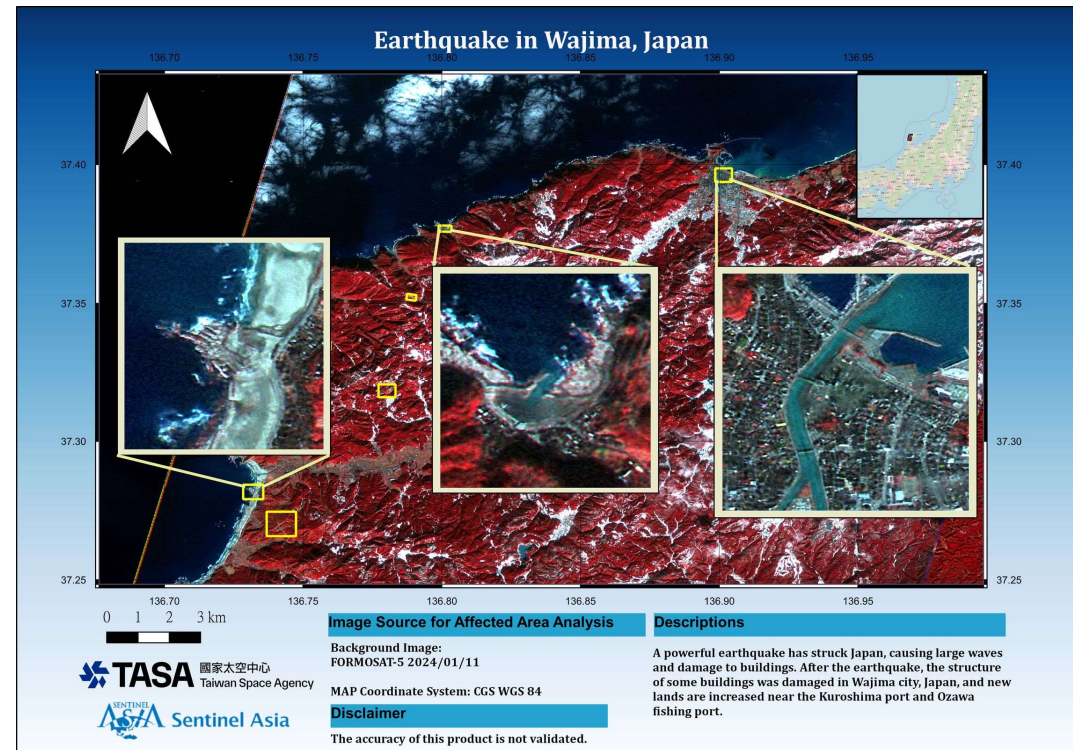
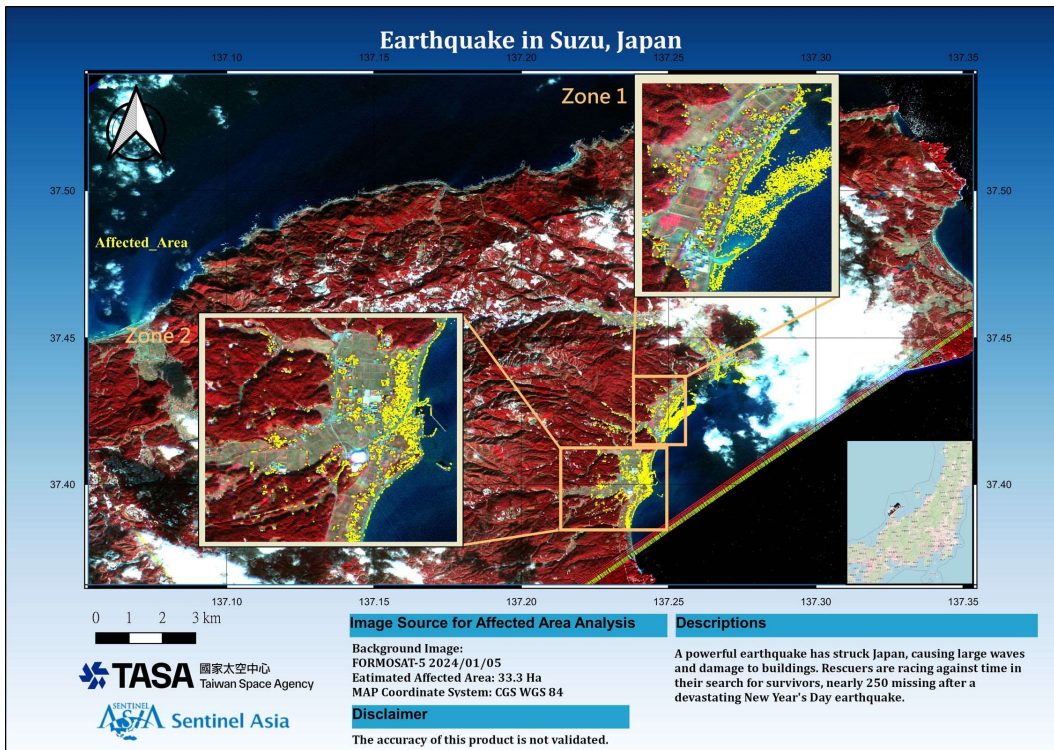
e.g., storm flooding in UAE observed by FORMOSAT-5 on May 2, 2024.



(2024.05.06)

Sentinel Asia

e.g., earthquake in Japan observed by FORMOSAT-5 on January 01, 2024.



▲ Earthquake in **Suzu** (2024.01.05)

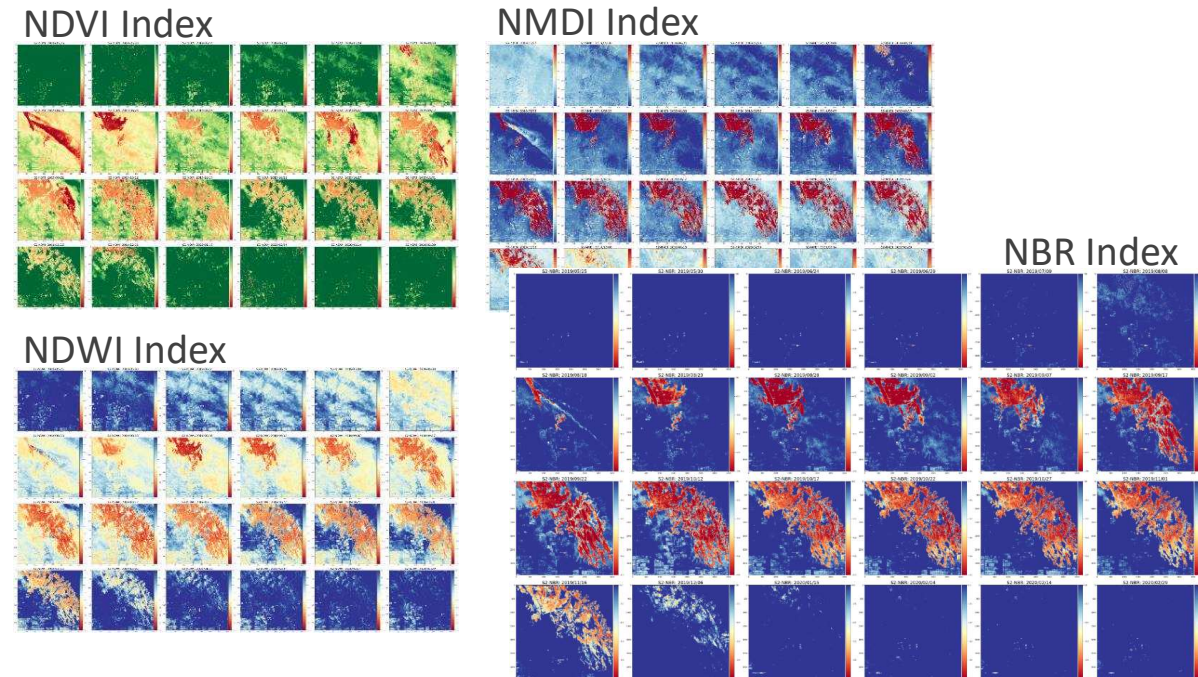
▲ Earthquake in **Wajima** (2024.01.11)

Supporting the UN Sustainable Development Goals (SDGs)

TASA has applied **FORMOSAT-5** imagery data along with other open-source satellite imagery in various events, including :

- Rice field detection in Thailand
- Coastline changes in Palau
- **Wildfire monitoring in Paraguay**
- Volcanic eruptions in Saint Vincent

e.g., wild fire analysis using multi-temporal satellite images with data cube in Paraguay



▲ Obtaining spectral index and burning ratio

TASA

Taiwan can help MORE
FORMOSAT-8 launch in 2025
FORMOSAT-9 launch in 2027

FORMOSAT-8 (optical)

FORMOSAT-8 (x 6+2) features :

- **6 high-resolution** optical remote sensing satellites (1st one in 2025/10)
 - ✓ **1m resolution**
 - ✓ **0.7m resolution** through super resolution ground image post-processing
 - ✓ Multiple **daily revisit** capability
- **2 super high-resolution** optical remote sensing satellites
 - ✓ **0.5-0.3m resolution**

FORMOSAT-9 (SAR)

FORMOSAT-9 (x 2+1) features :

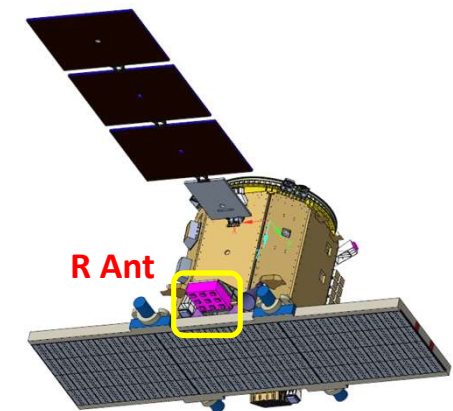
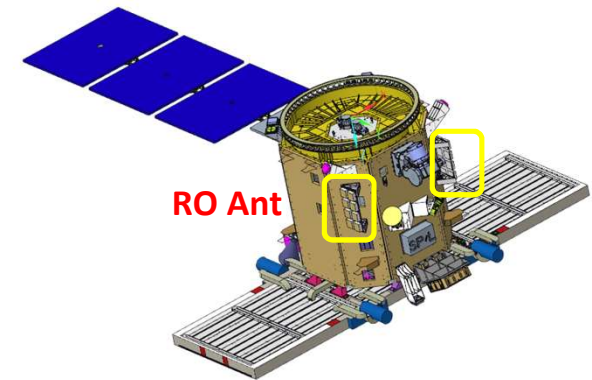
- **3 X-band Synthetic Aperture Radar** satellites(1st one in 2027)
 - ✓ **active phased array antenna SAR** (x2)
 - ✓ **Passive reflector SAR** (x1)
 - ✓ **0.5-1m** Resolution
 - ✓ Multiple **daily revisit** capability

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Taiwan WANT to help more
TASA GNSS-RO/R payload

TASA Standard GNSS-RO/R Payload

- Total mass < 30kg (RO/R included)
- Receiver Dimension: 20x20x11cm(4U)/5kg
- Orbit Average Power Consumption ~ 35W
- Precise Orbit Determination (POD)
 - ✓ 1 Hz/accuracy : 20 cm
- GNSS Radio Occultation (GNSS-RO)
 - ✓ 50 Hz, L1/L5 observation
 - ✓ At least 250 profiles per day
- GNSS Reflections (GNSS-R)
 - ✓ At least 4 DDMs, up to 8 DDMs



TASA

**Other space information *Taiwan*
would like to share...**

Data sharing in cybersecurity research

- TASA receives cybersecurity attacks from *China*.
- Including 10 *high-risk attack patterns*.
- TASA is willing to share *cybersecurity activity data*.

Between
March 1 and June 6, 2024



Taiwan Experienced a total of
25,584
Cybersecurity
Attacks

Building friendships through space information exchange



Taiwan is seeking more opportunities to engage with international space communities.

Thank you.

