



JAXA Agency Report

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2025 CEOS Plenary
November 6, 2025

JAXA Satellites in Operation



- Disaster/Forest
- Greenhouse Gases
- Cloud/Aerosol/Vegetations
- Precipitation/Water Cycle

Greenhouse Gases



(JAXA-MOE-NIES)

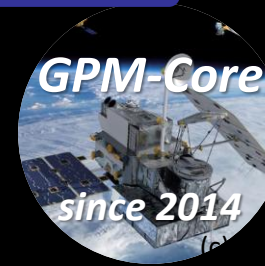
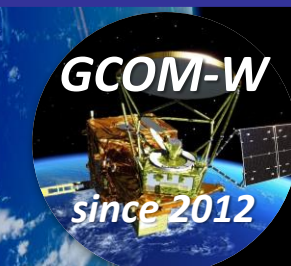
**GOSAT-GW**

Cloud/Aerosol/Vegetations

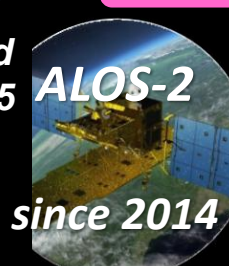


(ESA-JAXA)

Precipitation/Water Cycle

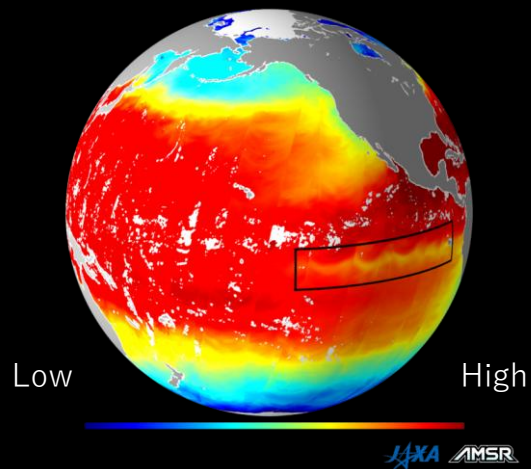


(NASA-JAXA)

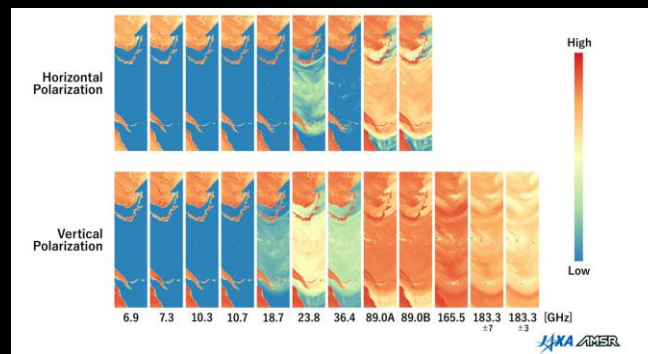
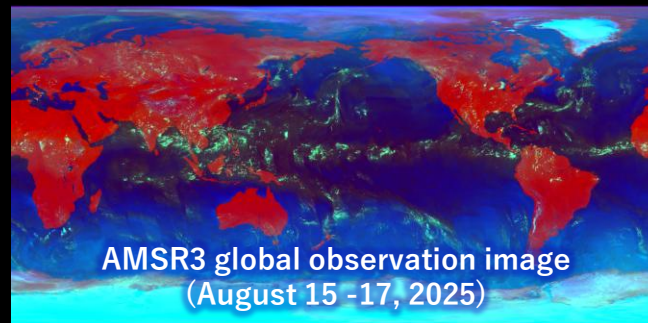
Launched
June 2025

Disaster/Forest

Advanced Microwave Scanning Radiometer3 (AMSR3)

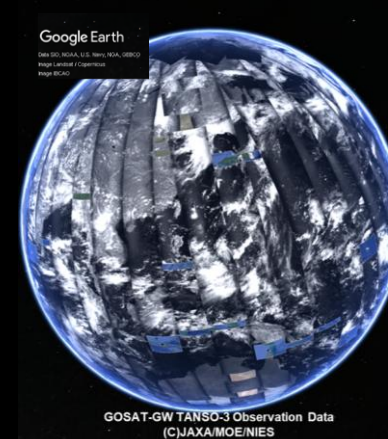


AMSR3 Sea Surface Temperature
(August 15-17, 2025)

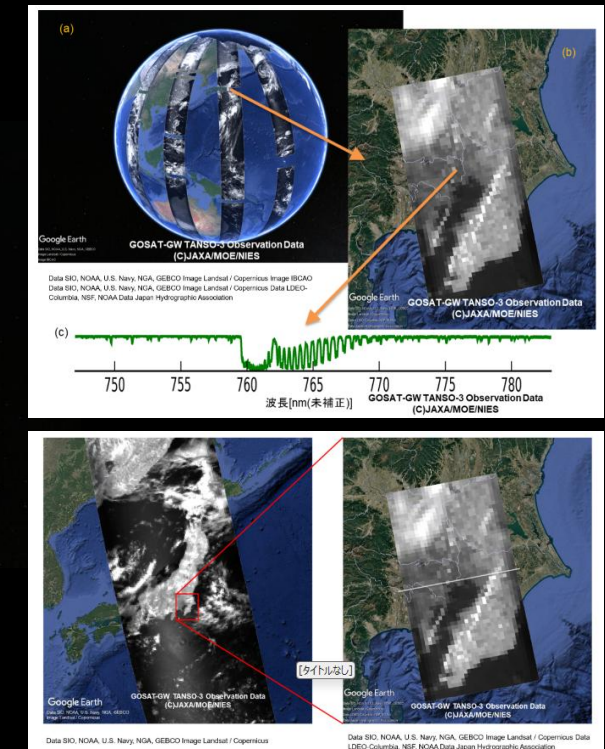


Observation around Japan by 21
channels equipped by AMSR3 (August 16,
2025)

Total Anthropogenic and Natural emissions mapping Spectrometer-3 (TANSO-3)

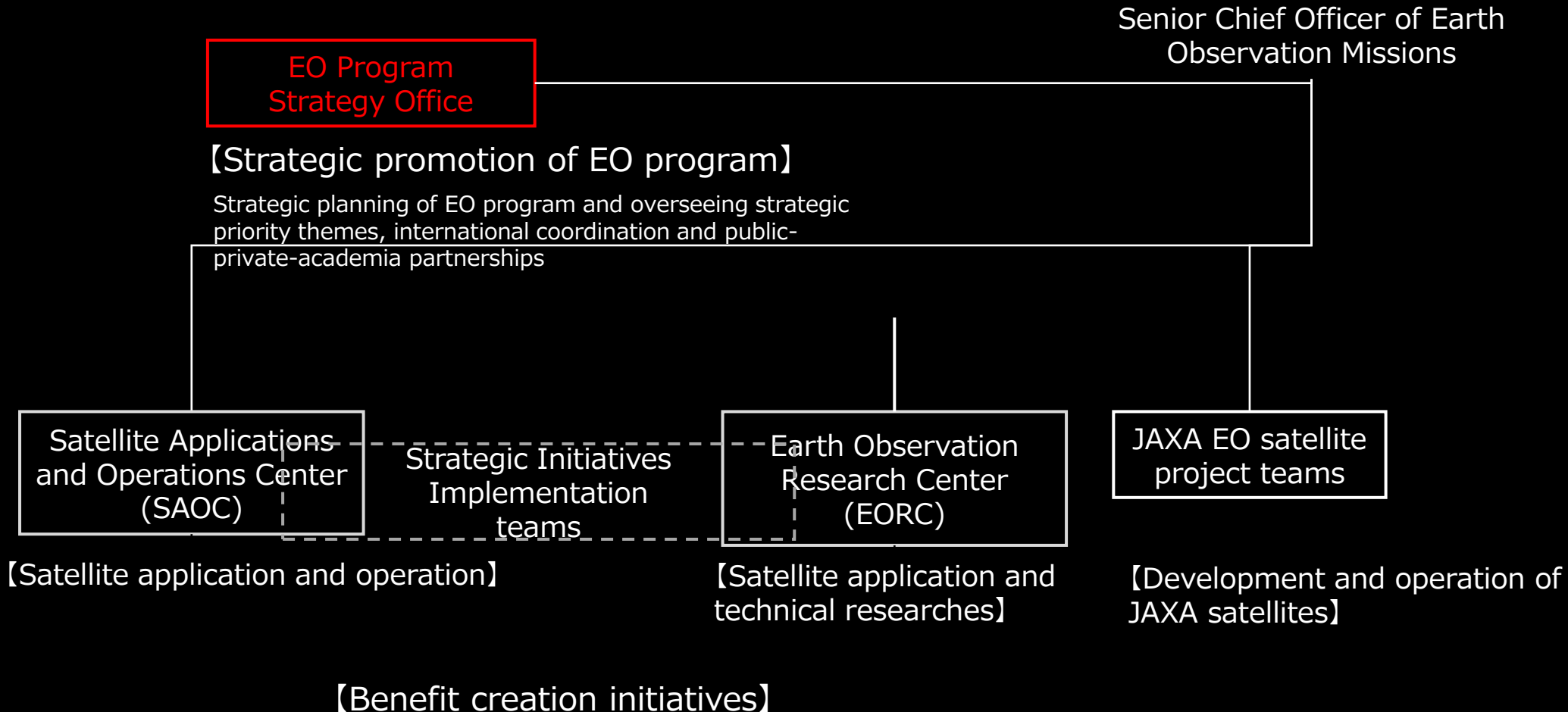


TANSO-3 Observation Data
(July 14-16, 2025)

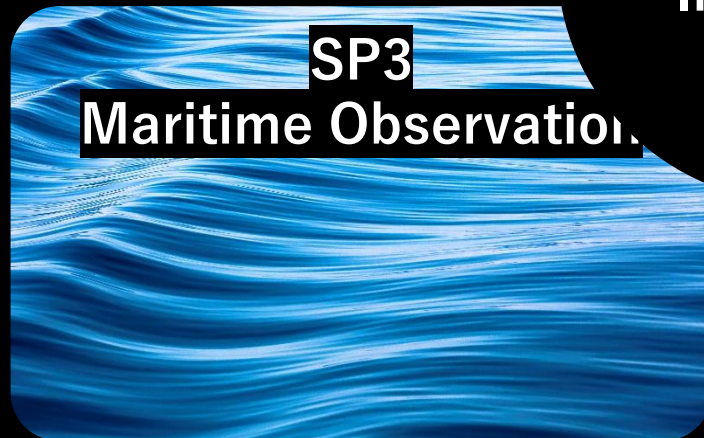


TANSO-3 Observation Data
(July 20, 2025)

EO Program Strategy Office established by reorganizing mission planning, public-private-academia partnerships and international coordination functions of Satellite Applications and Operations Center (SAOC) and the Earth Observation Research Center (EORC)



FOUR THEMATIC AREAS FOR STRATEGIC INITIATIVES



Strategic
Initiatives

Societal Benefit



Disaster Resilience



Infrastructure Management



Climate Action



Safety and Security



Resource Management



Urban Development



Business

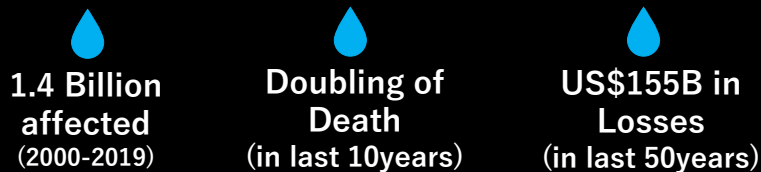
SP1

Global Water-related Disaster Risk and Resource Management



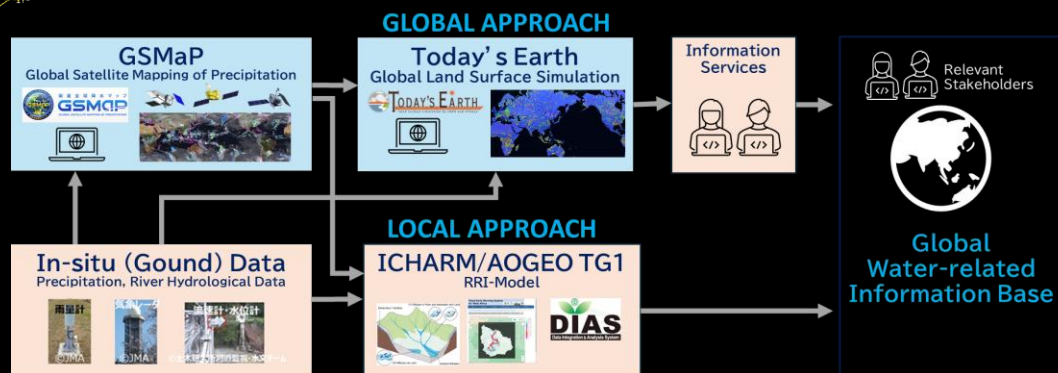
Strengthening global water-related disaster resilience and resource management through the space-based solutions for safer and more resilient society.

Challenges



Actions to resolve

Develop and deliver water-related solutions using high-resolution, borderless simulation models and satellite-based rainfall information



SP2

Understanding natural capital and utilizing satellite data for carbon credits



Establishing effective methods for assessing the natural capital of forests and rice paddies to support net zero targets and improve trust in carbon credits.

Challenges

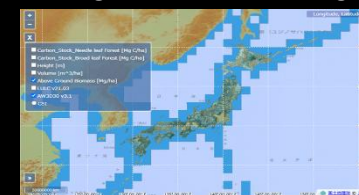


Ensuring reliability and transparency of carbon credit

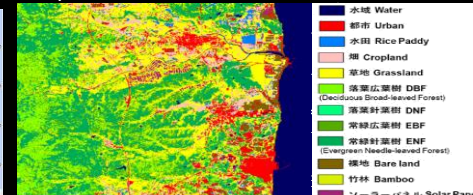
Actions to resolve

Develop the methodologies and promote the use of satellite data in crediting schemes.

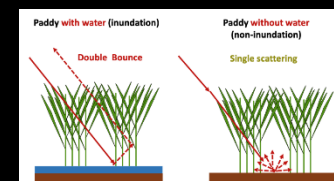
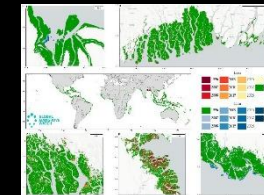
High-Resolution map of forest above-ground carbon storage



High-Resolution Land-Use and Land-Cover Map



Global Mangrove Map



Paddy field inundation and non-inundation monitoring



APRESAF/SAFE CH4Rice project 5

SP3

Maritime Observation

Strengthening capabilities for monitoring maritime conditions through satellite observation, while building cooperative relationships with surrounding countries

Challenges

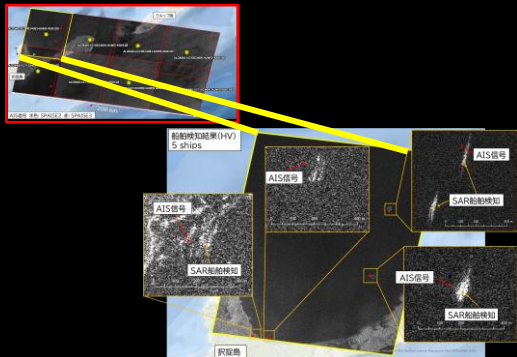


Enhancement of maritime observation capabilities across wide ocean areas through international cooperation

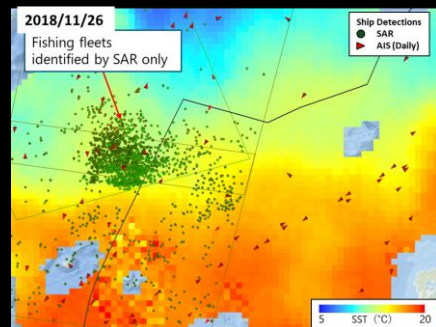
Actions to resolve

Strengthen capabilities for monitoring maritime activities and conditions through an extensive satellite observation network by public-private partnerships and promote international cooperation

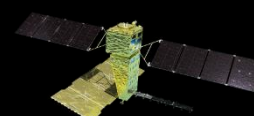
Ship Detection



Ocean Environment Monitoring



ALOS-4 (L-band SAR and AIS)



Safety and Security



New Business

SP4

Infrastructure and Disaster Management

Leveraging satellite-based geospatial data and infrastructure monitoring services, we aim to streamline land management, build a digital disaster management platform, and create globally competitive businesses.

Challenges

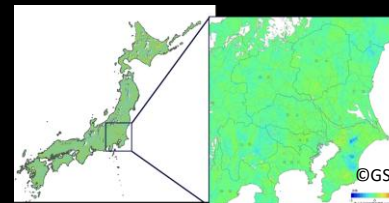
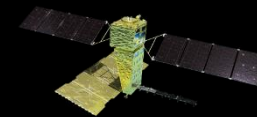


Disaster risk management/response and rapid damage assessment

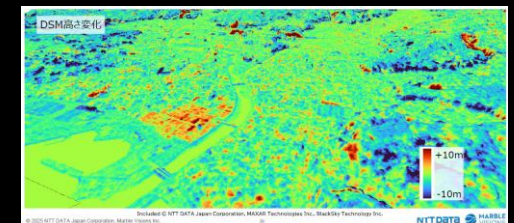
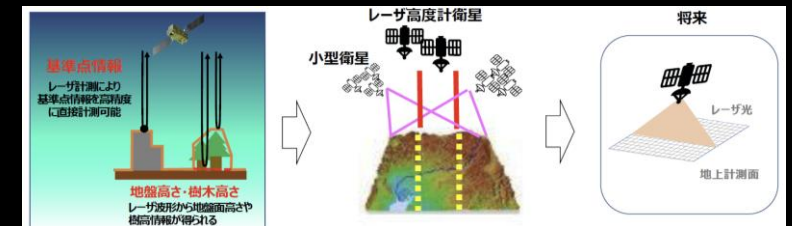
Actions to resolve

Enable and deliver high-precision 3D topographical information and infrastructure monitoring capabilities and services through satellite observation

ALOS-4 (L-band SAR and AIS)

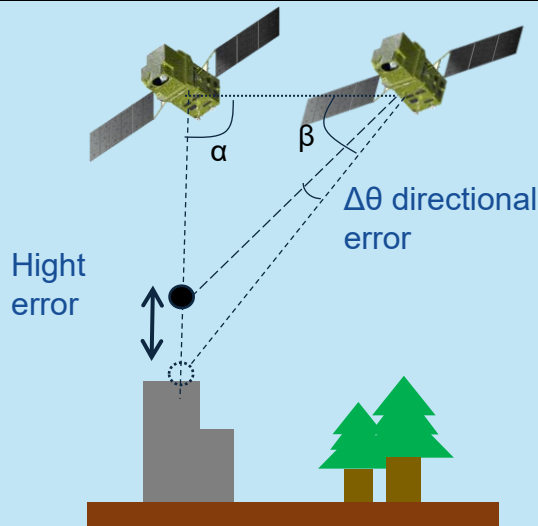


Ground/infrastructure motion monitoring



Accurate 3D mapping with optical and LIDAR sensors

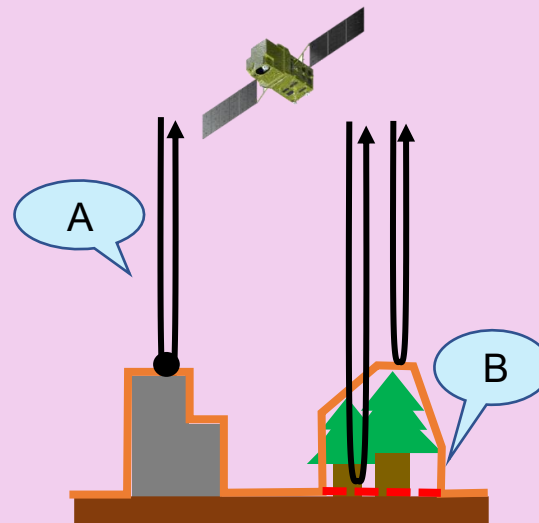
Conventional methodology: Stereo image synthesis processing



- Directional error and image quality affect height error
- Digital Surface Model (DSM) is available



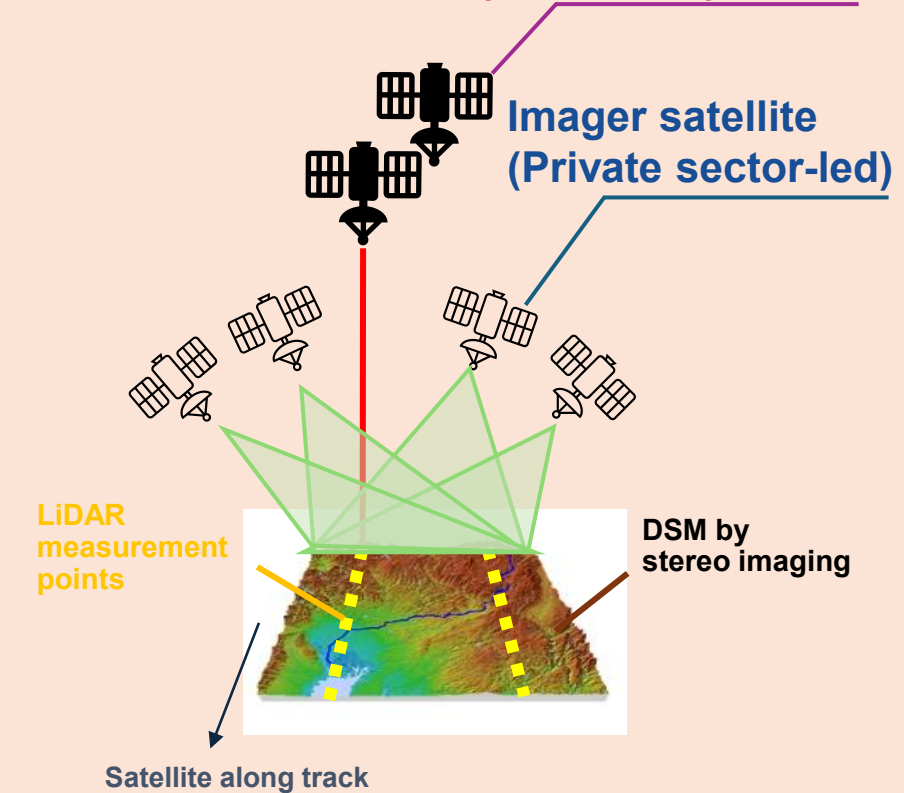
New methodology: Integrating altitude information by LiDAR

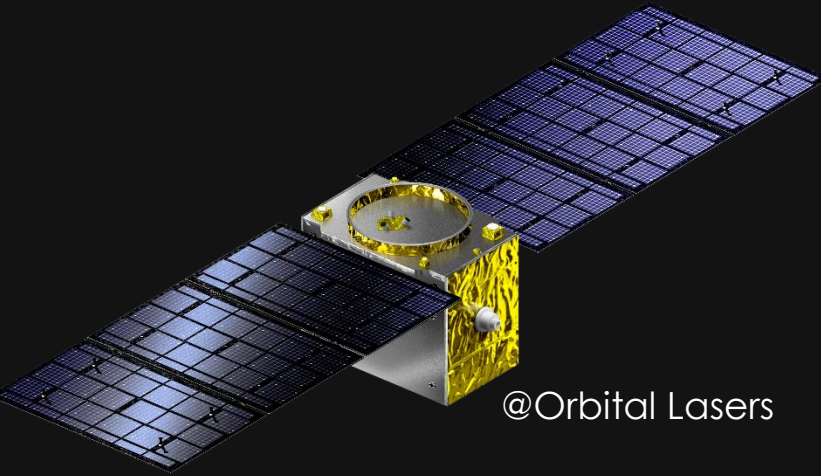


- A: Directly measure height with high accuracy
- B: Digital Terrain Model (DTM) is available in vegetated area

By integrating stereo imaging and altimeter LiDAR, to generate and update highly accurate 3D topographic information

LiDAR satellite (JAXA-led)





@Orbital Lasers

Global Geodetic Reference Points

The satellite generates global geodetic reference points defined as 3D coordinates with vertical accuracy on the order of several tens of centimeters.

Digital Surface Model Correction

Generated reference points help correct digital surface models for improved geospatial analysis.

Full waveform LiDAR and auxiliary 2D imager

The payload of the satellite, the LiDAR Altimeter and Imager System

300-kg-class satellite

The satellite is a 300-kg-class satellite designed to operate for two years in very low Earth orbit (VLEO) based on the flight heritage from JAXA's previous mission, SLATS.



Thank you for supporting
“JAXA EORC 30th Anniversary Symposium”

