



Calibration and Harmonization for Reliable, Comparable Satellite Data

A Japan–Europe collaboration
for interoperable Earth observation data

NEW SPACE INTELLIGENCE
(NSI)

Data from Different Satellites Cannot Be Directly Compared or Combined

The same place observed at almost same time can produce very different results.



Satellite A



Satellite B



Satellite C



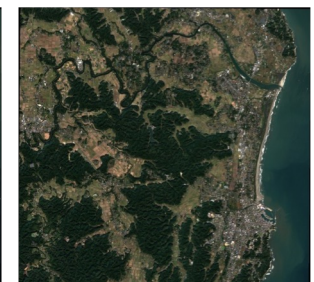
Satellite D



Satellite E



Satellite F



Satellite G



Limited
Observation Frequency



Cost Constraints



Missed Observations

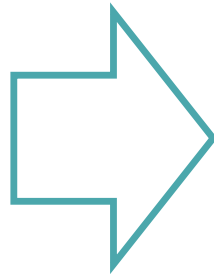


Continuity Risk

Satellite data needs **horizontal infrastructure**
that works across countries and satellite operators

Calibration Improves the Reliability of Each Satellite

NSI's mirror reflector



Original Satellite Data



Calibrated Satellite Data



Calibrating Diverse Satellite Data onto a Common Scale

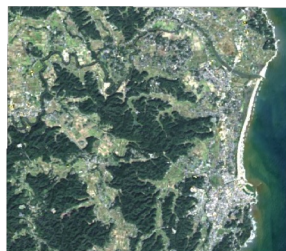
Making fragmented satellite data work together



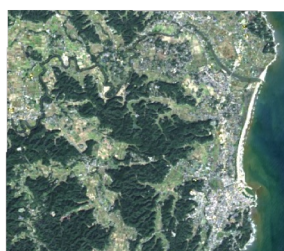
Satellite A



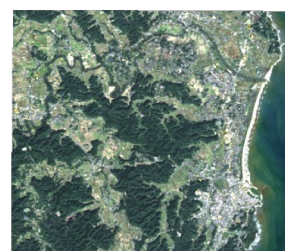
Satellite B



Satellite C



Satellite D



Satellite E



Satellite F



Satellite G

**Four
Powerful
Benefits**



Higher Observation Frequency



Lower Costs through Optimal Satellite Combinations



Fewer Missed Observations through Complementary Coverage



Continuity without Reliance on Any Single Satellite

World's First Satellite Data Calibration Technology Using **Mirror Reflectors**

As a calibration service for multiple satellites using permanent mirror reflectors. Based on company research.



This marks the world's first use of this calibration approach outside the U.S.



A Breakthrough Approach Different from Conventional Methods

Dramatically More Efficient On-Site Calibration



Conventional Approach

- Often requires a large test site in an arid region
- May require several engineers and months of on-site work
- Typically focuses on a specific satellite or mission

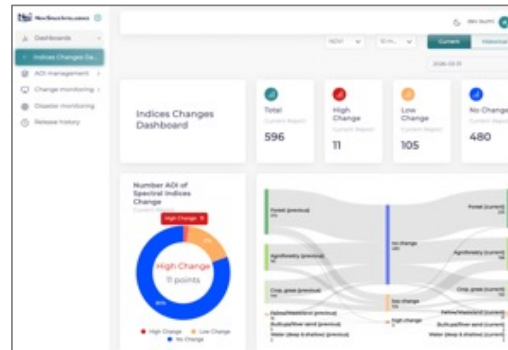
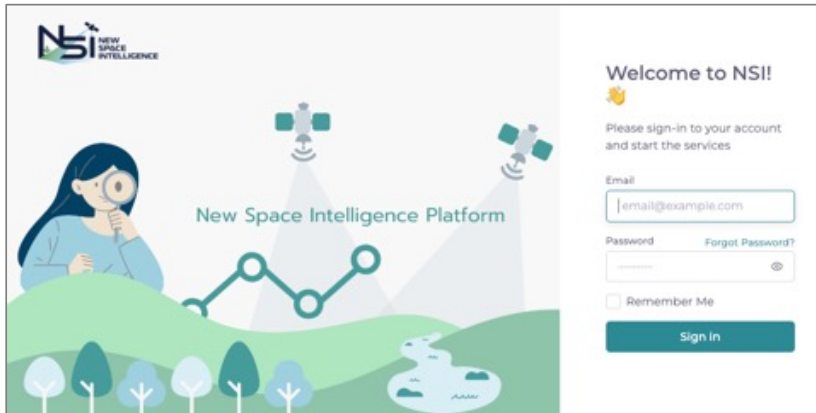


NSI's Approach

- One permanent installation can support satellites from around the world
- Calibration can be completed with a single observation
- Satellite data from different operators can be harmonized

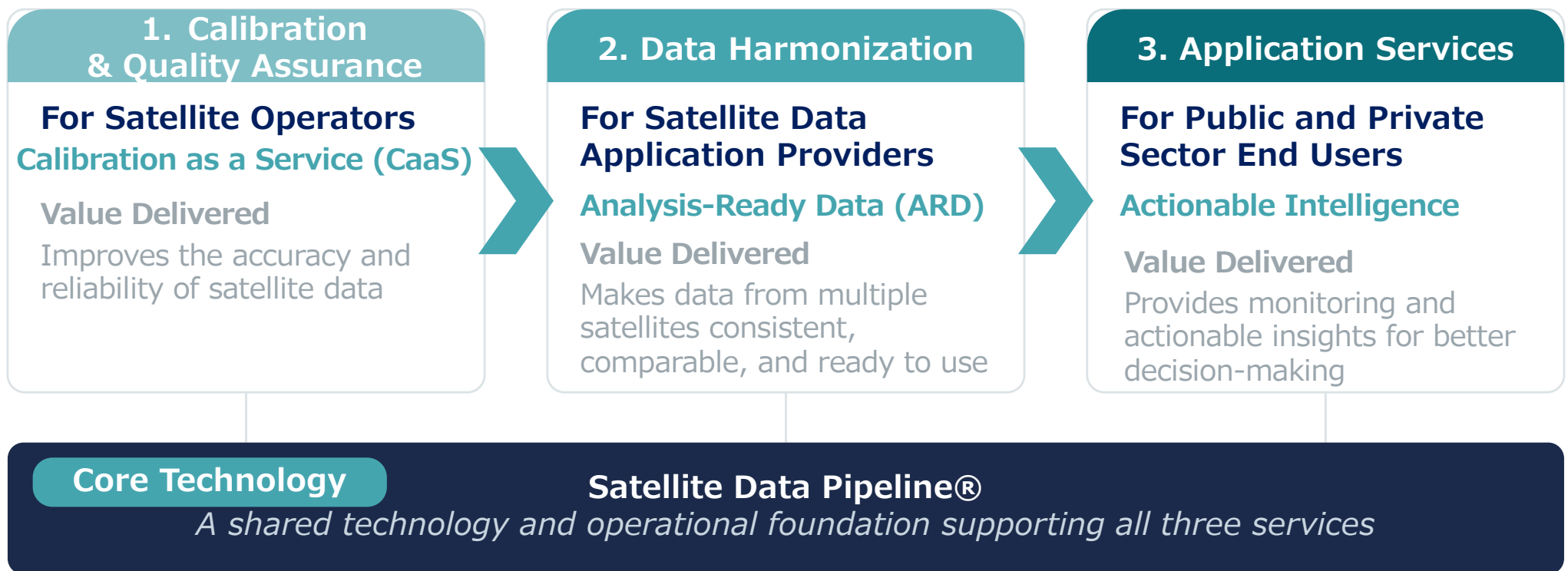
An Automated System from Selection to Operational Use

NSI's Proprietary Satellite Data Pipeline®



A platform that automates the entire process of selecting, integrating, analyzing, and delivering multiple satellite datasets.

One Technology Platform, Three Customer Groups



Use Cases



Disaster Response

Assess damage across wide areas rapidly after a disaster.



Noto Peninsula Earthquake: Detect illegal dumping early across forests and vacant land.

Compare before-and-after satellite data to identify collapsed buildings, landslides, and flooding—even through clouds.

During the 2024 Noto Peninsula Earthquake, NSI identified 5,312 collapsed or partially collapsed buildings.

Illegal Dumping Detection

Detect illegal dumping early in forests and vacant land.



Illustration: detecting illegal dumping on vacant land

Monitor changes over time to identify newly exposed ground and accumulated waste—even through clouds.

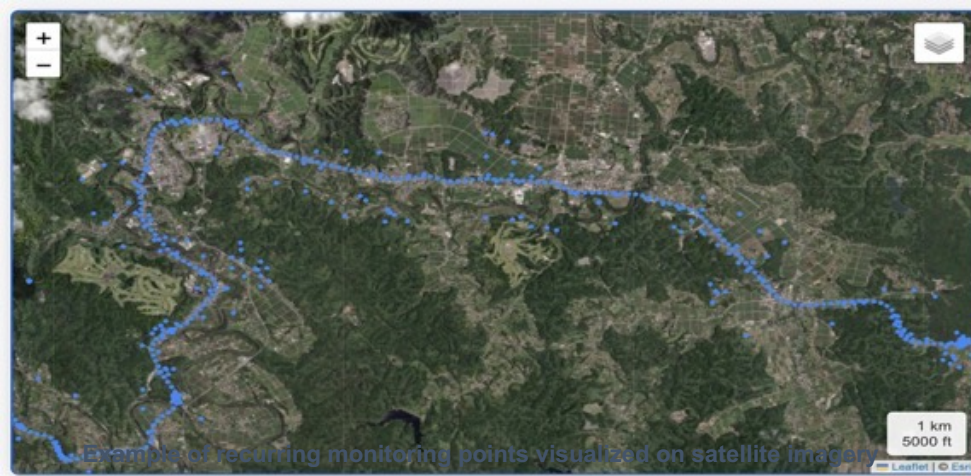
Hiroshima Prefecture has used this solution for three consecutive years.

Use Cases



Infrastructure Monitoring

Monitor infrastructure across wide areas and detect critical changes.

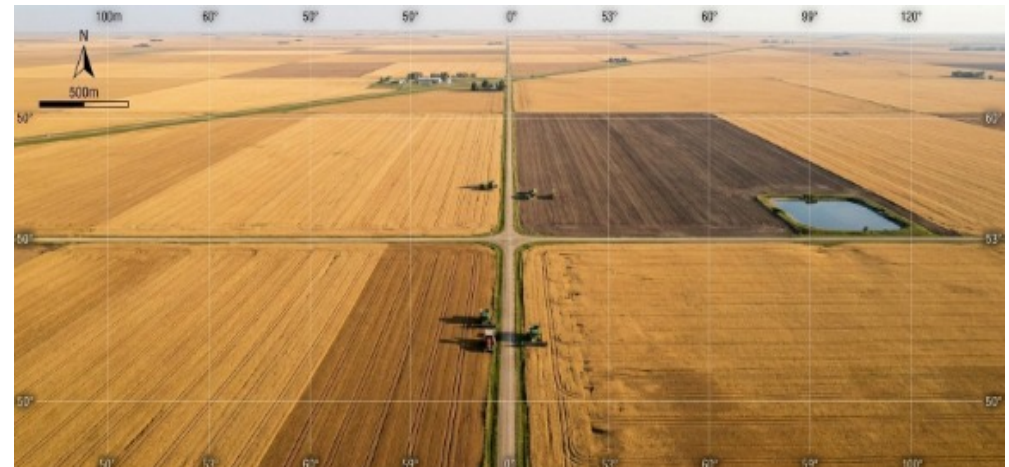


Satellite data is analyzed weekly, with detected anomalies delivered through alerts and dashboards.

Proof of concept with JR East for satellite-based railway monitoring

Crop Yield Forecasting

Forecast crop yields ahead of official statistics.



Satellite and weather data track crop growth and estimate yield changes throughout the season.

Provides early insights for trading companies, grain traders, and financial institutions.

Use Cases



Global Forest Monitoring

Monitor deforestation and illegal logging worldwide.



Satellite data automatically identifies forest loss, land-use changes, and clear-cut areas.

Supports timber management, carbon-credit assesment, and environmental monitoring.

Solar Panel Detection

Map solar panel installations across wide areas.



Satellite data detects both mega-solar facilities and small-scale panels.

Supports grid planning, environmental monitoring, and solar-related businesses.

Use Cases



Blue Carbon Monitoring

Monitor coastal vegetation to support blue carbon estimates.



Satellite data tracks the distribution and health of coastal vegetation over time.

Supports estimates of CO₂ absorption and progress toward decarbonization goals.

Coastal Water Clarity Monitoring

Assess water clarity across entire coastal areas.



Satellite data monitors turbidity and changes in coastal water quality.

Supports tourism management and environmental monitoring.

Team:

Built for Japan-Europe Satellite Data Collaboration



Expertise in satellite calibration and harmonization, software development, and field deployment.



**President,
CEO&Founder**

Yumiko Nagai



Chairman

Prof. Masahiko Nagai



**CSO |
Co-Founder**

Dorj Ichikawa
PhD



CFO | Sales

Hiroshi Senzoku



**CTO
Co-Founder**

Chairath
Sirirattanol,
PhD



**CAO
Co-Founder**

Nopphawan
Tamkuan,
Ph.D.



**CIO
Co-Founder**

Vaibhav Katiyar,
Ph.D.

Research and Engineering Roots:

NSI grew from Nagai Laboratory at Yamaguchi University and the Asian Institute of Technology. Our founding team brings deep expertise in satellite data quality and real-world deployment.



Collaboration with European Partners:

We seek partnerships with European satellite operators, data providers, and smart-city solution companies.

**33 members Worldwide
7 countries | 7 PhDs**

Together, we can calibrate and harmonize Japanese and European satellite data and jointly develop smart-city solutions.

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Scan the QR code for company information and inquiries.