HUAYUN Shinetek

Exploration and Outlook on the International Industrial Application of Fengyun Meteorological Satellites

Beijng Huayun Shinetek Science and Technology Co., Ltd

Tech-Driven Satellite-Ground Links; Service-Powered Mutual Cooperation.

01. Company Profile

02. Background of Meteorological Satellite Commercialization

03. Industrialization System for International Services of Fengyun Meteorological Satellites

- ★ Meteorological Satellite Infrastructure Construction
- ★ Fengyun Satellite Observation Data Quality Platform
- ★ Fengyun Satellite Quantitative Product Accuracy Platform
- ★ International Customized Application Service Platform

04. Exploration and Outlook on Meteorological Satellite Commercialization

1. Company Profile

With professional technique in meteorological research and application fields

Guided by China Huayun Corporation under CMA to fulfill requirements

Beijng Huayun Shinetek Company

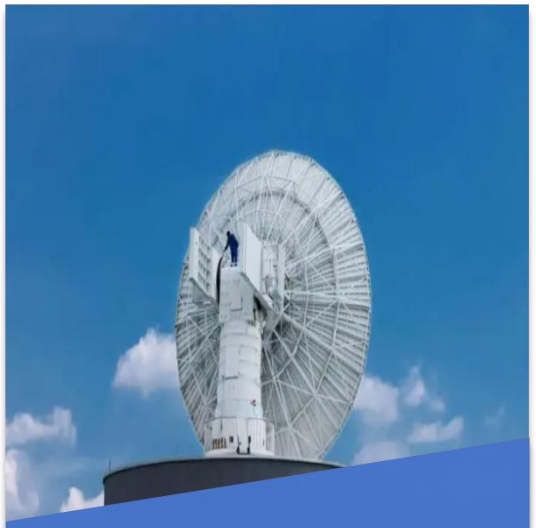
NSMC

China Huayun Group

Shanghai Satellite Engieering Research Institute

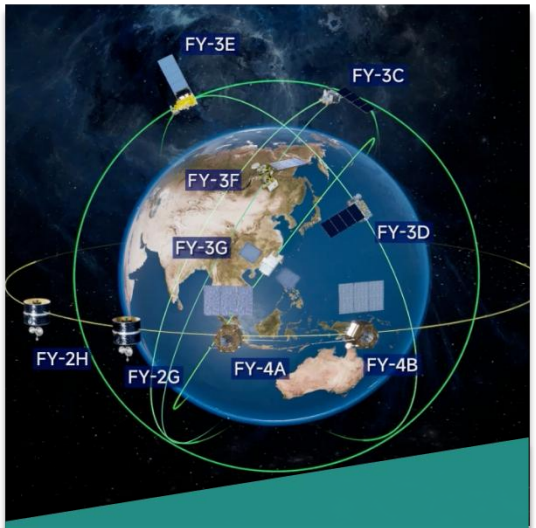
Technically supported by NSMC with strong research force for creative production

1. Company Profile

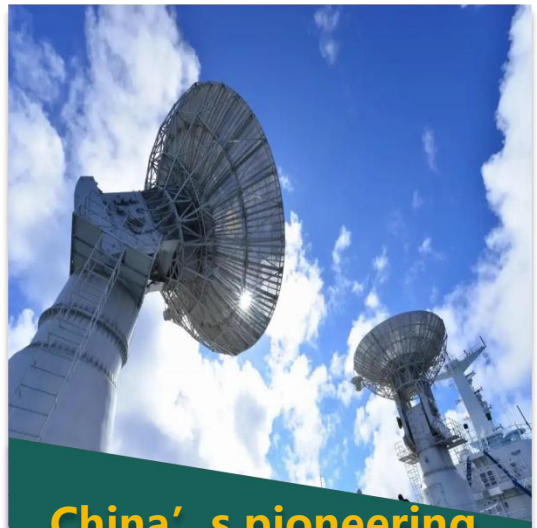


China’s first company to build mid-scale meteorological satellite utilization stations

China’s first company to develop provincial-level user stations for FY-3/FY-4 satellites

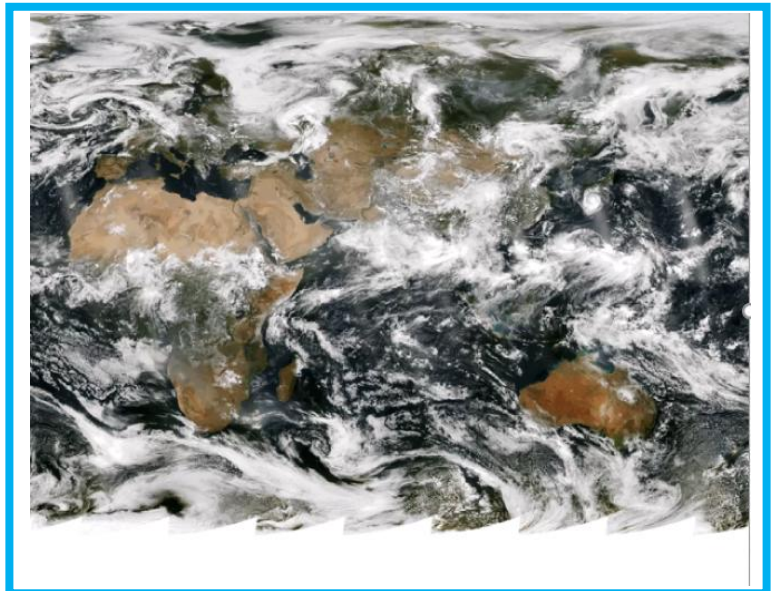


Prime contractor for the Fengyun satellite series ground system engineering

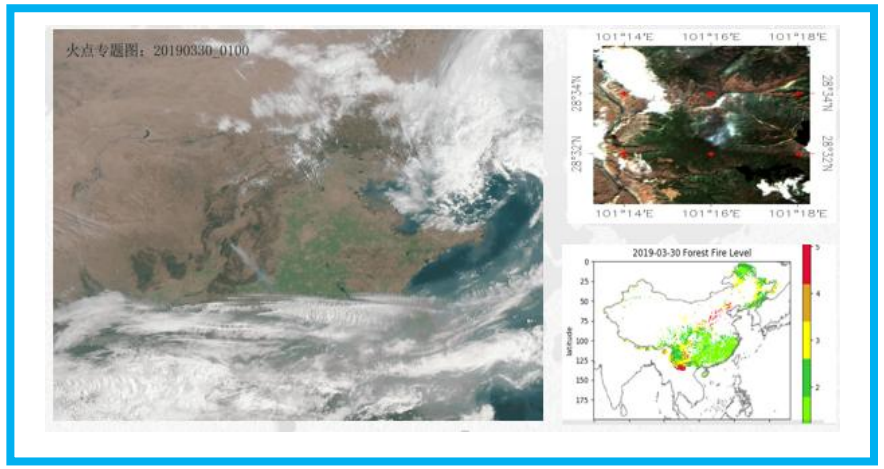


China’s pioneering company in implementing software engineering standards for satellite ground systems

1. Company Profile



- Fengyun Meteorological Satellites (FY Satellites)
- Chang’e Lunar Probe Program
- Mars Exploration
- Marine Satellite Series
- Earth System Numerical Simulation Facility
- ……



Remote Sensing Application in weather, marine, civil aviation, environment, ecological, forestry and traffic, etc.

Providing remote sensing ground systems along with operational and product software, including functions of data processing, data archiving, and system integration

Remote Sensing Industry

- **Satellite Engineering**
- **Remote Sensing**
- **Moonlet Industry**

- Intellegent Satellite Data Service System Real-time Monitoring
- Research and Data Simulation Services
- Multi-source Satelllite Remote Sensing Application
- ” Remote Sensing Plus” Intelligent Data Services
- Moonlet satellite industry: telemetry and receiving ground station network

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04. Exploration and Outlook on Meteorological Satellite Commercialization

2. Background of Meteorological Satellite Commercialization

Era-Specific Opportunities & Technological Evolution

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Commercial Aerospace Era

The global commercial aerospace satellite industry steps into a period of rapid development in 2025，whose market size has exceeded $100 Billion. China is the world’s second-largest country in commercial aerospace satellite launches with annul launch volume over 30% of the global total. Low-earth orbit (LEO) constellations, remote sensing satellites, and communication satellites are the core driven for the market. Over 50% of the world’s launch missions has led by commercial companies, and the participation of private enterprises has increased significantly.

“Growing Demand”

From traditional weather forecast to the industries of new energy, financial insurance, agriculture, logistics, and aerospace, the demand for high-resolution and customizable meteorological data has experienced explosive growth.

“Mature Industrial Chain”

The industrial chain has matured across all links from the batch manufacturing of satellite platform and remote sensing payload, to satellite launch, and to data reception and processing. It has cleared the obstacles for the large-scale deployment of meteorological satellite commercialization.

“Technological Revolution”

The use of AI and cloud computing technologies makes the real-time and customized commercial meteorological products based on massive satellite data possible, which is the foundation of the large-scale services.

The time for meteorological satellite commercialization is ripe!

2. Background of Meteorological Satellite Commercialization

Policy Breakthroughs & Ecosystems Reconstruction

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Development Direction Confirmed by Top-level Design

In August 2025, the China Meteorological Administration issued the "Guiding Opinions on Promoting the Development and Application of Commercial Moonlets in Meteorology" to build a space-based meteorological collaborative observation system with Fengyun meteorological satellites (FY satellites) as the main and commercial meteorological satellites as the supplement, and promote the integrated application of satellite remote sensing in the field of meteorology.

Nation strategic layout

In December 2024, the China Meteorological Administration and the National Space Administration jointly issued the "Belt and Road Initiative" Action Plan for Fengyun Meteorological Satellite Service (2024-2030) pointed out that it is necessary to promote the construction of the global meteorological satellite ground station network, improve the global supply capacity of satellite data products, improve the international emergency service guarantee capacity, and develop "One country, One policy" customized services.

Government ⇩ **Enterprise**

- **Data Channel Establishment**
- **Infrastructure Sharing**
- **Operation Access Mechanism**

⇩

Facilitating the healthy development of the meteorological satellite commercialization

2. Background of Meteorological Satellite Commercialization

Market Power & Bright Future

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Diversified Market Application Scenarios

ToG (Government and Public Utilities)

- Make up for the blind area of meteorological satellite observation and provide high-frequency and high-resolution data support
- Support emergency management and disaster prevention and mitigation (monitoring of natural disasters such as wildfires and floods)
- Ecological environment monitoring and protection
- Urban management and planning support

ToB (Enterprise Market)

- **New energy:** Provide accurate wind power and radiation forecast for wind farms photovoltaic power plants.
- **Financial insurance:** Provide objective damage determination for agricultural insurance and weather index insurance.
- **Agriculture:** Provide refined agricultural meteorological services, guide irrigation and pest control.
- **Logistics and transportation:** Shipping and aviation provide high-precision meteorological navigation services.

International opportunities

Relying on the “Belt and Road Initiative”, China’s commercial meteorological satellite has ushered in a historic opportunity for brands to go abroad. By outputting a complete solution of “data + platform + standard”, the commercialization of meteorological satellites can participate in global competition, which is more likely to dominate the meteorological service ecology of emerging markets and establish a Chinese brand.

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04. Exploration and Outlook on Meteorological Satellite Commercialization

03. Industrialization System for International Services of Fengyun Meteorological Satellites (FY Satellites)

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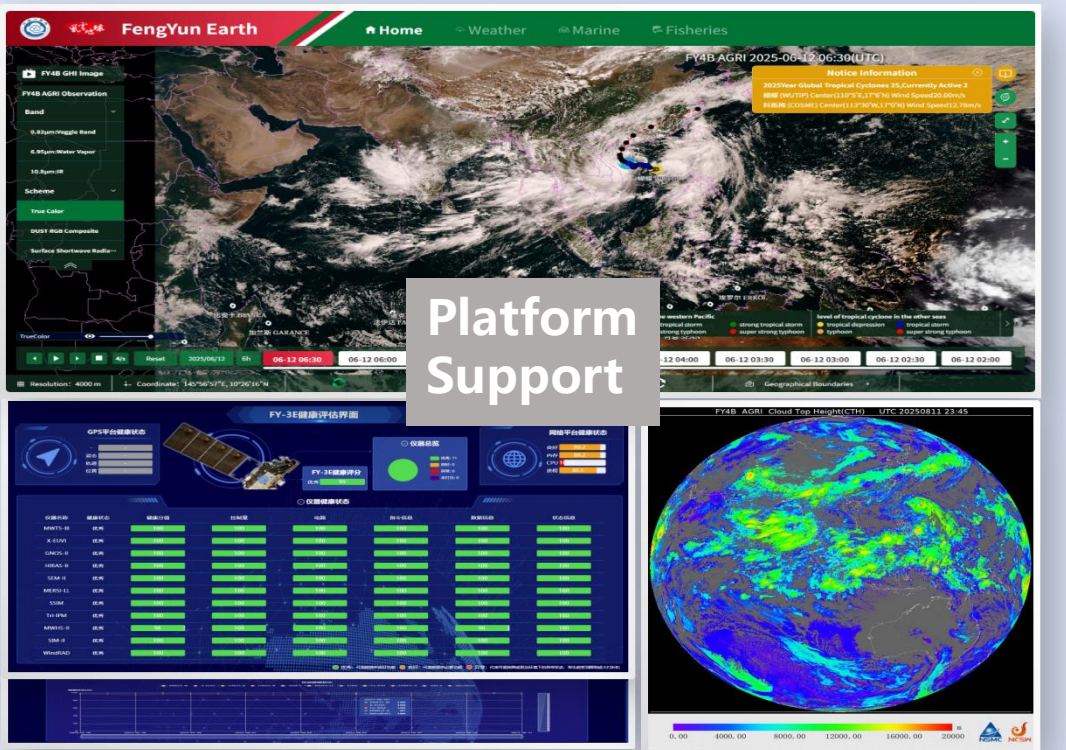
As an important business card for China's aerospace science and technology to "Going Global", the FY satellite system has moved from simple data sharing to a new stage of systematization and industrialization. Create a whole-chain industry that covers **data reception**, **data quality improvement** and **application empowerment**.



By building a **dual-wheel drive service system of infrastructure and platform support**, we are providing standardized, customizable and sustainable meteorological services for global users.

Meteorological Satellite Data Reception and Processing System

- ✓ **Global receiving station network**: overseas receiving station users are distributed in 29 countries and regions;
- ✓ **Verify the business model**: establish international channels and user bases;
- ✓ **Ground system sharing and collaboration**: use the existing ground station network resources of the state.

Overseas receiving stations along the "Belt and Roud Initiative"

Geostationary Satellite

Including FY-2, HimawariCast, GK2A and FY-4 Geostationary Data Receiving Systems.

Polar-orbiting Satellite

Including data receiving system for domestic and abroad polar-orbiting satellite and high-resolution satellite.

Broadcast Satellite

Including CMACast Broadcast and EUMETCast Broadcast Satellite Data Receiving Systems.

Ground Station User List (till 2025)

Serial No.	System Type	Country	Serial No.	System Type	Country
1	CMACast	Maldives	1	FY-2H	Mozambique
2		Pakistan	2		Oman
3		Malaysia	3		Kyrgyzstan
4		Myanmar	4		Bangladesh
5		Philippines	5		Mongolia
6		Mongolia	6		Iran
7		Iran	7		Pakistan
8		Sri Lanka			
9		Uzbekstan			
10		Nepal			
11		Kyrgyzstan			
12		Laos			

03. Industrialization System for International Services of FY Satellites - Infrastructure Construction

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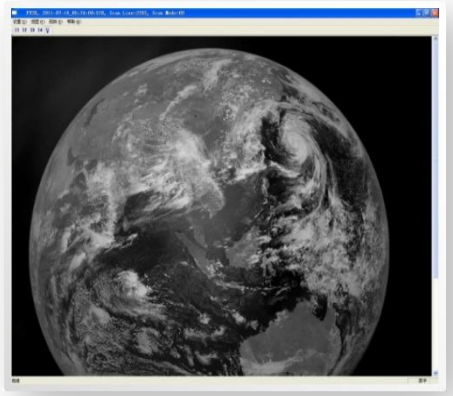
01. Geostaionary Receiving Station for FY-2 and FY-4

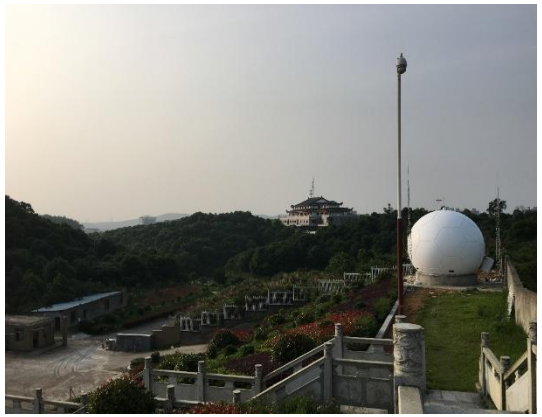
Integrated with software and hardware for

- ✓ Data receiving
- ✓ Image display
- ✓ Product processing
- ✓ Data distribution through network



02. Earth Polar-orbiting Receiving Station for FY-3 and Other

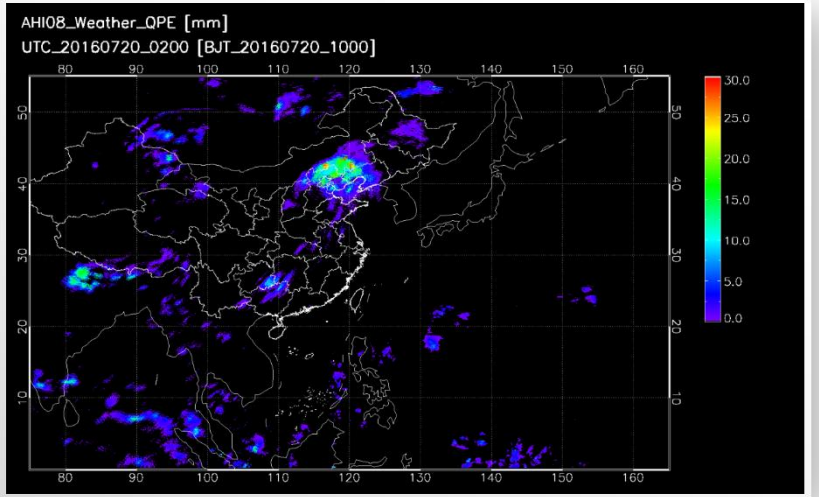
Satellite	Country	Resolution
F-3C/D/E/F/G/H	China	250m
NPP/NOAA20\21	USA	375m
EOS-TERRA/AQUA	USA	250m
NOAA-18/19	USA	1000m
METOPA/B/C	Europe	1000m



03. CMA Cast Satellite Broadcasting System

CMACast System

China Meteorological Administration adopts DVB-S2 standard with a C-band commercial satellite to broadcast data including meteorological, air sounding and rador data.
Hence greatly enhances variety and amount of meteorological broadcast data with high efficiency and reliability.
With 372 users in global range.



GK2A System

GK2A Satellite Data Receiving and Processing System developed by our company automatically receives Korean GK2A satellite data in 16 channels including 4 visible channels with resolution of 0.5-1 km and 12 infrared channels with resolution of 2 km.
With 13 users in China.

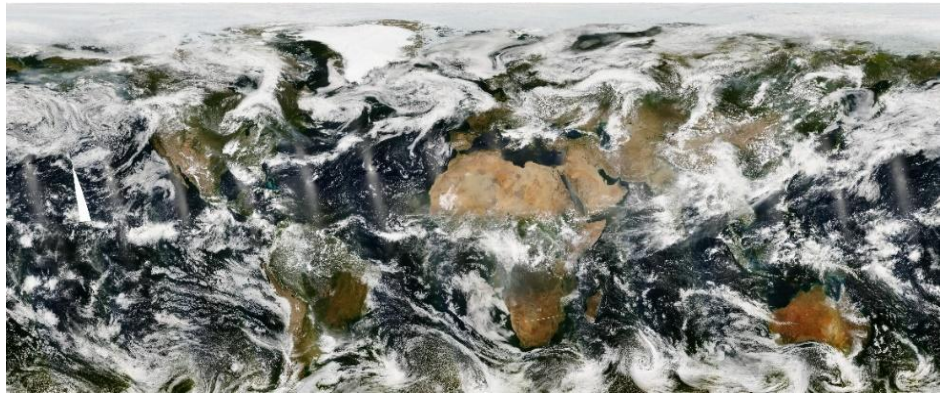
FY Satellite Data Accuracy Evaluation and Inspection Platform

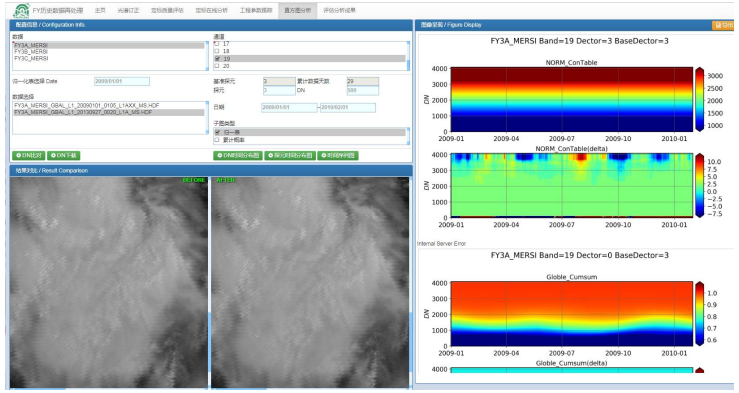
Pecker Accuracy Evaluation Satellite Data Accuracy Evaluation Platform

- If the data of commercial meteorological satellites is to be procured by national meteorological departments, scientific research institutions, large enterprises and other high-value users and used for operational applications, credibility is the first threshold. The platform must provide a objective and impartial accuracy evaluation report;
- Identifying problem accurately, accelerating satellite iteration and performance optimization, establishing industry benchmarks, and promoting data standardization and integration applications.

Platform Target:

- ✓ Track the working status of satellites and instruments
- ✓ Identify specific problems of remote sensing instruments
- ✓ Analyze the data accuracy of remote sensing instruments
- ✓ Improve the quality of remote sensing data

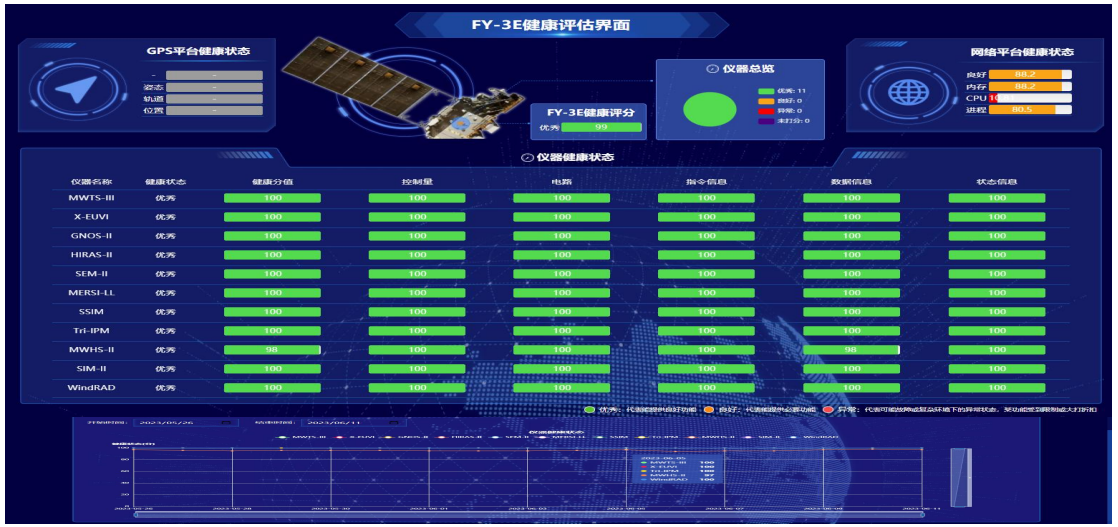




03. Industrialization System for International Services of FY Satellites – Observation Data Quality Optimization

1. Key Parameter Analysis and Early Warning for Satellite Platforms and Instruments

1. Support the health status assessment of hundreds of parameters of multiple satellites and multiple instruments.
2. Detect mangy types of data abnormalities of different forms
3. Support loading millions of data volumes
4. Improve the efficiency of satellite and instrument health status monitoring and fault analysis



Provide effective evidences for management and maintenance

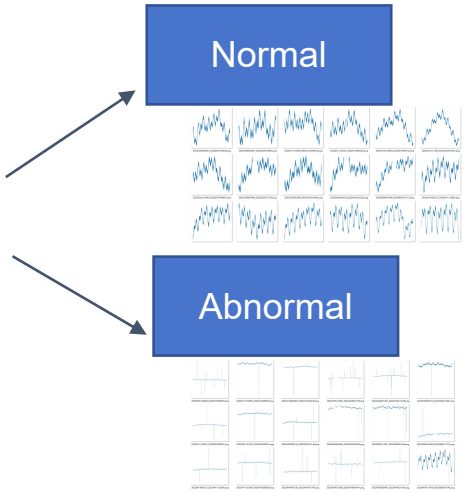
Ensure long-life and high-reliability operations of satellites and instruments

Massive Data

Abnormality dentification and trend prediction

Statistical algorithm

AI algorithms



Health monitor for satellites and instruments

03. Industrialization System for International Services of FY Satellites – Observation Data Quality Optimization

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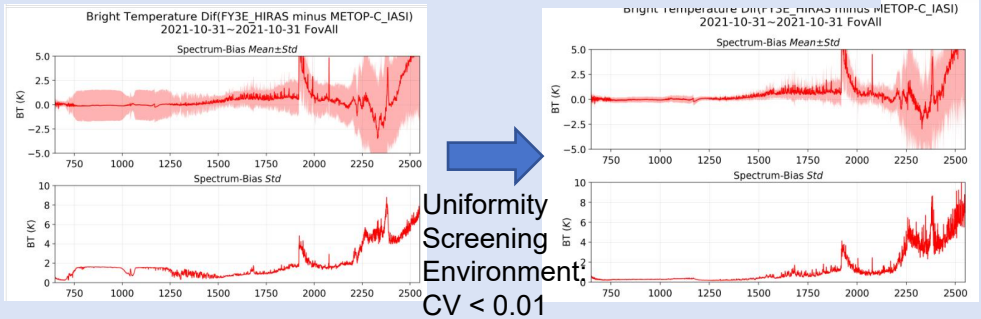
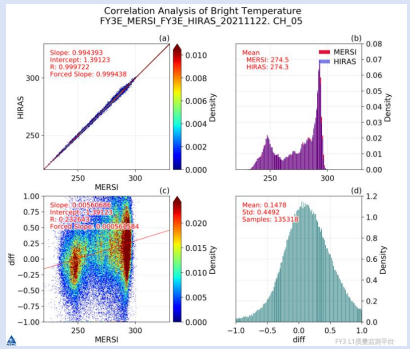
2. Quality Analysis and Accuracy Improvement of the Instrument Calibration

Eliminate discrete data by interactive operation to ensure the reliability of the data quality analysis

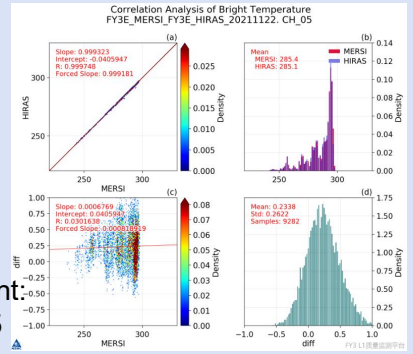
HIRAS&IASI
Uniformity screening:
STD plummets, boosting accuracy analysis reliability.



Uniformity Screening Environment: CV < 0.01

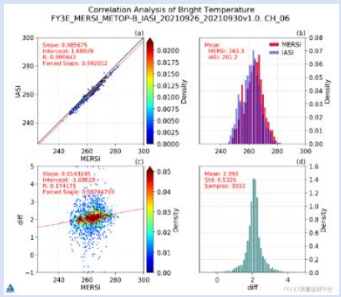


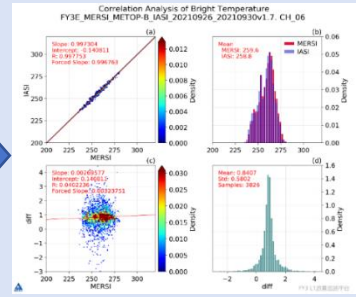
Uniformity Screening Environment: CV < 0.005



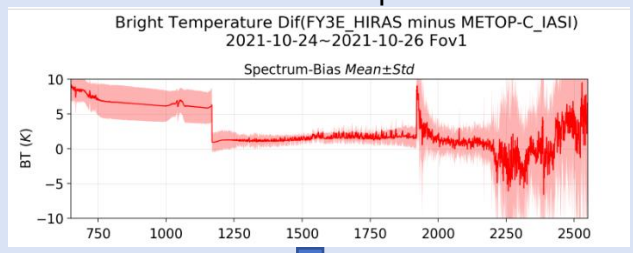
MERSI&HIRAS
Uniformity screening:
more trustworthy data results.

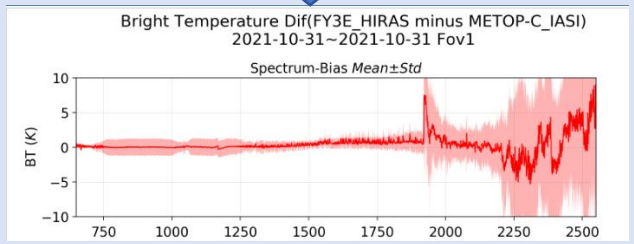
Support data quality analysis and coefficient optimization by rapid iteration





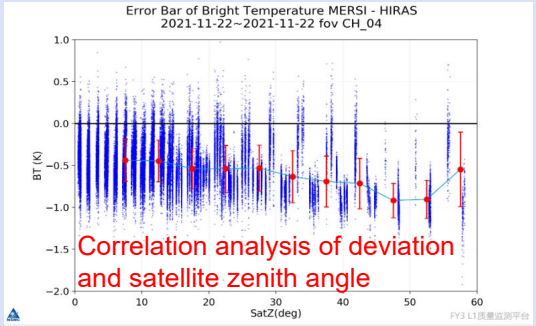
MERSI calibration optimization

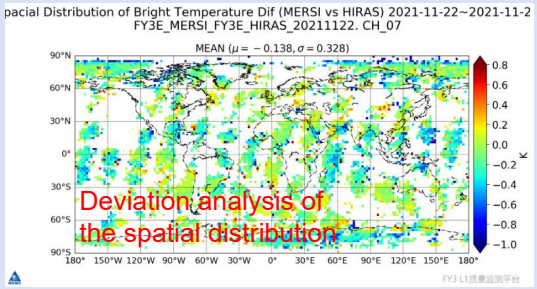


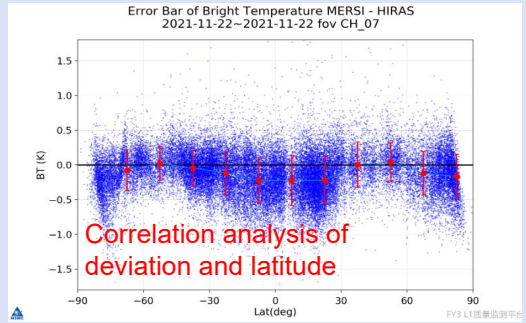


HIRAS calibration optimization

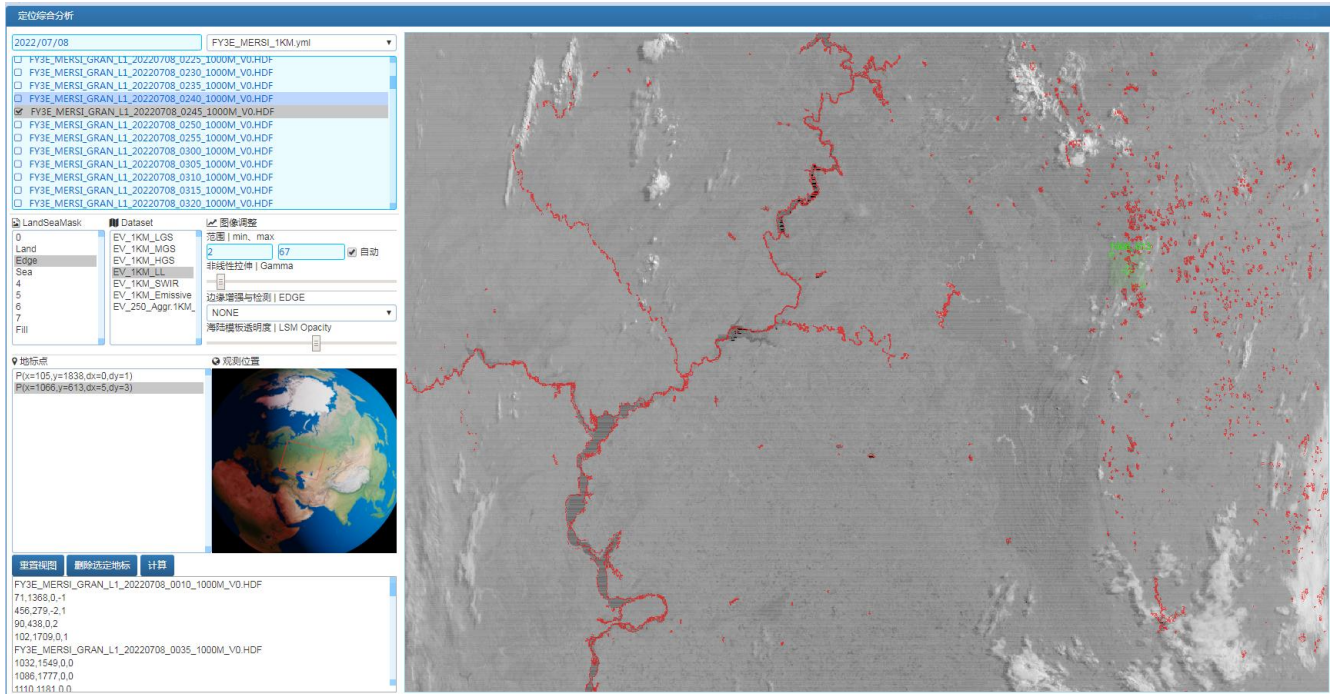
Provides issue tracking & root-cause analysis for data quality



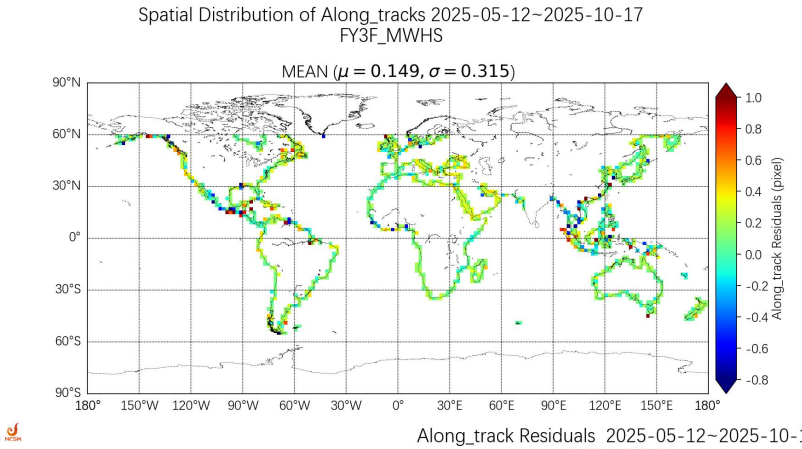




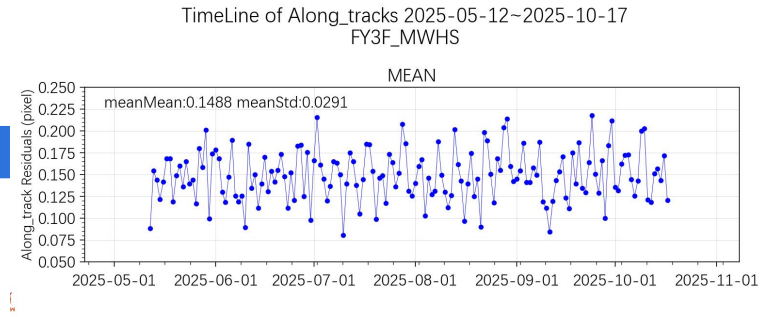
3. Quality Analysis and Accuracy Enhancement for Instrument Positioning

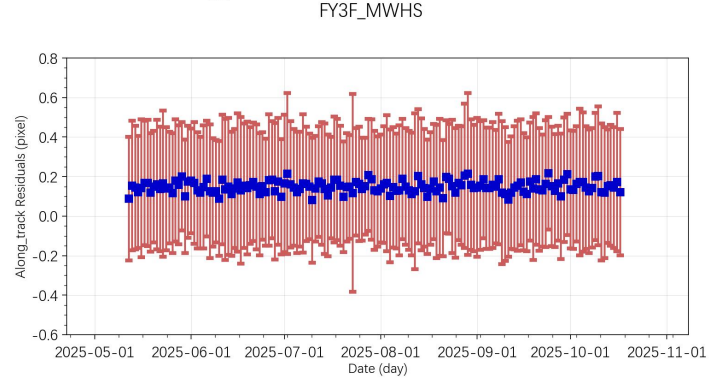


- Identify positioning bias by image shifting after selecting landmark point manually;
- Calculate equivalent deviation pointing based on the selected landmark point.
- Improve positioning accuracy by repositioning



- Increase analytical instruments via configuration
- Support long-term sequence analysis of positioning accuracy
- Support correlation analysis of positioning accuracy





03. Industrialization System for International Services of FY Satellites – Observation Data Quality Optimization

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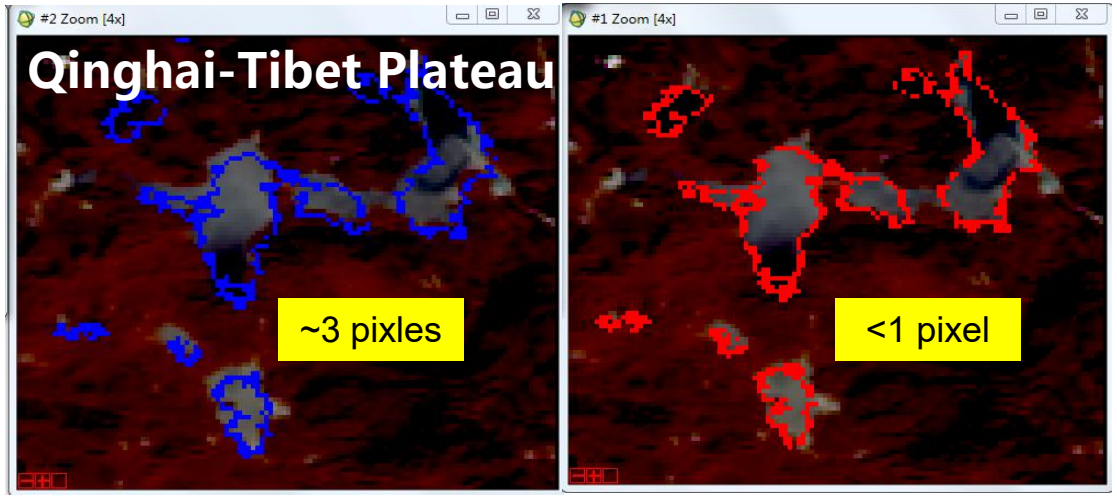
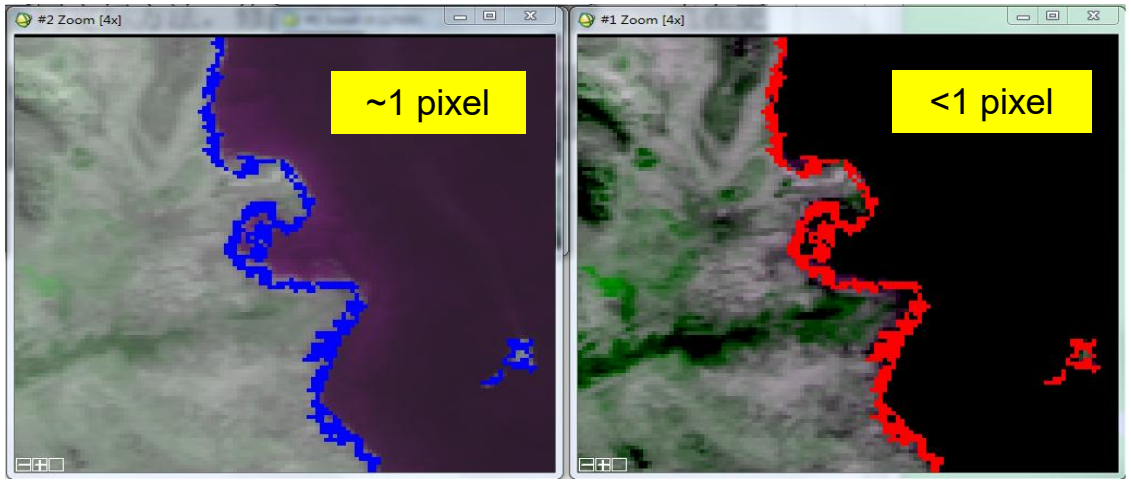
Accuracy improvement: significantly reduce the number of pixels with positioning error for FY-3



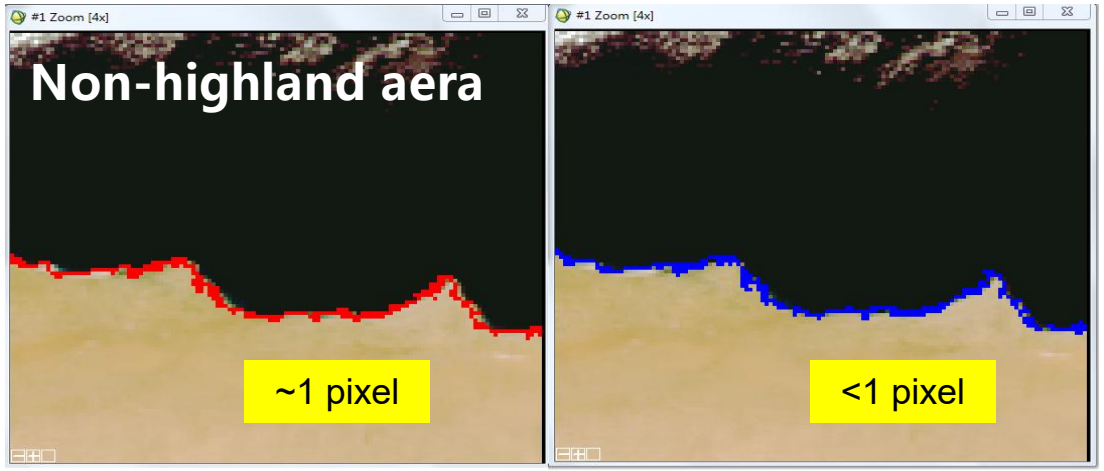
(a) before repositioning (b) after repositioning

FY3A_MERSI_20130101



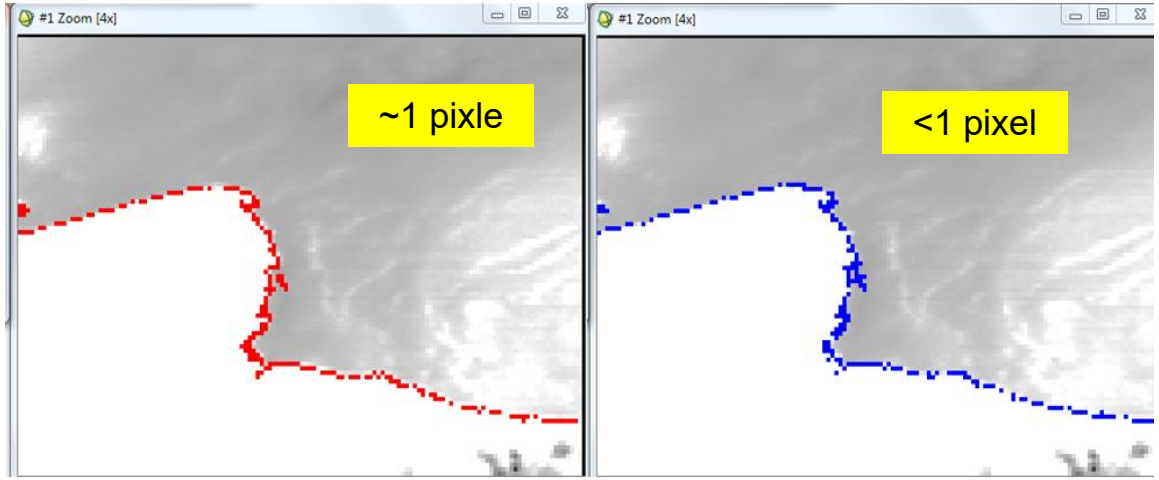
(a) before repositioning (b) after repositioning

FY3B_VIRR_20101225



(a) before repositioning (b) after repositioning

FY3A_MERSI_20130101

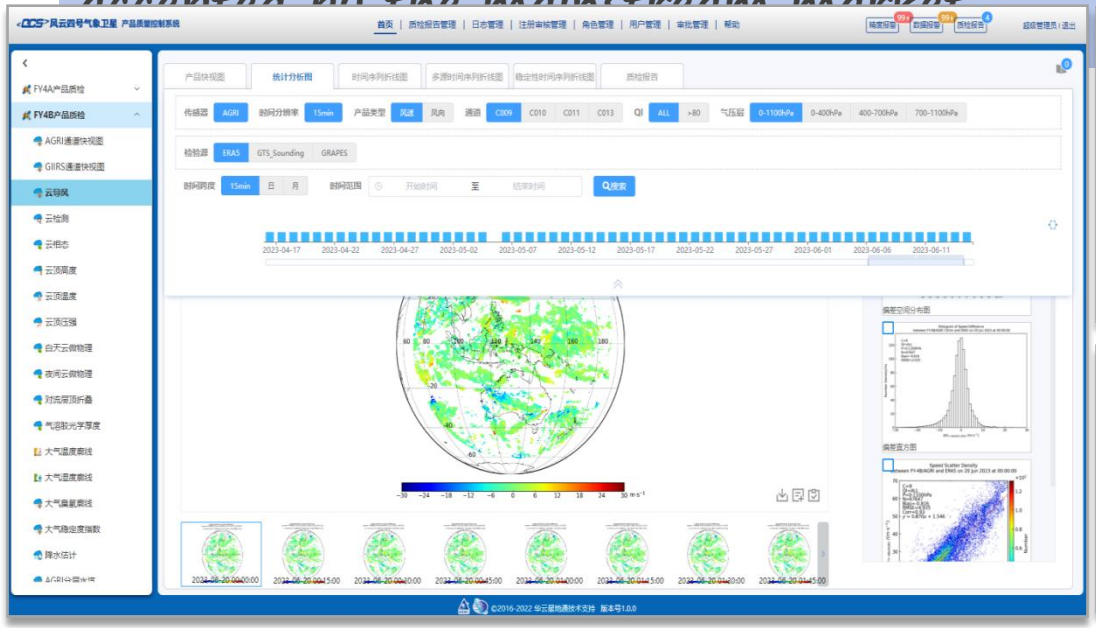


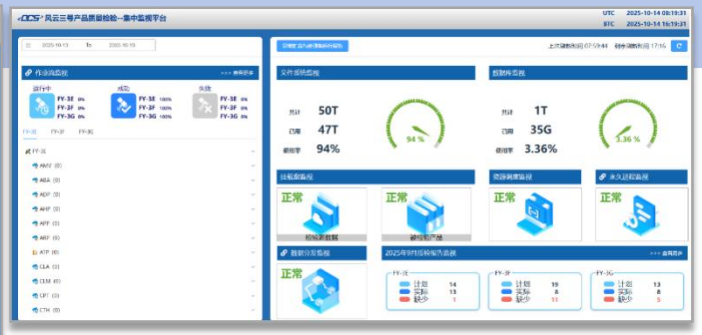
(a) before repositioning (b) after repositioning

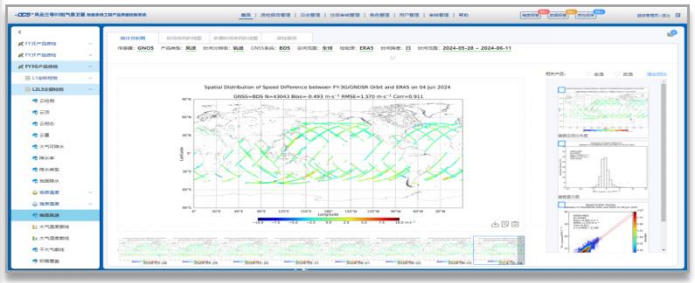
FY3B_MWRIA_20120105

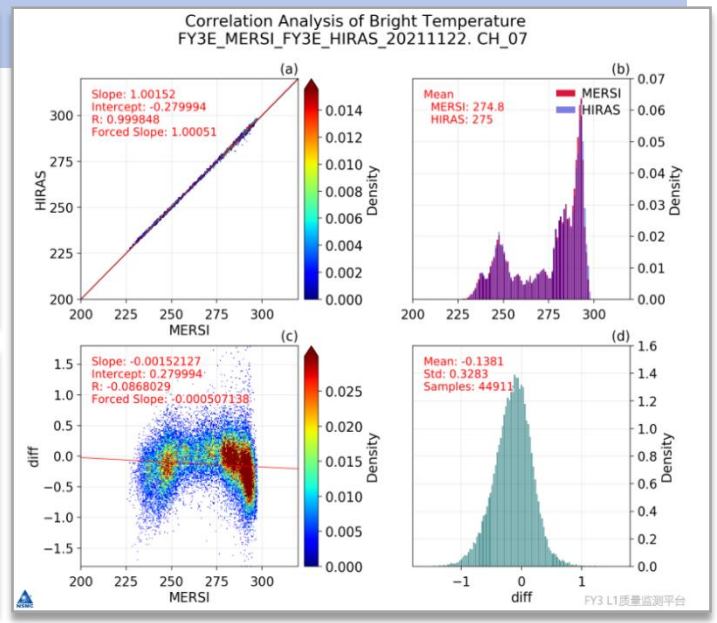
FY Satellite Product Quality Evaluation Platform

A systematic and reliable quality credit system, covering the entire life cycle of remote sensing data and product, has established, which determines whether FY satellite product can be accepted by the mainstream market.









Platform positioning and goals

- **The "quality gatekeeper" in the field of remote sensing satellite:** build a systematic, generalized and commercial quality inspection core hub.
- **Value proposition:** establish a full link from digital acquisition, to quality inspection, to result release, and to archiving traceability. Attach each piece of data with reliable quality label.

1. Standardization of Satellite-Satellite Validation and Satellite-Ground Validation for Multi-Source Data Acquisition

Challenges:

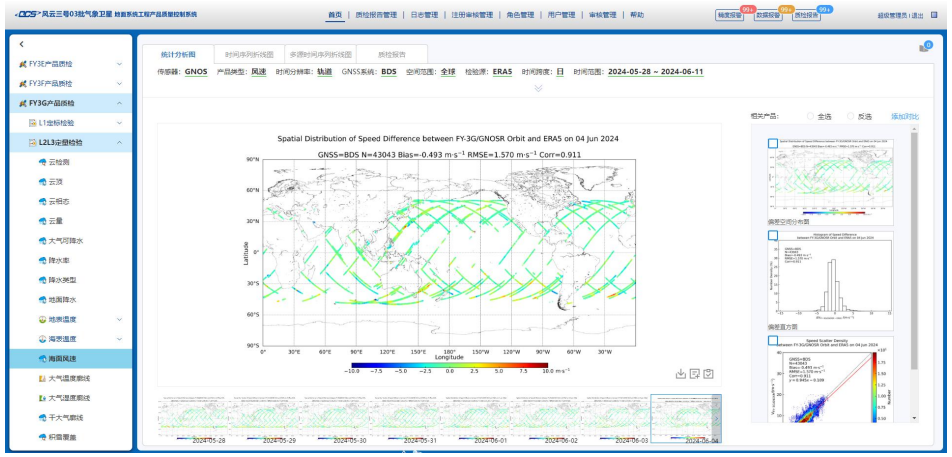
- **Various sources of inspection data** such as routine observations, field experiments, data from similar satellites, and analysis fields**;**
- **Complex formats** (over 10 types including TXT, NC, HDF, GRIB2, zip, BUFR, and EXCEL)
- **Diverse physical quantities and spatial scales**, leading to high parsing difficulty and long-time consumption**.**

The source of inspection data includes routine observations, field experiments, data from similar satellites, and analysis fields.

Platform effectiveness:

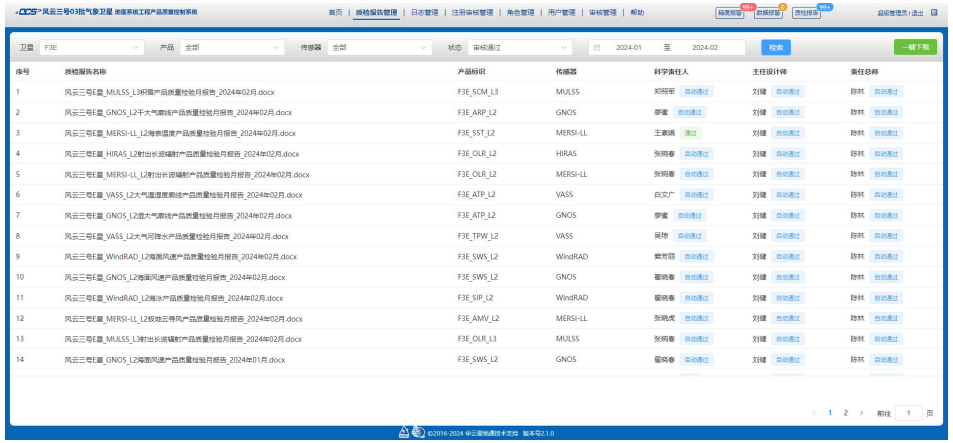
- **Normalization of Multi-source Data:** By overcoming the technical challenges of parsing over 10 types of complex data, and through format adaptation, physical unit conversion (e.g., conversion of temperature between °C/K and wind speed between m/s/km/h), and standardized reconstruction of storage structures, an intermediate data layer with "unified format, unified units, and unified storage specifications" is generated. This turns the "homogenization" of multi-source heterogeneous data into reality and provides a consistent data input benchmark for subsequent inspections.
- **Outlier Purification Engine:** Integrating technologies such as the 3σ statistical principle (identifying outliers deviating from the mean by 3 standard deviations), physical rule verification (e.g., threshold screening based on the reasonable range of meteorological elements, such as temperature and wind speed boundary values), and temporal continuity judgment. It filters data noise at the source and ensures the "purity" of input data.

2. Multi-dimensional Inspection: Comparative Evaluation of Various Indicators, Multi-star Comprehensive Comparison, and Long-time-series Trend Analysis



Interface1: Statistical analysis chart of quality inspection results

Interface 2: Long-time-series tracking of quality inspection



Interface 3: The third level audit of the quality inspection report
The audit is authoritatively released on the data service network.

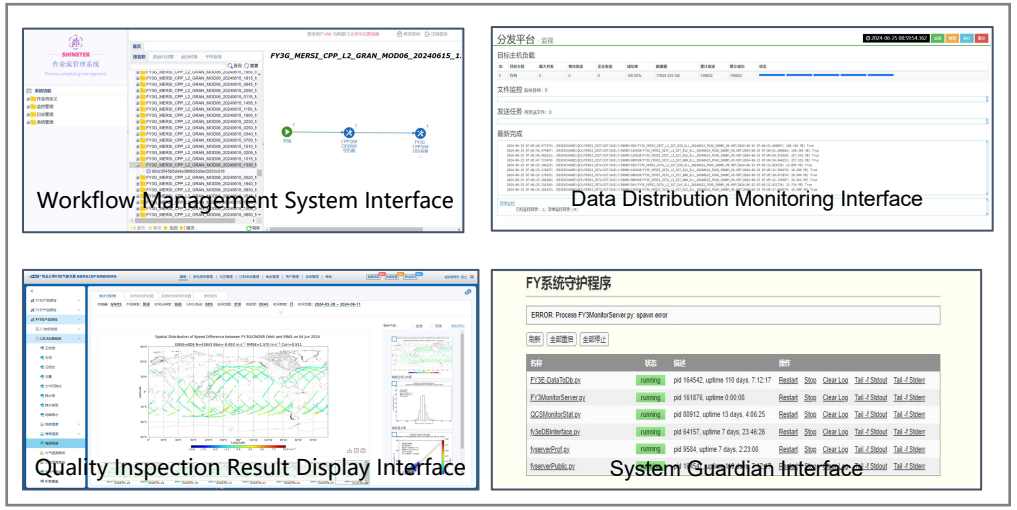
Interface 4: Product accuracy alarm

3. Result Platform Release: Operational and Intelligent Release Methods

From the perspective of operation and maintenance (O&M) users, the integrated comprehensive monitoring system includes functions for monitoring the operation of quality inspection tasks, file systems, databases, mounted disks, permanent processes, resource scheduling, data distribution, and report generation. O&M personnel only need a single interface to fully understand the system's operation status, which reduces the technical requirements for on-duty staff and supports the stable operation of the system.

- **Integrated Monitoring View:** A multi-satellite architecture enabling "full situational awareness on a single screen".
- **Closed-loop management of anomalies**: Automatically captures faults (such as process crashes and processing failures), triggers alarms, and records "star mark, fault code, type, description, and alarm time". It supports manual entry of "processing time, responsible person, and solution", forming a full-link traceability of faults.
- **Scheduled Automatic Updates**: Automatically updates monitoring status without manual intervention.

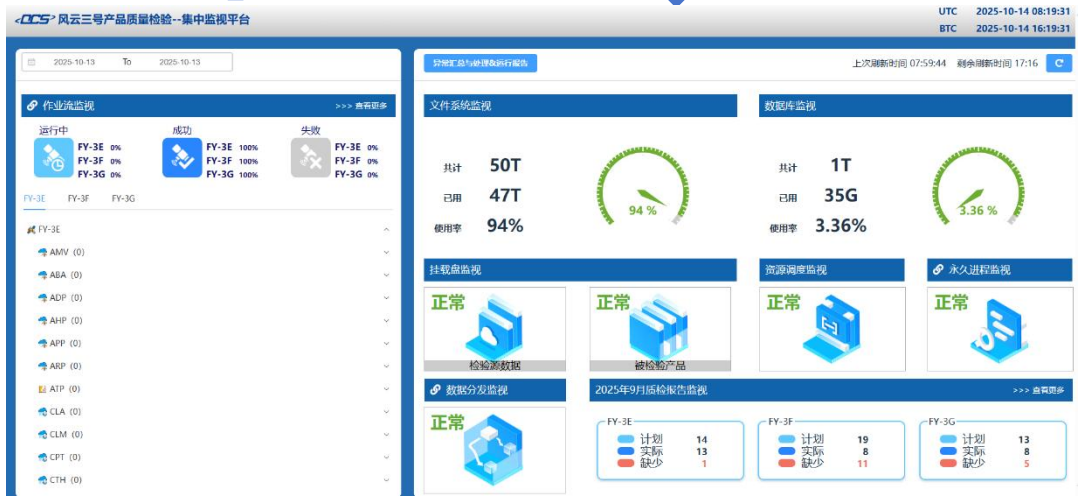
The success rate of the system's operational implementation reaches 99.7%.



View Details

Link Jump

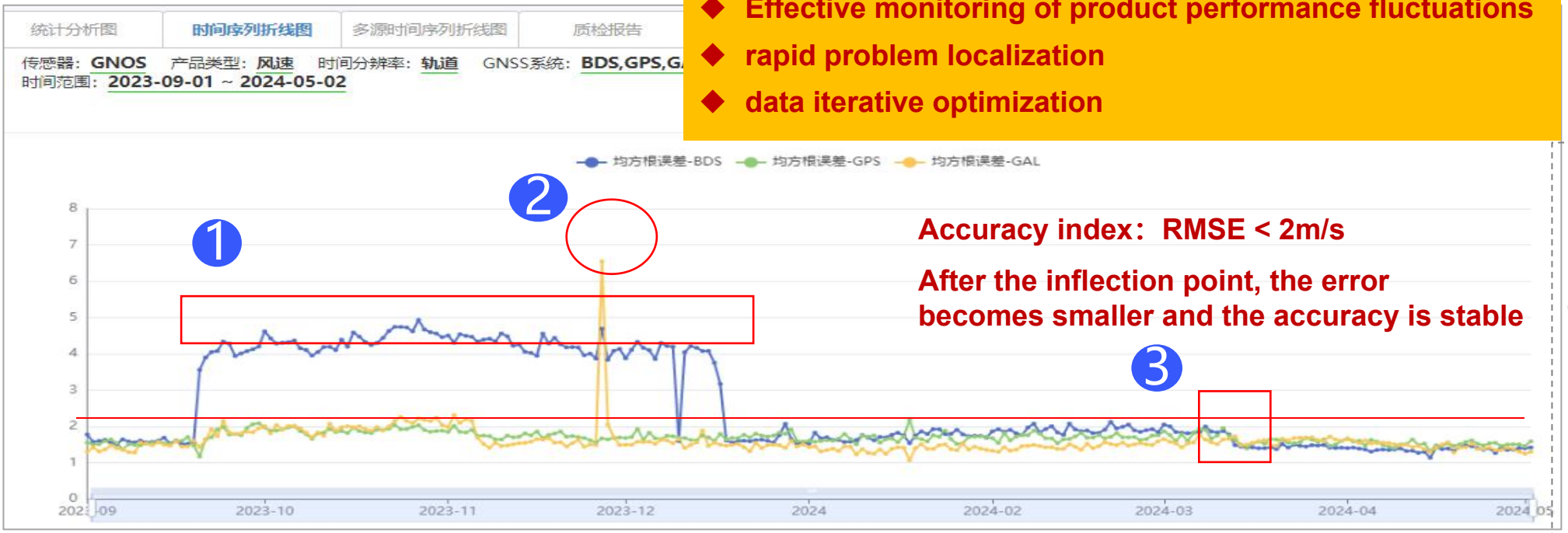
centralized monitoring

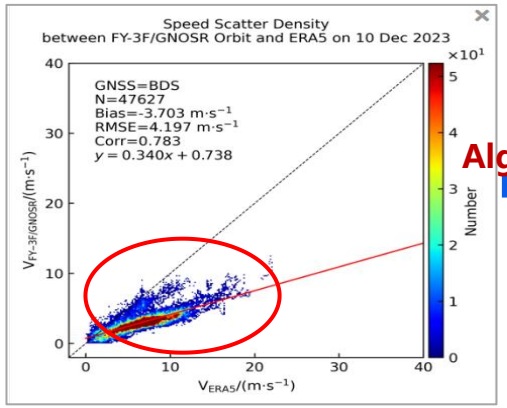


Centralized monitoring Interface

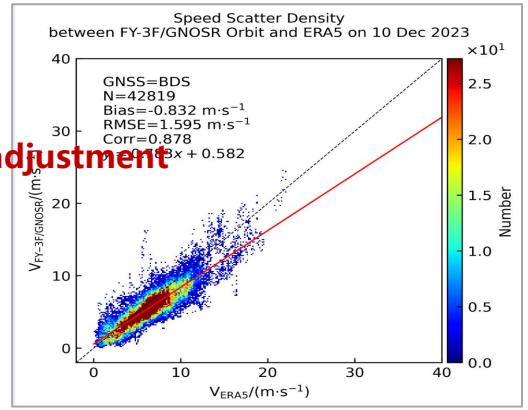
4. Rapid Identification of Algorithm Anomalies and Improvement of Product Accuracy

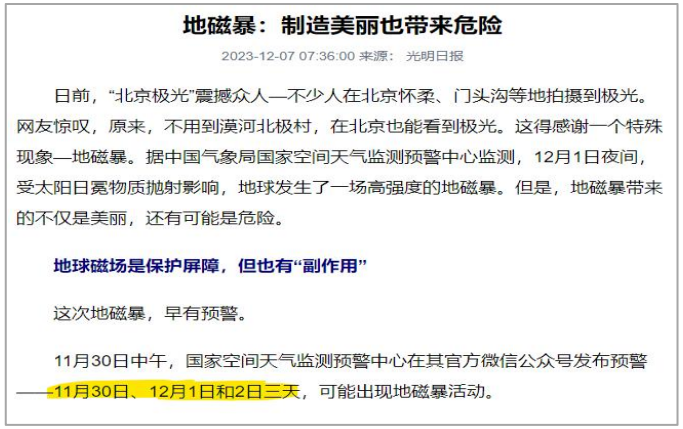
- Effective monitoring of product performance fluctuations
- rapid problem localization
- data iterative optimization





Algorithm adjustment





地磁暴：制造美丽也带来危险

2023-12-07 07:36:00 来源： 光明日报

日前，“北京极光”震撼众人——不少人在北京怀柔、门头沟等地拍摄到极光。网友惊叹，原来，不用到漠河北极村，在北京也能看到极光。这得感谢一个特殊现象——地磁暴。据中国气象局国家空间天气监测预警中心监测，12月1日夜间，受太阳日冕物质抛射影响，地球发生了一场高强度的地磁暴。但是，地磁暴带来的不仅是美丽，还有可能是危险。

地球磁场是保护屏障，但也有“副作用”

这次地磁暴，早有预警。

11月30日中午，国家空间天气监测预警中心在其官方微信公众号发布预警——11月30日、12月1日和2日三天，可能出现地磁暴活动。

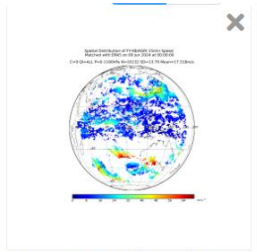
Long-time-series tracking of sea breeze velocity product based on FY-3F GNOS data received from 3 kinds of GNSS systems.

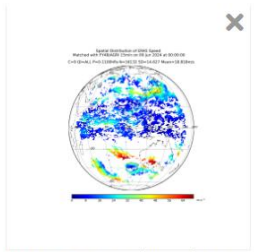
- Identify product algorithm abnormality: abnormal accuracy of see breeze velocity, incorrect L1 preprocessing, error replacement in the lookup table.
- Identify external interference: geomagnetic storm
- Optimize product algorithms: optimize geophysical empirical models and update inversion coefficients

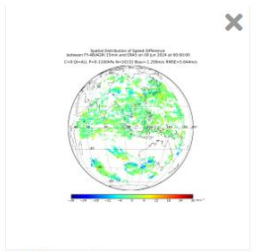
03. Industrialization System for International Services of FY Satellites – Quantitative product accuracy improvement

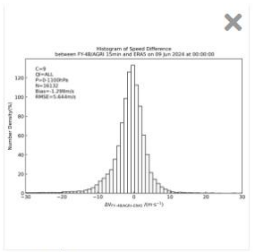
Accuracy improvement: Cloud Motion Wind Comparison between FY-4B and ERA5

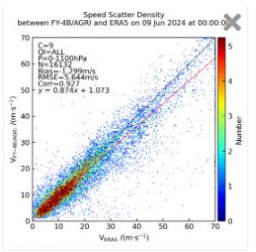
Channel 9


匹配后FY4B产品空间分布图


匹配后ERA5产品空间分布图

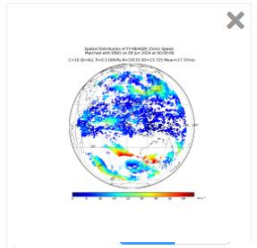

偏差空间分布图

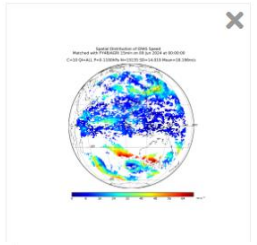

偏差直方图

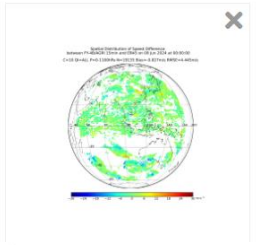


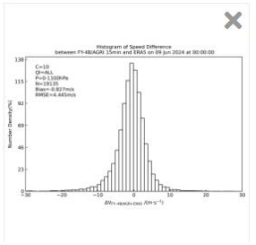
散点密度图

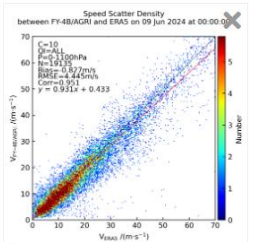
Channel 10



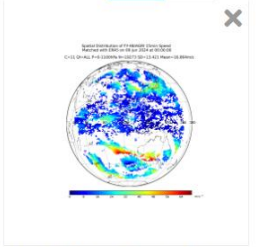


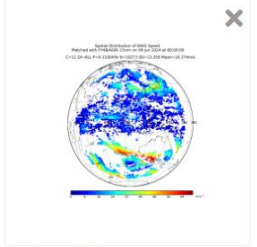


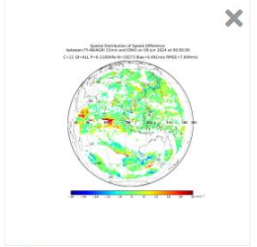


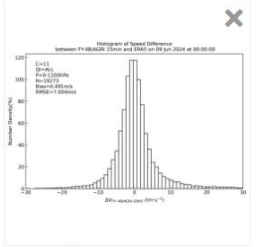


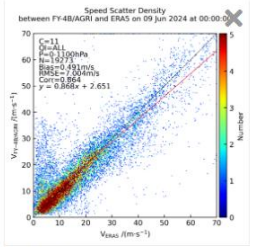
Channel 11


匹配后FY4B产品空间分布图


匹配后ERA5产品空间分布图

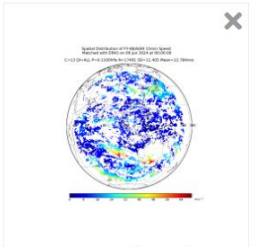

偏差空间分布图

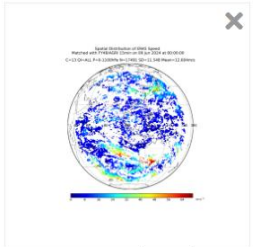

偏差直方图

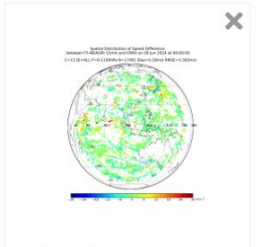


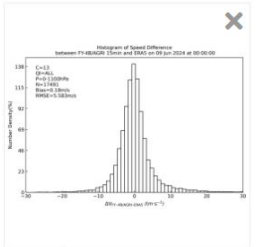
散点密度图

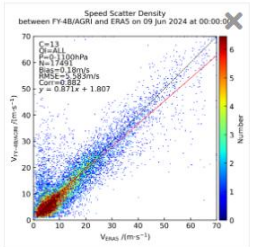
Channel 12


匹配后FY4B产品空间分布图


匹配后ERA5产品空间分布图


偏差空间分布图


偏差直方图



散点密度图

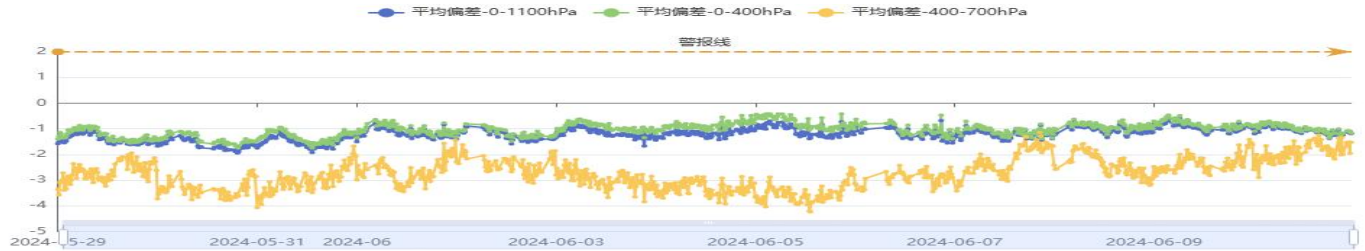
Difficulties: complexity in inspection dimensions: both products and inspection data are vector fields

Analysis method: cross-matching time, longitude, latitude, and pressure layer; corss-analysis from different channels, pressure layers, and mass codes.

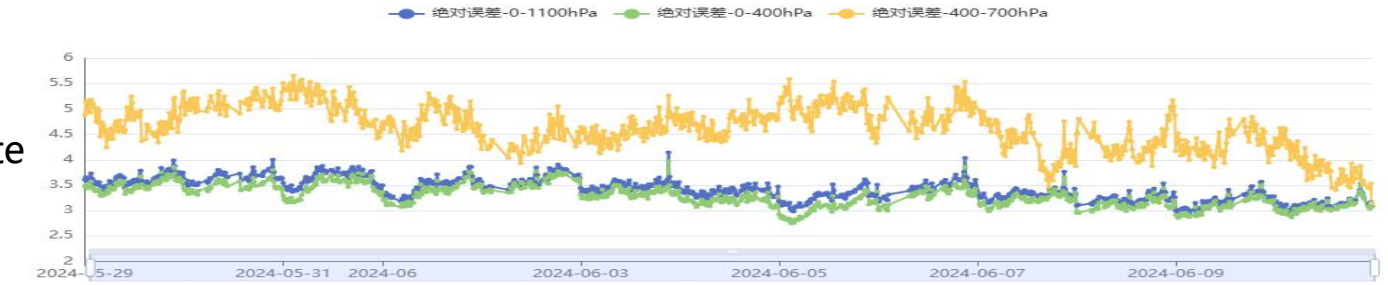
03. Industrialization System for International Services of FY Satellites – Quantitative product accuracy improvement

number of matched samples

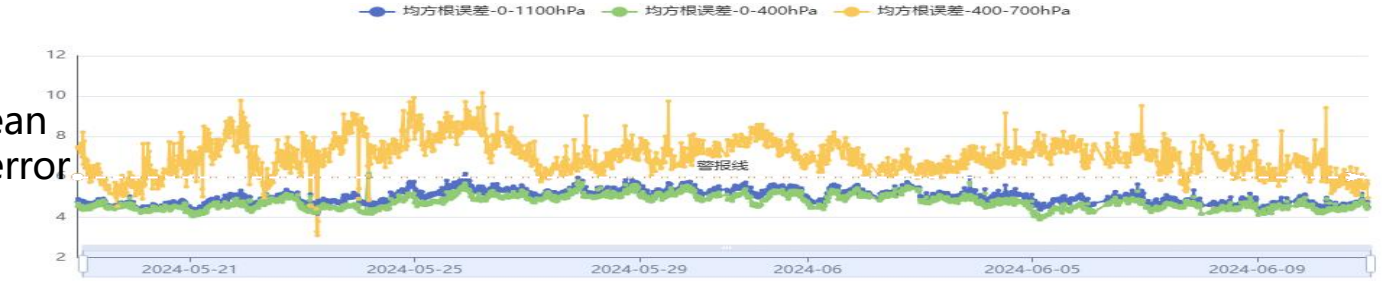
mean bias



Absolute error



Root mean square error



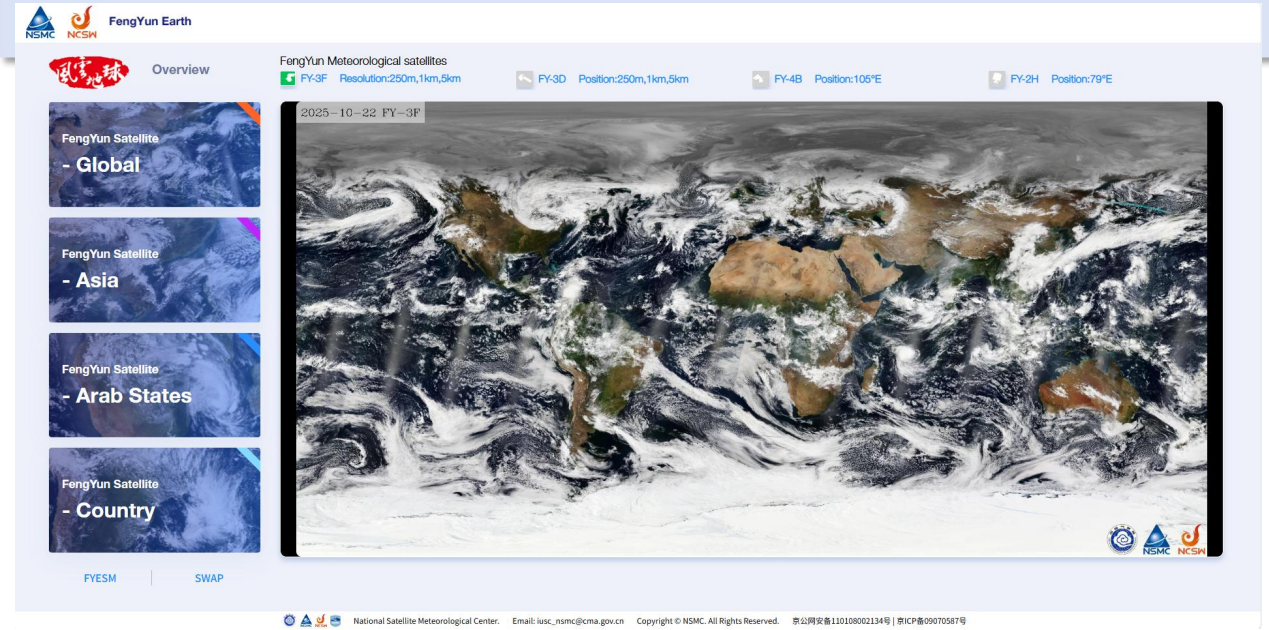
Cloud Motion Wind Comparison between FY-4B and ERA5 (the accuracy inspection of products between Satellite data and Analysis data)

Entire layer(blue): 0-1100hPa
Upper layer(green): 0-400hPa
Middle layer(yellow): 400-700hPa
Low level: 700-1100hPa

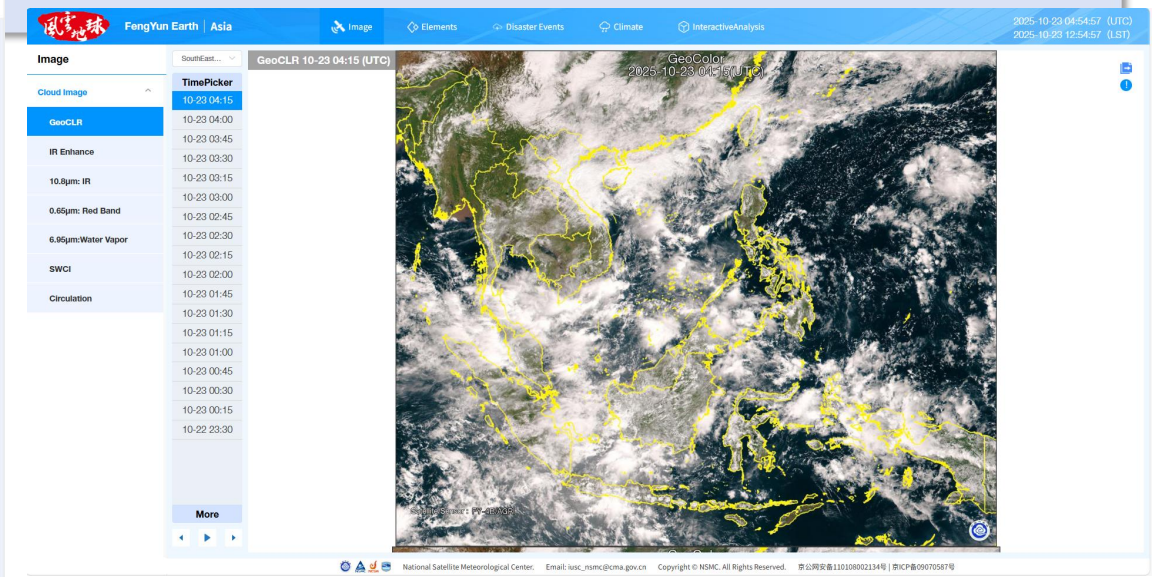
On the left is the wind speed of Channel 10. Below are the comparison results of outputs when selecting the entire layer, upper layer, and middle layer: the quality inspection index values of the entire layer and upper layer tend to change stably, while those of the middle layer fluctuate slightly.

International Customized Application Service Platform

The International Customized Application Service Platform leverages the advanced remote sensing technology and abundant data resources of China's Fengyun series meteorological satellites. By integrating diverse international user needs with capabilities in remote sensing data processing, analytical modeling, and application development, it establishes a global service platform capable of providing tailored remote sensing solutions for users across different countries, regions, and industries. This platform enables end-to-end support from "data provision" to "customized services," serving as the core vehicle for the industrial development of Fengyun satellites' international services.



Homepage



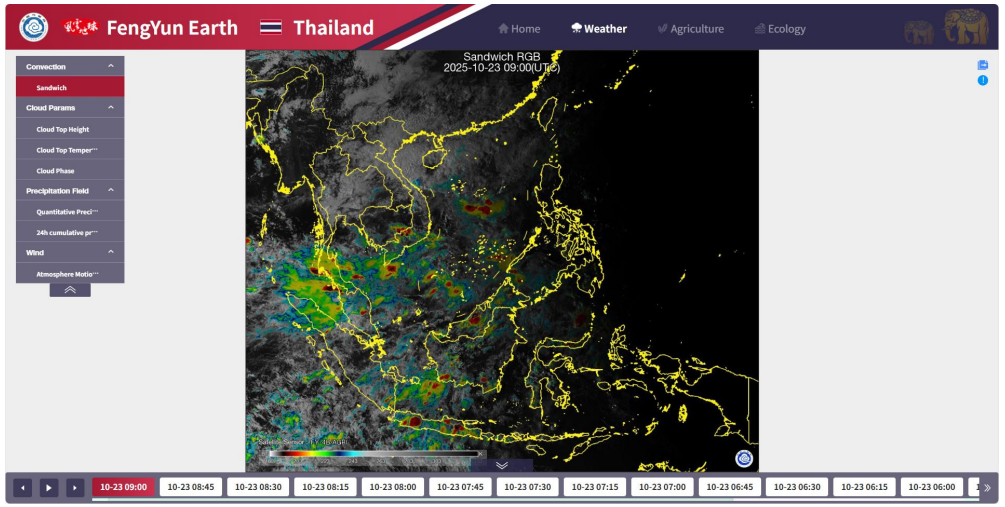
Southeast Asia Regional Cloud Image

International Customized Application Service Platform

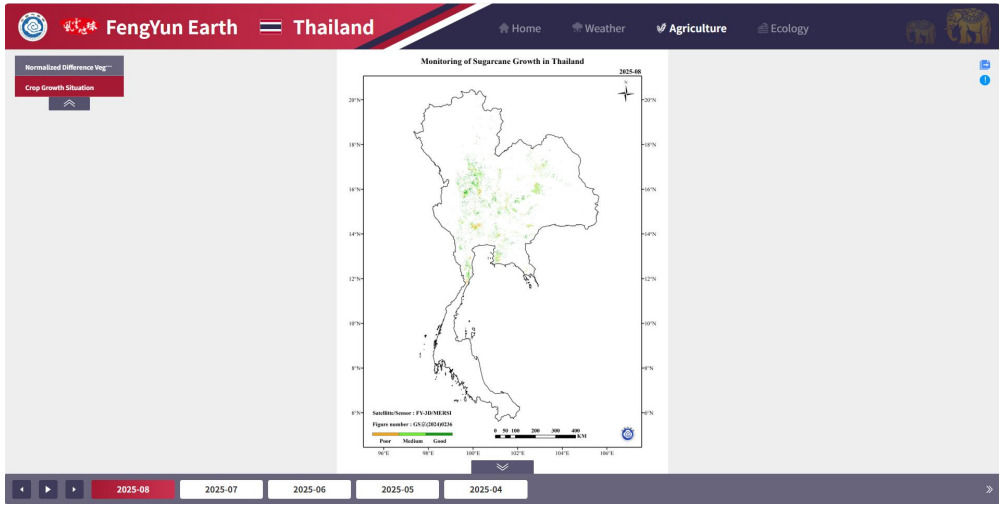
Platform Functionality

Data customization and processing: According to the needs of users in different countries and regions, targeted processing is performed on the original remote sensing data of Fengyun satellites, including data format conversion, regional cropping, synthesis, and other contents.

Thematic Application Services: Focusing on global meteorological disasters, weather, atmospheric environment, agriculture, climate change and other fields, it provides international users with real-time, automatic, thematic application development, high-efficiency, and refined meteorological product services with regional characteristics, enhancing global meteorological disaster monitoring and early warning capabilities.



Weather



Agricultrue

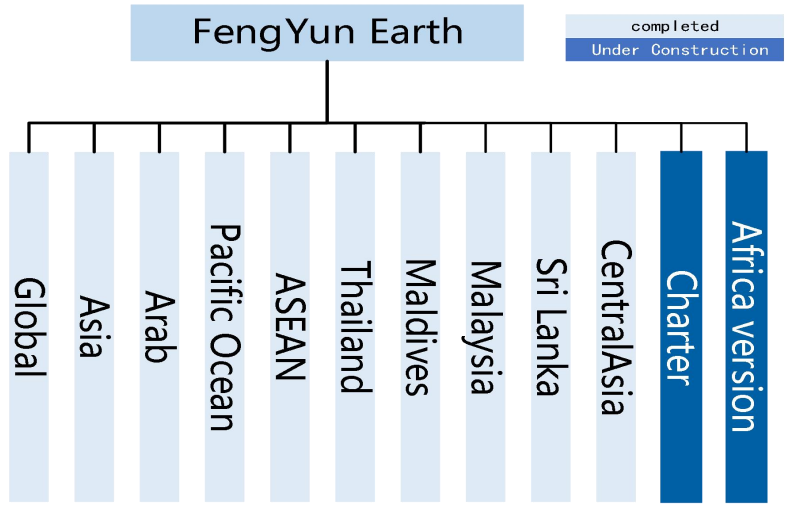
International Customized Application Service Platform

User tiering solution: Based on infrastructure conditions ,design differentiated system deployment plans to enhance user experience. For overseas direct reception stations and CMACAST users, adopt local deployment models to avoid data latency caused by network transmission; for professional users with stable network environments, provide interactive GIS and remote sensing product integration to meet high-intensity professional demands; for users without direct reception stations and limited network conditions, prioritize thematic map displays to accommodate basic usage scenarios.

Interface design principles: Adhere to the core concepts of "scientific, standardized, clear, aesthetically pleasing, and user-friendly" in overall planning, committed to creating high-quality visual and operational experiences for users.

Multilingual support strategy: The system supports multilingual switching functionality, with English as the default, to facilitate smooth usage for international users.

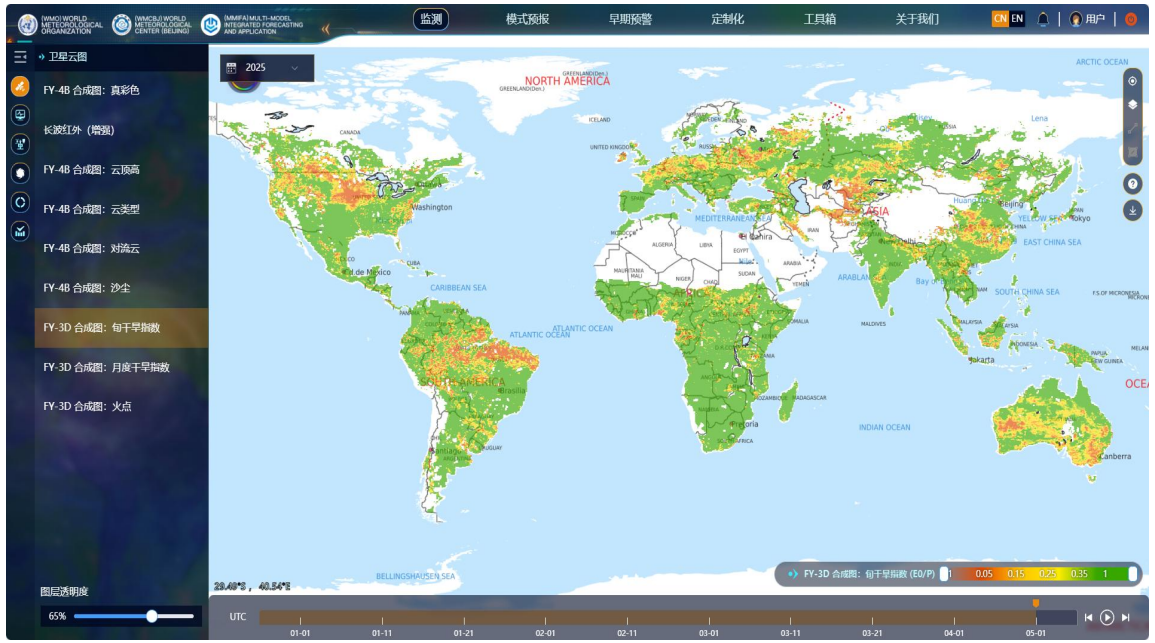
The system features scalability and customizability: Adopting a modular architecture design, it supports flexible functional expansion through adding new modules, interfaces, or plugins, significantly reducing time and resource costs for iterative updates. Meanwhile, it allows customization of functional configurations based on user habits, meeting both standardized needs in general scenarios and precisely addressing niche requirements in specialized scenarios. New demands can be rapidly adapted without redevelopment, enabling long-term efficient reuse.



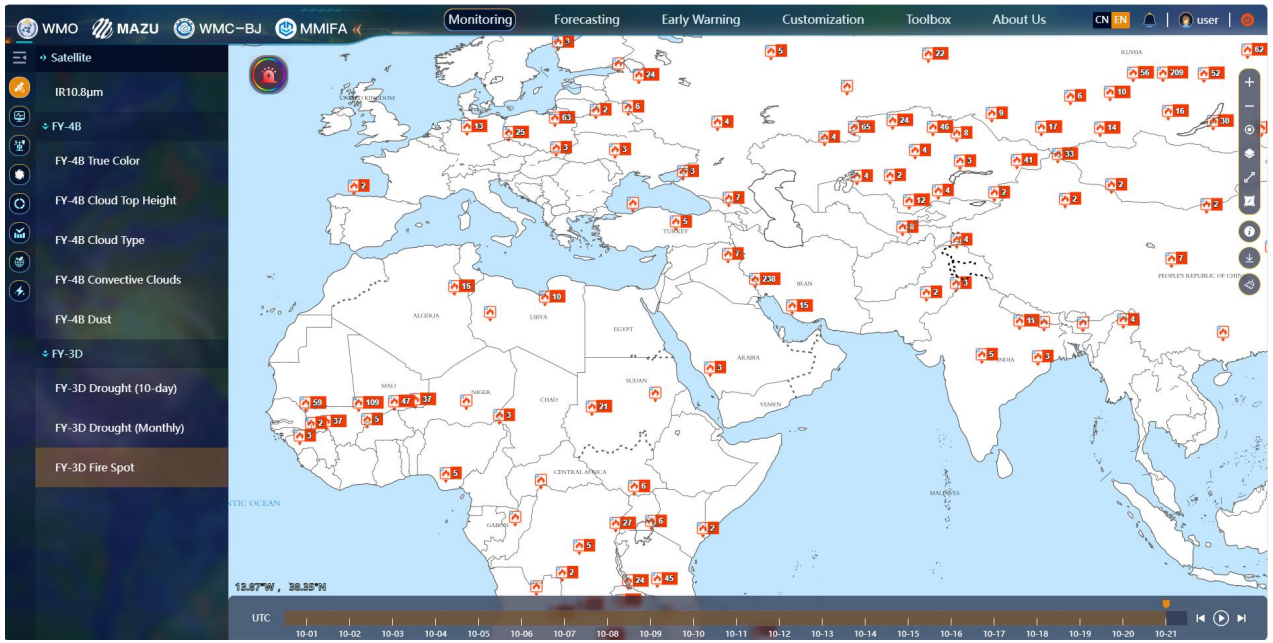
total :12, completed:10, uncompleted:2

International Customized Application Service Platform

Providing high-quality customized Fengyun satellite meteorological data services for members of the World Meteorological Organization (WMO) to supplement gaps in global meteorological observation data.



Early warning platform - Global drought monitoring

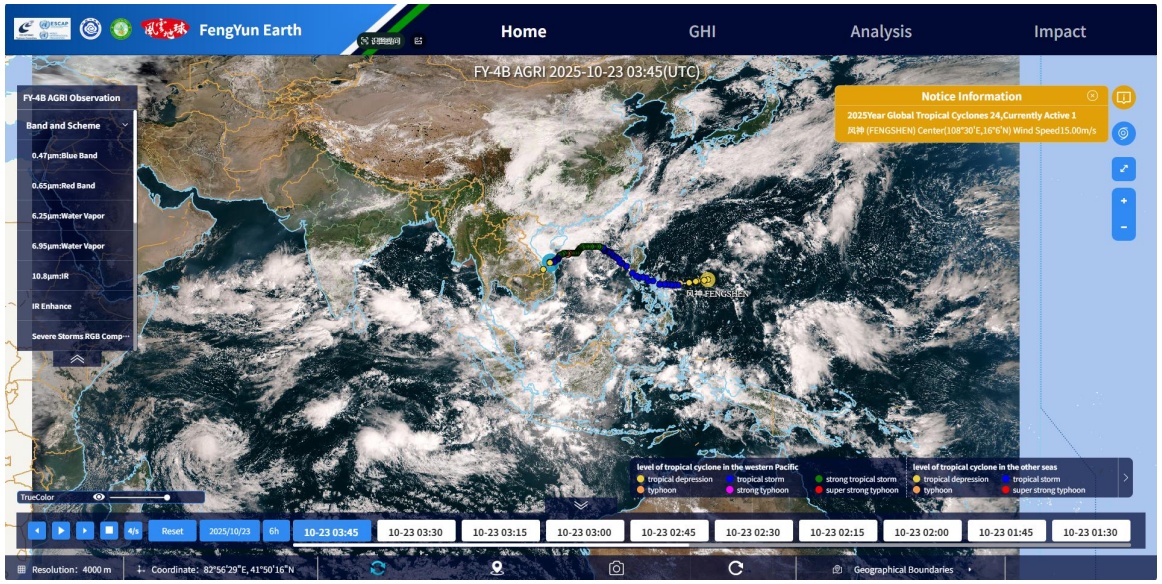


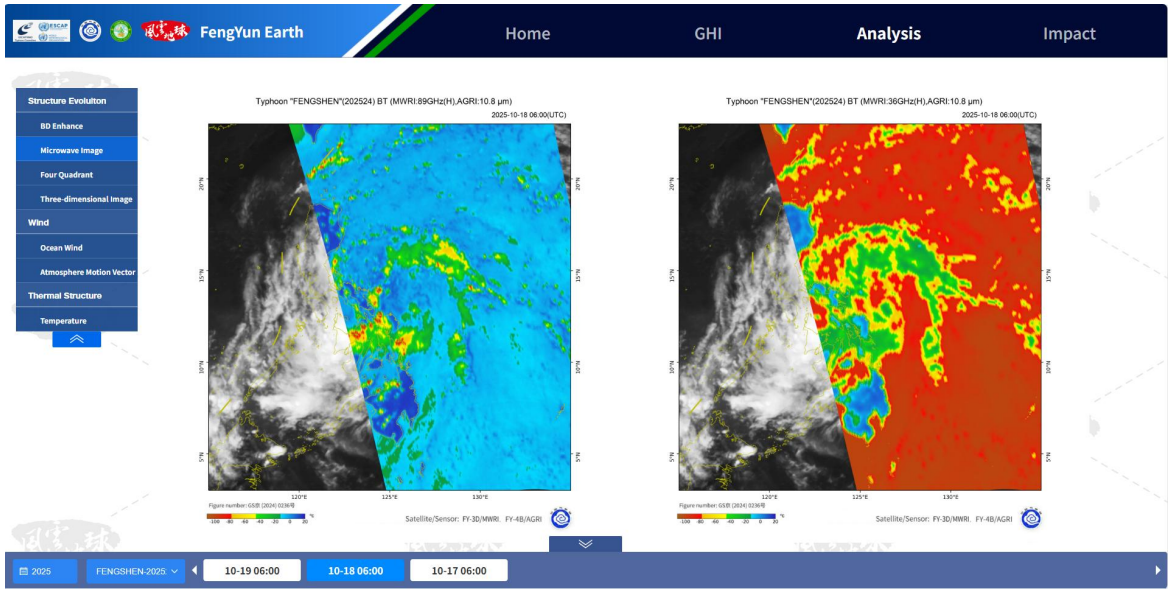
Early warning platform - Global fire monitoring

International Customized Application Service Platform

Supporting international disaster emergency response: Quickly providing customized remote sensing data services to affected areas during global meteorological disasters.

Typhoon Monitoring

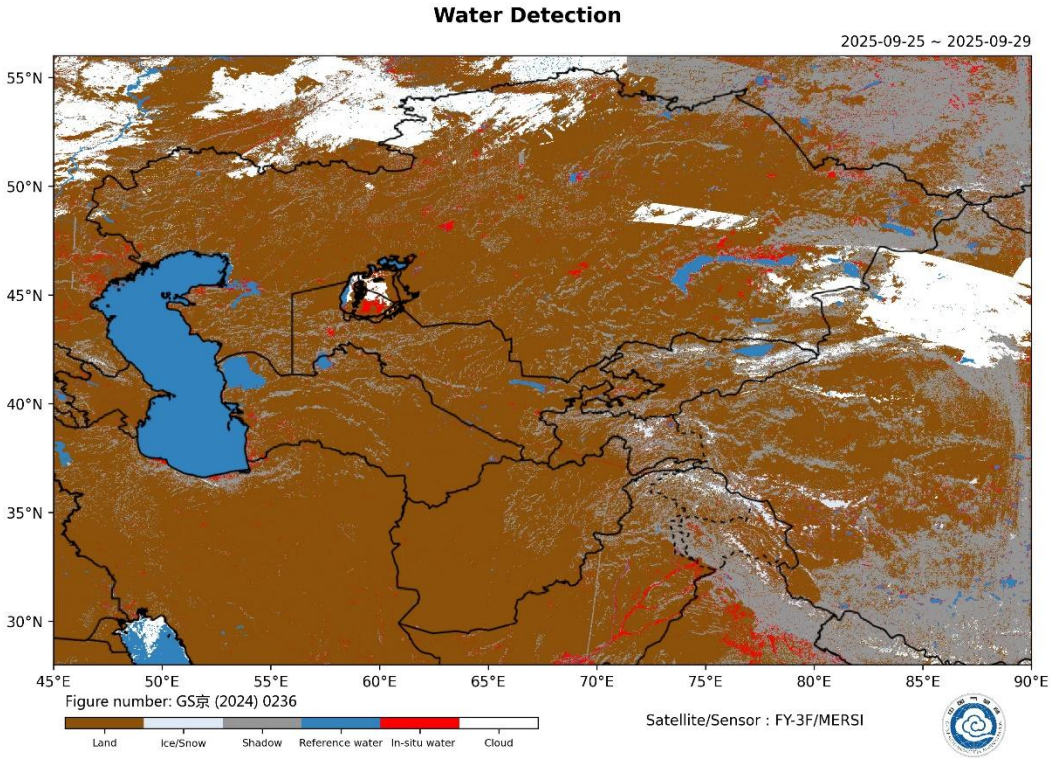




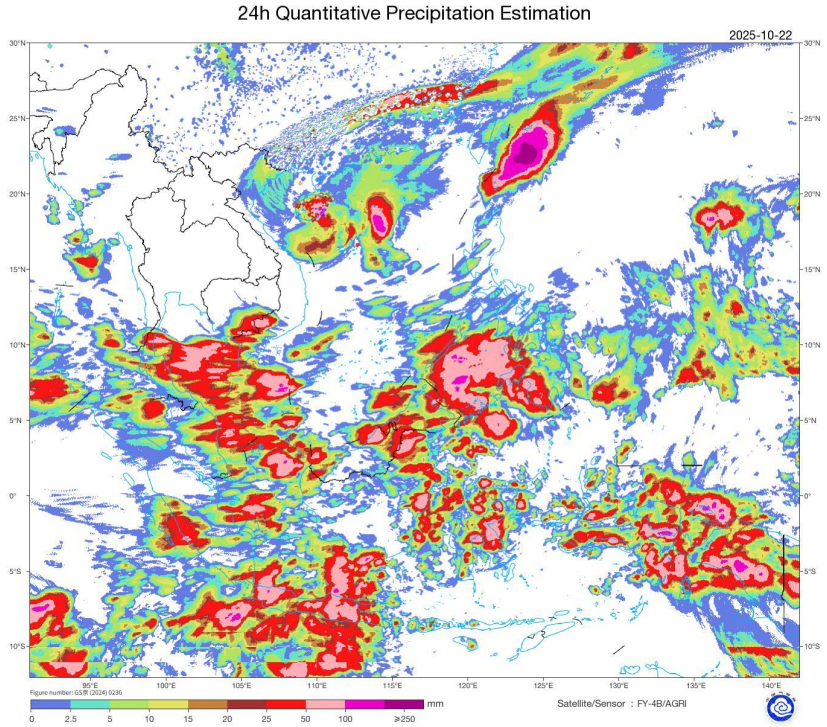
☐ International Customized Application Service Platform

Assisting with international disaster emergency response: When global meteorological disasters occur, quickly provide customized remote sensing data services to the affected areas.

Flooded water bodies



Accumulated precipitation

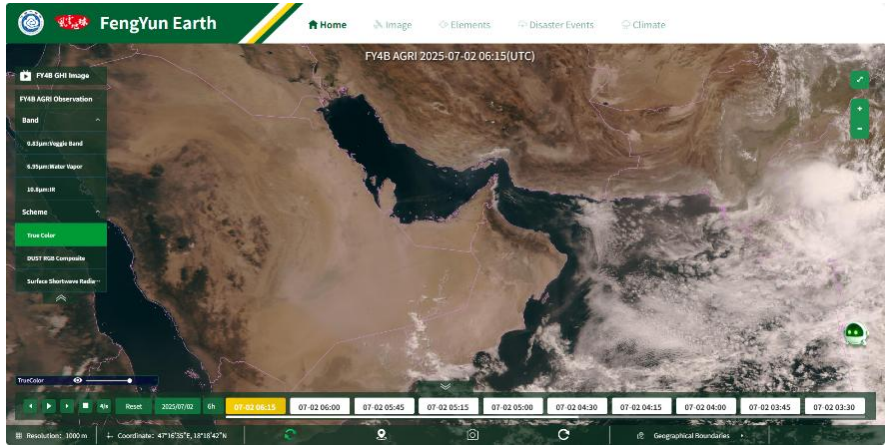


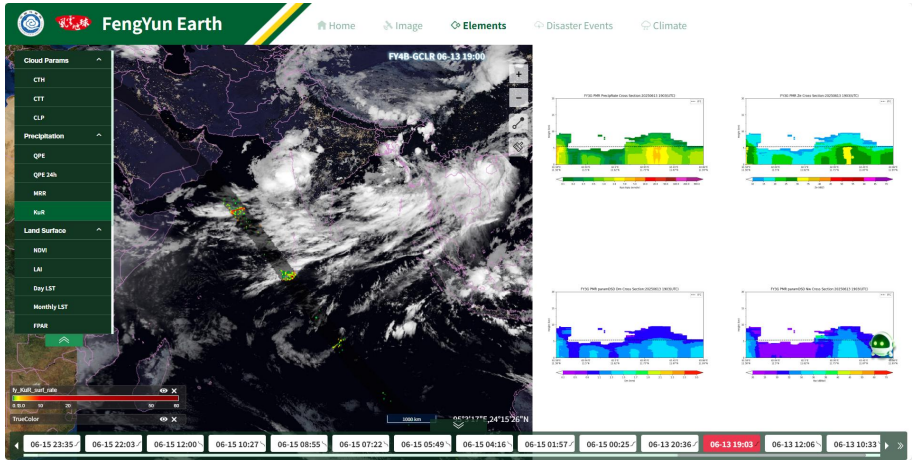
Provided data service support for more than 10 flood and heavy rainfall events

International Customized Application Service Platform

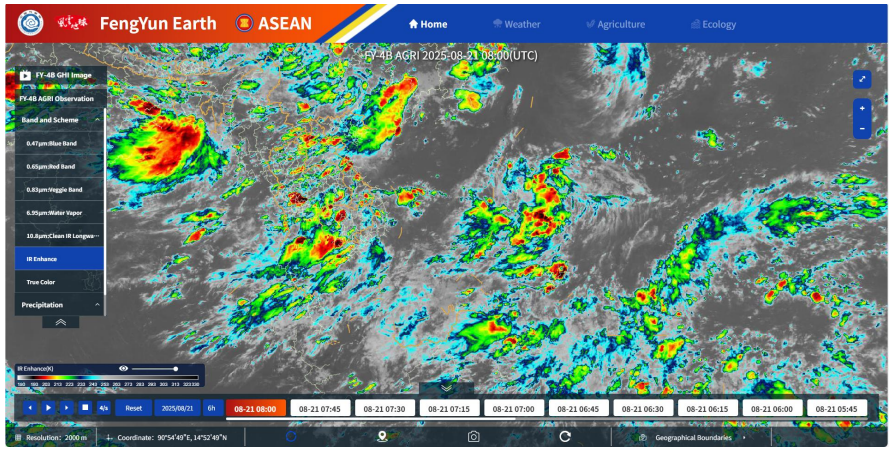
Promoting international remote sensing conference exchanges and technical cooperation

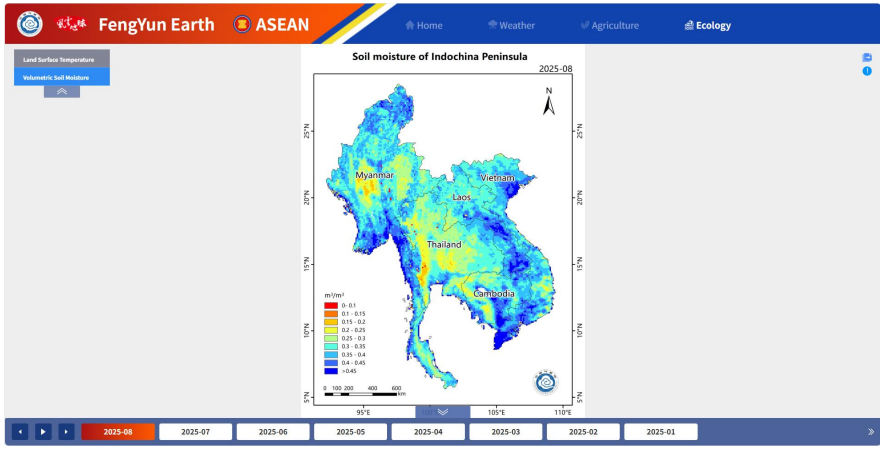
Arab version





ASEAN version



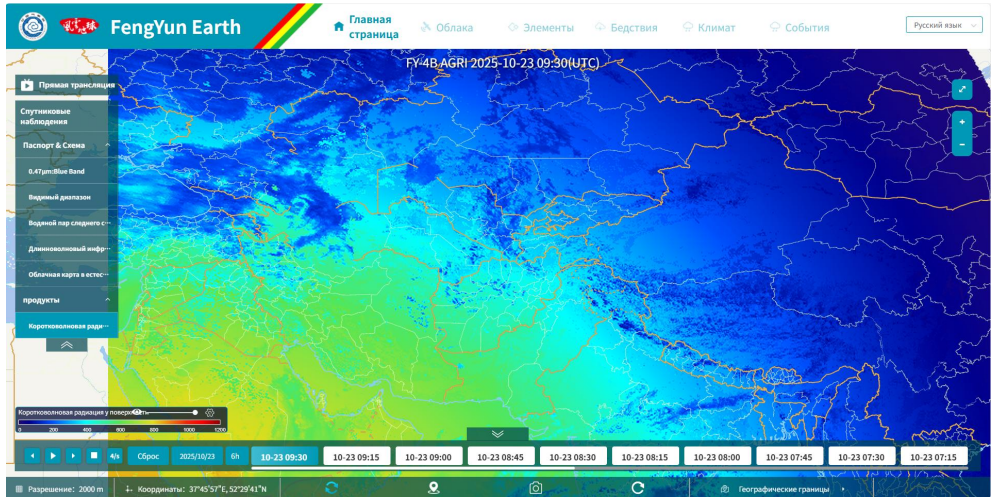


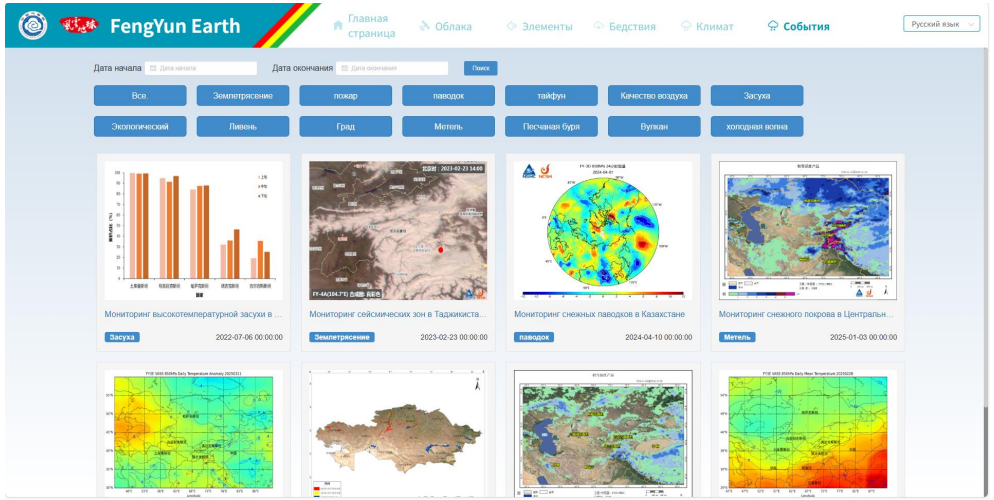
Support for important international conferences and visits (3 times in 2023, 12 times in 2024, and 10 times in 2025), and intelligent meteorological services (intelligent question and answer)

International Customized Application Service Platform

Promoting international remote sensing conference exchanges and technical cooperation

Central Asia version





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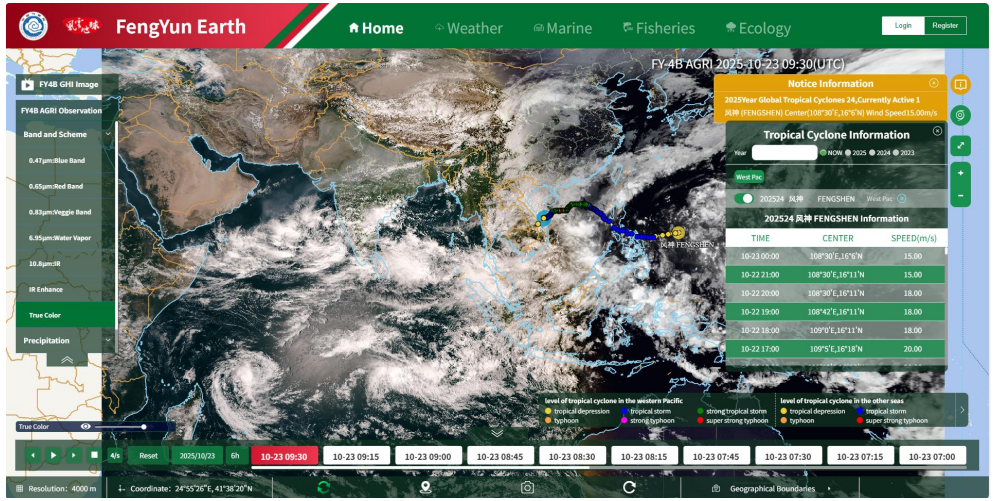
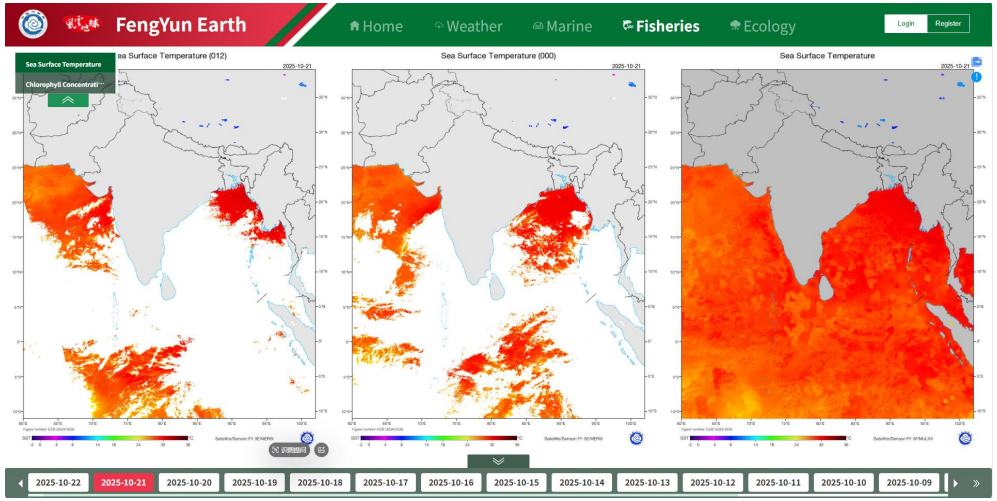




Support for important international conferences and visits (3 times in 2023, 12 times in 2024, and 10 times in 2025), and intelligent meteorological services (intelligent question and answer)

01. Company Profile

02. Background of Meteorological Satellite Commercialization

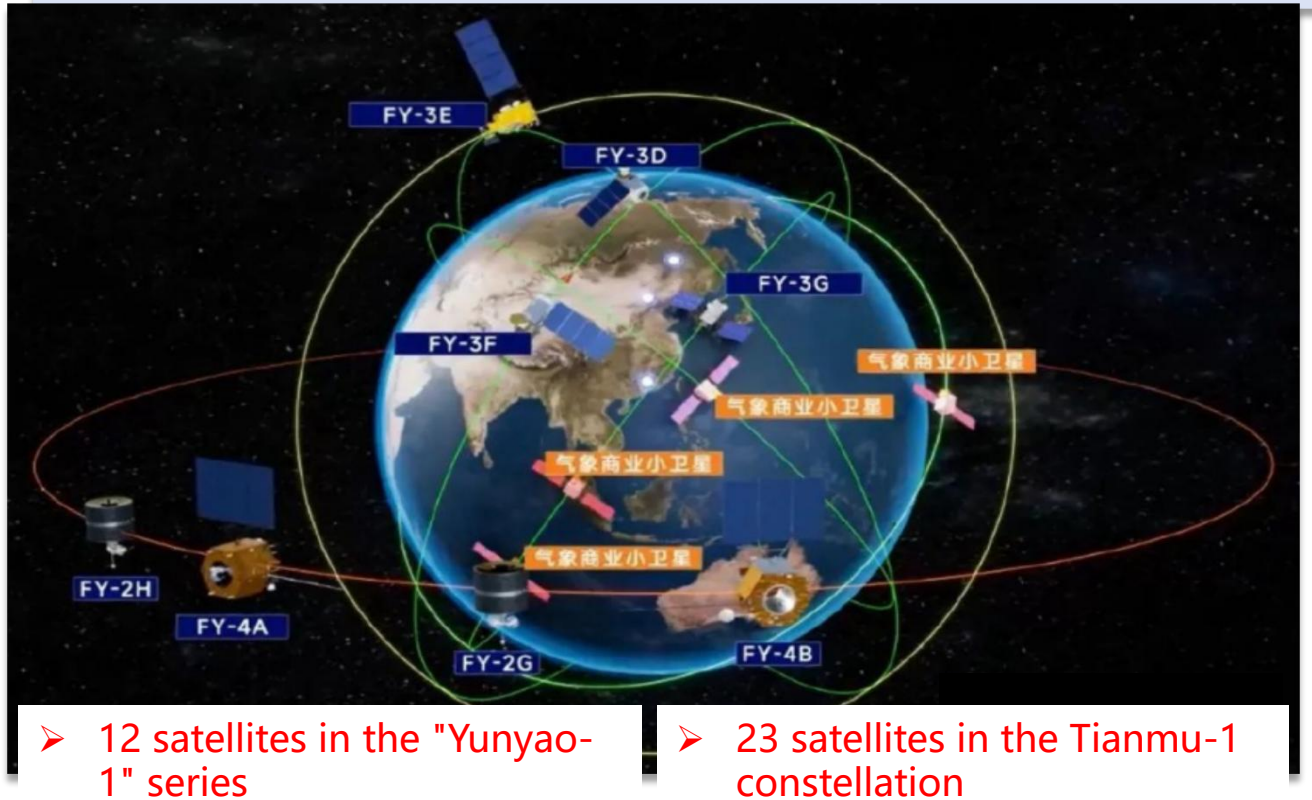
03. Industrialization System for International Services of Fengyun Meteorological Satellites

- ★ Meteorological Satellite Infrastructure Construction
- ★ Fengyun Satellite Observation Data Quality Platform
- ★ Fengyun Satellite Quantitative Product Accuracy Platform
- ★ International Customized Application Service Platform

04. Exploration and Outlook on Meteorological Satellite Commercialization

04. Exploration and Prospects of Meteorological Satellite Commercialization

By integrating the Tianmu-1 and Yunyao-1 constellations into the operational system, FY satellites and commercial satellites have achieved a leap from "data complementarity" to "joint networking and collaborative observation." This government-enterprise collaboration model marks the official entry of my country's space-based meteorological observation system into a new stage of integrated development, led by the government and participated by enterprises.



- 12 satellites in the "Yunyao-1" series
- 23 satellites in the Tianmu-1 constellation

Through platform support, the data accuracy of 31 "Tianmu" small satellite products and 22 "Yun Yao" products have been tested and evaluated, effectively supplementing the FY satellites.

04. Exploration and Prospects of Meteorological Satellite Commercialization

Core Summary

- ✓ **The path to industrialization is clear:** Relying on the international infrastructure and platform-based service capabilities of Fengyun satellites, a "primary-secondary" collaborative industrial ecosystem has been established, clarifying the positioning and development space of commercial satellites in the national system.
- ✓ **The closed loop of commercial value has been opened:** data from commercial satellites such as Tianmu and Yunyao have been successfully connected to the Fengyun satellite national business system, marking the official entry of commercial data into the national application sequence.
- ✓ **Unified data credit system construction:** The accuracy and quality assessment platform lays the foundation for assetization by labeling commercial data with a "trusted label".
- ✓ **Diversified application scenarios:** Based on Fengyun data and supplemented by commercial data, it has spawned diversified and in-depth applications in fields ranging from disaster prevention and mitigation, public safety to finance, new energy, agriculture, etc., and its market value has been verified on a large scale.
- ✓ **Solid international foundation:** Fengyun satellites' global ground station network and mature international service experience provide a high-starting platform and channel for commercial meteorological services to "borrow a boat to go to sea" and explore the global market.

04. Exploration and Prospects of Meteorological Satellite Commercialization

Future cooperation prospects

Technology integration

Promote the orderly opening of the Fengyun satellite ground receiving station network to commercial satellites, build a collaborative receiving system of "national leadership and commercial supplementation", and maximize data reception efficiency and coverage.

Global service

Build an intensive cloud + terminal "international service application cloud platform", integrate the globally distributed site network resources, data resources and computing resources into a unified service interface, and realize global regional customized platform support application services.

Industrial Ecology

With "infrastructure" as the cornerstone and "platform" as the hub, we will attract diverse entities such as data, algorithms, and applications. Through a clear benefit-sharing mechanism, we will stimulate innovation and form a positive industrial cycle of "more participants → richer applications → stronger platform capabilities → more participants."

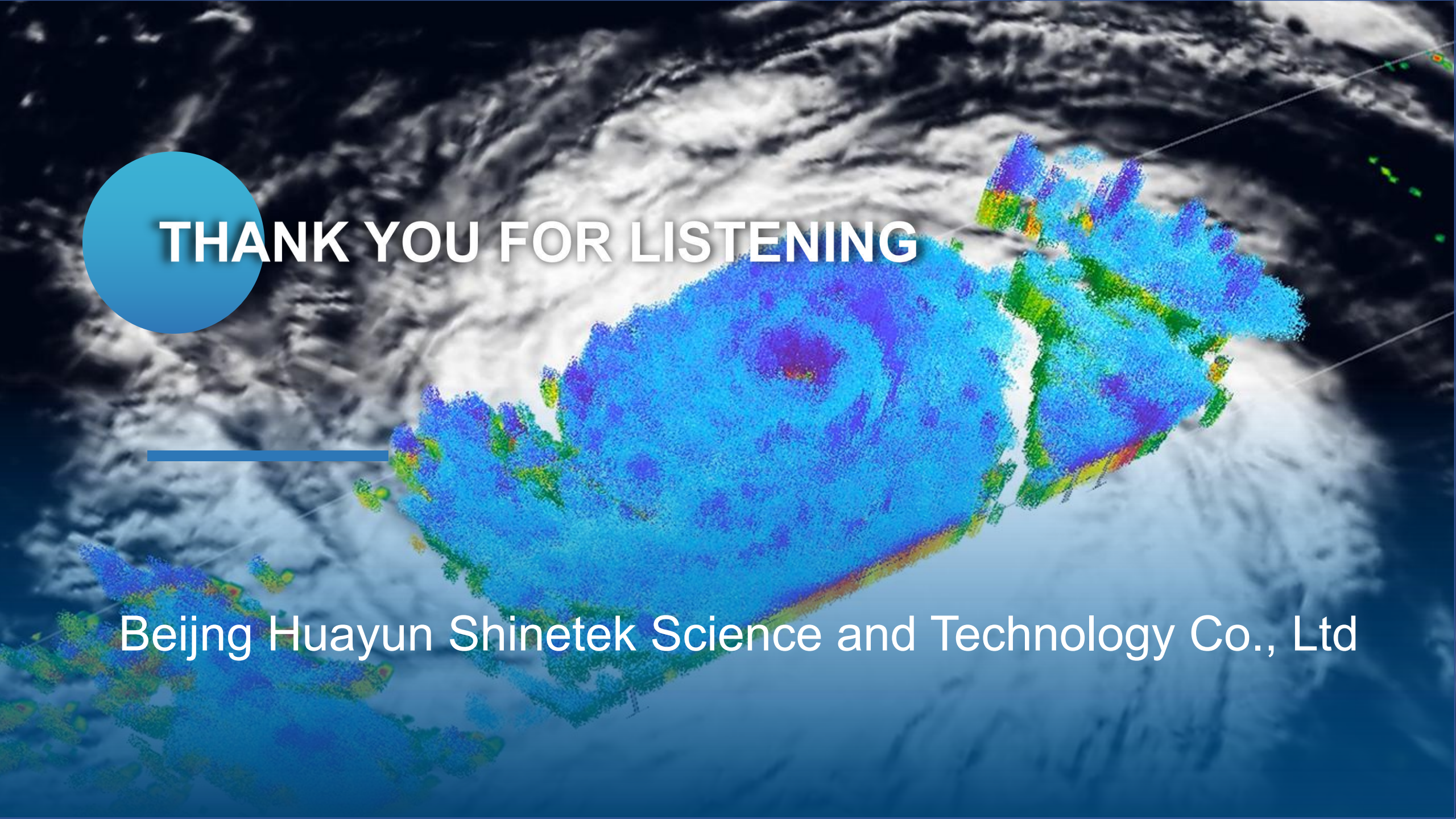
1. Promoting the integration and sharing of global meteorological satellite receiving station network facilities

2. Build an international service cloud platform to support global services

3. Activating the "flywheel effect" of the meteorological satellite industry ecosystem

Bringing together national strength and market wisdom,

we will jointly build a golden age for China's commercial meteorological satellites!


THANK YOU FOR LISTENING
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