



“AstroTerraSys” Empowering High-quality Development of Space Systems

Xinghong ZHU

CHINA SATCOM

2026-08-31

Connectivity is a key enabler of the Sustainable Development Goals. Yet connectivity gaps remain where terrestrial infrastructure alone may not be sufficient. By complementing terrestrial networks, **satellite connectivity** can extend the reach and resilience of digital infrastructure — connecting people, communities and industries wherever reliable communications are needed.

CONNECT

ADVANCE UNIVERSAL & MEANINGFUL
CONNECTIVITY



Remote & Underserved Areas · Maritime · Aviation

Extending the reach of digital
infrastructure

TRANSFORM

ENABLE ECONOMIC & SOCIAL
DEVELOPMENT



IoT · Remote Operations · Connected Industries

Connecting industries, assets and
operations

RESILIENCE

STRENGTHEN RESILIENCE



Emergency Response · Network Backup · Critical
Infrastructure

Maintaining connectivity when it matters
most

Connectivity is not an end in itself — it is a foundation for high-quality development.

Satellite connectivity extends this foundation beyond the limits of terrestrial infrastructure, enabling more inclusive, resilient and sustainable growth.

China Satellite Communications Co., Ltd. (China Satcom)

A leading satellite operator in China with **Four decades** of geostationary satellite operations, connecting China with regional and global markets.

- **Subsidiary of China Aerospace Science and Technology Corporation (CASC)**
- **Largest provider of space-segment satellite communication resources in China**
- **Listed company in Shanghai Stock Exchange**



CORE FACTS

40 Years

Satellite operations experience

19

Geostationary satellites in orbit

180+ Gbps

Ku/Ka HTS Capacity

19.8+ GHz

C/Ku GEO Resources

Full licensed Operator

fixed, mobile, transponder and VSAT satellite services

Class I

National Emergency Communications Support Team

China Satcom brings together space resources, global infrastructure to deliver trusted connectivity at scale, provide a practical foundation for high-quality development.

Combining space, ground and network capabilities to deliver connectivity across land, sea and air.

Integrated Capability Chain



SPACE

Satellite Resources

GEO fleet · C/Ku/Ka · REG/HTS



GROUND

Infrastructure

Teleports · Gateways · Monitoring



NETWORK

Connectivity Networks

Broadband · VSAT · Maritime · Aviation
· IoT

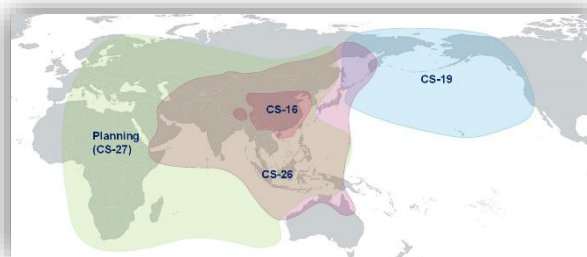


SERVICES

End-to-End Services

Access · Solutions · O&M · Value-added services

Three flagship networks translate capacity into real-world services

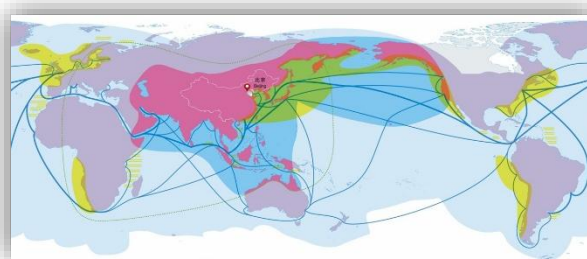


HTS Broadband

GEO Ka-band HTS Broadband Network

China's first GEO Ka-band HTS broadband network, built on CHINASAT-16, CHINASAT-19 and CHINASAT-26.

Full national coverage with extension to "Belt and Road" regions.



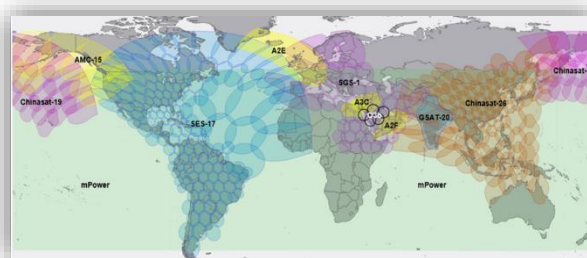
MARITIME

Global Maritime Network

95%+ of major global shipping routes covered.

Built with 20+ owned and leased roaming satellites.

28,000+ vessels on network.



AVIATION

Aviation Connectivity Network

Building global aviation connectivity with international roaming partnerships.

265 aircraft on network, >100,000 passengers served.

Supporting Boeing/AIRBUS/COMAC.

China Satcom is translating satellite infrastructure into connectivity at scale — from nationwide broadband to operational networks serving tens of thousands of vessels and hundreds of aircraft.

Evolving applications demand broader coverage, higher capacity, greater resilience and smarter network planning.

APPLICATION DEMAND

BROADER COVERAGE

From national availability to seamless regional and global service

HIGHER CAPACITY

Growing broadband, sensing, IoT and data-intensive applications

GREATER RESILIENCE

Continuity across disasters, remote sites and critical missions

GLOBAL MOBILITY

Connectivity across land, sea, air and cross-border operations

MORE FLEXIBLE SERVICES

Adapting capacity and network resources to diverse and changing demand

RAPIDLY CHANGING ENV.

➤ RAPID NGSO deployment

Large constellations are being deployed at unprecedented scale and speed

➤ MORE INTENSIVE use of spectrum and orbital resources

The resource environment is becoming increasingly dynamic

➤ GROWING coordination complexity

More real-time and interactive services

➤ CONTINUOUS situational awareness

Planning increasingly depends on understanding how the global satellite environment is evolving

NETWORK EVOLUTION

FUTURE REQUIREMENTS

MULTI-ORBIT

GEO + NGSO architectures for complementary coverage and resilience

MULTI-BAND

Coordinated use of C / Ku / Ka resources across services and regions

INTEGRATED NETWORKING

Inter-satellite links and space-ground integration for end-to-end services

GLOBAL RESOURCE PLANNING

Orbit and spectrum treated as strategic foundations of future networks

INTELLIGENT OPERATIONS

Dynamic planning, routing and service orchestration enabled by data

Key question: How can we make sound long-term network and resource decisions in a satellite environment that is becoming more dynamic, multi-orbit and resource-constrained?

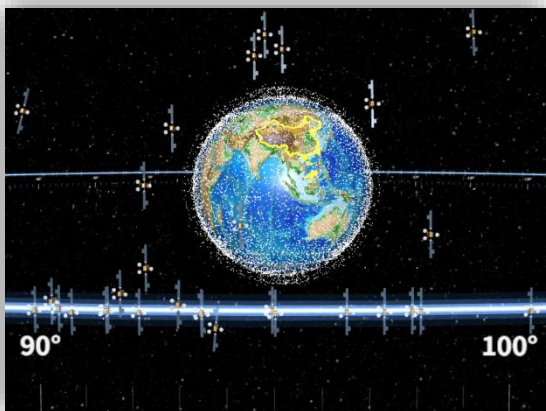
Continuous situational awareness is becoming an essential input to resource strategy, network design and coordination. Fragmented data and expert judgement alone are no longer enough.

Satellite Resource Planning, Simulation and Validation System: **AstroTerraSys**

Integrates global situation awareness, spectrum-orbit analysis, network simulation and decision support into one workflow for future satellite network planning.



01 SEE THE LANDSCAPE

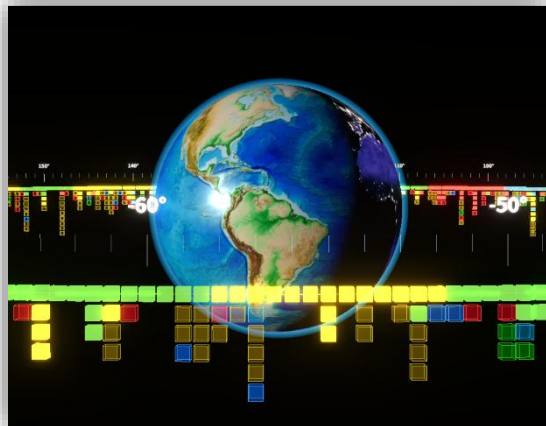


Global Situation Awareness

Track satellite deployments, constellation evolution and the changing global space environment.

SEE

02 ASSESS THE RESOURCES

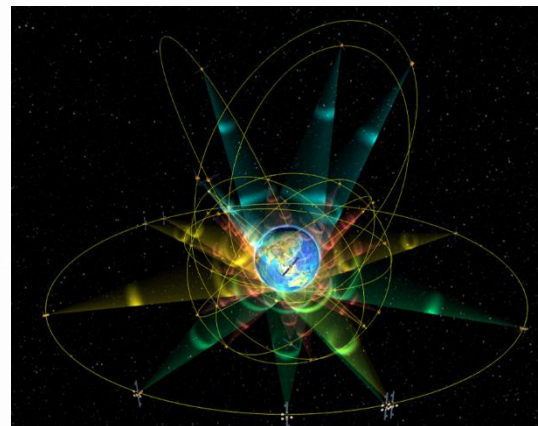


Spectrum & Orbit Analysis

Assess spectrum and orbital resources, competing networks and coordination constraints.

ASSESS

03 VALIDATE THE NETWORK

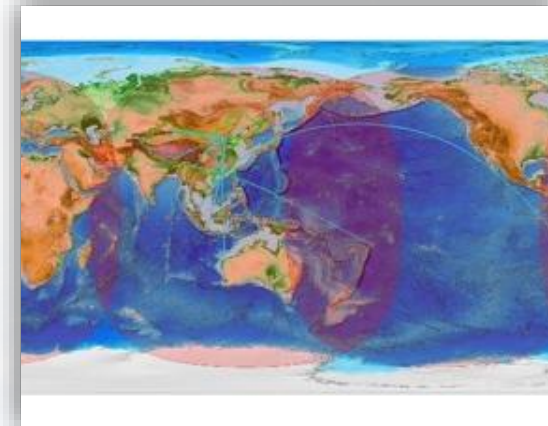


Network Simulation & Verification

Test coverage, links and multi-orbit architectures before deployment.

VALIDATE

04 SUPPORT DECISIONS



Planning & Decision Support

Turn analysis and simulation into evidence for planning, coordination and engineering decisions.

DECIDE

In a rapidly evolving satellite environment, effective planning starts with continuous awareness and ends with evidence for resource strategy, coordination and network design.

Main Feature

GLOBAL SATELLITE VISUALIZATION

Multi-orbit satellites, trajectories, beams and links

MULTI-DIMENSIONAL EXPLORATION

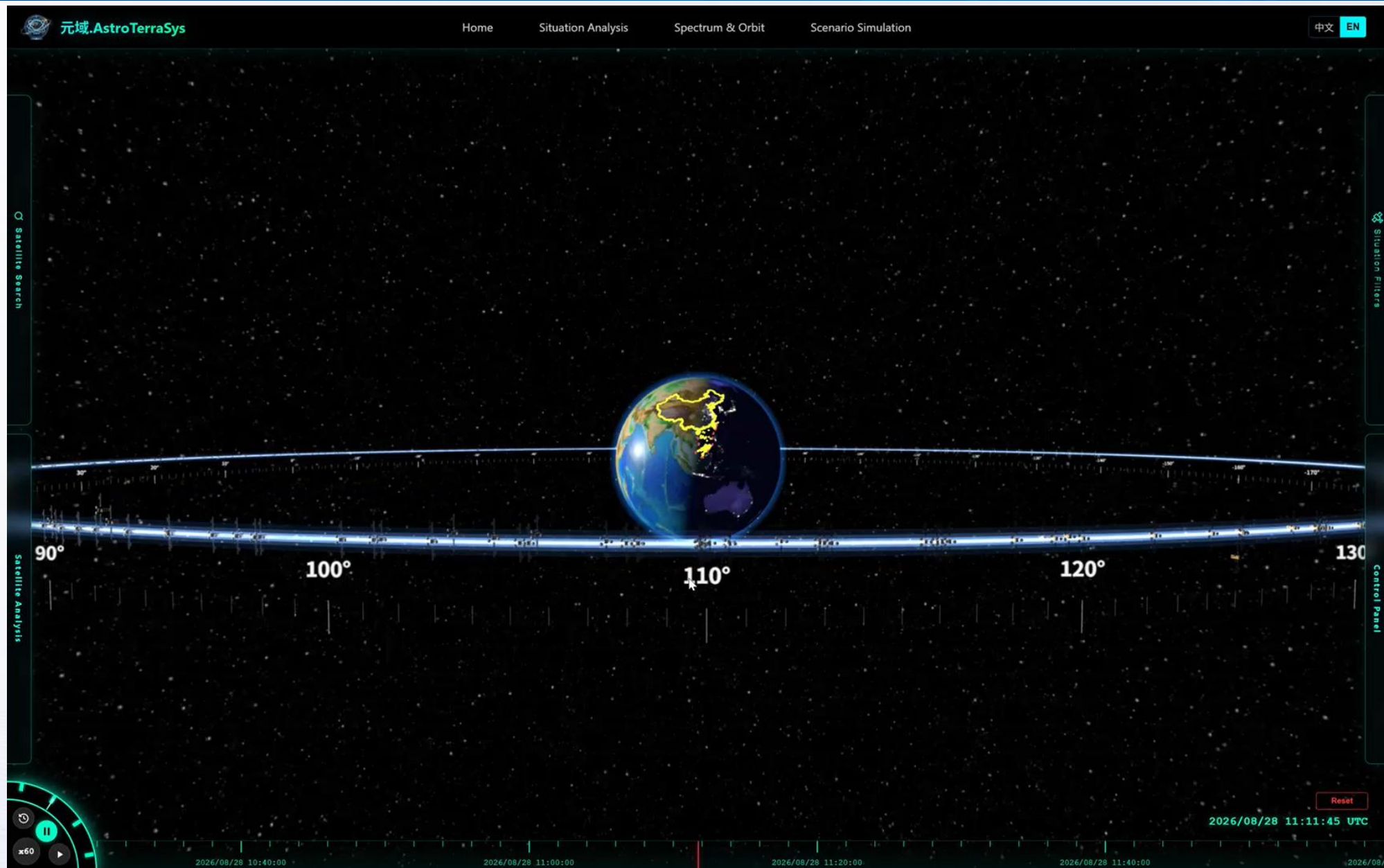
Orbit · Constellation · Mission · Satellite

CONSTELLATION EVOLUTION ANALYSIS

Deployment · Growth · Service capability · Lifecycle

HISTORICAL & ORBITAL TREND ANALYSIS

Launch trends · Fleet evolution · GEO drift



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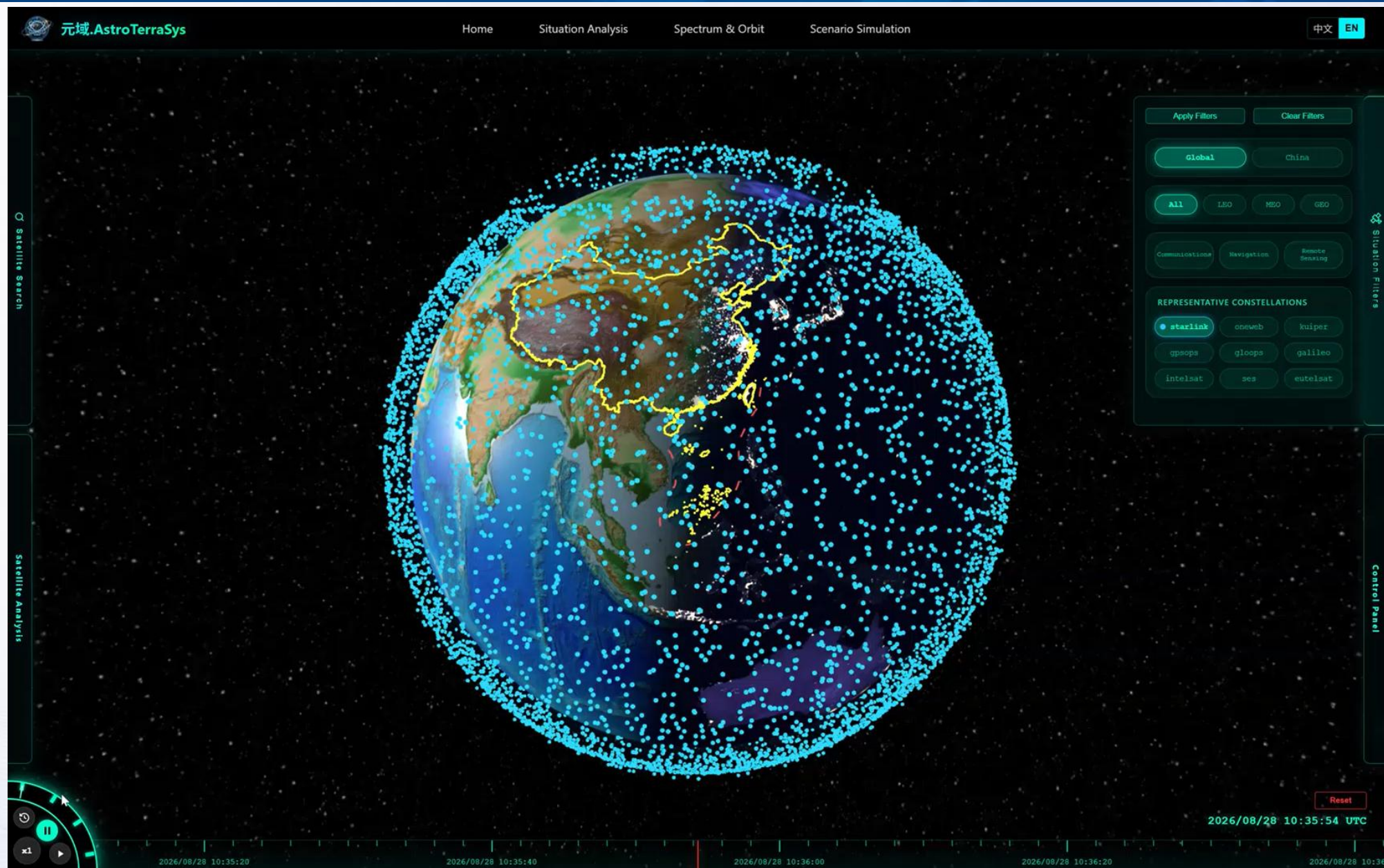
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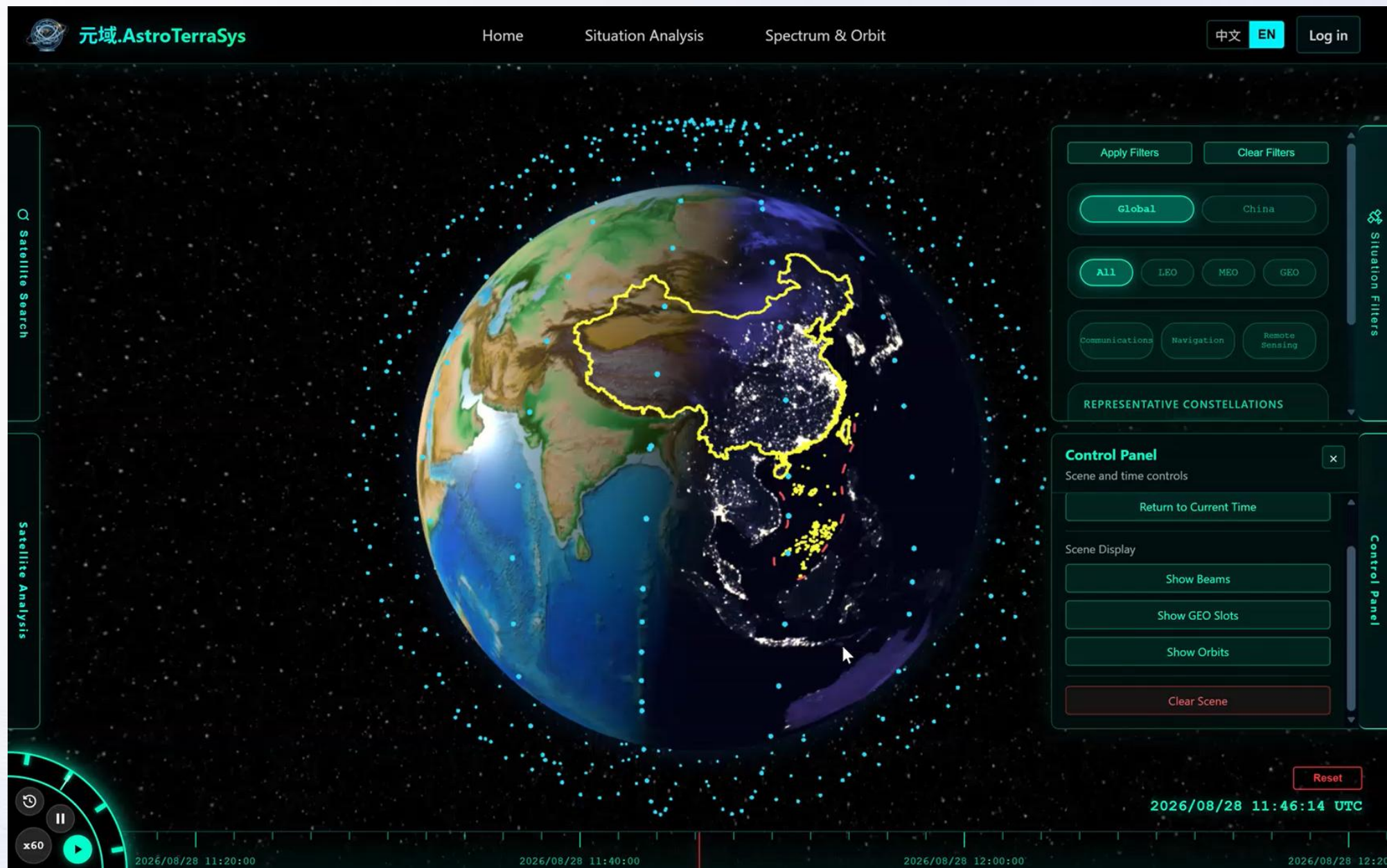
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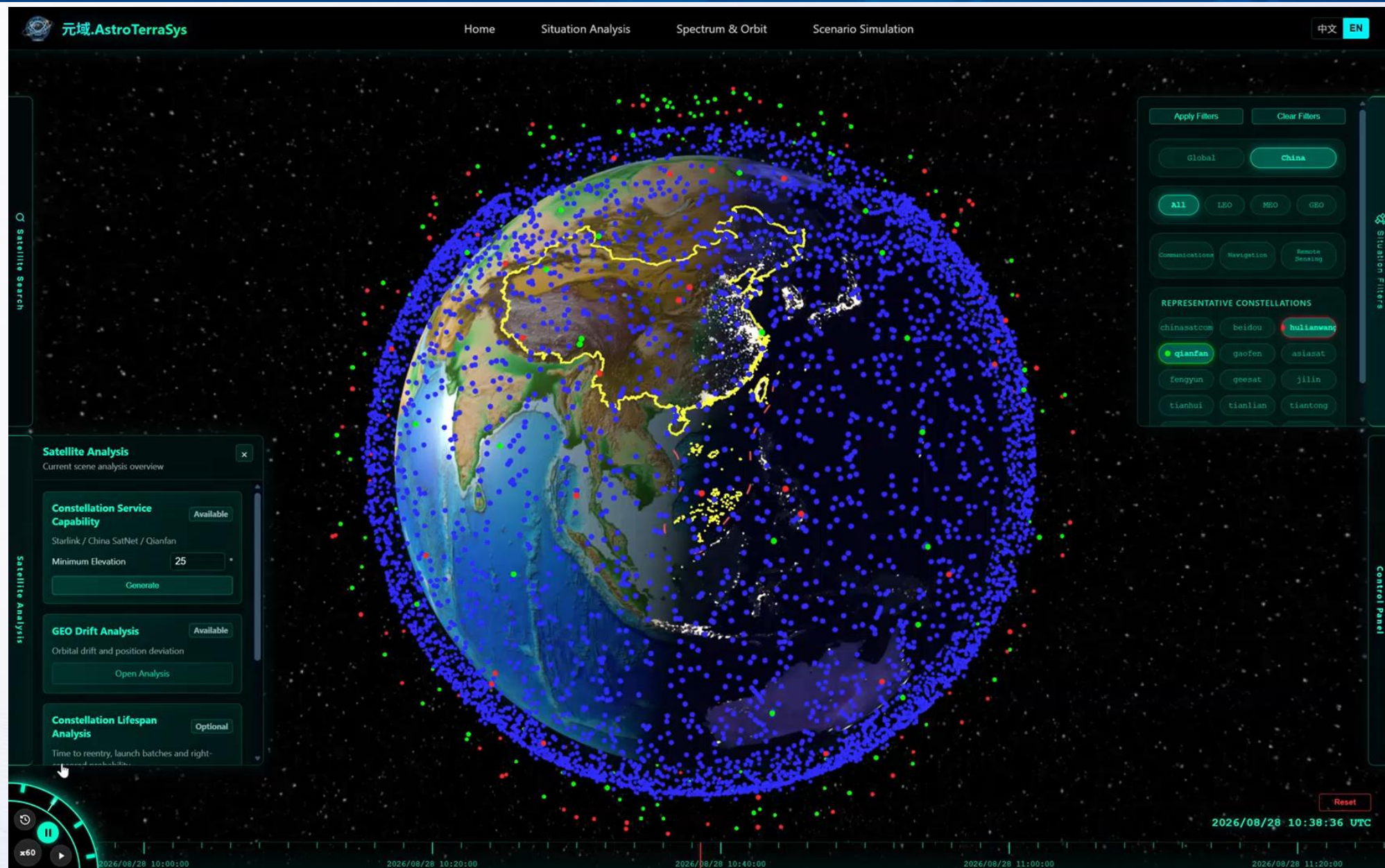
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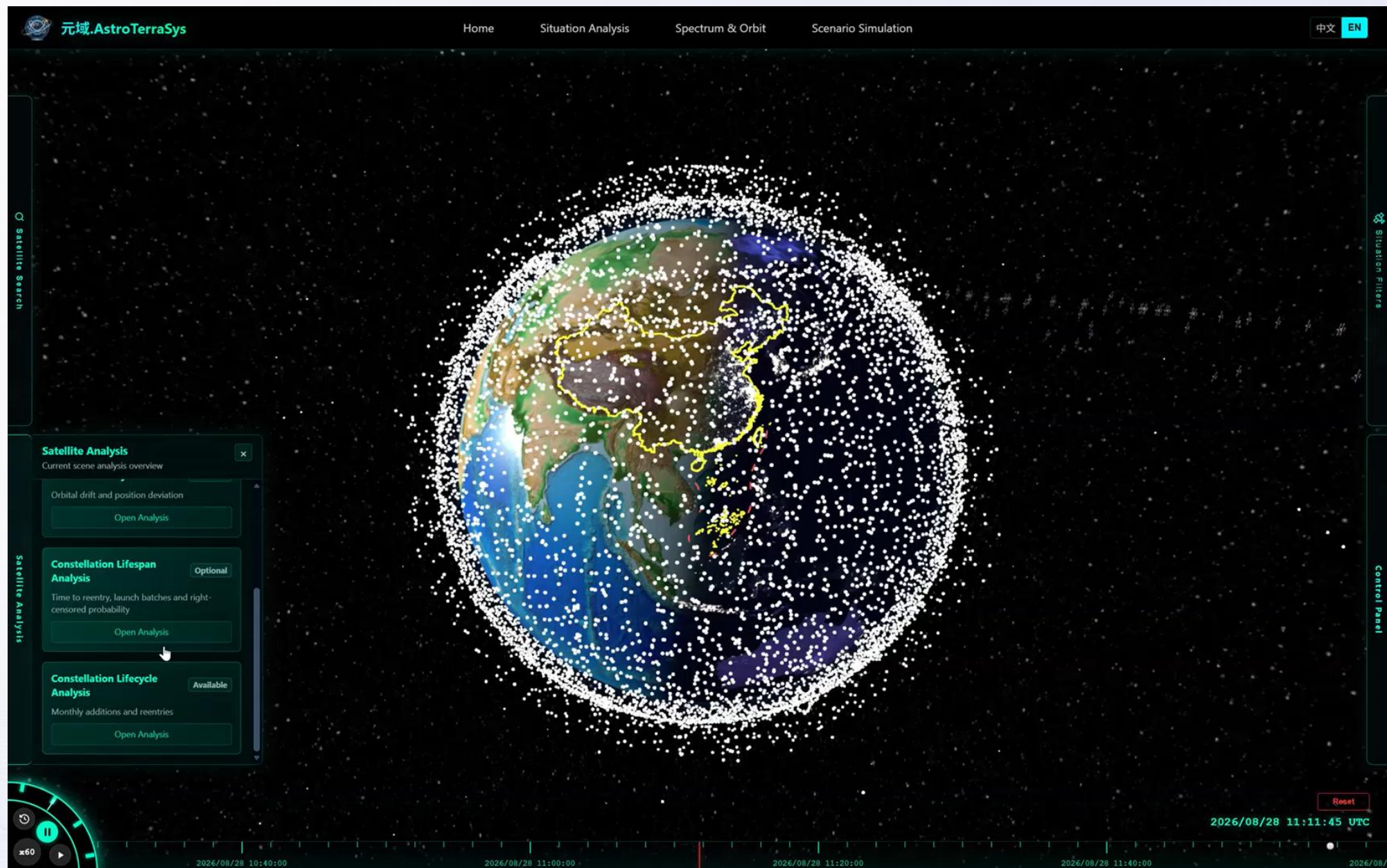
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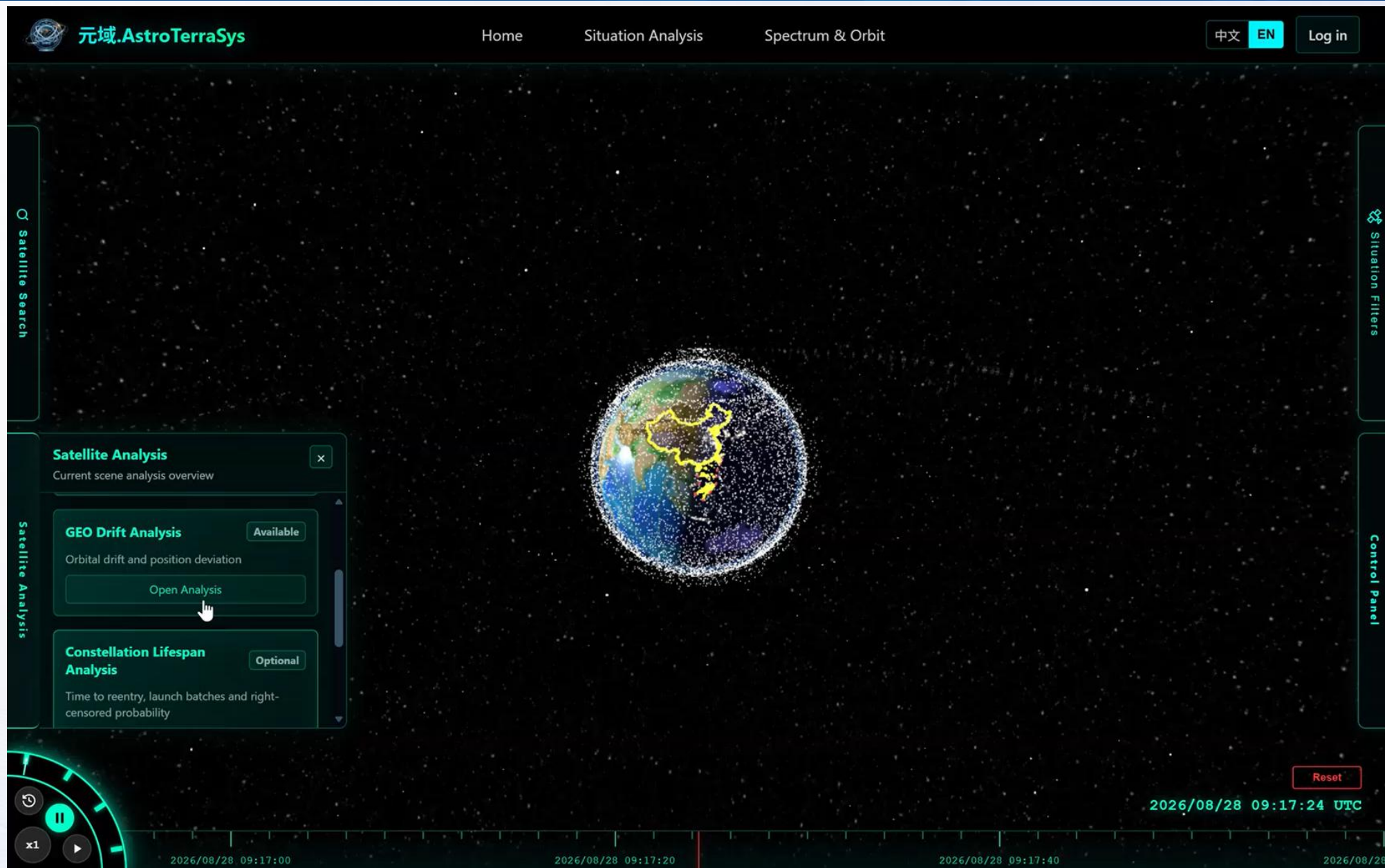
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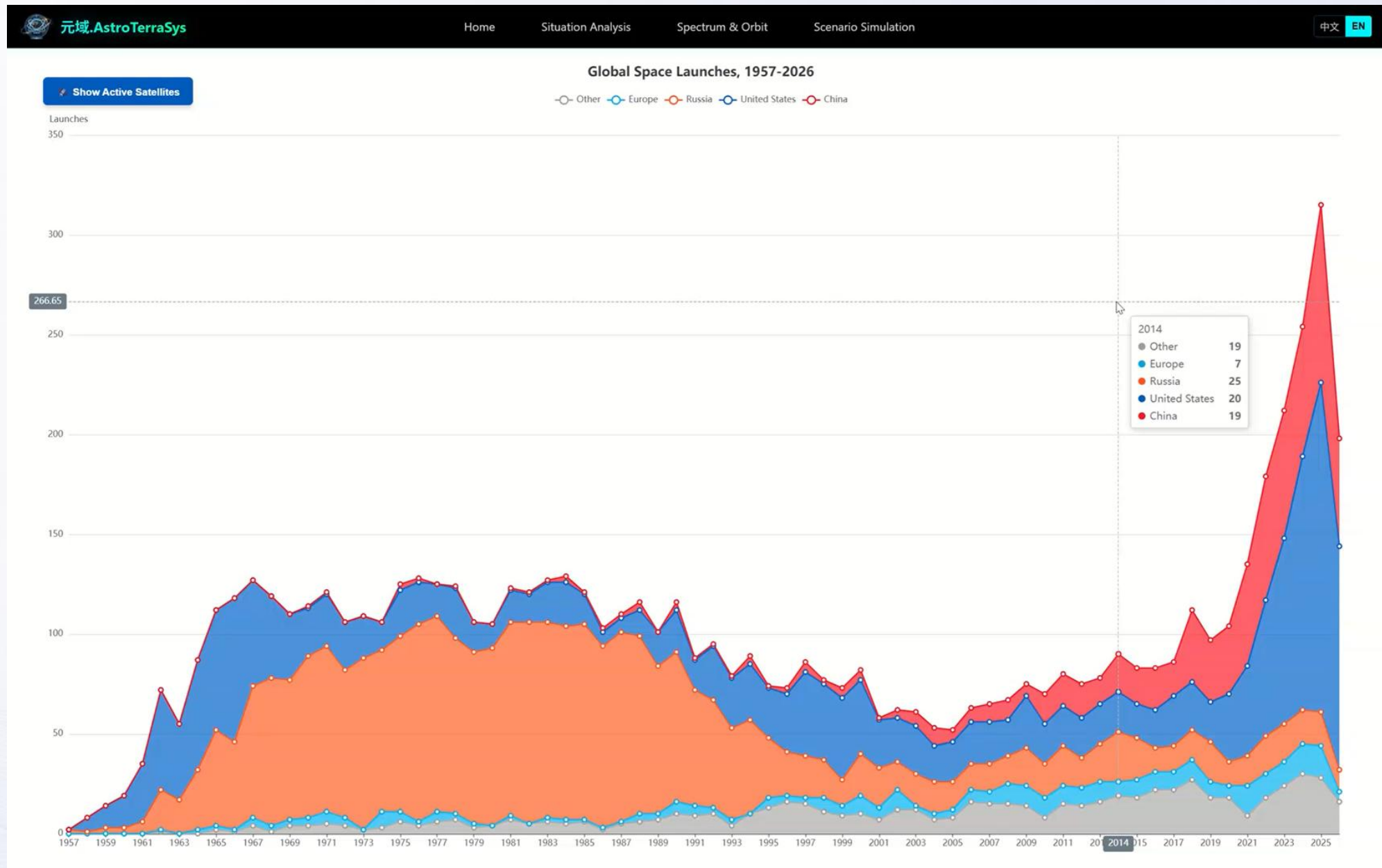
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ATS ANNUAL
Annual Report

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GLOBAL SPACEFLIGHT INTELLIGENCE

2026 Global Spaceflight Annual Report

Report Year

2026

This report analyzes global launch activity, the active satellite population, annual launch composition, and the structure of the orbital population, using interactive charts to show yearly trends, regional distribution, and major constellation deployment.

Source: GCAT / Jonathan C. McDowell, General Catalog of Artificial Space Objects, CC-BY-4.0

Data through: 2026-08

Launches in Latest Year

196

launches

Active Payloads

16,881

satellites

Most Active Launch Region

United States

2026

Largest Active Fleet

Starlink

2026

CHAPTER 01

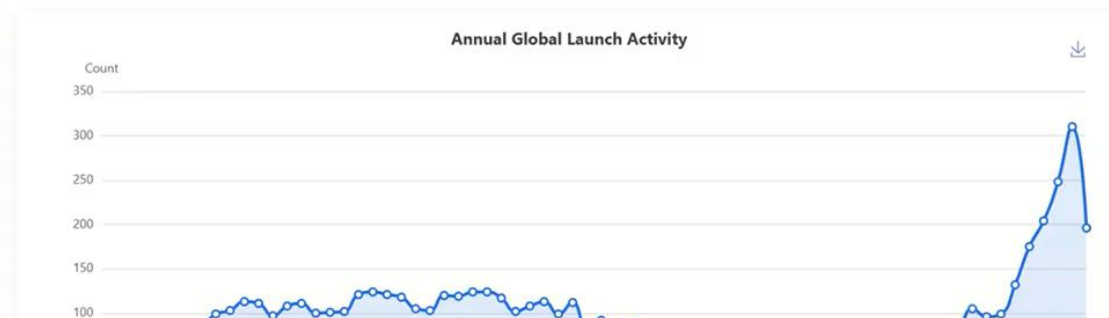
Global Spaceflight Overview

This chapter follows two lines of analysis. Launch activity covers annual launch totals, regional contributions, and launch vehicle utilization. Satellite activity covers the active spacecraft population, launches and retirements, and changes in mass distribution.

1.1 / LAUNCH ACTIVITY

1.1.1 Global Launch Activity

Global space launches have entered a new period of sustained high activity. Through **2026**, the database records **6,625 launches** in total, with **196 launches** during the latest year. This was a **36.77%** decrease from the previous year.



Main Feature

SPECTRUM-ORBIT VISUALIZATION

Global filings · Frequency bands · GEO positions

FILING & COORDINATION ANALYSIS

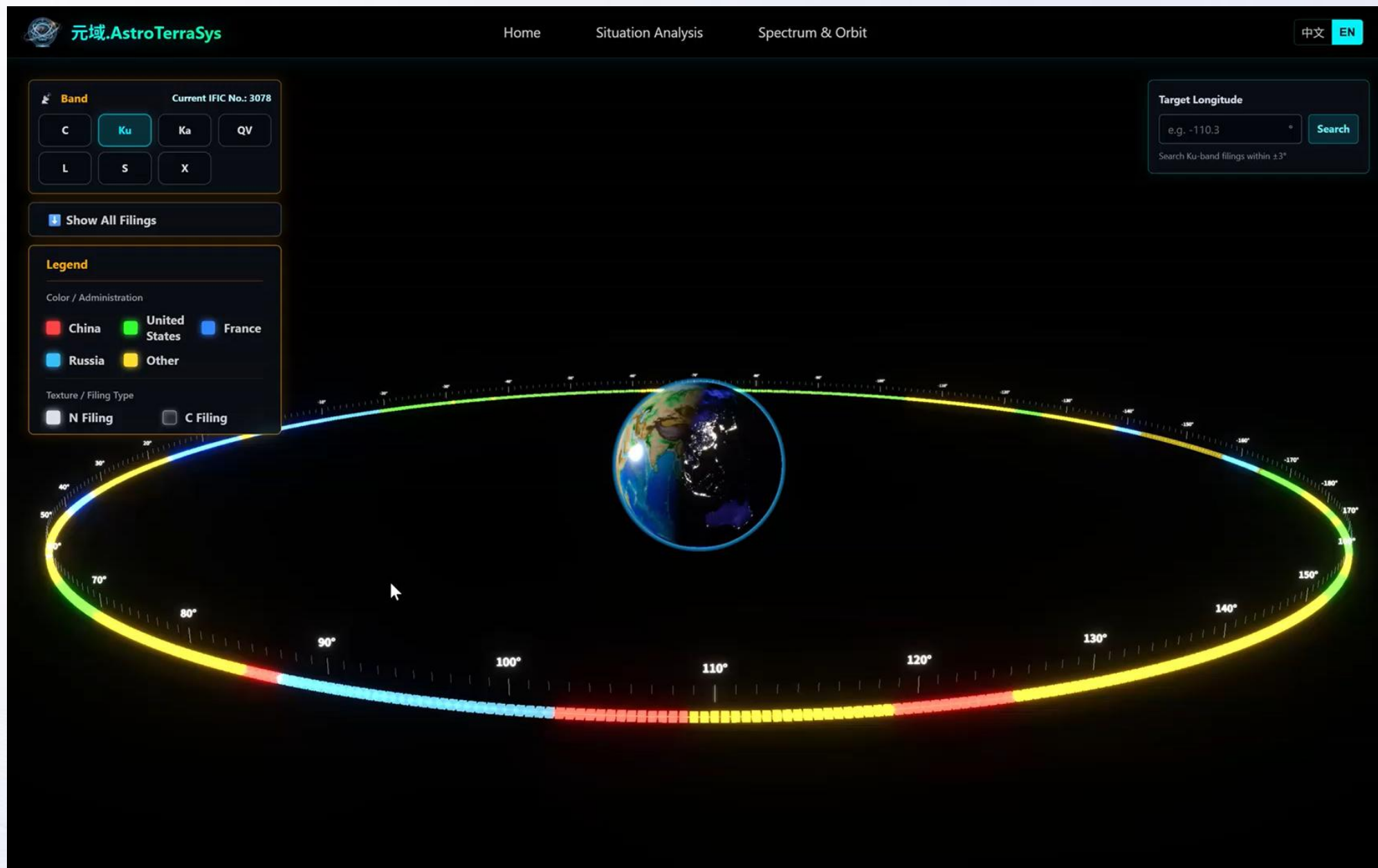
Status · Frequency · Beam · Competition

ORBITAL POSITION ASSESSMENT

Candidate resources · Availability · Risk analysis

COORDINATION & REPORT AUTOMATION

IFIC Comment · Reports · Meeting documentation



Main Feature

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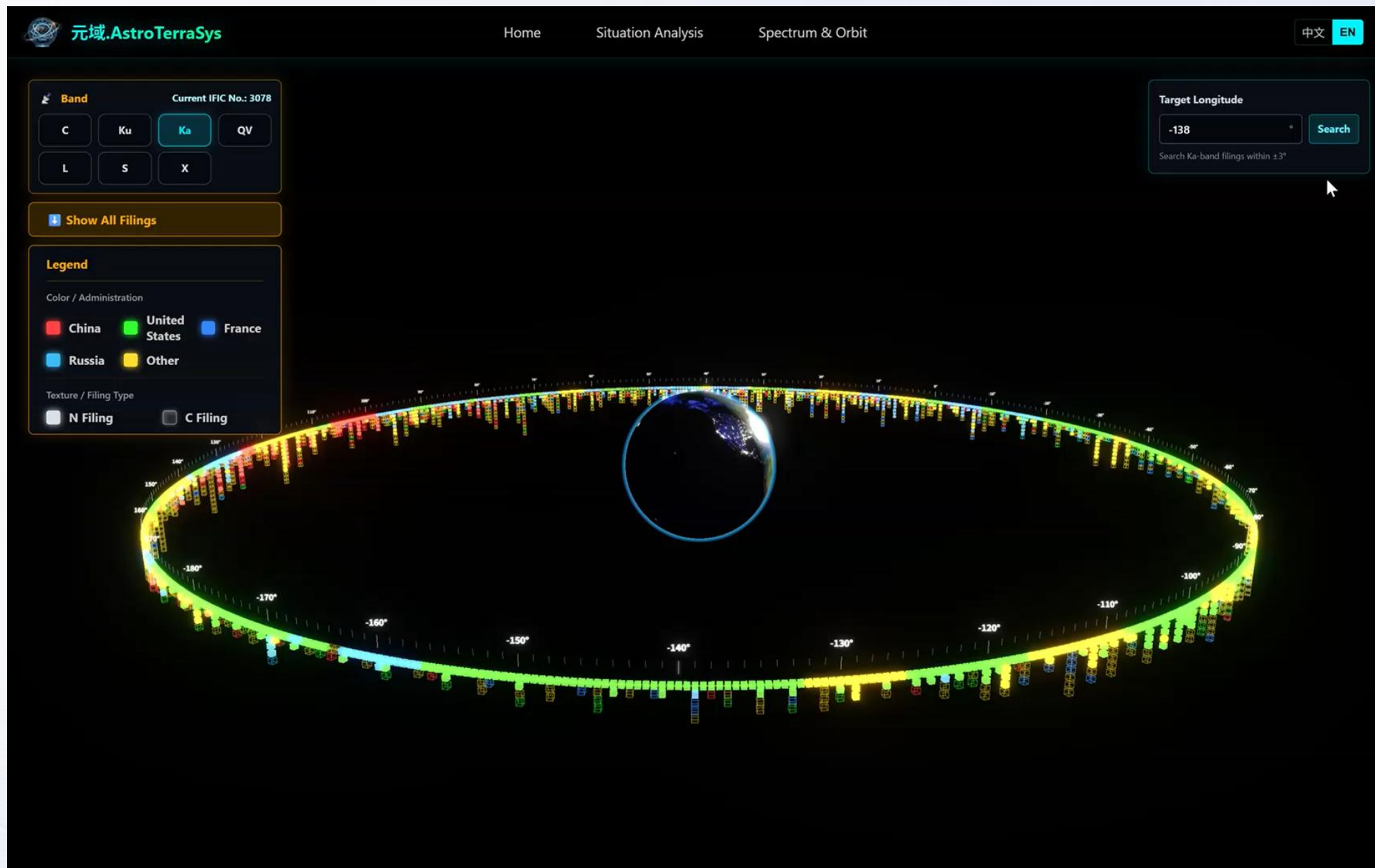
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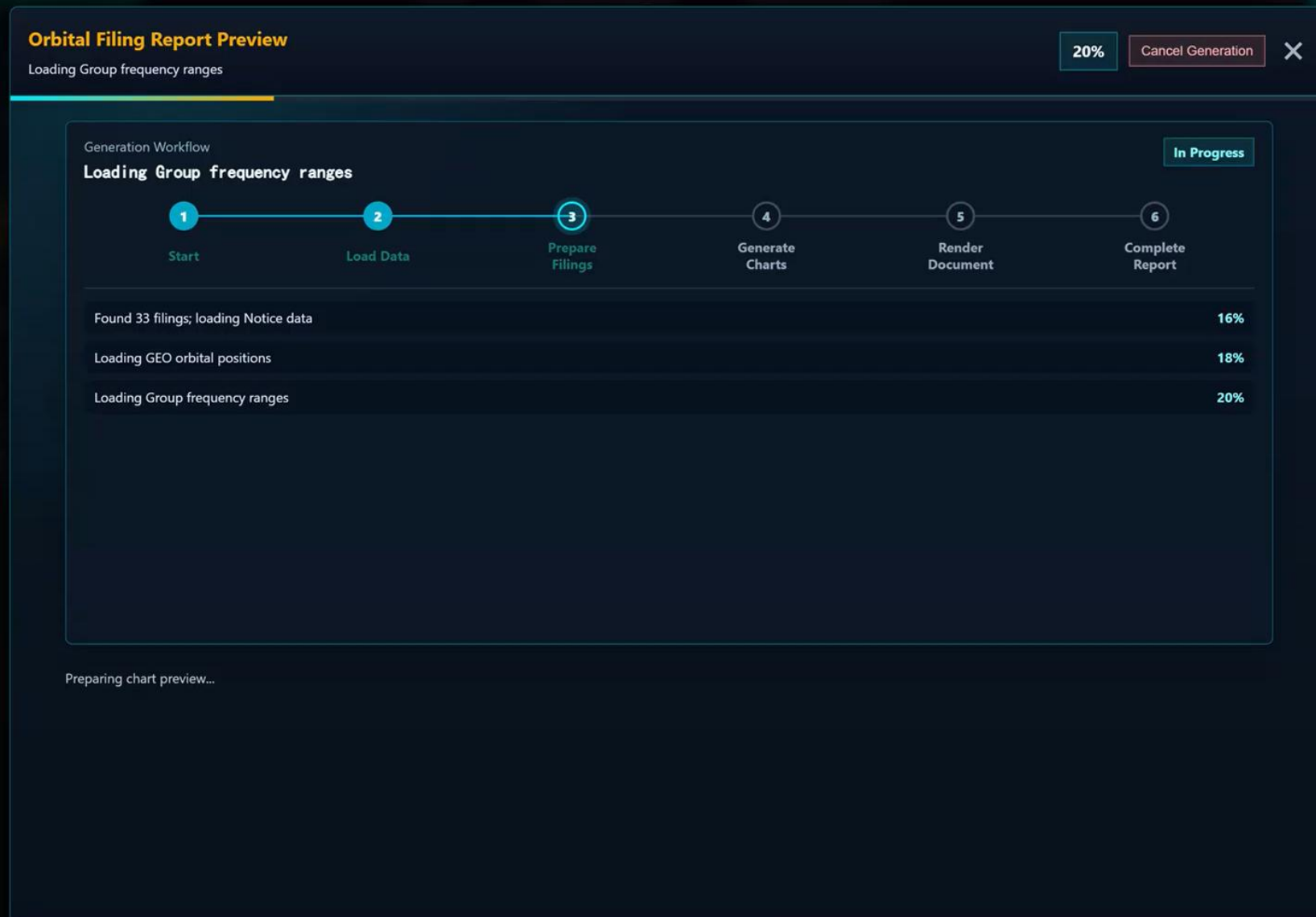
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Home

Situation Analysis

Spectrum & Orbit

中文 EN

Easier, Faster

One-Click Coordination Minutes

Select countries to begin →

Generate Draft

Detailed Preview

Download Word Document

Reset

INPUT METHOD

REPORT OPTIONS

Import Agenda Excel

Excel File:

CHINA SATCOM0608.xlsx

Choose File

Import Data

Batch Generate

☒ Frequency Service Type

Excel Records

Awaiting Import

Awaiting Import

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IFIC No.:
Our network:
Administration:
Our administration:
Process type:
☒ API/A
☒ CR/C
☒ AP30
☒ AP30B

Band:
☒ L
☒ C
☒ S
☒ X
☒ Ku
☒ Ka
☒ Q
☒ V
☐ QV
Network type:
☒ G
☒ N
Result limit:

IFIC No.: **3078**
Other networks: **0**
Administrations: **0**
Bands: -
China Satcom filings: **82**

No.	Other Satellite Network	Administration	Operator	Filing ID	Filing Stage	Overlapping Band	Frequency Range	Provision	Our Satellite Network	WIC No.	Filing ID	Filing Stage	Actions
No results													

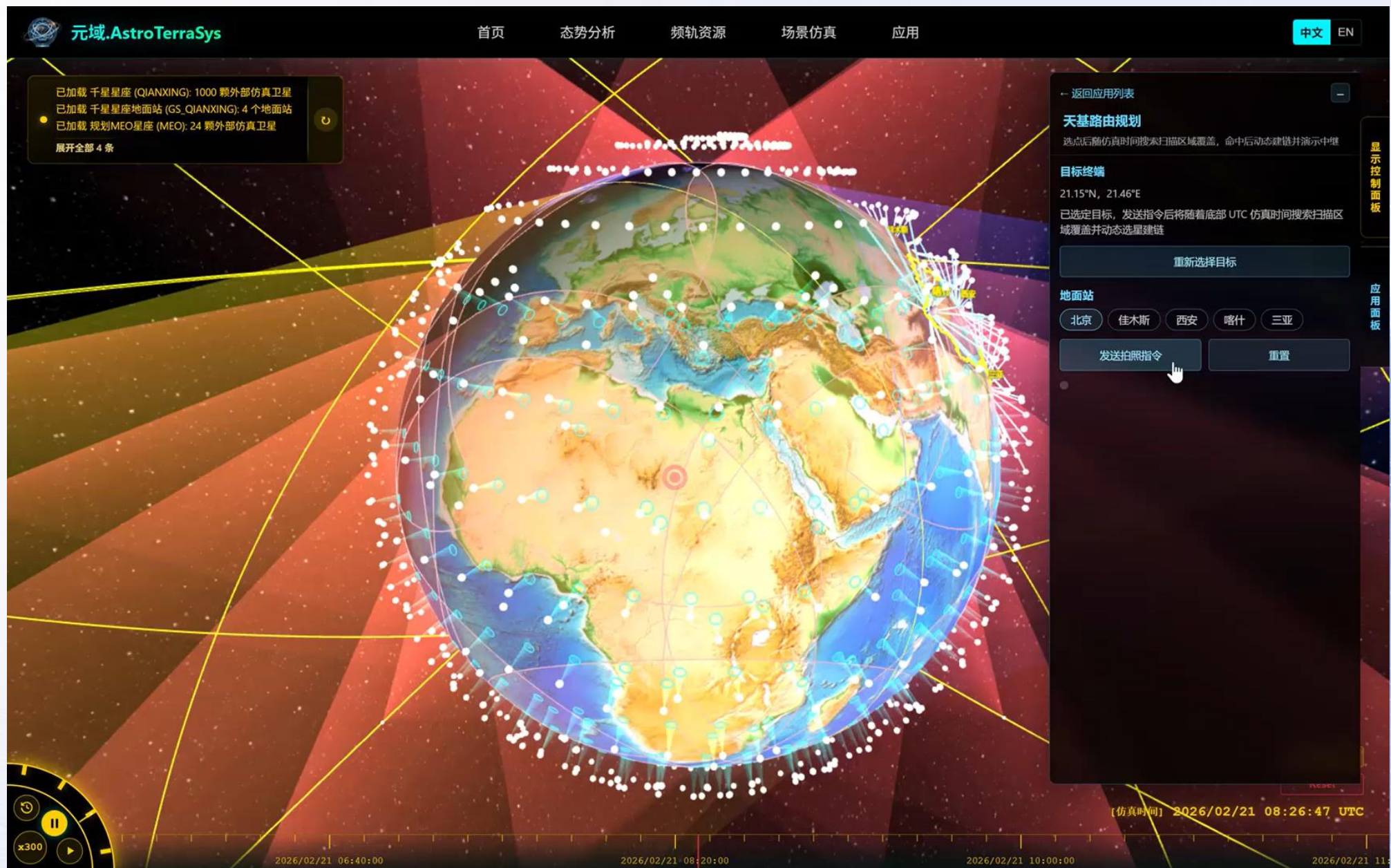
Main Feature

Multi-Orbit Architecture Simulation

Coverage & Footprint Validation

Link & Network Connectivity Analysis

Phased Deployment Evaluation



System Status

➤ **MODULE 1** **Global Situation Awareness**

ONLINE · BETA

➤ **MODULE 2** **Spectrum & Orbit Analysis**

ONLINE · BETA

➤ **MODULE 3** **Simulation & Scenario Validation**

PRIVATE DEPLOYMENT ·
AVAILABLE

Advanced simulation capabilities are currently provided through private deployment, supporting integration with local simulation environments, data and engineering tools.



The graphic features a dark space background with a view of Earth's horizon and several satellites in orbit. A large QR code is centered in a white rounded rectangle. Above the QR code, the text 'AstroTerraSys' is displayed in a bold, sans-serif font, followed by 'Resource Planning • Simulation • Verification' and 'Space Situational Awareness • Orbital Resource Intelligence' in a smaller font. Below the QR code, the text 'ASTROTERRASYS' is written in all caps. At the bottom right, the website 'Astroterrasys.cloud' is shown in a blue box. At the bottom left, the text 'Developed By: CHINA SATCOM' is displayed.

AstroTerraSys
Resource Planning • Simulation • Verification
Space Situational Awareness • Orbital Resource Intelligence

ASTROTERRASYS

Astroterrasys.cloud

Developed By: CHINA SATCOM

AstroTerraSys is still evolving. We welcome your feedback, use cases and ideas — and look forward to exploring opportunities for technical exchange and collaboration.



中国航天

High-Quality Development of space systems means understanding deeper, planning smarter and building better.

With AstroTerraSys, we hope to turn insight into sound decisions — for a more resilient, efficient and sustainable future in space.

Thank You