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eHorus New Energy Smart Operation Platform

--Full Lifecycle Operation and Management Solution for New Energy Assets

2026-01

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I. Platform Overview

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Characteristics of new energy assets

High asset value and stable investment returns

Short construction period, long operation period

Unstable load electricity trading (electricity sales) presents significant challenges.

The location is remote, the number of devices is large, and the management is difficult.



Pain points and needs

■ Management Pain Points:

- Long lifecycle of power plant assets (20+ years), resulting in a long investment return cycle.
- Numerous and geographically dispersed power plant assets of varying sizes, making unified management challenging.
- Inconsistent monitoring and service capabilities across power plants.
- Difficulty in on-site safety supervision at each power plant, leading to high operational and maintenance safety risks.
- Fluctuating electricity trading (sales) policies and market conditions, posing a significant challenge to securing sales revenue.*

■ Key Needs:

- Build a unified digital operation platform for new energy assets.
- A single platform to standardize the management of all new energy power plant assets, achieving "one-stop" digital management.
- Support safe production and operation throughout the entire lifecycle of power plant assets (no safety production liability accidents).
- Utilize AI, big data, and other information technologies to assist in the production and operation of each power plant asset, stabilizing investment returns.



Countermeasures

- Target Identification: Assets/Equipment, Hazard Sources
- Operational Plan: Policies and Regulations, Industry Safety Rules, Operating Procedures
- Operating Procedures: Daily/Monthly/Quarterly/Yearly Routine Tasks

Operational
planning

- One station, one policy;
- one item, one account;
- manpower, machine, material, method, environment + time + space.

Work
safety

Analysis and
optimization

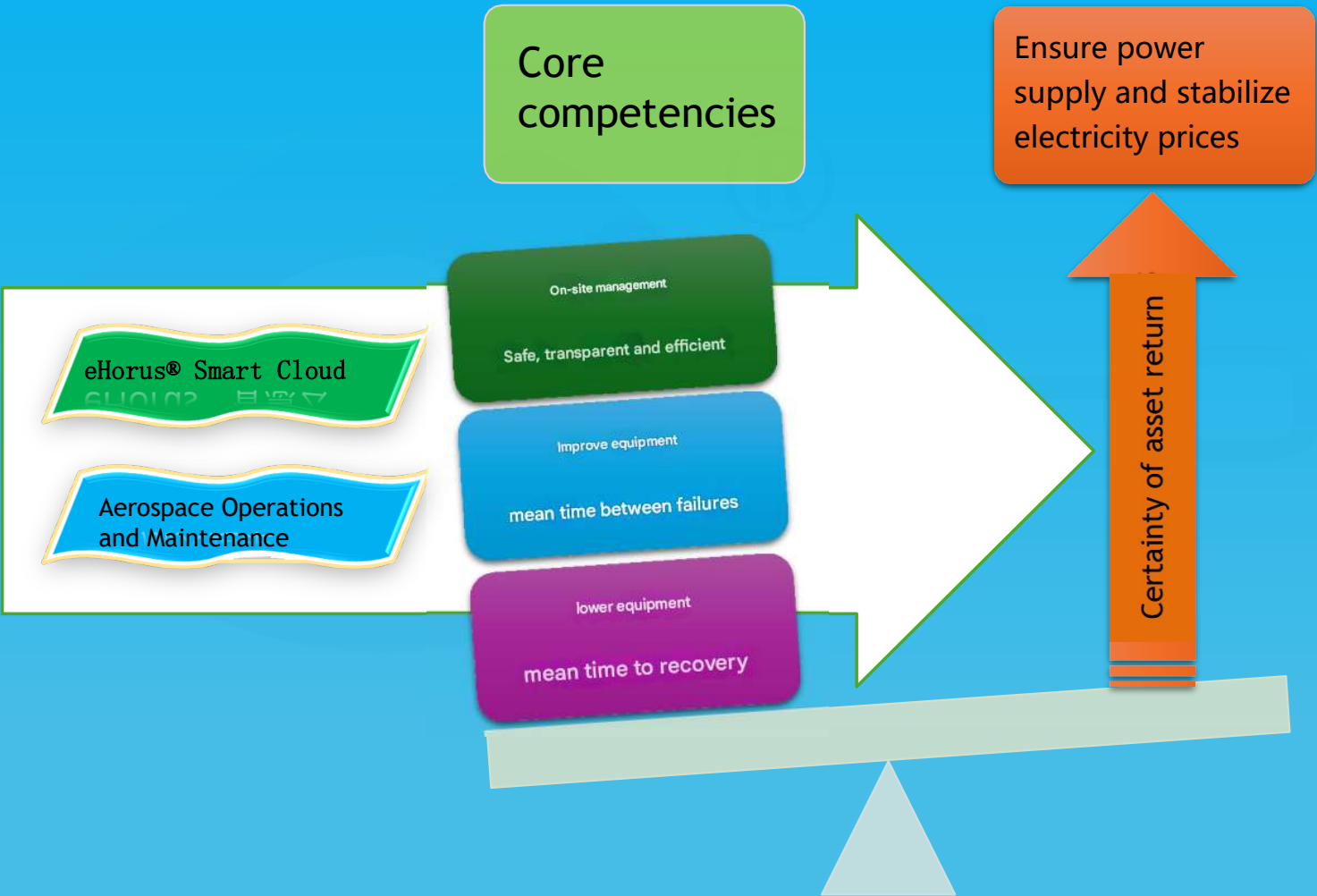
- Security Situation Awareness
- Specialized Analysis and Governance
- Operational Performance Improvement

Operational
supervision

- Remote/On-site multi-terminal interaction
- Unified data, unified process
- Intelligent alarm/early warning



Target path





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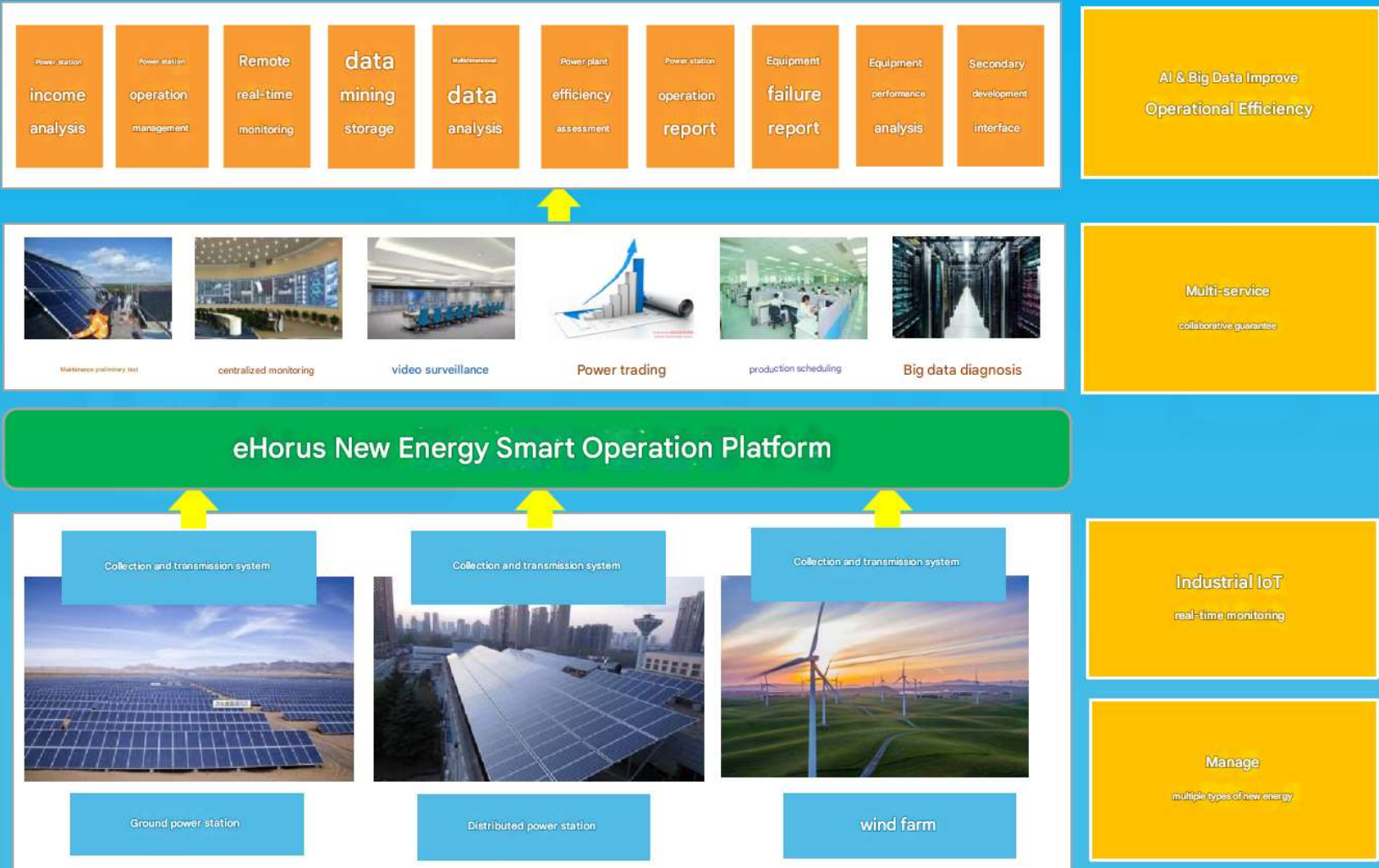
II. Platform Architecture

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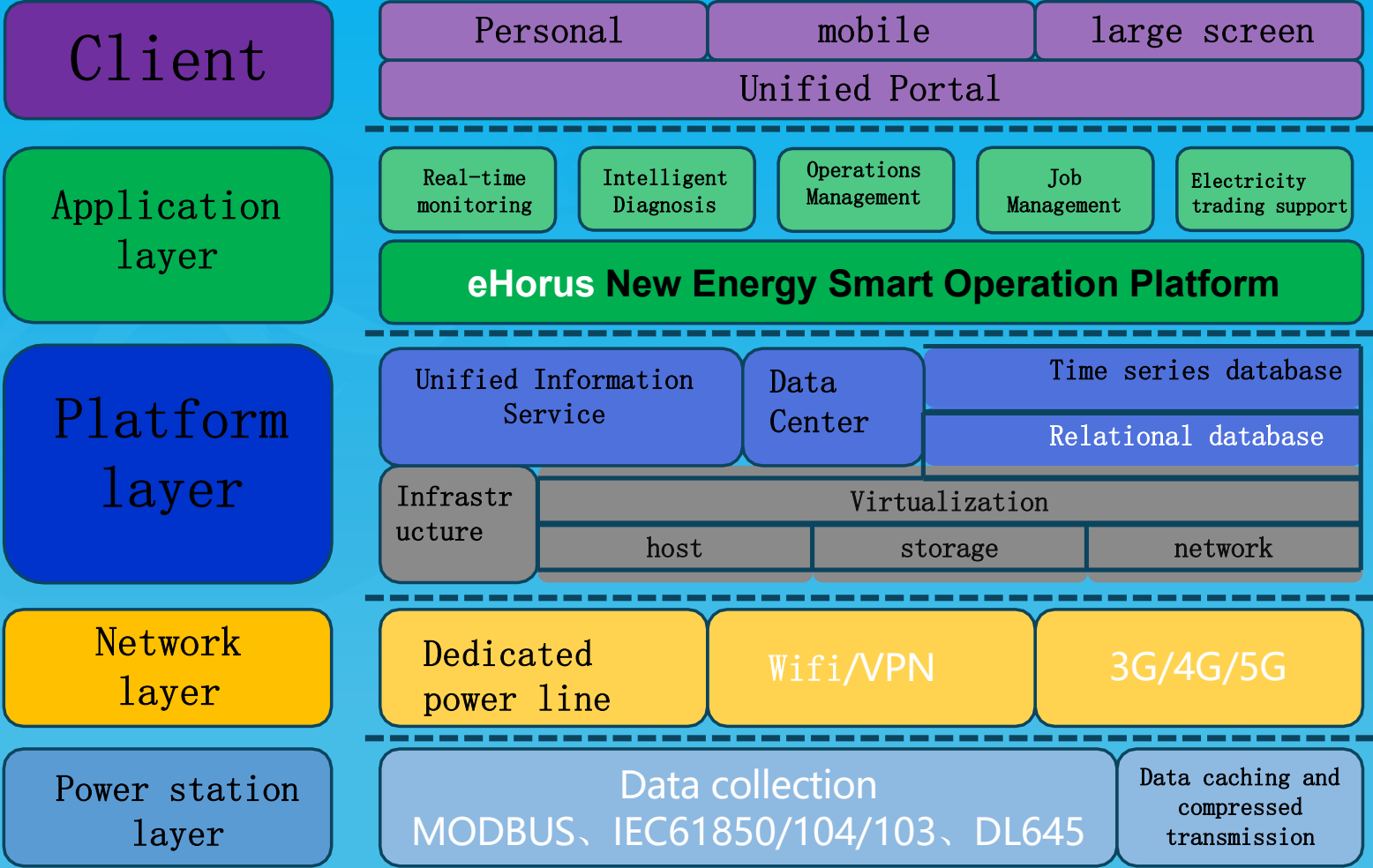
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Overall Architecture



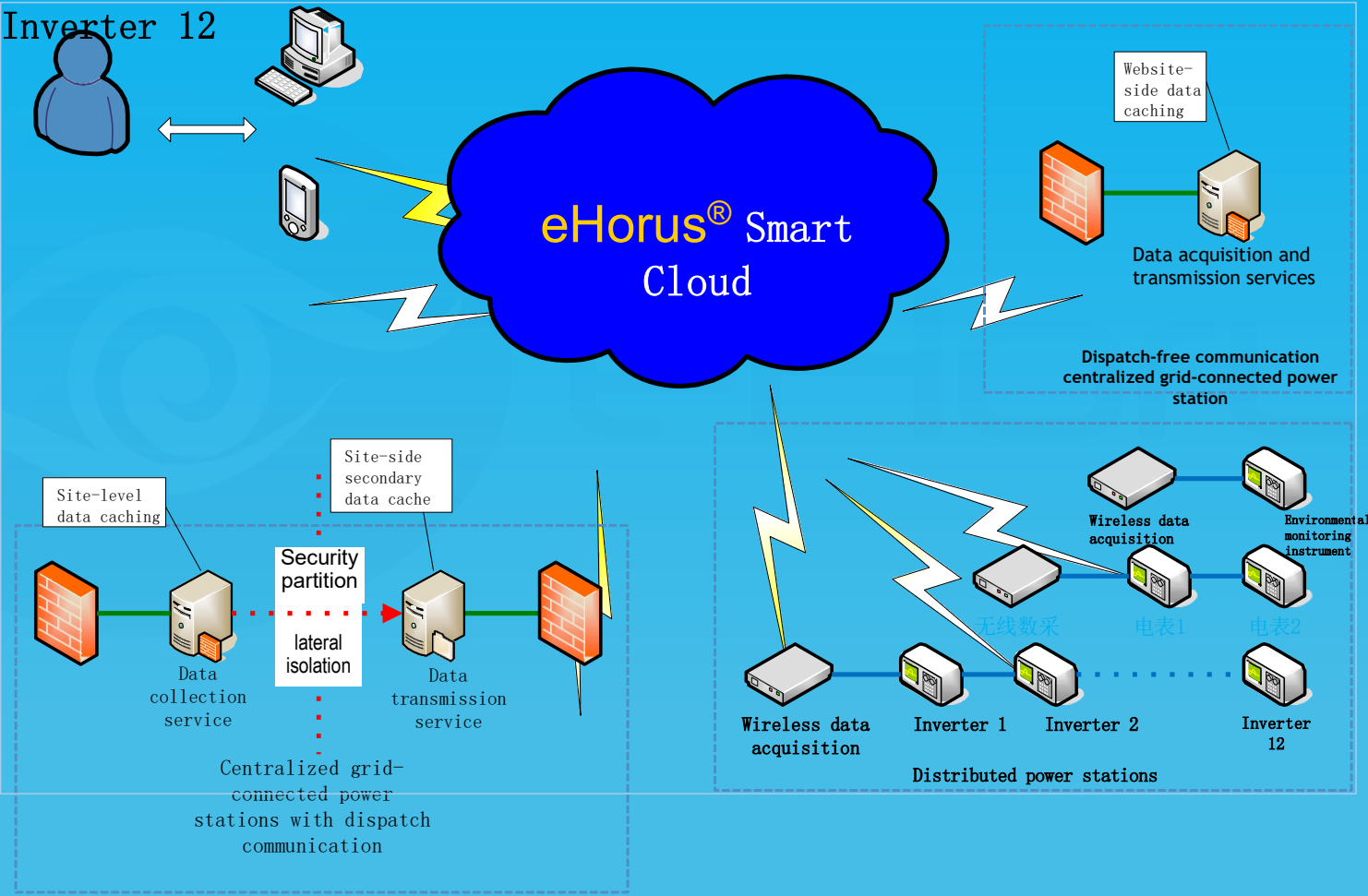


Technical Architecture





Application Topology

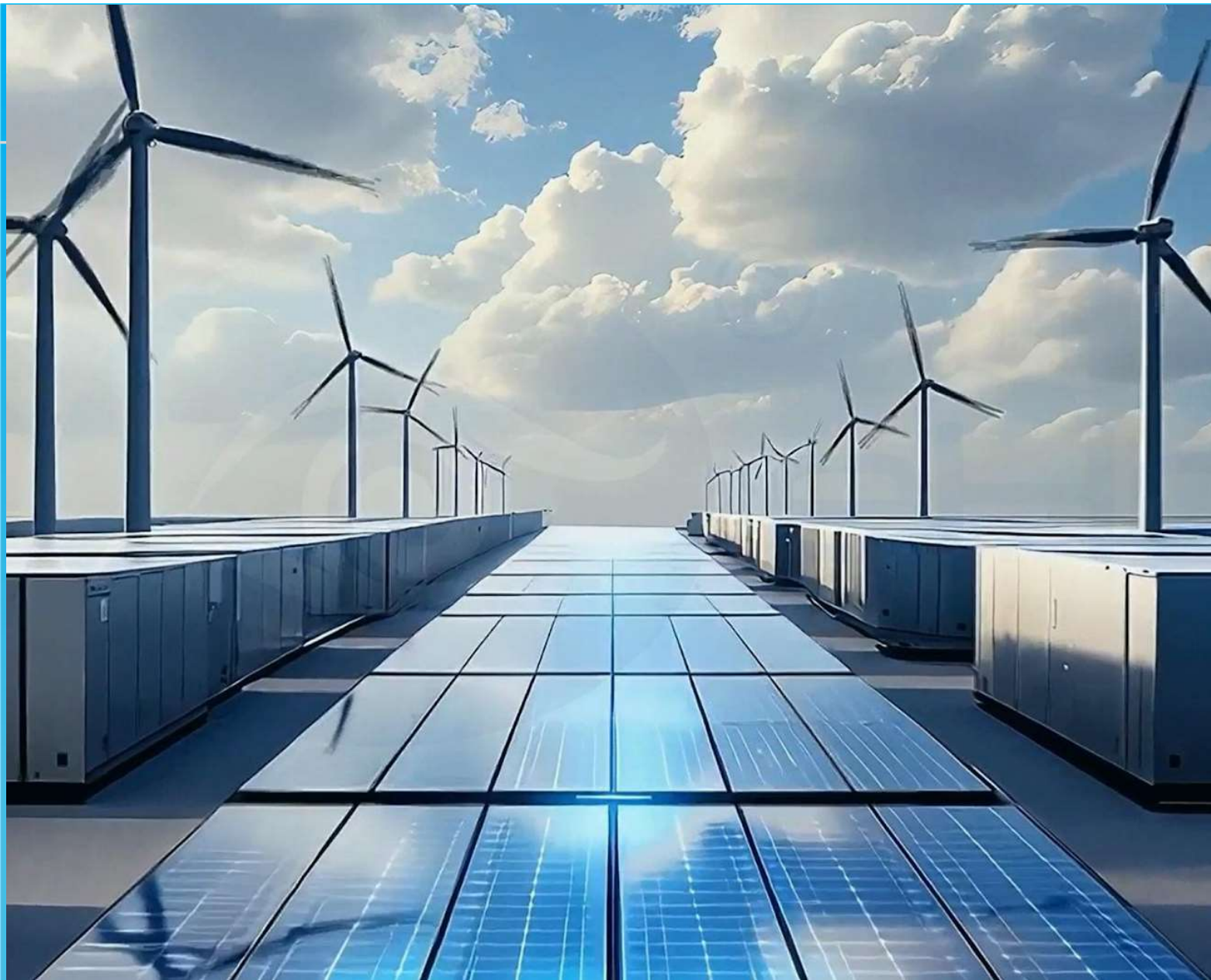




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III. Functional Overview

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Login page



eHorus® New Energy Smart Operation Platform

Welcome to log in

account:

yu.xiong

password:

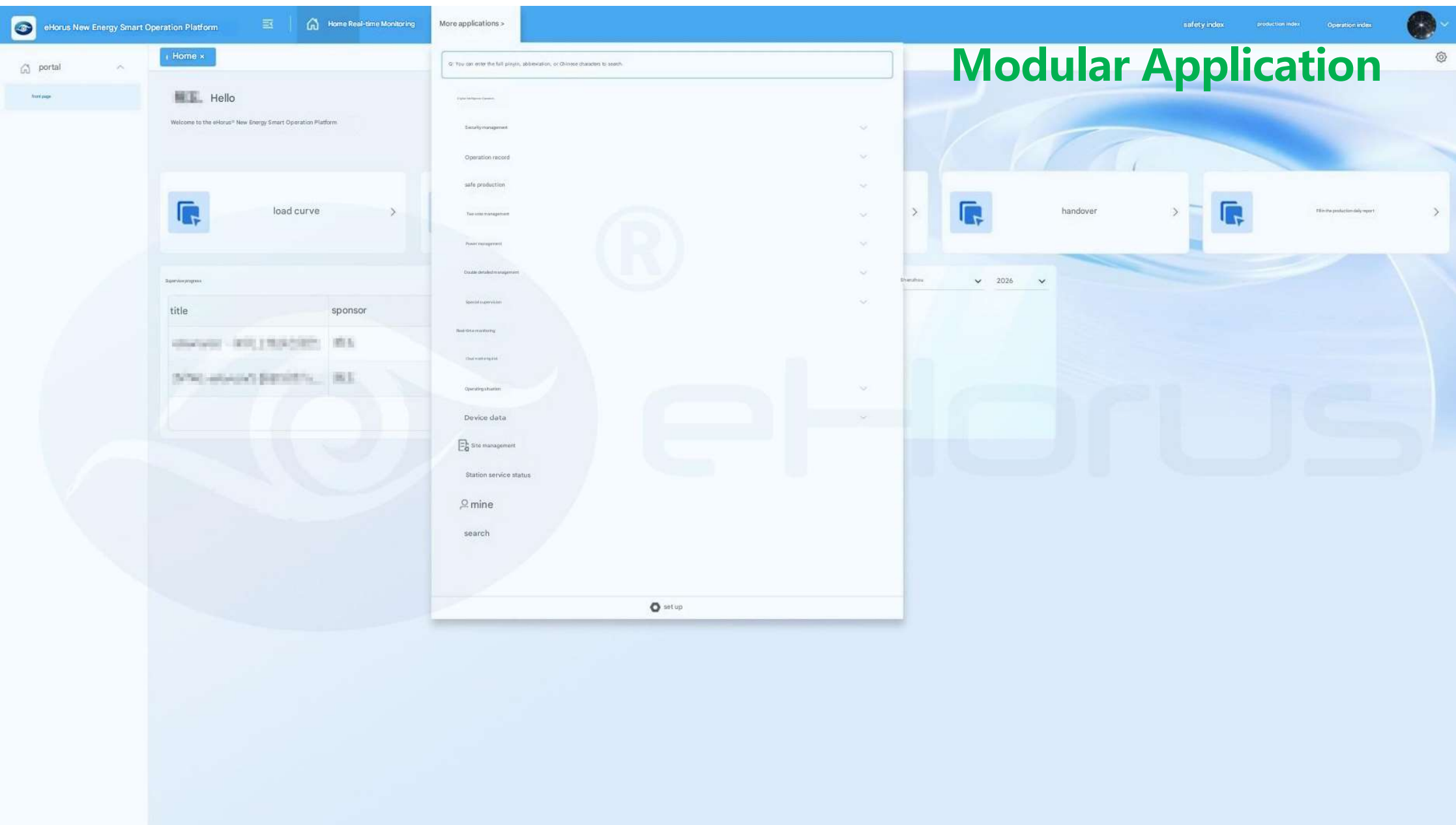
verification code:

9

1+8=?

Log in

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2016-01-02

Drawing

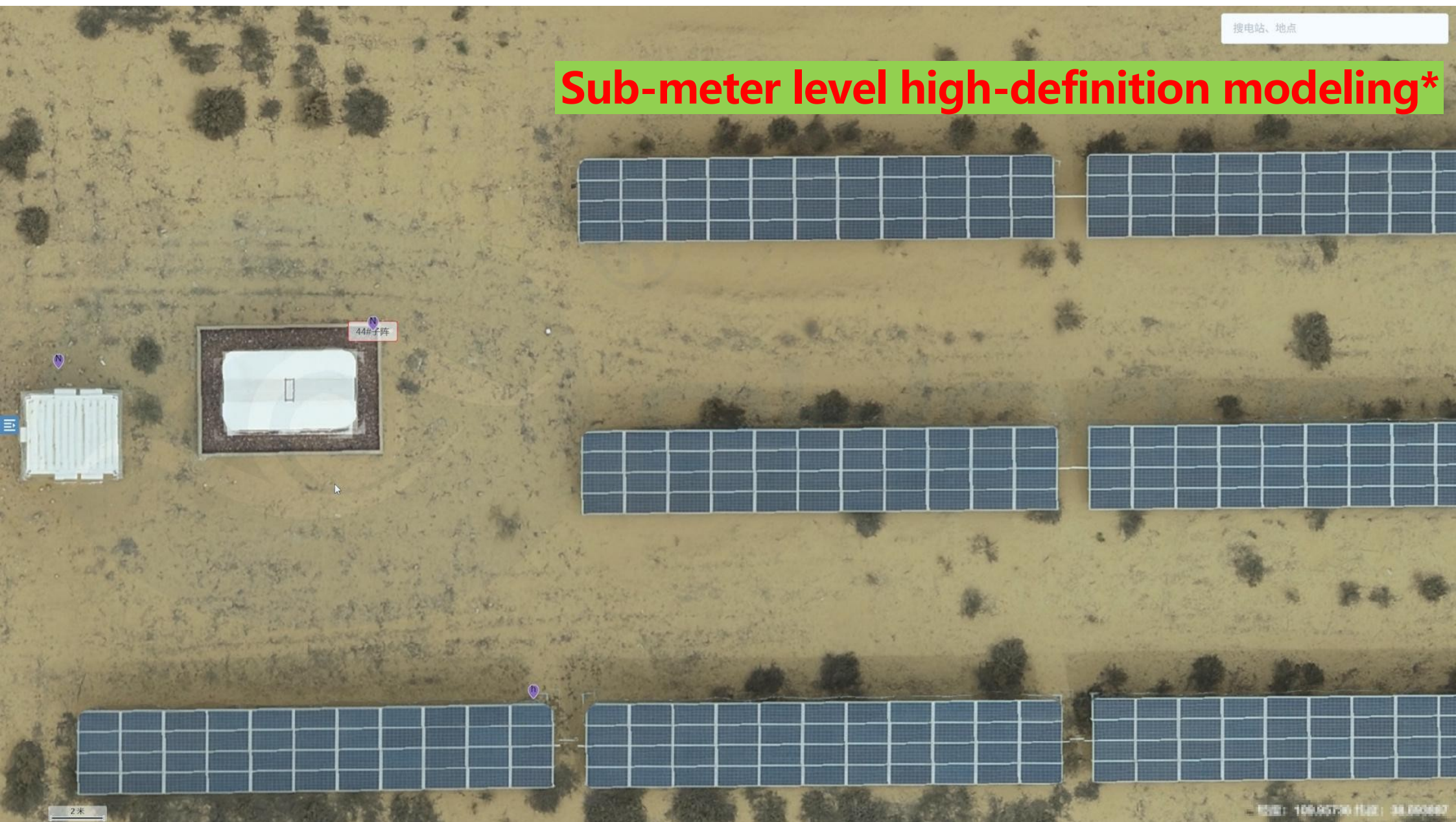
Real-time monitoring*

date	2015-12-30	Number of measurements: 186	maximum value	18.70	minimum value	-0.13	Expected value: 6.24	standard deviation	6.87	Dispersion rate: 110.06%
date	2015-12-31	Number of measurements: 198	maximum value	18.62	minimum value	-0.13	Expected value: 6.65	Standard deviation 6.02		Dispersion rate 90.59 %
date	2016-01-01	Number of measurements: 145	maximum value	18.52	Minimum value	-0.13	expected value 6.05	standard deviation 6.72		Dispersion rate 110.93 %
date	2016-01-02	Number of measurements: 114	maximum value	17.44	Minimum value	-0.13	expected value 6.31	Standard deviation 6.14		Dispersion rate 97.35 %
date	2026-01-01	Number of measurements: 126	Maximum value: 17.33		Minimum value: 0.01		Expected value: 9.37	standard deviation 4.20		Dispersion rate 44.77 %



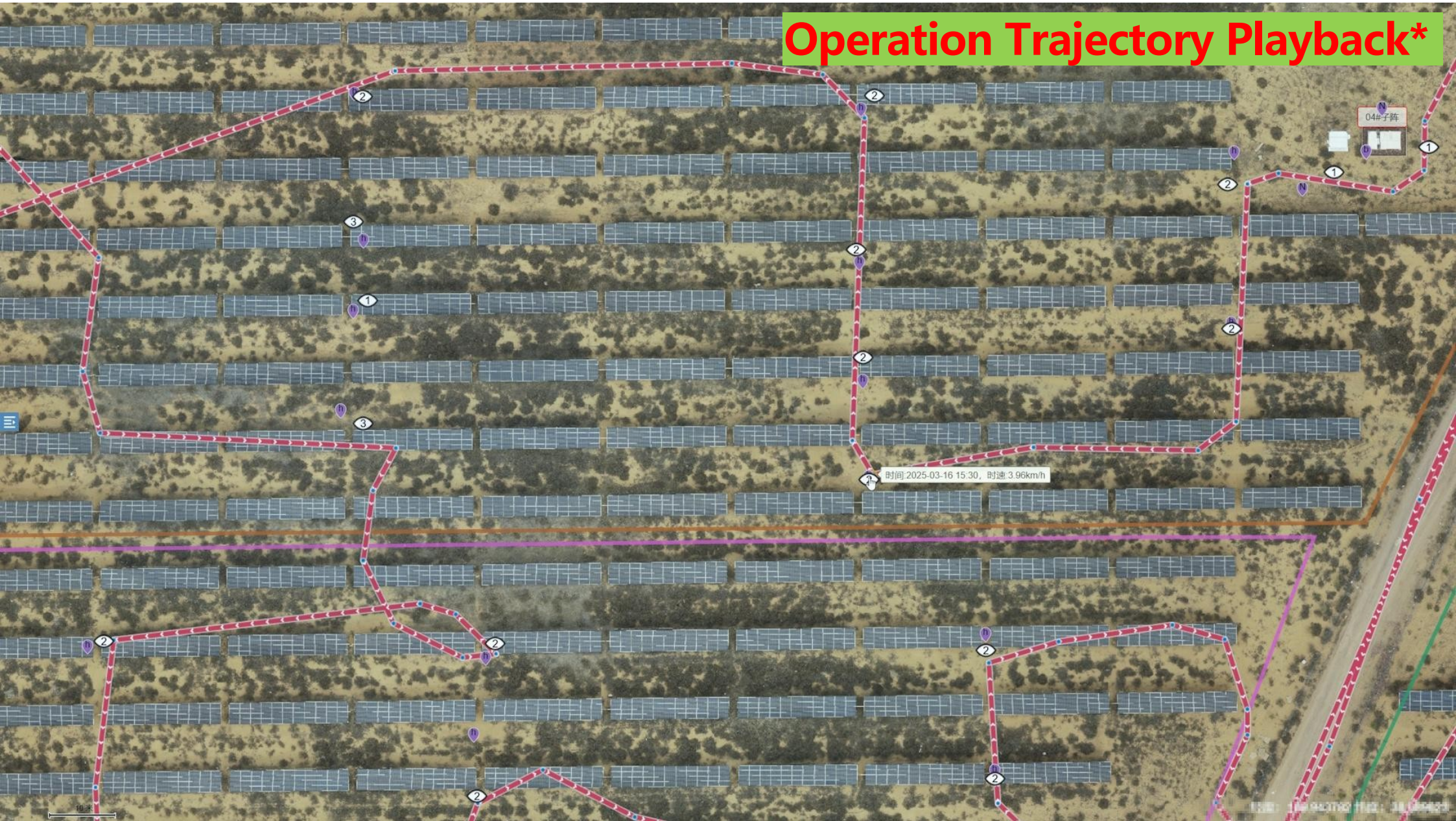
搜电站、地点

Sub-meter level high-definition modeling*



地图: 109.95736 纬度: 38.000007

Operation Trajectory Playback*





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IV. Safety Design

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Safety Design

- Data acquisition, transmission, and application all meet government and industry regulatory requirements.
 - **Regulations on Security Protection of Power Monitoring Systems**, Order No. 27 of 2024*
- Scalable petabyte-level data storage meets the requirements for the entire lifecycle of new energy assets.
- High-availability architecture, platform availability 99.9%+



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V. Implementation and Maintenance

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Deployment Plan

- Data Hosting (SaaS)
 - Cumulative capacity $\leq 500\text{MW}$ within 5 years
 - Out-of-the-box
- Enterprise-level private deployment
 - Current new energy asset scale $\geq 500\text{MW}$
 - Customized to meet individual needs
- Platform redistribution*
 - Product agency, entrusted operation*



Implementation and maintenance

- Real-time monitoring/intelligent diagnostics module requires the deployment of an edge data acquisition and transmission system*
- Job management module can optionally utilize high-definition drone imagery modeling*
- Power trading support module is deployed independently
- 5x8 technical support service guarantee



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VI. Best Practices

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Photovoltaic power plant case studies

■ New energy power generation park



- Installed capacity: 100 MW;
- Annual power generation: 150 million kWh+;
- Monitoring units: 20,000+;
- Component quantity: 400,000;
- Risk categories:
 - ✓ High-voltage power,
 - ✓ Equipment aging/overload,
 - ✓ Operational safety,
 - ✓ Fire safety,
 - ✓ Natural disasters;
- Annual inspection mileage: ~2000 km





规划

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Inspection plan

name	illustrate	Creator	operate
✖️ [ehorus] Aerospace Operations and Maintenance	System built-in base base template	super administrator	
📄 AC combiner box			
Lightning arresters and counters			

📄 Protection, measurement and control and secondary equipment
📄 Factory power collection line
📄 Factory communication equipment
📄 DC distribution cabinet
📄 DC combiner box
📄 UPS
Dispatch data network and communication cabinet
📄 electric actuator
environmental monitor
📄 houses
📄 Bracket
📄 components



[ehorus] Aerospace Operations and Maintenance: Protection, Measurement and Control, and Secondary Equipment - Inspection Project

Version	cycle	period unit	Inspection items	operate
1	1	day	6	🔍

1 item in total

30 items/page

< 1 >

Go to 1

Page

Project content

serial number	Inspection content	Fill in type	Text example
1	All protection and automatic devices are powered on normally.	Check	
2	Each protection function and outlet pressure plate in operation should correspond to the current operating mode;	Check	
3.	Components or plug-ins that are frequently powered do not exhibit any abnormal phenomena such as overheating, unusual odors, or unusual noises;	Check	
4. The	protection and automatic devices' human-machine interface are working normally, the signal indicator lights are displaying normally, and there are no alarm signals;	Check	
5	All cable holes in the cabinets are properly sealed, and the inside of the cabinets is clean and free of debris;	Check	
6	The protection and control devices of each cabinet are in normal time synchronization.	Check	



作业

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type	title	Planned start date	level	state	completion rate	evaluate
Inspection	The first inspection of substations and power lines in 2023	2023-01-01	company	Completed	100%	
Clean	First component cleaning task in 2023	2023-01-01	company	Completed	100%	4.0 (Satisfactory)
Inspection	The first factory area inspection task in 2023	2023-01-01	company	Completed	100%	
weeding	The first weeding task of 2023	2023-01-01	company	Completed	100%	4.0 (Satisfactory)
other	Dust removal work-in-the first quarter of 2023	2023-01-01	department	Completed	100%	4.0 (Satisfactory)
acceptance	Some transformer substations at the power station are running low on oil; three barrels of 45# transformer oil need to be purchased...	2023-01-09	company	Completed	100%	
acceptance	Acceptance of Civil Construction for Communication Upgrade of Power Station Combiner Box	2023-01-12	department	Completed	100%	4.5 (Surprise)
other	vehicle maintenance	2023-01-12	department	Completed	100%	4.5 (Surprise)
acceptance	Technical services for the repair of high-voltage side cable heads of transformer substation 3513-04B...	2023-01-16	company	Completed	100%	
acceptance	Safety shoes were purchased to ensure the safety of maintenance personnel working outdoors.	2023-01-18	company	Completed	100%	



作业

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View patrol tasks

serial number	step name	Fill in the results
1	cleaning area	Phase IV factory area
2	Cleaning methods - labor outsourcing	Site staff
3	cleaning staff	sweet
4	Daily preparation photos before construction	
5	Daily photos of the site before construction begins	
6	Daily photos during construction	
7	Daily construction video	Phase IV Southwest
8	Photos after daily construction work	

2023-03-02 09:44:28

Phase IV, Array 05, Array 5, Phase IV, Inverter 2, Combiner Box 14 - West, approximately 11.5 meters away.

viewimage (1500 x 900)



View patrol tasks



Cloud patrol

Basic information		
Number 2023042709535700033303	Photovoltaic Power Station A	Title: First Component-Based Contamination Cloud Inspection in 2023
Content: Second component contamination cloud inspection in 2023		level company
Work area whole site		
Device type		
Type Cloud Patrol	Planned start date: April 27, 2023	Planned completion date: 2023-05-02
state	Completed 100% ?	Actual start date: 2023-04-27
Actual completion date: 2023-04-27		
Executor sweet	Creator plum	Creation time: 2023-04-27 09:53:57

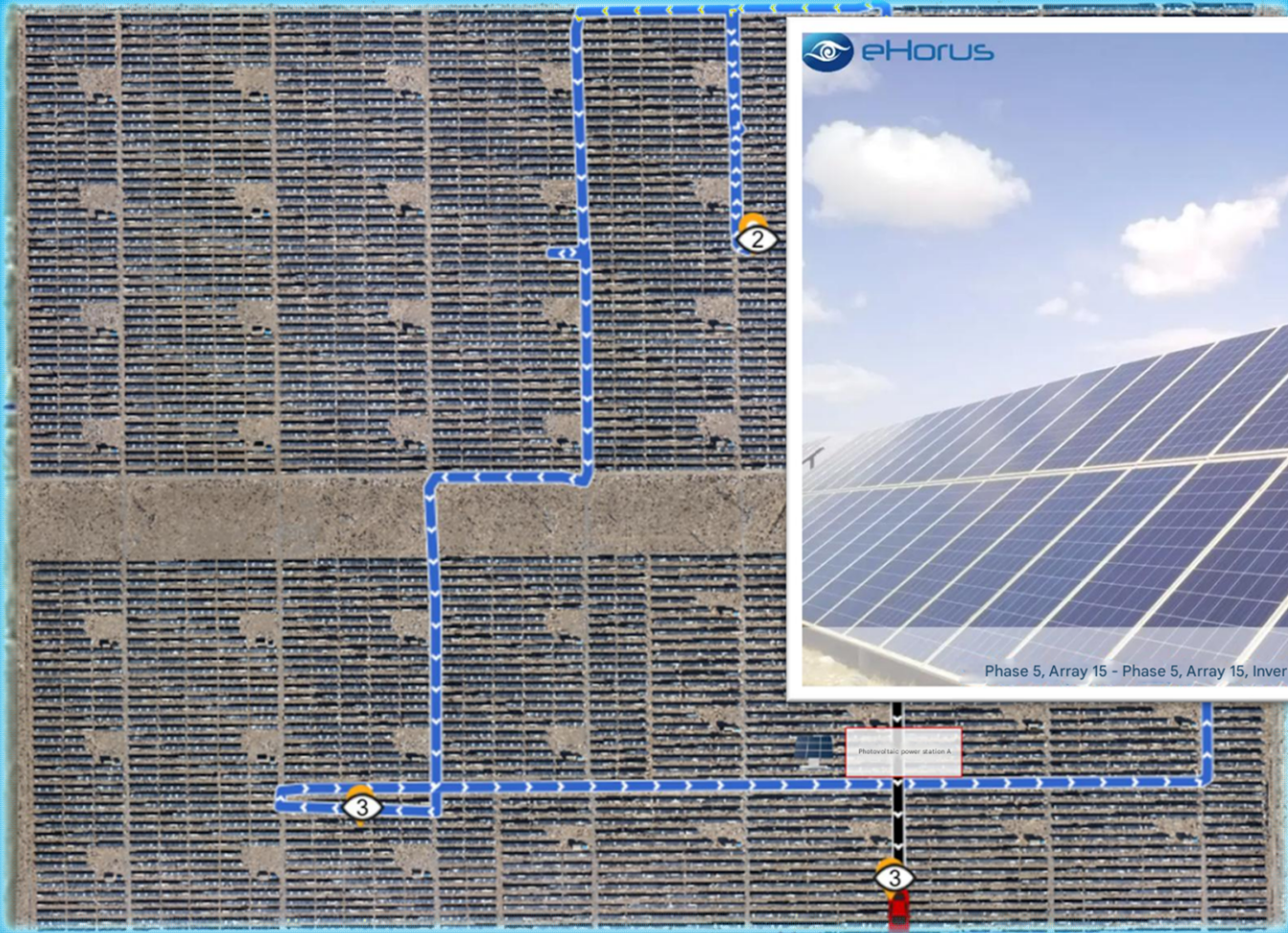


Review information				
Task rating	Task comments	Reviewer	Comment time	operate
★★★★☆ 4.5		plum	2023-04-27 14:16:30	



云巡视

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分析

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 Inspection report

All factories ☐

Please select the owner

Comprehensive completion rate

100%

Number of stations not inspected: 0

serial number	power station	Task name	Device name	Device type	Inspection times (times)	Last inspection time	Inspection completion rate
1		The first factory area inspection task in 2023	Phase 4 1# box transformer	Box transformer	6/6	2023/06/12	100%
2		The first factory area inspection task in 2023	Phase IV, Array 1, Inverter 1	central inverter	6/6	2023/06/12	100%
3		The first factory area inspection task in 2023	Phase IV, Array 1, Inverter 2	central inverter	6/6	2023/06/12	100%
4		The first factory area inspection task in 2023	Phase IV, Array 1#	components	1/1	2023/02/20	100%
5		The first factory area inspection task in 2023	Phase IV, Array #1Support	Bracket	1/1	2023/02/20	100%
6		The first factory area inspection task in 2023	Phase IV I-01#-A Cabinet-01H Combiner Box	DC combiner box	2/1	2023/02/20	100%
7		The first factory area inspection task in 2023	Phase IV I-01#-A Cabinet-02H Combiner Box	DC combiner box	1/1	2023/02/20	100%
8		The first factory area inspection task in 2023	Phase IV I-01#-A Cabinet-03H Combiner Box	DC combiner box	1/1	2023/02/20	100%
9		The first factory area inspection task in 2023	Phase IV I-01#-A Cabinet-04H Combiner Box	DC combiner box	1/1	2023/02/20	100%
10		The first factory area inspection task in 2023	Phase IV I-01#-A Cabinet-05H Combiner Box	DC combiner box	1/1	2023/02/20	100%
11		The first factory area inspection task in 2023	Phase IV I-01#-A Cabinet-06H Combiner Box	DC combiner box	1/1	2023/02/20	100%
12		The first factory area inspection task in 2023	Phase IV I-01#-A Cabinet-07H Combiner Box	DC combiner box	1/1	2023/02/20	100%



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Thanks

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