YAGENA

Informatization | Digitization | Intelligentization

Freedom · Integrity · Openness · Duty · Harmony

Hangzhou Yagena Technology Co. LTD

Company Profile

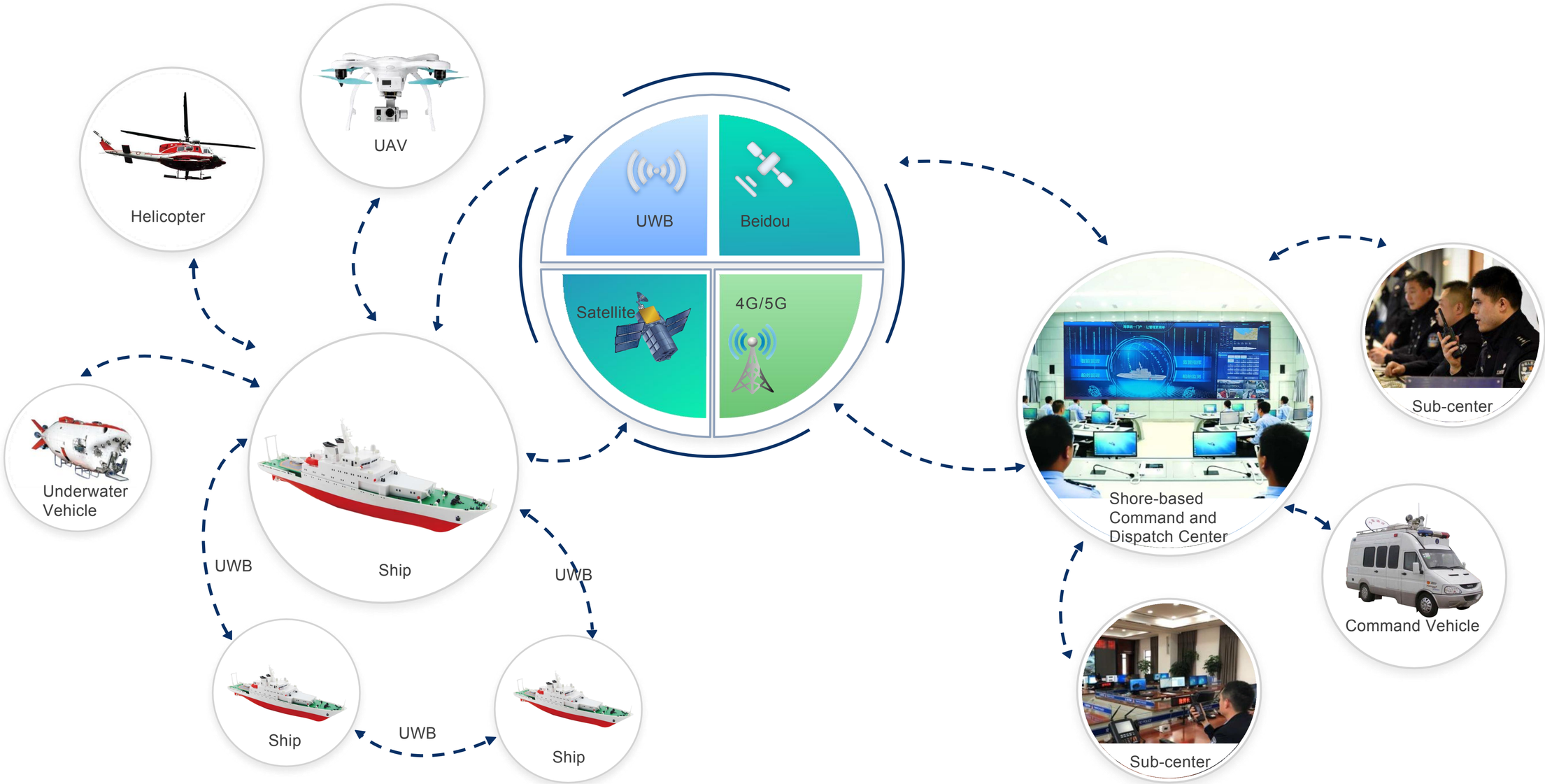
Hangzhou Yagena Technology Co. LTD, founded in 2017, is a technology company focused on the innovation of software and hardware products. Yagena adheres to the business philosophy of “Staff Integration, Affairs Fusion, Materials Convergence” and practices the core values of "Freedom, Integrity, Openness, Duty, Harmony". We are committed to meeting the needs of the sea related industry to upgrade and transform towards "Informatization, Intelligentization, and Intelligentization", leading the field of smart oceans and smart ships towards a new future.

By leveraging comprehensive communication capabilities, we can help achieve better ship-shore connections and build the foundation of a smart ocean; We are utilizing innovative perception technology to build a safe, convenient, efficient, and stable ocean world; With extensive intelligent products, we can gain insight into and meet diverse needs, allowing intelligent technology to fully play its role and helping all things connect.

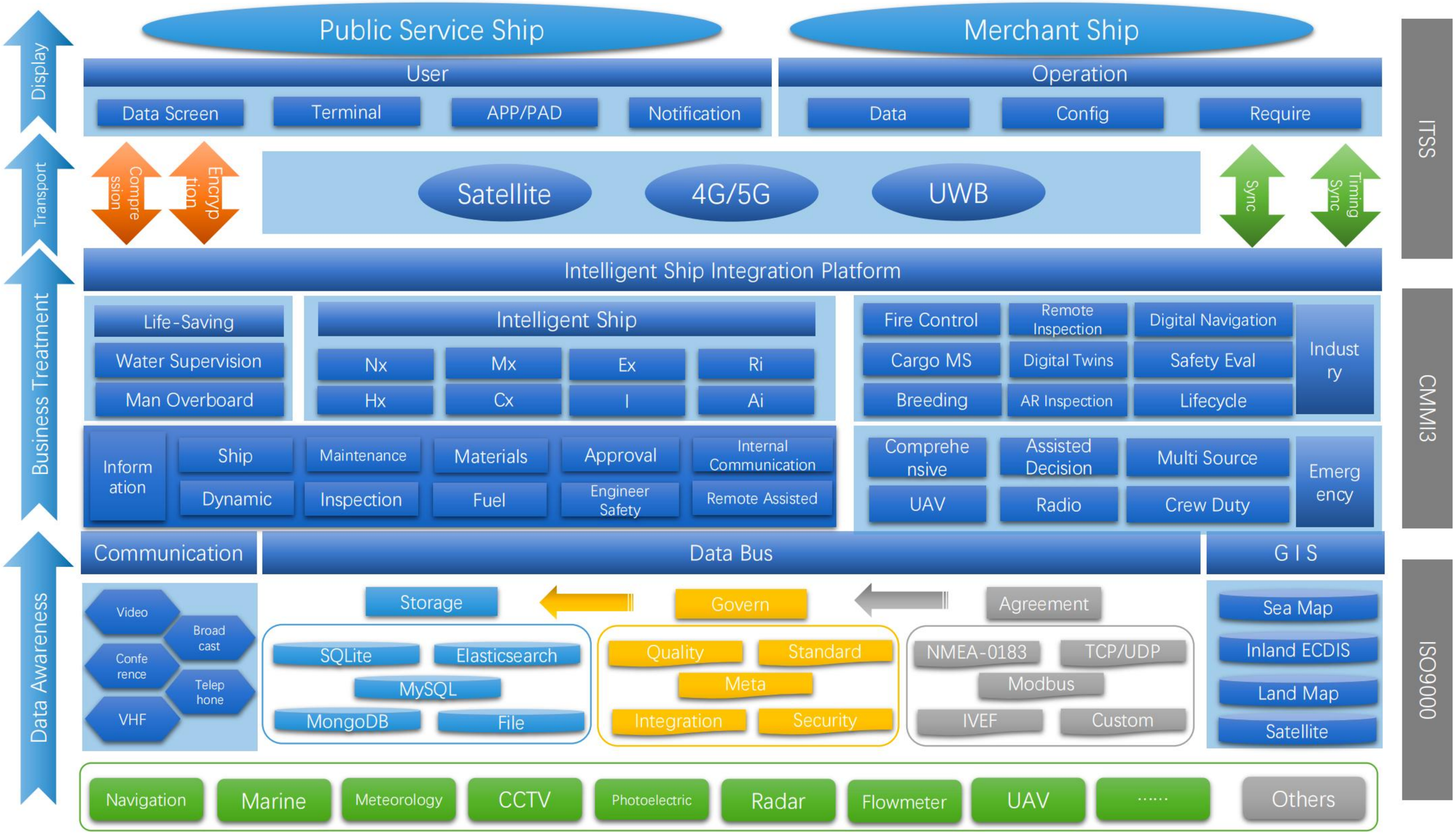
Yagena thinks of quality as the foundation of enterprise, pays attention to learning and innovation, always maintains an attitude of pursuing excellence, strives to forge ahead with determination, explore and develop, and stay open to change.

Business Introduction

The intelligent ship integration platform developed by Hangzhou Yagena Technology Co. LTD follows a new concept of ship management, making the most of modern communication and information data processing technologies, combined with advanced ship management models. Based on real-time ship performance data, it becomes the decision-making basis for ship safety and technical management, thus helping management personnel better manage ships, while utilizing technologies such as Internet communication and comprehensive situational awareness to provide intelligent decision-making and management for ship safety navigation.



Intelligent Ship Integration Platform

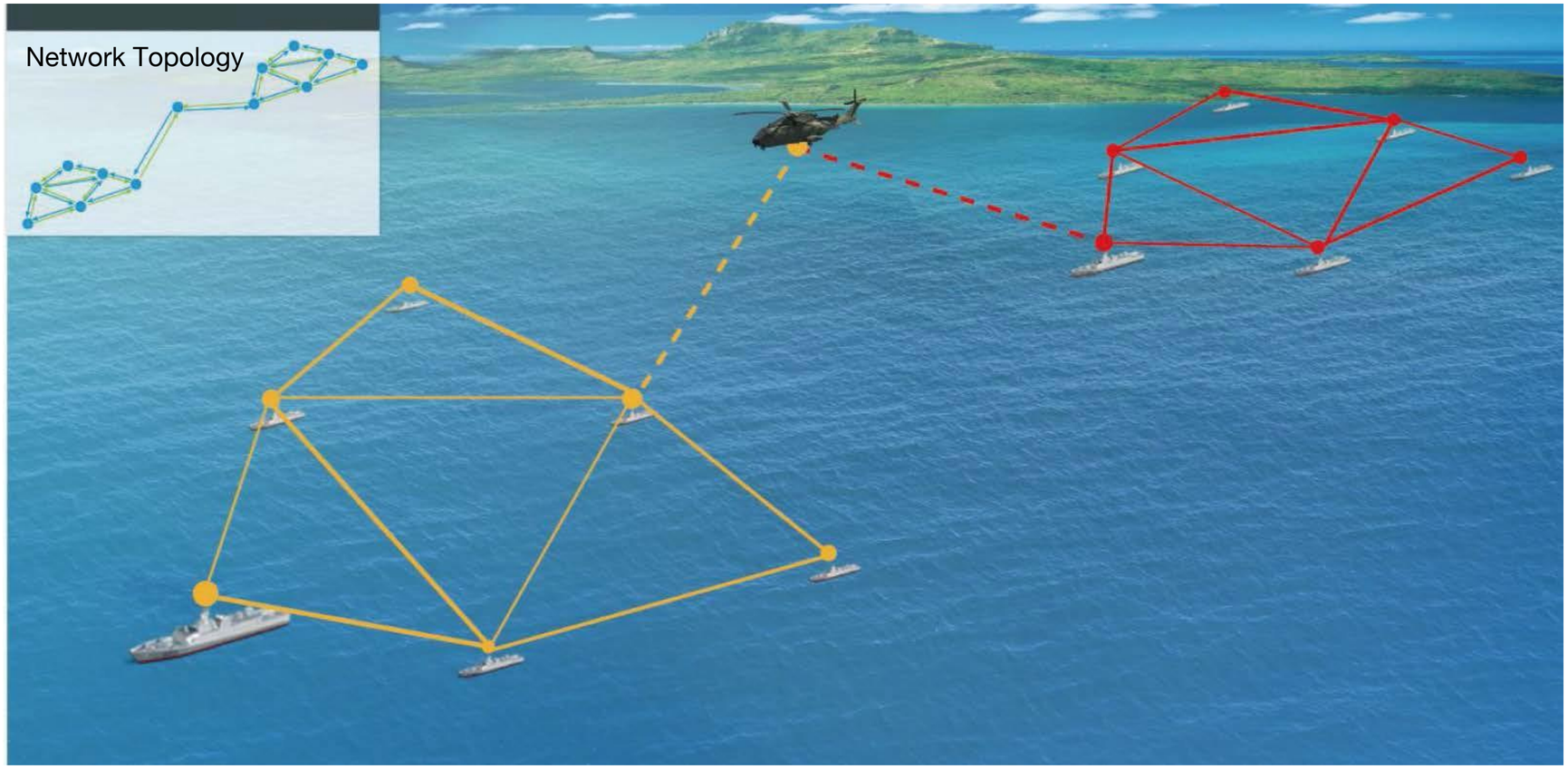


Ultra-wideband Communication System

This system provides communication links for the transmission of comprehensive business information such as language, data, video between ship-ship, ship-shore, ship-aircraft (manned/unmanned) access points, ensuring the communication capability of ships during formation collaboration or nearshore operations.

- UWB wireless communication scheme against complex environments
- Efficient, dynamic, self-organizing self-healing, destroy-resistant communication technology
- Same frequency network without center
- Automatic routing selection, zero configuration for network access and disconnection
- Multi-hop network, extended coverage for long-distance communication
- Zero cost for broadband wireless communication traffic

Portable Mobile Command Box

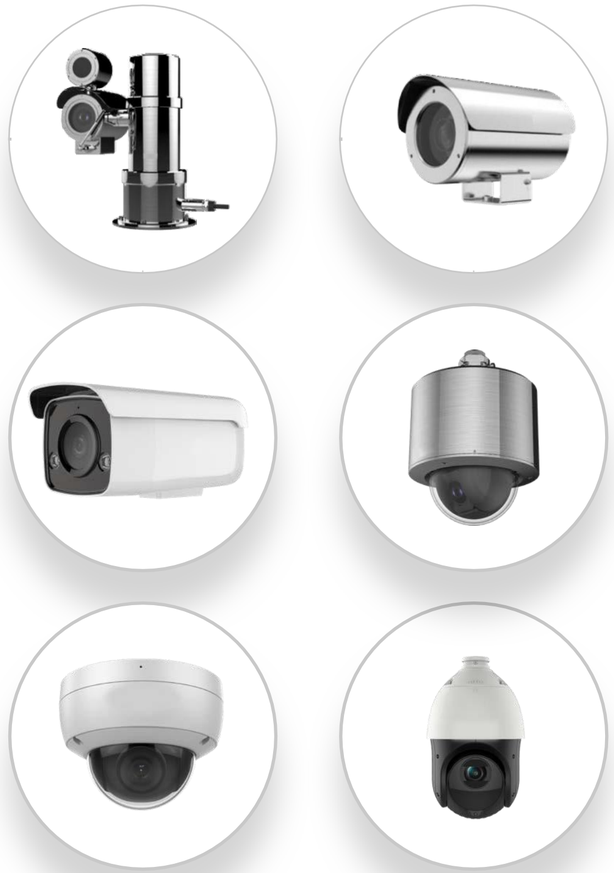


Backpacked Single Soldier

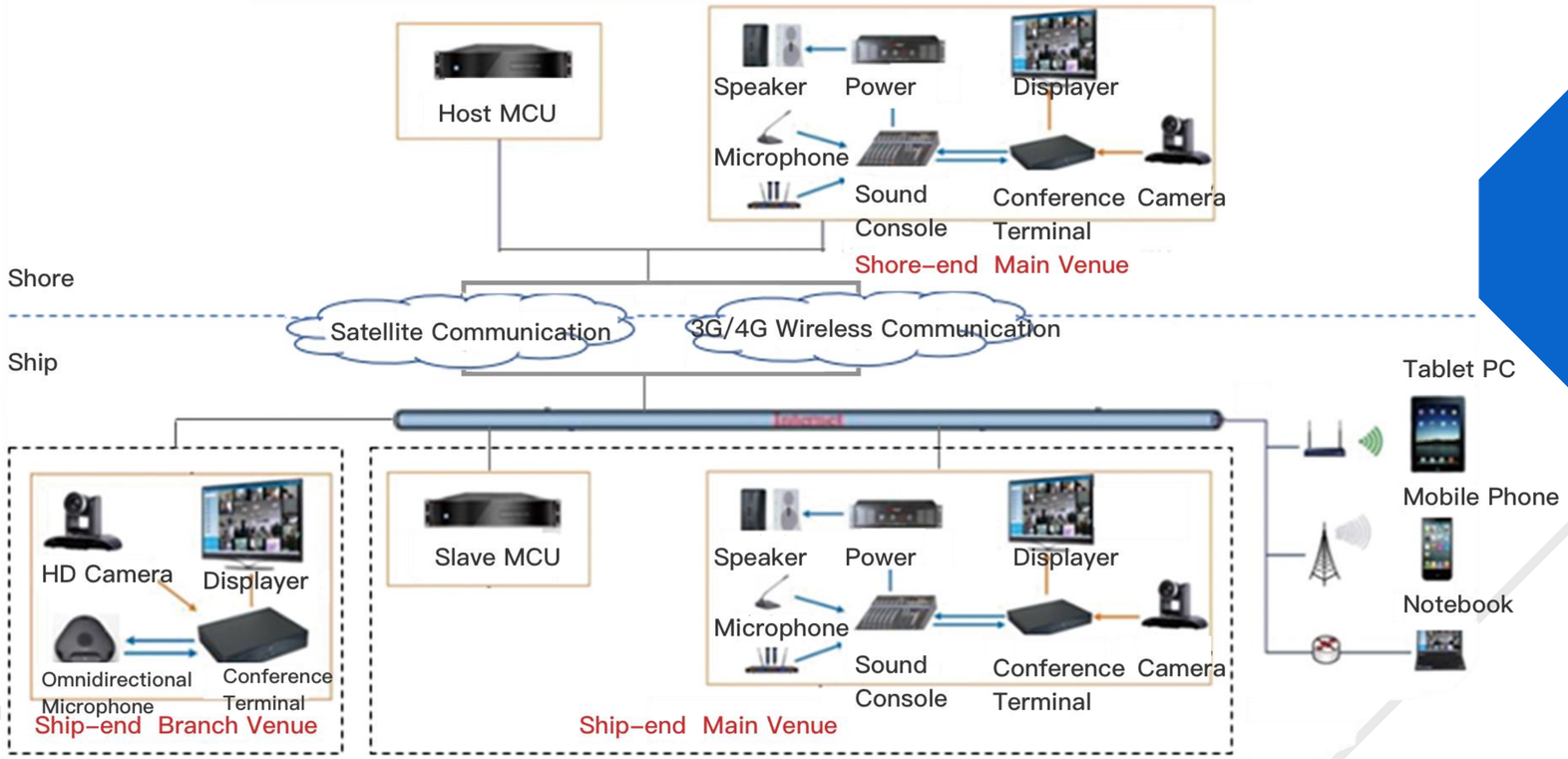
High-power Base Station

CCTV

CCTV is a kind of security and prevention system that integrates functions such as video collection, storage, playback and retrieval, and pan tilt control. Its functions are to ensure the safety of ships during navigation, berthing, and unberthing, to assist in video playback and playback of on-site ship operations, to give assistance for task command and event tracing, and to adapt to the needs of business development in the new situation.



Video Conference



Eight Functions:

01 Employee List

02 Video Retrieval

03 Request for Speech

04 Electronic Whiteboard

05 Screen Sharing

06 Media Player

07 Screen Recording Conference

08 Data Synchronization

Unified Communication System

The unified communication system adopts unified technical standards to integrate all audio, video, and image resources such as video conference, video surveillance, wireless image transmission, VOIP telephone, ship integrated internal communication, public broadcasting, automatic telephone, satellite phone, VHF telephone, single sideband radio, aeronautical station, fishery radio, terminal computer or conference voice peripheral, SMS, electronic fax, recording and replay.

Realize the cross-network convergence of various emergency communication modes, the aggregation and access of various communication terminals, and the seamless integration of various video business system resources, and build a visible and controllable communication system with "convergence platform, unified management, and unified command".

Operation and Maintenance Management Terminal of Unified Communication Platform

Unified Communication Terminal (seat) (multiple)

RESfullAPI Interface

Multimedia Interface

Unified Communication Platform

SIP&H323 Relay | E&M 2M | WEBRTC | SIP&H323 Terminals | RTSP | RTMP

Land

VHF Base Station | CCTV | Video Conference | Hand-held Terminal | Office Computer | Dispatch Terminal

Sea

VHF Base Station | CCTV | Broadcast | Automatic Telephone | Video Conference | Hand-held Terminal

Air

Unmanned Aerial Vehicle | CCTV | Aeronautical Station

Space

VSAT | Beidou | Space-based AIS

- Cross-network
- Cross-system
- Cross-terminal
- Cross-space

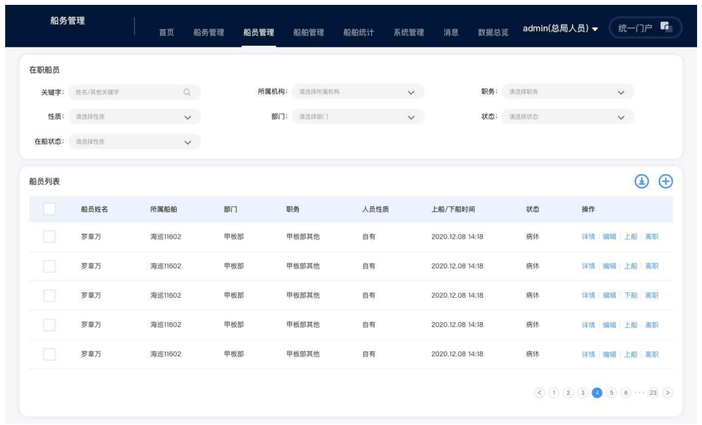
Ship Management Information System

The Ship Management Information System, SMIS System for short, covers various basic functions in the ship management process related to staff, affairs, and materials , and also can provide various customized statistical reports, analysis results, and other functional modules. The system is divided into shore-end system and ship-end system, providing services for shore-end and ship-end users respectively, and meeting their demand for intelligent ship management.

Ship Management Information System-Managing “Staff”

Seafarer Management Certificate of Seafarer Seafarer Assessment

Implement unified management on the information of crew members on board and realize electronic office.
Fully manage basic information, certificates, insurance, vacation, and breach of any rule or regulation related to crew members, etc.



Ship Management Information System-Managing “Affairs”

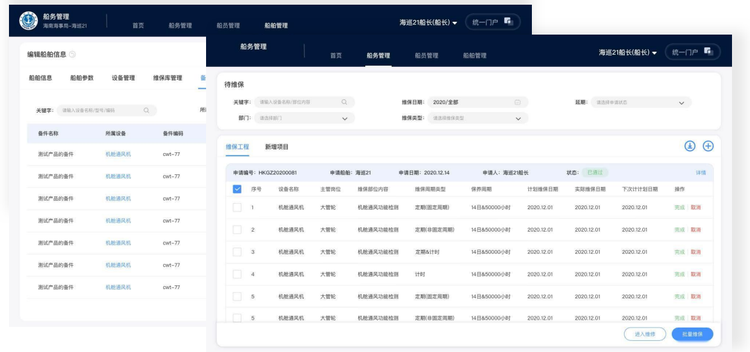
Seafarer Assessment On-duty Statistical Analysis Public Knowledge Management

Provide a method for recording the daily work of personnel on duty and maintenance personnel, and offer a data foundation for generating various business operation status reports. Personnel on duty can record their regular work, initiate work tasks, and ensure effective shift handover through this function. Management personnel also can complete various tasks through this function, such as shift arrangement, recording regular work, shift handover, and on-duty statistical analysis.

Ship Management Information System-Managing “Materials ”

Material Management Oil Management Equipment Management Spare Parts management .....

In accordance with the Ship Repair and Maintenance System (CWBT) and Ship Material Guidelines (IMPA), create a novel, scientific, and practical ship equipment management model that integrates planning, management, and guidance, thereby improving the level of ship equipment management and maintenance management, increasing efficiency, and reducing ship operation and maintenance costs.
Aiming at various objects such as materials, spare parts, and fuel on board, effectively manage processes from basic information to procurement application, approval, warehousing, stock count, inventory, etc.

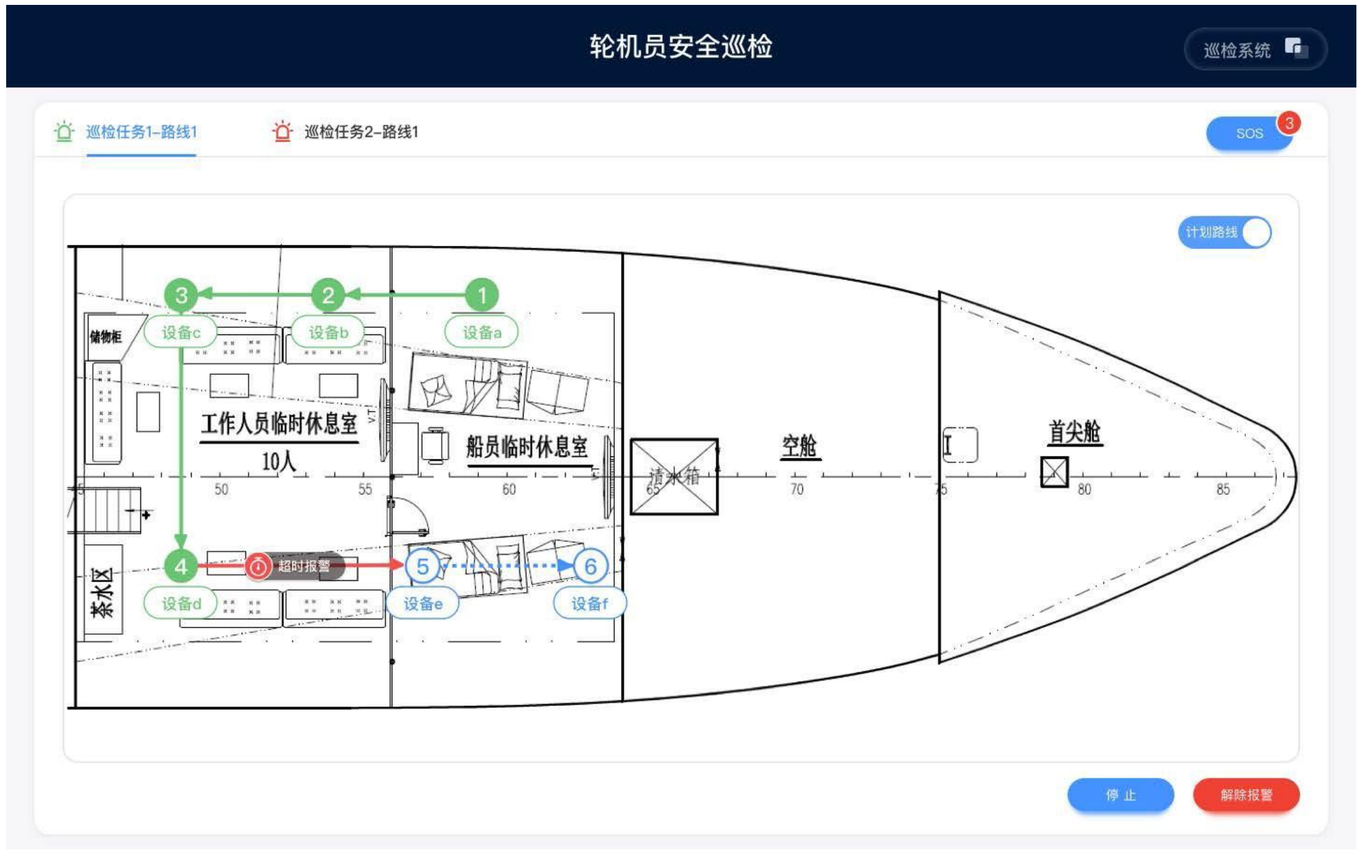


Ship Technical Condition Monitoring

The ship technical condition monitoring system obtains monitoring data of the main equipment on board through acquisition hardware, so as to achieve the connection, analysis, storage, query, and display of monitoring data. Its function is to help relevant crew members know the ship's navigation status and actual trajectory, formulate and report route plans, configure monitoring and alarm data sources, and view various types of data and alarm records. It also provides functions such as ship dynamic monitoring and abnormal alert warning for shore-end and ship-end personnel, offers auxiliary decision-making on ship navigation , and provides strong system support for ship safety navigation.

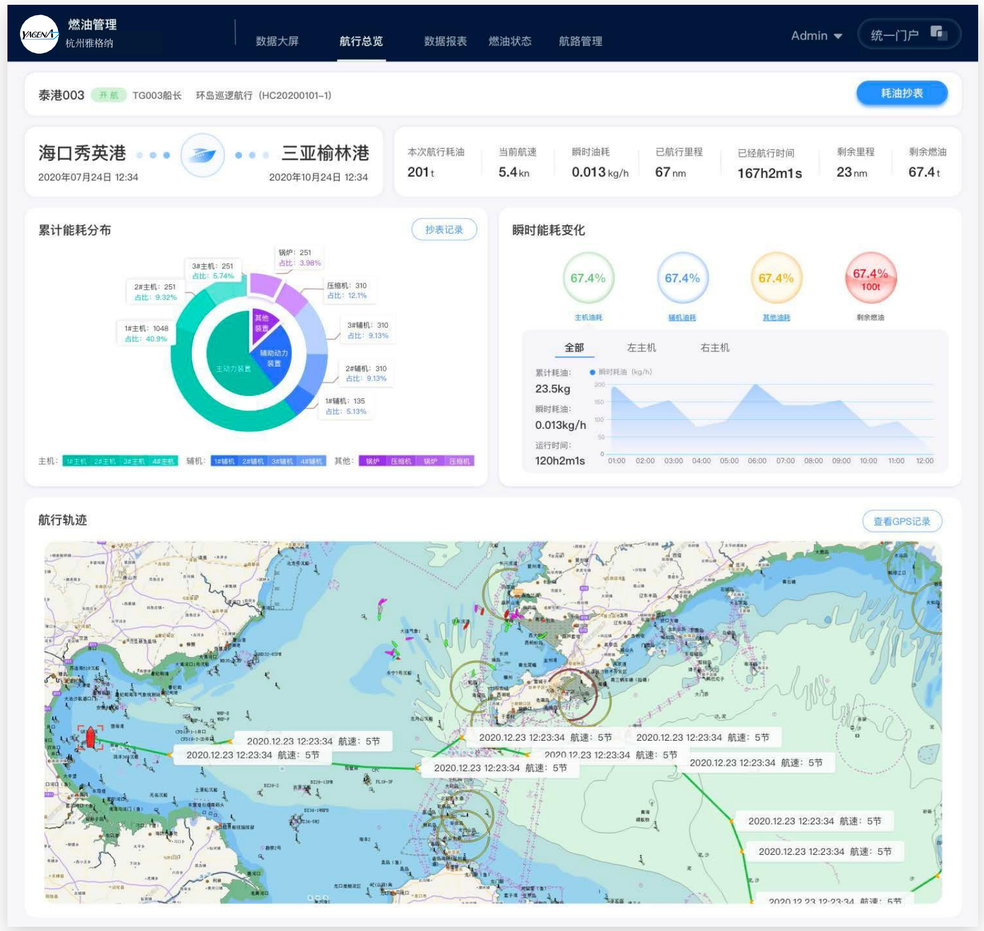
Engineer Safety Inspection

The engineer safety inspection system monitors dynamic information in real-time during the inspection of marine engine room facilities by engineer. The engineer can not only trigger the manual one-button alarm function, but also use the system's intelligent analysis and active alarm function. This solves the problem of the engineer being difficult to detect in case of an accident due to the complex environment, noise, and high temperature inside the marine engine room when the ship is sailing at high speed or under complex meteorological conditions, thus providing a strong guarantee for the safety of engineer and the stable operation of marine engine room facilities.



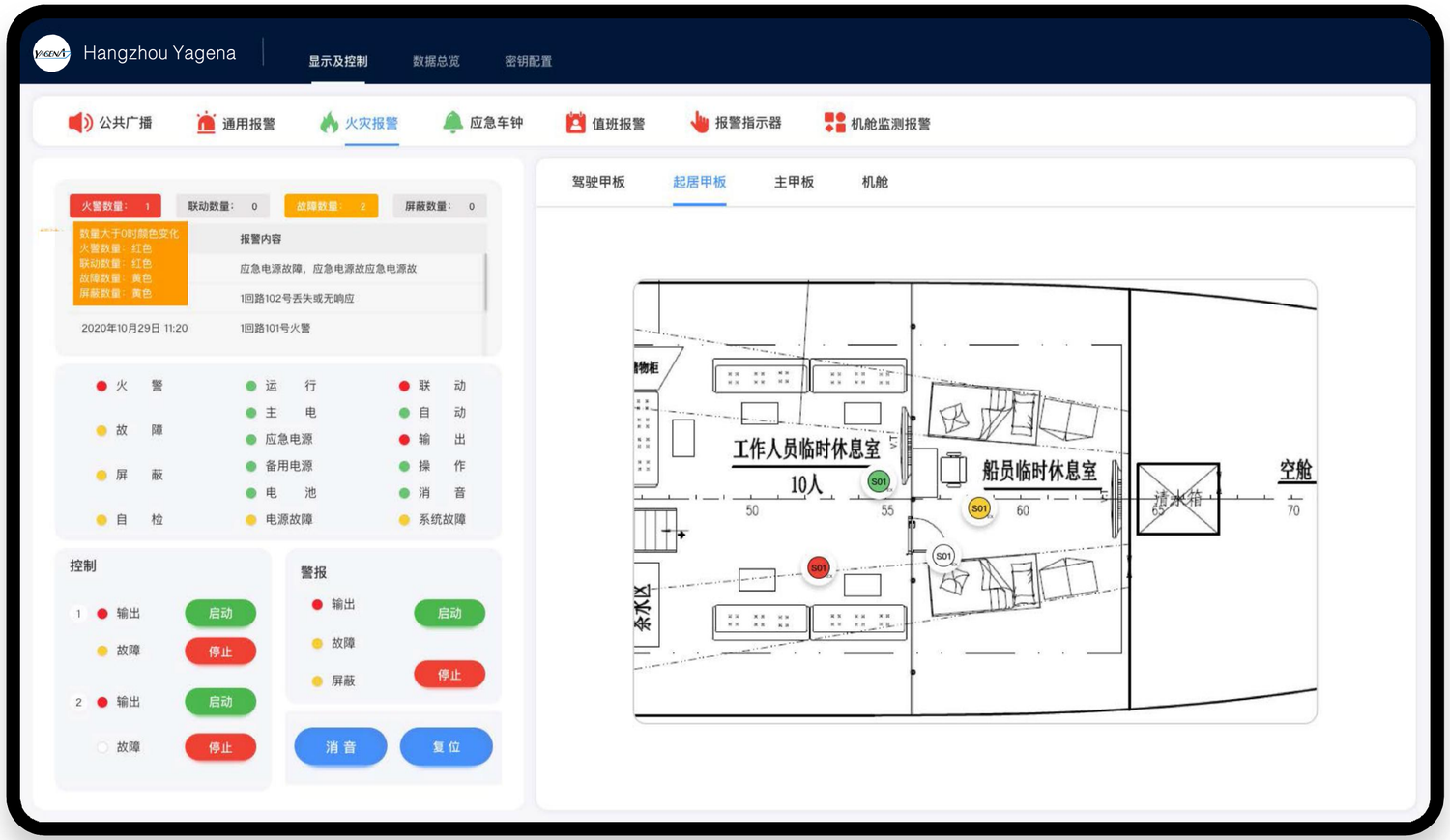
Fuel Oil Management Sy

- Equipment Fuel Consumption Statistics
- Reduce Carbon Emissions
- Statistics of Fuel Consumption Distribution during Voyages
- Oil Tank Refueling Record
- Liquid Level Alarm Record
- Oil Change Record of Equipment
- Multidimensional Fuel Report
- Oil Tank Variation Trend



Internal Communication Centralized Control System

The internal communication centralized control system is a comprehensive control display system that integrates the functions of fire warning, general alarm, emergency car clock, duty alarm, and monitoring alarm of marine engine room equipment , and can display the operational status of corresponding hardware equipment. When alarm occurs, the system can not only synchronize the alarm content, but also automatically record alarm information. Users can also control designated hardware devices by means of the system.

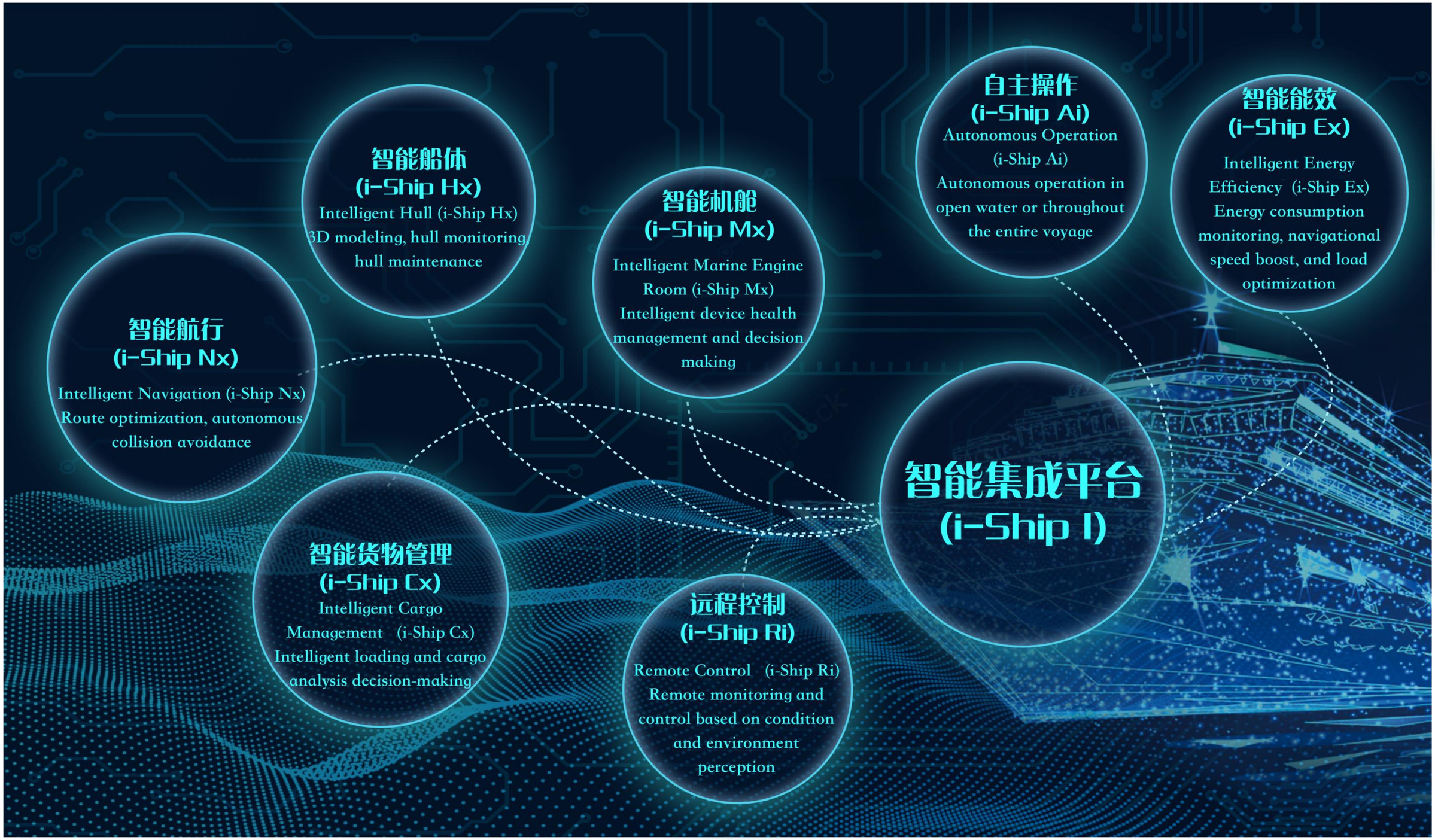


Intelligent Energy Efficiency Management System (i-Ship Ex)

Using the specification "Intelligent Energy Efficiency”as a reference, monitor the refueling, fuel consumption, and exh emission of the ship, collect relevant parameters of the main energy consuming equipment such as the main engine, auxiliary engine, and boiler, and record the operation data of navigation equipment such as the shaft power meter, GPS, anemorumbometer, prospecting instrument, and tilt meter. By scientifically monitoring the annual operating carbon intensity index (CII) of ship, the condition of ship energy consuming equipment, alarms, energy consumption, and tail gas emissions online and conducting analysis, it provides support for strengthening ship energy efficiency management, improving energy efficiency, reducing carbon emissions, and assisting decision-making.

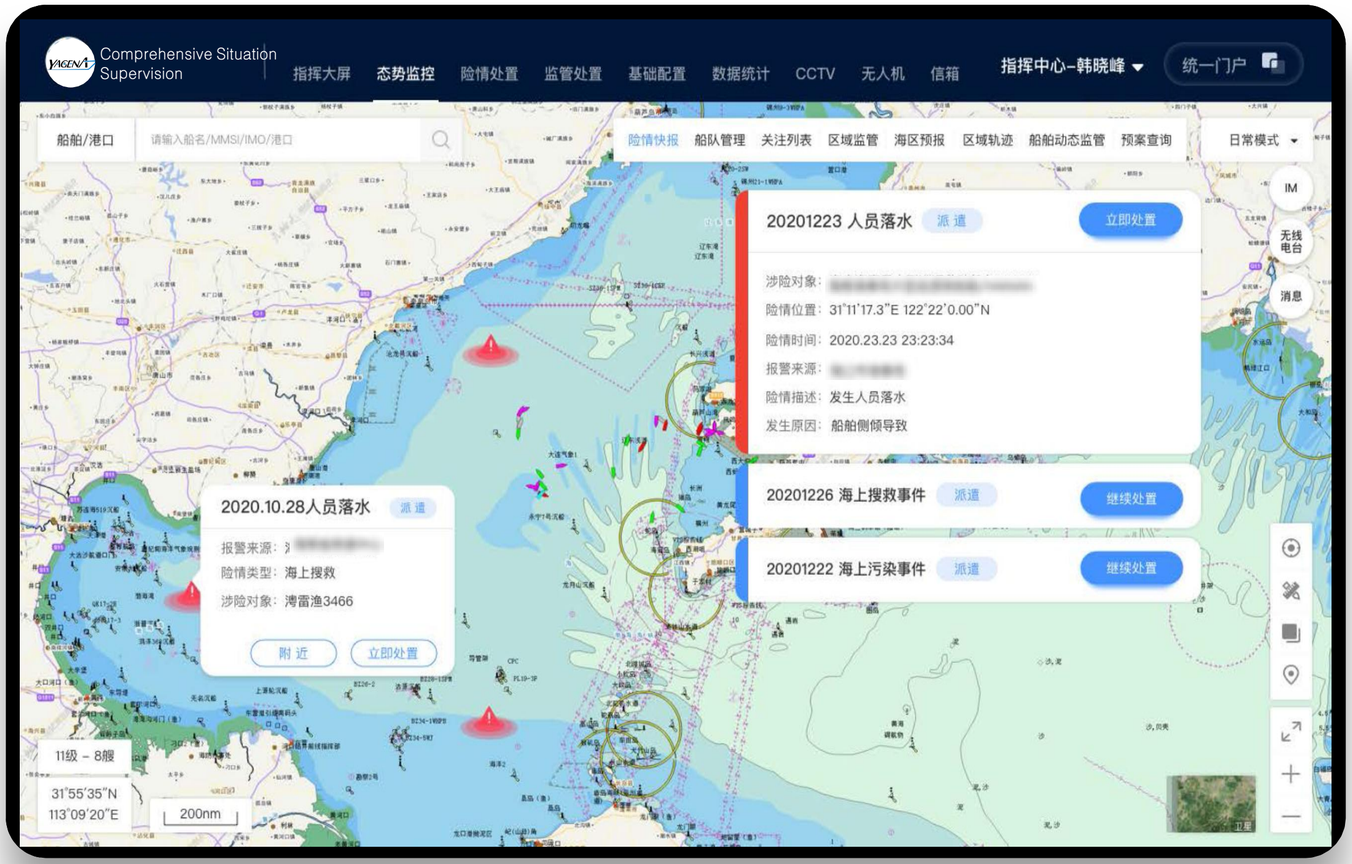
- Navigational Speed Boost
- Trim Optimization
- Load Optimization
- Reduce Carbon Emissions
- Equipment Online Monitoring Analysis

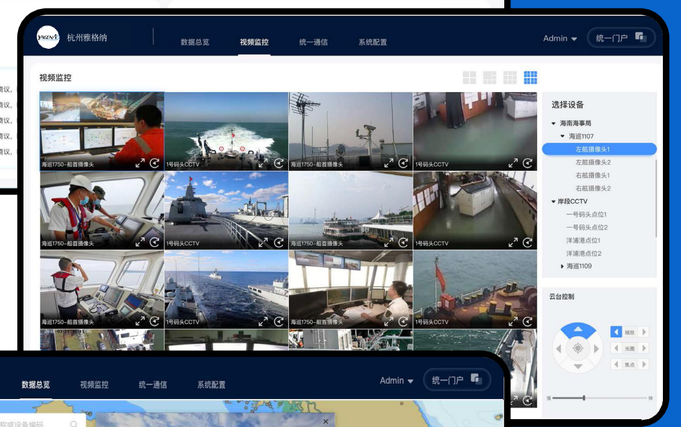
Intelligent Integration Platform (i-Ship I)

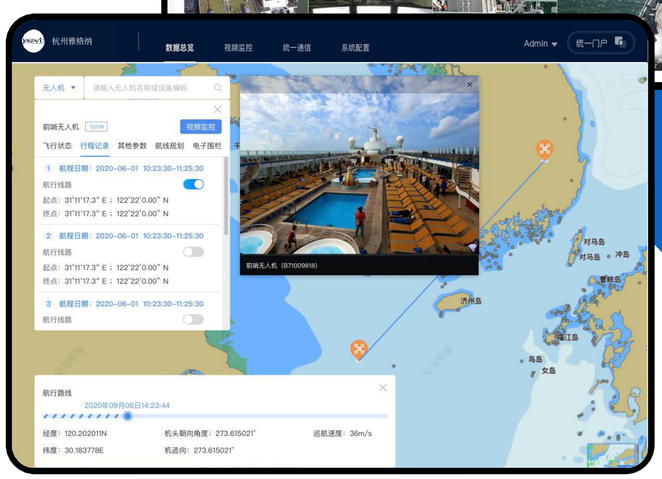


Comprehensive Situation Supervision

The comprehensive situation supervision system can provide real-time situation information of ships under jurisdiction, surrounding ships, and aircrafts, as well as environmental status, navigation elements, and other regulatory information for command staff, enabling them to judge hydrological and meteorological information of key sea areas in real time, conduct risk level assessments, and issue warning information. They can also use advanced intelligent analysis and processing technology to scientifically and effectively supervise ships that are given serious attention and ships in key sea areas.

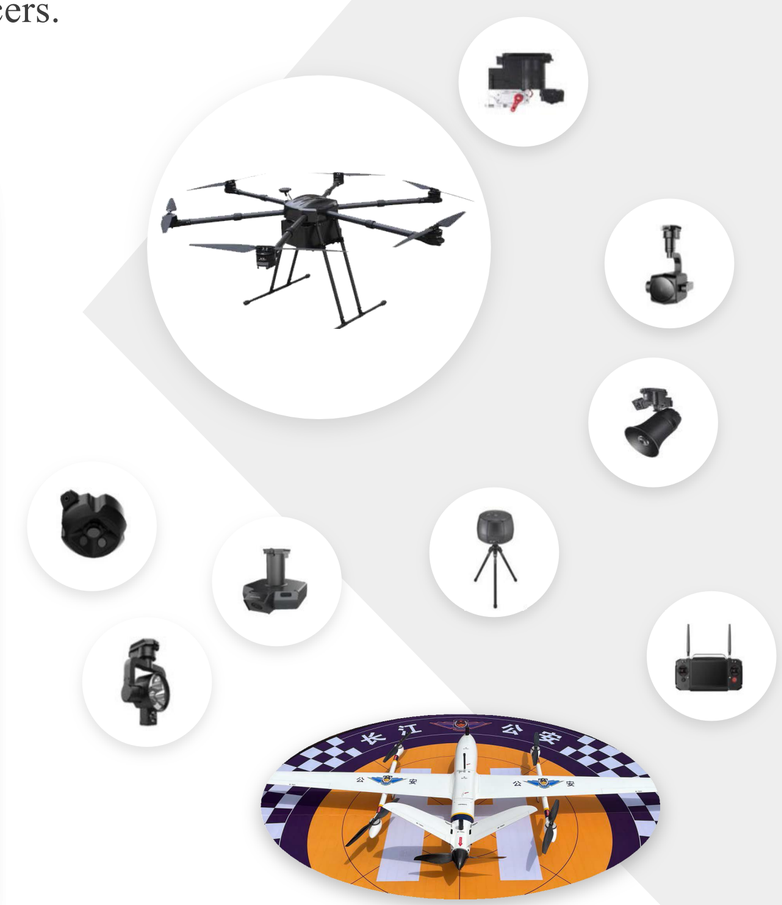






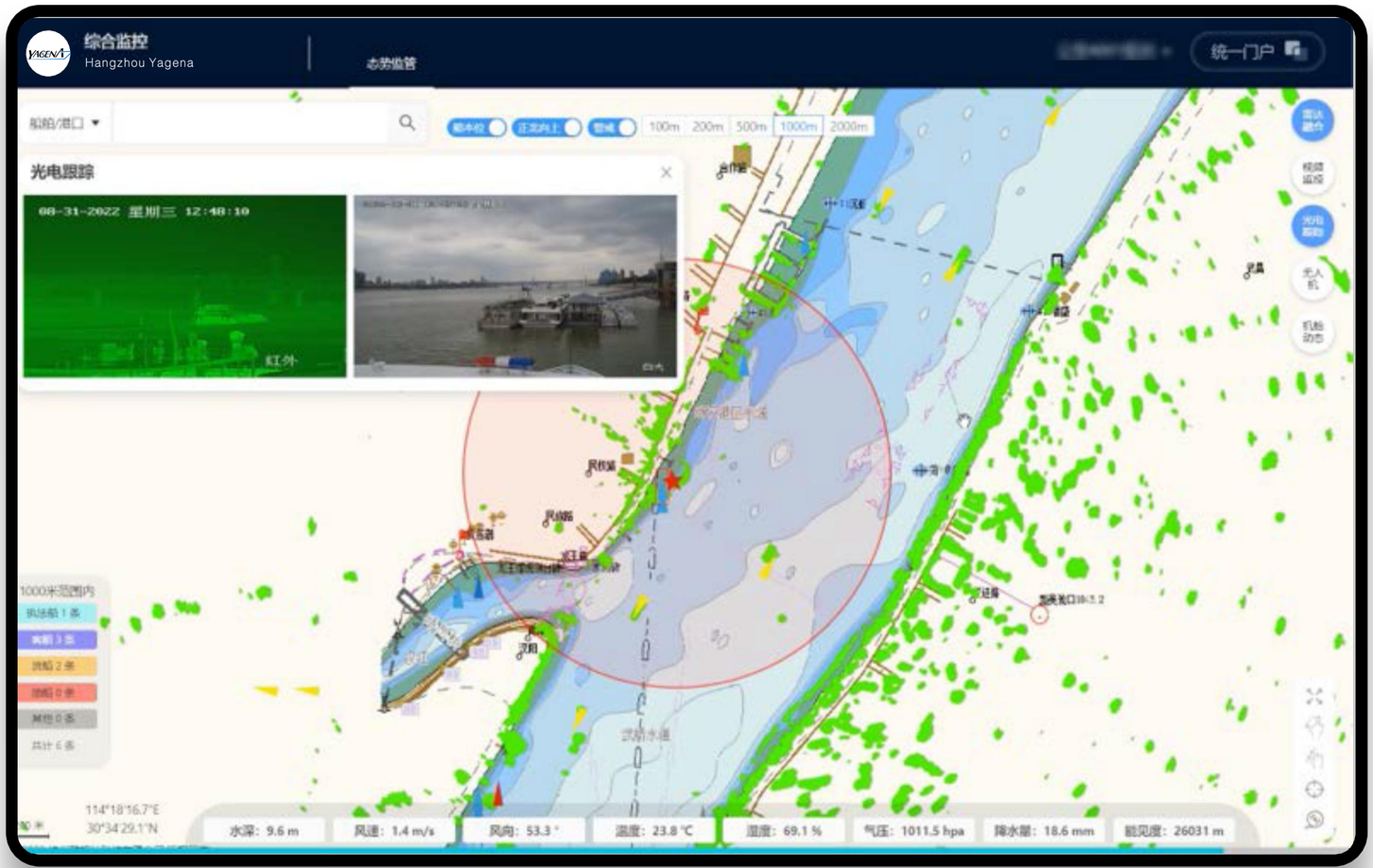
UAV

The Unmanned Aerial Vehicle (UAV) has the characteristics of large monitoring range, strong real-time, high flexibility, etc. , and can quickly get deep into accident/disaster regions and key regions.With its wide field of vision and flexible maneuverability, it can conduct deeper detection, provide highly reliable intelligence information, and achieve excellent inspection results. It utilizes the non visible light pan tilt for dynamic tracking at night, remotely tracking and monitoring ships within the jurisdiction, so as to provide auxiliary support for command and decision-making, and greatly improve the efficiency of law enforcement officers.



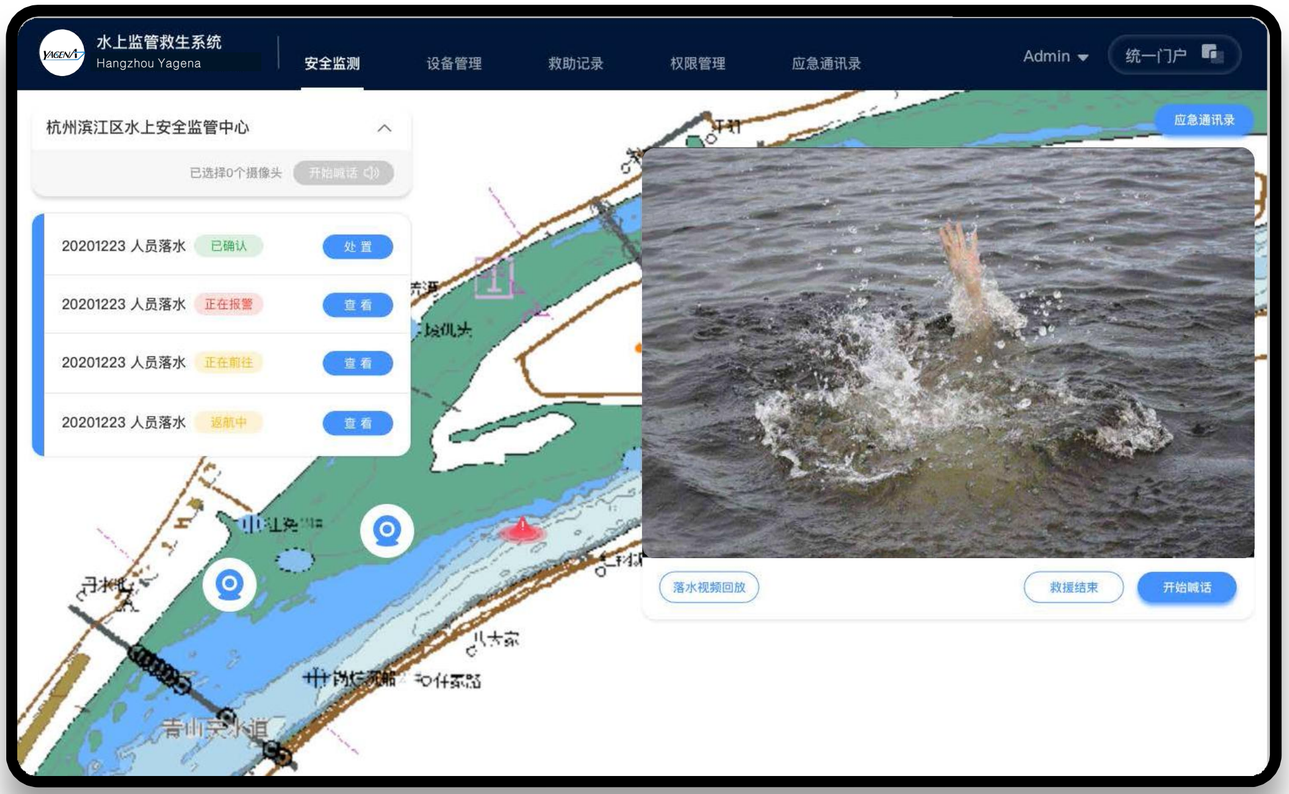
Multi Source Target Fusion

Based on the unique algorithm of radar clutter processing, the radar echo signal processing capability is improved. For extremely small targets on the sea with an area greater than 0.1 square meters, it exhibits excellent automatic tracking and recognition capabilities. After comparing and analyzing the AIS and radar fix information, the data from AIS and radar on the same target is fused, resulting in a high-precision, complete, and unified target data, which is presented on the electronic sea (inland waters) chart, achieving multi-source target fusion and improving comprehensive situational awareness capabilities.



Water Supervision Intelligent Life-saving

The water supervision intelligent life-saving platform mainly applies to the real-time monitoring and rescue of personnel in key areas such as rivers, lakes, seas, scenic regions, warehouses, bridges, docks, etc. The function of calculating overboard position in virtue of intelligent analysis service, as well as the rescue system and intelligent life ring, together make up this water supervision platform with intelligent perception and rapid response, which can reduce drownings.



Ship Operation VR Training System

There are a large number of ship equipment with advanced functions, and crew members need to be familiar with the operation of various equipment on the new ship and the ship handling process. It takes a certain amount of time and cost to proficiently master ship handling. Therefore, in order to shorten training time and reduce training costs, this ship operation VR training system has been created. The training content involves the following functional modules: ship cab operation training, centralized control room operation training, engine room operation training, steering engine room operation training, deck machinery operation training, etc.

(YGN-VR-001)
VR All-in-one Device

Digital Twins

With the development of the times, the offshore activities are constantly changing and becoming increasingly complex. Therefore, traditional flat map command can no longer meet the demand for current command and auxiliary scenes. The three-dimensional command assistance system can simulate the scene and situation, achieve stereoscopic situation monitoring and simulation, and the generated pictures are also clearer. The main functions include scene browsing, situation display of surrounding ships, video surveillance display, distance measurement, light and shadow simulation of 3D scene, post evaluation, equipment monitoring, etc.

Green

Intelligent

Low-carbon

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