

## ZQP group starter panel

### System introduction

The ZQP group starter panel is a comprehensive and efficient ship operation and maintenance monitoring platform built based on the needs of new-energy ship, aiming to enhance the operation and management capabilities of ships. This platform integrates functions such as fleet management, real-time ship monitoring, certificate management and energy consumption statistics to achieve full lifecycle management of ships. Fleet management provides ship archives, voyage monitoring, and crew management to ensure efficient operation of ships; ship monitoring accurately monitors key data information such as battery state and equipment state of ship through real-time data collection and transmission, effectively preventing potential failures; certificate management function realizes electronic management of ship-related certificates, ensuring the validity and timely updating of all certificates; the energy consumption statistics module provides detailed energy consumption data analysis for ships, enhancing the comprehensive performance and environmental benefits of ships. The overall system design focuses on high availability, intelligence, and data security to ensure efficient and safe operations.

### Product features

#### Visual information management

Utilizing technologies such as Geographic Information Systems (GIS) and big data visualization, various information including ship positions, routes, navigation status, and equipment operating parameters are presented in intuitive and easy-to-understand charts and maps. Managers can grasp the overall operational status of the ships at a glance, quickly identify potential problems and risks, and obtain intuitive basis for decision-making.

#### Data access convenience

A dedicated edge access terminal is installed on the vessel to enable easy integration with various onboard sensors and equipment, greatly reducing the difficulty of data access. Regardless of the model of ship equipment, whether old or new, and differences in interface types, rapid and stable data collection can be achieved, providing basic support for subsequent analysis and processing for the platform.

### System management flexibility

The product features an optimal system administration backend, allowing shipowners and managers to flexibly configure user permissions according to their organizational structure and operational needs. Different departments and personnel in different positions can be precisely assigned permissions to operate, view, and edit specific functional modules, ensuring data security while enhancing management efficiency. For example, permissions can be set for crew members, maintenance personnel, and dispatch personnel according to their respective job scopes, avoiding unauthorized operations.

### Intelligent event reminder

A variety of intelligent reminder functions are set up, such as ship voyage dynamic reminders, equipment fault early warnings, and certificate expiration reminders. Important events and abnormal situations are promptly pushed to relevant personnel to facilitate early preparation for responses, avoid accidents or business delays, issue early warnings in a timely manner, and arrange maintenance and service.

### High integration

Multiple functional modules—including vessel management, crew management, certificate and insurance management, and marine fuels and lubricants management—are integrated into one, realizing one-stop management, improving management efficiency, and helping shipping enterprises transform towards a digital and intelligent management model.

### High safety performance

GPS and BeiDou dual-mode positioning is combined to achieve real-time connectivity of ship navigation data. A full-process management is implemented for voyages, routes, energy consumption, etc., ensuring that the entire navigation process is made fully transparent and traceable. Furthermore, multi-dimensional monitoring, including video surveillance, is integrated, enabling active alerts in case of any anomalies and comprehensive safety assurance for ship navigation.



System architecture

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### Product functions

#### Ship management

Ship information: Maintenance of technical specifications such as ship name, type, tonnage, deadweight tonnage, ship length, and ship width

Voyage management: Voyage task arrangement, and status monitoring

Ship certificate: Expiration reminder

Charging records: Information on ship's charging and discharging records

#### Vessel monitoring

Navigational information: Information such as the ship's position, speed, and course

Cabin information: including the status of the battery system, navigation system, etc.

Video surveillance: Access of data from ship cameras

Energy consumption statistics

Device alarm: Device alarm status and historical record information

#### Crew management

Crew information: Maintenance of basic archival information of crew members

Crew certificate: Crew certificate upload management

#### Maintenance and service

Maintenance registration: planning, arrangement and execution logging

Maintenance information: related equipment information tree, maintenance and service items, and types of troubleshooting and maintenance

### Technical indicators

Cloud server

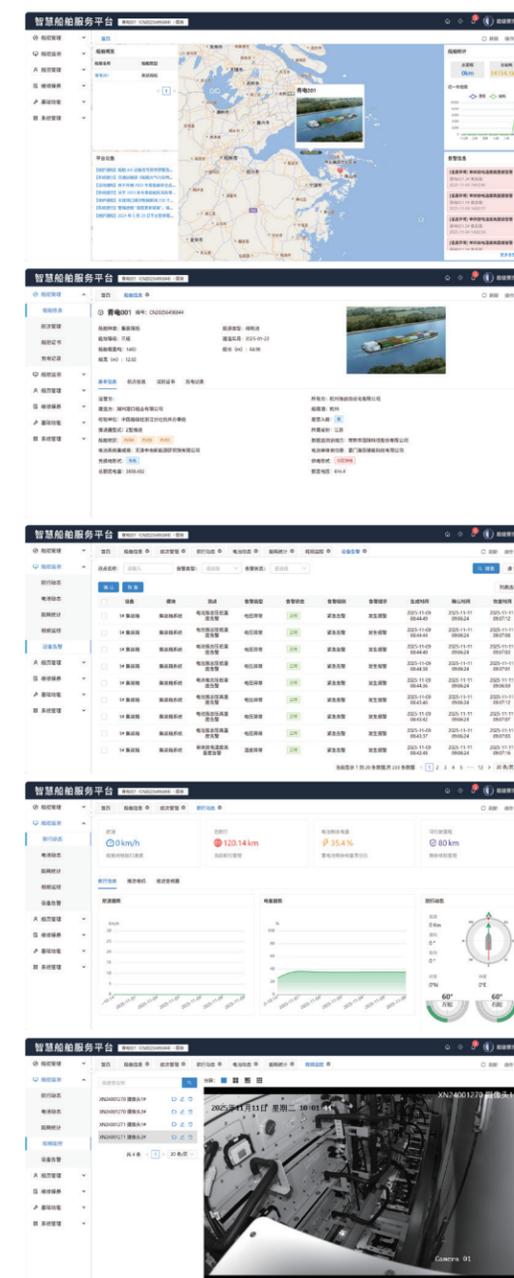
Operating system: Windows Server 2022 64-bit

CPU: 4 cores

Memory: >=8G

Storage: >=500G

Bandwidth: >=10M



Software interface