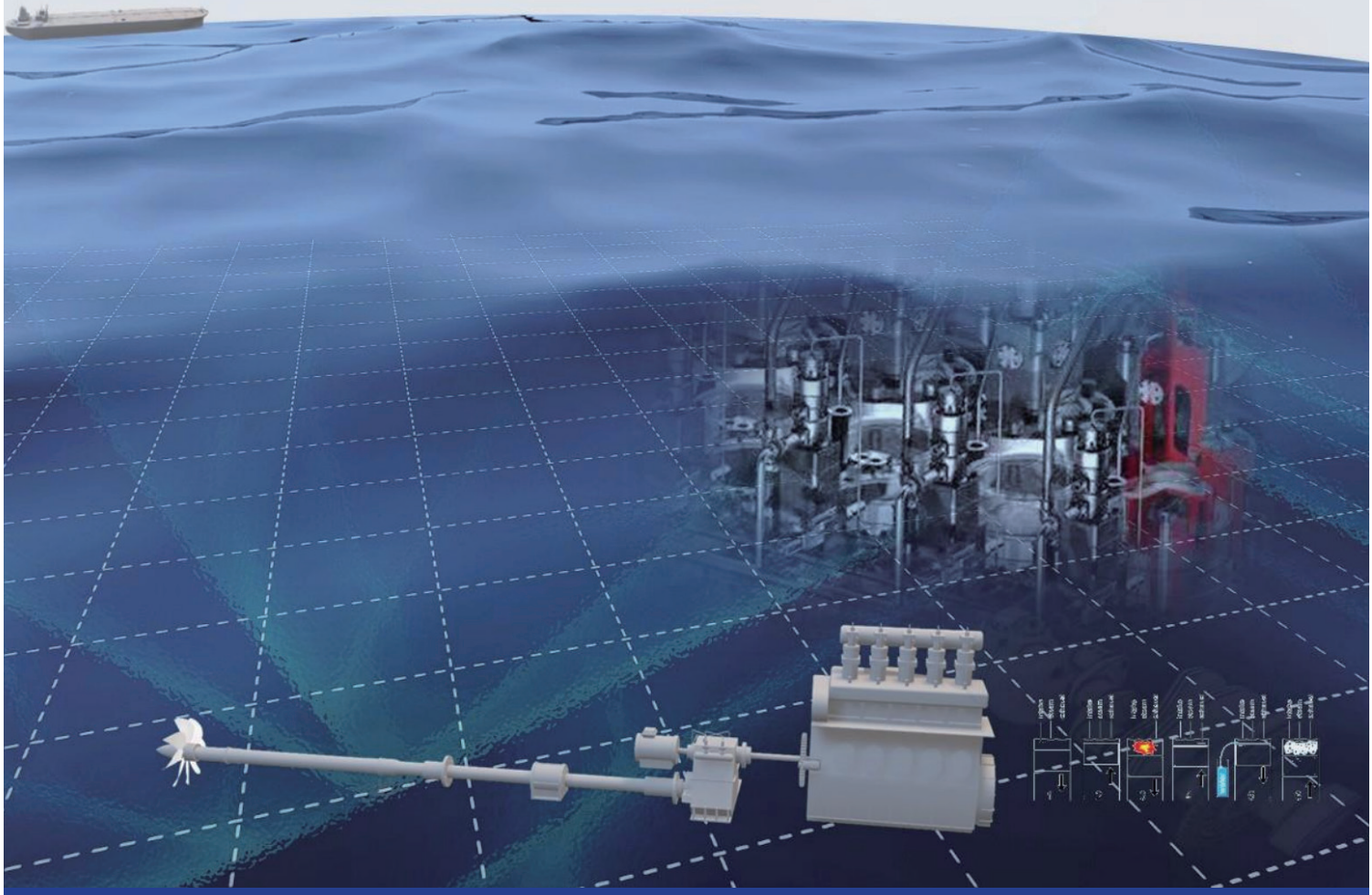
HIGHLANDER

i-COMMANDER V2

HLD-SMS600



INTELLIGENT EQUIPMENT OPERATION & MAINTENANCE SYSTEM

INTELLIGENT EQUIPMENT OPERATION & MAINTENANCE SYSTEM

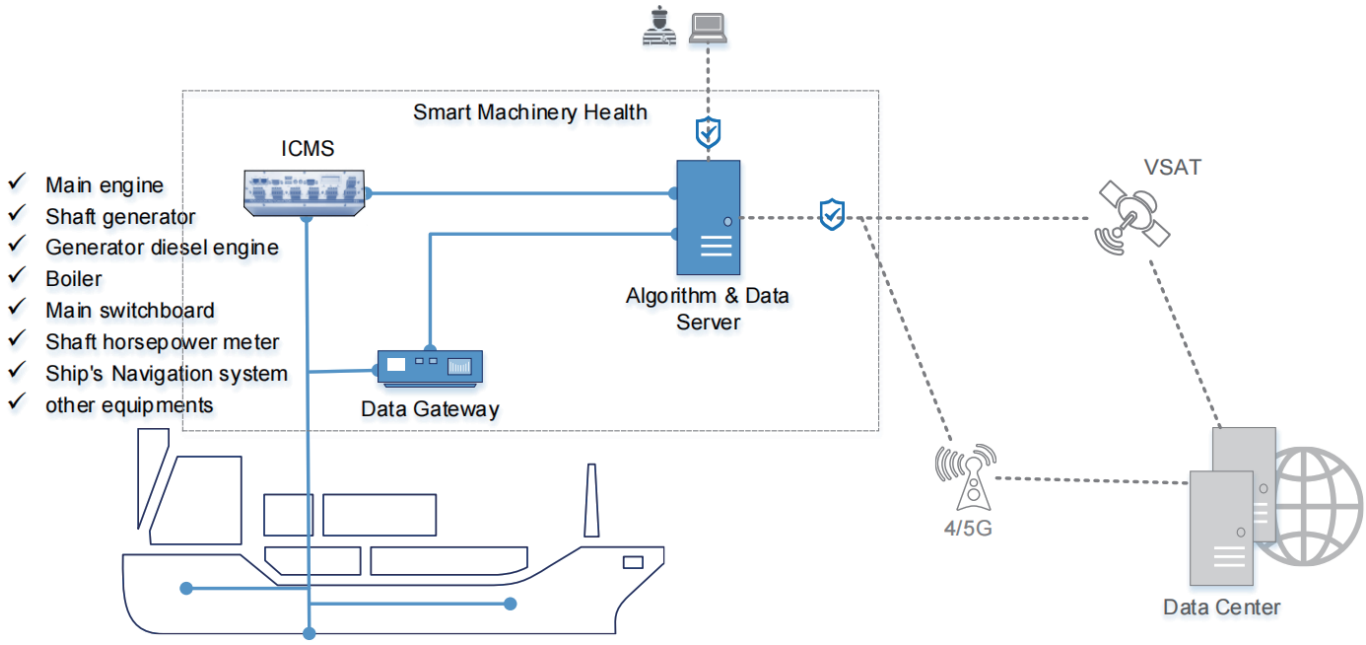
A.ARCHITECTURE

Intelligent equipment operation & maintenance system includes real-time monitoring of equipment working conditions, equipment health assessment and operation and maintenance assistance suggestions.

The system collects data in real time through ICMS system, data gateway and other devices, constructs digital twin model based on the correlation relationship between devices, realizes the evaluation of device health status, and provides assistance suggestions for device operation and maintenance.

The system does not need to add too many sensors, and can make full use of the conventional operating condition information of the equipment to evaluate the main engine, generator, dual fuel main engine, shafting, fuel system, lubricating oil system, cooling system, electric propulsion, servo oil system, starting and control air, as well as the boiler and ballast system.

The system can be seamlessly integrated with the Highlander intelligent integration platform, and after integration, the network and server computing resources of the platform can be shared to meet the requirements of digital security.



B.FUNCTOINS

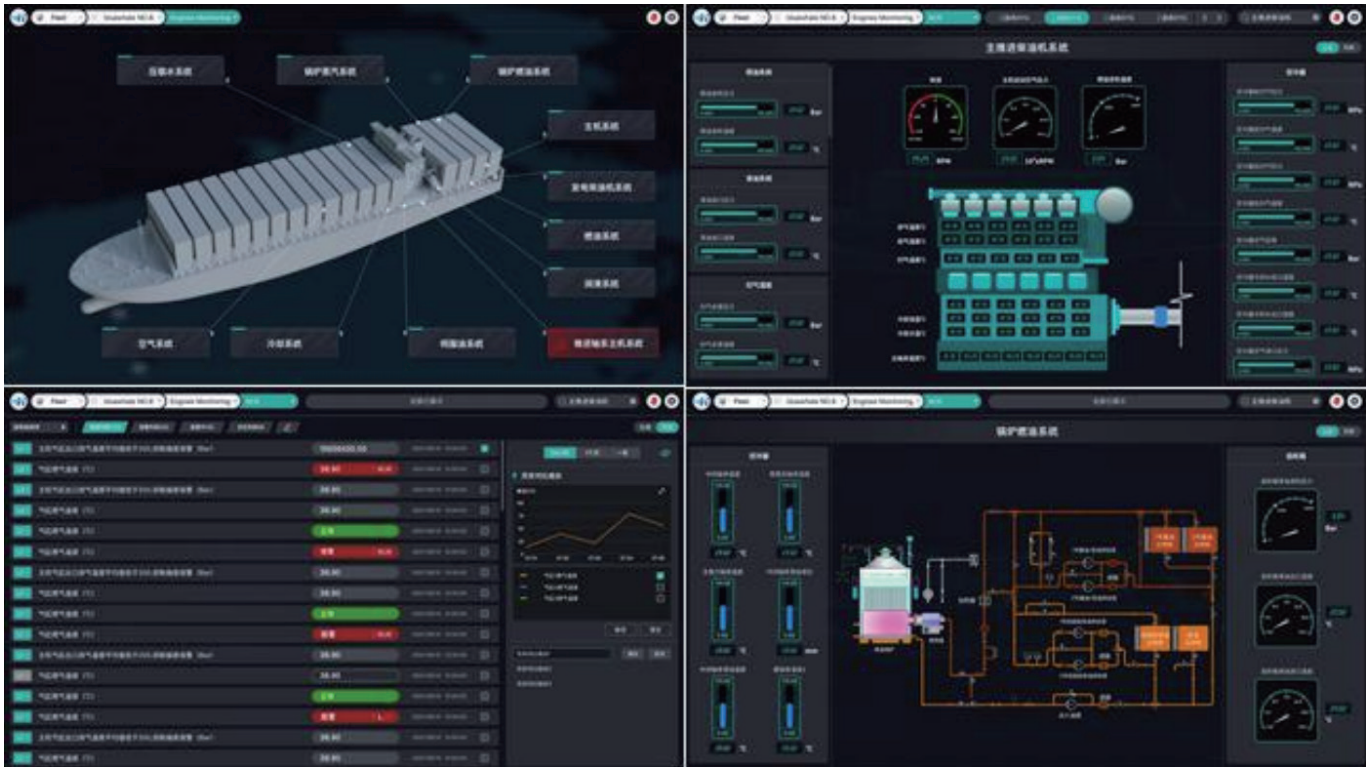
- The system is compatible with multiple sensor data acquisition protocols:

I/O、A/D
CAN
MODBUS RTU / TCP
IEC61162-1 NMEA0183
OPC-UA
other network protocols

- Support second-level data acquisition of equipment working condition information.
- Support data cleaning, data standardization, and periodic evaluation of data quality (including data continuity, integrity, rationality, etc.).
- The system supports single sign-on (SSO), which makes the system more secure.
- The system supports operations in both Chinese and English to meet the user's usage habits.

Equipment monitoring

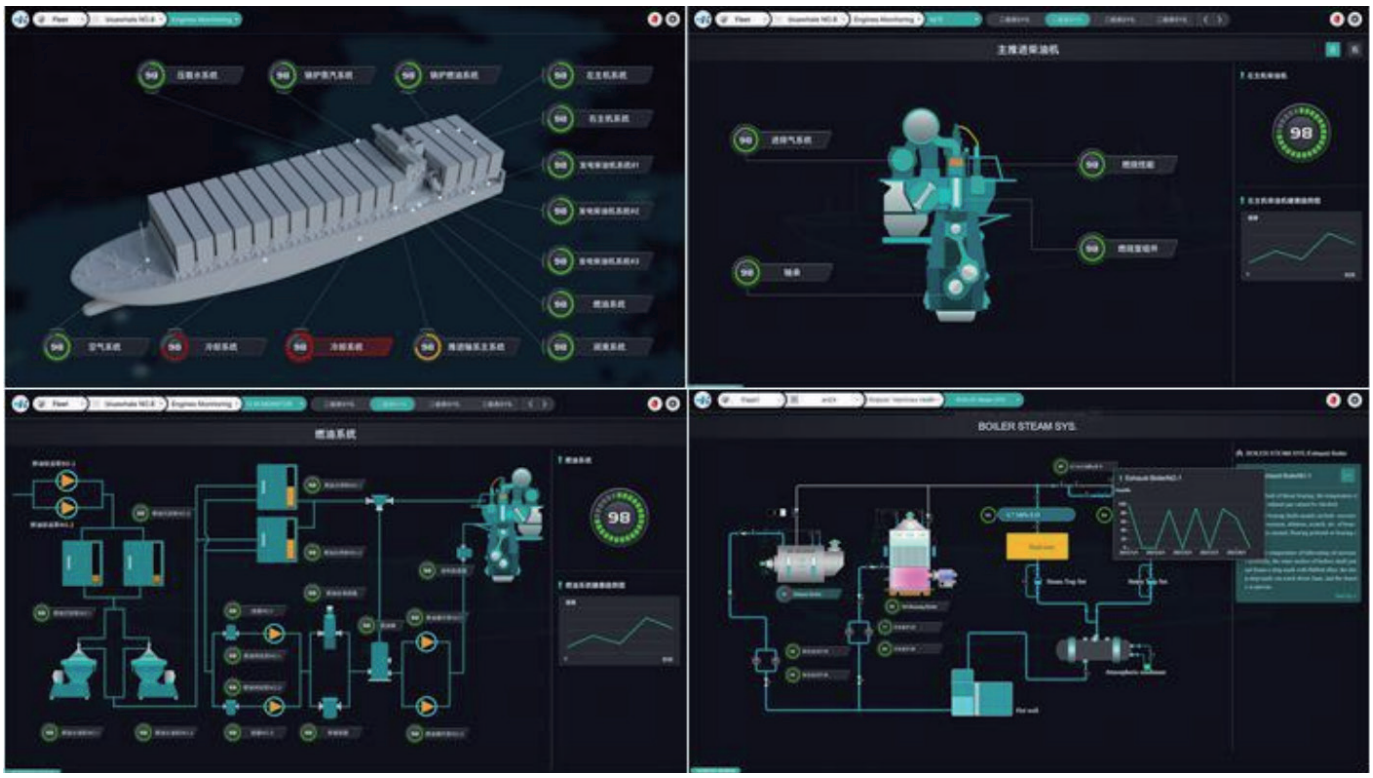
The system uses MIMIC, dashboard and other visual display forms to monitor the operating conditions of the equipment in real time, and provide customized display pages approved by customers.



Equipment health assessment and support decision

According to the working principle between devices, the digital twin model is constructed, and the health evaluation and maintenance analysis of devices are carried out based on the model.

- The system can periodically assess the health of the equipment according to the sailing state of the ship.
- When the device is in the sub-health state, the system can analyze possible causes and provide maintenance suggestions.



C.CONFIGURATION

Device	Description
Hardware	
Data acquisition unit	Supports data collection on interfaces such as I/O, A/D, CAN, MODBUS RTU/TCP, NMEA0183, and OPC-UA
Core switch	Full gigabit, 24 ports
Data server	10 cores CPU 32G MEM 480G*3 SSD
Software	
HLD-SMS600	Data acquisition, equipment monitoring, equipment health assessment and operation and maintenance assist decision making

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