



INS⁺ HLD-INS600

INTEGRATED NAVIGATION SYSTEM





OVERVIEW

The Highlander "Intelligent Bridge" integrated navigation system (HLD-INS 600) is the second generation of INS of Highlander, HLD-INS 600 is the first integrated navigation system in China which has passed the type approval tests from CCS and DNV-GL, fully meeting the requirements of IMO MSC.252 (83) and IEC 61924-2.

HLD-INS 600 is composed of the multifunction workstations which can be easily configured according to customer's individual requirements – from a radar or ECDIS up to a fully integrated multifunction workstation which provides data, features and functions. Each workstation can provide tasks of route planning, route monitoring, collision avoidance, navigational control data, status and data display and alert management. HLD-INS 600 seamlessly integrates sensors for heading, position, target detection and further safety related data. The consistent design of user interface supply the convenient operation to reduce the workload and stress of sailor so that they can do more tasks efficiently.

BENEFIT

Improve Safety

- Safe decision making and precision navigation by providing reliable and validated information.
- CCRS (Consistent Common Reference System) checks all sensor data, select the best data and transfer it to all modules in system via LAN to make sure all modules use the same data.
- CAM who aims at minimizing the total number of alerts supplies the presentation and handle of all alerts to avoid misunderstanding due to complex information of alerts.
- The overlay of RADAR, AIS, Weather data and NAVTEX enhances the safety.
- The redundancy of multifunction workstation reduces the influence of failure single RADAR, or single ECDIS, or single point.

System customized

- HLD-INS 600 is designed based on several standard hardware modules and consistent design of user client, all data, including RADAR echo, are collected, analyzed and transmitted via LAN. This enables the possibility of system configured according to customer's individual requirements, including budget. Based on the redundancy, the minimum number of workstation is three to supply tasks of route planning, route monitoring, collision avoidance, navigational control data, status and data display and alert management.

Increase of efficiency

- The system simplifies the operation of routine tasks to reduce the workload and stress and increase efficiency.
- The multifunction workstation enables to do many tasks on one workstation, for example, view and check all navigational data and alerts information, luminance adjustment, which saves time.
- All workstations use the same data, which makes use of data convenient and increase efficiency.
- CAM supplies the presentation of all alerts to reduce the time of judgement.
- Track control can control the ship sailing on the route to release the sailor from the frequent adjustment of rudder, reducing workload and stress.
- The consistent design of user interface makes operation convenient and short time use.

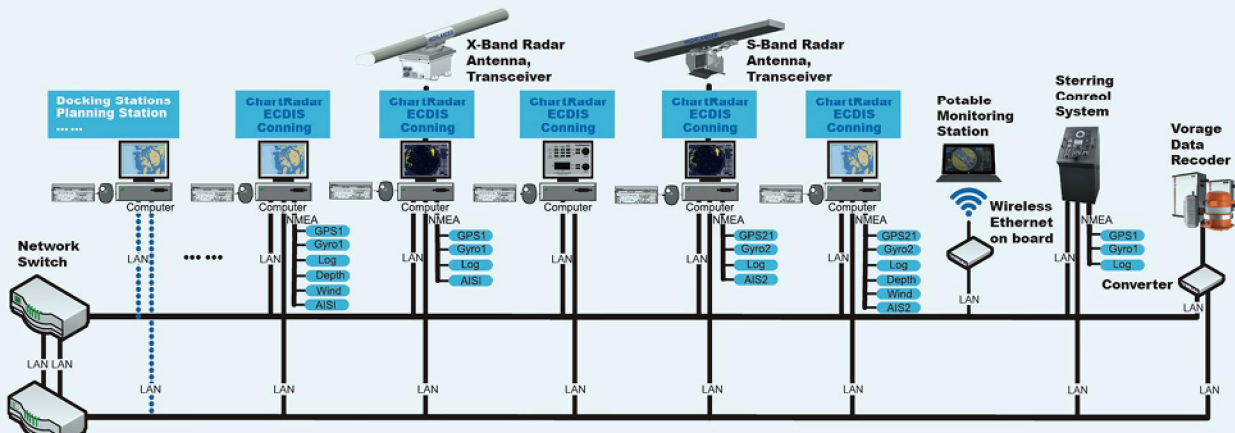
Hi-Cloud service

- Hi-Cloud remote access facility enables ship data to be checked and utilized ashore for fleet management and technical service. Either fixed or mobile computing devices can be used to connect to the vessel via Hi-Cloud.

SYSTEM COMPONENTS & DESCRIPTION

Stable system architecture

- HLD-INS 600 is based on dual-redundant Gigabit Ethernet.
- All workstations use the same identical hardware and software.
- The main control computer is ultra-compact, fanless industrial computer with solid-state drives. Display unit is marine industrial display, meeting requirements of IEC 60945, with stable performance and long life.



INS System Architecture Diagram

Multifunctional Workstations

Each workstation is a multifunctional workstation which supplies tasks of route planning, route monitoring, collision avoidance, navigational control data, status and data display and alert management.



CCRS

CCRS checks the validity, plausibility, latency and integrity of all sensor data, refer to the consistent common reference point based on the shape of vessel and transmit the analyzed data to all modules via LAN to ensure the consistency of data.

CAM

CAM supplies the presentation and handle of all alerts, based on the priority, category and raised time of alerts. This helps customer handling the alerts with high attention necessity.



OPTIONAL WORKSTATIONS

Individual Processor, Shared information with INS



SYSTEM OVERVIEW

S-Band Radar System and Multifunction workstation

| | | |
|------------------------|---|---------------------------|
| ● 12ft. S-Band Antenna | 1 | HLD-AT112 |
| ● Transceiver Unit | 1 | HLD-TU130 |
| ● Power Supply Unit | 1 | HLD-PCU600 |
| ● Display Unit | 1 | HLD-DU112/134/135/140/141 |
| ● Main Control Unit | 1 | HLD-MCU600/200 |
| ● Human Interface Unit | 1 | HLD-IU600 |
| ● UPS (Option) | 1 | |

X-Band Radar System and Multifunction workstation

| | | |
|-------------------------|---|---------------------------|
| ● 6/8ft. X-Band Antenna | 1 | HLD-AT106/108 |
| ● Transceiver Unit | 1 | HLD-TU110/125 |
| ● Power Supply Unit | 1 | HLD-PCU600 |
| ● Display Unit | 1 | HLD-DU112/134/135/140/141 |
| ● Main Control Unit | 1 | HLD-MCU600/200 |
| ● Human Interface Unit | 1 | HLD-IU600 |
| ● UPS (Option) | 1 | |

ECDIS System and Multifunction workstation

| | | |
|------------------------|---|---------------------------|
| ● Power Supply Unit | 1 | HLD-PCU600 |
| ● Display Unit | 1 | HLD-DU112/134/135/140/141 |
| ● Main Control Unit | 1 | HLD-MCU600/200 |
| ● Human Interface Unit | 1 | HLD-IU600 |
| ● UPS | 1 | |

Conning & Alert Management System and Multifunction workstation

| | | |
|-------------------------------|---|---------------------------|
| ● Power Supply Unit | 1 | HLD-PCU600 |
| ● Display Unit | 1 | HLD-DU112/134/135/140/141 |
| ● Main Control Unit (Monitor) | 1 | HLD-MCU600/200 |
| ● Human Interface Unit | 1 | HLD-IU600 |
| ● UPS (Option) | 1 | |

Steering Control System

| | | |
|-------------------------------------|---|-------------|
| ● Follow-Up Unit (Dual Channel) | 1 | HLD-FU200 |
| ● Non-Follow-Up Unit (Dual Channel) | 1 | HLD-NFUV200 |
| ● Steering Mode Switch | 1 | HLD-SW200 |
| ● Alarm Display Unit | 1 | HLD-AD600 |
| ● Steering Control Unit | 1 | HLD-SCU600 |

| | | |
|------------------------------|---|------------|
| ● Steering Compass Repeater | 1 | HLD-RP200 |
| ● Steering Console | 1 | HLD-ST200 |
| ● Rudder angle feedback Unit | 1 | HLD-RF600 |
| ● Automation Control Unit | 1 | HLD-ACU600 |
| ● Relay | 2 | HLD-RE200 |

Other Components

| | | |
|--------------------------|---|------------|
| ● LAN Switch | 2 | HLD-LS600 |
| ● Signal Conversion Unit | 1 | HLD-SCU600 |

WORLD-WIDE SERVICE NETWORK

With more than 80 service partners covering more than 40 countries worldwide such as USA, France, Russia, Belgium, Spain, Canada, Brazil, India, Korea and Singapore, Highlander is able to provide professional and prompt service to the customers. The service philosophy places the customers' interests in the highest priority.



Beijing Highlander Digital Technology Co.,Ltd.

Add: Building 10#, Courtyard 7# Dijin Road, Haidian District Beijing, China
Tel: +86 10 59738989 Fax: +86 10 59738737 100095
Salse hotline: +86 0513 80582969 www.highlander.com.cn



**Hours
Hotline**

Tel: 400 088 3335
Fax: +86 10 59738737
E-mail: service@highlander.com.cn