Avikus

HYUNDAI INTELLIGENT NAVIGATION ASSISTANT SYSTEM

Transforming Ocean Mobility
with Advanced Autonomy

HiNAS

HiNAS

Hyundai Intelligent Navigation Assistant System

One and only "all-in-one ADAS solution for ship" in the market, HiNAS is the ship navigation assistance system, like automotive ADAS, that enhances safety and convenience.
As a Level 2 autonomous system, it supports perception, decision, and control, but the pilot has responsibility for the navigation.
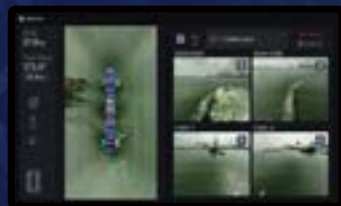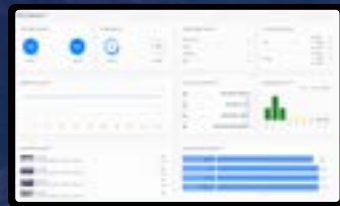
HiNAS Navigation   **HiNAS SVM**   **HiNAS Control**   **HiNAS Cloud**

| Enhanced Situational Awareness | Autonomous Navigation | Onshore Fleet Management |

Value Proposition of
HiNAS

find our
Track Records

	Safe Voyage	**Convenient** Voyage	**Economic** Voyage	**Sustainable** Voyage
	• Reducing human error by enhanced situational awareness.	• Autonomous path tracking and collision avoidance.	• Voyage optimization based on ship dynamics, weather and ETA.	• Optimizing fuel and energy consumption.
	• Safe decision-making for collision and grounding avoidance.	• Autonomous navigation was possible for 30 days with just one button click per day, without human intervention.	• Automatic speed control and steering following the optimal voyage plan.	• Supporting emission regulations.
	• 360-degree surveillance for detecting pirates, refugees and other hazards.	• Contributed to crew welfare, leading to a higher preference for boarding vessels equipped with HiNAS.	• Verification test results show fuel cost savings of 5-15%.	• Contributes to improving CII & EEXI grades.

| **HiNAS** SVM
HiNAS NAVI
HiNAS Cloud | **HiNAS** Control | **HiNAS** Control
HiNAS Cloud | **HiNAS** Control
HiNAS Cloud |

HiNAS

Navigation

HiNAS Navigation shows detected ships and navigation information in panoramic view using a wide array of advanced technologies such as computer visioin, image processing, sensor fusion, deep learning, etc.

Situation Awareness

Computer vision and deep learning-based target detection.

Night Vision

IR Camera-based target detection at night or restricted visibility.

Digital Overhead Indicator

Digital indicator can integrate individual indicators.

Video Recording

Used for both preventing accidents and recording incident data.

Control

HiNAS Control is an autonomous navigation system that has the functions of autonomous navigation, maneuvering, collision detection, and collision avoidance. It is a partially autonomous system that is not yet fully aunomous, so all the responsibility of autonomous operation belongs to the certified crews onboard.

Voyage Optimization

Providing optimal route and speed considering weather information and ship dynamics, etc.

Automatic Route and Speed Tracking

Following optimal and fuel efficient route autonomously Real-time collision detection and autonomous collision avoidance.

Collision Avoidance Guide and Control

Incorporating experienced captains' know-how into algorithms, basically based on COLREGs.

HiNAS

SVM(Surround-View Monitoring)

HiNAS SVM shows a 360-degree top-view AR image converted from input images recorded by multiple fish-eye cameras installed around the ship.
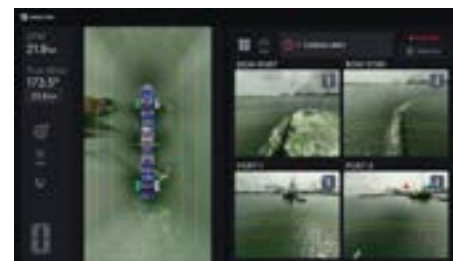
360 ˚ Top View Image

Intuitive surround view monitoring stitching individual camera images and showing them as one 360 real time top-view image.

Distance Guide

The equidistance line allow the user to see the distance between the ship and surrounding objects.
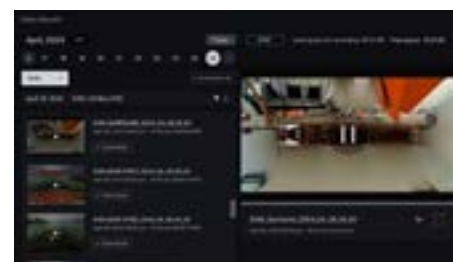

AIS Visualization

AIS/ARPA data represented on visual-map providing locational information and visualization of risk of collision between other ships and own ship.

Video Recording

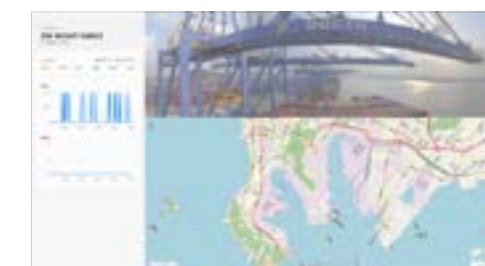Used for both preventing accidents and recording incident data.

Cloud

HiNAS Cloud is an advanced cloud-based solution designed to enhance maritime safety and efficiency.

Fleet Dashboard

The Fleet Dashboard is designed for efficient fleet management.
· Fleet safety score
· Risky event tracking
· Connection Status
· Real-time navigation status

Live View

The Live View feature allows for real-time, remote observation of actual situation on board ships.
· Real-Time Camera View
· Nautical Chart View
· Target Vessel Tracking

Safety Evaluator

The Safety Evaluator uses algorithms to analyze and store data on these scenarios, evaluating the safety of vessel operation.
· Collision Regulations(COLREGs)
· Sudden Maneuvers changes

Fleet Nautical Chart

The Fleet Nautical Chart offering a visual representation of fleet activities and live data.
· Real-time vessel position and status
· Notification of vessel events

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