



Hyundai Intelligent Navigation Assistant System

#### One and only "all-in-one ADAS solution for ship" in the market

HiNAS is an advanced ship navigation assistance system, comparable to automotive advanced driver-assistance systems (ADAS), designed to enhance operational safety and efficiency. As a Level 2 autonomous solution, it supports the captain and bridge crew by providing critical navigational insights.



HINAS SVM



**HiNAS** Navigation



**HiNAS** Control



**HiNAS** Cloud

**Enhanced Situational Awareness** 

**Autonomous Navigation** 

**Onshore Fleet Management** 

# Value Proposition of HINAS



#### HINAS SVM: "A 360-degree Solution for Enhanced Safety"

360-Degree Real-Time View, Zoom-In/Out Function, Distance Guide, Individual Camera View, Video Recording, Object Recognition, AIS/ARPA Visualization

#### HINAS Navigation: "Advanced Situational Awareness for Safer Voyages"

Integrated Display, Enhanced Visibility, Remote Monitoring, Night Vision Capability, Incident Recording

#### HINAS Control: "Leading the Path to Autonomous Navigation"

Advanced Autonomous Navigation, Collision Avoidance Control, Optimal RPM Management, Automatic Route and Speed Tracking

#### HINAS Cloud: "Seamless Monitoring and Playback for Proactive Fleet Management"

Real-Time Observability, Playback Function, Operational Efficiency, Seamless Integration, Scalable and Customizable, Low-bandwidth Solution

#### **SVM (Surround View Monitoring)**

HiNAS SVM provides a real-time 360-degree view also providing AR distance guides, object recognition, and AIS/ARPA visualization for safe berthing.

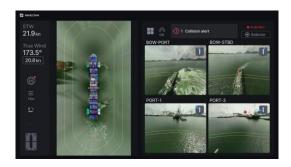
#### 360-Degree Real-Time View

Provides a seamless, real-time top-view of the vessel's surroundings with a full-screen live stitched display.



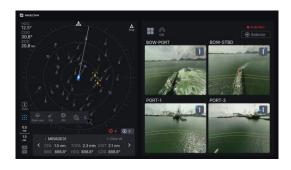
#### **Distance Guide**

AR-based distance guides with equidistance lines precisely monitor vessel proximity to surrounding objects.



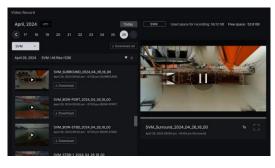
#### AIS/ARPA Visualization

Displays AIS/ARPA data on a map, highlighting collision risks up to 60 meters and key locational details for safe berthing.



#### Video Recording

Stores up to 30 days of recorded video for training, incident reporting, or review.



#### **Navigation**

HiNAS Navigation enhances maritime safety and efficiency by providing advanced situational awareness through cutting-edge technologies like computer vision, sensor fusion, and deep learning.

#### **Enhanced Safety**

Detects targets via camera, radar, and AIS, offering early collision risk warnings.



#### Night Vision Capability

Uses IR cameras for enhanced target detection in low-visibility conditions.



#### **Integrated Display**

Replaces analog indicators with a customizable digital display, consolidating navigation data into a single widescreen interface.

#### Video Recording

Offers 30-day video recording for incident review and operational analysis.



#### Control

HiNAS Control leverages advanced technologies and automation to enhance navigation safety, optimize fuel efficiency, and support crew decision-making, ensuring reliable and efficient maritime navigation within an operational envelope.

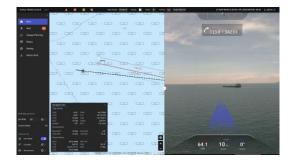
#### **Optimal Speed Management**

Optimizes RPM in real-time automatically for fuel efficiency, factoring in weather, ship dynamics, loading conditions and ETA.



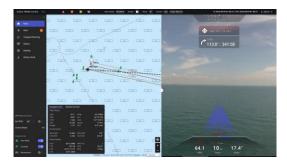
#### **Automatic Route and Speed Tracking**

Follows the ECDIS passage plan and adjusts RPM for fuel efficiency and safety in complex environments.



#### **Collision Avoidance Control**

Adapts and enhances human navigation and captain expertise to ensure COLREGs-compliant, safe operations.



#### Cloud

HiNAS Cloud is a cutting-edge platform enabling real-time fleet monitoring and playback analysis, seamlessly integrating with HiNAS systems to enhance safety and operational efficiency for on-shore teams.

#### **Operational Efficiency**

Provides a dashboard to track events and trends. Streamlining fleet management while ensuring adherence to safety and navigational procedures.

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#### Real-Time Observability

Offers near real-time live streaming for situational awareness and proactive risk management.

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#### Playback Functionality

Enables event replay for analysis, training, performance optimization and aiding incident investigation.

