SafeNav

TOWARDS AN AUTONOMOUS
FUTURE

SafeNav – Started September 2022 and now under development to Enhance Safer Navigation at Sea today and for the future.

2024

SafeNav

THE **CHALLENGE**

Too Many Bridge Screens

Too many screens on the bridge can cause mental overload for the navigator

Navigational Accidents

There are thousands of collisions every year, leading to crew injury and even death, and the loss of billions in repairs

Loss of Containers

Bad weather conditions can cause loss of containers and precious cargo, and leads to the potential collision risk for other vessels
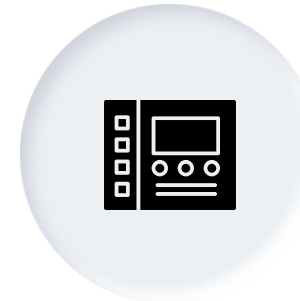
Harm to Marine Mammals

High frequency of collisions with cetaceans, as they are more difficult to spot, resulting in loss of life for our beloved marine mammals as well

Slow Move to Autonomy

The maritime industry is slow in moving towards autonomy, with limited functional offerings in the space

Inability to Detect Hazards

The human factor resulting in collisions: the inability to detect hazards due to dense traffic, floating debris and marine mammals

Lack of Existing Solutions

The few existing offerings fail to prove easy to use for the end user, with overly complicated menus and functionality

SafeNav

SAFENAV OFFERS

Reducing Accidents at Sea
To develop, test and operationally verify the SafeNav solution, with the goal to eliminate or at least significantly reduce the frequency of navigational accidents

Saving Marine Mammals
Promoting the timely detection and conservation of marine mammal life through the development of an alert system for cetaceans

Stress-Free Hazard Detection
Providing real-time information from multiple sensors, and reducing their stress through a reliable navigational decision support system (DSS) with automated COLREG-based suggestions
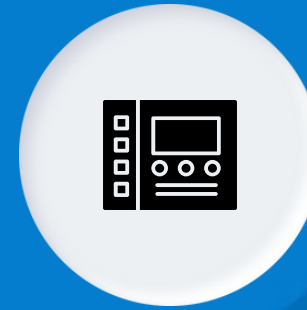
Singular Point of Access
Enhancing the crew's situational awareness through a singular-point of access – a dynamic dashboard to optimize the workplace and promote wellness

Container Tracking & Recovery
Utilizing computer vision technology to issue automated notifications to a centralized Navigational Hazard Database and aid in the tracking and recovery of lost containers at sea
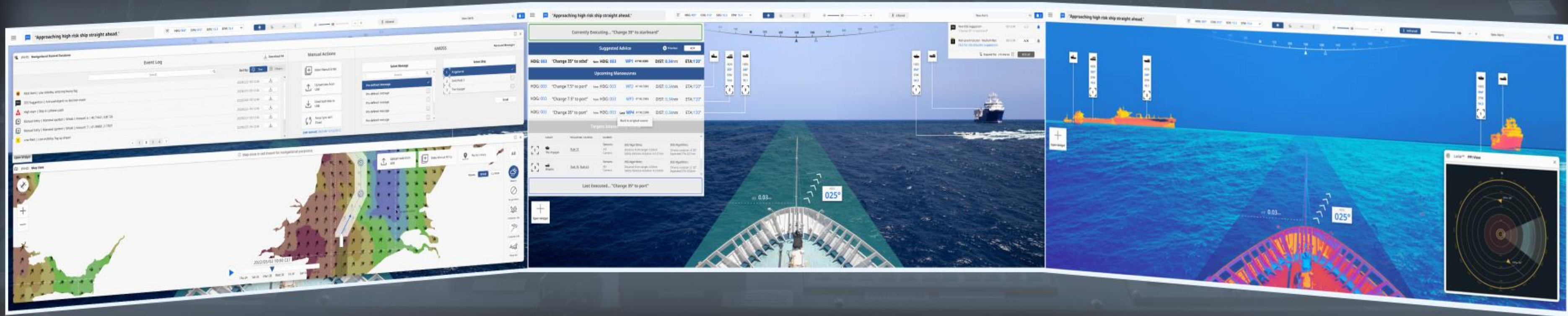
Moving Towards Autonomy
The SafeNav system will serve as a stepping-stone towards autonomous navigation while shifting how decisions regarding navigational hazards are made on-board

User-Friendly GUI
Our team of end user advisors have worked with a UI/UX designer to create a user-friendly, human-centered Graphical User Interface (GUI)

The SafeNav "Screen Layout"

To the left: Hazardous Navigation Database with Metocean Data & Voyage Overview.

Centre: The Decision Support Menu and Computer Vision

To the right: Computer vision from the digital lookout for the thermal vision detection.
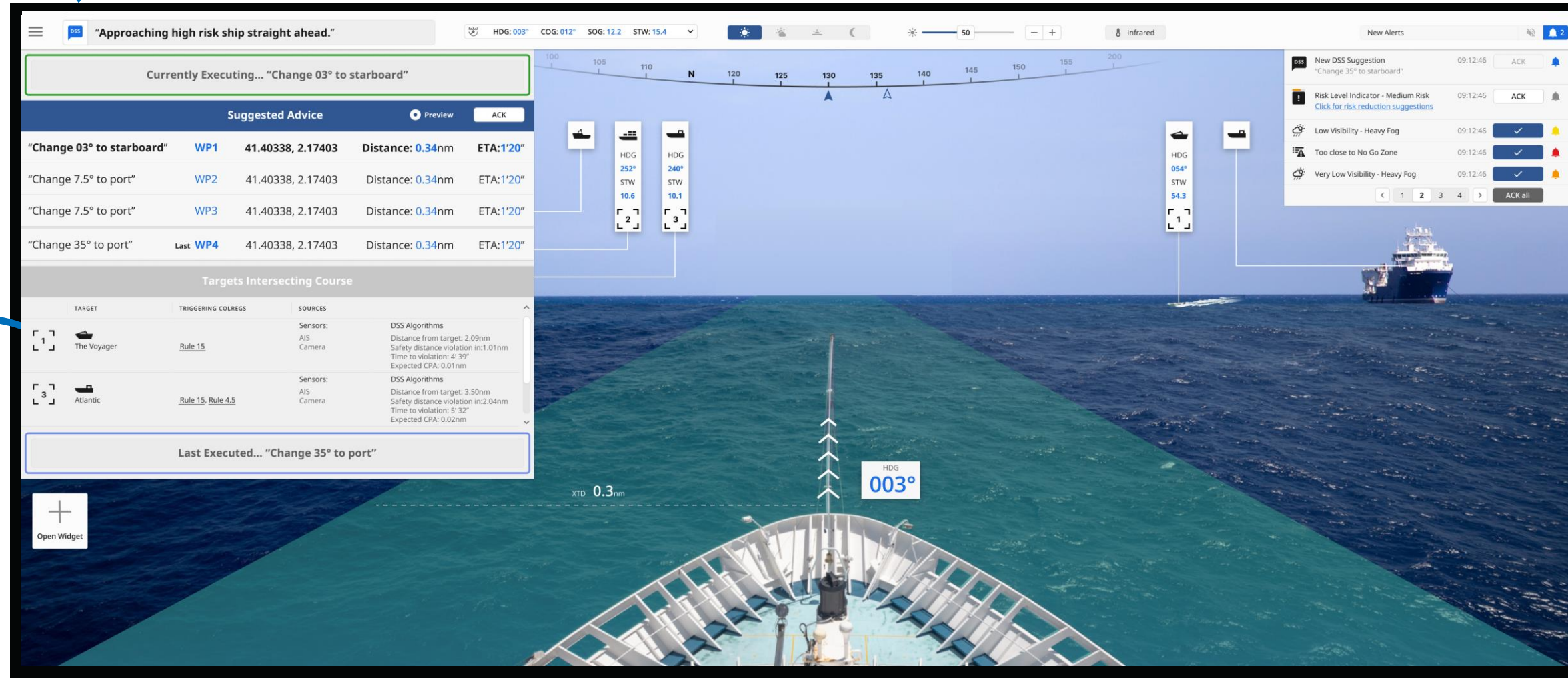
OUR **PRODUCT**

SafeNav

DECISION SUPPORT SYSTEM (DSS)

Collision avoidance manoeuvre advice

Open pop-up windows

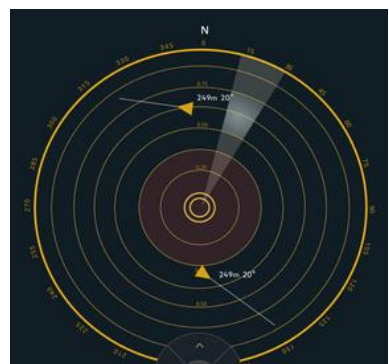option to open either one of the following features:

NOTIFICATIONS

- Risk level indicator
- Risk analysis module
- Heavy weather and other hazards

AUGMENTED REALITY (AR) LAYERS

- Camera and Infrared view underneath
- AR target info overlay from Data Fusion Module and Machine Learnng

LADAR™ PPI VIEW

Near proximity object detection from the Ladar™ Sensor Suite

or

NAVIGATIONAL HAZARD DATABASE (NHD) VIEW

- List view event log
- Selection of hazard categories
- Communication with mammal detect web application

or

MAP VIEW

- Heavy weather areas
- Cargo loss risk and drift trajectory
- Cetacean info from GRE web app
- Location based hazards from NHD

OUR FUTURE

Whether retrofitting existing ships or **incorporating this cutting-edge technology into new builds,** SafeNav marks a shift in bridge operations.

Benefits of fewer, larger screens on the bridge

Simplified Information Management: Less clutter and complexity, making it easier to manage and interpret critical information effectively.

Enhanced Visibility: Better visibility and readability, allowing navigators to quickly grasp the situation at hand.

Streamlined Workflow: Data consolidation onto a few screens promotes a smoother decision-making processes and reduces the risk of errors or oversight.

Improved Focus & Reduced Alarm Fatigue: Navigators maintain better focus on the most relevant data, enhancing situational awareness and response times.

Talking to end-users & stakeholders
is high priority

OUR MISSION
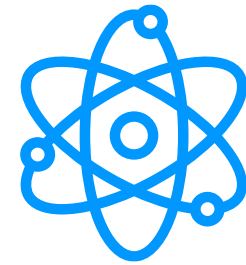
Scientific

- Multi-Sensor Data Fusion (digitalize the lookout)
- Decision Support System (DSS)
- Development of Collision Avoidance Algorithms
- Use of the Existing Patented LADAR® Sensor Suite
- Use of Acoustic/Electromagnetic Pingers for avoiding collision with marine mammals.
- Develop systematics and data platform for root causes of navigational accidents and incidents.
- Risk module for container loss and floating container drift trajectory prediction
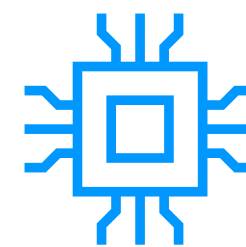
Economic & Technological

- Anti-Collision Automated Module
- Sensor Fusion for Enhanced Detection & Tracking Performance
- Web Application for Reporting Marine Mammal Detection and Collision Statistics
- Digital Training for Navigators (the system will be so easy to understand for a normal navigator, but the training will be focusing on the limitations of the system.

Environmental & Societal

- Improvement of the Navigational Crew's Decision-Making using the user-friendly SafeNav screens on bridge
- Collection and Storage of Observational Data in the SafeNav Navigational Hazard Database which will Support the Decision-Making onboard the vessels and ashore for voyage planning and monitoring.

OUR
PARTNERS

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Sveučilište u Rijeci POMORSKI FAKULTET FACULTY OF MARITIME STUDIES University of Rijeka

In collaboration with **11 esteemed partners**

spanning the maritime industry, research and development institutes, as well as Small and Medium-Sized Enterprises (SMEs), the SafeNav Project is a team mission moving towards a joint objective.

Read more on our website: **www.safenavsystem.com**

SafeNav

If you're keen on discussing SafeNav, exploring investment opportunities in this innovative technology, or obtaining further information about SafeNav, please reach out to:

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THANK YOU

2024