www.integrimarine.com

INTEGRI
MARINE | OFFSHORE

Smart Berthing
Guidance system

Smart Berthing Guidance System

Background:

Traditional maritime docking systems often struggle with accuracy and real-time monitoring, particularly in complex berthing conditions. With over 90% of world trade carried by sea, efficient docking is crucial for global commerce. Inefficient docking can lead to significant economic losses, with delays for large container ships potentially costing over $100,000 per day. Current systems face challenges such as limited visibility in adverse weather, difficulty in accurately judging distances and speeds, increased risk of accidents due to human error, and inefficient use of port resources.

The Smart Berthing Guidance System represents a significant advancement in maritime docking technology. Its core features address key challenges in current systems, while the optional advanced features allow for customization to meet specific port requirements and technological capabilities. This flexibility makes the system adaptable to diverse maritime environments and scalable for future technological integrations, aligning with broader goals of maritime digitalization and improved port operations

KeyFeaturesandAdvantages:

- Adaptable Perception-Utilizes multiple LiDAR sensors, with the number adjustable based on jetty or quay wall size and specific berthing requirements, ensuring optimal coverage and precision for various port configurations.
- Real-time Data Visualization: Provides immediate, actionable information to operators, improving decision-making during berthing.
- Customizable GUI: Features a user - friendly interface designed for easy interpretation of complex data.

Optional Advanced Features:

1. AIS Integration-Incorporate Automatic Identification System (AIS) data for enhanced positioning and situational awareness, including AIS-enabled berthing angle calculation and display.
2. Displaying Vessel name or ID using AIS or VTMS interface
3. IIoT Integration : Leverage data connectivity by 5G LoRA, Long Range RF or Satellite IoT for seamless data processing and cloud storage, enabling robust analytics and remote access and remote maintanance capabilities.
4. VTS/ VTMS Interface : Offers the ability to interface with Vessel Traffic Service (VTS) or Vessel Traffic Management System (VTMS) for comprehensive port traffic management and precise positioning of vessel during berthing
5. Energy Optimization : Employ smart switching of the LED displays controlled by AIS-based geofencing to manage energy consumption efficiently. Powering of system components also can be managed at VTS/VTMS depending on the requirement.

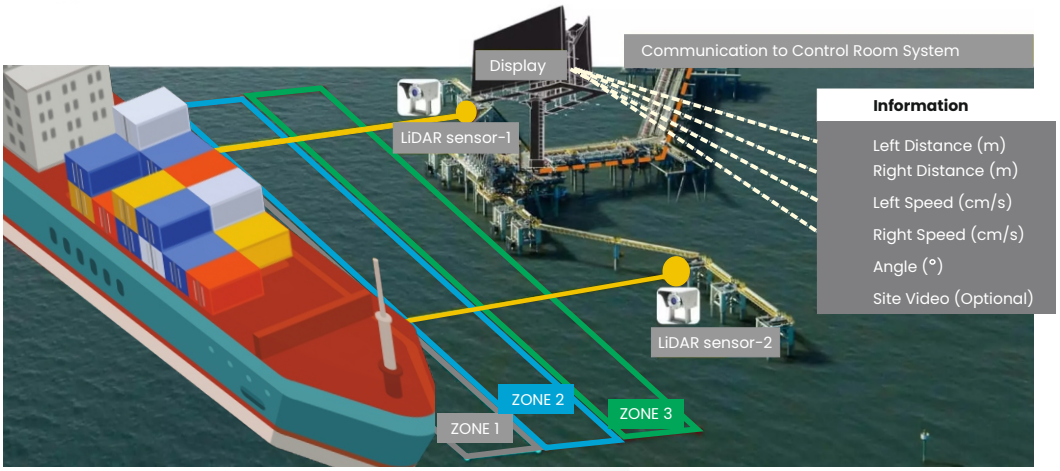
CCTV integration – For enhanced berthing records

The SBGS is a smart port feature and represents a significant advancement in maritime docking technology. I t's core features address key challenges in current systems, while

Smart Berthing Guidance System

the optional advanced features allow for customization to meet specific port requirementsandtechnologicalcapabilities.Thisflexibilitymakesthe system adaptable to diverse maritime environments and scalable for future technological integrations, aligning with broader goals of maritime digitalization and improved port operations.

With LiDAR technology, this module controls speeds and distance to the dock, guaranteeing a safe berthing and preventing blows



This system has the cross compatibility to following products.

- Automatic mooring system.
- VTS/VTMS system
- Maritime Autonomous Surface Vessel

With SBGS technology, guidance to control the berthing speeds and distance to the dock, berthing angle guaranteeing safe berthing and preventing blows.

The advantages of using a berthing aid system are:

- Reduced operational costs and damages to the dock, fenders, and ships.
- Increased safety control and protection over surroundings.
- Real- t ime monitoring, data register, reports, reproductions, and records.
- Smart analysis of the multiple variables involved in berthing

Capabilities from the bow of the vessel to the stern of other vessels;

- Relative speed between both vessels;
- Vectors showing the direction and speed of the bow
- Interfaces to VTS / VTMS systems
- Io T enabled
- Pilots can be given IOS/ Android application
- Switching or operating the panel from VTMS
- System Interface able to quickly release mooring hooks

Significant features

- Heading, rate of turn (ROT), course, and speed over ground (COG and SOG);
- True and relative bearing, and distance from the bow of the vessel to the stern of other vessels.

  Relative speed both vessels.

  Vecotors showing the direction and speed of the bow

Our Presence

INTEGRI
MARINE | OFFSHORE

Dubai
Integri Marine and Offshore Services FZC
+971 5861 78334 dubai@integrimarine.com

India
Integri Marine and Offshore Services Private Limited
+91 84258 00926 support@integrimarine.com

Qatar
Integri Marine and Offshore Services LLC
+974 7066 8507 qatar@integrimarine.com

Denmark
Integri Marine and Offshore Services ApS
+45 7148 3545 support@integrimarine.com

Hamburg (Germany)
Integri Marine and Offshore Services GmbH
+49 17254 12182 info@integrimarine.de

Rotterdam (Netherlands)
Integri Marine and Offshore Services B.V.
+31 06537 26151 rotterdam@integrimarine.com