SmartDAS

DRIVING SAFETY AND EFFICIENCY WITH TRELLEBORG'S SMART DOCKING AID SYSTEM

Powered By SmartPort®

SmartDAS - Transforming ports with data-driven insights

With the rise of global trade and larger vessels navigating busier ports, the need for enhanced safety measures and operational precision in docking has become more critical than ever.

To successfully navigate these operational challenges, ports must embrace advanced technologies that improve safety, efficiency, and sustainability, while also minimizing the risk of damage to port infrastructure or vessels.

SmartDAS, a compact Docking Aid System, uses advanced laser technology to provide operators with continuous, real-time updates on vessel distance, velocity, and approach angle.

The system meticulously monitors positioning, providing vessel masters with real-time situational awareness, that enables precise adjustments during the crucial moments of docking.

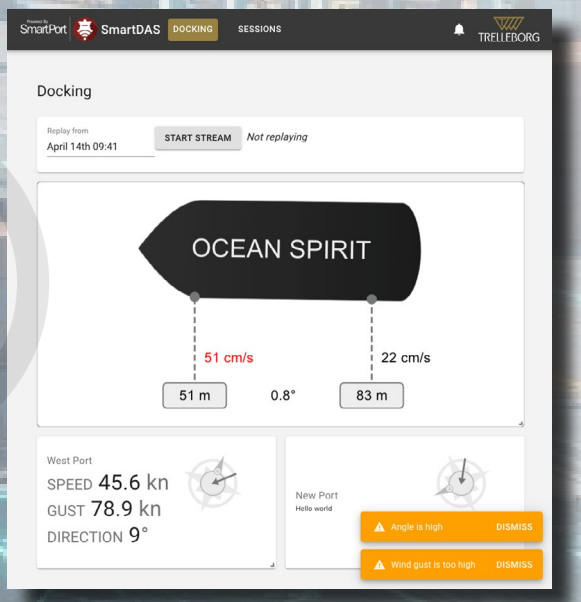
SmartDAS provides feedback essential to the safe docking of vessels, enabling controlled berthing velocities to prolong fender and jetty infrastructure life.

SECURE DATA STORAGE PLATFORM

SmartDAS uses SmartPort technology to collect and store data on a secure cloud. Docking data is streamed and accessed in real-time and can also be downloaded for reporting and analysis.

SIMPLE TO INTEGRATE AND INSTALL

SmartDAS integrates into existing wireless networks and is designed to be easily installed in busy environments such as container ports and bulk cargo terminals.



WHY USE SMARTDAS?

SmartDAS, with accurate real-time laser sensors offer many advantages for port operations.

- Ensures safe, efficient, and reliable docking operations.
- Features configurable alarm functionality to alert operators of potential issues during approach manoeuvres.
- Protects maritime assets and prevents structural damage to port infrastructure and vessels, while also reducing downtime and demurrage fees through more predictable docking operations.
- Supports strategic operational improvements with detailed data logging and historical records. This also aligns with PIANC WG211 fender guidelines, which emphasize leveraging site-specific insights to optimize fender design and prevent overengineering.
- Provides time-stamped, sensor-verified data, offering clear evidence to support insurance claims and protect against liability disputes.

KEY FEATURES

Real-time interface

The SmartDAS system features an intuitive web-based interface that displays docking data in real-time, facilitating immediate access and interaction. It seamlessly integrates with existing third-party wireless networks, enhancing usability without the need for additional hardware or infrastructure. The interface supports single-berth jetty mooring configurations or continuous berths, and provides detailed information on vessel distance, velocity, and longitudinal angle.

Enhanced with event-based functionality, SmartDAS matches vessel AIS (Automatic Identification System) information to berthing data to offer a comprehensive view of docking operations. The system detects and identifies vessels within a 200-meter range, ensuring accurate monitoring of vessel position and motion throughout the docking process.

Data logging

All captured SmartDAS data can be revisited and assessed retroactively, to look into specific events or trends over time.

Environmental information

The SmartDAS system can integrate information from Trelleborg standard MetOcean sensors keeping operators on top of the approach and docking operation.

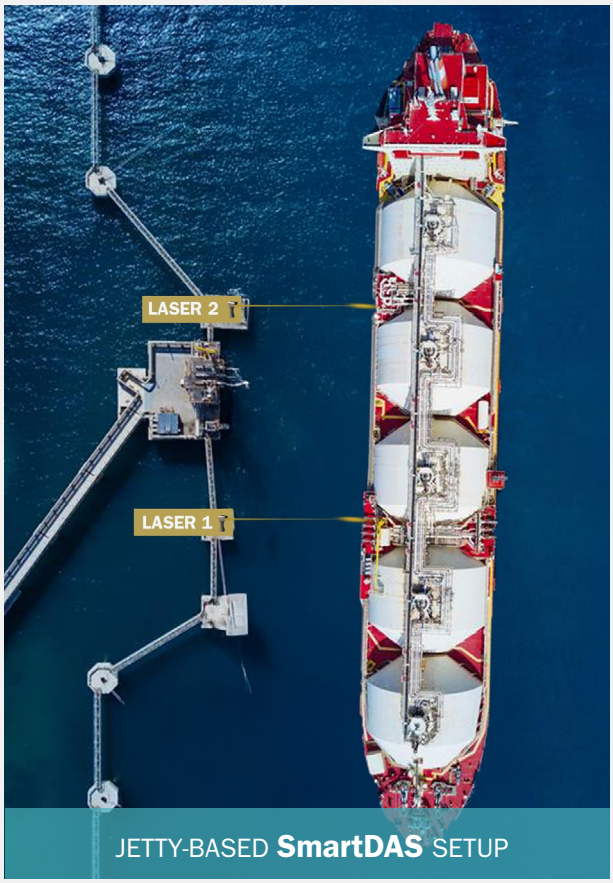
Report generator to track trends

The SmartDAS system provides comprehensive session-based reports to identify short-term operational efficiencies and improvements over time.

Customizable functionality

The SmartDAS offers customizable functionality to suit specific port and terminal requirements. Velocities and angle exceeding predefined limits will be highlighted in the user interface and by the alarm functionality.

SEE SmartDAS IN ACTION



JETTY-BASED **SmartDAS** SETUP

MULTI-LASER CONTINUOUS BERTH **SmartDAS** SETUP

SmartDAS SPECIFICATIONS

WHAT YOU'LL RECEIVE	DETAILS
Hardware Components:	▌SmartDAS Docking Aid Laser: Equipped with a protective shroud, this high accuracy laser is designed for ease of installation ▌SmartDAS AIS Enabled Interface Unit: This includes a communications interface for up to 8 devices, cellular wireless interface, data processing capabilities, AIS radio, and a VPN router.
Software and Setup:	▌Initial SmartDAS Cloud Setup: A one-time configuration service for the SmartDAS Cloud Application along with user account setup, tailored per jetty. ▌SmartDAS Basic Licence: Facilitates continuous monitoring of the jetty and daily access to data log files in CSV format via the SmartDAS cloud. Includes regular software updates, system support, user account administration, and system configuration management.
SmartDAS Software Licences:	▌Professional Licence: Live Data Features: Start/stop docking sessions, cloud-based live streaming of docking sessions, and automatic operation via AIS integration. Docking Session Management: Log, export, and generate reports of all live docking and MetOcean data sessions. Replay historical docking sessions in real-time. Concurrent Vessel Berthing: Monitor two vessels concurrently at the same terminal, requiring additional laser installations per berthing location.

SmartDAS OIL TERMINAL CALIFORNIA, USA

4 lasers and a single interface installed

MAXIMIZING OPERATIONAL VALUE THROUGH DATA INSIGHTS

SmartDAS helps improve the operational efficiency of port and terminal mooring and transfer operations by:

Real-Time Data Accessibility:

Enable multiple remote users to simultaneously access the same real-time docking aid system data during critical approach events.

Accident Prevention:

Utilize customizable alarm functionalities to prevent incidents before they occur.

Risk Assessment Through Data Analysis:

Analyze vessel and event-specific data to accurately assess risks. Determine the exact timing of overloads for detailed incident reporting, with sensor-verified records that support insurance claims and liability. resolution

Enhanced Remote Control:

Enable activation and termination of sessions remotely, enhancing operational flexibility.

Optional Integrated Environmental Information:

Display environmental data in the streamlined and user-friendly SmartDAS interface, supporting informed decision-making.

Data-Driven Decisions for Long-Term

Store data for comprehensive trend analysis and reporting, enhancing overall optimization and guiding investment decisions. Use accumulated data to inform future structural designs, predict remaining asset life, and optimize maintenance schedules.

Support Site-Specific Optimization Aligned with PIANC WG211

Enable ports to align with PIANC WG211's fender guideline recommendations by capturing precise, site-specific docking data. WG211 emphasizes that using localized information, such as berthing velocities, angles, and environmental conditions, helps avoid overly conservative assumptions that can result in oversized fender systems. By monitoring actual vessel behavior during docking, ports can apply lower partial energy factors, optimize fender sizing, and reduce capital expenditure. This approach enhances safety and performance while enabling smarter, data-driven infrastructure planning.

SmartPort by Trelleborg

SmartPort®

SmartPort by Trelleborg powers the critical interface between ship and port, on land and at sea. Visit our website to access our case studies and white paper, plus the entire suite of SmartPort solutions.

SCAN TO LEARN MORE

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TRELLEBORG

Trelleborg is a world leader in engineered polymer solutions that seal, damp, and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way.

Trelleborg Marine and Infrastructure is a leading provider of premium solutions for critical marine, port, and built infrastructure applications. Its innovative polymer and smart technology solutions enhance operational efficiency, safety, and sustainability.

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