SafeCaptain
navigation system

FOR CAPTAINS WHO DEMAND PRECISION:
NAVIGATE WITH CONFIDENCE. EVERY TIME.

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In an era of increasing maritime complexity, where crews face unreliable charts and growing signal threats, a navigator's judgment is only as good as the data they receive. SafeCaptain replaces uncertainty with absolute certainty. We deliver more than just hardware; we provide a fully integrated, constantly evolving navigational ecosystem where proprietary software and hardware work in perfect sync. From empowering captains with the autonomy to correct charts in real-time to defending against GPS jamming and spoofing, SafeCaptain provides an independent point of truth. This is a long-term partnership in safety and performance, ensuring that captains have the confidence to navigate any challenge, today and tomorrow.

CONQUER THE TOUGHEST WATERS
Narrow passages, unpredictable currents, and complex waterways.

High-accuracy navigation capabilities including advanced GNSS and motion sensors ensure you stay on course, even in the most challenging environments.

MASTER EVERY MOVE
Risky operations and outdated tools slow you down.

SafeCaptain gives you real-time data and the tools to make smarter, faster decisions—keeping your crew safe and your operations efficient.

CHART THE UNCHARTED
Outdated or incomplete charts leave you guessing.

With SafeCaptain's manual chart annotation, you can fill in the gaps and navigate confidently—even in uncharted waters.

OUTSMART THE THREATS
GNSS spoofing and jamming can disrupt navigation and compromise safety.

SafeCaptain is equipped with advanced GNSS spoofing and jamming protection*, ensuring your navigation remains accurate and secure—even in the face of modern technological threats.

STAY IN COMMAND, NO MATTER WHAT
Blackouts and system failures leave you vulnerable.

SafeCaptain's dual GNSS antennas and built-in battery** ensure uninterrupted navigation, so you're always in control—even when the unexpected happens.

SAFECAPTAIN
Navigation software

SAFE CAPTAIN P-SERIES
Fixed navigation units

P1

P1+

P3

SafeCaptain navigation software on a portable iPad enables total flexibility, offering real-time situational awareness and the freedom to monitor the vessel's position and operations from anywhere on board.

A range of fixed navigation units tailored to meet your specific navigation priorities, fully compatible with SafeCaptain navigation software.

*Available with SafeCaptain P1+ and P3.
**Available with SafeCaptain P3.

SafeCaptain
navigation software

ENABLING PRECISION AND CONTROL

SafeCaptain is a high-accuracy navigation tool designed to empower marine captains with unparalleled situational awareness and control. Running on a portable iPad, it combines official sea charts with advanced overlays to deliver precise navigation in even the most challenging environments. Fully compatible with the SafeCaptain P-Series of fixed piloting units, this software ensures seamless integration for a complete navigation solution.

Whether navigating constrained waterways, managing complex maneuvers, or ensuring operational safety during transit, SafeCaptain provides the tools captains need to make confident, informed decisions.

REAL-TIME SITUATIONAL AWARENESS

SafeCaptain delivers accurate heading, position, speed, and course data, along with real-time AIS information. This ensures captains have a comprehensive view of the vessel's movements, enhancing decision-making and operational efficiency.

ADVANCED NAVIGATION TOOLS

The software includes multilayer vector charts, route planning, safety contours, and prediction of vessel movement. Cloud-shared chart annotations and automatic recording allow for seamless collaboration and post-operation analysis.

UNDER-KEEL CLEARANCE (UKC)

SafeCaptain's adaptive UKC feature provides real-time, highly accurate measurements of water under the keel, ensuring safe navigation in draft-restricted waterways. Visual displays of go/no-go areas further enhance safety.

ENHANCED DOCKING AND MANEUVERING

With features like docking mode, distance measuring, and transverse speed monitoring, SafeCaptain simplifies complex maneuvers, making docking and port operations safer and more efficient.

JAMMING AND SPOOFING PROTECTION

No GNSS system can be made completely immune to interference, but our solutions are engineered with advanced safeguards. Our high-quality components are designed to detect and mitigate jamming and spoofing attempts. With multi-frequency, multi-constellation antennas, spoofing is effectively deterred. Additionally, our P1+ antennas provide an extra layer of defense by physically blocking low-elevation signals, preventing jamming and spoofing attempts from these angles.

SafeCaptain P-Series

P1

The SafeCaptain P1 interface box enables navigational data for the SafeCaptain app. It communicates with the SafeCaptain app via a local Wi-Fi network, providing a stable and flexible connection with a 1Hz update rate.

The interface box connects directly to the pilot plug, making the solution easy and quick to set up and start navigating.

P1+

The SafeCaptain P1+ enhances the interface box system by incorporating a dual-band, all-constellation GNSS receiver paired with an advanced anti-jamming antenna. This ensures superior positioning accuracy and reliability by blocking interference from low-elevation signals, even in challenging environments.

P3

Originally designed for Neopanamax vessels and fully compliant with ACP regulations, the SafePilot P3 is a fixed piloting unit that delivers unmatched accuracy and reliability. While optimized for Panama Canal operations, it seamlessly integrates with the SafeCaptain app, making it a versatile solution for navigation challenges worldwide. Featuring dual-band, multi-constellation GNSS receivers, spoofing and jamming protection, and a built-in Inertial Motion Unit (IMU) for uninterrupted navigation, the P3 ensures precise positioning and heading data even in the most demanding environments. Its backup battery provides over 5 hours of operation, offering peace of mind for extended missions.
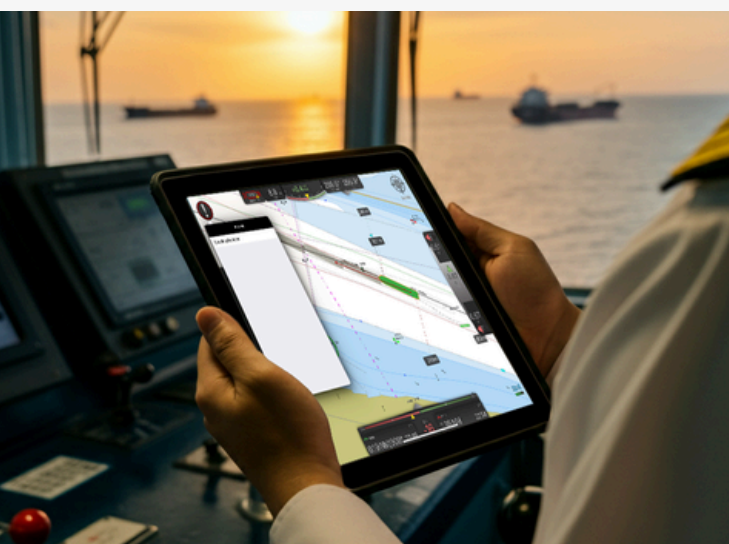
P1

P1+

P3

Empowering navigation
with SafeCaptain software

SafeCaptain is a robust software platform designed to elevate navigation and vessel monitoring, placing control and confidence directly in the hands of marine captains. Accessible through an intuitive iPad app, it seamlessly integrates with SafeCaptain P-Series (P1, P1+, and P3) to deliver precise, real-time insights and situational awareness in any environment. Captains benefit from key features such as advanced route planning, precise docking and alignment tools, and leading anti-jamming/spoofing protection. The platform also supports manual chart updates and red zone creation, empowering users with greater autonomy in unreliable port conditions. By enhancing safety, streamlining operations, and supporting decision-making, SafeCaptain is built to support safe, efficient navigation wherever the voyage leads.

FEATURES	BENEFITS
Pro navigation software	Provides comprehensive navigation data, including route planning, safety contours, and simulation tools for better decision-making and training.
Docking and alignment	Enhances docking precision with features like shoulder distance to fender lines, transverse speed, and berthing angle.
Chart annotations and distance measurement	Empowers navigation with the ability to mark specific areas directly on the chart and create custom lines to measure distances with precision.
River module	Enables quick navigation between multiple locations, calculates meeting points, and provides speed recommendations for efficient river navigation.
Under Keel Clearance (UKC)	Ensures safe passage through constrained waterways by calculating the optimal time for transit based on water depth.
Live weather data	Displays real-time weather conditions, including tide, current, wave, wind, and visibility, to improve situational awareness.
Jamming/Spoofing alerts*	Protects navigation data integrity by alerting users to potential external data quality issues or compromises.
Care pack	24/7/365 hardware and software remote support for peace of mind and operational reliability.

*When combined with P1+ or P3.

SMART ALERTS FOR COMPROMISED SIGNALS

Pairing the P1+ and P3 with the SafeCaptain app ensures you're always informed. The app displays alerts and notifications whenever signals are compromised, keeping you safe and in control.

SCAN TO LEARN MORE

P-Series technical specifications

With three advanced fixed navigation units to choose from, P-Series offer the flexibility to tailor a system that aligns perfectly with your operational priorities and challenges. When combined with the powerful SafeCaptain software, these units create a fully integrated navigation ecosystem, delivering precision, reliability, and control for even the most demanding maritime environments.

SPECIFICATIONS	P1	P1+	P3
Pilot plug repeater mode	✓	✓	—
Rate of Turn gyro	✓	✓	IMU
Position, course, speed	✓ (Pilot plug)	✓	✓
Position accuracy	Vessel dependent	Std. Alone: 1.5m SBAS: 0.6m RTK: 0.01m	Std. Alone: 1.5m SBAS: 0.6m RTK: 0.01m
Speed accuracy	—	1 cm/s	1 cm/s
Heading accuracy	0.5°	0.5°	0.05°
Multi GNSS	—	✓	✓
L1/L2	—	✓	✓
Independent heading	—	—	✓
AIS receiver	✓ (Pilot plug)	✓ (Pilot plug)	✓
UHF radio	—	—	✓
Spoofing and jamming detection	—	✓	✓
UKC	✓	✓	✓
Roll, pitch, heave	—	—	✓
Rate of Turn accuracy	0.5° /min	0.5° /min	0.1° /min
Roll accuracy	—	—	0.05°
Pitch accuracy	—	—	0.05°
Heave accuracy	—	3cm	3cm
Battery life	—	—	5 hours
Over the air firmware update	✓	✓	✓
Wi-Fi range 200m line of sight	✓	✓	✓
ACP compliant	—	—	✓

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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Twitter: @TrelleborgMI

Trelleborg Marine and Infrastructure
Email: marine_infra@trelleborg.com