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Marine Onboard Communication and Control Systems Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Communication Systems, Control Systems), By Platform (Commercial, Defense), By End User (OEM, Aftermarket), By Region & Competition, 2021-2031F

https://marketpublishers.com/r/M89018DA2962EN.html
Date: January 2026
Pages: 185
Price: US$ 4,500.00 (Single User License)
ID: M89018DA2962EN

Abstracts

The Global Marine Onboard Communication and Control Systems Market is projected to expand from USD 9.83 billion in 2025 to USD 15.39 billion by 2031, reflecting a compound annual growth rate of 7.76%. These systems consist of integrated electronic networks and hardware architectures designed to manage internal coordination, facilitate data transmission between ship and shore, and automate vital navigation and propulsion functions. The market is primarily driven by the industry's urgent need for improved operational efficiency to reduce fuel consumption, alongside strict regulatory mandates concerning emissions monitoring and maritime safety. Additionally, the push toward autonomous shipping capabilities necessitates robust control infrastructures, further fueling the demand for advanced system integration.

Despite these positive growth trajectories, the sector encounters significant challenges due to cybersecurity vulnerabilities, where enhanced connectivity exposes vessels to malicious digital threats capable of compromising safety and operational integrity. The ongoing expansion of the global fleet emphasizes a growing reliance on secure technologies, thereby generating a substantial market for new installations. According to BIMCO, deliveries of new container ships are expected to reach a record 2.8 million TEU in 2024, representing a considerable increase in the volume of vessels necessitating sophisticated onboard network implementations.

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Market Driver

The market is being fundamentally reshaped by the rising demand for high-bandwidth VSAT and LEO satellite connectivity, which allows vessels to function with digital agility comparable to onshore offices. The swift commercial rollout of Low Earth Orbit (LEO) constellations has largely resolved historical latency issues, enabling the real-time transfer of large data sets needed for modern vessel management and crew welfare applications. This transition from legacy narrowband systems to high-throughput networks is essential for supporting cloud-based operations and the continuous remote monitoring of onboard machinery. The magnitude of this shift is highlighted by Starlink's October 2024 annual update, which reported that its maritime service has connected over 75,000 vessels worldwide, indicating a significant industrial move toward low-latency satellite solutions.

Market growth is further driven by the acceleration of maritime digitalization and the adoption of smart ships, as owners incorporate sophisticated electronic architectures to improve fuel efficiency and automate complex decision-making processes. These smart control systems employ Artificial Intelligence (AI) and IoT sensors to anticipate mechanical failures before they occur, thus cutting down on operational downtime and maintenance expenses. The economic impact of integrating these technologies is expanding rapidly; a September 2024 report by Lloyd's Register titled 'Beyond the Horizon' values the maritime AI market at $4.13 billion, fueled by the sector's aggressive pursuit of digital efficiency. Moreover, modern communication infrastructures are crucial for upholding high safety standards; Inmarsat Maritime's July 2024 'Future of Maritime Safety Report' noted a 7.6% decrease in distress calls via the Global Maritime Distress and Safety System (GMDSS) in 2023, underscoring the improved reliability of contemporary onboard safety networks.

Market Challenge

The expansion of the Global Marine Onboard Communication and Control Systems Market is significantly hindered by the escalation of cybersecurity vulnerabilities inherent in increasingly connected maritime environments. As vessels evolve into integrated digital nodes, the convergence of Information Technology and Operational Technology expands the potential attack surfaces for malicious actors. This vulnerability to data breaches and ransomware poses severe operational risks, ranging from the theft of cargo data to the potential remote hijacking of critical navigation systems. Consequently, fleet operators remain cautious about adopting highly networked control architectures, fearing that greater connectivity leads to reduced security resilience.

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This apprehension is supported by recent industry data showing a tangible surge in hostile digital activity. According to DNV, in 2024, 31% of maritime professionals reported that their organizations had experienced at least one cyber-attack in the preceding twelve months, a rate nearly double that of previous years. This rising frequency of incidents compels stakeholders to divert capital toward defensive cyber-hardening measures rather than expanding communication bandwidth or control system capabilities. The necessity to mitigate these high-stakes risks creates friction in the adoption of advanced onboard networks, directly impeding the overall market momentum for digital transformation.

Market Trends

The implementation of Hybrid and Electric Propulsion Control Architectures is quickly emerging as a critical trend, significantly transforming the complexity of onboard power management. With shipowners facing stricter environmental regulations, the simple mechanical linkages of the past are being replaced by sophisticated Power Management Systems (PMS) capable of orchestrating dual-fuel engines, battery energy storage, and shaft generators. This transition demands advanced control logic to balance variable power loads and optimize energy distribution in real-time, driving a surge in demand for integrated automation platforms that can handle multi-source propulsion. The scale of this technical migration is substantial; according to DNV's September 2024 'Maritime Forecast to 2050', the global fleet of alternative-fuel-capable vessels is set to almost double between 2024 and 2028, highlighting the immense requirement for next-generation control units adaptable to methanol, ammonia, and hybrid configurations.

Simultaneously, the shift toward Cloud-Based Remote Fleet Management represents a parallel evolution where control functions are increasingly separated from physical proximity to the machinery. This trend moves beyond basic data logging, evolving into active shore-based diagnostics and 'power-by-the-hour' operational models in which OEMs remotely monitor and adjust system parameters to ensure optimal performance. Such connectivity allows for continuous algorithmic tuning of onboard systems, significantly extending asset lifecycles and shifting maintenance from reactive to prescriptive strategies based on real-time telemetry. The commercial traction of this model is evident; Wartsila's February 2024 'Annual Report 2023' reveals that approximately 30% of the company's marine and energy installed base is now covered by long-term service agreements, confirming a wide-scale industrial pivot towards digitally integrated, remotely managed control ecosystems.

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Key Market Players

Northrop Grumman Corporation

Emerson Electric Co.

Wartsila Corporation

Kongsberg Gruppen ASA

ABB Group

Furuno Electric Co., Ltd.

Japan Radio Co., Ltd.

L3harris Technologies, Inc.

Saab AB

Honeywell International Inc

Report Scope

In this report, the Global Marine Onboard Communication and Control Systems Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Marine Onboard Communication and Control Systems Market, By Type

Communication Systems

Control Systems

Marine Onboard Communication and Control Systems Market, By Platform

Commercial

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Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Marine Onboard Communication and Control Systems Market.

Available Customizations:

Global Marine Onboard Communication and Control Systems Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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