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South Korea Autonomous Ships Market Report by Component (Hardware, Software), Level of Autonomy (Semi-Autonomous, Fully-Autonomous), Fuel Type (Carbon Neutral Fuel, Liquefied Natural Gas, Electric Batteries, Heavy Fuel Oil (HFO)), Installation (OEM, Retrofit), Ship Type (Commercial Ships, Defense Ships, Passenger Ships), and Region 2026-2034

https://marketpublishers.com/r/S68971EA7899EN.html
Date: July 2026
Pages: 121
Price: US$ 2,999.00 (Single User License)
ID: S68971EA7899EN

Abstracts

South Korea autonomous ships market size reached USD 2.15 Billion in 2025. Looking forward, IMARC Group expects the market to reach USD 3.43 Billion by 2034, exhibiting a growth rate (CAGR) of 5.04% during 2026-2034. The increasing demand for automation, which can enhance the efficiency of various maritime operations, such as navigation, cargo handling, and maintenance, is driving the market.

SOUTH KOREA AUTONOMOUS SHIPS MARKET ANALYSIS:

Major Market Drivers: Ongoing advancements in technology and the increasing demand for efficient and cost-effective maritime transportation are driving the market's growth. Additionally, the rising emphasis on safety and the reduction of human errors at sea are significant drivers for adopting autonomous vessels, including autonomous ships.

Key Market Trends: The rapid developments in connectivity infrastructure, such as 5G networks and satellite communication, play a pivotal role in enabling real-time data exchange, navigation, and remote monitoring for autonomous vessels, thereby driving the market's demand. Moreover, government bodies in South Korea are recognizing the potential benefits of autonomous ships in enhancing

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operational efficiency, safety, and environmental sustainability, further propelling the market forward.

Competitive Landscape: The report has also provided a comprehensive analysis of the competitive landscape in the market. Also, detailed profiles of all major companies have been provided.

Geographical Trends: Seoul is home to many technology companies, research institutions, and government agencies involved in maritime innovation. Moreover, developments in artificial intelligence (AI), machine learning, and sensor technologies in the Honam region are making autonomous ships more viable. These advancements enhance navigation, safety, and operational efficiency.

Challenges and Opportunities: The rising cybersecurity risks and high initial costs are hampering the market's growth. However, autonomous ships can reduce operational costs by optimizing routes, improving fuel efficiency, and minimizing human error. This could lead to significant economic benefits for shipping companies and the broader maritime industry.

SOUTH KOREA AUTONOMOUS SHIPS MARKET TRENDS:

Growing International Trade

As South Korea’s international trade expands, the volume of cargo that needs to be transported increases. For instance, according to OEC, in 2022, South Korea exported worth around $705 billion, making it the world's fifth largest exporter. South Korea's exports increased by $104 billion over the last five reporting years, from $601 billion in 2017 to $705 billion in 2022. Also, according to Statista, in 2023, South Korea shipped around 327 million metric tons of freight cargo to the Far East Asia region. During that time, about 1.3 billion metric tons of freight were sent out of the country by sea. Autonomous ships offer a solution to handle larger volumes of cargo efficiently. With autonomous vessels, shipping companies can manage the higher demand more effectively. These factors are further contributing to the South Korea autonomous ships market.

Rising Government Support

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The South Korean government has shown strong support for the maritime industry, including the development of autonomous ships. Initiatives, such as subsidies, research funding, and strategic plans, aim to foster innovation and ensure that South Korea remains competitive in the global maritime sector. For instance, in April 2024, the government announced to invest an additional 3.5 trillion won ($2.5 billion) by 2030 in the maritime industry. The government intends to boost Korea's shipping capacity to 140 million tons by 2030, while increasing container shipping capacity to 2 million twenty-foot equivalent units (TEUs) by 2030, up from 1.2 million TEUs. These factors are positively influencing the South Korea autonomous ships market forecast.

Rapid Technological Advancements

South Korea has a robust technology sector and is a leader in innovation, which has led to advancements in autonomous ship technology. The development of sophisticated sensors, AI software, and machine learning algorithms enhances the capabilities of autonomous ships, making them more reliable and efficient. For instance, in April 2024, Seadronix, an AI maritime solutions company based in South Korea, introduced the Rec-SEA Plugin, cutting-edge AI software that converts traditional ships into smart ships. The Rec-SEA Plugin enhances marine operations' safety and efficiency by utilizing current onboard sensors, such as LiDAR and RADAR. These factors are further contributing to the South Korea autonomous ships market share.

SOUTH KOREA AUTONOMOUS SHIPS MARKET SEGMENTATION:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the country and regional levels for 2026-2034. Our report has categorized the market based on component, level of autonomy, fuel type, installation, and ship type.

Breakup by Component:

- Hardware
- Software

The report has provided a detailed breakup and analysis of the market based on the component. This includes hardware and software.

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According to the South Korea autonomous ships market overview, hardware components in autonomous ships are essential for enabling the vessel to operate without human intervention. It includes a variety of sensors, such as radar, lidar, sonar, and cameras, to provide real-time data about the ship's surroundings. These sensors detect obstacles, map the environment, and monitor other vessels, ensuring safe navigation. Moreover, software components process data from sensors and navigation systems to plan and adjust the ship's route. They use algorithms to optimize travel paths, avoid obstacles, and comply with maritime regulations.

Breakup by Level of Autonomy:

Semi-Autonomous

Fully-Autonomous

A detailed breakup and analysis of the market based on level of autonomy have also been provided in the report. This includes semi-autonomous and fully-autonomous.

According to the South Korea autonomous ships market outlook, semi-autonomous ships are vessels that can perform many functions autonomously but still require human oversight and intervention. They combine automated systems with human control to enhance operational efficiency and safety. Moreover, fully-autonomous ships operate without human intervention, using advanced technology to perform all navigational and operational functions independently.

Breakup by Fuel Type:

Carbon Neutral Fuel

Liquefied Natural Gas

Electric Batteries

Heavy Fuel Oil (HFO)

The report has provided a detailed breakup and analysis of the market based on the fuel type. This includes carbon neutral fuel, liquefied natural gas, electric batteries, and

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heavy fuel oil (HFO).

Carbon neutral fuels are those that have net-zero carbon emissions when burned, either because they are derived from renewable sources or because their carbon emissions are offset through various means. Moreover, LNG is natural gas that has been cooled to a liquid state for storage and transport. It is a cleaner-burning fossil fuel compared to traditional marine fuels. Besides this, electric batteries store energy that is used to power electric propulsion systems. They are typically charged using renewable energy sources or grid electricity.

Breakup by Installation:

OEM

Retrofit

A detailed breakup and analysis of the market based on installation have also been provided in the report. This includes OEM and retrofit.

OEM refers to the integration of autonomous technologies directly into new ships during the design and manufacturing process. When autonomous features are included as OEM components, they are built into the ship from the outset, ensuring that the technology is seamlessly integrated with the ship’s systems and infrastructure. Moreover, retrofit involves upgrading existing ships with autonomous technologies. This process involves installing new systems and modifying existing infrastructure to support autonomous operations. It allows older ships to benefit from modern technology without needing to be replaced.

Breakup by Ship Type:

Commercial Ships

Defense Ships

Passenger Ships

The report has provided a detailed breakup and analysis of the market based on the

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ship type. This includes commercial ships, defense ships, and passenger ships.

Autonomous commercial ships can optimize routes, reduce fuel consumption, and enhance safety. Technologies, like advanced navigation systems, collision avoidance, and automated cargo handling, are key components. Moreover, autonomous systems in defense ships can enhance surveillance, reconnaissance, and operational capabilities. Unmanned surface vehicles (USVs) and underwater vehicles (UUVs) are often used for missions like mine sweeping, border patrols, and anti-submarine warfare. Furthermore, in passenger ships, autonomous technology can enhance safety, optimize routes, and improve passenger experiences. Features like automated navigation and real-time adjustments to itineraries are increasingly relevant.

Breakup by Region:

Seoul Capital Area

Yeongnam (Southeastern Region)

Honam (Southwestern Region)

Hoseo (Central Region)

Others

The report has also provided a comprehensive analysis of all the major regional markets, which include Seoul Capital Area, Yeongnam (Southeastern Region), Honam (Southwestern Region), Hoseo (Central Region), and others.

The Seoul Capital Area is the economic and financial center of South Korea, with a significant concentration of businesses, trade, and shipping activities. With increasing interest in smart city solutions, autonomous vessels could support urban logistics and transportation needs, including potential connections with the metropolitan area's extensive transportation network. Moreover, Yeongnam is known for its strong industrial base, including shipbuilding, steel production, and manufacturing. The presence of major shipyards in the region, such as Daewoo Shipbuilding & Marine Engineering and Hyundai Heavy Industries, makes Yeongnam a prime candidate for integrating autonomous technology into new builds and retrofits.

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COMPETITIVE LANDSCAPE:

The market research report has also provided a comprehensive analysis of the competitive landscape in the market. Competitive analysis such as market structure, key player positioning, top winning strategies, competitive dashboard, and company evaluation quadrant has been covered in the report. Also, detailed profiles of all major companies have been provided.

KEY QUESTIONS ANSWERED IN THIS REPORT
How has the South Korea autonomous ships market performed so far and how will it perform in the coming years?
What has been the impact of COVID-19 on the South Korea autonomous ships market?
What is the breakup of the South Korea autonomous ships market on the basis of component?
What is the breakup of the South Korea autonomous ships market on the basis of level of autonomy?
What is the breakup of the South Korea autonomous ships market on the basis of fuel type?
What is the breakup of the South Korea autonomous ships market on the basis of installation?
What is the breakup of the South Korea autonomous ships market on the basis of ship type?
What are the various stages in the value chain of the South Korea autonomous ships market?
What are the key driving factors and challenges in the South Korea autonomous ships?
What is the structure of the South Korea autonomous ships market and who are the key players?
What is the degree of competition in the South Korea autonomous ships market?

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