

AGV Software Market ? Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Offering (In-built Vehicle Software and Integrated Software), By End-Use Industry (Automotive, Manufacturing, Food & Beverages, Aerospace, Healthcare, Logistics, Retail and Others), By Region & Competition, 2021-2031F

<https://marketpublishers.com/r/ACD4C863CFABEN.html>

Date: January 2026

Pages: 186

Price: US\$ 4,500.00 (Single User License)

ID: ACD4C863CFABEN

Abstracts

The Global AGV Software Market is projected to experience robust growth, rising from a valuation of USD 3.59 Billion in 2025 to USD 7.22 Billion by 2031, reflecting a CAGR of 12.35%. This specific software category encompasses the centralized control systems that govern the navigation, traffic routing, and task scheduling of Automated Guided Vehicles within industrial settings. By coordinating fleet movements to prevent collisions and streamline material flow in warehouses and manufacturing plants, these technologies are essential for modern logistics. The market is primarily driven by the urgent need for operational efficiency and the necessity to mitigate global labor shortages, compelling industries to rely more heavily on software to orchestrate their increasingly complex internal logistics networks.

However, the market faces a substantial challenge regarding the difficulty of achieving interoperability between new AGV software and existing legacy infrastructure, often leading to high implementation costs. Despite these technical barriers, the deployment of mobile robotics is accelerating. Data from the International Federation of Robotics indicates that in 2024, the transportation and logistics segment achieved sales of 102,900 units, marking a 14% increase driven by industrial automation demands. This statistical growth highlights the expanding scale of fleets, which subsequently requires increasingly robust management software to ensure effective operation.

Market Driver

The escalation of labor costs and a scarcity of available workers serve as primary catalysts propelling the adoption of AGV software. As industrial sectors face a widening skills gap and rising wages, companies are turning to automated solutions to sustain productivity rather than depending on a volatile human workforce. Advanced software platforms enable facilities to maximize the utility of their robotic fleets, ensuring continuous operation while reducing reliance on manual forklift operators. This strategic shift is supported by data from Rockwell Automation's '10th Annual State of Smart Manufacturing Report' from June 2025, which notes that 41% of manufacturers are using AI and automation specifically to bridge the skills gap and address labor shortages, allowing fewer personnel to oversee larger, more complex material handling operations.

Furthermore, the surge in global e-commerce and omnichannel fulfillment accelerates the deployment of sophisticated navigation and control systems. Modern fulfillment centers operate under immense pressure to process orders with exceptional speed and accuracy, requiring the dynamic routing and real-time task allocation that only robust software can provide. This demand is particularly acute in consumer-facing industries dealing with seasonal peaks. According to the Association for Advancing Automation's press release from February 2025, 'A3 Reports North American Robotics Market Holds Steady in 2024,' robot orders from the food and consumer goods sector jumped by 65% in 2024. Additionally, the International Federation of Robotics reported in 2025 that global sales of professional service robots reached nearly 200,000 units in 2024, a 9% increase that underscores the operational imperatives driving this sector.

Market Challenge

The technical difficulty of establishing interoperability between modern AGV software and existing legacy infrastructure acts as a significant restraint on market expansion. Many industrial facilities rely on older enterprise resource planning systems and warehouse management tools that are not inherently compatible with current robotic control architectures. Bridging this technological gap often necessitates expensive middleware and extensive engineering customization, which significantly increases the total cost of ownership. Consequently, these inflated implementation costs frequently compel companies to delay or scale back their automation projects, particularly when capital budgets are strictly scrutinized for return on investment.

This financial hesitation has resulted in a measurable deceleration in the adoption of automation technologies. According to the Association for Advancing Automation, North American companies ordered 15,705 robots in the first half of 2024, representing a decline of approximately 8% compared to the same period in the previous year. This contraction in procurement activity underscores how the financial burden of complex integrations can suppress demand. When the cost of synchronizing new software with established systems becomes prohibitive, it effectively limits the addressable market and slows the overall growth trajectory of the global AGV software sector.

Market Trends

The integration of Artificial Intelligence for dynamic path planning is transforming AGV software by empowering vehicles to navigate complex environments without reliance on rigid physical infrastructure like magnetic tapes. Unlike traditional rule-based systems, AI algorithms process real-time sensor data to instantly recalculate routes, allowing fleets to bypass obstacles and dynamically prioritize urgent material movements. This shift toward autonomous adaptability is becoming a standard operational requirement for modern facilities aiming to optimize material flow; according to Rockwell Automation's '10th Annual State of Smart Manufacturing Report' from June 2025, 95% of manufacturers have invested in or plan to invest in artificial intelligence and machine learning technologies over the next five years to enhance operational resilience.

Concurrent with AI adoption, the incorporation of Digital Twin technology for simulation is altering how robotic fleets are deployed and optimized. This technology enables facility managers to create virtual replicas of their physical environments, allowing them to test fleet behaviors, validate routing logic, and identify potential bottlenecks before physically commissioning any vehicles. By simulating various operational scenarios, companies can significantly reduce implementation risks and minimize downtime during system integration. The increasing adoption of this validation tool is evident; according to Robotics and Automation News in the September 2025 article 'Robotics Survey Highlights Autonomy and Digital Twins Trends,' 39.4% of organizations already utilize digital twins extensively for their robotic systems, with an additional 51.7% currently piloting the technology.

Key Market Players

KION Group

Toyota Industries Corporation

KUKA Group

Jungheinrich AG

Seegrid Corporation

Daifuku Co., Ltd.

JBT Corporation

Murata Machinery, Ltd.

Oceaneering International, Inc.

Kollmorgen

Report Scope

In this report, the Global AGV Software Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

AGV Software Market, By Offering

In-built Vehicle Software and Integrated Software

AGV Software Market, By End-Use Industry

Automotive

Manufacturing

Food & Beverages

Aerospace

Healthcare

Logistics

Retail and Others

AGV Software Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

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 AGV Software Market.

Available Customizations:

Global AGV Software 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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