

AI and Robotics in Aerospace and Defense Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

<https://marketpublishers.com/r/A80AFF6332EDEN.html>

Date: November 2024

Pages: 230

Price: US\$ 4,850.00 (Single User License)

ID: A80AFF6332EDEN

Abstracts

The Global AI And Robotics In Aerospace And Defense Market reached USD 32.5 billion in 2024, with projections for a 7.7% CAGR through 2032. AI advancements are transforming aerospace systems, enhancing autonomy in unmanned aerial vehicles (UAVs) and autonomous aircraft. Core AI technologies, including machine learning, computer vision, and sensor fusion, enable aerospace applications to achieve higher precision, reliability, and sophisticated decision-making without human involvement.

Despite significant potential, the market faces obstacles, primarily the high costs of research, development, and technology integration. Nonetheless, demand is growing for autonomous drones, AI-driven military robots, and advanced surveillance systems that promise increased operational efficiency. Regulatory requirements surrounding safety standards, data protection, and defense compliance can limit growth, but evolving defense policies and cross-border collaborations are helping to alleviate these restrictions.

The market is segmented by component into hardware, software, and services, with the hardware sector holding the largest market share at 46.7% in 2024. Hardware innovations—particularly in sensors, processors, and actuators—are crucial for developing autonomous capabilities. Enhanced data collection, real-time analytics, and improved maneuverability in drones, robots, and other unmanned vehicles are being driven by high-performance AI chips and edge computing technology, allowing faster data processing and low latency for critical missions.

Deployment in AI and robotics in aerospace and defense market is categorized across airborne, ground-based, space-based, and naval systems. The space-based segment is

expected to grow, with a projected 10.4% CAGR over the forecast period. These systems are increasingly vital for surveillance, communication, and navigation, where autonomous decision-making, AI-driven data analysis, and anomaly detection are essential for operations in challenging environments. Robotics in satellites and space exploration vehicles further enhance mission efficiency, supporting tasks such as maintenance, resource collection, and planetary exploration.

North America led the AI and robotics in aerospace and defense market with a 34.5% share in 2024 and is expected to retain its dominance. Growth in the region is largely attributed to robust investments in autonomous defense technologies, AI-enhanced surveillance, and military robotics. The U.S. government, particularly the Department of Defense, is prioritizing technological innovation to modernize its defense infrastructure. Strategic partnerships with defense contractors accelerate advancements in AI and robotics, reinforcing North America's leading position in aerospace and defense technologies.

Contents

Report Content

CHAPTER 1 METHODOLOGY & SCOPE

- 1.1 Market scope & definitions
- 1.2 Base estimates & calculations
- 1.3 Forecast calculations
- 1.4 Data sources
 - 1.4.1 Primary
 - 1.4.2 Secondary
 - 1.4.2.1 Paid sources
 - 1.4.2.2 Public sources

CHAPTER 2 EXECUTIVE SUMMARY

- 2.1 Industry synopsis, 2021-2034

CHAPTER 3 INDUSTRY INSIGHTS

- 3.1 Industry ecosystem analysis
 - 3.1.1 Factor affecting the value chain
 - 3.1.2 Profit margin analysis
 - 3.1.3 Disruptions
 - 3.1.4 Future outlook
 - 3.1.5 Manufacturers
 - 3.1.6 Distributors
- 3.2 Supplier landscape
- 3.3 Profit margin analysis
- 3.4 Key news & initiatives
- 3.5 Regulatory landscape
- 3.6 Impact forces
 - 3.6.1 Growth drivers
 - 3.6.1.1 Advancements in AI enhancing autonomy in aerospace systems
 - 3.6.1.2 Surge in investment for military robotics and defense
 - 3.6.1.3 AI-driven predictive maintenance reducing downtime in operations
 - 3.6.1.4 Increasing demand for drones in surveillance and reconnaissance
 - 3.6.1.5 Expanding use of robotics in space exploration missions

- 3.6.2 Industry pitfalls & challenges
 - 3.6.2.1 High research, development, and implementation costs in aerospace
 - 3.6.2.2 Regulatory hurdles and safety concerns hindering market growth
- 3.7 Growth potential analysis
- 3.8 Porter's analysis
- 3.9 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2024

- 4.1 Introduction
- 4.2 Company market share analysis
- 4.3 Competitive positioning matrix
- 4.4 Strategic outlook matrix

CHAPTER 5 MARKET ESTIMATES & FORECAST, BY COMPONENT, 2021-2034 (USD MILLION)

- 5.1 Key trends
- 5.2 Hardware
- 5.3 Software
- 5.4 Services

CHAPTER 6 MARKET ESTIMATES & FORECAST, BY DEPLOYMENT, 2021-2034 (USD MILLION)

- 6.1 Key trends
- 6.2 Airborne systems
- 6.3 Ground-based systems
- 6.4 Space-based systems
- 6.5 Naval-based systems

CHAPTER 7 MARKET ESTIMATES & FORECAST, BY END USE, 2021-2034 (USD MILLION)

- 7.1 Key trends
- 7.2 Government/Military
- 7.3 Commercial
- 7.4 Space agencies and research institutes

CHAPTER 8 MARKET ESTIMATES & FORECAST, BY REGION, 2021-2034 (USD MILLION)

8.1 Key trends

8.2 North America

8.2.1 U.S.

8.2.2 Canada

8.3 Europe

8.3.1 UK

8.3.2 Germany

8.3.3 France

8.3.4 Italy

8.3.5 Spain

8.3.6 Russia

8.4 Asia Pacific

8.4.1 China

8.4.2 India

8.4.3 Japan

8.4.4 South Korea

8.4.5 Australia

8.5 Latin America

8.5.1 Brazil

8.5.2 Mexico

8.6 MEA

8.6.1 South Africa

8.6.2 Saudi Arabia

8.6.3 UAE

CHAPTER 9 COMPANY PROFILES

9.1 Airbus SE

9.2 Bae Systems

9.3 GE Aviation

9.4 General Dynamics Corporation

9.5 Honeywell International Inc.

9.6 IBM Corporation

9.7 Intel Corporation

9.8 Iris Automation Inc.

9.9 L3 Harris Technologies

- 9.10 Leonardo S.p.A.
- 9.11 Lockheed Martin Corporation
- 9.12 Microsoft
- 9.13 Northrop Grumman Corporation
- 9.14 Nvidia Corporation
- 9.15 Raytheon Technologies Corporation
- 9.16 Rheinmetall AG
- 9.17 SAAB AB
- 9.18 Safran SA
- 9.19 Shild AI
- 9.20 SITA
- 9.21 Thales Group
- 9.22 The Boeing Company

I would like to order

Product name: AI and Robotics in Aerospace and Defense Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

Product link: <https://marketpublishers.com/r/A80AFF6332EDEN.html>

Price: US\$ 4,850.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/A80AFF6332EDEN.html>