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AI In Aerospace And Defense - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-07-01 | 110 pages | Mordor Intelligence

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Report description:

AI In Aerospace And Defense Market Analysis

The AI in the aerospace and defense market generated USD 27.91 billion in 2025 and is on track to reach USD 42.67 billion by 2030, implying an 8.86% CAGR over the forecast period. Military programs account for the largest spending block, while accelerating digital-transformation initiatives in commercial aviation and space exploration sustain a broad demand base. Rapid growth in defense AI budgets, ongoing fleet renewals, and a clear shift toward autonomy at the edge continue to widen the total addressable opportunity. Adoption is especially strong wherever predictive-maintenance analytics cut unscheduled downtime, and wherever certified edge-AI processors make real-time inference possible aboard aircraft, spacecraft, or unmanned vehicles. Competitive dynamics remain fluid as software-centric entrants challenge long-established primes, focusing on fast iteration, cloud-native deployment, and outcome-based contracting.

Global AI In Aerospace And Defense Market Trends and Insights

Soaring defense-AI budgets drive adoption

The FY-25 US Department of Defense allocation of USD 1.8 billion for AI-40% higher than FY-24-fast-tracks prototyping across autonomy, C4ISR, and decision-support systems. DARPA directed USD 300 million to field projects such as the Advanced Capability Enabler, while the newly elevated Chief Digital and Artificial Intelligence Office consolidates enterprise authority. Contracts awarded to Lockheed Martin, Northrop Grumman, and Anduril cover automated mission-planning, synthetic-aperture radar exploitation, and manned-unmanned teaming capabilities. The spending surge sparks similar moves among NATO partners that co-invest in data-fusion platforms and secure edge-compute nodes.

Predictive-maintenance economics reshape MRO

Airlines employing AI-driven prognostics cut unscheduled events by 20-30%, saving several million USD per wide-body annually. Pratt & Whitney's EngineWise processes 50 billion datapoints annually, while Lufthansa Technik's AVIATAR reduces aircraft-on-ground time by 15%. Military operators mirror the trend: the US Air Force reports 25% higher mission-capable rates after rolling out its Predictive Analytics and Decision Assistant. Consequently, service providers pivot from reactive repairs toward outcome-based, analytics-backed contracts.

Export controls impose technology choke points

Revisions to the US Commerce Control List now require licenses for facial-recognition or automated-targeting software shipped to designated states. European partners in the Future Combat Air System consequently develop parallel AI stacks to avoid ITAR constraints. Companies devote up to 20% of AI project budgets to compliance, and multi-national projects often slip 12-18 months while clearances are negotiated.

Other drivers and restraints analyzed in the detailed report include:

Autonomous UAV fleets reach maturity / Edge-AI chips clear certification hurdles / Cyber supply-chain threats undermine trust /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Software maintained 53.33% of 2024 revenue, reflecting the centrality of algorithms, data-fusion engines, and autonomy frameworks to every major platform. For instance, Palantir's tactical intelligence platform underpinned multi-billion-USD defense awards in 2024. In value terms, the AI in aerospace and defense market size for software eclipsed USD 14 billion and is projected to climb at a 7.90% CAGR. Hardware trails as component commoditization offsets unit-volume gains.

The services line, however, will outpace all other categories at 9.87% CAGR through 2030 as customers lean on integration specialists to harden AI models for certification, connect legacy avionics, and operate AI-at-scale across hybrid clouds. Training-and-simulation services, underpinned by adaptive AI flight instructors, record double-digit billings, mirroring the military's emphasis on ready-now pilots.

The AI in Aerospace and Defense Market Report is Segmented by Offering (Hardware, Software, and Services), Application (Defense, Commercial Aviation, and Space), End-User (Defense Primes, Airlines and MRO Providers, Space Agencies and Commercial Operators, and More), and Geography (North America, Europe, Asia-Pacific, and More). The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

North America retained a 33.45% share of the AI market in aerospace and defense in 2024, buoyed by the United States' USD 1.8 billion FY-25 defense-AI budget, a robust venture ecosystem, and extensive university partnerships. Boeing's collaboration with Microsoft Azure Government provides classified cloud training pipelines, while CAE Canada delivers AI-enabled flight-training devices globally. The region's 7.8% historical CAGR is expected to rise 8.2% through 2030 as production programs come online and export demand for autonomous systems grows.

The Middle East is emerging as the fastest-growing theater, with a 9.31% forecasted CAGR on the back of sovereign AI roadmaps and defense-modernization funds. The UAE's Mohammed bin Rashid Space Centre operates fully AI-driven Earth-observation scheduling, and Saudi Arabia has earmarked USD 20 billion for NEOM's autonomous-aviation spine. Israel's defense tech base continues to deliver world-class electronic-warfare AI, feeding export channels across the region.

Europe and Asia-Pacific maintain complementary strengths. Europe channels EUR 1.2 billion (USD 1.4 billion) from its European Defence Fund into collaborative AI for the Future Combat Air System. At the same time, Airbus and Dassault push common data fabrics for multi-domain operations. Iapan's Global Combat Air Programme, India's Indigenous AI radar, and China's self-navigating UAV swarms illustrate escalating investment. In Asia-Pacific, both regions target balanced growth above 8% as civil aviation recovery meets national security imperatives.

List of Companies Covered in this Report:

Airbus SE / International Business Machines Corporation / The Boeing Company / NVIDIA Corporation / General Electric Company / Thales Group / Lockheed Martin Corporation / Intel Corporation / SITA N.V. / RTX Corporation / General Dynamics Corporation / Northrop Grumman Corporation / Microsoft Corporation / Honeywell International Inc. / Indra Sistemas S.A. / T-Systems International GmbH / Anduril Industries, Inc. / BAE Systems plc / Palantir Technologies Inc. / Shield AI / Helsing GmbH /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

Table of Contents:

5.4.1 North America
5.4.1.1 United States
5.4.1.2 Canada
5.4.1.3 Mexico
5.4.2 Europe
5.4.2.1 United Kingdom
5.4.2.2 Germany
5.4.2.3 France
5.4.2.4 Russia
5.4.2.5 Rest of Europe
5.4.3 Asia-Pacific
5.4.3.1 China
5.4.3.2 Japan
5.4.3.3 India
5.4.3.4 South Korea
5.4.3.5 Australia
5.4.3.6 Rest of Asia-Pacific
5.4.4 South America
5.4.4.1 Brazil
5.4.4.2 Rest of South America
5.4.5 Middle East and Africa
5.4.5.1 Middle East
5.4.5.1.1 Saudi Arabia
5.4.5.1.2 UAE
5.4.5.1.3 Turkey
5.4.5.1.4 Rest of Middle East
5.4.5.2 Africa
5.4.5.2.1 South Africa
5.4.5.2.2 Rest of Africa

6 COMPETITIVE LANDSCAPE
6.1 Market Concentration
6.2 Strategic Moves
6.3 Market Share Analysis
6.4 Company Profiles (includes Global Overview, Market Overview, Core Segments, Financials, Strategic Info, Rank/Share, PandS, Recent Developments)
6.4.1 Airbus SE
6.4.2 International Business Machines Corporation
6.4.3 The Boeing Company
6.4.4 NVIDIA Corporation
6.4.5 General Electric Company
6.4.6 Thales Group
6.4.7 Lockheed Martin Corporation
6.4.8 Intel Corporation
6.4.9 SITA N.V.
6.4.10 RTX Corporation
6.4.11 General Dynamics Corporation

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