Special Report

M&A in Aerospace and Defense | Q3 2023





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Executive Summary

M&A in Aerospace and Defense (A&D) | Q3 2023



A&D Industry Overview

The global AI market is expected to expand at a CAGR of 6.15% to US\$1,300 billion by 2030, driven by technological advancement, increasing demand for commercial aircraft, and rising defense spending.



SPAC Transactions

 SPACs are expected to continue to play a significant role in the A&D industry in the coming years, as companies look to raise capital in order to fund their growth and development.



M&A in A&D Overview

- A&D accounted for 55 technology deals in Q3 2023 compared with 85 deals in Q3 2021.
- The total transaction size in Q3 2023 was US\$12.4 billion compared with US\$4.1 billion in Q2 2023.



Recent Trends & Developments

- Al is being used to develop autonomous weapons systems, such as drones and missiles, that can operate without human intervention.
- The A&D industry is increasingly recognizing the need to adopt sustainable energy practices.



Global A&D Venture Funding

- Al funding fell 30% YoY to US\$1.6 billion in Q3 2023, the lowest quarterly total since Q1 2020.
- Deals slid for the third quarter in a row to 70, the lowest tally since Q1 2020.



Outlook - 2024

- Defense companies would acquire or partner to gain capabilities in emerging markets.
- The commercial spaceflight industry is growing rapidly, creating new opportunities for aerospace companies.



A&D Industry Overview – (1/2)

Global A&D market expected to register 6.15% CAGR and reach US\$1,300 billion by 2030

Global A&D Market Size

US\$ Bn



- The global A&D market is expected to advance at a CAGR of 6.15% between 2023 and 2030 to reach US\$1,300 billion.
- A&D is a highly regulated and complex industry that involves the design, development, manufacture, and maintenance of aircraft, spacecraft, missiles, and other military equipment.
- The industry is constantly evolving. Technological advancement, increasing demand for commercial aircraft, and rising defense spending are expected to be the key growth drivers.

Regional Insights Europe is the world's secondlargest A&D market and is focused on developing joint programs with other countries in the region. Asia-Pacific is the fastest-North America is the largest growing A&D market and is A&D market in world with focused on modernizing its 40% of the global share. militaries and expanding its commercial airlines. Subsectors

Defense	Space	Avionics	Engines
Commercial Aerospace		nce, Repairs verhaul	omponents & Subsystems

Source: Aranca Research



A&D Industry Overview – (2/2)

Increase is defense spending, technological innovation, and global economic growth to drive A&D industry

Market Drivers and Restraints



Drivers

Rising global defense spending as governments worldwide seek to modernize their militaries

Economic growth in emerging markets and rising middle class to drive demand for commercial flight

Development of new technology to support constantly evolving A&D industry



Restraints

High cost of materials, complexity of manufacturing process, and stringent safety and reliability standards

Constrains arising from heavy regulation by governments worldwide

Supply chain disruption could hamper development of A&D industry

Recent Developments

US Navy awards Lockheed Martin \$1bn contract for systems engineering and software integration Oct-23 of Integrated Combat System

> Indonesia Inks MoU to acquire F-15EX from Boeing

IndiGo announces 500-aircraft deal with Airbus, setting a record in aviation history

Lockheed Martin partners with US Navy to integrate hypersonic strike capability onto surface ships



Jun-23

Feb-23

Jul-23

Feb-23

The US Army awards Lockheed Martin \$1.5 billion contract to develop a new hypersonic missile

Boeing wins \$795mn contract to procure Military Aircraft

Air India agrees to buy 470 planes from Airbus and Boeing, the biggest order of new passenger aircraft in history at the time

Competition Insights

Consolidated

(Market dominated by 1–5 major players)

Fragmented

(Highly competitive market with no dominant player)



Global A&D Market

- Some key players in the global A&D market are adopting aggressive acquisition strategies to strengthen their market presence and dominance.
- A diversified growth strategy protects a firm from global economic slumps, triggering industry incumbents to acquire several competing products to gain a competitive advantage in the market.
- · As nascent defense and commercial markets continue to grow, winners and losers would emerge in crowded and highly competitive markets, leading to consolidation in the industry.



















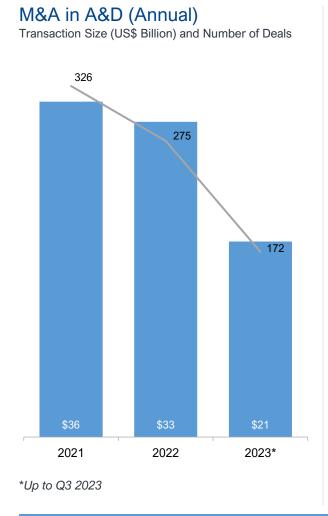




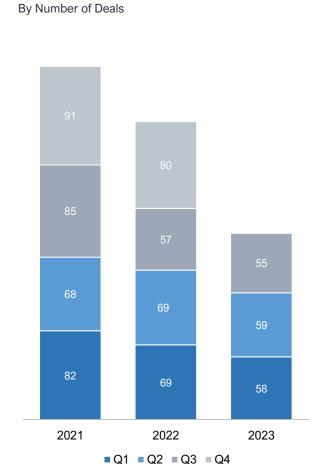


M&A in A&D Transaction Trend Overview

After record highs in 2021, M&A activity plunges across industry sectors in 2022







M&A in A&D (Quarterly)

Note: Volume and total transaction value might differ due to the lack of availability of undisclosed transactions.



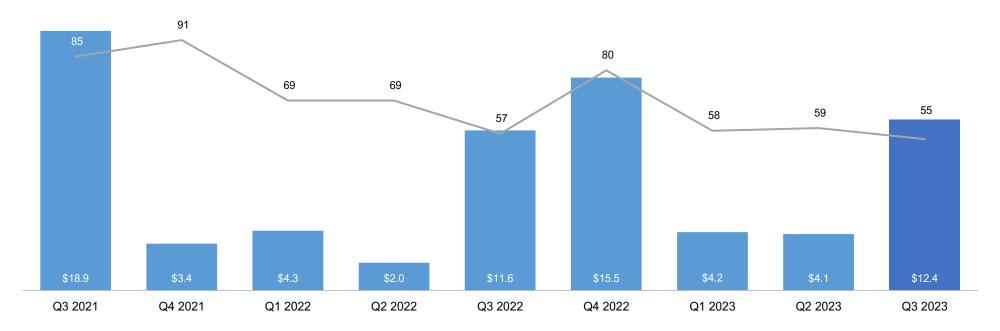


M&A in A&D Transaction Trend Overview

Consolidation continues, driven by rising geopolitical tensions and technological innovation

M&A Deals in A&D: Last 2 Years

Total Transaction Size (US\$ Billion) and Number of Deals



- SMBC Aviation Capital's acquisition of Goshawk Aviation for US\$6.7 billion in December 2022 was the largest disclosed aerospace deal of the year.
- OEM manufacturer Safran SA is the second-biggest acquirer in A&D by number of deals, with 11 acquisitions, just behind Rheinmetall AG.
- The UK has seen the most aerospace and defense M&A deals in Europe, followed by France, Germany, and Russia.
- A&D-related deal volume decreased 7% in Q3 2023 compared with Q2 2023 and was 35% lower than in Q3 2021.

Note: Volume and total transaction value might differ due to the lack of availability of undisclosed transactions.

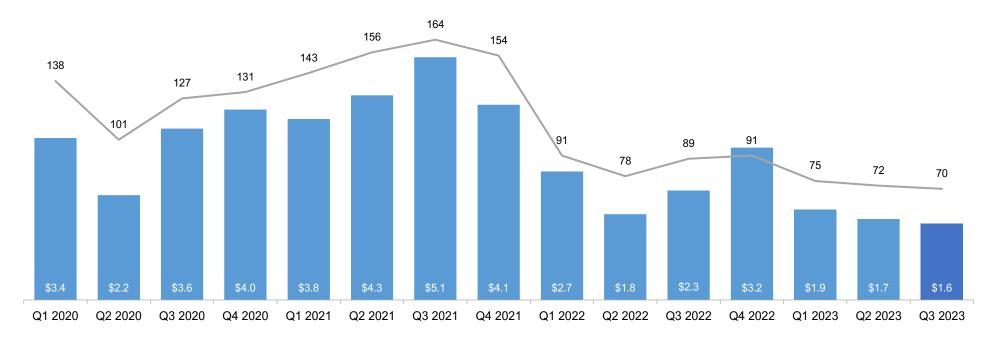


Global A&D Venture Funding – Q3 2023

A&D venture funding is healthy and growing, but headwinds could slow near-term growth

Global A&D Venture Funding

Venture Funding (US\$ Billion) and Number of Deals



- The global A&D venture funding market has grown significantly in recent years, reaching a record high of US\$10.1 billion in 2022. However, there has been a slight decline in deal volume and funding raised in recent quarters.
 - A number of reasons may have contributed to this decline, including rising interest rates, a more cautious investment environment, and the ongoing war in Ukraine. However, the long-term outlook for the sector remains positive, driven by factors such as increased government spending on defense, growth of commercial spaceflight, and development of new aerospace technologies.
- The top five A&D venture deals in 2022 were all for companies developing new military technologies.



Trends in A&D

International cooperation, AI, and increasing focus on sustainability set to drive market



Increasing importance of international cooperation

- The A&D industry is becoming increasingly globalized, with companies from different countries working together on projects.
- International cooperation enables companies from different countries to share the costs and risks associated with development, give companies access to a wider pool of talent and expertise, and help them gain access to new markets.
- Boeing and Airbus are working on developing new zero-emission commercial aircraft in partnership with companies from other countries. Boeing is collaborating with Rolls-Royce, Siemens, and Safran on its 797 aircraft, while Airbus is working with General Electric and Pratt & Whitney on its ZEROe aircraft.
- The US and India are working together to develop a new missile defense system. The system is being developed by Raytheon Technologies and Bharat Dynamics Limited.



Artificial intelligence in A&D industry

- Artificial intelligence is playing an increasingly important role in the A&D industry, with applications ranging from design and manufacturing to
 maintenance and operations. One of the most significant developments is the use of AI to develop autonomous weapon systems that can
 operate without human intervention
- Al is being used to improve intelligence gathering and analysis. It is also being used to develop new training and simulation systems that can provide realistic and challenging training environments.
- Boeing has built and trained machine learning algorithms to identify patterns in data and make recommendations in minutes. Lockheed Martin is developing AI technologies with speed and agility to deliver a superior solution and tactical advantage to its fleet. Airbus is using AI for knowledge extraction, computer vision, anomaly detection, conversational assistance, decision-making, and autonomous flight.



Rising focus on sustainable energy practices

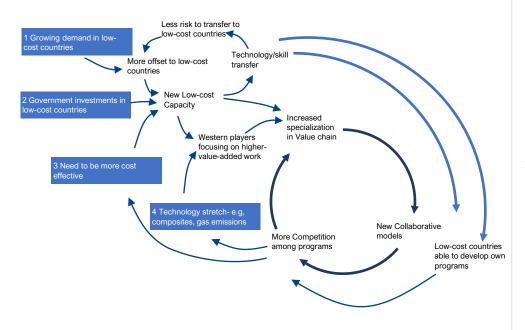
- The A&D industry is a large consumer of energy and a major contributor to greenhouse gas emissions. However, the industry is increasingly recognizing the need to adopt sustainable energy practices.
- With growing concerns about climate change, many aerospace companies are prioritizing carbon footprint reduction. This has recently become possible due to innovations and advancements in energy technology. Airbus has launched a new line of electric aircraft in an effort to bring zero emission aircraft to market by 2035.
- Metafuels is a Swiss startup that is developing alternative fuels for aerospace operations. Its proprietary technology converts green methanol into sustainable aviation fuel, potentially reducing the carbon footprint by up to 80%.



Emerging Markets

Emerging markets brace for major investment, tech, and regulatory push in 2024, accelerating value chain shifts

Value Chain



- The aerospace industry has been slow to expand into emerging markets, despite the potential cost advantages. Currently, only 3% of aerospace output originates in these regions.
- However, emerging markets are gaining ground in the aerospace industry, driven by offset requirements, government investments, and partnerships with Western OEMs.
- China, India, and Russia are poised to become major players in the coming decades, presenting Western companies with significant opportunities to reduce costs in the short term.

Technologies

Space



- Private companies and startups are fueling the growth of the space segment with ambitious launch plans and investments in space manufacturing, asteroid mining, space tourism, and space-based solar power.
- Blue Origin, SpaceX, and Relativity Space are developing reusable launch vehicles to deploy multiple communication satellites to low Earth orbit.

Supersonics/Hypersonic



- The commercial aerospace industry is considering relaunching supersonic aircraft, which were suspended in 2003 due to fuel consumption and environmental concerns.
- The US Air Force partnered with Boom Supersonic (worth US\$60 million) and Hermeus (US\$60 million) for supersonic and hypersonic aircraft.

Advanced Air Mobility (AAM)



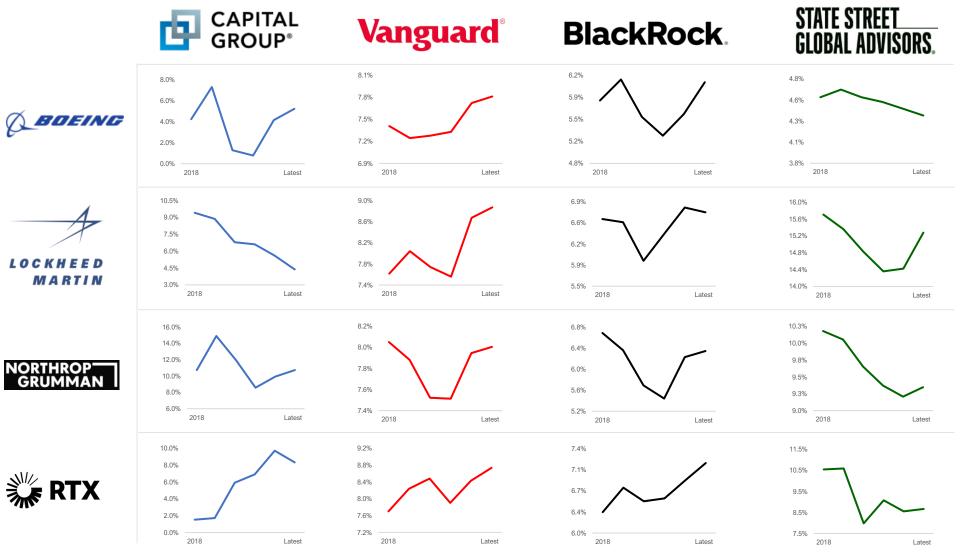
- The year 2024 could be a breakthrough for the AAM market, with electric vertical takeoff and landing (eVTOL) aircraft companies poised for significant technological and regulatory advances.
- NASA researchers recently crash-tested a full-scale eVTOL concept vehicle, advancing their vision for safe and efficient AAM in emerging markets.

Source: McKinsey and Aranca Research



Investments in A&D Sector

Asset managers seeing opportunities to invest in companies developing and deploying cutting-edge technologies



Source: Capital IQ and Aranca Research

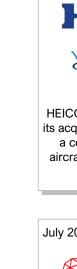


Recent M&A Deals in A&D Industry

Most significant M&A transactions in A&D to date

















Source: S&P Capital IQ and Aranca Research



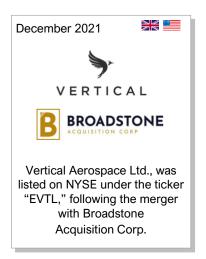
Recent SPAC Deals and SPACs Searching for Targets

Several A&D-focused companies announce collaborations with SPAC

The A&D sector is a particularly attractive target for SPACs because of its high growth potential and the need for significant capital investment.









SPACs Searching for Targets	Target Focus	Trust Value (USD billion)
Redwire Space Acquisition Corporation	Technology with focus on A&D	\$ 2.87
Vertical Aerospace Acquisition Corporation	Technology with focus on A&D	\$ 2.32
Agility Acquisition Corporation	Technology with focus on A&D	\$ 1.26
Xcalibur Acquisition Corporation	A&D	\$ 0.81
Lionheart Acquisition Corporation II	A&D	\$ 0.45

Source: SPACtrack and Aranca Research



Outlook - 2024

AI, M&A, and startups likely to shape industry in near term



Increase in M&A

- M&A are a proven way for A&D companies to diversify their operations and gain access to new capabilities. In industries with long product development cycles and strong customer loyalty, M&A can be a key growth driver. A more diversified portfolio of end markets can help to stabilize earnings and expose companies to higher growth segments.
- Defense companies would seek to acquire or partner with other players to obtain the capabilities they need to compete in emerging, high-growth markets.



Growth of commercial spaceflight industry

- The commercial spaceflight industry is growing rapidly, and this is leading to new opportunities for aerospace companies.
- The growth is supported by companies such as SpaceX and Blue Origin developing new spacecraft and launch vehicles. This is creating new opportunities for aerospace companies in areas such as satellite manufacturing and space tourism.
- Commercial spaceflight firms are developing new suborbital spacecraft that can reach the edge of space and give passengers a brief experience of weightlessness.



Emerging startups in A&D

- The A&D industry is a major sector of the global economy and is constantly evolving. New technologies and products are being developed all the time, and startups are playing an increasingly important role in the industry.
- The A&D industry is becoming more and more globalized, and startups are well-positioned to compete in the global market.
- Startups are bringing new ideas and technologies to the industry and helping to make the industry more competitive and efficient, while also creating new jobs and opportunities for businesses of all sizes.



Increasing Al application

- All is being used to develop new weapon systems, improve aircraft maintenance and safety, and enhance intelligence gathering and analysis by automating tasks, improving decision-making, and enabling new capabilities.
- To address the labor shortages and safety challenges that the A&D industry has faced recently, many leading companies in the sector are prioritizing the use of AI and machine learning to improve their business processes.





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