# 3D Printing In Aerospace and Defense Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 118 pages | Mordor Intelligence

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**Report description:**

The 3D printing in aerospace and defense market was valued at USD 1,915.51 million in 2021, and it is anticipated to register a CAGR of more than 24% during the forecast period (2023 - 2028).

The COVID-19 pandemic affected the aviation industry in 2020. Thus, airlines have opted to accelerate the retirement of older aircraft as a cost-cutting measure and are now planning to replace them with newer generation aircraft that are comparatively lightweight and more fuel-efficient. Several aerospace OEMs are investing in large-scale research projects to enhance the use of 3D-printed parts and components in newer generation aircraft. Furthermore, the use of 3D-printed parts is increasing in the aftermarket space, as such parts may reduce the pressure on traditional supply chains.

The benefits offered by 3D printing have popularized its adoption in the aerospace sector. 3D printing produces parts at lower costs with faster lead times and more digitally flexible design and development methods. 3D printing also results in significant cost savings for the users and manufacturers.

Although the adoption of 3D printing is increasing in the A&D sector, there are significant challenges that are currently delaying its progress toward mass adoption. Nevertheless, the advancements in the 3D printing technology and material sciences are likely to address most of these limitations, thereby driving the adoption of 3D printing in the aviation industry in the coming years.

3D Printing in Aerospace & Defense Market Trends

The Aircraft Segment is Projected to Dominate the Market During the Forecast Period

The aviation industry, along with the manufacturing and logistics hubs, suffered a significant loss during 2019-2020 due to the COVID-19 outbreak. However, the industry is expected to recover during the forecast period. According to the International Air Transport Association (IATA), passenger traffic will recover to pre-COVID-19 levels by 2023, which may drive the procurement of new aircraft and the demand for aircraft aftermarket parts. The aggressive growth opportunities and increasing backlogs due to slow manufacturing capabilities, owing to the lack of technological integration, have forced the aircraft OEMs to focus on using novel 3D printing technologies that can reduce time and money by automating and increasing the operational efficiency of manufacturing. Several aircraft OEMs are adopting 3D printed parts in their aircraft models. For instance, in March 2021, Stratasys was awarded a contract extension by Airbus to produce 3D printed polymer components for aircraft cabin interiors. While the previous contract was only for the A350 aircraft, the renewal includes the production of parts for several more aircraft platforms and spare part production. In addition to A350, the company will supply parts for installation on the A300, A330, A340, and A320 aircraft platforms. The aging aircraft fleet within the military segment and the demand for replacing military aircraft with a mordent fleet have generated considerable market potential. Aircraft manufacturers are aware of the increasing demand for new aircraft and actively investing in 3D printing technologies within the manufacturing segment, which is expected to drive the segment's growth in the coming years.

Asia-Pacific is Expected to Witness the Highest Growth

The Asia-Pacific region is expected to record the highest growth in the market during the forecast period. Countries like China, India, Japan, and South Korea are investing in the R&D of 3D printing technologies to increase their adoption in the aerospace sector. Under China's Made in China 2025 master plan, the Chinese government has earmarked the development of aerospace equipment and 3D printing as key growth drivers for Chinese manufacturing industries. The country's latest C919 commercial airliner is built using several 3D printed components, paving the way for greater adoption of 3D printing technologies. The C919 uses 3D printed titanium parts, 28 cabin door parts, and two fan inlet structural parts to reduce the airliner's weight and increase safety. In 2020, China successfully launched an indigenously developed space 3D printer onboard a Long March 5B rocket in the space sector. The 3D printer was designed by the China Academy of Space Technology (CAST), and it completed the first 3D printing test in the microgravity of space.

On the other hand, India is gradually increasing its focus on utilizing 3D printing technology, with start-ups in cities like Bangalore, Chennai, Mumbai, and Visakhapatnam to produce essential parts for the aerospace and defense sector. The clientele includes the Indian Navy, Air Force, Indian Space Research Organisation (ISRO), and Hindustan Aeronautics Limited (HAL). Japan-based aerospace firms are also strongly advocating the use of 3D printing technologies. They result in minimum wastage of materials and align with their lean manufacturing principles. Japanese firms, including IHI and MHI, are keenly adopting 3D printing technologies to foster their design and production capabilities for the A&D sector. Such developments are expected to drive the market's growth in the region during the forecast period.

3D Printing in Aerospace & Defense Market Competitor Analysis

The market for 3D printing in aerospace and defense is fragmented with the presence of aircraft OEMs and spacecraft manufacturers, along with tier-1 and tier-2 manufacturers that support the aerospace and defense industry. Some of the prominent players in the market are GE Aviation, Airbus SE (Airbus), Safran SA (Safran), Raytheon Technologies Corporation, and The Boeing Company. With the increasing demand for lightweight components and more fuel-efficient airborne platforms, the companies are robustly investing in expanding their existing additive manufacturing capabilities to seize the growing opportunities. On this note, in July 2021, Burloak Technologies announced the opening of its second additive manufacturing center in Camarillo, California. The new facility is expected to reinforce its Additive Manufacturing Center of Excellence in Ontario. Aircraft OEMs are also increasing their footprint in the additive manufacturing market with the increasing requirement for 3D printed components. Also, due to the economic advantage of 3D printing components in the space sector compared to the traditional subtractive manufacturing methods, space agencies like NASA and ESA are currently looking to manufacture spacecraft

parts using 3D printed components. This factor is expected to allow new companies to venture into the market in the coming years, thereby increasing competition.

Additional Benefits:

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