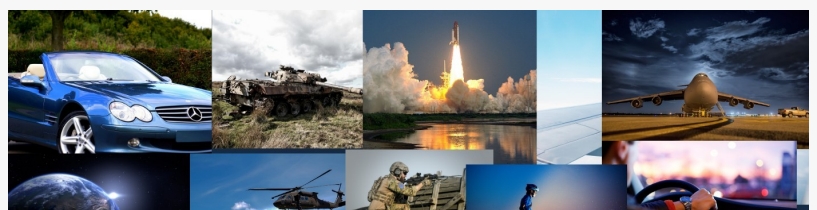


Year 2023's Top 10 Upcoming Technologies in Aerospace & Defense

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-- The aerospace & defense industry is the reflection of a nation's initiatives to strengthen its all-around capabilities in the modern world. While the world is slowly progressing toward recovery from the COVID-19 impact, the industry is witnessing Tech Trends in 2021. Top 10 technology trends that are expected to have significant growth include "Electric and Hybrid Aircraft Engines, Structural Health Monitoring System for Aircraft, Advanced Space Propulsion Technologies (eVTOL), Smart Automation and Blockchain in the Aviation Industry, Aerospace 3D Printing Market, MRO of Aviation Technology, Advanced Materials for Lightweight Aerospace Parts, Augmented and Virtual Reality in Defense Sector, Smart Weapons, and Aircraft Leasing Market".



Year 2023's Top 10 Upcoming Technologies in Aerospace & Defense

Electric and Hybrid Aircraft Engines: The Major Focus of Manufacturers Post 2020

The current fleet of aircraft that runs on jet fuel (kerosene) consumes a lot of fuel and emits harmful emissions such as CO₂, NO_x, and others. With the depletion of fossil fuels at an alarming rate, the aviation industry is compelled to find alternative energy sources to power the next-generation aircraft. With tremendous success of electric cars across the globe, the experts are experimenting ways to equip the aircraft with energy-efficient batteries to power the aircraft. Several companies, such as Boeing, Airbus S.A, Zunum Aero, Joby Aviation, Embraer SA, and Pipistrel, are developing complete electric or hybrid aircraft engines. Big players are investing significantly on the development of electric aircraft engines.

Electric Aircraft - <https://www.alliedmarketresearch.com/electric-aircraft-market>

Structural Health Monitoring System for Aircraft: Helps in Tracking and Real-time Monitoring of Structural Defaults

Structural Health Monitoring (SHM) systems aid in monitoring airplane components in real-time

and detect structural faults. SHM systems have been widely used for many years for the inspection and overhaul of aircraft. It is gaining wide acceptance for new composite aircraft structures, where the conventional material fatigue models aren't viable and the faults aren't apparent on the surface. These systems make it possible to accurately determine the damage to airplane structure when it happens. It leads to lower maintenance costs and increased availability of the aircraft.

Advanced Space Propulsion Technologies (eVTOL): Fuel the Electric or Hybrid-Electric Aircraft Power Generation System

Electric vertical take-off and landing (eVTOL) aircraft is a type of aircraft that is able to take off and land vertically by making use of its electric or hybrid-electric power generation. eVTOL aircraft includes personal, ultra-light vehicles to air-taxis. There are many applications where the eVTOL aircraft proves promising due to its cost-effective operations and high load-carrying capacity, for example, package delivery and disaster rescue operations. eVTOL eliminates the requirements for runways and offer high maneuverability, efficiency, and low-noise operation.

Space Propulsion System - <https://www.alliedmarketresearch.com/space-propulsion-system-market-A10443>

Smart Automation and Blockchain in the Aviation Industry: Prospect Program for Execution by 2021

As per the research study released by SITA (a multinational information technology company) in 2018, blockchain technology is rapidly evolving as the significant technology for impending assessment of the aviation industry across the world. The report revealed that around 60% of airlines have blockchain-based research programs for execution by 2021. Several airport authorities are also examining the prospects of the application of technology. Various airlines now view blockchain technology as a prospect to make more savings out of their setups. Blockchain has the ability to considerably reorganize the accounting and settlement of regular flyer points by making these resources into becoming digital and universal.

Blockchain Technology in Aviation - <https://www.alliedmarketresearch.com/aviation-blockchain-market-A06275>

Aerospace 3D Printing Market: Upcoming Trend to Manufacture Major Aircraft Parts

The aerospace & defense industry holds a major share in the utilization of 3D printing to manufacture aircraft parts that are robust and lightweight in comparison to the parts that are made using conventional manufacturing methods. The aerospace & defense industry was the frontrunner in adopting the 3D printing technology as early as 1989. Over the years, the industry made extensive usage of the technology and by 2015, it accounted for around 16% of the 3D

printing market's revenues. Major players active in the aerospace 3D printing market include The ExOne Company, Stratasys Ltd., 3D Systems Corporation, and EOS GmbH.

MRO of Aviation Technology: Encompasses all Maintenance Activities

Maintenance, Repair, Overhaul (MRO) in the aviation industry involves restoration, service, or examination of an aircraft or its components. It encompasses all maintenance activities that are performed to make sure of the safety and reliability of all aircraft as per the international aviation standards.

MRO of Aviation Technology - <https://www.alliedmarketresearch.com/air-transport-mro-market>

Advanced Materials for Lightweight Aerospace Parts: Low Carbon-emission Aviation Concept

The demand for lightweight components is a widely examined and developed concept across several industries, particularly in aerospace applications, and is usually connected with the low carbon-emission aviation concept. The ever-rising contribution of aviation to GHG emissions has resulted in the rise of initiatives across the globe to explore ways to limit aircraft emissions.

Aerospace Materials - <https://www.alliedmarketresearch.com/aerospace-materials-market>

Augmented and Virtual Reality in Defense Sector: Leverages Defense Sector

The methods of modern warfare are changing rapidly across the world. The usage of digital technologies has become imperative in today's scenario. The developed nations are seeking new ways to incorporate augmented and virtual reality in the defense sector.

AR/ VR in Defense Industry - <https://www.alliedmarketresearch.com/augmented-and-virtual-reality-in-defense-market>

Smart Weapons: Changing Nature of Warfare

Smart weapons are modern weapons that are usually equipped with a laser or satellite guidance system. As a result, smart weapons offer benefits over conventional weapons such as reliable shots, quick hit capability, and high accuracy. In addition, as smart weapons are light in weight, they reduce the logistics carrying cost.

Smart Weapons - <https://www.alliedmarketresearch.com/smart-weapons-market>

Aircraft Leasing Market: To Scale-up the Fleet of Aircraft

Aircraft leasing is a model where commercial airline corporations acquire the airplane on rent from leasing airline businesses and other airplane operatives. Over the years, many airlines have

displayed keen interest in aircraft leasing to reduce the financial load and scale-up the fleet of aircraft.

Aircraft Leasing - <https://www.alliedmarketresearch.com/aircraft-leasing-and-rental-market-A09063>

So says a study - [Allied Market Research](#) believes that their adoption will lead to enhancing the business opportunities for the aerospace industry and will help the militaries to plan robust and technologically

David Correa
Allied Analytics LLP
+ +1 503-894-6022

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