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Aviation Weather Radar - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Aviation Weather Radar Market size is estimated at USD 214.08 million in 2025, and is expected to reach USD 256.11 million by 2030, at a CAGR of 3.65% during the forecast period (2025-2030).

The aviation weather radar market is experiencing a surge in demand for advanced radar systems, driven by the critical need for weather monitoring. Safeguarding aircraft from adverse weather conditions emerges as a key market driver. Instances of unexpected weather disturbances lead to aircraft disruptions and, in severe cases, damage, underscoring the urgency for airports to adopt weather radars.

Adopting state-of-the-art radar technologies, notably pulse-doppler radar, enables aircraft to navigate adverse weather conditions more efficiently and safely. Additionally, the industry is witnessing a notable shift toward lighter, more compact radar systems, offering improved fuel efficiency and lower maintenance costs.

However, the market faces challenges, including the high costs and complexities of radar systems and regulatory and environmental obstacles. Market players need to focus on R&D, innovation, and collaboration to overcome these challenges and stay competitive. While these hurdles could potentially hinder market growth, the rising demand from the commercial, general, and military aviation industries for advanced radar systems is set to drive the market positively during the forecast period.

Aviation Weather Radar Market Trends

Military Aviation to Exhibit Highest Growth Rate During the Forecast Period

The global military aviation sector is experiencing a surge, driven by rising geopolitical tensions and extensive modernization programs. This surge is spurring the demand for advanced aircraft with heightened capabilities. With global military expenditures on the rise and nations prioritizing defense enhancements, the market for advanced aircraft is poised for expansion. In 2023, global military spending peaked at USD 2,440 billion, marking a significant 9% increase from 2022.

As global defense spending climbs, countries are increasingly looking to military aircraft to bolster their security. This heightened demand is underscored by certain events. For instance, in June 2024, Turkey and the United States sealed a monumental deal, with Turkey acquiring 40 new F-16 aircraft in a USD 23 billion agreement. Similarly, in January 2024, Lockheed Martin delivered Slovakia's first two F-16s, featuring Northrop Grumman's cutting-edge APG-83 AESA radar. This radar, found in the Block 70/72 F-16s, inherits advanced capabilities from its F-22 and F-35 counterparts, offering improved situational awareness, all-weather targeting, and detailed digital map displays. Pilots benefit from tailored features like slew and zoom, further enhancing their operational capabilities.

Following suit, Honeywell extended its radar technology to a range of military aircraft. The RDR-7000 weather radar system from Honeywell is a cutting-edge solution designed to provide unparalleled weather insights and situational awareness for defense and military applications. Notably, it is engineered for seamless integration across a broad spectrum of military aircraft, including transport, helicopters, and specialized mission planes. These advancements are primed to drive significant market growth in the years ahead.

Asia-Pacific to Register the Highest CAGR During the Forecast Period

Asia-Pacific is set to lead the global aviation sector, boasting the highest CAGR during the forecast period. Notably, China is on track to overtake the United States in commercial aviation, while India is poised to outstrip the United Kingdom, positioning itself as the largest and third-largest market. This growth surge is underpinned by airlines' robust fleet procurement strategies and substantial expansions in airport infrastructure. In 2022, China bolstered its aviation infrastructure, introducing six new freight airports and 29 general-purpose airports, bringing the year-end totals to 254 and 399, respectively. Looking forward, China has ambitious plans to add a further 215 airports by 2035 to cater to the escalating passenger demands.

In a similar vein, the Indian Ministry of Civil Aviation, in June 2023, unveiled plans to elevate the country's airport count to 200-220, including heliports, within the next 2-3 years. India has allocated a significant USD 12 billion for airport investments to support this expansion, drawing from both public and private funding. As these airports increasingly adopt diverse weather radar technologies, the market demand is further amplified. For instance, in February 2024, Terma clinched a contract with the India Airports Authority to deploy its renowned SCANTER 5502 surface movement radars (SMRs) in four major Indian airports, namely Bengaluru, Mumbai, Navi Mumbai, and Hyderabad. Renowned for its reliable all-weather detection capabilities, the SCANTER 5502 is poised to significantly enhance the operational efficiency of these pivotal Indian airports.

Furthermore, several regional militaries are significantly boosting their procurement of weather radars, consequently driving up the demand for aviation weather radars. On this note, in May 2024, Bharat Electronics revealed orders totaling INR 481 crore (approx. USD 57.6 million), with a notable Doppler weather radar order. Similarly, in April 2024, the Embassy of Japan in Pakistan pledged an additional USD 5.5 million grant for the Sukkur weather surveillance radar project. Initially announced in January 2021 at a cost of USD 13.12 million, the project, bolstered by the Japan International Cooperation Agency, is set to cover nearly 90% of Pakistan after the Sukkur radar's installation. These advancements are poised to be pivotal drivers for the regional market's growth in the years to come.

Aviation Weather Radar Industry Overview

The aviation weather radar market is consolidated and dominated by key players, including Honeywell International Inc., Collins

Aerospace (RTX Corporation), L3Harris Technologies Inc., Leonardo SpA, and Garmin Ltd. This dominance is due to the limited number of companies producing weather radars for aviation, resulting in a concentrated market.

These companies are expanding their product offerings to cater to a broader range of aircraft manufacturers. For example, in 2022, Spire Global secured a significant five-year contract to provide weather forecasts for TCOM, a US-based intelligence, surveillance, and reconnaissance (ISR) firm. The agreement entails delivering weather forecast services to 10 sites where TCOM operates aerostats (aircraft that utilize lifting gas for flight). Such strategic moves are poised to reshape the competitive landscape among market players.

Additional Benefits:

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

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