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Commercial Aircraft Collision Avoidance System Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Aircraft Type (Narrow-Body Aircraft, Wide-Body Aircraft, Regional Aircraft), By Region & Competition, 2021-2031F

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Abstracts

The Global Commercial Aircraft Collision Avoidance System Market is projected to expand from USD 455.01 Million in 2025 to USD 603.17 Million by 2031, reflecting a compound annual growth rate of 4.81%. This sector focuses on the creation and implementation of avionics capable of surveying nearby airspace and executing automated maneuvers to avert mid-air accidents. A key factor propelling this growth is the strict enforcement of aviation safety regulations by international authorities, which require commercial fleets to be equipped with traffic alert systems. Furthermore, the swift recovery of global travel networks has forced airlines to boost their operational capacities, subsequently raising the demand for these essential safety installations.

According to the International Air Transport Association, total global passenger traffic, measured in revenue passenger kilometers, rose by 10.4 percent in 2024 compared to the prior year. This marked increase in flight volume highlights the urgent need for dependable conflict detection technologies to safely navigate congested skies. However, despite strong demand, the market faces significant hurdles due to the considerable expense and technical intricacies involved in updating older aircraft with contemporary collision avoidance capabilities.

Market Driver

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A major catalyst for market expansion is the rapid acquisition of new commercial aircraft within emerging markets, as airlines aggressively enlarge their fleets to satisfy post-pandemic travel needs. This increase in procurement directly drives the installation of sophisticated collision avoidance avionics, which are compulsory for new deliveries. In its 'Half-Year (H1) 2024 Results' released in July 2024, Airbus noted a significant backlog of 8,585 commercial aircraft orders as of the end of June. Long-term forecasts support this upward trend, especially as airlines swap older models for modern, safety-compliant jets; Boeing?s '2024 Commercial Market Outlook' from July 2024 estimates a need for nearly 44,000 new commercial planes through 2043, guaranteeing consistent factory-fit demand for system manufacturers.

Furthermore, rising global air traffic density and airspace congestion demand the implementation of sturdy conflict detection technologies to preserve safety margins in busy skies. With increasing flight frequencies comes a higher risk of mid-air incidents, forcing operators to adopt systems that handle stricter separation standards effectively. Airports Council International (ACI) World stated in its '2024 Annual World Airport Traffic Report' published in September 2024 that global passenger traffic is expected to rise by 10 percent to 9.5 billion travelers in 2024. This swift recovery places strain on existing infrastructure, rendering current collision avoidance mandates essential for averting accidents in heavily trafficked terminal zones.

Market Challenge

A significant obstacle to market expansion is the substantial expense and technical difficulty involved in upgrading legacy aircraft to meet modern collision avoidance standards. Older airframes frequently miss the digital infrastructure required for advanced avionics, necessitating major alterations to wiring and power systems. This complex integration requires considerable skilled labor and results in extended downtime for the aircraft. For commercial carriers, taking a plane out of rotation for lengthy maintenance leads to significant revenue loss, creating a potent financial deterrent against upgrading older fleets until absolutely required.

This reluctance to invest is exacerbated by the massive operational costs currently weighing on the aviation industry. Data from the International Air Transport Association suggests that total airline industry expenses were anticipated to hit USD 936 billion in 2024. These elevated operating costs compel airlines to tightly control capital spending, often favoring immediate operational necessities over costly aftermarket upgrades for aging jets. As a result, the steep cost of retrofitting hinders the widespread adoption of next-generation safety systems across the existing global fleet.

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Market Trends

The shift toward Airborne Collision Avoidance System X (ACAS X) standards represents a pivotal advancement in aviation safety, substituting traditional rule-based logic with probabilistic dynamic programming to refine resolution advisories. This technological progression significantly reduces unnecessary alerts and permits smaller separation distances, which is vital for handling growing airspace congestion while maintaining safety. Regulatory bodies are actively prioritizing this modern standard to update air traffic management frameworks; for example, the European Union Aviation Safety Agency (EASA) proposed amendments in June 2024 ('Opinion No 03/2024') to authorize the voluntary use of ACAS Xa operations within the Single European Sky, promoting consistent implementation among member nations.

Concurrently, there is a strong trend toward adopting Integrated Surveillance Systems (ISS) architectures, which combine traffic collision avoidance, terrain awareness, and Mode S transponder capabilities into one hardware unit. This integration significantly lowers aircraft weight and power usage while facilitating easy software updates for new features such as ADS-B In. The demand for these streamlined, multifunctional avionics suites is fueling revenue growth for major manufacturers as airlines look to optimize cockpit technology. As reported in Thales Group's '2024 Half-Year Results' from July 2024, Aerospace segment sales reached EUR 2,582 million, a 4.6 percent organic rise driven by continued strength in both original equipment and aftermarket sectors.

Key Market Players

Honeywell International Inc.

BAE Systems PLC

Thales S.A.

L3Harris Technologies Inc.

Garmin Ltd

RTX Corporation

Saab AB

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FLARM Technology AG

QinetiQ Group

ZF Friedrichshafen AG

Report Scope

In this report, the Global Commercial Aircraft Collision Avoidance System Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Commercial Aircraft Collision Avoidance System Market, By Aircraft Type

Narrow-Body Aircraft

Wide-Body Aircraft

Regional Aircraft

Commercial Aircraft Collision Avoidance System Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

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Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Commercial Aircraft Collision Avoidance System Market.

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Available Customizations:

Global Commercial Aircraft Collision Avoidance System Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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