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Asia Pacific Infrared Search & Track (IRST) System Market By Component (Scanning Head, Processing Unit, Control & Display Unit), By End User (Civil, Defense), By Platform (Airborne, Naval, Land, Others), By Country, Competition, Forecast & Opportunities, 2020-2030F

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Abstracts

Market Overview:

Asia Pacific Infrared Search & Track (IRST) System Market was valued at USD 2.60 Billion in 2024 and is expected to reach USD 3.71 Billion by 2030 with a CAGR of 6.11% during the forecast period. Asia Pacific Infrared Search & Track (IRST) System market is witnessing steady growth driven by rising demand for advanced surveillance technologies that enhance aircraft survivability in contested airspaces. Defense forces are increasingly adopting IRST systems to counter stealth aircraft and low observable threats, as radar systems face limitations against evolving aerial platforms. Growth is further supported by rapid integration of IRST solutions into next-generation combat aircraft, naval vessels, and unmanned platforms, with manufacturers focusing on improving sensor sensitivity, detection range, and multi-target tracking capabilities.

Market Drivers

Rising Emphasis on Stealth Aircraft Detection

The increasing deployment of stealth aircraft has elevated the demand for advanced infrared search and track systems that can overcome radar limitations. Stealth platforms are designed to minimize radar signatures, making traditional detection systems less

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effective. IRST technology provides a passive solution capable of identifying heat signatures without emitting detectable signals, which enhances survivability during missions. This driver is shaping procurement strategies, with military forces prioritizing passive sensors that can complement radar and electronic warfare systems. The ability to detect and track multiple targets in complex environments further positions IRST as a crucial technology in modern defense. Growing requirements for counter-stealth capabilities ensure that IRST adoption will continue expanding, especially as adversaries focus on fielding low-observable platforms.

Key Market Challenges

High Development and Procurement Costs

Developing and integrating IRST systems involves significant investment in research, advanced materials, and sophisticated algorithms, which elevates costs. The procurement price for military customers can be a barrier, particularly when budgets must be balanced across multiple defense priorities. Maintenance and lifecycle expenses further add to the total cost of ownership. This challenge often requires manufacturers to justify value by emphasizing long-term strategic advantages. Affordability concerns may also slow widespread adoption, as only the most critical platforms are initially equipped with IRST capabilities. The high cost factor continues to pose a significant hurdle in scaling deployments across fleets.

Key Market Trends

Fusion with Artificial Intelligence and Machine Learning

The integration of artificial intelligence and machine learning into IRST systems is emerging as a major trend, transforming detection and tracking accuracy. AI-driven algorithms enhance real-time image processing, enabling systems to differentiate between genuine threats and background clutter with greater precision. Machine learning models continuously improve through data exposure, enhancing adaptability in diverse combat scenarios. This fusion not only increases reliability but also reduces operator workload by automating threat classification. As AI capabilities evolve, IRST systems are expected to become more autonomous, providing faster and more accurate situational awareness that enhances decision-making in high-threat environments. For instance, China’s DeepSeek LLM, developed at a fraction of Western costs with only one-tenth of the computing power of models like ChatGPT-4, is being integrated into UAVs, command systems, and autonomous vehicles, showcasing

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rapid dual-use experimentation. Reports indicate the PLA is building a ‘multi-domain kill-web’ to coordinate aircraft, satellites, sensors, and missiles, aiming for network-centric warfare by 2030. With 1.7 million 5G towers, a vast drone market, and strong civil-military fusion, China is accelerating real-time decision loops, precision mass deployment, and reconnaissance-strike capabilities posing a direct challenge to US systems integration and battlefield dominance.

Key Market Players

Leonardo S.P.A.

Thales Group

Rheinmetall AG

Aselsan A.S.

Safran S.A.

Lockheed Martin Corporation

Northrop Grumman Corporation

HGH Syst?mes Infrarouges

Tonbo Imaging Private Limited

Raytheon Technologies Corporation

Report Scope:

In this report, Asia Pacific Infrared Search & Track (IRST) System Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Asia Pacific Infrared Search & Track (IRST) System Market, By Component:

Scanning Head

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Processing Unit

Control & Display Unit

Asia Pacific Infrared Search & Track (IRST) System Market, By End User:

Civil

Defense

Asia Pacific Infrared Search & Track (IRST) System Market, By Platform:

Airborne

Naval

Land

Others

Asia Pacific Infrared Search & Track (IRST) System Market, By Country:

China

India

Japan

Indonesia

Thailand

South Korea

Australia

Rest of APAC

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Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in Asia Pacific Infrared Search & Track (IRST) System Market.

Available Customizations:

Asia Pacific Infrared Search & Track (IRST) System Market report with the given market data, TechSci Research offers customizations according to the 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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