

## **Asia-Pacific Inertial Systems Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)**

Market Report | 2023-01-23 | 122 pages | Mordor Intelligence

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### **Report description:**

The Asia-Pacific inertial system market was valued at USD 6.8 billion in 2021, and it is expected to reach USD 9.22 billion by 2027 and register a CAGR of 6.1% over the forecast period 2022-2027.

#### Key Highlights

Asia-Pacific is home to the biggest manufacturers and exporters of goods in the world. Countries, like China, India, Indonesia, and Japan, are the big powerhouses of industries. There are both domestic players as well as international companies, who have big factories for exports and self-consumption in these countries. With the economy growing in this region, new companies from different parts of the world are looking to invest in this region. Factories are using more machines in the production lines to increase the speed and efficiency of production.

The advancement of the global lifestyle has resulted in the need for equipment with greater ease of use. This has enabled the use of motion-sensing technology, which extensively uses inertial sensors. This technology has become a key driving factor in this market.

Additionally, it is expected to continue to play an important role in defining the trend for the next few years. The unprecedented rise in unmanned vehicles across various applications in both civilian and defense applications has increased the need for complex navigational systems, which include inertial sensors. The rapid advancement in technology has made sensors both accessible and affordable, making their use abundant in day-to-day devices.

Increasing integration of the navigation system such as GPS/INS and GNSS/INS added superior performance attributes compared to the traditional navigation system, thus, driving the inertial system market. In recent years, an unprecedented rise in demand for unmanned vehicles such as an autonomous underwater vehicle (AUV), unmanned aerial vehicle (UAV), and remotely operated vehicle (ROV) across various applications in both civilian and defense applications fuelled the growth of the Asia-Pacific inertial navigation system market.

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## APAC Inertial Systems Market Trends

### Increasing Demand in Accuracy to Drive the Market

High levels of accuracy and reliability are the prime features of navigational systems. Inertial navigational systems have a distinct advantage over other forms of navigation systems in terms of their lack of dependence on external aids to determine the rotation and acceleration of a moving object. These systems make use of a combination of gyroscopes, accelerometers, and magnetometers to determine the vector variables of a vehicle or a moving object.

Navigational systems are inherently suited for use in integrated navigation, control, and guidance of vehicles in challenging environs. Unlike GPS and other kinds of navigation systems, inertial systems can retain their performance even under difficult conditions. Inertial measurement units (IMU) are well suited for navigational systems to calculate several metrics. These systems remain unaffected by radiation and jamming problems. Strapdown inertial systems find more usage in inertial navigation systems than gimbaled systems, as they are strapped to the moving object and offer better reliability and performance. Moreover, they provide cost-effectiveness as they are incorporated with MEMS techniques.

As advanced technologies such as AI and machine learning become more widely adopted, advanced robotics cars that can be controlled remotely via sensor technology are becoming more common. As a result, in the current scenario, accurate position parameters, such as altitude and orientation of tactical grade equipment, are important.

Inertial navigation systems are now being made available for commercial use in private aircraft, UAVs, military and defense units. They form an integral part of the navigational control systems and are also able to interact with other navigational systems due to incremental advancements in the processing ability of the systems. Several forms of inertial systems like magnetometers are widely used for determining the orientation and presence of a magnetic field in conjunction with other forms of inertial systems. Multi-axis systems like IMUs and AHRS are being used for determining the altitude, position, acceleration, and velocity of moving objects. Inertial systems are deemed to be ideal for providing high accuracy in navigational systems by using a combination of accelerometers, gyroscopes, and magnetometers.

### Rising Military Applications and Expansions of MEMS Will Drive the Market

An indigenous artillery system, Dhanush, was recently introduced into the Indian army. The weapons are equipped with an inertial navigation system that guides missiles nearly 36 kilometers away from the guns' placements. The new technology will also include auto-laying and GPS-based gun recording. The cannon will be able to calculate ballistics and measure onboard velocity thanks to the features. Additional technologies such as a laser range finder, cameras, and thermal imaging were crucial to the inertial systems' improvement.

The use of IMUs in military operations, particularly in unmanned aerial vehicles (UAVs), has spurred companies in this field to develop advanced solutions for this technology. As a result, next-generation IMUs are widely available on the market today. Inertial guidance systems are used in almost every missile and precision-guided bomb in the military. This enables these weapons to precisely target and set their course while in flight. Inertial guidance employs sensitive measurement sensors to calculate the missile's location based on the acceleration applied after it leaves a known site. Many commercial aircraft use inertial navigation with a ring laser gyroscope, which is less accurate than the mechanical systems used in ICBMs but still provides a somewhat accurate fix on location.

The Asia-Pacific region has been a hotbed for military conflicts around the world. The growing frequency of territorial disputes in the region has prompted countries to purchase modern cruise missiles to beef up their defenses against prospective rivals. The expansion of military expenditures in various countries in the region has aided the development and procurement of modern

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cruise missile systems, propelling the industry forward.

India and Pakistan are both continuing to develop their missile delivery systems and nuclear arsenals. The evolving deterrent relationship between India, Pakistan, and China is fueling the procurement and development of advanced military systems such as airplanes, submarines, artillery, and missile systems, among other things.

## APAC Inertial Systems Market Competitor Analysis

The Asia-Pacific inertial systems market is moderately fragmented due to the presence of various inertial systems solution providers. However, the vendors are consistently focusing on product development to enhance their visibility and presence. The companies are also undergoing strategic partnerships and acquisitions to gain market traction and increase their market share.

January 2021 - Lockheed Martin granted a contract to Northrop Grumman to better integrate the F-35 stealth fighter's communications, navigation, and identification system and its electronic warfare system. The new functionality is planned to be incorporated into jets coming off the production line starting in 2025, as part of the production Lot 17.

January 2021 - At CES 2021, InvenSense unveiled its new SmartMotion sensors. The business demonstrated two high-performance motion-tracking solutions for IoT, robots, smart TV, AR, VR, and wearable applications, together with dedicated bundled software. The ICM-40627 and ICM-42688-V are 6-axis MEMS motion tracking devices that combine a 3-axis gyroscope and a 3-axis accelerometer in 2.5mm x 3mm x 0.9mm dimensions.

Additional Benefits:

The market estimate (ME) sheet in Excel format

3 months of analyst support

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