

Navigational Inertial Systems - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Navigational Inertial Systems Market is expected to register a CAGR of 5.55% during the forecast period.

Key Highlights

- INS is an autonomous system with excellent concealment. It is independent of any external information, which does not radiate energy to external space, making it applicable in sea, airspace, or underground. Since the inertial navigation system updates the data quickly and possesses the advantages of accuracy and stability with small size and lightweight, it can provide comprehensive navigation data, such as the location. Thus, the INS plays a critical role in military and civilian navigation.
- For instance, the US Navy awarded a contract to Northrop Grumman Corporation to develop the replacement inertial navigation system (INS-R) deployed on navy combat and support ships. INS-R provides increased navigation accuracy in challenging maritime combat environments.
- Inertial navigation systems are also suitable for unmanned systems, widely used on unmanned aerial vehicles (UAV) and unmanned underwater vehicles (UUV). These are extensively used across oil and gas and defense industries. UUVs are mainly used for counter-attacking, deactivating underwater mines, and port security in the defense sector. The INS employed in these unmanned systems provides better navigation and accurate positional data. This is expected to fuel demand during the forecast period.
- Increasing governmental measures concerning the adoption of unmanned vehicles in various countries are expected to impact the growth of the market studied. For instance, according to the Association for Unmanned Vehicle Systems International, the US military had proposed spending USD 9.6 billion in 2019 (which was an increase of 28% over the previous year) on unmanned vehicle systems.
- The inertial navigation system will be adopted in guiding autonomous cars. The INS, comprising an inertial measurement unit and other sensors, provides the position, velocity, and attitude information of a vehicle. Aceinna, in 2019, launched a

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high-performance, dual-band, real-time kinematic inertial navigation system with built-in inertial sensors for automotive applications. The device, INS1000, embeds nine-degree-of-freedom inertial sensor technology to achieve automotive dead reckoning performance in GNSS-challenged environments, such as heavily tree-lined roads, tunnels, underpasses, and bridges.

- However, automakers have faced increased pressure to shut down their factories due to the COVID-19 pandemic. After governments started recommending that people stay in their homes as much as possible, it has caused supply chain disruptions across various industries.

Navigational Inertial Systems Market Trends

Aerospace and Defense? Sector Dominates the Inertial Navigation System Market

- Fresh investments in military and naval applications encourage the inertial navigation system market. The blooming aerospace market and technological advancements in navigations systems are further anticipated to drive the market. Inertial Navigation System gives exact navigation and positioning information to fight platforms when engaged in missions, whether for their location or the pointing of weapons systems (artillery, missile, etc.), sensors (radars, optronics, etc.), or weapons themselves. They deliver valuable assistance to these systems while ensuring the best security. On advanced fighters like the Rafale, INS gives fully autonomous operation and resistance to electronic warfare. The European helicopter NH90 has also installed this technology.
- Aircraft carriers need to harmonize the ship's navigation system with those on its aircraft. An inertial Navigation System guarantees the ship's capability to work in a critical magnetic environment, without castigating performance, an ideal solution for new-generation submarines. Out on the battlefield, artillery systems have to offer extraordinary precision, extreme shock resistance. As the commercial aviation market is increasing at a more accelerated rate due to the exponential rise in air passenger traffic, the demand for new aircraft is growing year on year. This increasing demand is expected to drive the navigational grade INS market during the forecast period.
- The increasing military spending across multiple regions paves the way for technologies like drones/unmanned aerial vehicles (UAVs). In addition, the usage of the inertial navigation system in traditional fighter jets is increasing significantly. The factors mentioned above are creating an exponential demand for inertial navigation systems in terms of volumes as well. These solutions that have minimum standardization, based on applications, are highly customizable. However, the manufacturers are often challenged by the long production time, leading to the technology becoming obsolete by the end of the production period. ?

North America to Hold Maximum Market Share

- The North American segment is expected to account for a significant share of the overall market. The region's primary demand for inertial systems is observed in the defense sector to provide accurate navigation and positioning information to combat platforms when engaged in missions. ?
- Inertial tactical navigation systems are battle-proven solutions adopted by the US Army. As the military sector demand assured positioning and navigation solutions, the demand for INS systems is expected to increase rapidly.?
- There is also a demand for inertial systems in the US maritime sector, primarily owing to the renewed emphasis on oil exploration activities. Moreover, the exploration activities of oil rigs require high-performance gyroscopes and accelerometers to provide the right self-contained sensing system, inertial measurement unit, and inertial gyroscopes offer accurate solutions for platform stabilization, where outstanding bias stability is essential in applications, such as offshore oil rigs.?
- With offshore oil and gas in the United States accounting for a significant portion of the country's oil and gas supply and large oil and gas reservoirs found under the sea offshore from Louisiana, Texas, California, and Alaska, the demand for inertial systems and equipment is higher.?

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- Companies in the region invest in developing new products to cater to the needs of the end-user verticals. For instance, Northrop Grumman Corporation, an aerospace and defense technology company in 2019, launched SeaFIND (Sea Fiber Optic Inertial Navigation with Data Distribution), a next-generation maritime inertial navigation system. This is ideal for applications where low cost and reduced size, weight, and power requirements are critical. ?

Navigational Inertial Systems Industry Overview

Navigational Inertial Systems Market is moderately concentration with a number of key players in the market.

- Sep 2020: Northrop Grumman Corporation announced that it has successfully completed the critical design review (CDR) milestone for the embedded global positioning system (GPS)/ inertial Navigation System (INS)- Modernization, or EGI -M, program.
- July 2020: Honeywell expanded its navigation offerings by introducing the HGuide n380, a new inertial navigation system that communicates the position, orientation, and velocity of an object such as an autonomous vehicle or unmanned aerial vehicle (UAV)

Additional Benefits:

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

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