Global Navigation Satellite System (GNSS) Market, By Application (Agriculture, Aviation, Location-Based Services, Maritime, Time & Synchronization), By Technology (Global Constellations, Satellite-Based Augmentation Systems (SBAS)— Forecast till 2023

Market Synopsis

Global navigation satellite system (GNSS) is used to identify geographical location of a user anywhere in the world. GNSS helps electronic receivers to find the actual location of a person by using geo-spatial frequencies. GNSS uses triangulation method to locate the user with the help of calculations involving information from a number of satellites. Common GNSS systems are United States' Global Positioning System (GPS), Russian Federation's Global Orbiting Navigation Satellite System (GLONASS), and Europe’s Galileo. Each satellite system transmits coded signals at accurate intervals. The receiver receives the signal and converts it into information related to velocity, positions, and time estimates. With this information, any receiver near the earth’s surface can calculate the exact distance between transmitter and receiver and actual position of the transmitting satellite.

In case of satellite systems failure, the GNSS receivers immediately pick-up signals from other adjacent systems. Four criteria that are used to measure performance of GNSSs are accuracy, integrity, continuity, and availability. Accuracy depends on the difference between receiver’s measured value and actual position. Integrity is a system’s capacity to provide notifications prior to detection of any system error. Continuity is a system’s ability to function without interruption. Availability is measure of time a signal takes to fulfill all the accuracy, integrity, and continuity criteria.

Increasing emphasis on positioning, navigation and timing (PNT) tools in industrial, military, commercial, and government applications, and the growing demand for indoor positioning and navigation devices and solutions for customer privacy are driving the global navigation satellite system market. However, ease of accessibility leading to cyber threats and issues regarding storage of unstructured data restrict the growth of GNSS market.

Trimble Inc. is one of the key players in GNSS market. Trimble provide products as well as solutions regarding GNSS such as integrated GNSS systems, modular GNSS systems, software-based receivers, handheld GNSS systems, data radios, and antennas.

Segmentation

Global Navigation Satellite Systems market can be segmented as follows:

By application, the market is segmented into agriculture, aviation, location-based services, maritime, road, rail, surveying, and time & synchronisation. Location-based services are further segmented into smartphones, tablets, digital cameras, portable computer, sport & wearable's, personal tracking devices, search & rescue (PLB). Maritime is further segmented into search & rescue (plb), search & rescue (epirb), traffic management, homeland security, inland water transport (iww) navigation, merchant navigation, recreational navigation, ports, traffic management, marine engineering and fishing vessels. Surveying is further segmented into cadastral, construction - machine control, construction - person based mapping, mining and marine surveying. Timing & synchronization is further segmented into telecommunication, energy, and finance.
By technology, the market is segmented into global constellations and satellite-based augmentation systems (SBAS). Global constellations is segmented into GPS, GLONASS, Galileo and BeiDou. Satellite-based augmentation systems is segmented into EGNOS (Europe), WAAS (North America), GAGAN (India) and MSAS (Japan).

By region, the market is segmented into North America, Europe, Asia-Pacific, and the rest of the world.

Regional analysis

The global market for navigation satellite system (GNSS) is estimated to grow at a significant rate during the forecast period. The geographical analysis of GNSS market is studied for North America, Europe, Asia-Pacific, and the rest of the world.

North America is expected to dominate the market for navigation for satellite systems in the forecast period. The US, Canada, and Mexico dominates the satellite navigation system market in North-American region. In the United States, this market is been growing very rapidly as they have their own GNSS (global navigation satellite system) name NAVSTAR GPS.

The satellite navigation system market in Asia-Pacific is also expected to grow at faster rate during the forecast period owing to the presence of large telecom industries, consumer electronics such as mobile phones which increase the application scope for navigation systems in the Asia-Pacific region. Recently, India’s PSLV launched 31 satellites in single flight in which 2 satellites are from other countries.

Key players

The Key players in the GNSS market are Qualcomm Technologies International Ltd. (US), AgJunction, Inc. (US), Garmin Ltd. (Switzerland), Furuno Electric Co Ltd. (Japan), Hexagon (Sweden), Raytheon Company (US), Topcon Corporation (Japan), Trimble Navigation Ltd. (US), Rockwell Collins (US), and TomTom NV (Netherlands) among others.

Intended Audience

- Technology standards organizations,
- Forums, alliances, and associations
- Analysts and strategic business planners
- Research organizations
- Technology investors
- Governments, financial institutions, and investment communities
- Original equipment manufacturers (OEMs)
- Mining
- Oil & Gas
- Construction and infrastructure

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