Space Traffic Management Market Size Worth USD 26,341.3 million by 2030 at a CAGR of 8.2%: Astute Analytica

CHICAGO, UNITED STATES, January 30, 2023 /EINPresswire.com/ -- Global space traffic management market revenue was valued at US$ 13,219.9 million in 2021 and is forecast to reach US$ 26,341.3 million by 2030. The market is growing at a CAGR of 8.2% during the forecast period.

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One of the current hot topics in space politics is space traffic management (STM). The phrase "contested, congested, and competitive" describes outer space. STM is the process of coordinating the movement of spacecraft and other objects in order to avoid collisions to protect the safety of both people and property.

By 2030, there will be over 4,800 active spacecraft from over 40 different nations, totaling close to 25,000 satellites in Earth's orbit. The phrase "space situational awareness" (SSA), which refers to the fundamental knowledge of objects in orbit, more accurately describes the state of STM today.

Automated space traffic management systems that provide more precise and timely data on the positions of satellites and other spacecraft can aid in the resolution of these issues. These technologies can help prevent collisions by providing early warning of prospective conflicts in the worldwide space traffic management sector. The need for improved space traffic management is growing as the number of satellites and other space-based assets increases. Space traffic is currently primarily managed manually, which could lead to errors and delays. Additionally, the system is not designed to handle the increasing traffic flow.

Market Dynamics

Driving Factors

Congestion brought induced by an increase in the number of spacecraft

The need for a space traffic management market is being driven by the increase in space launches, spacecraft, and lingering space debris. In the past year, more than 1,000 satellites have been launched, with more than 90% coming from commercial companies, and is anticipated that this number of spacecraft will rise. Increasing space debris increases the risk of a space collision, which can have disastrous results for future crewed and uncrewed launches. For the space industry, precise tracking and traffic control of space debris are therefore essential. Standards and norms for sub-national and national space operations must be created by an international coordinating administration in order to improve the sustainability of the space environment.

Restraints Factor

Countries' incomplete awareness of the space domain

Due to inadequate sensor coverage, one of the main issues that nations face is comprehensive space domain awareness. This problem in the space traffic management industry is substantially more challenging when compared to the awareness needed for the air and water domains. Although systems are being developed or are already in place, none of them are fully integrated enough to provide comprehensive space domain knowledge. The majority of discussions about space traffic management focus on the 35,000 tracked items, however, this represents barely 0.01% of all objects.

Segmentation Summary

Component

In 2021, the hardware segment acquired the maximum share of 44.7% in the global industry. The hardware consists of sensors, spy cameras, and other components. It is very expensive to design smart sensors, advanced cameras, and other components. They demand significant up-front investment to construct and generate. Contrary, the segment will record a CAGR of 8.3% throughout the projection years.

Traffic Type

In 2021, the satellite segment maintained a significant share of 64.84% of the industry. According to the Atlantic Council, over 4,800 operational satellites from more than 40 nations will total about 25,000 spacecraft entering Earth's orbit by 2030. In Nov 2021, a Russian anti-satellite test resulted in the production of more than 1,500 debris fragments. The result produced about 2,000 pieces of debris, most of which will stay in orbit for many years. As launch prices come down and more satellites are launched into Earth's orbit, such collisions will occur more

frequently.

Orbit Type

In 2021, the LEO segment acquired 72.6% of the global market share. The number of active on-orbit spacecraft and the object density in LEO has significantly increased owing to the advent of small satellites and the deployment of very large satellite constellations. According to NADA, there are around 6,000 tonnes of space debris in LEO. Given the scale of the space trash, an adequate STM system and framework are required to clean up the debris and avoid any potential spacecraft collisions.

Application

In 2021, space situational awareness dominated the global industry. In addition, within the same segment, the orbiting space object segment projected the leading share. Situational awareness in space (SSA) is useful for providing operators with timely information. With more satellites in orbit, there is a higher chance of a space collision, which might lead to sad space catastrophes and monetary loss. As a result, SSA is a crucial application for controlling space traffic.

Industry

In 2021, the commercial segment led the global market with a share of 84.0%. Most commercial end users are private companies that design, manufacture, and launch cutting-edge rockets and spacecraft. Activities that take place in commercial space include those where a company provides services primarily to clients in the government. Additionally, because of the extensive commercialization of space operations, commercial companies dominate the sector.

Regional Summary

In 2021, North America dominated the space traffic management industry with a US$5,963.4 Mn in revenue. Additionally, in 2021, the US government spent nearly US$ 54.6 Bn on its space programs, placing it as the country with the highest space budget in the world.

With a growth rate of 8.5%, Asia Pacific is likely to change the game between 2022 and 2030. This is primarily due to China's substantial expenditures on space activities. China will also enhance its system for tracking space debris and tighten space traffic control.

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Companies Landscape
The prominent competitors in the global space traffic management market are:
The Aerospace Corporation

Airbus Group
Thales Group
Kayhan Space Corp.
BAE Systems plc
Saab AB
Raytheon Technologies
Boeing Company
Lockheed Martin
Exolaunch
Northrop Grumman
L3Harris Technologies, Inc.
HyImpulse Technologies
Other Prominent Players

Segmentation Outline
The global space traffic management market segmentation focuses on Component, Traffic Type, Orbit Type, Application, Industry, and Region.
By Component
Hardware
- Sensors
- Cameras
- Others

Solution
- Traffic Analytics
- Smart Surveillance
- Others

Services
- Space Monitoring & Tracking Service
- Space Data Management Service
- Space Operation Service
- Space Warning Service
- Space Conflict Management Service

By Traffic Type
Launch Vehicles
Satellites
Others

By Orbit Type
Geostationary orbit (GEO)
Low Earth orbit (LEO)
Medium Earth orbit (MEO)

By Application
Space Situational Awareness
- Space Weather
- Orbiting Space Objects
- Natural Space Debris

Space Debris Remediation
- Low-Cost Active Debris Removal (LCADR)
- Space Debris Removal
- Space Debris Monitoring
- On-Orbit Servicing
- Tethered-Net Removal Technology

Space Orbit Management
Launch Vehicle Operations
Others

By Industry
Commercial
Military

By Region
North America

Europe

Asia Pacific

Middle East
Saudi Arabia
Iran
Israel
Jordan
Iraq
Kuwait
Qatar
UAE
Turkey
Rest of Middle East

South America
North Africa
Algeria
Egypt
Libya

Morocco
Rest of North Africa

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