

Space-Based Fuel Management System Market - A Global and Regional Analysis: Focus on Application, Component, and Region - Analysis and Forecast, 2022-2032

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Abstracts

Global Space-Based Fuel Management System Market Overview

The global space-based fuel management system market is estimated to reach \$45,124.1 million in 2032 from \$22,229.5 million in 2021, at a growth rate of 1.58% during the forecast period 2022-2032. The space-based fuel management system technology companies have witnessed the demand from the growing commercial industry. The ecosystem of the space-based fuel management system market comprises system manufacturers, original equipment manufacturers (OEMs), and end users.

Market Lifecycle Stage

In 1957, when the Sputnik-1 satellite was launched, it implemented a fuel regulator, which failed and resulted in excess fuel consumption. Since then, till 2022, propulsion system technologies and fuel management systems have come a long way in being cost-effective and efficient. Companies like Northrop Grumman and Lockheed Martin have shown their capabilities in the propulsion system and fuel management system department.

Currently, many space agencies and commercial companies across the globe have been focusing on developing low Earth orbit (LEO) satellite constellations. This would drive the market for the space-based fuel management system. Moreover, rising research and development activities to develop cost-efficient propulsion technologies

and fuel management systems are other factors contributing to the growth of the LEO-focused space-based fuel management system market. For instance, in June 2022, ThrustMe signed a contract with European Space Agency (ESA) to provide an NPT30-I2-1.5U electric propulsion system for the GOMX-5 mission under ESA general support technology programme (GSTP).

Impact

The increasing number of smaller telecom satellites in low Earth orbit (LEO) with the upcoming mega-constellation has placed a high demand for the production of space-based fuel management systems during the forecast period.

Furthermore, there is a rise in research and development activities for building cost-effective space-based fuel management systems for satellites.

Market Segmentation:

Segmentation 1: by Application

Satellite

Launch Vehicle

Deep Space Vehicle

The satellite application type segment is expected to dominate the global space-based fuel management system market during the forecast period 2022-2032.

Segmentation 2: by Component

Sensors

Valves

Flow Controllers

Mass Flow Sensors

Pressure Transducers

Particle Filters

Plumbing/Tubing

Based on component, the global space-based fuel management system market is expected to be dominated by plumbing and tubing segment during the forecast period.

Segmentation 3: by Region

North America - U.S., Canada

Europe - France, Germany, Russia, U.K., and Rest-of-Europe

Asia-Pacific - China, India, Japan, and Rest-of-Asia-Pacific

Rest-of-the-World - Middle East and Africa and Latin America

Recent Developments in the Global Space-Based Fuel Management System Market

In July 2022, Thales Alenia Space received a contract of \$2.4 million from European Space Agency (ESA) to develop Skimsat, a small satellite bus for very low Earth orbit (VLEO). The contract also includes developing electrical propulsion to air drag in VLEO.

In August 2022, Astra Space won a contract from Airbus for the development of electric propulsion systems using xenon and krypton as propellants for its line of small satellites.

In August 2021, the European Space Agency signed a contract with Airbus for the construction of European Service Module (ESM) propulsion systems for Orion spacecraft that will be responsible for orbital maneuvering and position control.

In April 2021, Lockheed Martin received a contract worth \$2.9 million from the

U.S. DoD agency DARPA to build and demonstrate nuclear-based propulsion systems by 2025 to power spacecraft for missions beyond LEO.

Demand - Drivers and Limitations

Following are the drivers for the global space-based fuel management system market:

Increasing Demand for Fuel Management Systems due to the Serial Production of Satellites and Launch Vehicles

Increasing Need for Customization of Satellite and Launch Vehicle Platforms

Following are the challenges for the global space-based fuel management system market:

Modular Propulsion Solutions Negating the Need for Commoditized Fuel Management Solutions

Evolution of Integrated Propulsion Solutions Restricting the Choice of Fuel Management System Components

Following are the opportunities for the global space-based fuel management system market:

Evolution of New Environment-Friendly Spacecraft Fuels

How can this report add value to an organization?

Product/Innovation Strategy: The product segment helps the reader understand the different types of space-based fuel management system markets available for deployment in the industries for space platforms and their potential globally.

Growth/Marketing Strategy: The global space-based fuel management system market has seen major development by key players operating in the market, such as business expansion activities, contracts, mergers, partnerships, collaborations, and joint ventures. The favored strategy for the companies has been contracted to strengthen

their position in the global space-based fuel management system market. For instance, in April 2021, ThrustMe signed a contract with the Norwegian Space Agency to be its prime supplier of propulsion systems for their NorSat-1TD satellite.

Competitive Strategy: Key players in the global space-based fuel management system market analyzed and profiled in the study involve satellite propulsion manufacturers. Moreover, a detailed competitive benchmarking of the players operating in the global space-based fuel management system market has been done to help the reader understand how players stack against each other, presenting a clear market landscape. Additionally, comprehensive competitive strategies such as contracts, partnerships, agreements, acquisitions, and collaborations will aid the reader in understanding the untapped revenue pockets in the market.

Key Market Players and Competition Synopsis

The companies that are profiled have been selected based on inputs gathered from primary experts and analysis of the company's coverage, product portfolio, and market penetration.

The top segment players leading the market include established players of fuel management systems for satellites which constitute 80% of the presence in the market. Other players include start-up entities that account for approximately 20% of the presence in the market.

Key Companies Profiled

Airbus

Accion Systems

Benchmark Space System

Cobham

Exotrail

IHI Aerospace Co. Ltd

Lockheed Martin Corporation

Microcosm Inc.

Moog Inc.

Northrop Grumman

Orbion Space Technology

Reaction Engines

Safran S.A.

Thales Alenia Space

ThrustMe

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