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U.S. Geospatial Imagery Analytics Market - A Regional Analysis: Focus on Application and Solution - Analysis and Forecast, 2023-2033

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Abstracts

U.S. Geospatial Imagery Analytics Market Overview

The U.S. geospatial imagery analytics market has experienced remarkable growth in recent years due to the increasing use of geospatial technologies in various industries such as transportation, agriculture, maritime, and defense. The widespread adoption of artificial intelligence (AI), machine learning (ML), and cloud computing geospatial technologies led to the growth of geospatial imagery analytics in the U.S. Regional organizations are consuming large amounts of data generated through remote sensing, geographic information systems (GIS), global positioning systems (GPS), and internal mapping technologies. For instance, in February 2023, IBM and the National Aeronautics and Space Administration (NASA)' Marshall Space Flight Center signed a collaboration to use artificial intelligence (AI) to process geospatial data quickly. The partnership includes the integration of AI with large datasets from NASA's Earth observation satellites for quicker and easier climate research analysis. The U.S. geospatial imagery analytics market is characterized by intense competition, with several key players operating in the industry. Notable companies include BENTLEY SYSTEMS, INCORPORATED, BlackSky Technology Inc., Esri, Maxar Technologies Inc., and others. These companies heavily invest in research and development to introduce innovative products. The market also features smaller and medium-sized companies offering specialized products. With the increasing demand for geospatial imagery analytics, the market is anticipated to experience significant growth in the coming years as more industries recognize the benefits of utilizing services such as remote sensing, environmental monitoring, infrastructure, and asset management. The market can be segmented based on application and product, and it is expected to witness continued growth as key players and defense forces invest in advanced

technologies to enhance performance and effectiveness, leading to new opportunities for growth and innovation in the sector.

Introduction to the U.S. Geospatial Imagery Analytics

New technologies, such as machine learning (ML) and artificial intelligence (AI), enable businesses and government organizations to analyze large amounts of data in real time for better decision-making. ML and AI algorithms excel in pattern recognition, predictive analysis, and automation, providing valuable insights, optimizing operations, and enhancing overall efficiency. This digital revolution is not only enhancing decision-making processes but also shaping the future of industries across various sectors, including healthcare, finance, transportation, and more. Furthermore, high-resolution satellite images and geospatial data are becoming more widely available, which is one of the factors driving the growth of the market.

Furthermore, the rise in deployment of small-satellite constellations in the U.S. by various companies such as Capella Space, Descartes Labs, Inc., and Planet Labs PBC are capable of cost-effective geospatial solutions. The regional companies have access to high-resolution satellite imagery data through the Earth observation satellites in orbit. There are approximately 1,000 Earth observation satellites, out of which more than 600 of these satellites are being operated by the U.S. Hence, deploying more satellites has decreased the satellite imagery acquisition cost and made it more affordable for geospatial services.

Furthermore, the region is collaborating with commercial geospatial service providers through contracts and partnerships for intelligence and defense needs. For instance, in March 2023, Planet Labs PBC announced that its wholly owned subsidiary, Planet Labs Federal, Inc., secured a contract from the National Reconnaissance Office (NRO) under the Strategic Commercial Enhancements (SCE) Broad Agency Announcement (BAA) program, with a specific focus on Commercial Hyperspectral Capabilities (CHC).

Industrial Impact

The U.S. geospatial imagery analytics market is witnessing rapid growth due to the growing demand for integrated domain awareness solutions, the deployment of small-satellite constellations, and the need for real-time data for surveillance or commercial purposes.

The increasing deployment of small satellites for Earth observation applications is another factor that is driving the geospatial imagery analytics in the region. In 2022, the region contributed more than 140 Earth observation satellites in orbit. The high-resolution remote sensing data is utilized by various geospatial imagery analytics providers for offering solutions to commercial and government organizations. For instance, Planet Labs PBC, a satellite imagery data provider, manages terabytes of satellite datasets through its satellite constellation of more than 150 satellites. The company provides satellite imagery data access to users through its web-based tools, such as the application programming interface (API). However, compliance with regulations and international agreements regarding the collection, storage, and use of geospatial data can be complex and may vary by region.

Market Segmentation:

Segmentation 1: by Application

- Aviation
- Maritime
- Agriculture and Forestry
- Sustainability and Natural Resource Monitoring
- Oil and Gas
- Energy
- Logistics/Shipping
- Defense
- Civil Government
- Construction and Infrastructure Development
- Healthcare
- Surveying/Cartography

Disaster Management

Business Intelligence

Finance and Insurance

Mining

Construction and Infrastructure Development in Application Section to Dominate the U.S. Geospatial Imagery Analytics Market

The construction and infrastructure development segment of the U.S. geospatial imagery analytics market is estimated to be $0.88 billion in 2022 and is expected to grow up to $1.34 billion by 2033, growing at a CAGR of 4.07%. The Building Information Modeling (BIM) industry's rapid evolution caused a significant impact on both the construction and the design industries. BIM and GIS integration development brings a new way of thinking about construction and planning. This process includes a transition from 2D to 3D, building information modeling on the digital front. Additionally, GIS data is required to plan various infrastructure operations such as roads, trains, and airports.

Segmentation 2: by Solution

Data Acquisition

Data Processing

Analytics

Integrated Delivery Platform

Analytics in Product Section to Dominate the U.S. Geospatial Imagery Analytics Market by Solution

The U.S. geospatial imagery analytics market is expected to be dominated by analytics in 2023, with $2.57 billion in 2022 in terms of revenue, and is expected to reach $3.57 billion in 2033. In this market, there are companies such as Orbital Insight that offer AI-powered software platforms. The Orbital Insight platform can perform analytics using a variety of geospatial data sources, including satellite and aerial images, location data, automatic identification system (AIS) data, and more. Similarly, EOS Data Analytics, a cloud-based solutions provider, offers the EOSDA platform for tasks such as crop monitoring, land observation, and forest monitoring. This platform leverages deep learning algorithms to analyze satellite imagery and deliver actionable insights.

Recent Developments in the U.S. Geospatial Imagery Analytics Market

In August 2023, Umbra Lab Inc. secured a significant SBIR Phase II contract valued at $1.25 million from AFWERX. This contract is focused on addressing critical challenges within the Department of the Air Force (DAF), specifically in the realm of space-based moving target indication (MTI). Umbra would harness its cutting-edge, cost-effective space systems, known for their wide-bandwidth capabilities and unique paired flight operation. Umbra’s goal is to develop and demonstrate maritime and ground-moving target indication capabilities.

In August 2023, BlackSky Technology Inc. and Rocket Lab U.S., Inc. signed an agreement for five launches of BlackSky's satellites. This increased the capacity of BlackSky's constellation and introduced new capabilities. BlackSky's next-generation Gen-3 satellites were designed to produce images with up to 35-centimeter resolution.

In July 2023, Spire Global, Inc. was selected by RDC Aviation to provide its customers with insights into global flight and aviation data. Spire delivered its flight report, which uses satellite and ground-based automatic dependent surveillance-broadcast (ADS-B) data to provide actionable metadata about flights, aircraft, and airlines. RDC would use Spire's data to analyze airport charges and navigation costs for its database of over 3,000 airports. This data would be used to help airlines and airports make informed decisions about pricing and operations.

Demand – Drivers, Challenges, and Opportunities

Market Drivers: Increasing Deployment of Artificial Intelligence Capabilities

Geospatial imagery analytics extensively employs artificial intelligence (AI) to efficiently tackle complex and crucial tasks, delivering high precision in tasks such as object detection, land cover classification, change detection, and environmental monitoring, among others. Machine learning, as a subset of AI, serves as the enabling technology that makes this level of accuracy attainable. Additionally, geospatial artificial intelligence (GeoAI), the fusion of spatial analytics and artificial intelligence, is a powerful approach used to gain insights from geospatial data, allowing for a deeper understanding and comprehensive analysis of such information. Companies such as Esri provide an ArcGIS platform that integrates spatial data with imagery from sources such as satellites, drones, or aircraft.

Market Challenges: Increasing Competition Due to Fragmented Market as a Result of Multiple Start-Ups

The geospatial market in the region is fragmented, and multiple key players such as Esri, Trimble Inc., Satellogic, Spire Global, and Planet Labs PBC are providing satellite imagery data and analytics solutions. Additionally, the region has several start-ups, such as Capella Space, Orbital Insight, and DroneDeploy, that have gained significant market presence. So, the presence of various geospatial players in the region increases the competition in the market and provides customers with more options, such as pricing, customization, and innovation in geospatial services.

Market Opportunities: Increasing Use of Geospatial Data to Create Sustainable Solutions

Geospatial technology serves as a valuable tool for promoting sustainable development and empowering policymakers and planners to make well-informed, evidence-based decisions that consider the long-term impacts on the environment, economy, and society. Machine learning methods and algorithms have greatly expanded the potential of geospatial technology in supporting sustainable development and surpassing expectations. Its cost-effective data acquisition across various spatial-temporal scales and information richness enhances the ability to analyze, process, and visualize scenarios, leading to deeper insights into the interconnected pillars of sustainability.

How can this report add value to an organization?

Product/Innovation Strategy: The product segment helps the reader understand the different types of solutions available for deployment and their potential globally. Moreover, the study provides the reader with a detailed understanding of the U.S. geospatial imagery analytics by component (hardware and software).

Growth/Marketing Strategy: The U.S. geospatial imagery analytics market has seen major development by key players operating in the market, such as contract, collaboration, and joint venture. The favored strategy for the companies has been contracts to strengthen their position in the U.S. geospatial imagery analytics market.

For instance, in August 2023, ESP Logistics Technology chose Spire Global, Inc. to supply wind data via its weather conditions API and real-time automatic identification system (AIS) vessel-tracking data. ESP is leveraging Spire's AIS data to furnish its customers with live ship tracking and estimated arrival times at their intended destinations, utilizing historical data from ships that have followed comparable routes in the past.

Competitive Strategy: Key players in the U.S. geospatial imagery analytics market analyzed and profiled in the study involve major U.S. geospatial imagery analytics companies providing solutions, respectively. Moreover, a detailed market share analysis of the players operating in the U.S. geospatial imagery analytics 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 partnerships, agreements, and collaborations will aid the reader in understanding the untapped revenue pockets in the market.

Methodology: The research methodology design adopted for this specific study includes a mix of data collected from primary and secondary data sources. Both primary resources (key players, market leaders, and in-house experts) and secondary research (a host of paid and unpaid databases), along with analytical tools, are employed to build the predictive and forecast models.

Data and validation have been taken into consideration from both primary sources as well as secondary sources.

Key Considerations and Assumptions in Market Engineering and Validation

Detailed secondary research has been done to ensure maximum coverage of manufacturers/suppliers operational in a country.

Exact revenue information, up to a certain extent, has been extracted for each company from secondary sources and databases. Revenues specific to product/service/technology were then estimated for each market player based on fact-based proxy indicators as well as primary inputs.

Based on the classification, the average selling price (ASP) has been calculated using the weighted average method.

The currency conversion rate has been taken from the historical exchange rate of Oanda and/or other relevant websites.

Any economic downturn in the future has not been taken into consideration for the market estimation and forecast.

The base currency considered for the market analysis is US$. Currencies other than the US$ have been converted to the US$ for all statistical calculations, considering the average conversion rate for that particular year.

The term “product” in this document may refer to “service” or “technology” as and where relevant.

The term “manufacturers/suppliers” may refer to “service providers” or “technology providers” as and where relevant.

Primary Research: The primary sources involve industry experts from the defense industry, including geospatial imagery analytics manufacturers and defense experts. Respondents such as CEOs, vice presidents, marketing directors, and technology and innovation directors have been interviewed to obtain and verify both qualitative and quantitative aspects of this research study.

Secondary Research: This study involves the usage of extensive secondary research, company websites, directories, and annual reports. It also makes use of databases, such as Spacenews, Bloomberg, Factiva, and Businessweek, to collect effective and useful information for a market-oriented, technical, commercial, and extensive study of the global market.

Secondary research was done to obtain critical information about the industry’s value chain, the market’s monetary chain, revenue models, the total pool of key players, and the current and potential use cases and applications.

Key Market Players and Competition Synopsis

The companies that are profiled have been selected based on thorough secondary research, which includes analyzing company coverage, product portfolio, market penetration, and insights gathered from primary experts.

Key Companies Profiled:

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Albedo Space Corp.

AllSource Analysis

AiDash

BENTLEY SYSTEMS, INCORPORATED

BlackSky Technology Inc.

Capella Space

DataCapable Inc.

Esri

EOS Data Analytics, Inc.

GreenValley International

Keystone Aerial Surveys, Inc.

Locana

Maxar Technologies Inc.

Michael Baker International

NextNav Inc.

Planet Labs PBC

Spire Global, Inc.

Swift Navigation, Inc.

TerraGo Technologies

The Sanborn Map Company, Inc.

Trimble Inc.

Unearth Labs

Umbra Lab Inc.

VETRO FiberMap

VORTICS IMAGING

Weather Stream Inc.

Zonda

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