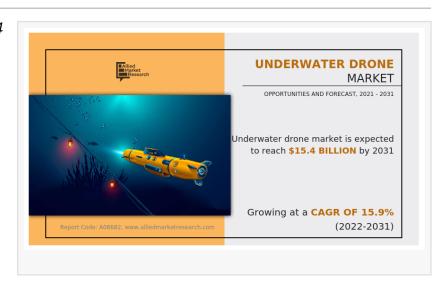


Artificial Intelligence and Machine Learning in Underwater Drones: Enhancing Performance and Efficiency

Underwater Drone Market to Reach \$15.4 billion by 2031

PORTLAND, OREGON, UNITED STATES, April 20, 2023 /EINPresswire.com/ -- According to a recent report published by Allied Market Research, titled, "Underwater Drones Market by Type, Application, Propulsion System, and Product Type: Global Opportunity Analysis and Industry Forecast, 2022–2031," the global underwater



drones market was valued at \$3,600.0 million in 2021, and is estimated to reach \$15,426.1 million by 2031, registering a CAGR of 15.9%.

North America dominates the market in terms of revenue, followed by Europe, Asia-Pacific, and LAMEA. U.S. dominated the global underwater drones market share in 2021 and is expected to grow at a significant rate during the forecast period, due to an increase in demand for underwater drones for the oil & gas and defense sectors.

The underwater drones are equipped with cameras, sensors, and sampling tools to gather different kinds of data and are used for various applications such as oceanographic research, support in drilling and subsea construction to perform offshore oil & gas exploration, marine archaeology, mine counter-measures, reconnaissance, and forward observation by the military forces among others. The underwater drone covers a wider area relative to human drivers with lesser time. Moreover, it provides a much closer examination of underwater objects or sea beds.

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Traditionally, the researchers used to deploy ships, to drop probes and drifters into the oceans to collect underwater data. In recent years, owing to the advent of underwater drones, the oceans have become quite easy to analyze. The underwater drones are efficient, safe, and

reliable machines that can dive thousands of meters into the ocean and collect samples using payloads that help in the study of water and marine life. Moreover, underwater drones are quite beneficial in several defense and security applications including port security, criminal investigations, search & recovery, training, and others. Due to this, militaries across the world are procuring underwater drones to uplift their operational competencies.

By type, the market is categorized into remotely operated vehicles (ROV), autonomous underwater vehicles (AUV), and hybrid vehicles. The remotely operated vehicle (ROV) accounted for the highest revenue in 2021, owing to the high adoption of these drones in oil and gas exploration and pipeline inspection. ROVs provide access to difficult zones under the oceans and handles complex operations in the deep water, thus providing efficient and faster oil exploration and pipeline inspection service. However, the segment of the hybrid vehicle is anticipated to witness the highest CAGR of 18.0% during the forecast period, due to its thruster design that allows it to hover and function with six degrees of freedom which offers a superior capability for inspection purposes.

On the basis of application, the <u>underwater drone market</u> is segregated into defense & security, scientific research, commercial exploration, and others. The defense & security segment accounted for over 46.84% market share in 2021, owing to a surge in demand in developing countries such as India and Brazil. Moreover, underwater drones are increasingly used by police and fire departments for ocean rescue and port security.

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Factors such as an increase in demand for oceanographic research are expected to drive the growth of the global underwater drone market. However, Communication problems associated with AUVs are expected to restrain the growth of the market during the forecast period. Conversely, the advent of energy-efficient underwater drones is expected to offer potential opportunities for the global underwater drone market during the forecast period.

In addition, Europe is the second largest market due to product innovation, collaboration between companies and investments in oceanographic research drive the growth of the underwater drone market in the region. Major countries such as Germany, France, and the United Kingdom are beefing up their armed forces through the acquisition and development of underwater drones. For instance, Admiral Christoph Plaszuk, the Chief of Naval Staff, told the French National Assembly Armed Forces Committee in 2019 that by 2030 he would target a fleet of 1,200 unmanned systems. rice field. Additionally, in May 2020, the Belgian Ministry of Defense awarded a consortium led by the French Naval Group a contract to supply minesweepers and drones to the Belgian and Dutch navies.

Similarly, in November 2020 announced a US \$223.54 million investment in the joint Maritime Mine Counter Measure (MMCM) program that is supposed to create new systems to combat sea

mines. Furthermore, in September 2022, Huntington Ingalls Industries (HII) handed over three REMUS 100 uncrewed underwater vehicles (UUVs) to the UK Royal Navy (RN) which will be used to support the RN's mine countermeasure (MCM) operations.

COVID-19 Impact Analysis

The COVID-19 outbreak forced governments across the globe to focus on medical services. Owing to this, the countries reduced their military budgets to help pay for the pandemic response and recovery measures. For instance, South Korea and Thailand reduced their military budgets to allocate more money to the pandemic response. Moreover, the nationwide lockdown forced the manufacturing facilities of the underwater drones to shut down or cut the full fledge opening of the facilities. The pandemic has placed more pressure on drone manufacturing for its business model transformation, as the industry faced demand shock with an uncertain recovery timeline. Many original equipment manufacturers (OEM) faced liquidity issues as operating cash flow diminishes during the crisis. Moreover, the local shutdowns and supply chain disruptions led to delays in deliveries of existing orders of underwater drones.

KEY FINDINGS OF THE STUDY

By type, the hybrid vehicles segment is expected to register significant growth during the forecast period.

By propulsion system, the mechanical system segment is anticipated to exhibit significant growth in the near future.

By application, the scientific research segment is projected to lead the global underwater drone market owing to a higher CAGR as compared to other applications.

By region, Asia Pacific is anticipated to register the highest CAGR during the forecast period.

The key players analyzed in underwater drone market are The Boeing Company, Lockheed Martin Corporation, Bluefin Robotics, Saab Seaeye Ltd, Teledyne Marine Group, Kongsberg Maritime, Oceaneering International, Inc., TechnipFMC plc, ECA Group, and Deep Ocean Engineering, Inc.

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