Published by

ON&T

January 2023

UNCREWED SURFACE VEHICLE (USV)

Market Summary and Forecast

2022–2026

oceannews.com

Contents

Tables

Charts

Executive Summary

When we published our first report on the Uncrewed Surface Vessel (USV) market at the beginning of 2020, we predicted that the market was approaching a pivotal period, where it could transform from an embryonic market based on long-term potential and hype to a mature market with measurable growth.

This is exactly what has happened since early 2020. In spite of COVID-19 and the uncertainties that the pandemic brought to the world, USVs have been embraced in both the defense and the commercial markets. The hints of a bright future that we identified in January 2020 have transformed into orders and a growing market. The acceptance of USV technology has resulted in the identifications of new applications for their use. Perhaps most telling is that we have moved from the view that "maybe USVs could do this" to "we're using USVs to do this."

In addition to USVs showing up in all sorts of new applications, we are seeing signs of a supply chain building up around them. As will be shown in the pages of this report, companies involved in everything from deck equipment to marine repair to maritime communications are positioning themselves to service the developing USV market. They are not responding to a short-term need, either. These companies are recognizing the long-term potential for the market and are preparing to make long-term commitments to USVs.

Getting back to COVID-19, our previous USV market report was published just as the pandemic-related lockdowns were occurring. It is interesting to note that in spite of the turmoil this caused on the financial markets, it seemed to have little impact on the USV market. In fact, as we noted above, the USV market has seen tremendous advancement during this period. Again, as will be shown, USV companies have received significant financial investment in 2021. While it could be expected that military spending would be impacted little by the pandemic, commercial financing also seems to be largely available to USV makers, many of which are small start-ups.

Besides COVID and other issues that might negatively impact the USV market, the reality is that the market is developing rapidly simply because USVs make sense. Human activity always has revolved around the oceans, but the reality is that working on the oceans is undeniably expensive. Looking back through history, empires have fallen because of the prohibitive expense and manpower drain involved in maintaining a large navy. Working at sea can also be dangerous and insurance rates are high.

Given these factors, it is not surprising that navies are investing in USVs at a breakneck pace. And these are not just the large navies; smaller navies see advantages in the technology as well. On the commercial side, many offshore operations that currently require crewed vessels could be performed by USVs at lower insurance costs and without putting people at risk. USV makers and their investors recognize this.

There are many factors driving the USV market and we will not get into them all, but we should mention one more: climate change. It

is easy to recognize that USVs can perform tasks currently performed by crewed vessels using diesel engines, but with the USVs using much cleaner fuels. These include green electricity stored in batteries, as well as various types of solar, wind and ocean current propulsion. USV developers, who are an inventive breed to begin with, have been particularly innovative with clean means of propulsion for their vessel.

This report is focused on the various markets for USVs. As such, we will not go into detail about the technologies or specific applications. And, as the markets are mostly far from mature, we will concentrate on those developments that indicate the current state of the market and its potential for growth.

We will present a five-year demand forecast from 2022–2026. While the current global economic conditions are still experiencing some instability from the COVID-19 pandemic, an argument can be made that the USV industry as a whole is somewhat insulated as the total market's largest component is the military, and defense spending by the major military powers–the ones that have the greatest interest in developing USVs–are unlikely to see large cuts.

In this report, we are defining a USV as a complete system–a vessel (hull) with a full autonomy package and a payload to complete one or more specific missions. The vessel can be purpose-built or an autonomous conversion of a conventional vessel designed for manned operations. Demand is considered to be sales of complete systems.

This report covers USVs for military, scientific and commercial applications. It does not include Maritime Autonomous Surface Ships (MASS) for commercial, large-scale transport of cargo. This technology is very promising but still in its infancy; not yet reaching even the limited market strength of USVs.

In terms of demand, the USV market is unusual in that it takes two forms. First, there is the conventional demand where a customer buys one or more USVs and then operates them for whatever application they need. The military is the most obvious example of this type of customer, but USVs are also purchased by universities, governmental or quasi-governmental ocean agencies and marine survey companies. This is the typical type of demand that is seen in most products. But for USVs there is another type of demand–the rental market. In this case, primarily seen in scientific and commercial data collection applications, USVs (and often the personnel to operate them) are rented from a marine survey company or sometimes from the manufacturer itself. This latter method has been useful in building up a comfort level for USV technology in the market, without requiring customers to make a huge financial investment.

For the purposes of this report, USVs that are rented from a manufacturer for trial applications are not considered to be part of the market demand. However, USVs that are purchased by survey companies and then rented to an end user, are counted when discussing demand.

As the overall USV market is far from a mature one, the type of consistent, large-scale acquisitions that typify a mature market are mostly absent when it comes to USVs. With a few exceptions, most USV sub-markets are still in an immature phase.

There are signs, however, that market maturity may not be too far away. The period from 2019 through 2022 has yielded numerous developments that we believe is setting the stage for widespread adoption of USV technology and the formation of a fully mature market.

Signs of a mature, or at least maturing, market for a technology such as USVs include:

- **Mainstream usage in practical applications (moving from prototyping to production)**

- **A consistent pattern of production contracts (measurable demand)**

- **New or expanded production facilities, mergers and acquisitions, raising of capital, etc.**