CASE STUDY: **U.S. NAVY**

VideoRay
a BLUEHALO company

Explosive Ordnance Disposal

INSIDE:

CUSTOMER: US Navy and Foreign Militaries

TECHNOLOGY: Mission Specialist Defender

PAYLOAD:
Payload Capacity: 25 lbs / 12.5 kg
Manipulator
Sonar
DVL (Doppler Velocity Log)
GPS (Global Positioning System)

MARKET: Defense

DEPLOYMENT LOCATION: Global

Overview

VideoRay LLC, a rapidly growing defense technology company, was awarded a $92.6M USD five-year indefinite-delivery/indefinite-quantity (IDIQ) contract for the continuous production, sustainment, and development of the MK20 Defender Remotely Operated Vehicle (ROV) platform for the US Navy's Maritime Expeditionary Standoff Response (MESR).

This contract provides access to VideoRay's Mission Specialist family of underwater robotics systems to support the Navy's Explosive Ordnance Disposal Underwater Response Vehicle program and the MESR program of record.

Administered by Naval Information Warfare Command, Pacific, the contract provides for the delivery and support of the Navy's next-generation Remotely Operated Vehicles (ROVs) that will be used to conduct critical undersea missions to support our warfighters.

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The Challenge

The U.S. Navy's MESR program focuses on enhancing the capabilities of Explosive Ordnance Disposal (EOD) units, with the Mission Specialist Defender serving as the base platform for the MK20 Defender ROV program.

The challenge lies in efficiently locating, identifying, neutralizing, and recovering underwater mines, particularly in high-risk areas such as those near Ukraine and other maritime war zones. The complexity of these missions requires cutting-edge technology that can operate reliably in challenging underwater environments.

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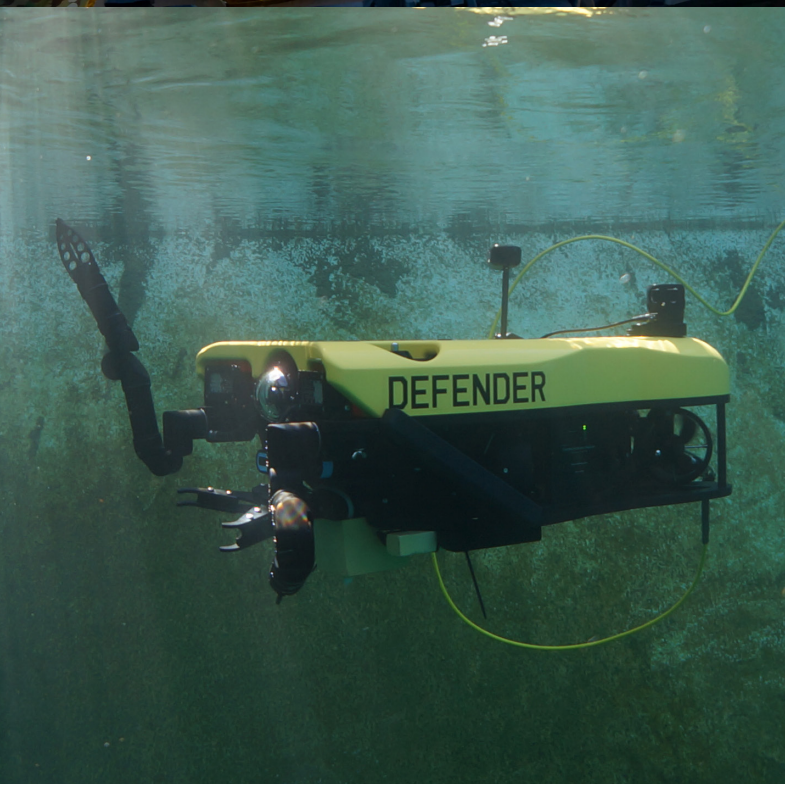

The Solution

VideoRay's one-person portable Mission Specialist Defender addresses the dangerous challenges of the U.S. Navy EOD missions by decreasing risk to operational forces, minimizing injury to personnel, and reducing damage to equipment. The platform's modularity and open systems architecture supports seamless integration of a wide array of third-party sensors and payloads. This configuration enables defense personnel to repair or replace a component promptly in the field, further emphasizing the Defender system's practicality in demanding situations. The modular design also provides the ability to upgrade the system as new technology becomes available.

State-of-the-art capabilities for the Defender systems are continuously evolving, including the integration of VideoRay Labs technology to enhance artificial intelligence (AI), autonomy, augmented reality/virtual reality (AR/VR), 3D visualization and reconstruction, simulation, and man-machine teaming. These advanced features empower the Defender underwater robots to conduct missions more autonomously, safely, and effectively.

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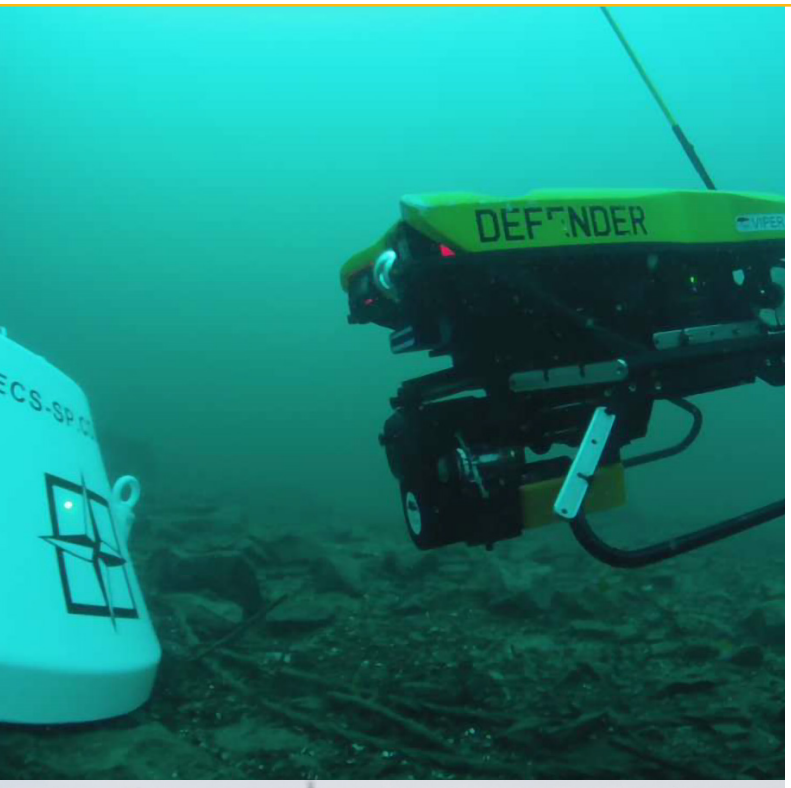

The Solution *cont'd*

In addition, VideoRay's collaboration with a network of partners and component manufacturers contributes to rapid advancement of Defender systems. These include autonomous identification and defeat of underwater mines, extend operational depths, the option for battery-equipped units, and long-distance underwater communication without tethers.

The Defender offers industry-leading performance in size, weight, and power (SWAP), coupled with a proven track record of reliability. Its one-person-deployable footprint, portability, power, versatility, and reliability make it an unmatched tool for critical EOD missions, significantly reducing operational costs while streamlining logistics.

The Mission Specialist Defender is VideoRay's largest and most powerful system, weighing 17.2 kg (38 lbs). It has been optimized for precise control and heavier payloads, making it ideal for lifting or conducting specialized operations. The Defender's impressive seven thrusters can handle currents up to four knots at depths of up to 1,000 meters.

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Conclusion

VideoRay's Defender underwater robots have become the U.S. Navy's preferred choice due to their advanced technologies, superior capabilities, flexibility, and ruggedness, The company's commitment to customer support, training facilities on both the East and West coasts of the U.S., and modular design principles has garnered praise from the Navy. VideoRay's strategic partnerships and ongoing research and development position the Defender as a versatile and adaptable tool for hazardous EOD underwater missions.

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