

Submarine Rescue Intervention

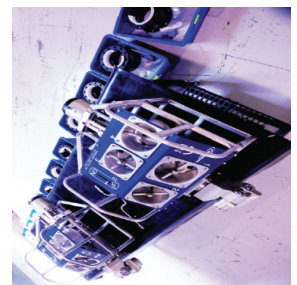
Military

Overview

OceanWorks International's submarine rescue systems and services provide rapid response and world wide capability for rescue of crew members from a submarine that is disabled and trapped on the sea floor (DISSUB). OceanWorks International supplies a variety of system configuration and operational service options for customers to choose from.

Products

<p>Atmospheric Diving Systems (ADS)</p>	<p>ADS provides a highly adaptable, diver equivalent intervention capability for rescue related missions, including submarine location, initial communication, hatch clearing, ELSS pod posting, submarine ventilation system connection, salvage and general intervention. The ADS includes fully integrated Launch and Recovery Systems (LARS) and operational tooling.</p>
<p>Remotely Operated Vehicles (ROVs)</p>	<p>ROV systems can also be utilized for the same type of rescue related missions as the ADS. Due to size and configuration they are best suited for search, survey and heavy duty work. ADS and ROV systems are often used in pairs for optimum intervention capability.</p>
<p>Submarine Emergency Ventilation and Decompression System (SEVDS)</p>	<p>SEVDS provide fresh air and controlled decompression and ventilation in a DISSUB to extend life while rescue assets are being mobilized. They can be rapidly deployed to the scene and connected to the submarine by the HARDSUIT™ ADS, an ROV, or conventional divers during a submarine disaster.</p>
<p>Emergency Life Support Stores (ELSS)</p>	<p>ELSS pods are pressure vessels that carry food, water, medical supplies, oxygen candles or CO2 scrubber materials. The pods are transferred individually into the DISSUB through a hatch or escape tower by the HARDSUIT™ ADS, an ROV, or conventional divers. Materials are used to extend life while rescue assets are being mobilized.</p>



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ADS

The HARDSUIT™ ADS include fully integrated Launch and Recovery Systems (LARS) and operational tooling. With over forty HARDSUIT™ systems delivered since 1986, OceanWorks ADS technology has consistently evolved since its initial release and today the HARDSUIT™ Quantum ADS represents the state of the art in atmospheric diving systems. The Quantum ADS is available in two depth ratings including 365 meters (1200 feet) and 610 meters (2000 feet). The HARDSUIT™ has an unblemished safety record and provides human, three dimensional awareness and “eyes-on-the-scene” capability, with diver equivalent dexterity. The ADS is a fraction of the cost of a conventional saturation diving system due to the elimination of decompression time, reduced crew size, elimination of costly consumables, ease of mobilization and reduced support vessel requirements.

Several militaries around the world have acquired the HARDSUIT™ system from OceanWorks for use in salvage, ordinance recovery and submarine rescue efforts. The HARDSUIT™ is ideal for location and evaluation of a stranded submarine, establishment of communications, submarine escape hatch clearing, life support re-supply and rescue system interface assistance. The HARDSUIT™ provides unmatched mobility for access to tight spaces and can change its attitude and orientation based on the commands of the HARDSUIT™ pilot. The ability of the HARDSUIT™ to quickly respond to and execute unplanned tasks combines with simplified training and reduced maintenance to make it an ideal deep diving system for all military applications.

ROVs

ROV systems can be utilized for a variety of rescue related missions, including large area search, submarine location, hatch clearing, ELSS pod posting, submarine ventilation system connection, salvage and general intervention. The ROV removes the requirement to place a human underwater and can be used for multiple applications at depths exceeding 6000 meters. The ROV can be used in situations where the depth exceeds the rating of the ADS or in very hazardous scenarios. The HARDSUIT™ Quantum and ROV are often operated as a pair for safety and enhanced task performance with the ROV providing heavy lift, tool power and area lighting / video while the ADS undertakes all work requiring fine dexterity and sensitive manipulation. ROV systems are available in a number of sizes and capabilities ranging from small observation only to heavy duty, full work class. OceanWorks can recommend the best ROV configuration to compliment the HARDSUIT™ operation and other customer requirements.

SEVDS

In a submarine disaster it is essential to stabilize the internal environment and extend the life of survivors while the rescue equipment is being mobilized.

The OceanWorks SEVDS can be rapidly deployed to the scene and connected by the HARDSUIT™, ADS, an ROV, or conventional divers. With air supply and return controlled and monitored from the surface, the SEVDS can then be used to control DISSUB depressurization and clear smoke, carbon dioxide or other toxic gas accumulation. The OceanWorks SEVDS is designed with custom submarine receiving fittings (SRF) and submarine adapter units (SAU) and is compatible with NATO STANAG 1450. The unique OceanWorks SRF and SAU fittings are specifically designed for operation by divers, ADS and ROV systems.

ELSS

ELSS pods are pressure vessels that carry food, water, medical supplies, oxygen candles or CO2 scrubber materials. The pods are transferred individually into the DISSUB through a hatch or escape tower by the HARDSUIT™ ADS, an ROV, or conventional divers. Materials are used to extend life while rescue assets are being mobilized. The pods are standardized in accordance with STANAG 1391 to fit the escape tower of NATO submarines. Alternate pod configurations have also been made for nonstandard applications.