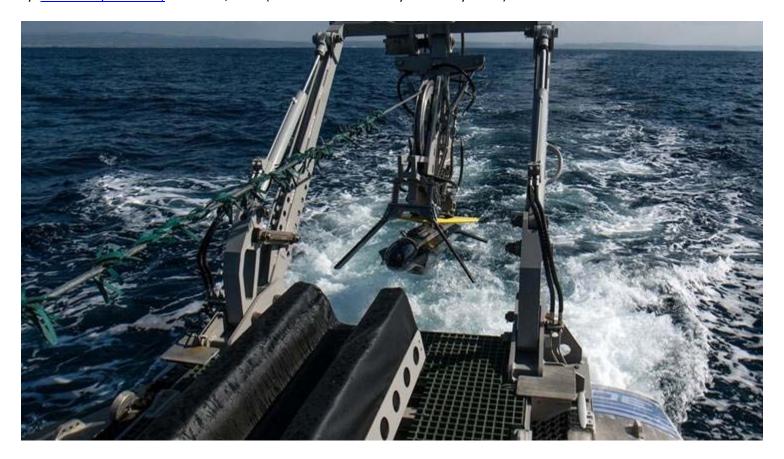# Elbit offers Multi-Mission, Unmanned Naval Robot

By: Barbara Opall-Rome, March 28, 2017 (Photo Credit: Courtesy of Elbit Systems)

HAIFA, Israel — Israel's Elbit Systems has concluded operational testing of its Seagull Unmanned Surface Vessel, a maritime robot that the firm claims is the first of its kind designed for underwater mine hunting, mine clearing, anti-diver and anti-submarine warfare missions.

Only 12 meters long with a top speed of 32 knots, the Seagull USV operates for four days at a time at a mission speed of 8 knots, using electro-optic and infrared sensors along with various sonars to scour the seas for underwater threats.

For anti-submarine warfare, or ASW, missions, Seagull comes equipped with dipping sonars and torpedoes, which Elbit has put through dozens of tests, including live-fire trials earlier last year. Its ASW mission package, executives here say, can be switched out in less than six hours with three additional modular mission modules, enabling the robot to conduct counter-mine, anti-diver and maritime security operations.

"Seagull is the only unmanned system in the world designed from the beginning to be multi-mission. We can control two USVs from one controller and since it's highly autonomous, you just tell it what to do, not how to do it," said Hanan Marom, senior director for Elbit's naval systems business line.

"Most navies use one platform for mine sweeping, another vessel for mine hunting, another for ASW, but we're using one platform with interchangeable modules that can be changed out in hours," he said.

According to the Elbit executive, Seagull is fully autonomous and is controlled via line of sight or satellite communications data links for operations at unlimited ranges. "At the end of the day, the most important thing is the mission. If you are searching for submarines, find the submarine. If you are searching for mines, find the mines. Don't deal with sailing and maneuvering. The robot will handle all that," he said.

"We've put decades of Elbit experience in controlling UAVs into controlling Seagull's mission and payloads."

If, for whatever reason, communication is lost, Marom said Seagull knows to return to a preprogrammed position. "This is especially important when operating in minefields, because nobody will be able to go after it if the vessel gets stuck. It needs to be smart enough to return to a safe point until it can proceed with its mission."

Seagull comes equipped with dipping sonars and torpedoes, which Elbit has put through dozens of tests, including live-fire trials earlier last year. Photo Credit: Courtesy of Elbit Systems

Similarly, Elbit executives say the system has been designed to compensate for human error, with algorithms that instruct the ship to avoid collision at all cost. While Seagull can be launched from ports, Elbit executives say it is ideal for expeditionary forces at sea, where its design allows it to be launched from a mother ship or packed in a container and airlifted to hot spots via C-17 transports.

"Seagull was designed to be organic. It can launch and recover from a mother ship anywhere in the world. And it can be sent by air anywhere in the world," Marom said.

For expeditionary forces, he said, data generated by Seagull's sensors are transmitted to the mother ship or to bases on shore. "Commanders or civilian leaders can see the picture and everyone can share the information based on the same pictures from deep underneath the sea."

A senior Elbit executive who recently retired as head of operations for the Israeli Navy said the ASW role performed by Seagull returns the asymmetric advantage to those seeking to counter threats from terror organizations or state sponsors of terror, which are increasingly turning to mini- and midget submarines to lay mines and attack much larger and more powerful forces.

With regard to Iran, whose undersea force consists of three Kilo-class submarines and at least a dozen of midget subs, the Seagull USV "will change the dynamic," the former Navy commander said. "The only way to deal in an efficient and cost-effective manner with the growing submarine threat — particularly the smaller undersea platforms — is to counter them with robots

"The economic, psychological and operative threat from these cheap, asymmetric weapons is enormous; as is the cost to buy, operate and maintain fleets of minesweepers, mine hunters and various support ships. ... Seagull reverses this asymmetry with a safe and economical means of combating such threats."

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