L3Harris, Voyis and Wavefront collaborate to enhance NATO Navyâ€™s AUV capabilities

L3Harris, Voyis and Wavefront have joined forces to introduce cutting-edge technology aimed at enhancing the autonomous underwater vehicle (AUV) capabilities of the NATO Navy. L3Harris specializes in the development of AUVs tailored for various maritime applications.

These AUVs are engineered to operate in challenging environments, including deep waters, and are suitable for a range of missions such as search and rescue, surveillance, mine countermeasures (MCM) and oceanography. L3Harris leads the way in AUV development, consistently advancing its technology to meet the evolving needs of critical defence missions. To further enhance the capabilities of L3Harris' Iver4 900 AUV, the global defence company has integrated a Voyis Recon LS and Wavefront Solstice 3000 multiple-aperture sonar (MAS) combined AUV payload onto the Iver4 900 platform to support defence missions.

Versatile multisensor payload

The Voyis team, in collaboration with Wavefront Systems, has announced the successful completion of a factory acceptance test for the Recon LS/3000MAS AUV payload with L3Harris. This payload is set to be delivered to a NATO Navy, enhancing the capabilities of the Iver4 900. It comprises a single, integrated forward payload section housing Voyis' compact dynamic laser scanner, capturing high-resolution 3D point cloud data, Voyis' 4K imaging system with appropriate lighting for crisp, evenly illuminated still images through its edge-computed image enhancement feature, and Wavefront Systems' Solstice multi-aperture sidescan sonar, providing 200m-wide swath coverage and high-resolution bathymetry.

The Voyis Recon LS/Wavefront Solstice Combined AUV payload presents a solution for autonomous underwater vehicles to discreetly detect, classify and identify mine-like objects (MLOs), reducing risks to divers. The system employs multi-aperture sidescan sonar, a 4K digital still camera, and a high-resolution laser scanner to execute these tasks. L3Harris' Iver4 900 vehicle offers stability and endurance to maximize the payload's potential.

Mine countermeasure operations

MCM operations involve four stages: detection, classification, identification and disposal/neutralization. Currently, sidescan sonar is used for mine detection and sometimes for classification. However, visual identification requires a clearance diver or remotely operated vehicles to enter the minefield, a time-consuming and risky process, especially in areas with complex seabeds. This necessitates deploying multiple resources into a potentially hazardous environment to achieve a successful operation, an inefficient process when relying on lower-quality sensor data and dangerous if humans are mobilizing the assets.

The Recon LS/Wavefront Solstice MAS Combined AUV payload is designed to revolutionize current MCM operations, enabling single assets to complete complex missions without deploying additional resources within the minefield. By enabling search and classify mapping using Wavefront's leading multi-aperture sonar Solstice, the vessel can re-acquire and identify MLOs using Voyis' laser and camera, improving the probability of detection, reducing false alarms and sustaining a high operational tempo.

The Voyis Recon LS/WaveFront Solstice Combined AUV payload. (Image courtesy: Voyis/Wavefront Systems)