

Exploiting Sonar and aROV Potentialities for Mine Neutralization

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NURC's (now CMRE) mine reacquisition and neutralization efforts focus on Autonomous Surface Vehicle carrying and guiding an automated Remotely Operated Underwater Vehicle (aROV) close to the mine target utilizing advances in sonar image processing and target tracking, autonomous navigation and control, and collaborative autonomous systems mission planning.

NURC's (now CMRE) approach is to use modified COTS equipment to test new concepts inexpensively. In the presented concept of operations, an ASV reacquires a previously identified target (in the mine hunting phase) using its imaging sonar.

Once the target location is known, an expendable aROV is released. The aROV position is determined from sonar imagery onboard the ASV. This minimal information is sent to the aROV via acoustic link so that it can converge towards the desired target. With this approach, complex and expensive sensors are removed from the expendable vehicle, which now becomes a simple actuation system that carries the neutralization payload, and this in turn greatly increases cost efficiency.

Click [here](#) to download the Project's presentation.