



Europe

Naval

ECA Group Unveils Mid-Size A18-M AUV for Underwater Mine Warfare

March 26, 2018 DP Press Releases 0 Comments Autonomous Underwater Vehicle (AUV), ECA Group, ECA Group A18 AUV, France, Mine countermeasures (MCM)

ECA Group unveiled its latest mid-size A18-M Autonomous Underwater Vehicle (AUV) dedicated for mine counter measure missions.

A18-M is the new generation of autonomous underwater vehicle developed by ECA Group for efficient mine detection and classification in all water depths up to 300m. Like the A9-M and A27-M, the AUV A18-M is specifically designed to operate in the close vicinity of the smartest mines without triggering them.

"This mid-size AUV is the top trade-off between, size, weight and long endurance. Its payload capacity makes it able to host high performance sonar, such as synthetic aperture sonar (SAS) providing unprecedented detection and classification performances," says Léonie Delacou, AUV's product manager at ECA Group. More compact than previous generation of MCM AUV, A18-M is easy to deploy even from small naval platforms such as new generation of Unmanned Surface Vehicle (USV). Thanks to its high stability, and the fact that it is less affected by waves than a surface ship or a towed system, a very high image quality is obtained.

In addition, the AUV A18-M can also adapt its operating depth to the environmental conditions, avoiding blind zones due to sound speed stratification.

Advanced embedded processing allows to process in real time the sonar image raw data and extract a list of contacts which are relayed back to the command center using an advanced communication network, with an unmanned surface vessel (USV) or an unmanned aerial vehicle (UAV) acting as gateway. These contacts are then reviewed by sonar operators onboard a mothership or onshore, in order to launch identification and disposal.

More generally, the AUV is able also to detect any kind of hazard such as improvised explosive devices (IED), pollutants, as well as to provide very accurate maps of the seabed which allow the environment to be assessed with high fidelity.

The AUV A18-M integrates the Synthetic Aperture Sonar (SAS) and has very high area coverage rate, of the order of 2km²/hr which represents between 5 and 10 times more than that of a conventional side-looking sonar on an AUV. This optimal configuration enables to cover very large areas – of the order 20-40km² (depending on transit distance) in a fraction of the time of legacy assets, with far superior image quality, and with reduced risk to personnel.

"The performance gain is due to the very high resolution in both range and cross-range offered by a wideband SAS, of the order of 2.5cm x 3cm constant up to the edges of the swath, which is unachievable, at any practical range, by any other type of sonar on any type of platform. With the only possible exception of buried or concealed mines, all known mines can be detected and high quality classification cues can be extracted from the highlight and shadow structure." says Dr. Marc Pinto Program Director for Systems of Robots and sonar expert at ECA Group

AUV A18-M can be integrated within a larger unmanned system, such as ECA Group's UMIS (Unmanned Maritime Integrated System) and benefit from common interfaces, communication network as well as data processing system.

"The A18-M joins now the ECA Group MCM robotic 'team' which is composed of the Unmanned Surface Vehicle (USV) INSPECTOR MK2, the identification ROV SEASCAN and the expendable mine disposal vehicle, also called minekiller, the K-STER C. All of these robots can work together in order to accomplish tasks simultaneously or for INSPECTOR USV, to be used a communication relay to send gathered a preprocessed information (ATD – automatic target detection) to a command and control system on a mothership or on shore to deploy the identification and disposal vehicle. This is the first comprehensive unmanned maritime system that includes all types of naval robots: USVs, AUVs, ROVs and EMDS." says Daniel Scourzic, UMIS (Unmanned Maritime Integrated Systems) Marketing Manager at ECA Group.

Operating in parallel several unmanned devices, the UMIS system allows the user to have higher efficiency and clearance rate, enabling to achieve typical operations in at least 3 times shorter period compared to conventional systems without any risks for the ship and the operators who stay out of danger zones.