

◆ PRODUCT PROFILE

From Drones to Simulators: **ECA Group's Wide Range of Defence and Security Solutions**

In the naval forces domain, ECA Group offers a wide-range of innovative solutions that will meet tomorrow's naval challenges. Using cutting edge technology ECA Group delivers effective interoperable systems, training simulators, and specialist equipment. These greatly enhance the capability and performance of naval forces in the most complex and challenging of environments.

Unmanned Mine Warfare and Maritime Protection

UMIS: Proven Unmanned System for MCM Missions

Having been involved in mine warfare from more than 40 years, ECA Group proposes efficient solutions for mine counter-measure (MCM) missions. Today, over 30 navies are equipped with ECA Group solutions.

UMIS (Unmanned MCM Integrated System) is the ECA Group's brand new unmanned system able to fulfil any MCM mission. Delivered to its first customers in 2016, UMIS surpassed conventional mine-hunters in all criteria (speed of clearance, efficiency and through life cost), while keeping the crew out of the risky area.

"With conventional mine-hunters, either the ap-

ted with sonar, video and disposal charges and which operates close to targets. The operations can be managed simultaneously at distance of the minefield through appropriate communication links, thus keeping the operators in safe conditions. "It is proven that, operating in parallel, the UMIS system can divide time of mission by three or more together with a higher efficiency and clearance rate," reports VAdm (Retd) Christian Canova, FRN, Undersea Warfare Expert and former NATO Maritime Command Deputy Commander.

Flexible and scalable according to customer's requirements and environmental particularity, ECA proposes UMIS in various definitions:

- **MCM mission modules for new generation of MCM vessels.**

According to the size of MCMV and type of mission, the UMIS will be composed of

About ECA Group AUVs: They can operate in water depths above 5m, can adjust their operating depth to ensure high acoustic performance regardless of environmental conditions related to sea state or layering. And of course, they can approach mines without risk to personnel, allowing the use of very high-resolution sensors with a step change in mine classification performance.

About ECA Group USVs: The INSPECTOR USV is an essential component of UMIS. First, the USV acts as an intelligent docking system for AUVs or ROVs, allowing these vehicles to be deployed and recovered automatically, for recharging and data download, as well as fast transits. Second, the USV is the ideal intelligent gateway between the above and the underwater world. It can be equipped with satellite, radio and WiFi for above water communications. as



Maritime Surveillance and Protection System

Piracy and terrorism affect a number of countries as well as the international community through the multiple attacks of ships, offshore stations or coastal infrastructure. Over time, pirates are becoming more aggressive using more and more sophisticated arms. Their actions are along the coast as well as in open sea.

Whether it is for port, coastal or offshore infrastructures, ECA offers scalable solutions of protection made up of fixed and mobile sensors combined with powerful effectors appropriate to the type of threats to be managed.

Mobile Unmanned System for Port and Coastal Protection

The mobile harbour protection solution developed by ECA Group provides an innovative unmanned solution based on USV and UAV interaction. Thanks to their exceptional capacities at sea and in the air, as well as their agility to operate with their crews out of danger zones, these drones properly equipped with sensors and effectors detect, recognise and interpose rapidly against surface threats.

Combined with underwater sonar for diver intrusion detection (DDS), the operator gets the complete situation awareness and adapts its response for protecting coastal maritime assets such as harbours, and other maritime infrastructures.

Self-contained in a truck and trailer, this easy to deploy solution (less than two hours by two operators) provides a high level of integration between hardware sub-systems and mission and data management systems.



appropriate answers to asymmetric naval threats.

If the primary mission of the MPSV is to survey with its own sensors and crew a dedicated area with a long persistence at sea, the onboard USVs and UAVs will multiply the efficiency of this mission.

Stored on the aft deck of the MPSV55 during the transit, the USVs are deployed at the operational area. With endurance over one day at 8 knots, each USV patrols in a 10 to 20nm range around the MPSV55, and their radar and electro-optical sensors complement in real time the “eyes” of the MPSV itself. With a top speed of 40 knots, more than double of that of main patrol boat, the USV provides the MPSV with the intercept capability against light and medium pirate boats.

Training Simulators to Improve Crew's Abilities on Board of Warships and Submarines

Thanks to its 40 years of experience in naval simulation, ECA Group proposes a wide-range of simulators: warship, submarine, tactical and safety

Cubicles of Simulators for Various Types of Platforms

ECA Group simulators are organised in cubicles that are configured to represent various types of platforms such as: warships, submarines, ASW helicopter, maritime patrol aircraft, command and control centre—fleet commander or operator training centre.

As the consoles are multi-functional, a cubicle can also be configured as classroom for single operator training (all consoles as sonars, or all tactical combat stations), each trainee playing the same exercise (parallel training) or playing a joint tactical scenario but limited to a specific sensor.

The system simulates active and passive sensors, weapons, communication systems, counter-measures, tactical data link (TDL) and all the equipment that characterise a naval unit. In addition to the different warfare simulation modules, ECA Group develops specific software functionalities to improve the realism of the solution.

Multifunctional Naval Warfare Simulator for

Maritime Surveillance Solution (MSS)

Combining the long endurance at sea of the Multi-Purpose Surveillance Vessel (MPSV) and the performances of USV and UAV, the MSS offers

training simulators. All of these comprehensive solutions offer operators the right tool for training in order to improve their ability to conduct missions on board warships and submarines.



Photos: ECA Group

AAW, ASuW and ASW warfare exercises

As part of those solutions, ECA Group proposes a Multifunctional Naval Warfare Simulator (M-NWS) which enables basic and advanced training at na-

val tactical level allowing AAW, ASuW and ASW warfare exercises. The system can be furthermore used for performing training in the C2 field at operational tactical level (mission planning and execution).

The proposed system is capable of simulating all the naval warfare tactical scenarios, either limited to one single domain (air, surface, sub-surface) or multiple domains in a high realistic environment. It is also scalable according to the different training courses to be executed and following different levels such as operators, officers and unit commanders or commanding staff and operational tactical level.

350 Simulators in More Than 20 Countries

ECA Group has already delivered more than 350 simulators to more than 20 countries. At the end of 2016, ECA Group has successfully commissioned two new simulators for two Asian naval forces. ■

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