

navigation system that enables USVs to operate safely at both high and low speeds. With funding from Dstl, ASV Global has developed advanced marine autonomy software, with the agreement allowing the firm to expand the use of its software, the intellectual property of which lies with Dstl. This licencing agreement will enable ASV Global to exploit this technology across its current product range. ASV Global's Managing Director **Dan Hook** said: "Working with Dstl has enabled ASV Global to design and test advanced autonomous capabilities. This technology will enable ASV Global to access new market areas as well as continuing to solidify our position as the leading autonomous surface vehicle system supplier."

While this software has obvious applications for the marine sector, Dstl's **Dr. Philip Smith**, Ship Systems & Integrated Survivability Programme Manager, noted it could be used elsewhere: "There is a need for more efficient platforms with greater automated systems across all domains – air, land and sea – so there are many potential routes for this software."

MuMNS' the Word



MuMNS is based on a number of mine neutralisation disruptors carried by a highly manoeuvrable Remotely Operated Vehicle (ROV). (Photo: Courtesy of Saab Group)

The harsh, unforbidding environment of underwater operations becomes an even more difficult operational domain when unexploded ordnance is taken into account. In the Baltic alone, for example, where there has been no actual widespread conflict for well over half a century, naval operators and maritime safety authorities have to deal with the prospect of around 160,000 unexploded mines and similar devices, according to **Bengt Larsson**, Sales Manager for **Saab SeaEye** in the company's Dynamics business area. Speaking to *NAVAL FORCES* on the opening day of Euronaval 2016 on 17 October, Larsson explained this was part of the background to the company's development of the Multi-Shot Mine Neutralisation System, or MuMNS. The system, which maintains a 'man in the loop' at all times when deploying explosive charges, is designed to provide operators with a flexible and adaptable mine-clearing capability, with the facility to place three separate charges on three separate objects in a single mission. "Other clearance systems are limited to a single charge and, indeed, some of them are expendable, blowing themselves up with the target", Larsson told *NAVAL FORCES*, emphasising the unique nature of the MuMNS solution. A prototype has been in the water for well over three years now, according to Larsson, and tests with a potential customer have been under way since earlier this year. Demonstrations have so far taken place for naval authorities in Sweden, the Baltic nations and the United Kingdom, where the significant advantages in cutting the operational burden of long, tedious and complex counter-mine missions has been obvious, he points out. MuMNS is the result of a self-financed research and development effort within Saab, merging technologies throughout the Dynamics business with those of SeaEye, the Fareham, UK-based Saab subsidiary. **By Tim Mahon**

New Punch in the Maritime Domain



ECA Group's waterjet-powered INSPECTOR Mk2 is a commercial boat-based USV that can be equipped with LARS for launching AUVs like SEASCAN Mk2 (top), K-STER (below), and A-9M. (Photos: Courtesy of Victor M.S. Barreira)

ECA Group promotes a number of new robotic/unmanned underwater mine disposal systems. At Euronaval 2016, the company unleashed a new Unmanned Surface Vehicle (USV), to complete its family of Unmanned Maritime Systems (UMS). The new vehicle is named INSPECTOR Mk2, which, according to ECA Group officials in Le Bourget, is designed to perform detection and identification of mine threats in very shallow waters such as harbours and amphibious landing areas. The new USV can be fitted with the company's Launch and Recovery System (LARS) for deploying inspection (SEASCAN) and neutralisation (K-STER C) drones. A high data-rate radio-link enables real-time Mine Countermeasures (MCM) missions that can be supervised by operators on-board a nearby mothership.