

## Saab Multi-Shot Mine Neutralisation System (MuMNS) Deployed from USV

*Powerful, reliable and adaptable vehicle for a variety of different roles*



Saab's unique Multi-Shot Mine Neutralisation System (MuMNS) is a powerful, reliable and adaptable vehicle that can be used in a variety of different roles, including live operational mine clearance, peacetime operations against historical ordnance, mine investigation and underwater demolitions. The system is effective against a complete range of underwater targets: mines (ground, moored, floating and drifting), depth charges, torpedoes and IEDs.

A separate inspection or training round is not required for MuMNS enabling the operational team to "train as you fight" in harsh conditions including strong currents and tidal flows. This has never been more important as the introduction of unmanned and autonomous systems to Navy presents the opportunity to revolutionise MCM warfare.

[SaabMuMNS for Complete Underwater Target Effectiveness](#)

## U.S. Navy Orders More REMUS Marine Robotic Systems

*Contract extension of US\$52.3 million for the MK 18 (REMUS) family of Unmanned Underwater Vehicle (UUV) systems*

This modification is to provide additional fleet fielded assets, to provide expanded capacity. This modification will allow procurement of additional MK 18 Systems, individual UUVs to replace lost or damaged items, and parts kits needed to support repairs at the organisational level. The MK 18 system consists of Hydroid REMUS UUVs and associated auxiliary equipment. These UUVs can be used singularly, or in groups to search in the enemy rear areas for threat objects.

New Generation Hydroid REMUS 100 Autonomous Underwater Vehicles have recently completed sea trials at Cape Cod Bay, Massachusetts, confirming a significant new capability for International Hydrographic Organization (IHO) Order 1 survey that will soon be operated by the Royal Australian Navy. The survey capability significantly exceeds the capability that would be required for MCM operations.



[New Generation REMUS for US Navy](#)

## Pacific 2019 and Teledyne Marine Technology Workshop



October was a busy month for the BlueZone team meeting with our major customer, the Royal Australian Navy, at Pacific 2019 in Sydney and at the same time learning about new products from our major supplier at the Teledyne Marine Technology Workshop (TMTW) in San Diego.

At Pacific 2019 the BlueZone exhibit focussed on Unmanned Maritime Systems and Marine Robotics for Mine Countermeasures (MCM) and other applications for demanding customers operating in harsh environments:

- MCM Covert Search: Autonomous Underwater Vehicle capability for covert search
- MCM Rapid Search: Advanced Mine Hunting Multi-Beam Side Scan Sonar for rapid search with real-time data feedback
- MCM Disposal: Multi-shot mine neutralisation systems for assured mine destruction in all weather and sea conditions
- Marine Robotics Product Solutions: MARTAC Unmanned Surface Vehicles for innovative performance in the marine environment



At TMTW the keynote address was by Oliver Steeds who spoke about the 'First Descent: Indian Ocean' series of missions undertaken by the Nekton partnership. Teledyne Marine is the Official Subsea Technology Partner for the Nekton partnership, providing the widest breadth of marine technology in the industry, now available through a single supplier.

## [Unmanned Maritime Systems and Marine Robotics](#)

## Subsea Power Enabling New Autonomous Technology Applications

### New Technologies Provide New Options for Subsea Energy

The 2019 Autonomous Underwater Technology conference was a “sell-out” attendance in Perth with a keynote address provided by Commodore Chris Smith and Commander Paul Hornsby reviewing the Royal Australian Navy’s transition toward Maritime Autonomous Systems (MAS) for naval operations – this change is underway throughout the world’s militaries, and the application of MAS today is already shaping future warfare.

BlueZone CTO, Darren Burrowes, presented a paper entitled “Subsea Power Enabling New Autonomous Technology Applications”. The paper provided an overview of new, existing and developing energy technologies that could provide new options for powering subsea resident Unmanned Underwater Vehicles (UUV). In the industrial context this provides the opportunity to reduce the costs and risks associated with deploying support ships for UUV launch and recovery, and in the military context it provides the advantage of long-term covert operations in areas of interest.



## [Power for Subsea Resident UUV](#)

## Defence Reserves Support Visit



BlueZone Group was pleased to participate in a Defence Reserves Support Visit to RAAF Williamtown.

BlueZone technicians, Paul Montgomery and Hamish McInnes, gained useful insight into both the workings of RAAF Williamtown and Defence Reserves Support. The tour included a Defence Reserves Support presentation, address by Group Captain Peter Cluff, a visit to 2 Squadron, and tour of the new Air Traffic Control Tower and Williamtown Base. Employer Support Award presentations were also made with lunch at the Sergeants mess.

[Read More](#)

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## Events

Please join BlueZone Group at these upcoming events!

We are keen to talk to you about how innovative new technologies offered by BlueZone can solve issues for your challenges in Australia's oceans, coastal seas, and rivers.

We are happy to answer your questions and arrange on-site demonstrations and further discussion if required.

## 5th SIA Submarine Science, Technology and Engineering Conference (SubSTEC5) – 18 to 21 November – Fremantle

*Theme: 'Innovation and Investment in the Sub-sea Environment'*

This year's SubSTEC5 Conference will be held with the support of the Institute of Marine Engineering, Science and Technology (IMarEST). BlueZone CTO, Darren Burrowes, will present on "Methods and technologies for improving the performance of submarine launched bathymetric probes".

[Read More](#)

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## New Products & Services



## Lithium Battery Pack for Workhorse ADCP

Workhorse Lithium Battery Packs triple the duration of your ADCP deployments, compared with RDI standard alkaline batteries. The Battery Packs can be used in Workhorse Sentinel, Workhorse Long Ranger and Workhorse Quartermaster. The packs can be used interchangeably in any of these instruments.

The packs are too large to fit inside the Long Ranger battery holders, but they can install directly inside the case without the holders. All you need to add is a plate on the end to hold them in place. This works well because the lithium battery packs are light. They are only 60% of the weight of an alkaline pack.

BlueZone is importing lithium battery packs for stock and immediate distribution with expected availability in January 2020.

### [Lithium Battery Packs for Extended ADCP Duration](#)

## OG05 Teledyne Reson SeaBat® T20P Deployment & Integration Kit

*Fast & Easy Deployment of SeaBat® T20P Multi-Beam Echo Sounder*

The OG05 Teledyne Reson T20P Integration Kit provides for fast deployment and easy integration of the SeaBat® T20P Multi Beam Echo Sounder (MBES) into small boats or other survey vessels.

The complete OG05 Teledyne Reson T20P Integration Kit is re-packaged from multiple shipping boxes to just four rugged and transportable “Pelican” type cases. Each case weighs less than 32kg (70lb) and is fitted with wheels for easy manoeuvring through airports. A survey crew can deploy on commercial airlines using standard baggage allowances for T20P transport. The crew arrives at the same time as the equipment without complicated shipment arrangements.



### [The T20P – Now Truly Portable](#)

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