

ALLY

VIDEORAY AS LAUNCHED THE LATEST VEHICLE IN ITS MISSION SPECIALIST RANGE. IT HAS MUCH OF THE DEFENDER'S CAPABILITY BUT AT A MUCH LOWER PRICE POINT



In 2023, VideoRay announced that it planned to discontinue the production of its highly popular, but outdated Pro 4 ROV. The company had compiled a road map of where it saw its future and the model no longer fit into this vision.

This caused alarm, particularly from the pipeline and tank inspection market sector.

Responding to this, VideoRay has now released its latest vehicle, the Mission Specialist Ally. At around 24ins in length and 12in diameter, it is compact, but still offers the

versatility required for operations. It has two float options- a rounded float for tasks requiring movement in tight spaces, and a squared float for handling heavier payloads and subsea batteries.

"One difference between the new Ally and the other mission specialist vehicles is the number of thrusters," said Marcus Kolb, Chief Product & Innovation Officer.

"The larger Defender has four horizontally vectored thrusters and three vertical thrusters. When designing the Pro 5, the company opted for a much simpler arrangement of two vectored and one vertical thruster.

With the Ally, however, the design team reasoned that if it was to have the necessary lifting capacity and high manoeuvrability, it would require a fourth thruster.

"Interestingly, we use exactly the same thruster modules in all of our systems, said Kolb. "If a company already owns a mission specialist vehicle, they will recognise that the thruster, topside control system, and AHRS are all the same. The Ally shares all the same modules as the Defender for 100% cross-compatibility - an entire family of systems running off the same backbone.

"Of the four thrusters, the two horizontal units can power the vehicle at a speed of 4kts while the other pair can move the Ally at 0.8 meters per second vertically. Because of the vectored angle of the vertical thrusters, these can also achieve a 1kt lateral movement capability. This was something that the Pro 5 was unable to do."

"We discovered that when moving laterally, the hull form and tangential thruster means that sometimes

MODULARITY

"The keynote of the Mission Specialist design is its modularity," said Kolb. "This means, that if the system experiences a technical issue, only very rarely does the vehicle have to be returned to the factory for any kind of maintenance. Most work can be carried out by the operators while still in the field.

A common cause for any underwater vehicle not working is thruster failure. In the Ally, the thrusters are held securely with a pair of plastic mechanical fasteners and so in order to replace them, the operator simply has to undo the two screws, unplug the thruster and insert the replacement.

By simply copying the serial number of the thruster into the control software and its location within the vehicle, the software automatically remaps it to that position.

This means that the time taken to replace the thruster and have the vehicle back in operation is around five minutes.

The Ally with its flotation top removed



the body is susceptible to roll. It soon corrects itself, but during this sideways roll, it does mean that the cameras may be temporarily tilted," said Kolb.

"We have now eradicated that problem because our new 4K Ultra Smart camera is digitally stabilised so that the image will stay level even though the vehicle experiences movement.

"All Ally vehicles will be delivered with our new smart camera, which has a resolution of 4.7K. The camera also has inbuilt intelligence which will give us give more processing power on the vehicle.

Below the camera is the sonar.

"It is configured with the Oculus 750 as standard but the frame is already designed to mount the Tritech 702 or 1200ik sonars as well as others down the road.

"Another difference between the Ally and the Pro 5 is the former is designed to carry a WaterLinked DVL for positioning and station keeping.

"The other novel feature about the Ally is the lights are no longer fixed into it. They can be moved about and oriented in multiple positions to provide the best viewing performance on the camera. At the front is the Reach Robotics Alpha manipulator which comes as an option.

"When a large ROV picks up a heavy object, its own mass and its multiple thrusters are often



sufficient to ensure the vehicle does not destabilise.

"Smaller vehicles have a different response to picking up a weight with a front facing manipulator- it tips the vehicle and the thrusters from the horizontal.

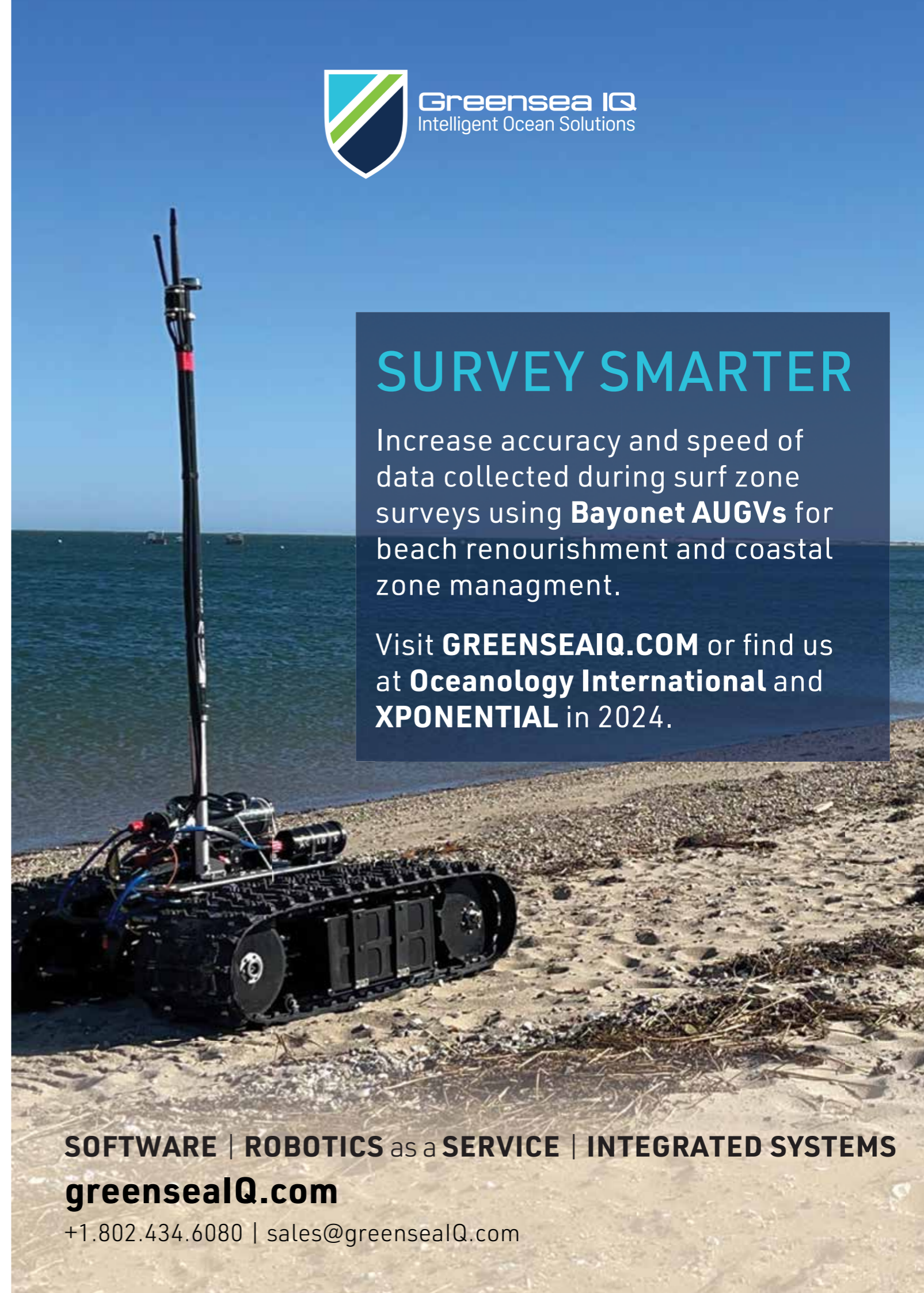
"As soon as Ally picks up a point load greater than 3lbs, however, the manipulator is free to swing from the horizontal to the vertical. This effectively repositions the load below the thrusters to provide stability.

"Instead of the ROV fighting to balance itself, it can focus on exerting maximum lift. The Ally can fly around carrying weight of around 21lbs.

"It is also possible to lock the manipulator up or at a 15 degree down angle. This is achieved from locking pins located near the manipulator mount, along the bottom edge of the vehicle.

SPECIFICATIONS

Length	64.1cm
Diameter	30.5 cm
Depth Rating:	300 m (984 ft)
Weight in Air:	13.6 kg (301b)- No Payloads
Manipulator:	90- 180deg Spring Loaded
Propulsion	2 Horizontal Thrusters: 16.8 kg / 37 lbs, 4 Knots
Thrusters	2 Vertical: 9.5 kg / 21 lbs (lift) 1.5 Knots
Lateral Thrust:	6.1 kg / 13.5 lbs, 1 Knot
Subsea Processor:	NVIDIA
Image Quality:	12MP Resolution (4.7k) 150ms Latency Up to 60 fps 3.5- 15Mbps Bandwidth
Features	1 TB SSD Auto-White Balance Electronic Focus Image Unwarp Digital Pan, Tilt



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