



Jul 29, 2022 13:30 BST

Greensea Systems Inc. partners with sister company Armach Robotics and Maryland's Maritime Environmental Resource Center (MERC) leading to contract award from US Navy's Office of Naval Research

This release was originally issued on 27th July 2022 by Armach Robotics, a company launched in November 2021 by marine software pioneer Greensea Systems, Inc. Both companies were merged into Greensea IQ on 1st

September 2023. The content remains relevant and factual.

Richmond, VT, Wednesday 27th July 2022 – Marine Software Pioneer, Greensea Systems Inc. has been awarded a contract for a two-year Phase II Option Period by the US Navy's Office of Naval Research to continue the technology development for an Autonomous Hull Cleaning Vehicle. This is a continuation of the work that Greensea has been conducting through a Small Business Technology Transfer (STTR) program since 2018.

“The objective of this STTR is to develop a highly autonomous robotic system for proactively cleaning ship hulls, that can be operated easily and cost effectively with minimal supervision. The Navy is investigating this technology as a means to keep ships clear of biofouling in an environmentally sustainable way, ensuring fleet readiness and ultimately reducing hull related maintenance costs.” said Karl Lander, Armach Robotics' Director of Regulatory Compliance and Outreach.

He went on to say, “The focus of the earlier Phase I and II efforts were to design, characterize, develop and test a navigation system that can provide the required accurate on-hull navigation. The focus of the newly awarded option period is to continue to refine the navigation and autonomy technology, demonstrate the capabilities through proactive cleaning of a vessel of significance to the US Navy, and deliver a complete data package for the cleaning system.”

A final requirement of any STTR program is to demonstrate the commercial viability of the technology, in addition to demonstrating its value to the US Navy. To achieve this, Greensea has developed a novel, hull-relative positioning system for use in a hull crawling robot designed and built by Armach Robotics. Using a combination of inertial and feature based sonar navigation, the Armach hull cleaning robot will be capable of determining and continually updating its position on the ship's hull with extreme accuracy, allowing Greensea's autonomy capabilities to free the operator from driving the robot.

To achieve the goals of Phase II, Greensea has partnered with the University of Maryland Centre for Environmental Science's Maritime Environmental Resource Center (MERC) and Armach Robotics. MERC brings significant

expertise in biofouling control methods and will provide critical support in independent, scientific assessments of the robots' navigation, autonomy and cleaning technologies efficiency and efficacy. With Armach Robotics, a sister company of Greensea, providing the robots and robot operators to conduct field operations throughout the period of performance, Greensea will continue to focus on the navigation and autonomy refinement.

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Image credit: Armach Robotics

About Greensea Systems

Greensea Systems Inc. was founded in 2006 to design and create a commercially available open architecture software platform to break down siloed technology in the AUV and ROV environment. The resultant open architecture software, OPENSEA® with its a central library software suite, is the most powerfully integrated control and navigation technology available in the market today that is easy to use, easy to maintain, robust, and portable.

The company works with leading OEMs throughout the world providing the

OPENSEA® platform on hundreds of installations to the offshore and military industries.

To learn more about Greensea, visit www.greensea.com or call +1.802.434.6080

About Armach Robotics

Incorporated in November 2021 as a spin-out company from Greensea Systems Inc., Armach offers shipowners a proactive, autonomous in-water robotic cleaning solution. Our service simply offers shipowners a constantly clean hull and following each cleaning operation provides an accurate georeferenced hull condition survey.

The technology is not coating specific and is based on a state-of-the-art system, powered by Greensea's autonomy, intelligence and data fusion technologies. Our business model provides resident cleaning robots to ships, ports, harbours and established service providers on a monthly subscription basis.

www.armachrobotics.com