

Radmantis and Berkeley Marine Robotics Partner to Enhance Underwater Threat Detection and Drone Swarm Communication

BlueTech partnership created to enhance capabilities of marine surveillance and threat detection using AI, laser communication, and autonomous drone swarms.

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EINPresswire.com/ -- Midwest BlueTech startup [Radmantis](#) (RM) and underwater technology venture studio [Berkeley Marine Robotics](#) (BMR) formally announce a partnership in building capacities for subsurface threat detection, underwater intelligence, and persistent marine surveillance.



Radmantis Co-Founder, Dr. Robert Huber installing wiring components in a proprietary marine imaging device.

Underwater environments present unique challenges to monitoring, imaging, communication, and positioning systems. As electromagnetic waves are readily absorbed into water, the lack of traditional wireless technology severely limits multiple maritime sectors - naval defense, coastal surveillance, energy infrastructure, ship transport, aquaculture, and port environmental conservation.

Merging BMR's capabilities in subsurface autonomous swarm navigation and laser communication with RM's AI-based edge processing for advanced imaging, the companies will expand on a patented suite of tools, transform aquatic wireless communication and subsurface data collection, and advance anomaly detection in complex biological and manmade scenes.

Proprietary photonic technologies are utilized for both communication and 3D positioning, addressing bandwidth constraints of underwater data transmission. Each uncrewed vehicle has enhanced imaging capabilities, performing robust machine learning inferencing on the edge, and restricting communication to critical network elements. The outcome is a drone swarm with the

ability to coordinate movements and investigative actions by its individual members.

"Using lasers to create wireless mesh networks, drone swarms will now have the ability to hold targeted patterns and shapes, thus making a significant leap forward in how the industry will approach underwater threat detection and environmental assessment," said Sushil Tyagi, board chair of Berkeley Marine Robotics. "Advances in subsurface situational awareness and underwater threat intelligence generate novel opportunities to effectively prepare for, assess, and counter dangers and to devise successful strategies for resilient responses to risks. "

Dr. Moira van Staaden, Co-Founder of Radmantis, echoed enthusiasm, stating, "The underwater environment is one of the last great frontiers, and the ability to assess it with precision and efficiency is critical to a sustainable future. Our partnership lets us address both known and emerging challenges that the underwater world presents, allowing us to protect critical marine infrastructure, strengthen maritime security, and enhance environmental conservation."

The founders of both companies, who met as members of SeaAhead and the New England Aquarium's BlueSwell Cohort III, bring a wealth of expertise to the partnership. Their recognition of the synergies that arise when advanced sensor capabilities are deployed on a mobile platform that can physically navigate denied environments instills confidence in the potential of this collaboration.

Radmantis is an early-stage bluetech company that combines expertise in electronics, Big Data processing, and the Life Sciences to advance innovative solutions for sustainable aquaculture and aquatic resource protection. Expertise in state-of-the-art imaging provides the needed raw inputs to perform subsequent manipulative workflows across networks of connected devices.



Sushil Tyagi of Berkeley Marine Robotics at US Navy Fathomwerx pool with his swarm UAVs and underwater laser comm system for Coastal Trident ANTX (Advanced Naval Technology Experiments) '23



Radmantis and Berkeley Marine Robotics Logos

Berkeley Marine Robotics is a deep-tech venture studio specializing in R&D on dual-use underwater technology solutions for maritime commerce, naval defense, and sustainability impact. Their R&D initiatives have won NSF SBIR grants and support from blue-tech accelerators (e.g., SeaAhead BlueSwell, Scripps Startblue) and global industry organizations (e.g., TMA BlueTech, World Ocean Council).

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