



# EU MISSIONS

RESTORE OUR OCEAN AND WATERS



## SeaClear2.0 Robotic System makes waves in Japan

SeaClear2.0 proudly announces a major success in the project's operations. In September 2024, following 18 months of constructive discussions, SeaClear2.0 project partner, Subsea Tech ([www.subsea-tech.com](http://www.subsea-tech.com)), based in Marseille, France, was awarded a contract by a Japanese company specialising in marine environmental and geophysical surveys, for the manufacture of a SeaCAT-class unmanned surface vessel (USV). SeaCAT is a 6.8m long, 1.2T vessel designed by Subsea Tech that serves as the system hub for the SeaClear2.0 robotic system.

Extensive discussions with the Japanese customer, led to the development of an optimal solution, both high-performance and cost-effective, that meets the end-user requirements. An uncrewed vessel highly capable with a range of sensors such as a multibeam sonar for bathymetry, a side-scan sonar for seabed search, a sub-bottom profiling sonar for substrate imaging, a current profiler for water velocity measurements and a towing frame and winch for a magnetometer. Finally, the vessel will also be able to embark a mini-Tortuga, a class inspection ROV, also manufactured by Subsea Tech, equipped with a Hydro300 photogrammetry sensor to acquire millimetric 3D models of the underwater environment.

This version of SeaCAT has largely benefited from the developments carried out within the framework of the SeaClear ([www.seaclear-project.eu](http://www.seaclear-project.eu)) and SeaClear2.0 projects such as the Tortuga ROV launch and recovery system (LARS), the towing frame and its associated winch, the dynamic positioning capabilities with the bow thrusters and more generally from the numerous sea campaigns whose feedback has helped to improve the reliability and operability of the overall system.

This all-in-one survey solution is quite unique, especially on board an unmanned vessel. It will allow campaigns of up to 7 days at sea without refuelling or reconfiguration of the sensor layout. The vessel will have a fully autonomous navigation system and will be supervised by Starlink satellite communication. Its high-end obstacle avoidance system (OAS) will manage automatic rerouting when crossing other vessels in accordance with international COLREG collision regulations.

Halfway through the SeaClear2.0 project implementation, SeaCAT's sale marks one of the project's major successes. SeaClear2.0 is now sailing at full speed towards the first piloting of the robotic system in Hamburg, Germany, scheduled for May 2025. The first of a series of pilots and demonstrations in 6 different locations across the Mediterranean, aiming to showcase the system's ability to operate at diverse locations and underwater conditions; and its marketability as a pioneering and highly tailorable solution for marine operations, including seabed and floating litter collection.

SeaClear2.0 is co-funded by the European Union through the Horizon Europe Programme and is among the cross-cutting projects supporting the objectives of the EU MISSION RESTORE OUR OCEAN AND WATERS, to restore, protect, and preserve the health of our ocean, seas, and waters by 2030. SeaClear2.0 builds upon the pioneering work of the SeaClear project, which was co-funded by the Horizon 2020 programme and ended in December 2023. SeaClear2.0 offers a novel solution for the restoration and protection of our ocean and waters from marine litter through a combination of technological and social innovations. The SeaClear2.0 system comprises a team of autonomous and heterogeneous robots engineered and trained to work collaboratively for in-situ mapping, detection, classification, and collection of marine litter from the seafloor and sea surface. Capable of operating at depths of up to 100 metres and lifting items weighing up to 250 kilograms, SeaClear2.0's pioneering technological solutions represent a paradigm shift in ocean restoration.

Learn more about SeaClear2.0: [www.seaclear2.eu](http://www.seaclear2.eu)

Robots for the Ocean. Together we SeaClear2.0.

