

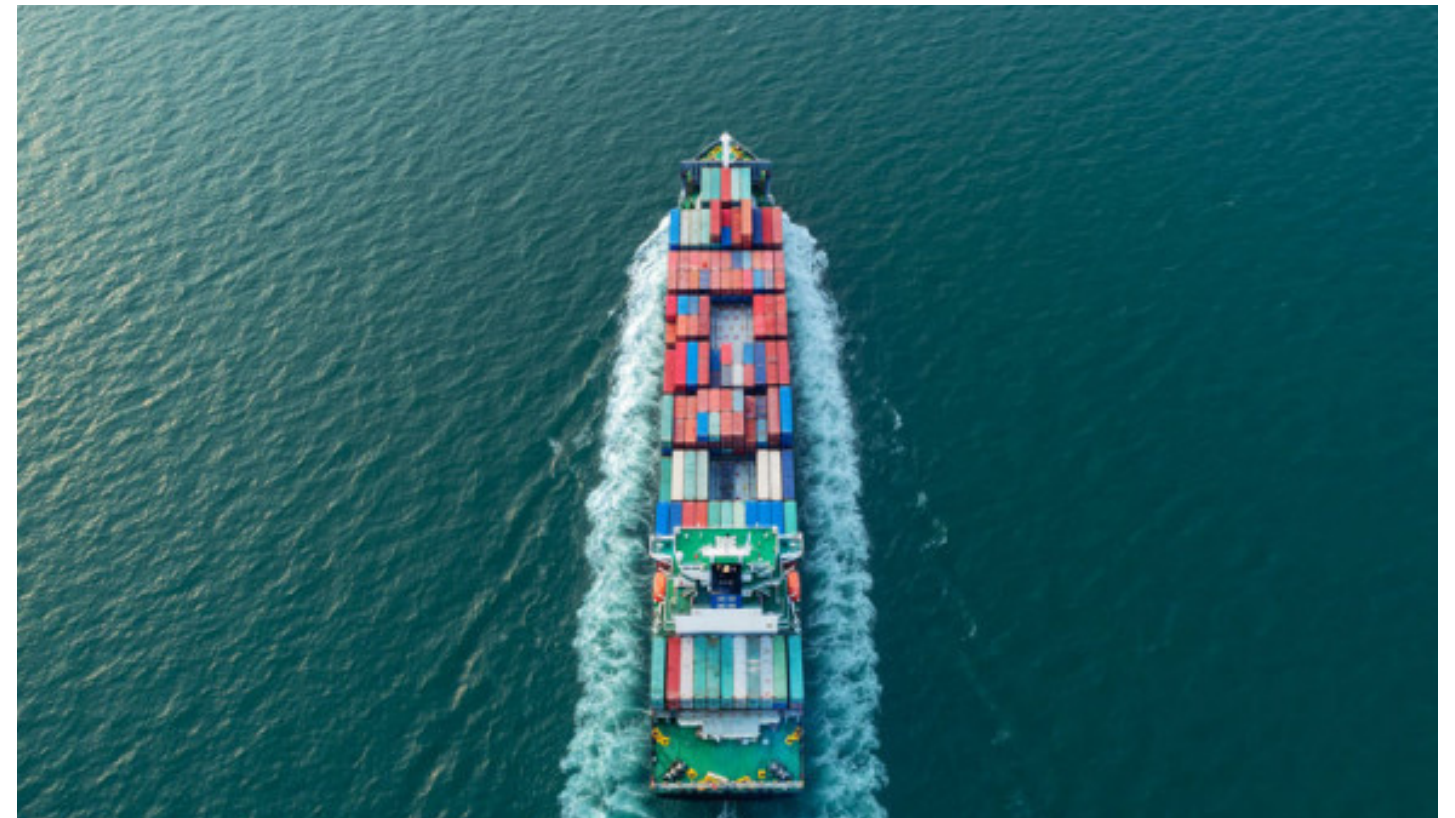
# cooperAtion unDerwater foR efflcient operATions vehlCles – ADRIATIC

## About ADRIATIC

ADRIATIC aims to develop a vendor-neutral software framework for mission planning and simulation of cooperative autonomous marine vehicles. This solution will integrate the whole mission loop (Autonomous Navigation - Environment Recognition and Sensing - Water/Underwater Communications) while expanding the functionalities of existing open-source libraries and APIs focused on specific aspects of UUV/USV operation, such as vessel dynamics, guidance, navigation (UUV Simulator, UWSim) or underwater image processing (UNDROIP).

A simulation environment will be used to develop and verify the task planning navigation and the control of the system. Simulation will provide a flexible test environment and demonstrate different scenarios and vehicles. This approach will remove the restrictions of having limited access to hardware and will increase software reusability, lowering the existing entrance barrier to UUV/USV operation.

ADRIATIC combines the complementary efforts of five organisations from three European countries and adopts a transdisciplinary approach in developing a comprehensive smart system for monitoring, inspection, intervention and path planning/guidance methodologies for marine vehicles (AUVs/ROVs).



**EU Budget: €1.479M**

**Duration: 36 months**

**Consortium: BEIA, Elkon, OBSS Teknoloji, Norwegian University Science and Technology Computer Science, uSEA Corporate**

## Objective

The primary goal of the ADRIATIC project is to expand the use of underwater vehicles (AUVs, ROVs) to facilitate the conception, planning and execution of maritime and offshore operations and missions. This will reduce the operational costs, increase the safety of tasks and of involved individuals, and expand the offshore sector. To that extent, an integrated software platform for a new generation of autonomous maritime and underwater operations will be developed as a set of components, adopted and incorporated into the current generation of maritime and underwater vehicles in order to improve autonomy, robustness, cost-effectiveness, and reliability of offshore operations, specifically through vehicles cooperation.

## Results

- R1** A distributed, integrated and coordinated vendor-neutral software framework that enable UUVs, from different manufactures, to share/integrate functionalities/robot features in a transparent way;
- R2** A distributed set of intelligent components for sensing, decision-making and environment recognition capable of assisting the vehicles in characterizing the working environment;
- R3** Improved communication technologies as a base of cooperation and information exchange among vehicles, as well as the sensing (vision and acoustic) technologies
- R4** Enhanced control and management services, to assist in the execution of mission's tasks, entrusting the ADRIATIC platform with creating, monitoring, controlling and managing the mission's activities in real-time.
- R5** A simulation environment to develop and verify the task planning, navigation and system control, and where the software modules can be integrated and mission scenarios can be tested and demonstrated.

## Consortium

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