

BRIGANTINE

Chemico-physical and multispectral Data fusion
for Adriatic sea monitoring
by autonomous vessel

D.1.5.2 Participation to Aquafarm & Workshop for Aquaculture stockholders

Project Acronym	BRIGANTINE
Project ID Number	ITHR0200237
Project Title	Chemico-physical and multispectral Data fusion for Adriatic sea monitoring by autonomous vessel
Priority Axis	1 - Sustainable growth in the blue economy
Specific Objective	1.1 - Developing and enhancing research and innovation capacities and the uptake of advanced technologies
Work Package Number	WP1
Work Package Title	Develop jointly solutions: the autonomous monitoring
Activity Number	1.5
Activity Title	Communication campaign about BRIGANTINE'project
Partner in Charge	PP1_UniUD
Partners involved	PP1, PP2
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Summary

The BRIGANTINE project participated in AQUAFARM 2025, held in Pordenone (Italy) on 12–13 February 2025, one of the leading international events dedicated to aquaculture, shellfish farming and sustainable fisheries. The event attracted approximately 2,400 visitors, 110 exhibitors, and featured more than 150 speakers across 21 scientific sessions.

During the conference, the BRIGANTINE consortium presented its innovative approach to monitoring Adriatic coastal ecosystems through the integration of chemico-physical sensors, multispectral data and Autonomous Surface Vessels (ASVs). The presentation highlighted the ecological and socio-economic importance of marine macrophytes, the challenges posed by unsustainable aquaculture practices, and the role of advanced monitoring technologies in supporting ecosystem conservation and sustainable coastal management.

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Participation in AQUAFARM also provided an excellent opportunity to showcase the BRIGANTINE monitoring technology to potential end users, including aquaculture operators, environmental agencies, researchers, technology providers and public authorities. The event facilitated direct interaction with stakeholders, enabling the consortium to collect valuable feedback, promote future technology uptake and strengthen networking for the future exploitation of the project's results.

Overall, the event significantly contributed to the dissemination of BRIGANTINE's objectives and preliminary results while increasing the visibility of both the project and the Interreg VI-A Italy–Croatia Programme.

BRIGANTINE at AQUAFARM 2025

The BRIGANTINE – Chemico-physical and multispectral data fusion for Adriatic Sea monitoring by autonomous vessel project, funded under the Interreg VI-A Italy–Croatia Programme, participated in AQUAFARM 2025, Italy's leading international exhibition and conference dedicated to aquaculture, shellfish farming, algaculture and sustainable fisheries. The event took place at Pordenone Fiere (Italy) on 12–13 February 2025.

Participation in AQUAFARM 2025 represented a key dissemination opportunity for the project, providing an excellent platform to present BRIGANTINE's objectives, activities and technological developments to researchers, companies, public authorities, aquaculture professionals and other stakeholders interested in marine environmental monitoring and sustainable blue growth.

AQUAFARM 2025

The 2025 edition confirmed AQUAFARM as one of the most important events for the aquaculture sector in Southern Europe. The exhibition attracted approximately 2,400 visitors, representing a 30% increase compared with the previous edition.

A total of 110 exhibitors participated in the event, with approximately one-third coming from abroad, while 25% of all visitors were international participants, particularly from the Adriatic and Balkan regions. The scientific programme included 21 conferences featuring more than 150 speakers, covering topics such as sustainable aquaculture, technological innovation, circular economy, decarbonisation, marine monitoring and environmental management.

Within this international framework, BRIGANTINE contributed to the scientific programme by presenting its innovative approach to monitoring coastal ecosystems through autonomous marine technologies.

BRIGANTINE Presentation

BRIGANTINE was presented on 12 February 2025 during the session dedicated to funded research projects.

The presentation, entitled "Marine macrophytes of the Northern Adriatic: their socio-economic value and innovative tools for their monitoring", introduced the project's objectives and described the development of an innovative monitoring system based on the integration of chemico-physical and multispectral data collected by Autonomous Surface Vessels (ASVs).

The speakers highlighted the ecological importance of marine macrophytes as key indicators of the environmental status of coastal ecosystems and emphasized the need for efficient monitoring strategies to support ecosystem conservation and sustainable coastal management.

Particular attention was devoted to the ecological and socio-economic value of marine macroalgae, which play a fundamental role in oxygen production, carbon sequestration, habitat formation and biodiversity conservation. Their importance for applications in the food, pharmaceutical, cosmetic and biotechnology sectors was also discussed. Furthermore, macroalgal forests were presented as high-value marine ecosystems protected under European environmental policies due to their ecological significance.

The presentation also addressed the potential impacts of unsustainable aquaculture practices on benthic habitats, illustrating how inappropriate farming methods may negatively affect macroalgal forests and seagrass meadows. Finally, innovative approaches such as seaweed aquaculture and Integrated Multi-Trophic Aquaculture (IMTA) were presented as promising strategies to enhance environmental sustainability within the aquaculture sector.

Speakers

The BRIGANTINE session was coordinated by Prof. Sabina Susmel, Project Coordinator of BRIGANTINE at the University of Udine.

The following researchers also contributed to the presentation:

Prof. Fabio Rindi – Università Politecnica delle Marche (Polytechnic University of Marche);

Paolo Cingano – University of Udine;

Marco Vuerich – University of Udine.

Outcomes

Participation in AQUAFARM 2025 contributed to achieving several dissemination objectives:

presenting BRIGANTINE's objectives and initial results to a highly specialised international audience;
promoting innovative monitoring technologies based on Autonomous Surface Vessels, multispectral imaging and environmental sensors;

strengthening collaboration with researchers, companies, public institutions and stakeholders operating in the aquaculture and marine sectors;
increasing the visibility of the Interreg VI-A Italy–Croatia Programme and its contribution to cross-border scientific cooperation;
creating opportunities for future scientific collaborations and technology transfer in the field of marine environmental monitoring.

Conclusions

Participation in AQUAFARM 2025 represented an important dissemination and networking activity for the BRIGANTINE project. The high attendance, international profile of the event and quality of the scientific programme provided an excellent opportunity to showcase the project's innovative monitoring solutions and promote dialogue with stakeholders from academia, industry and public authorities.

The event confirmed the growing interest in autonomous marine platforms, remote sensing technologies and integrated environmental monitoring systems as essential tools for protecting coastal ecosystems and supporting the sustainable development of the Adriatic Sea. BRIGANTINE will continue to contribute to these objectives through the development of innovative technologies for marine environmental monitoring and ecosystem conservation.