SEADEEP advances digital and energy-efficient solutions for Europe's aquatic food sector

The new EU funded project, SEADEEP (Sustainable Energy Advancement through Digitalisation for Energy Efficient Production in Aquaculture and Fisheries), has officially launched. The project aims to accelerate the transition toward sustainable, low-carbon aquatic food production systems by deploying advanced digital solutions and energy-efficient technologies.

Aquaculture and fisheries are essential to global food security, yet they face increasing pressure to reduce environmental impact, improve energy efficiency, and remain economically viable. High energy consumption, operational inefficiencies and limited uptake of digital technologies continue to slow down the sector's transition to more sustainable practices. The newly launched SEADEEP project directly addresses these challenges by supporting the sector's shift toward integrated digitalisation and energy optimisation, enabling producers to reduce emissions while maintaining productivity and competitiveness. The project will test and deliver 16 innovative solutions (TRL 6-8) across nine demonstration sites across the North Sea and Baltic Sea basins, ensuring that these innovations are scalable, adaptable and directly relevant to current industry needs for:

- Macroalgae farming: one large-scale energy-efficient solution and two advanced digital solutions to optimise production and resource use.
- Recirculating aquaculture systems (RAS): one large-scale energy-efficient installation alongside eight digital solutions to enhance monitoring, control and efficiency.
- Small-scale fishing fleets: four digital solutions aimed at improving operational efficiency, energy use and decision-making at sea.

As part of the SEADEEP consortium, DYNAMITA will take part in developing a Digital Twin for modeling fish growth and water quality in RAS applications. Through this project, we aim to introduce the versatility of SUMO to another interesting market.

The project is funded by the European Union under the call "HORIZON-MISS-2025-03-OCEAN-03: Digital technologies and energy transition in fisheries and/or aquaculture", with project number 101296119. It brings together 30 partners from 11 countries. The research and innovation partners, including IVL Swedish Environmental Research Institute (Coordinator), Norwegian Institute for Water Research (NIVA), Fraunhofer, Uniwersytet Morski w Gdyni, AZTI, and Photonics Bretagne, drive scientific excellence, system design and validation activities across the project. The networks and industry

platforms, including Submariner Network for Blue Growth, Food & Bio Cluster Denmark, Eurofish International Organisation and the European Aquaculture Technology and Innovation Platform (EATiP), support stakeholder engagement, policy alignment as well as the dissemination and uptake of project results across Europe. The industry, technology providers and demonstration partners, including Oceanloop, SmögenLax, Danish Salmon, Ocean Forest (Lerøy), Nordic SeaFarm, Norfolk Seaweed, Vetik, Szkuner Sp. z o.o. (Port of Władysławowo), FSK-PO, Aquaticode, OxyGuard International A/S, Kesacon AB, Infrasonik, VisionAir, YellowScan, Erwin Sander Elektroapparatebau, Kytos, Dynamita, Solution Seeker AS and Flonergia are responsible for developing, deploying and validating solutions in real-world aquaculture and fisheries environments.

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