

Iliad Digital Twins of the Ocean - for fisheries management

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Location:	Online
Date:	October 15 2025



Project details

Title: Integrated Digital Framework for Comprehensive Maritime Data and Information Services (Iliad)

Total amount: €18,750,000

Duration: 3.5 years

Lead partner: Intrasoftware (Belgium)

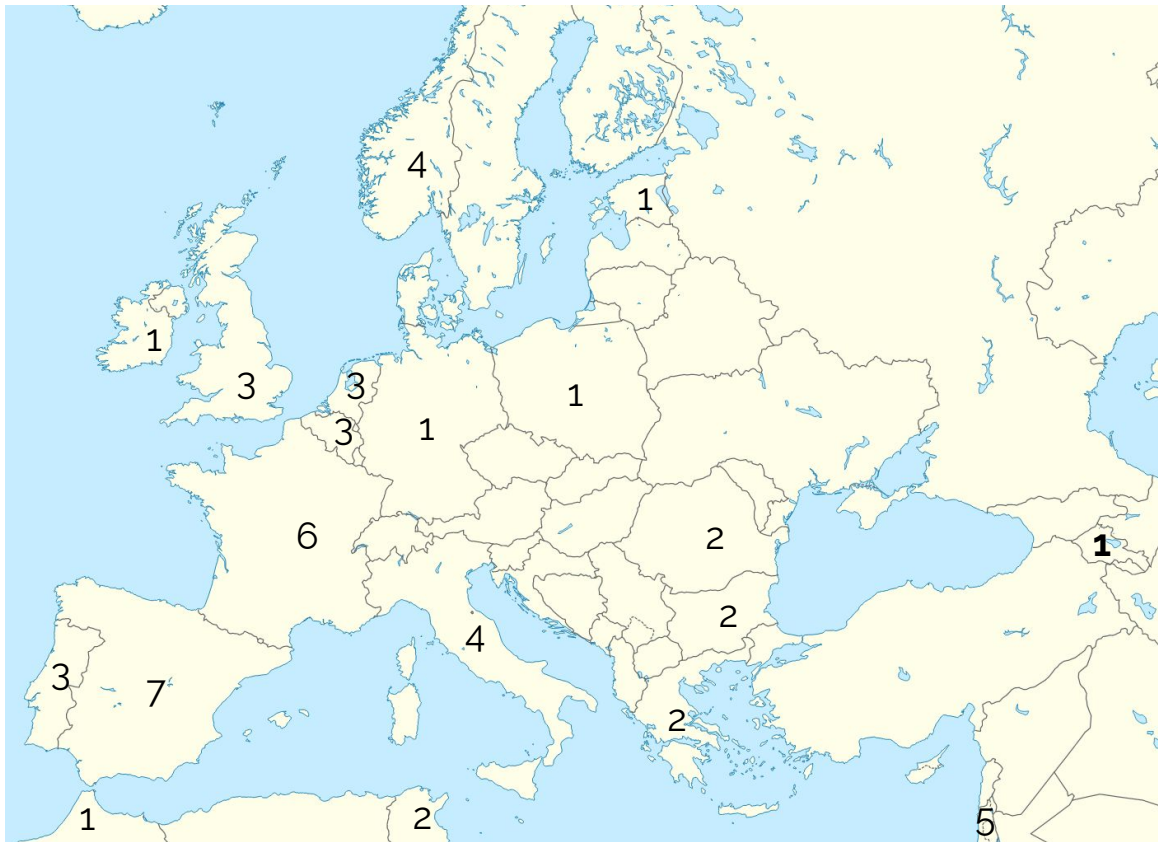
No. of partners: 56

Industry: 12

End-users: 8

Research and Tech Dev: 26

Other: 10



Iliad's Digital Twin of the Ocean provides a virtual environment representing the ocean, capable of running complex, predictive management scenarios. The innovative system integrates across discipline, sensors, models, and digital infrastructures.

A collage of four images: top-left shows an offshore oil rig in a stormy sea; top-right shows a diagram of model scales from Global to Local; bottom-left shows a futuristic underwater scene with a yellow submarine and various sensors; bottom-right shows a hand interacting with a digital globe network.

Interoperable, data-intensive, and cost-effective Digital Twins of the Ocean



The Iliad Concept & Approach



The ocean is vast and complex. It consists of geophysical, biological and numerous interaction between its components and human activity.



To reflect this complexity of **European digital twin of the ocean**, the EU, its members and associates are developing a core infrastructure, Modelling capacity and implementations in local and sector /thematic twins. **This ecosystem of twins and its components are referred to as the European digital ocean twin.**



Iliad partnership being part of this dynamic ecosystem is working closely with other projects and initiatives (public & private) to ensure **alignment** by using similar standards, APIs, best practices etc.



Iliad partnership is working towards the implementation of **interoperable** systems, services and assets.



Iliad In a Seashell



Enabling an ecosystem of **interoperable digital twins** for the ocean trough:

- Connecting to *existing* ocean data infrastructures
- Enhance ocean data infrastructures with *additional* observation technologies and **citizen science**



Create an open **marketplace** accessible for all providers and users by:

- Development of *innovative methods* in open frameworks and platforms
- Enable model *evaluations & comparisons* for many Earth science applications from weather, energy, aquaculture to climate and more

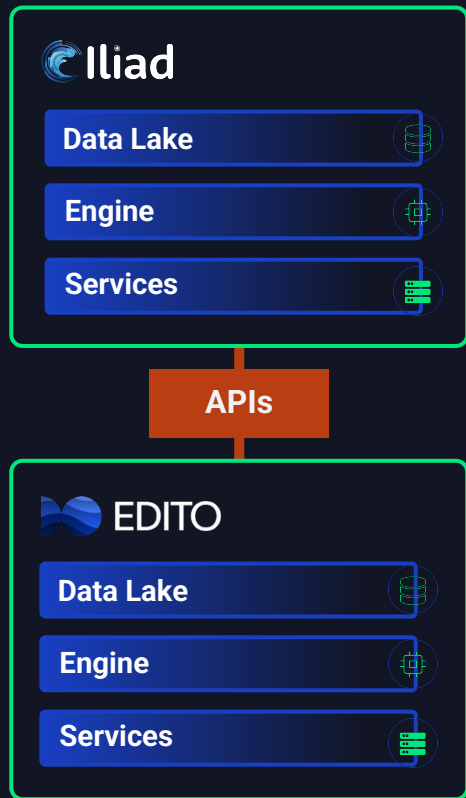


Provide **solutions** to address future societal challenges by:

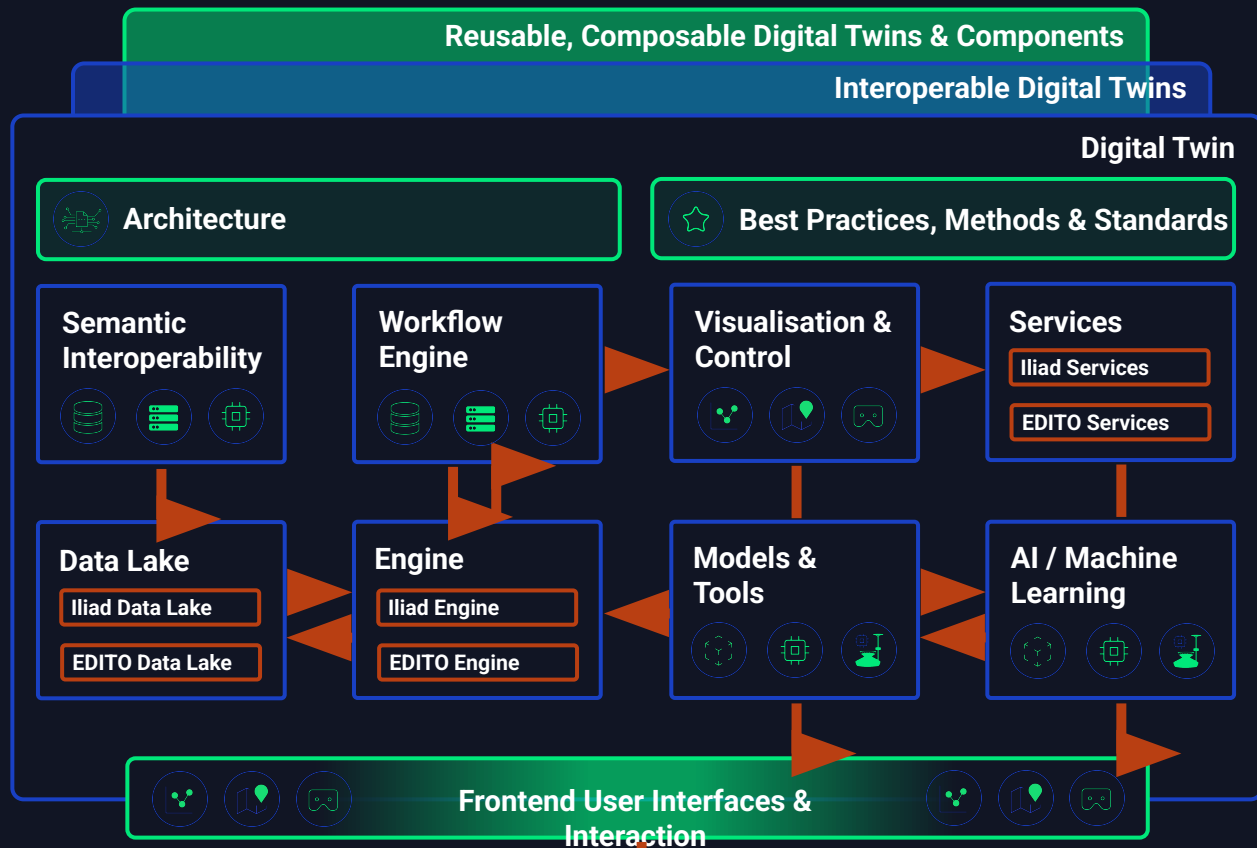
- Assembling a broad and diverse *user community* of existing and new users,
- Supporting the communities in testing and using the project's *innovative technological solutions*



Iliad & EDITO Infrastructures



Digital Twins Architecture & Interoperability



ILIAD DIGITAL TWINS OF THE OCEAN



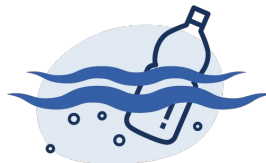
Existing Wind Farm
Capacity



Ocean Energy Potential



Coastal Sediment
Transport



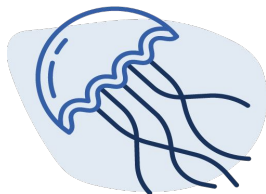
Plastic Pollution
Monitoring



Oils Spill Simulation



Insurance For Marine &
Maritime Activities



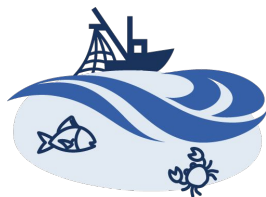
Jellyfish Swarm Forecast



Harbour Safety



Met Ocean Hind, Now &
Forecast



Fisheries
Productivity &
Sustainable Aquaculture



Ballast Water Monitoring

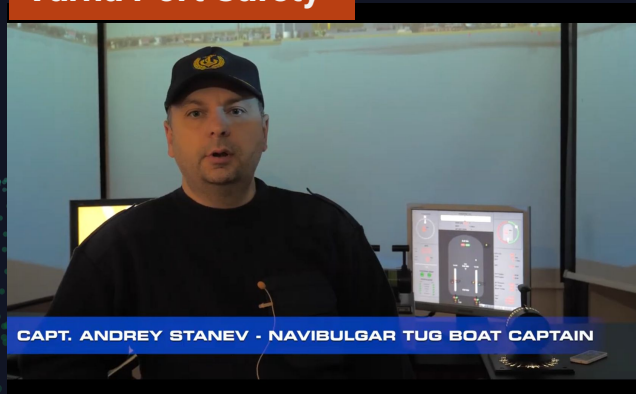


Aquaculture & Harmful
Algae, Water Quality &
Ship Traffic



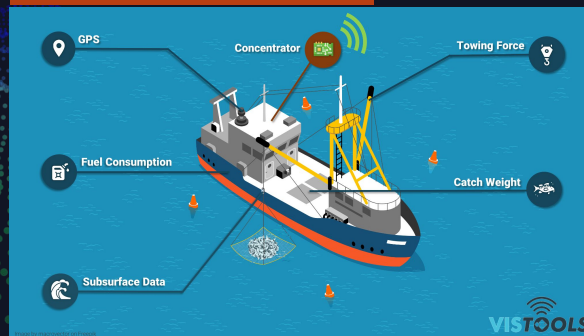
Codevelopment, feedback, improvement

Varna Port Safety



CAPT. ANDREY STANEV - NAVIBULGAR TUG BOAT CAPTAIN

North Sea Fisheries



Valencia port



Identify real needs – improve usability based on feedback – no Zombie DTOs

8. Supporting the Blue Economy



Expand your impact with the Iliad Marketplace: Share your models and tools with a global community

ocean-twin.eu/marketplace

5. Demonstration of value to stakeholders

e. Policy toolkits

Home / Policy Toolkit

Iliad Project Policy Toolkits

Ports and maritime industries play a critical role in the global economy, supporting trade, food security, and sustainable blue growth. However, they are also significant contributors to environmental pressures. In Europe, maritime transport is responsible for approximately 13.5% of total transport-related greenhouse gas (GHG) emissions, with methane emissions from shipping having doubled between 2018 and 2023 due to increased use of liquefied natural gas (LNG) as fuel. Additionally, maritime activities contribute to water pollution through oil spills, wastewater discharge, and marine litter, with container loss remaining a persistent issue for ocean ecosystems (European Environment Agency, 2025).

To address these challenges, European and international policies such as the European Green Deal, the Marine Strategy Framework Directive (MSFD), and the UN Sustainable Development Goals (SDGs) set ambitious targets for emissions reductions, marine biodiversity protection, and sustainable resource management. In this context, Digital Twin Ocean (DTO) technologies offer a powerful tool to enhance policy monitoring, compliance assessment, and governance. The Iliad project, integrating 22 individual digital twins through the "Twin of Twins" concept, provides a scalable and unified framework to analyze environmental impacts, optimize resource management, and drive data-informed policymaking.

This policy tool
stakeholders e
global policy o
advanced anal
implementing
sustainable ma
need for climat
makers with cu
a science-base

Target Groups

- National and regional management
- Regional and local sustainability
- Businesses and shipping, and
- European Commission and compliance



Fisheries



Aquaculture



Ports



Water Quality & Reducing Pollution



Renewable Energy



Analytics & Policy Impact

ocean-twin.eu/policy-toolkits

Iliad's complete framework

01

The Marketplace

Commercial space for applications and digital services

02

The Academy

Learning and training platform

03

The Blue Tech Transfer

Support for development and commercialization

04

The Policy Impact Hub

Support for policymakers

Iliad DTO Demonstrations



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iliad develops interoperable, data-intensive, and cost-effective Digital Twins of the Ocean ...more

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Iliad

WORKSHOP

**ILIAD DIGITAL TWINS OF THE OCEAN
AS A TOOL FOR POLICYMAKERS –
THE CASE OF FISHERIES**

21 November, Tuesday
12:00 CET
Zoom / Registration is required

1:15:17

Thank you

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