# DIGITALE HAVTVILLINGER I NORGE

**Velkommen og introduksjon til Iliad og digitale havtvillinger**
Bente Lilja Bye, BLB

**Miljødata i Norge**
Ragnvald Larsen, Miljødirektoratet

**Undina MarTERA programme**
Beatrice Tomasi, NORCE

**Climarest - restaurering av vår kyst**
Lara Veylit, Sintef Ocean

**Diskusjon/Discussion**

Støttet av Forskningsrådet

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# DIGITAL TWINS

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.



Global Models    Regional Models

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

Coastal Models    Local Models

# THE ILIAD APPROACH & CONCEPTS



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*

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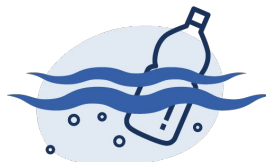
# ILIAD DIGITAL TWIN**S** OF THE OCEAN

Iliad

**Existing Wind Farm Capacity**

**Ocean Energy Potential**

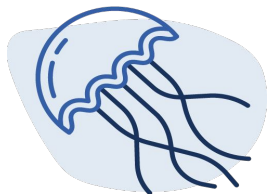**Coastal Sediment Transport**

**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 Monitoing**

**Aquaculture & Harmful Algae, Water Quality & Ship Traffic**

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# ILIAD numbers

- **Full name:** Integrated Digital Framework for Comprehensive Maritime Data and Information Services

- **Coordinator:** Netcompany-Intrasoft

- **Grant Agreement No:** 101037643

- **Project start date:** 1. February 2022

- **Project end date:** 31. January 2025

- **Duration of project in months:** 36

- **Overall budget:** 18 956 630 EURO

- **EU contribution:** 17 046 230 EURO

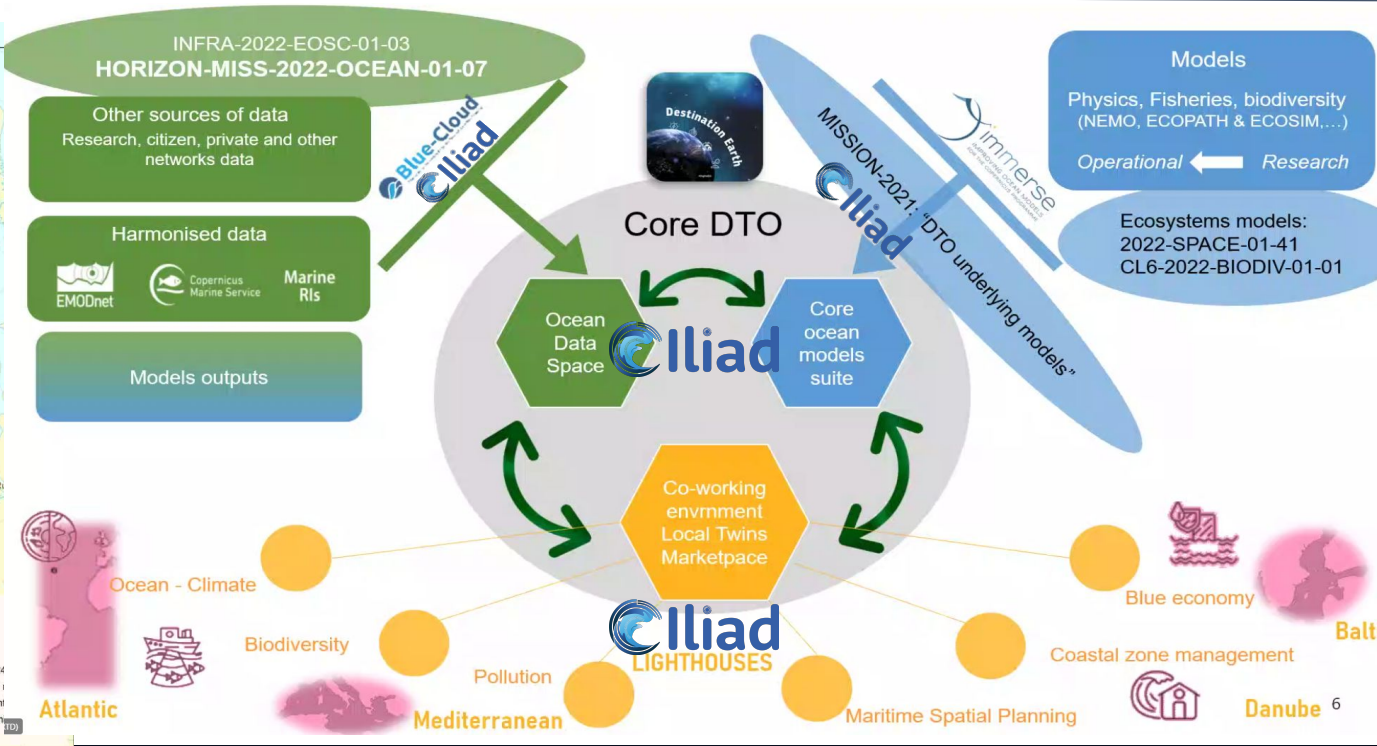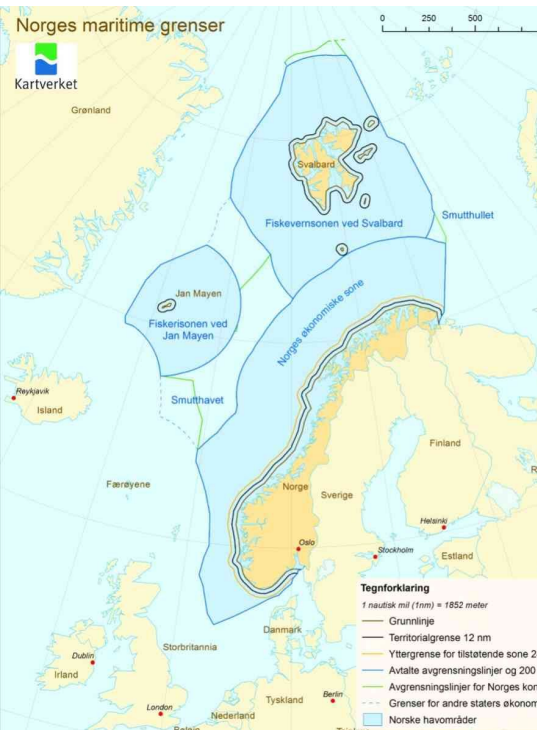- **Partners:** 56 + 2 linked third parties

European Green Deal

HORIZON 2020

ILIAD Norge, Europa og verden

**Introduksjon til Iliad - digital twins of the ocean**
*Bente Lilja Bye, BLB*

Bente is Innovation Manager in Iliad - Digital Twins of The Ocean and expert on data management and capacity development

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# Miljødata i Norge
## *Ragnvald Larsen, Miljødirektoratet*



Ragnvald Larsen works with the Norwegian Environment Agency, the executive body of the Norwegian Ministry of the Environment. In his current position as a chief engineer with the Directorate he works with serving, using and developing systems for environmental information data management. Procurement of external consultant services is part of this work.

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**Climarest - restaurering av vår kyst**

*Lara Veylit, SINTEF*

Lara is a Research Scientist at SINTEF Ocean. She is an experienced data scientist and sustainability expert with a demonstrated history of working in research, ocean data management, and teaching. Skilled in statistical data analysis, mathematical modelling, and data visualization.

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# Undina MarTERA programme
## *Beatrice Tomasi, NORCE*

Beatrice Tomasi received the Ph.D. degree in information engineering from the University of Padova, Padova, Italy, in 2011. She has been actively working on underwater acoustic channel modeling and performance evaluation of communication systems and networking protocols. She was a Visiting Student at the NATO Undersea Research Center (currently CMRE, La Spezia, Italy) during 2009 and at Woods Hole Oceanographic Institution (Woods Hole, MA, USA) in 2011, where she is currently a Postdoctoral Research Fellow. Her research interests include energy-efficient scheduling, optimal resource allocation, and adaptive protocols with minimal feedback. She was a recipient of the Office of Naval Research Fellowship in Ocean Acoustics in 2013.

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