



**SAFE, EFFICIENT AND AUTONOMOUS:  
MULTIMODAL LIBRARY OF EUROPEAN SHORTSEA  
AND INLAND SOLUTIONS**

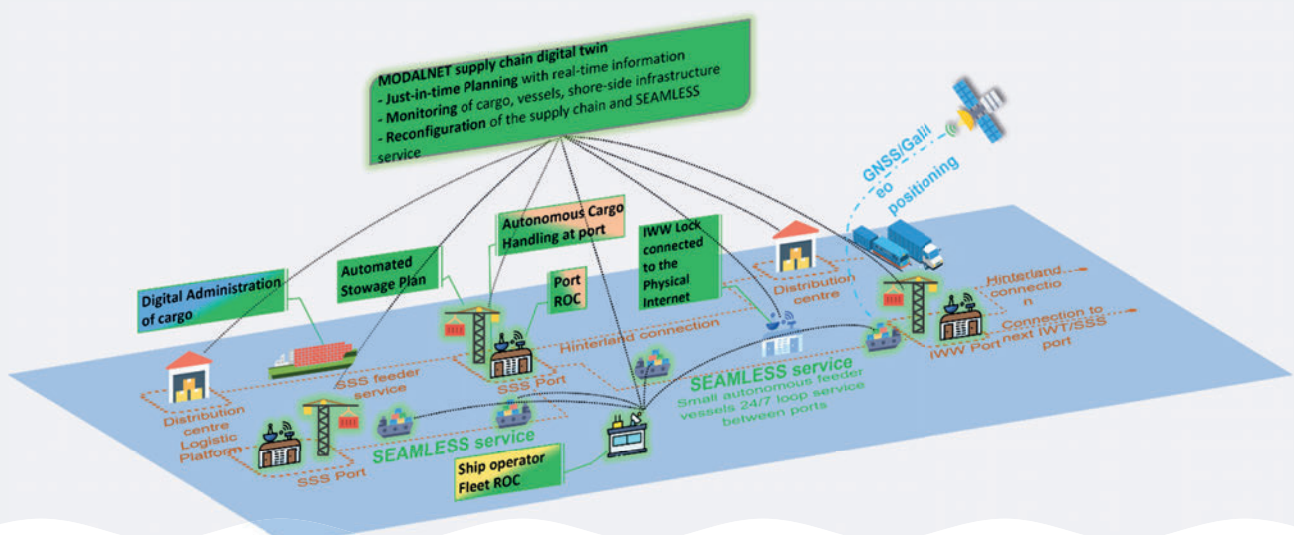
## The Project!

The **SEAMLESS** project, started on January 1<sup>st</sup> 2023, will last for 48 months to develop, and adapt missing technological building blocks and key enabling technologies into a fully automated, economically viable, cost-effective, and resilient waterborne freight feeder service for Short Sea Shipping (SSS) and Inland Waterway Transport (IWT).

The SEAMLESS project addresses the call topic HORIZON-CL5-2022-D5-01-05: Seamless safe logistics through an autonomous waterborne freight feeder loop service and focuses on developing and adapting missing building blocks and enablers necessary for the successful implementation of the service.

Autonomous systems will be integrated to ensure safe, resilient, efficient, and environmentally friendly operation to shift road freight movements to hinterland waterways, while enhancing the performance of the TEN-T network. The service will be delivered 24/7 by a fleet of autonomous cargo shuttles, with humans-in-the-loop located in Remote Operation Centres (ROCs), which efficiently cooperate with automated and autonomous shore-side infrastructure and safely interact with conventional systems.

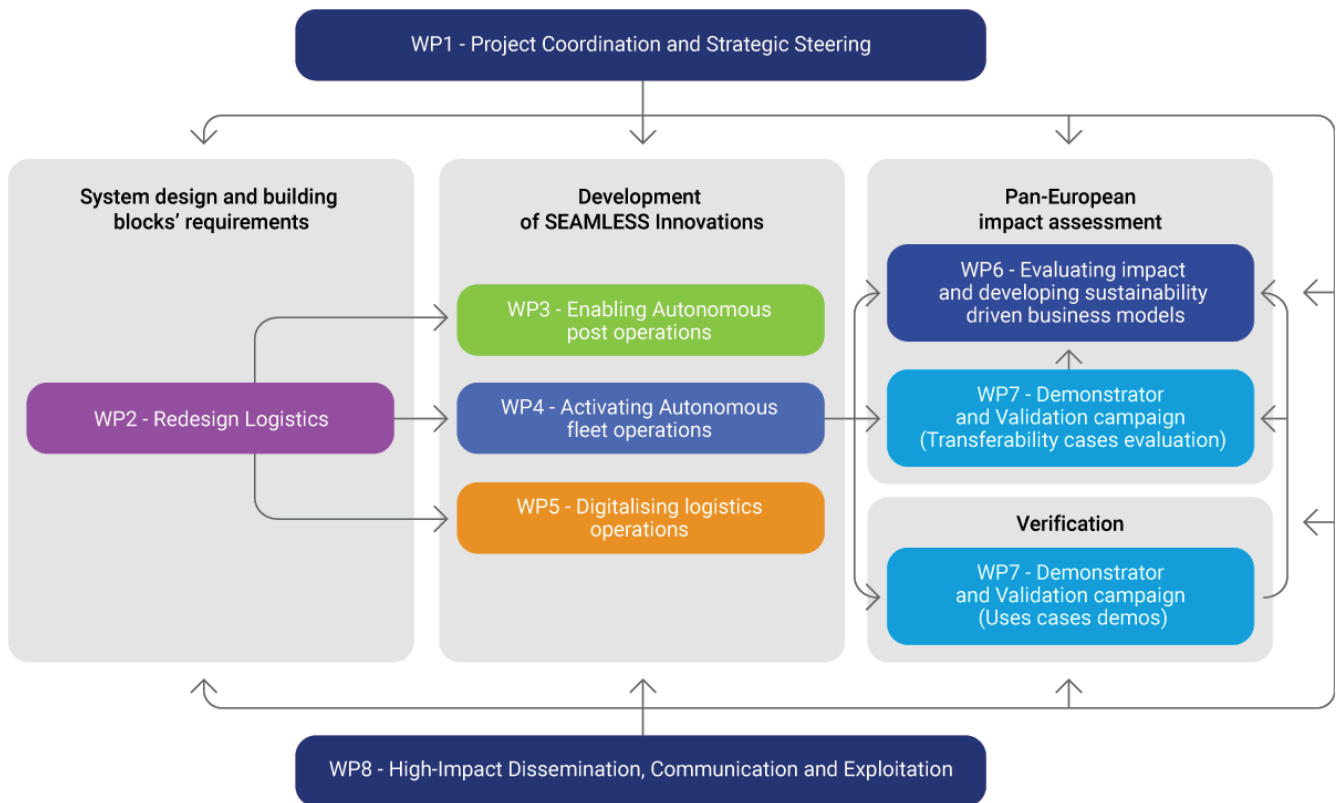
The services will rely on a redesigned logistics system enabling seamless freight flows by minimizing delays at intermodal nodes. A digital bird's-eye view of the supply chain allows the exploitation of real-time information for planning optimization and reconfiguration to support resilient logistics, incl. digitalized administrative procedures. An overview of the SEAMLESS concept is presented in the following Figure.



The SEAMLESS building blocks will be verified and validated by conducting full-scale demonstrations in selected real-world scenarios. Transferability will be fully demonstrated in selected use cases that cover a wide range of transport applications and geographical regions throughout Europe. Based on a structured methodological framework evaluating sustainability criteria, they will act as guidance for the replication of the project results beyond the project scope and time span.

Novel business models will be thus developed and provide a framework for implementing the SEAMLESS service to minimize investment risk for first movers. Regulatory gaps and challenges related to autonomous vessel operation (e.g., social aspects) will be identified, and recommendations for policy makers to allow the smooth and safe deployment of fully automated services will be provided.

The implementation of SEAMLESS is organized into 8 Work Packages (WPs), as shown in the following picture:





# The Consortium!

The **SEAMLESS consortium** – coordinated by the National Technical University of Athens (NTUA) – comprises 26 organizations from 12 EU countries.



SEAMLESS officially kicked off on January 1<sup>st</sup>, 2023, and the partners gathered on February 16<sup>th</sup> and 17<sup>th</sup> in Brussels (Belgium) to present and review the project objectives, activities, and work plan.



# Updates from the consortium!

## SEAMLESS gathering in Norway to kick start Work Package 4

Exciting news from our recent trip to Horten, Norway! The consortium got to witness some incredible innovations in autonomous ship technology. Our team had the chance to kick start Work Package 4 and check out the equipment that will be used for the project's future demonstration. Special thanks to our partner Kongsberg for the excellent hospitality.



## SEAMLESS presented at the ERTICO ITS Congress 2023

SEAMLESS joined the ERTICO ITS Congress, the largest event entirely dedicated to smart mobility and digitalization of transport is organized by ERTICO – ITS Europe, which took place in Lisbon (Portugal) from May 22<sup>nd</sup> to 24<sup>th</sup>. SEAMLESS was showcased on May 23, in the frame of the session “Improved and Innovative Cargo Logistics with Small Autonomous Ships”, which also featured presentation by our sister projects AEGIS, AUTOSHIP, MOSES. To represent SEAMLESS and the Consortium, Alexandros Rammos from NTUA – SEAMLESS coordinator – hosted the presentation “SEAMLESS: Small vessel transport from port to city center and small rural destinations”.





## SEAMLESS IWT Demo Use Case Workshop

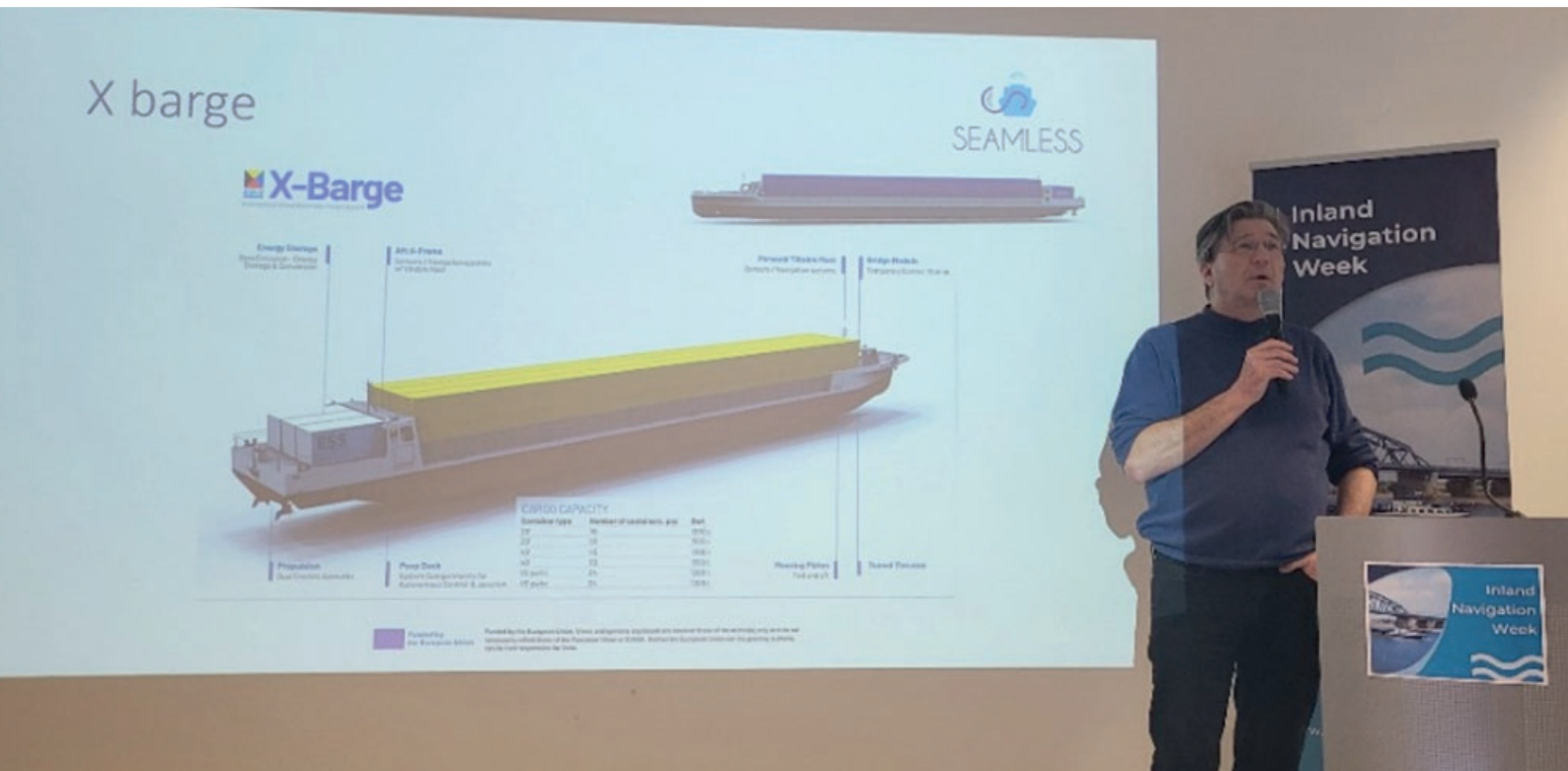
The IWT Demo Use Case Workshop, a significant component of the SEAMLESS Project's WP 2 activities, successfully took place on June 1<sup>st</sup> at DST in Duisburg's premises. Researchers from ISL - Institute of Shipping Economics and Logistics, National Technical University of Athens, Institut Droit International des Transports, Voies navigables de France, SINTEF Ocean, Faculty of Transport and Traffic Engineering - University of Belgrade, and DST - Development Centre for Ship Technology and Transport Systems gathered developed a common understanding of the existing transport concepts, logistics environment, and involved stakeholders, identified opportunities and challenges of the envisioned logistics concepts redesigned in the SEAMLESS project, and derived pending questions regarding the demo setting.





## SEAMLESS showcased at the Inland Navigation Week

On March 21<sup>st</sup>, the SEAMLESS project was showcased at the "Autonomous sailing" and "Resilience" clusters event, hosted during the Inland Navigation Week organized by the European Inland Waterway Transport Platform. During the event, Antoon Van Coillie from ZULU Associates highlighted the SEAMLESS demonstration, leveraging the innovative ZULU's X-Barge design. It was a fantastic occasion to present our project and establish connections with fellow EU initiatives dedicated to building a more resilient and less stressed #transportsystem. Networking and collaboration are key to driving positive change!



Stay tuned for more updates on our groundbreaking work in smart mobility and digital transport visiting the [SEAMLESS project website](#) and follow us on [LinkedIn](#) and [Twitter](#)!



# Consortium



## FOLLOW US!



#seamless-project



@seamless\_heu



[www.seamless-project.eu](http://www.seamless-project.eu)

## CONTACT US

### PROJECT COORDINATOR

**Nikolaos P. Ventikos**  
Associate Professor, NTUA  
School of Naval Architecture and  
Marine Engineering  
niven@deslab.ntua.gr

### DAY TO DAY PROJECT MANAGER

**Konstantinos Louzis**  
Naval Architect and Marine Engineer, NTUA  
Research Engineer, PhD Candidate, NTUA  
klouzis@mail.ntua.gr

**Alexandros Rammos**  
Naval Architect and Marine Engineer, NTUA  
Research Engineer, NTUA  
aleramos@mail.ntua.gr



Funded by  
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.