



# FOREMAST

## Freight volumes transfer from Road to waterborne transport, using zeroEmission, Automated, Small, and flexible vessel protoTypes

The roadmap for transitioning to zero-emission transport and logistics in Europe promotes the higher use of waterborne transport, specifically Inland Waterway Transport (IWT) and coastal shipping, to **shift goods from road to water**.

Funded by the Horizon Europe programme, the 3-year long **FOREMAST** project will address the urgent need for sustainable transport solutions in urban and coastal areas, with the aim to create a paradigm shift towards **cleaner and more efficient logistics**.

36 Months

16 Partners

3 Living Labs

Jan 2024 -  
Dec 2026





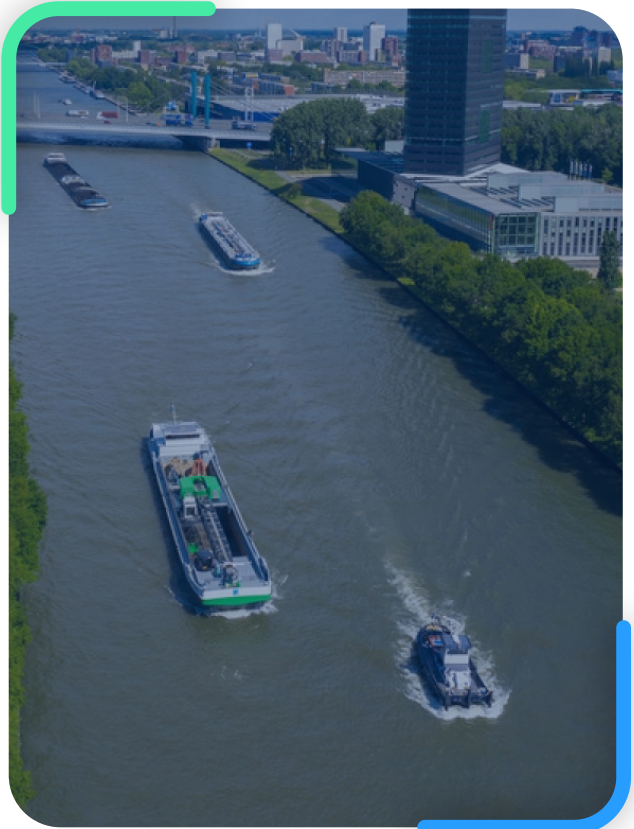
# FOREMAST

FOREMAST is fully committed to sustainability, aiming to create a cleaner, smarter, and more efficient transportation system. FOREMAST will facilitate the movement of goods in urban and coastal areas by creating a **Small, Flexible Automated, Zero-emission (SFAZ) vessel** that enables the efficient, safe, and sustainable transportation of **cargo shift to inland waterways**.

The SFAZ vessels will seamlessly integrate into urban environments, connected infrastructures, supply chains and other modes, reducing road congestion, and enhancing accessibility.

The main objectives of FOREMAST are to:

- ▶ examine the **techno-economic aspects** of SFAZ vessels in smart, competitive and green transport systems
- ▶ undertake **focused research** in SFAZ design and solution components in line with vessel research
- ▶ test and demonstrate the SFAZ vessel concept in the **FOREMAST Living Labs**
- ▶ accelerate the **wider deployment** of SFAZ vessels



# Living Labs

FOREMAST solutions will undergo development and validation in **three regional Living Labs**, making use of existing experimental vessels. The core concept and value proposition revolve around integrating practical advancements in vessel automation, encompassing mooring and cargo operations, alongside innovative green propulsion, data space vessel connectivity and ship design innovations. This approach enables the creation of solutions that align with local topographies and market demand characteristics.



**Living Lab 1 in Ghent, Belgium** is set to advance and trial an eco-friendly SFAZ vessel solution designed for the urban and intra-urban transport of goods in the Ghent region. This initiative involves retrofitting the currently under-construction AVATAR vessel, customised specifically for urban transport needs, and ensuring its discoverability by logistics players to facilitate new markets for modal shift.



**Living Lab 1**  
Ghent, Belgium



**Living Lab 2**  
Caen, France

**Living Lab 2 in Caen, France** will create and validate an inventive trimaran vessel design and prototype, aligning with the SFAZ concept. This innovative watercraft is intended for the transportation of goods within urban and intra-urban areas in Caen and Le Havre (Normandy – Natura 2000), using the NEAC platform. While the testing in Caen will take place in a real-life environment, the one in **Le Havre** will be conducted through simulation.



**Living Lab 3 in Galati, Romania** will develop an enhanced SFAZ concept tailored to the Romanian context, specifically catering to the inland and Black Sea coastal navigation areas in South-Eastern Romania. This encompasses the waterway system connecting Galati – Tulcea – Sulina – Constanta – Medgidia – Cernavoda – Braila – Galati, as well as the Danube Delta's network of shallow channels. The environmental research vessel REXDAN will play a crucial role in employing data-driven modelling and selective testing of FOREMAST innovations, with a particular emphasis on transferability.



**Living Lab 3**  
Galati, Romania



# FOREMAST

## CONSORTIUM

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