Safe, Efficient and Autonomous: Multimodal Library of European Shortsea and inland (waterway) Solutions

Integrating automation into waterborne logistics

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ALICE WEBINAR: AUTONOMOUS INLAND WATERWAY VESSELS: MARKET READY OR ARE THERE STILL LINKS MISSING?

VIRTUAL – 23 JUNE 2026

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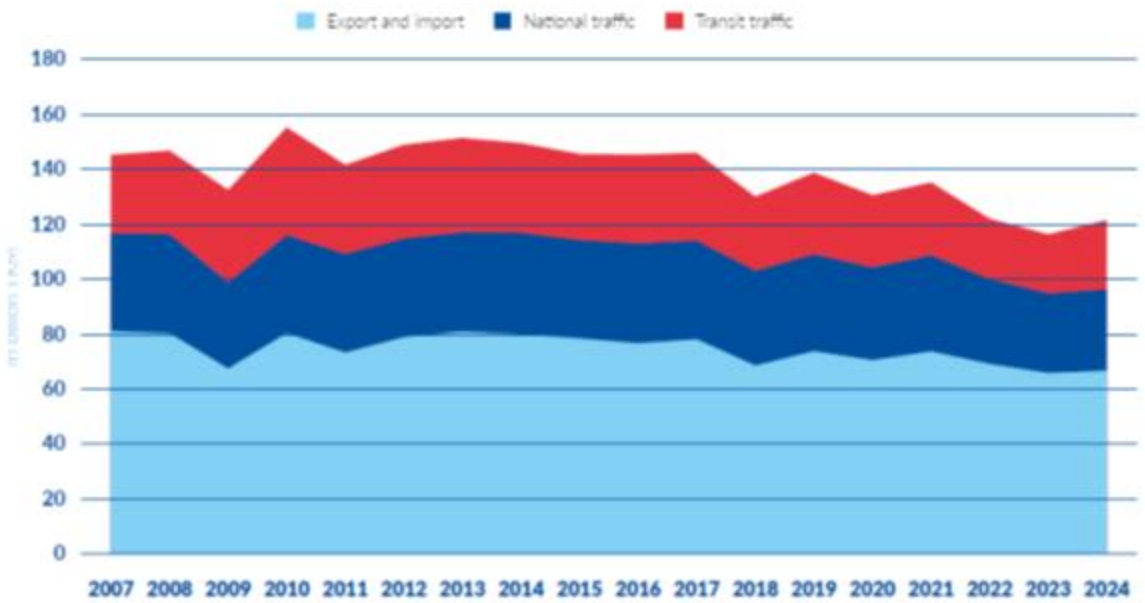
DST SEAMLESS

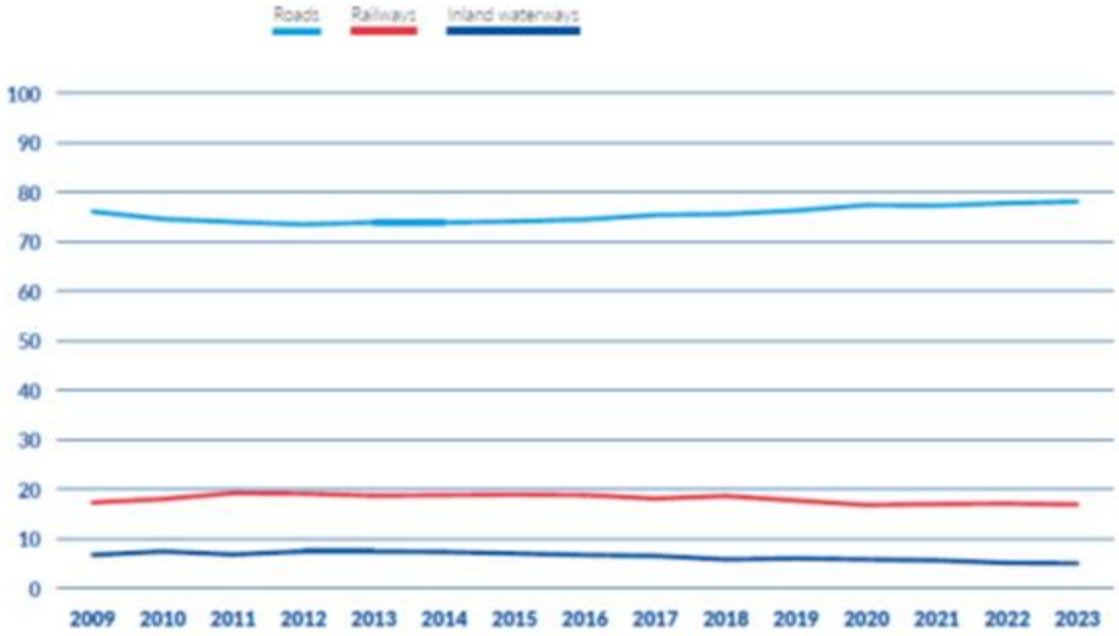
European IWT activity

Annual IWT performance in the EU



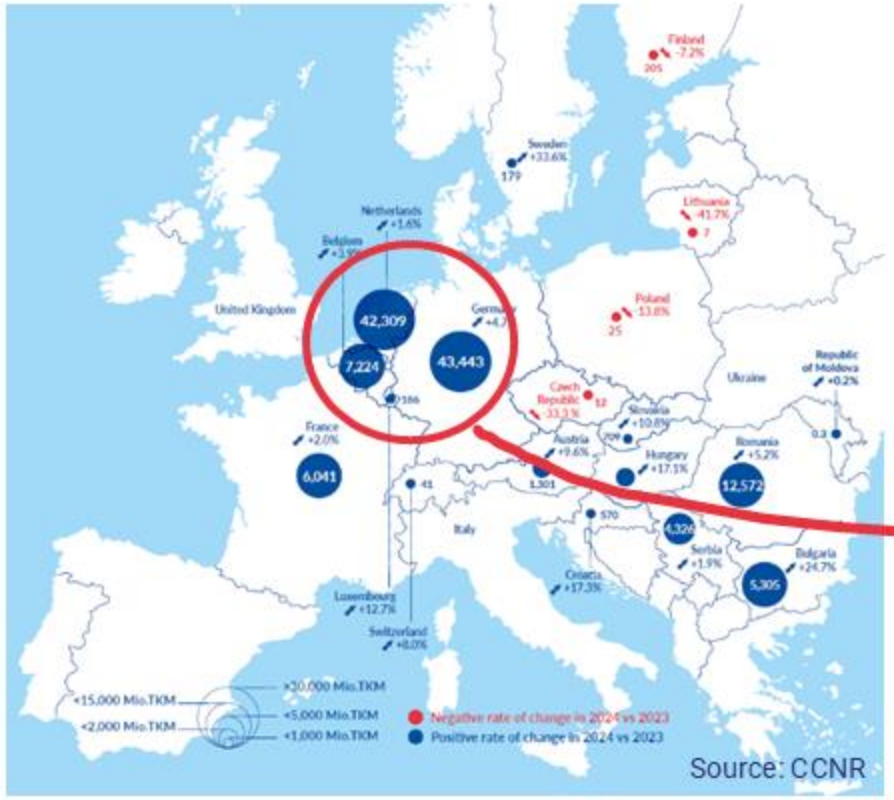
Source: CCNR, eurostat

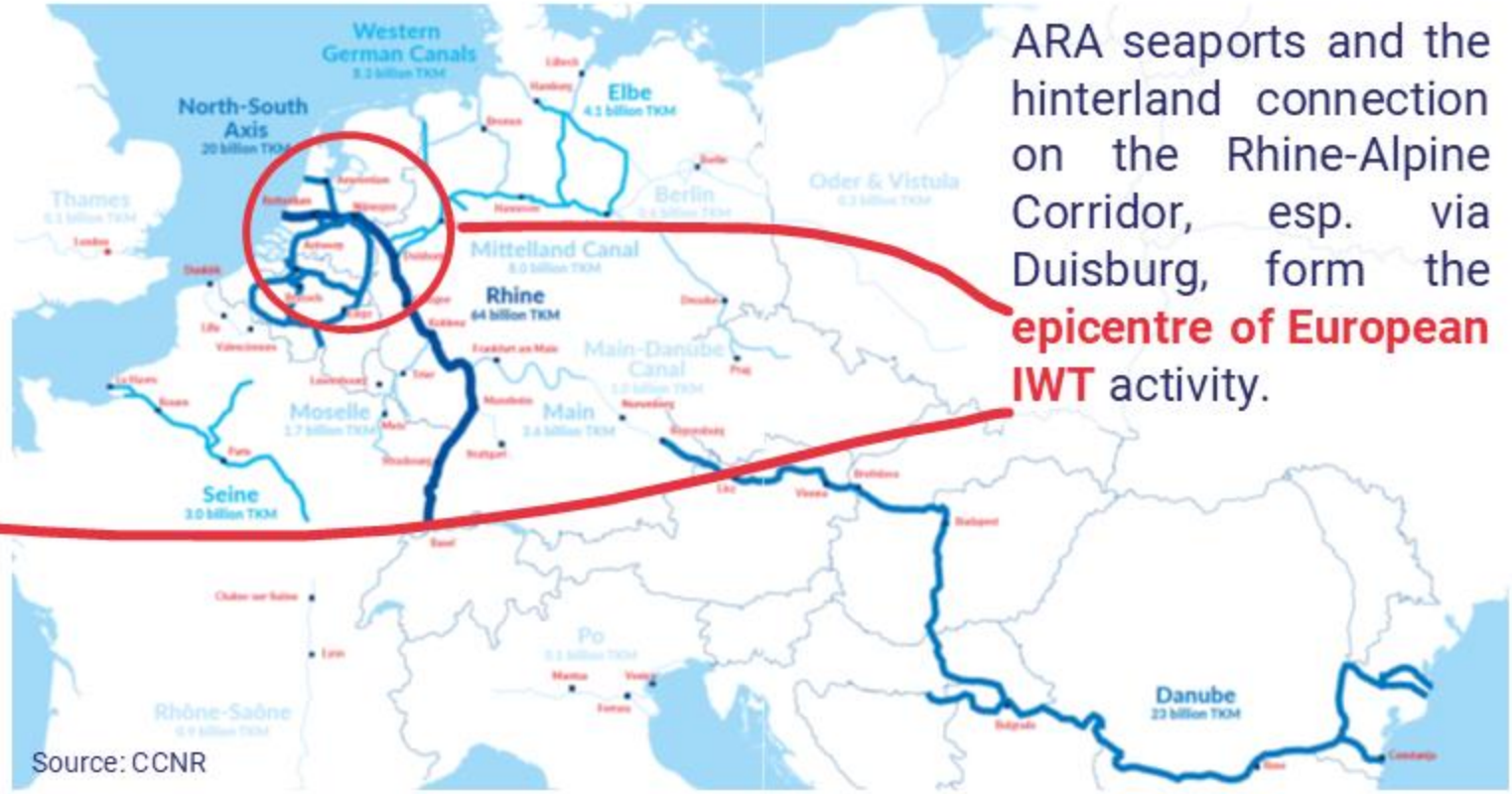
Modal split share of IWT in the EU



Source: CCNR, eurostat

European IWT activity





ARA seaports and the hinterland connection on the Rhine-Alpine Corridor, esp. via Duisburg, form the **epicentre of European IWT** activity.

Automation in IWT is coming

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Automation in IWT is coming

0
- **NO AUTOMATION**
- Full-time performance by shipmaster

1
- **STEERING ASSISTANCE**
- Context-specific performance by a steering automation system

2
- **PARTIAL AUTOMATION**
- Context-specific performance by a navigation automation system of certain navigational tasks, i. e., both steering and automation

3
- **CONDITIONAL AUTOMATION**
- Sustained context-specific performance by a navigation automation system of all navigational tasks

4
- **HIGH AUTOMATION**
- Sustained context-specific performance and fallback performance by a navigation automation system of all navigational tasks

5
- **FULL AUTOMATION**
- Sustained and unconditional performance and fallback performance by a navigation automation system of all navigational tasks

Source: CCNR

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CCNR
CENTRAL COMMISSION FOR THE NAVIGATION OF THE RHINE

Source: CCNR

So, what is SEAMLESS about then?

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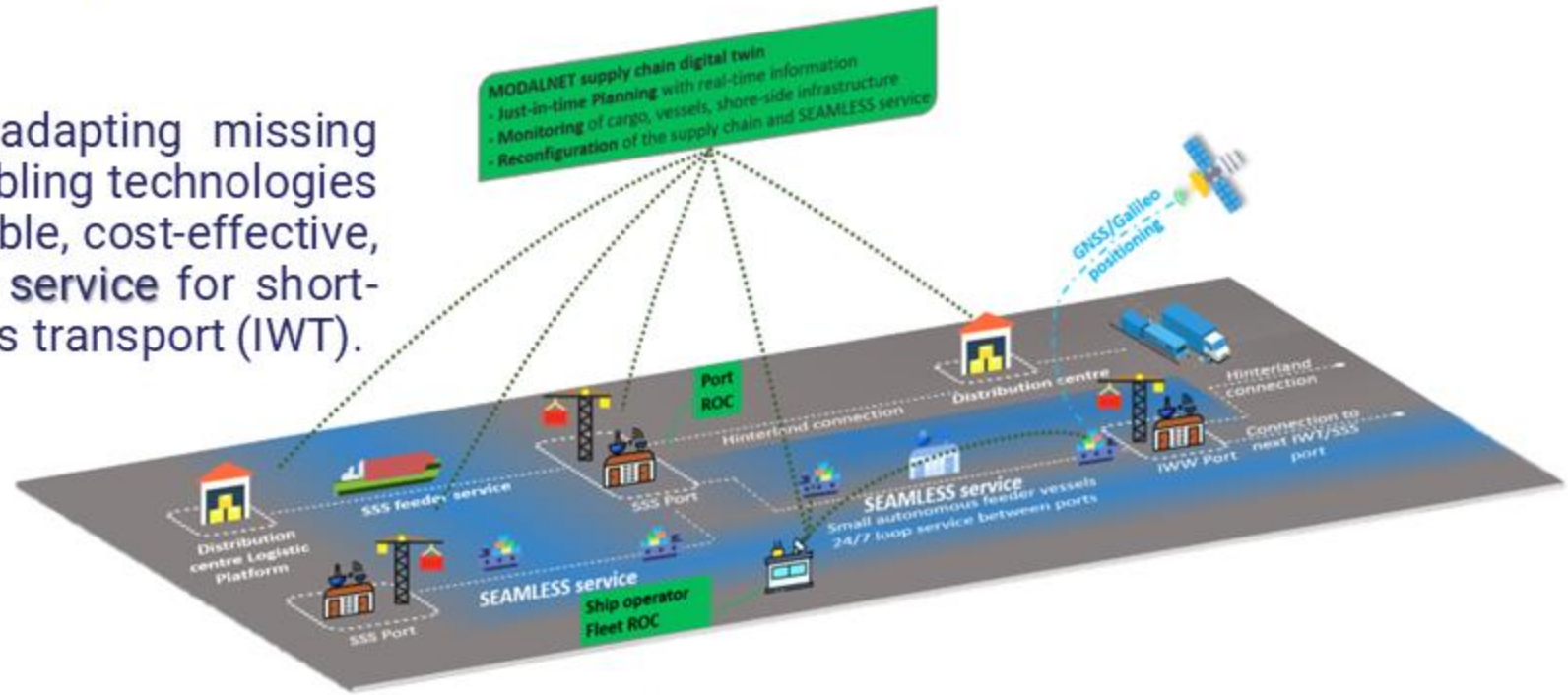
SEAMLESS

SEAMLESS Transport Service

SEAMLESS aims at developing and adapting missing technology 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 waterways transport (IWT).



The SEAMLESS **consortium** comprises of a total of 25 organizations from twelve European countries.

The SEAMLESS **concept** includes

- three Building Blocks
- two Demonstrations
- six Use Cases

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SEAMLESS Use Cases

All SEAMLESS building blocks and enablers will be verified and validated through the **SEAMLESS Use Cases**, which are divided into:

- two **Demonstration** Use Cases (DUCs), one in SSS and another one in IWT, and
- six **Transferability** Use Cases (TUCs) across the continent.

➢ The project's technological Building Blocks (BB) will be developed to serve and accommodate the needs of the two DUCs and thus prove the feasibility of the SEAMLESS service

➢ The TUCs will be examined and evaluated on a higher, conceptual level to determine the transferability potential of the project's BB

➢ **Having the word "Demonstration" before the first two Use Cases, does not necessarily force us to conduct the actual BB demonstrations to one coherent route****

Integrating automation into waterborne logistics
Automated waterborne seaport hinterland transport

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Integrated multimodal transport planning

Maasvlakte II

Waalhaven

Gorinchem

Nijmegen

Emmerich

Wesel

Duisburg

Moerdijk

Antwerp

Ghent

Lille

Automated stowage planning

Interaction with terminals

Automated port calls

Automated mooring

Remote-controlled navigation

Battery-fuelled propulsion

Vision:
„Automated waterborne seaport hinterland transport“
October 2026

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DST

map scale: 1:1000000

SEAMLESS

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SEAMLESS Project

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