What are the possibilities within freight transport, how can autonomy attract cargo to waterborne transport?

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Maritime transport is efficient and green, mainly due to economies of scale!

Land-based transportation is still preferred in some cases.
Why is Short Sea Shipping not preferred?

**No door-to-door delivery**

**Cascading delays**

**Complex cost structure**

**Capacity utilisation**

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Change in transport means → Administrative burden
Increased transportation costs
(Perez-Mesa et al., 2012)

Delays in liners → delayed feeder service → delayed delivery
(Kotowska, 2014)

Ports close to hub ports “often lose with direct land transport”
(Kotowska, 2014)

Lack of integration with industrial operations
(Gustafsson et al., 2016)
Automation and Autonomy in MOSES
Expected impact for supply chain

- Minimum decrease of end-to-end costs for container transport with feeder services: 5%
- Increase of feeder traffic between large terminals and small ports: 15%
- Modal shift to Short Sea Shipping in designated areas: 10%
Autonomous tugboats with automated docking

- Decrease in docking time for large container ships: 20%
- Decrease in manoeuvring time for large container ships: 70%
Innovative feeder with Robotic Cargo Handling

20% Decrease of loading time for feeder vessel

10% Decrease of large crane usage in DSS port for (un)loading feeder vessel

70% Decrease in docking time for feeder, when combined with MOSES Automated Docking
Is this enough to attract cargo to Short Sea Shipping and create sustainable feeder services?

Sustainability in terms of steady cargo demand, which means that stakeholders will prefer Short Sea Shipping over other transport modes.
MOSES Matchmaking Platform

A digital platform for horizontal collaboration among logistics stakeholders, aiming to match demand and supply of cargo volumes

Goals for attracting cargo to Short Sea Shipping

• Increased visibility of available SSS routes, demand maximization
• Clear mapping of B2B processes within the entire supply chain
• Optimization of distribution routes and improvement of empty container management
• Changing freight flows handling and increase of partial cargo loads cost-effectiveness
MOSES Matchmaking Platform – Features

Platform Stakeholders/Users
Shipping agents, Terminal operators, Warehouse operators, Freight forwarders, Shippers, Trucking companies, Rail operators

Tasks Performed
• Ship/rail routes, schedule & capacity publication
• Truck services publication
• Order request
• Information about available transport options
• Information about available matching options
• Order execution & status monitoring
• Communication with other stakeholders
MOSES Matchmaking Platform – Adaptability

Developed mainly for SSS

Ability to be replicated for inland waterways

Focused on container freight

Easily customizable for any modular logistics unit

Smaller boxes make sense:
- a) If the capacity of big boxes is underutilized
- b) When terminal space is not enough
Modal shift through autonomy...

In an “automated reality”, things could be different compared to the “conventional reality”!

Design of automated and autonomous technologies must be better linked to operation
Thank you for your attention!

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