Creating opportunities for Short Sea Shipping and small ports within the EU container supply chain: MOSES Innovations

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SSS in the EU

The EU aims at transferring cargo from land-based transportation to more environmentally friendly modes.

To increase the share of SSS in the container supply chain:
- Feeder routes must reach more destination ports.
- Feeder vessels must carry less cargo cost effectively.
Expanding the EU container supply chain with SSS

Short Sea Shipping to small ports with no cargo handling infrastructure could provide an alternative to land-based transshipment

This potential is mostly untapped, because:
• Existing feeders cannot be served by small ports.
• There is little incentive for carriers to choose maritime transport instead of road/rail modes.
MOSES Facts

- **Project Title:** AutoMated Vessels and Supply Chain Optimisation for Sustainable Short SEa Shipping
- **Duration:** 01.07.2020 - 30.06.2023 (36 months)
- **Budget:** 8 million €
- **Consortium:** 17 Partners across Europe
The aim of MOSES project is to enhance the Short Sea Shipping (SSS) component of the European supply chain by addressing the vulnerabilities and strains related to the operation of large containerships.

A two-fold strategy

**SSS feeder services**
- Logistics solution for balancing demand-supply

**DSS ports efficiency**
- Technological solutions for improving DSS ports inefficiencies – reduce berthing time, improve safety
MOSES Objectives

MOSES will create **new pathways** in the EU by **integrating small ports** with no infrastructure into the EU container supply chain.

Feed containers directly from large container terminals...

...to small ports via Short Sea Shipping feeders.
MOSES Innovations:
1. MOSES AutoDock (MOSES Autonomous tugboats + AutoMoor)
2. MOSES Recharging Station
3. Innovative Feeder Vessel
4. Robotic container-handling system
5. MOSES matchmaking platform
MOSES Innovations

Innovative Feeder
• Autonomous sail in the open seas along a predefined route monitored by a SCC.
• (Un)loading capabilities independent from the port’s infrastructure.
• Enhanced maneuverability and position keeping capability enabling the operation in unprotected service ports.

Robotic Container Handling System
• Autonomously operated.
• A remote operator located at the innovative feeder’s SCC, whose main responsibilities will be the monitoring and supervisory control of the autonomous operation and supporting the interaction with onsite actors.
• An Intelligent Operator Support System (IOSS) will provide situation awareness to the remote operator.

Reduced ballasting/de-ballasting operations

Dynamic task allocation to the operators at the SCC
A horizontal collaboration logistics platform will allow *shippers* to submit their transport needs *(demand)*... 

...*transport operators and shipping lines* will be able to advertise their schedules/prices for the SSS routes *(supply)*.

**Order aggregation at container level according to capacity, availability, user-defined criteria, legal and practical constraints.**
MOSES Impact on sustainable SSS

**Innovative feeder vessel**

### Safety
- Automated functionalities (cargo handling and navigation).

### Environment
- Reduced environmental footprint.
- Reduced road congestion in port areas.

### Efficiency
- Improvement of maritime logistics chains.
- Make SSS a competitive alternative to land transport cargo delivery in smaller ports.
- Benefit local communities with infrequent RoPax connections (passengers’ accommodation).
MOSES Impact on sustainable SSS

Robotic container-handling system

Safety

• Minimize risk in cargo handling.

Efficiency

• Enable Lo-Lo container services to small ports that have limited or no loading and offloading infrastructure.
• Impact on the local logistic infrastructure to transport Lo-Lo delivered containers to the final destination of the end-costumer.
• Impact on the receiving port logistic infrastructure and port control organisation.
MOSES Impact on sustainable SSS

Environment
- The shipper is informed about transport services with low environmental footprint and is able to select them, leading to the reduction of total emissions for the cargo transportation.
- Some carriers may be preferred based on their emissions. This can be used as incentive for other carriers to promote routes with lower emissions.

Efficiency
- Single communication channel between shippers and carriers.
- Available routes and their characteristics must be systematically updated.
- No extra operational budget is required.
MOSES Business Case #1: “Western MED-Spain”

- Feeder service with a frequency of **three weekly services**, with geared ships.
- The expected cost-effective capacity of the vessel is **600-700 TEUs**.
MOSES Business Case #2: “Eastern MED-Greece”

- Cargo should not only be transferred from the Ro-Ro logistic chain to the Lo-Lo logistic chain, but should also be consolidated/deconsolidated in a different way.
- The expected cost effective capacity of the vessel is 300-400 TEUs.
- At least two weekly services in each port.
Paving the way towards the future of Short Sea Shipping

• The problem addressed by MOSES does not have an obvious solution!

• The expected benefits will strengthen the presence of SSS within the EU supply chain
What are the key components of the next generation of Short Sea Shipping in the EU?

slido.com with the code #MOSES
What are the key components of the next generation of Short Sea Shipping in the EU?
Thank you very much for your attention!

If you have any questions or require further information, please contact us:

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