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

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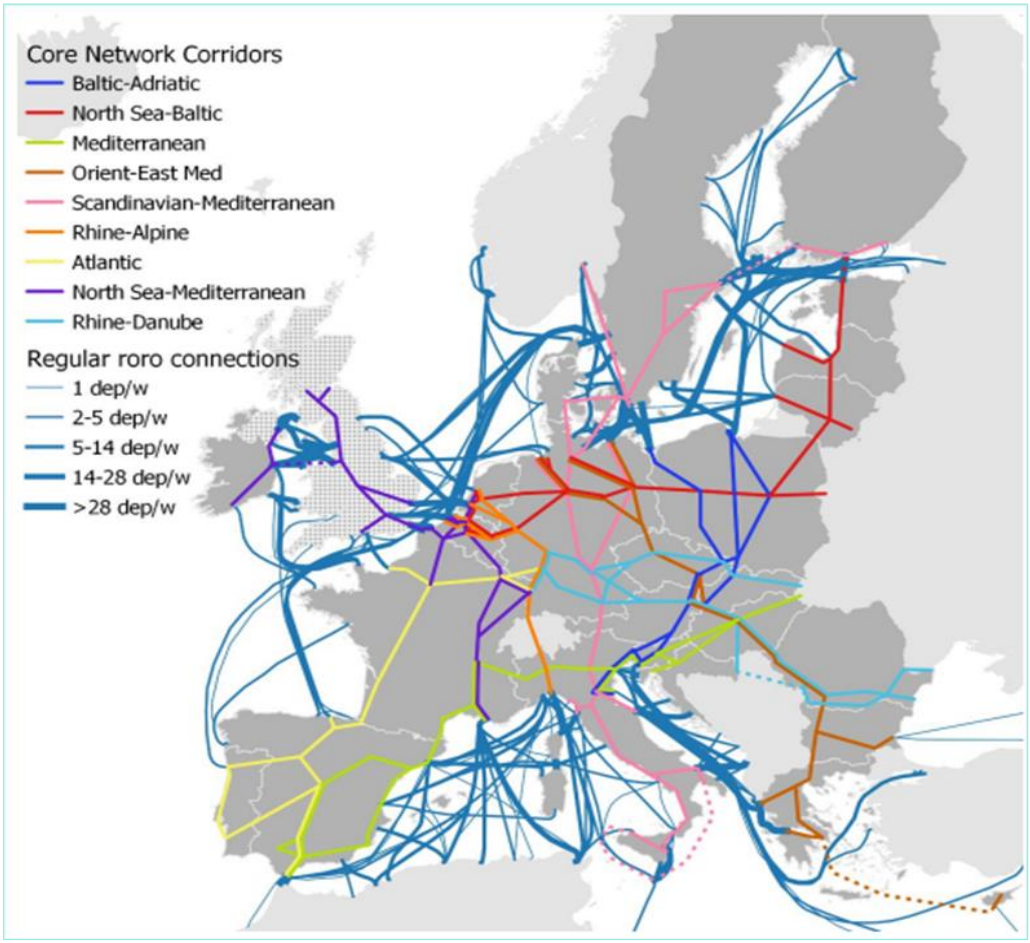
SSS in the EU

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

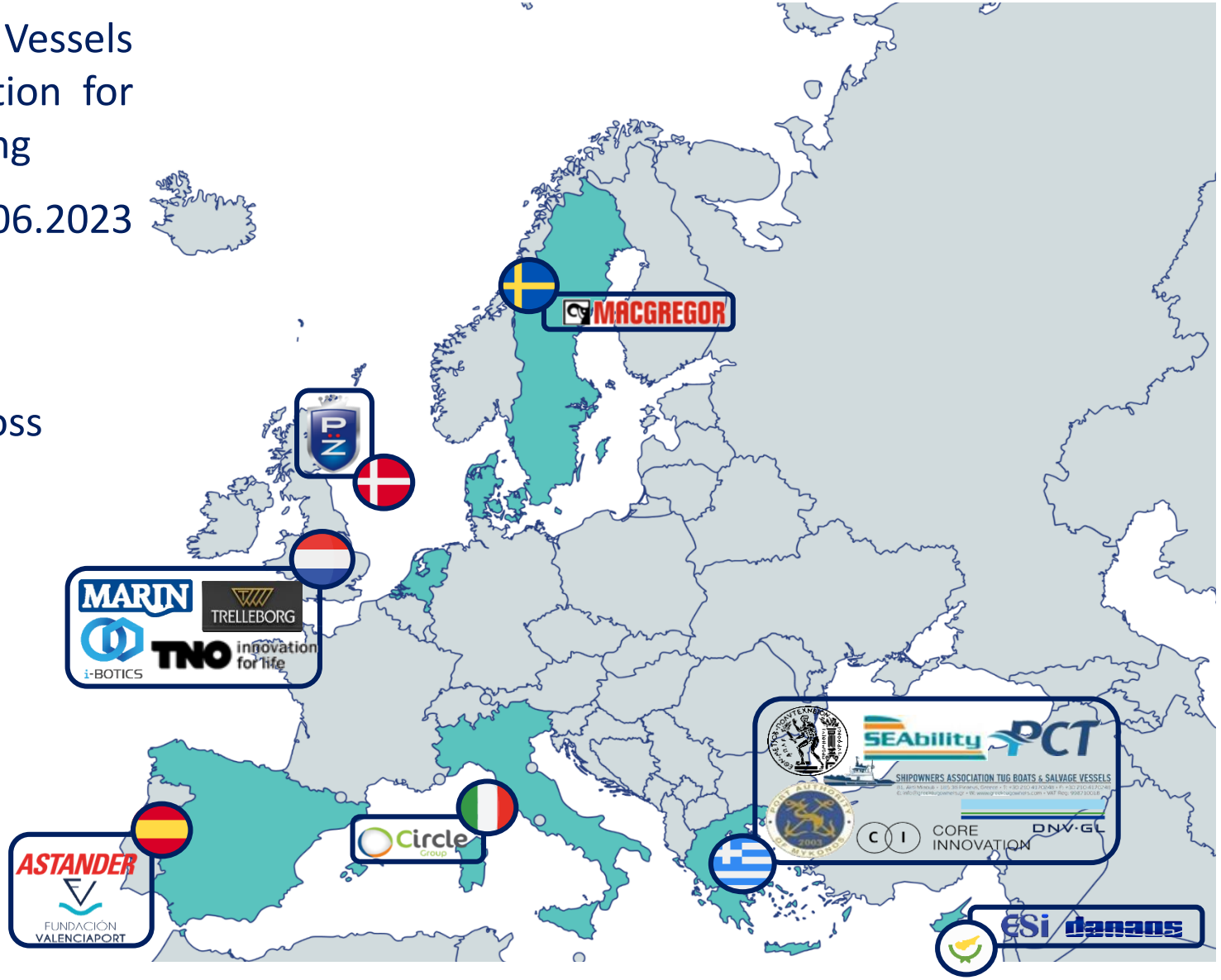
Efficient **Green** **Safe**

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



MOSES Objectives

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

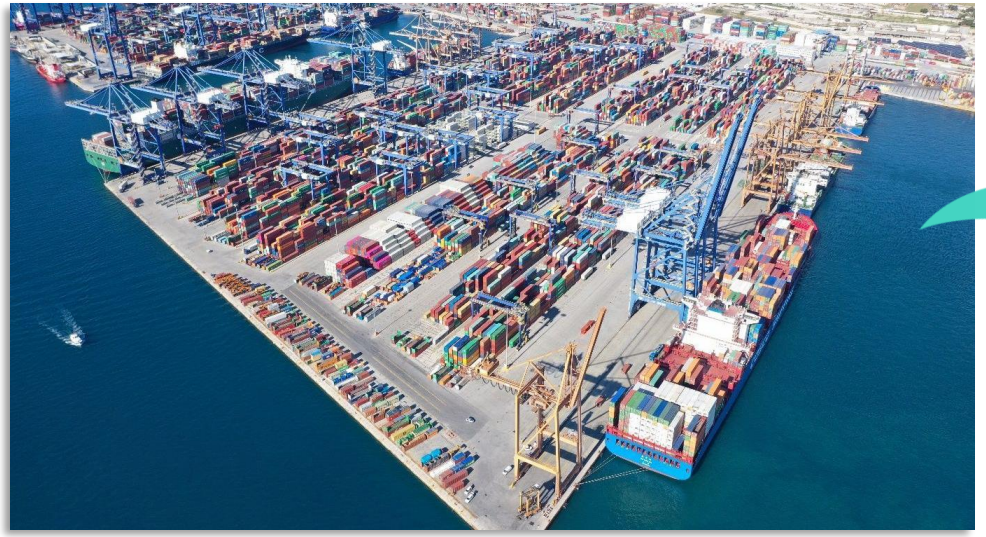
Logistics solution for balancing demand-supply

DSS ports efficiency

Technological solutions for improving DSS ports inefficiencies – reduce berthing time, improve safety

MOSES Objectives

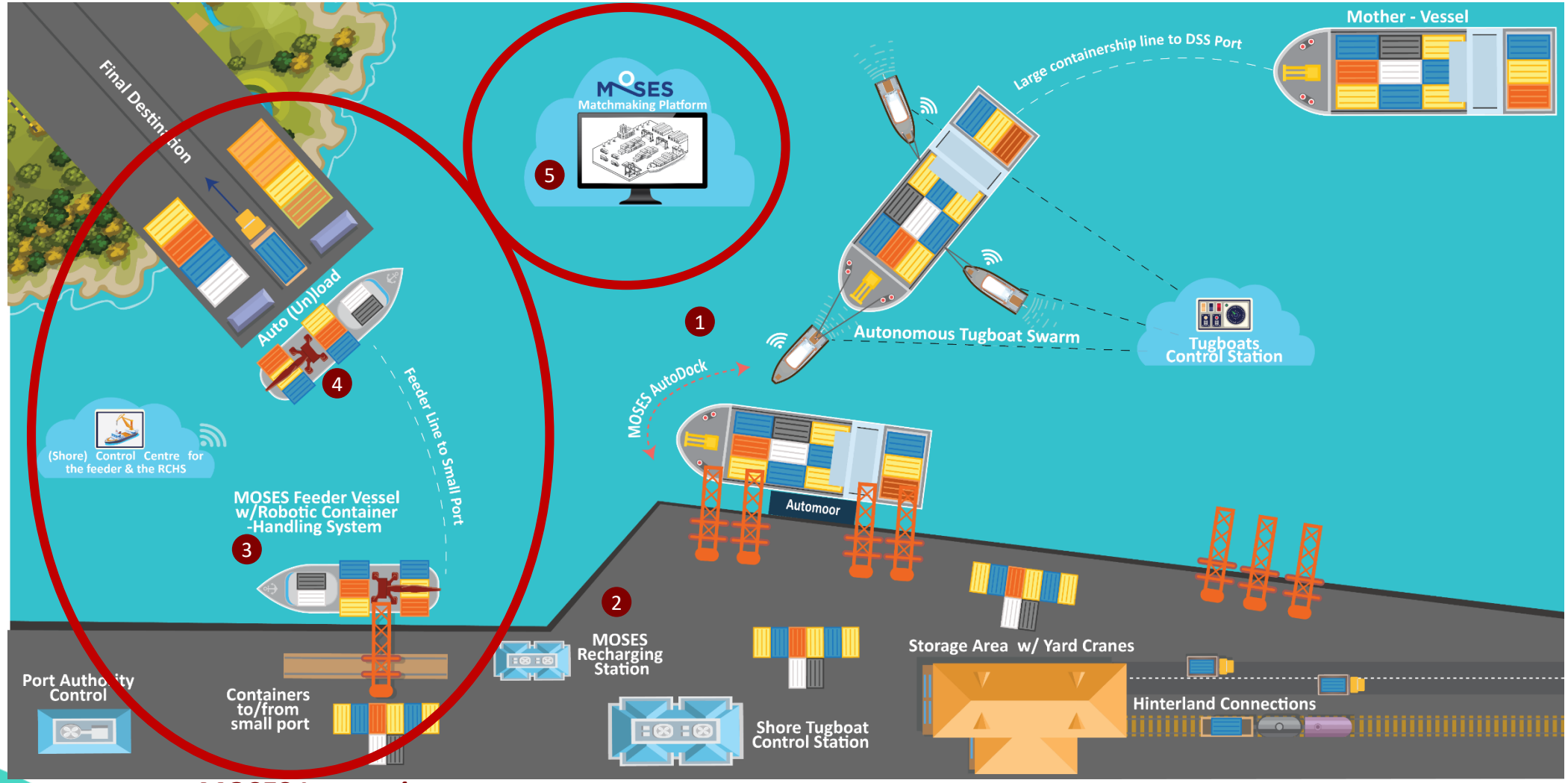
MOSES will create **new pathways** in the EU by **integrating small ports** with no infrastructure into the EU container supply chain



Feed containers directly from large container terminals…

…to small ports via Short Sea Shipping feeders

MOSES Concept



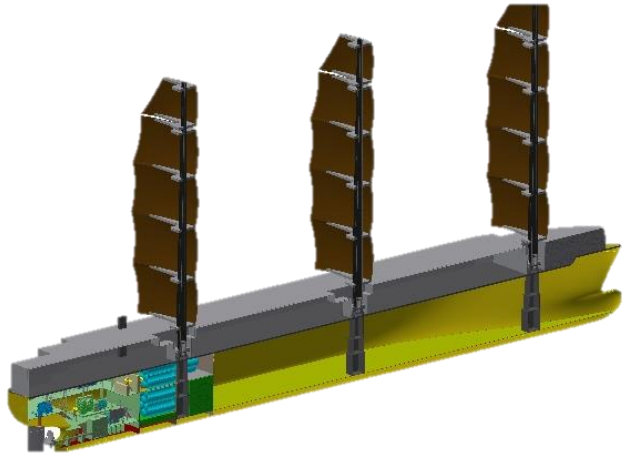
MOSES Innovations:

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.



Reduced ballasting/de-ballasting operations

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.

Dynamic task allocation to the operators at the SCC

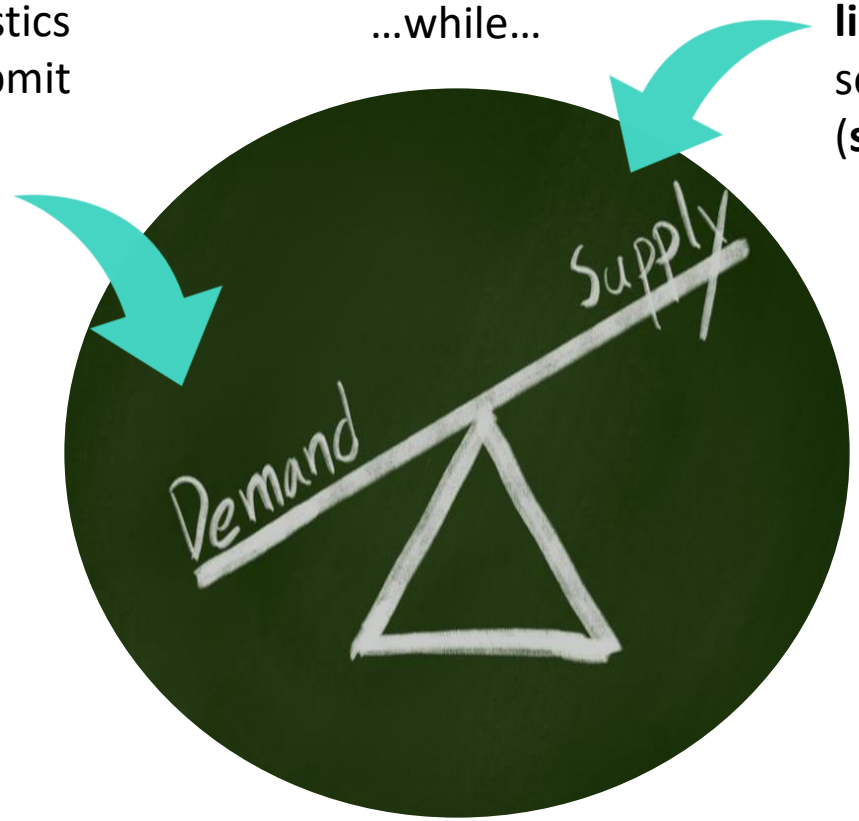
MOSES Innovations

Matchmaking Platform

A horizontal collaboration logistics platform will allow **shippers** to submit their transport needs **(demand)**…

…while…

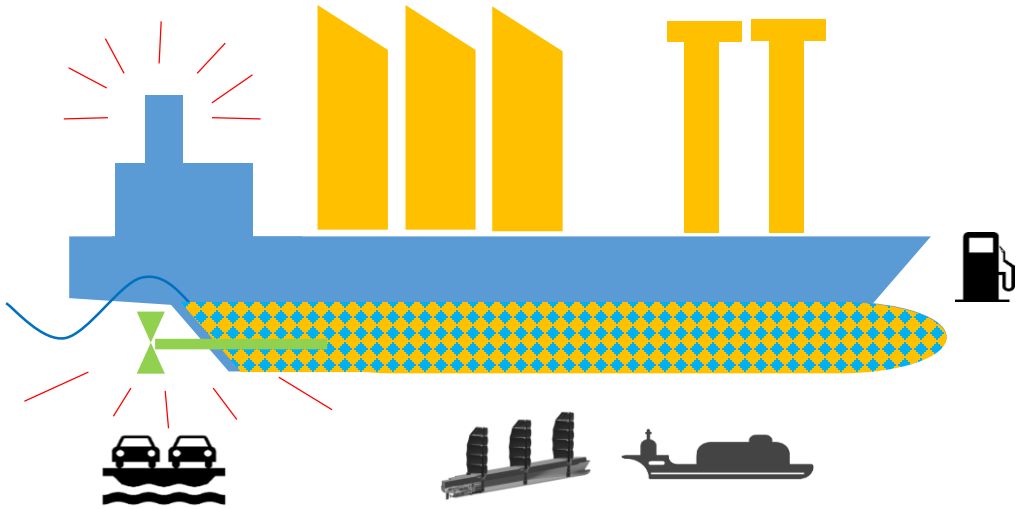
…**transport operators and shipping lines** will be able to advertise their schedules/prices for the SSS routes (**supply**).



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

Matchmaking Platform

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.

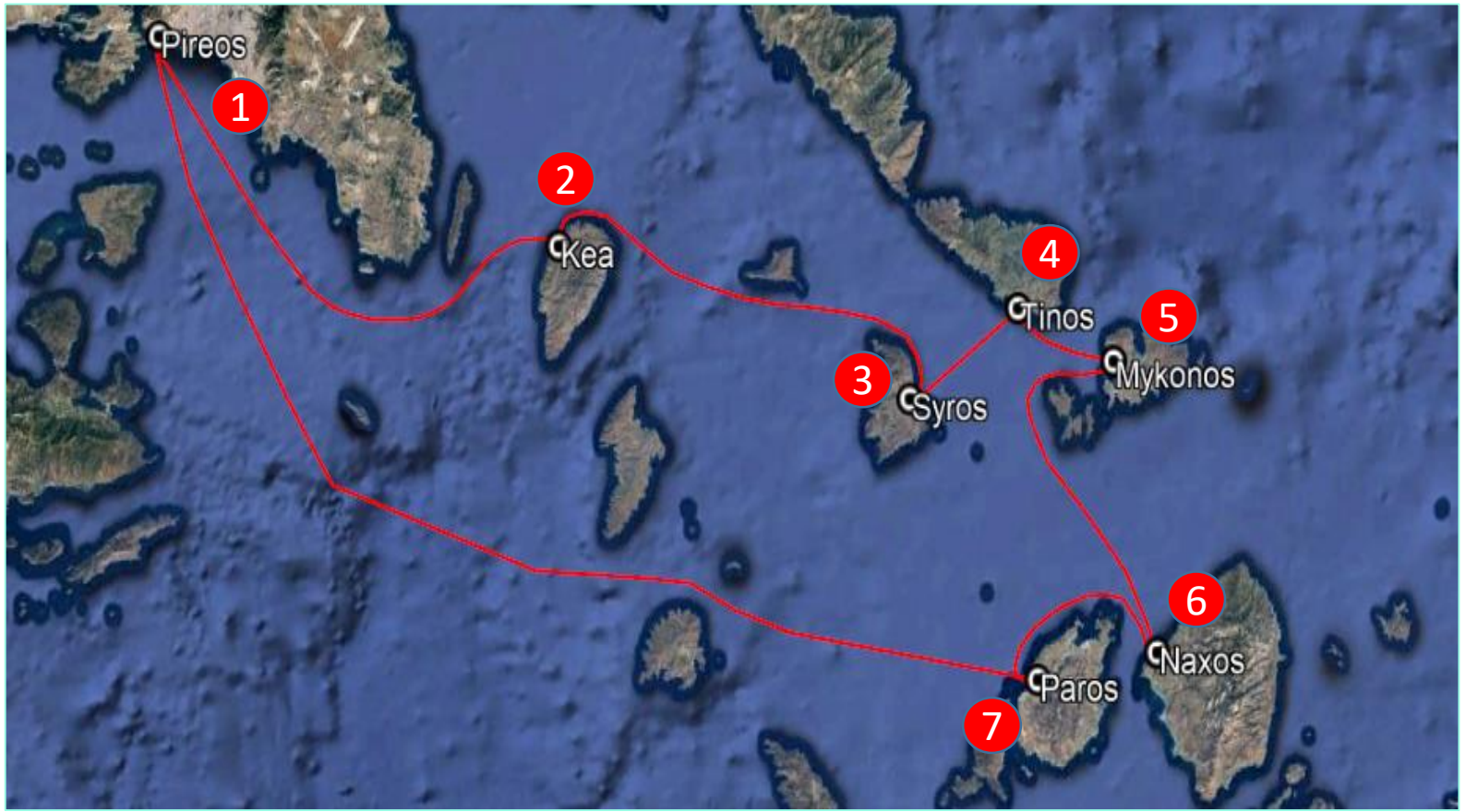
Efficiency

- 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**

Paving the way towards the future of Short Sea Shipping

What are the key components of the next generation of Short Sea Shipping in the EU?

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What are the key components of the next generation of Short Sea Shipping in the EU?

ⓘ Start presenting to display the poll results on this slide.

Thank you very much for your attention!

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MOSES Project

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

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