

MOSES

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



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alice

Alliance for
Logistics Innovation
through Collaboration
in Europe

**MOVING FREIGHT BY WATER:
SUSTAINABLE INFRASTRUCTURE
AND INNOVATIVE VESSELS –
STANDARDIZED CARGO UNITS**



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

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



Cascading delays

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



Complex cost structure

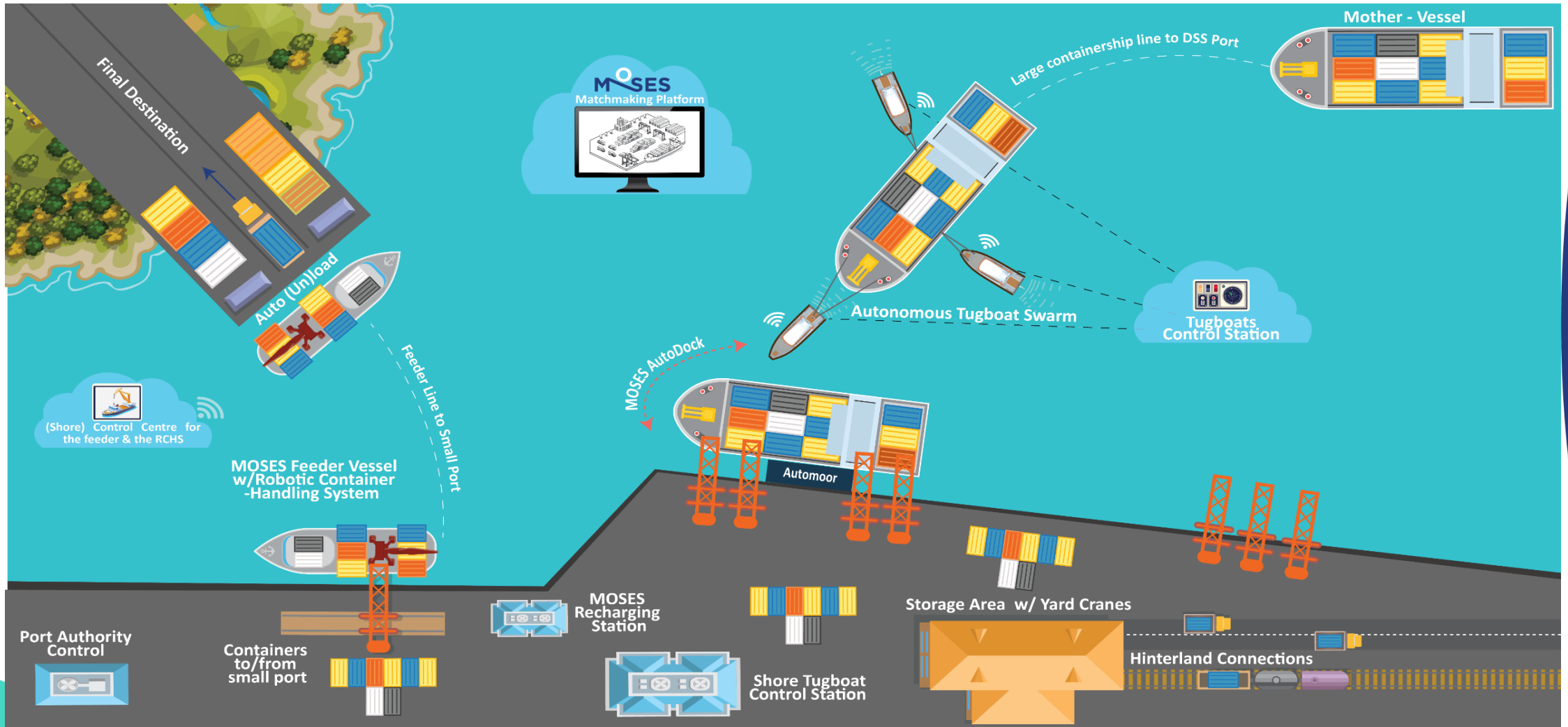
Ports close to hub ports “often lose with direct land transport”
(Kotowska, 2014)



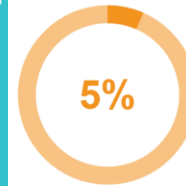
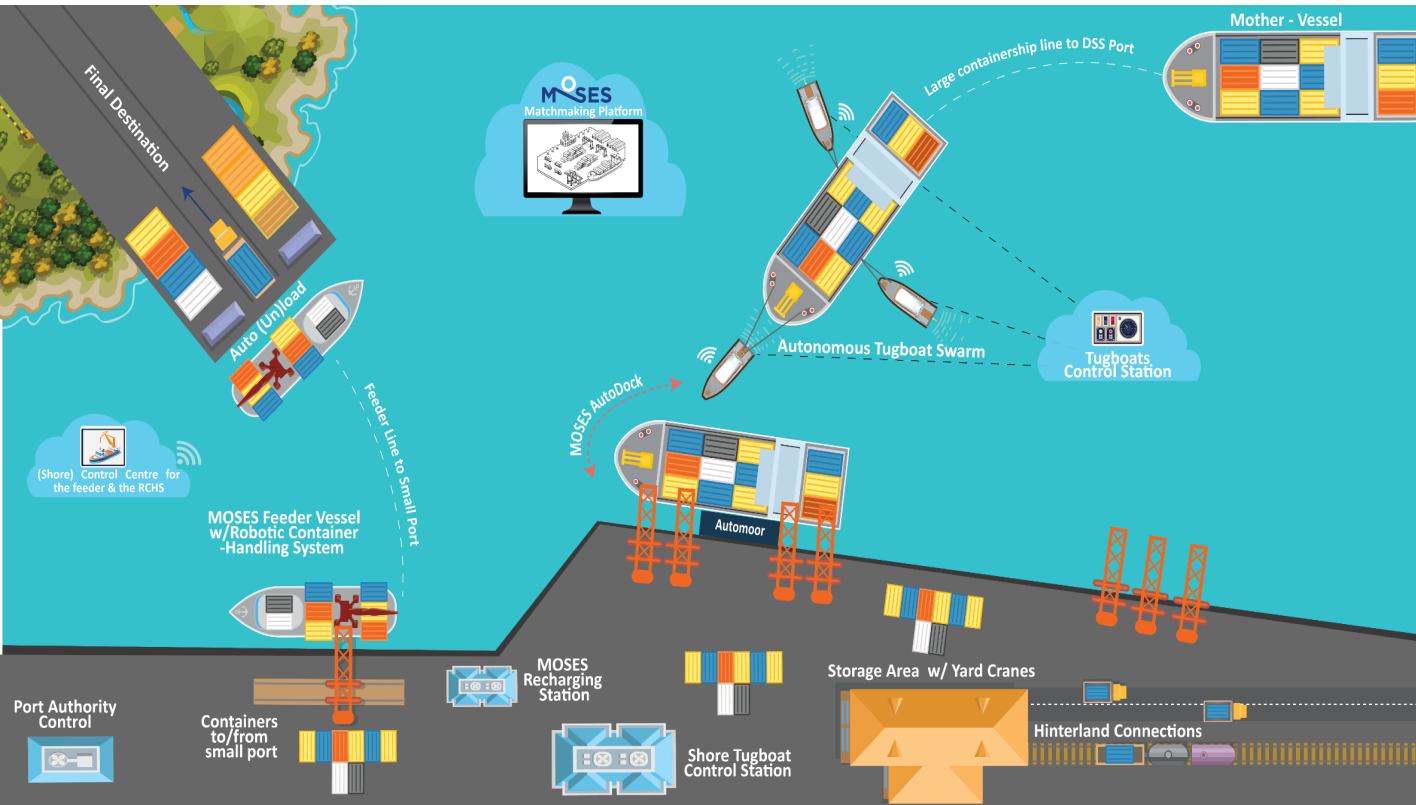
Capacity utilisation

Lack of integration with industrial operations
(Gustafsson et al., 2016)

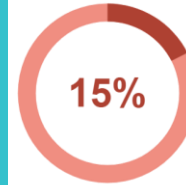
Automation and Autonomy in MOSES



Expected impact for supply chain



5% Minimum decrease of end-to-end costs for container transport with feeder services

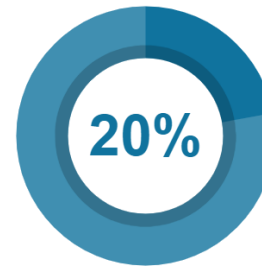
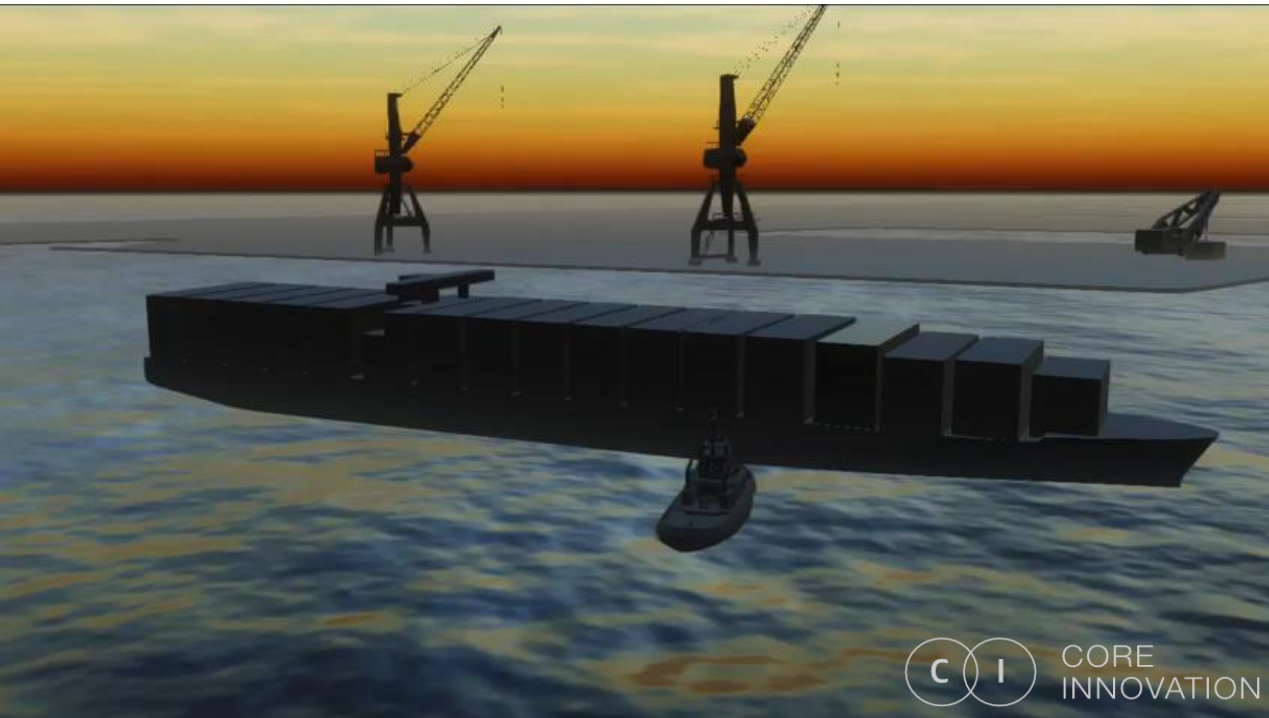


15% Increase of feeder traffic between large terminals and small ports

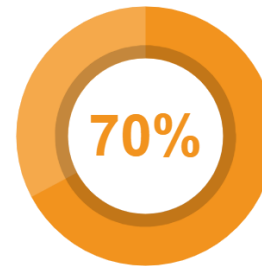


10% Modal shift to Short Sea Shipping in designated areas

Autonomous tugboats with automated docking

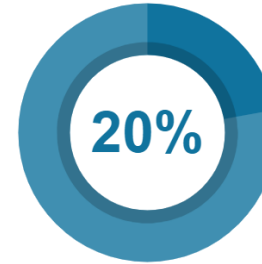
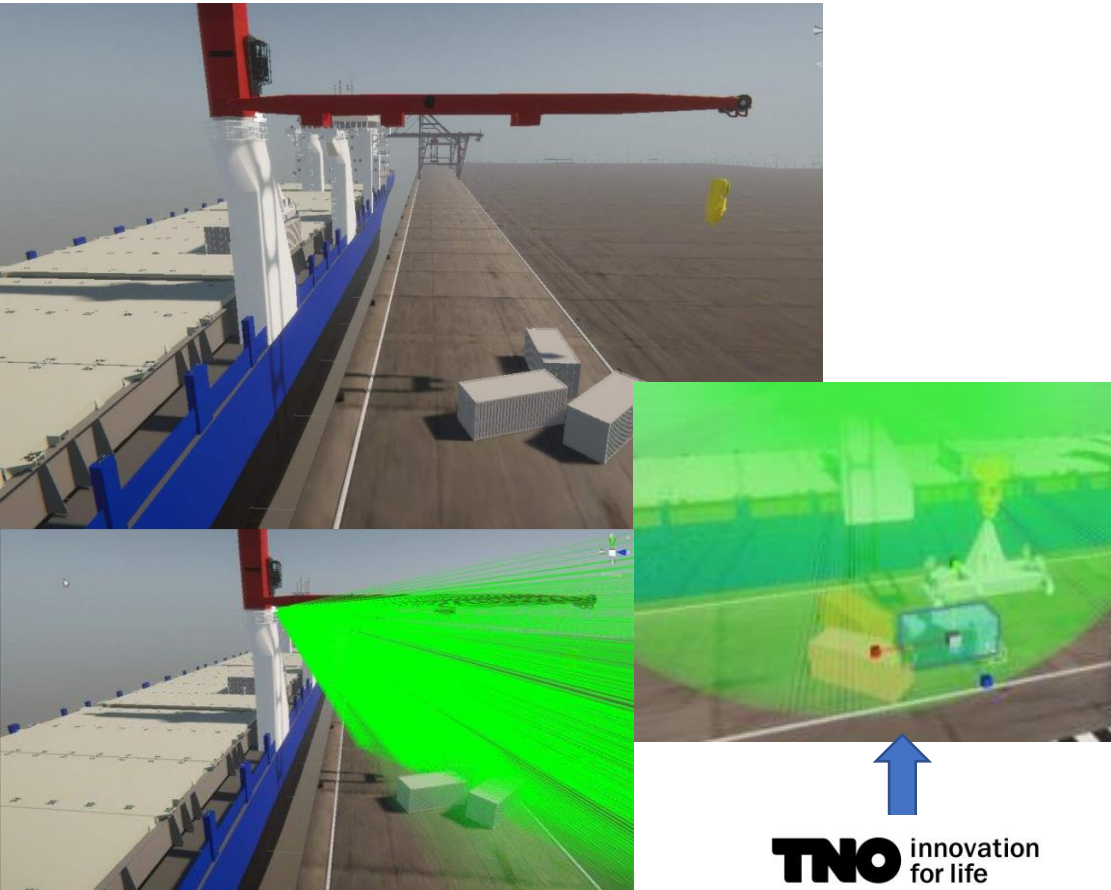


Decrease in docking time for large container ships

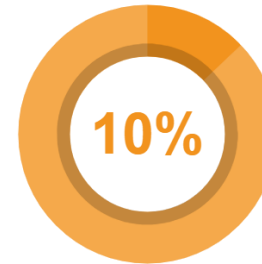


Decrease in manoeuvring time for large container ships

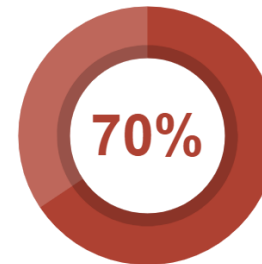
Innovative feeder with Robotic Cargo Handling



Decrease of loading time for feeder vessel



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



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

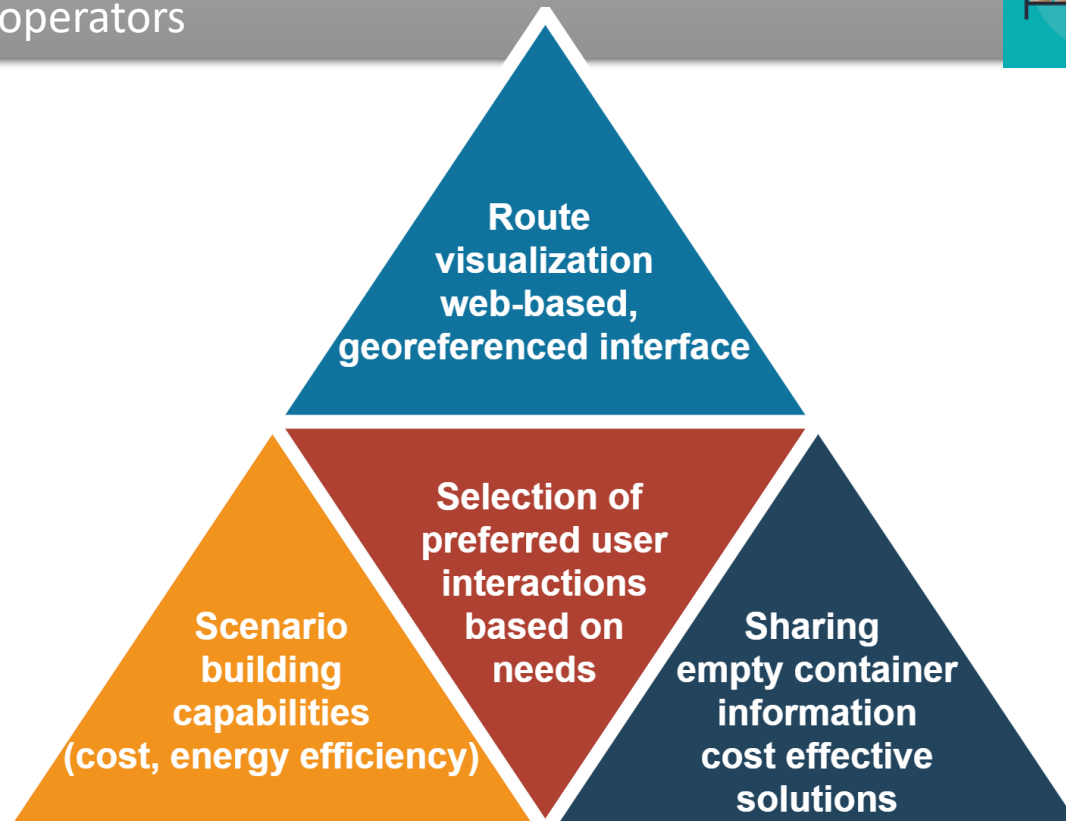
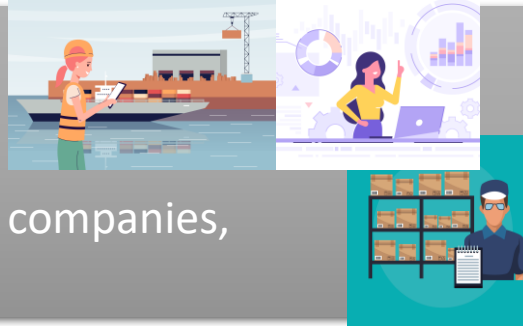




MOSES Matchmaking Platform – Features

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**



MOSES

Thank you for your attention!

 www.moses-h2020.eu

 MOSES project2020

 @mosesproject20

 MOSES Project



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