



Central European Demonstration Case

WEBINAR 5/6/25

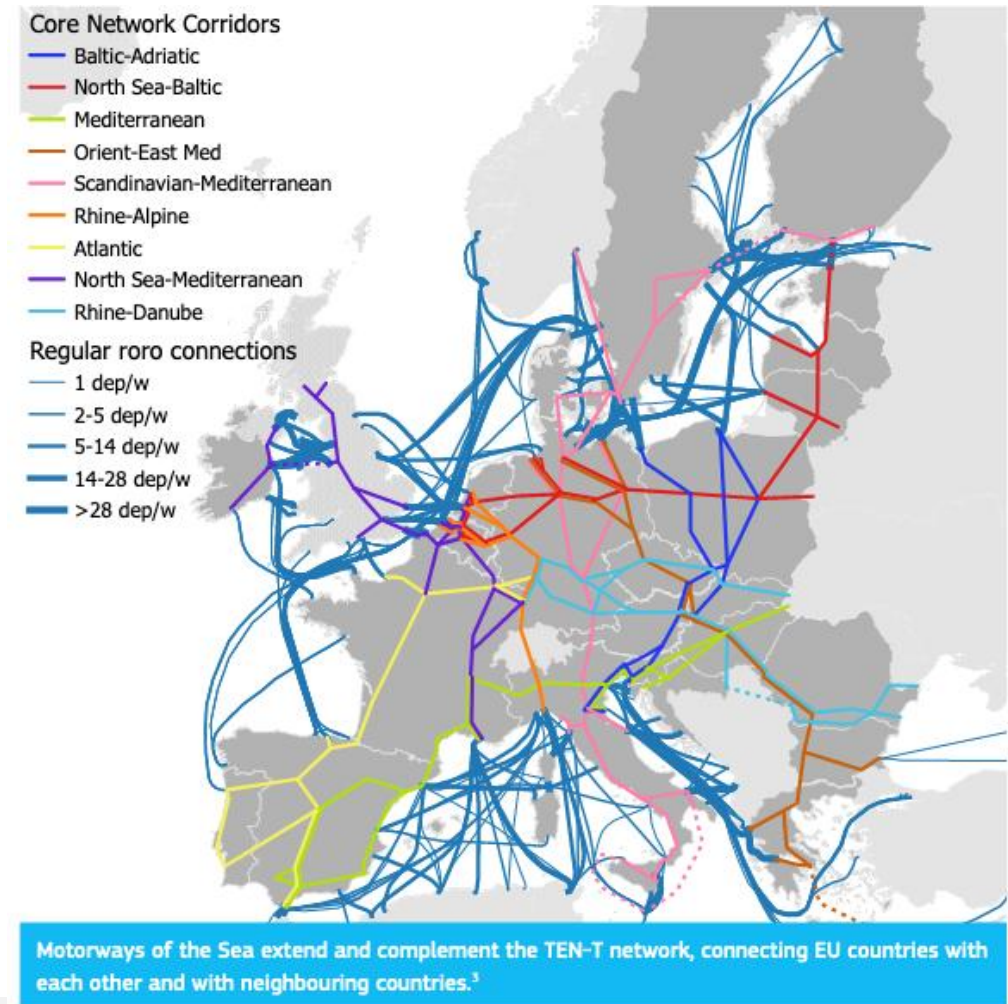


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Inland waterways in the EU

- On 24 June 2021, the Commission published its NAIADES III programme by putting forward an ambitious 'Inland Waterway Transport Action Plan 2021-2027' in line with its Sustainable and Smart Mobility Strategy by focussing on two core objectives:
 - shifting more freight transport to inland waterways, and
 - setting the sector on an irreversible path to zero-emissions accompanied by a paradigm shift towards further digitalisation, as well as accompanying measures to support the current and future workforce
- IWT and short sea are part of the TEN-T (trans-European transport networks) corridors and as such are represented in 7 of the 10 corridors
- IWT is expected to increase its share in total transportation mode by 25% by 2030 and by 50% by 2050



Inland waterways market

- With over 40,000 km of navigable waterways and 250 inland ports, the European continent IWT currently carries some 550 million tonnes of goods per year and is of increasing importance in the field of cruising and passenger transport
- Rhine countries (Belgium, France, Germany, Luxembourg, the Netherlands, Switzerland) accounted for 81.1% of total IWT performance in the EU-27, plus Switzerland, Serbia and the Republic of Moldova
- In 2021, the number of inland vessels in Europe comprised more than 16,000 vessels of which more than 12,500 in Western Europe
- Around 83.2% of the dry cargo fleet was constructed in the 20th century whereas the respective share for the tanker fleet amounts to 41.6% (due to the early implementation of double hulls)



TANK CARGO

Year of construction	Number of vessels	Share in %
2000 to 2021	1,043	58.3
1900 to 1999	744	41.6
1875 to 1899	2	0.1

Source: IVR, CCNR analysis

DRY CARGO

Year of construction	Number of vessels	Share in %
2000 to 2021	1,420	16.6
1900 to 1999	7,138	83.2
1875 to 1899	24	0.3

Source: IVR, CCNR analysis



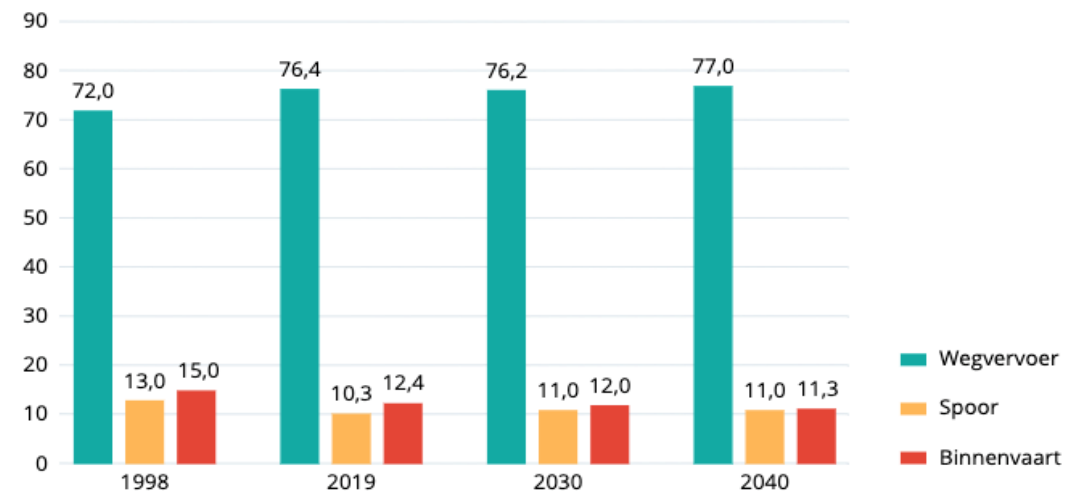
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Modal shift

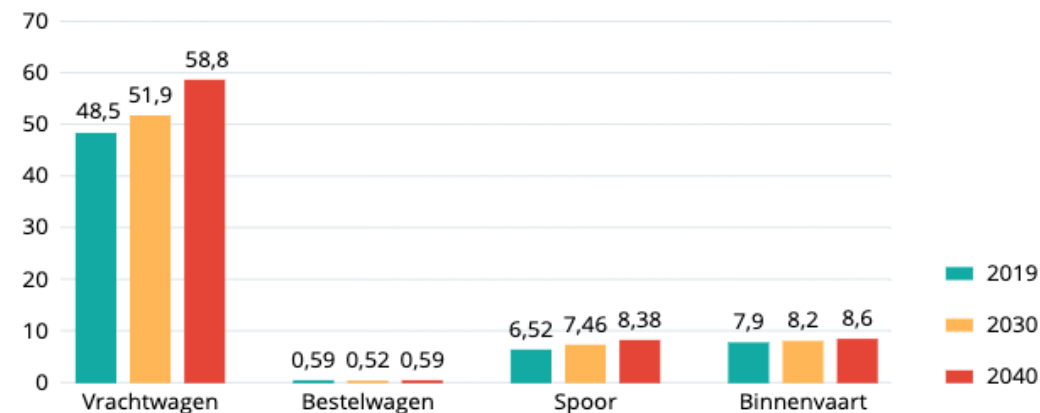


Figuur 15: Prognose modale verdeling goederenvervoer (op basis van tonkm)



Bron: Federaal Planbureau + Ontwerp mobiliteitsplan Vlaanderen 2001

Figuur 14: Evolutie van de vervoersvraag in het goederenvervoer per modus (miljard tonkm)



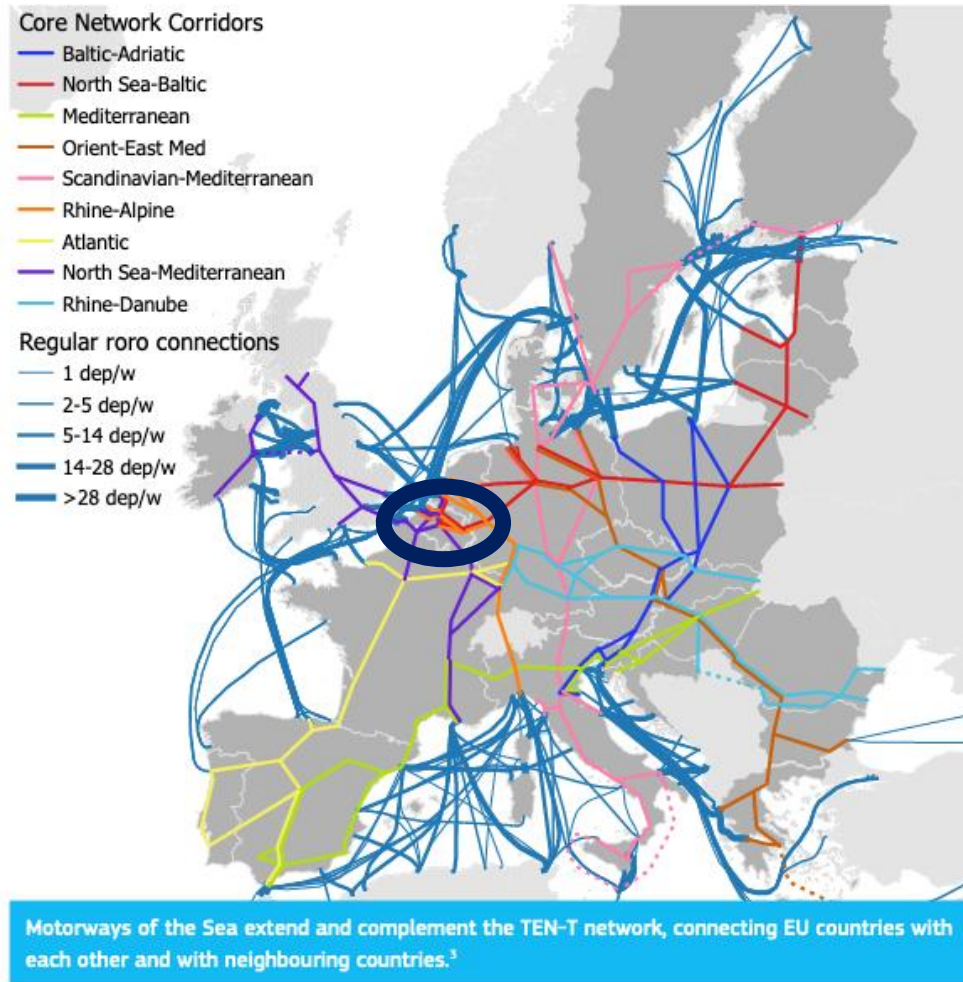
Bron: Federaal Planbureau



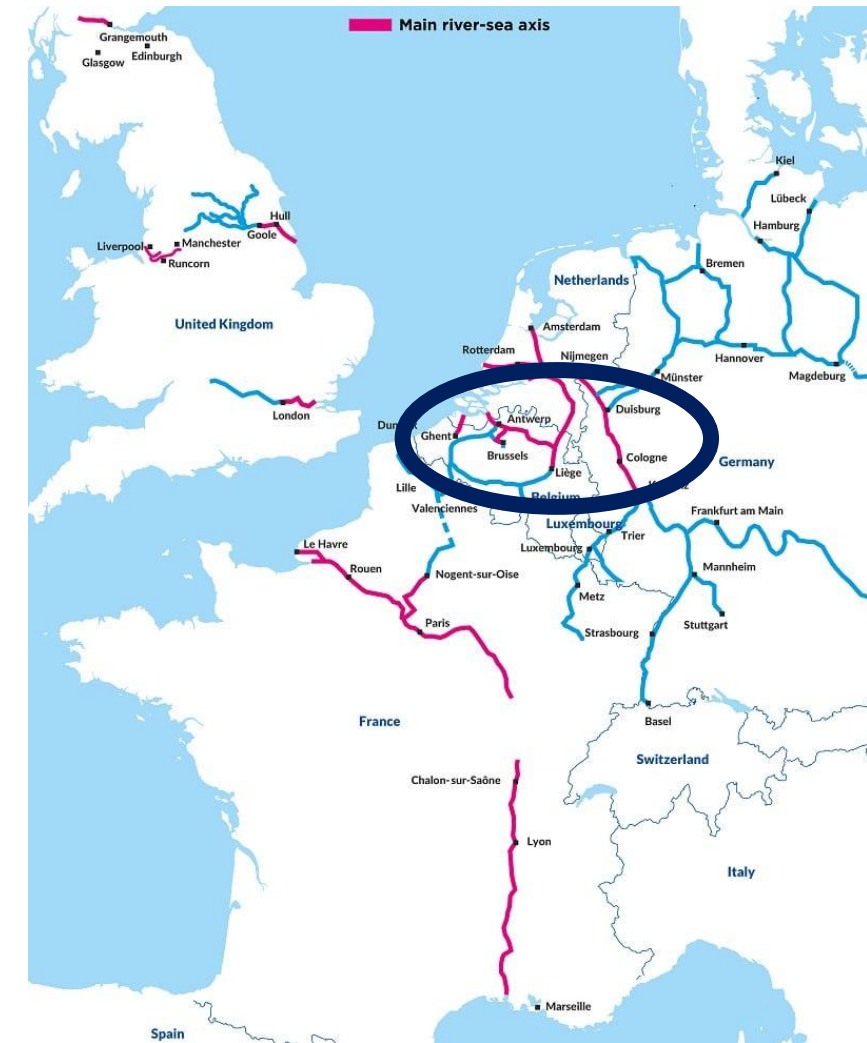
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Demonstration Use Case 2



- Reduce truck traffic
- Zero emissions
- Improve logistics through digitalisation
- 24/7 operations with reduced crew
- Seamless door to door container transport

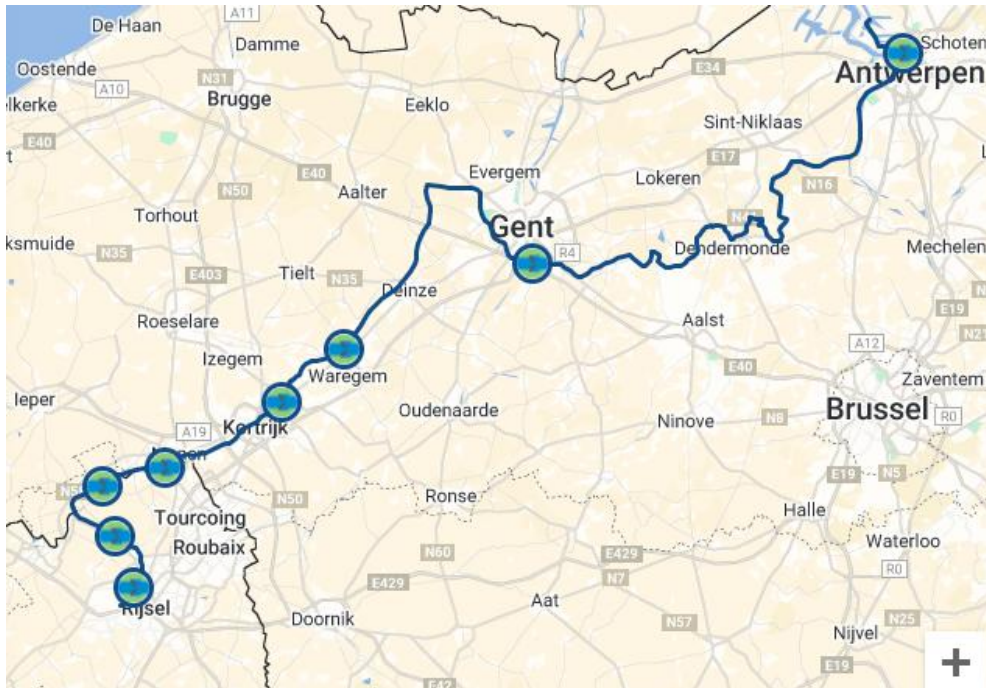


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Central European Demo Case

Antwerp - Lille



Antwerp - Duisburg



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Enabling parnters

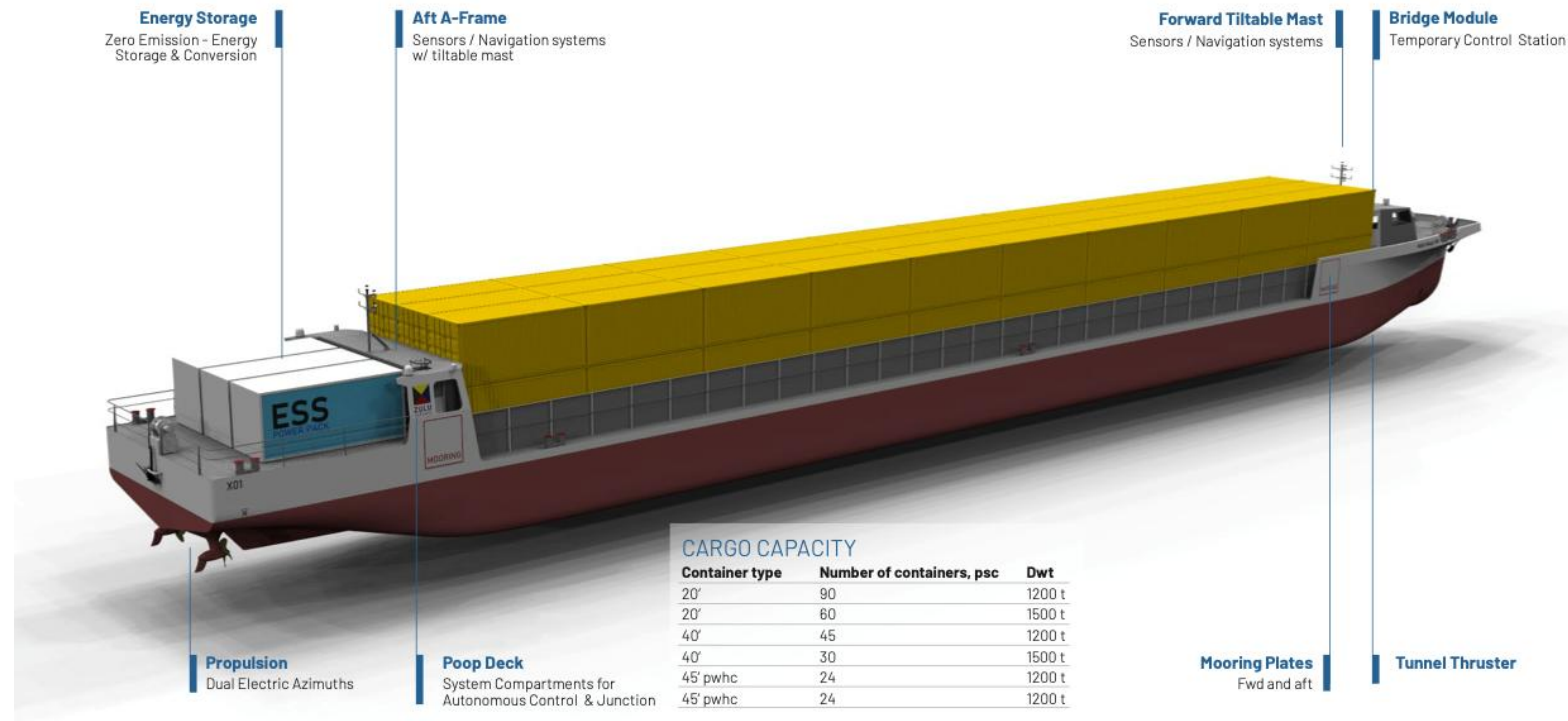


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X-Barge and ROC

Zero emission, unmanned vessel, monitored through ROC



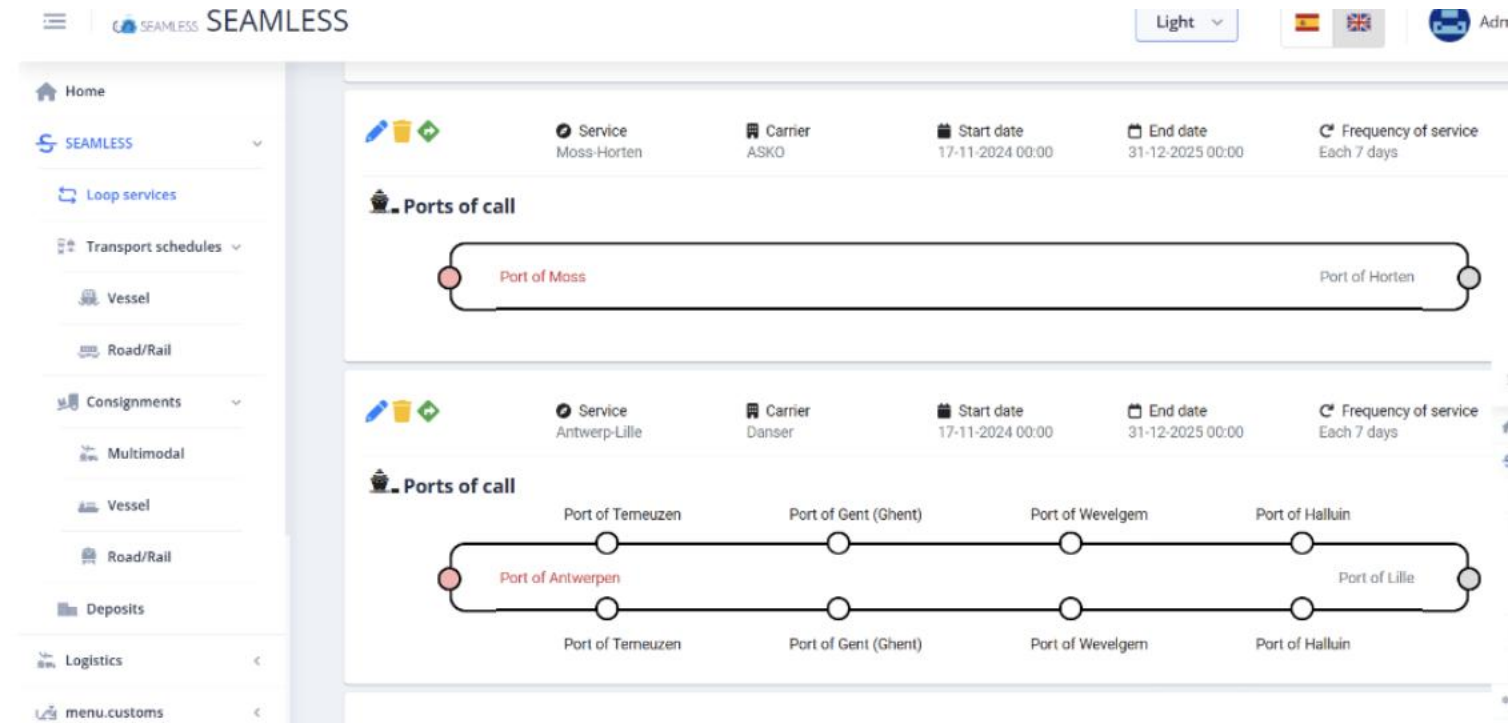
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ZULU ASSOCIATES

Logistic platform facilitating communication between systems and stakeholders involved in the supply chain.



- provides to the shipper/consignor the best route to send their cargo taking into account all the options available for inland transport
- It has an overview of all specific transport schedules from a loop service
- Digital booking of a transport operation from origin to destination
- Real-time cargo tracking and event monitoring

Voyage and Container Optimisation Platform (VCOP)

MACGREGOR

Cloud based software platform to manage autonomous cargo handling

- Automated stowage optimization considering vessel stability
- Cargo handling sequence planning
- Integration with Terminal Operating Systems (TOS)
- Real-time cargo monitoring and visualization



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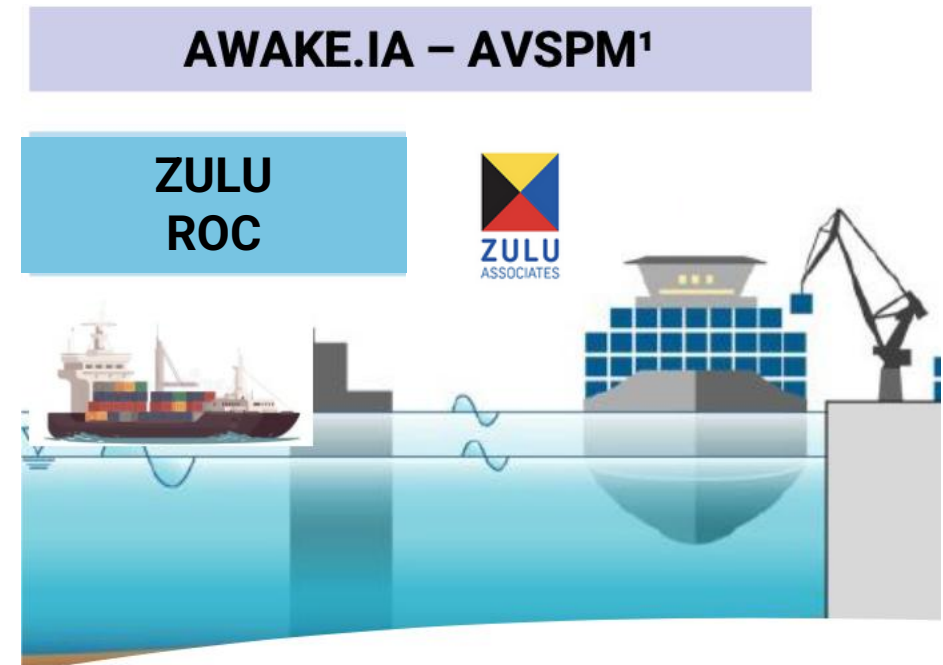
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Autonomous Vessels' Smart Port Manager (AVSPM)



Intermediate between port authority (VTS) and vessel (ROC)

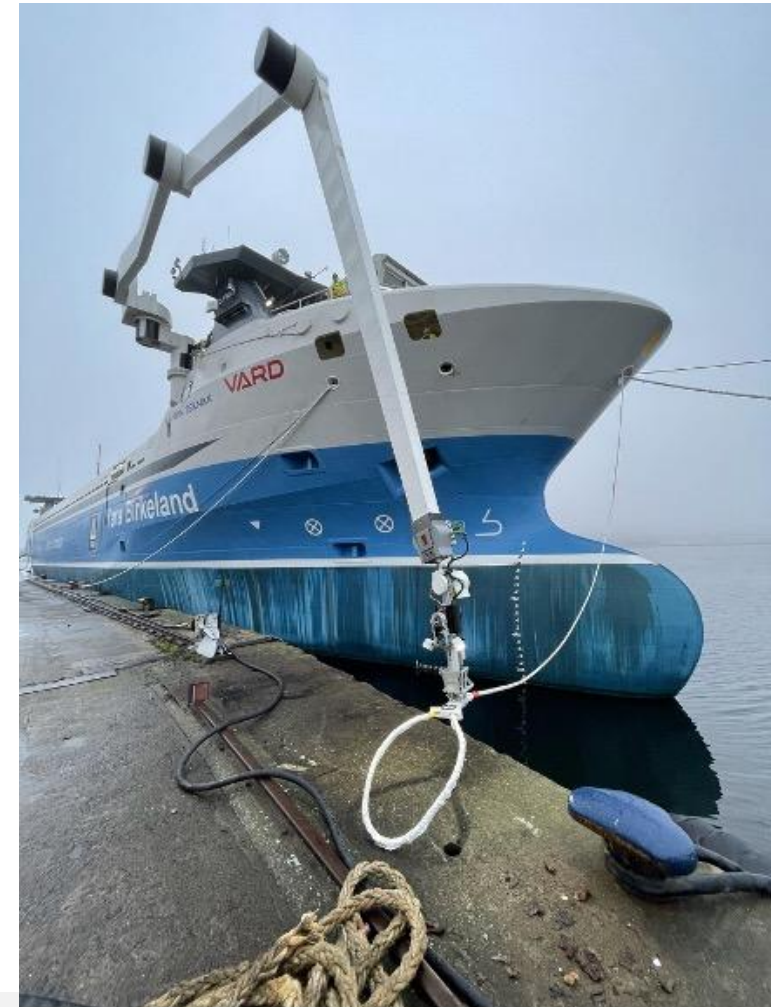
- Early port call planning
- Automated berth allocation and scheduling
- Port traffic management and coordination
- Real-time port conditions monitoring



Mooring arm **MACGREGOR**

Autonomous mooring system to deploy and pick up the mooring lines from the bollards without human intervention.

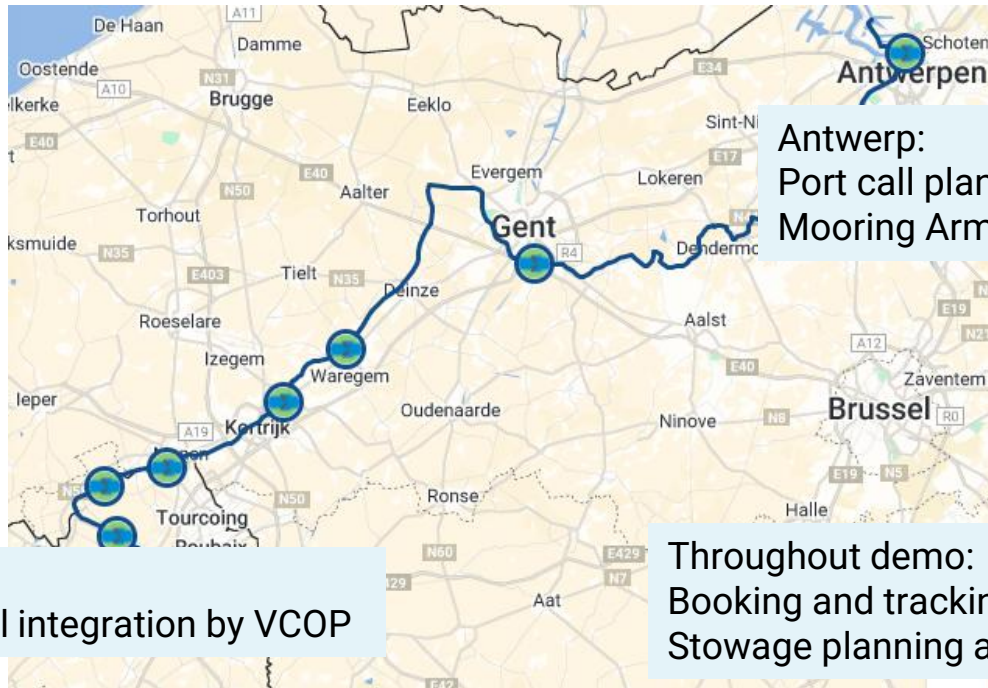
- Automated bollard detection and positioning
- Ship motion compensation
- Safety systems with obstacle detection
- Remote operation capabilities



DUC 2 – Central European Demo Case

Scenario X-Barge / traditional vessel

Antwerp - Lille



Antwerp:
Port call planning by AVSPM
Mooring Arm

Lille:
Terminal integration by VCOP

Throughout demo:
Booking and tracking of cargo by ModalNET
Stowage planning and replanning by VCOP

Antwerp - Duisburg



Duisburg:
Terminal integration by VCOP



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Thank you



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