The future of Ro-Ro and Ro-Pax shipping:
An innovation and policy roadmap for digitalising integrating ship operations

2022
01. AIS data used to coordinate the existing fleet
02. Automated mooring systems available
03. Fuel & cargo data used to audit vessel performance
04. Hull & propeller maintenance supported by AI
05. Predictive maintenance tools available for engines & systems
06. Onboard sensor & equipment calibration via live video
07. Crew & staff have real-time performance analysis
08. Stability & trim optimised on data
09. Voyage planning & execution supported by AI
10. AI-enhanced cameras at terminals & onboard ships
11. Engine & subsystem maintenance supported by AI
12. Cargo ETA to terminal tracked & shared

2023
13. Terminal operations & cargo storage system integration
14. Aerial drones support ships’ navigation & berthing
15. Cargo info shared in real-time across network
16. Contracts penalise late-arriving haulage carriers
17. Cargo condition data shared across network
18. Terminal operations & stowage aided by AI
19. Vessels assessed & valued based on EEXI & MRV
20. International standards for maritime cyber security
21. Multipurpose drones stationed at ports
22. Voyage (noon) reports replaced by sensor and satellite data
23. Standards for sharing vessel positions across ports

2024
24. IMO mandates cargo weight & dimensions
25. International vessel voyage codes for Ro-Ro vessels
26. Shipowners taxed on their CO2 emissions
27. EU mandates cold ironing at ports for Ro-Ro vessels
28. Remote controlled terminal tugs (un-)load cargo
29. 2nd generation AIS uses satellites
30. Bunker fuel taxed
31. International standards for sensor data logging & exchange
32. Robots perform lashing operations

2025
33. International cold ironing mandate implemented

2026

2027

2028

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