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

06. Onboard sensor & equipment calibration via live video

07. Crew & staff have real-time performance analysis

2023

04. Hull & propeller maintenance supported by AI

05. Predictive maintenance tools available for engines & systems

08. Stability & trim optimised on data

09. Voyage planning & execution supported by AI

10. AI-enhanced cameras at terminals & onboard ships

2024

11. Engine & subsystem maintenance supported by AI

12. Cargo ETA to terminal tracked & shared

13. Terminal operations & cargo stowage 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

2025

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

24. IMO mandates cargo weight & dimensions

2026

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

2027

29. 2nd generation AIS uses satellites

30. Bunker fuel taxed

31. International standards for sensor data logging & exchange

2028

32. Robots perform lashing operations

33. International cold ironing mandate implemented

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