



International Chamber of Shipping

Shaping the Future of Shipping



'Maritime Autonomous Surfing Ships' – MASS

An industry perspective



What do we mean by 'Autonomous'

➤ Results of IMO regulatory scoping exercise



- **Degree one:** Ship with automated processes and decision support: Seafarers are on board to operate and control shipboard systems and functions. Some operations may be automated and at times be unsupervised but with seafarers on board ready to take control.
- **Degree two:** Remotely controlled ship with seafarers on board: The ship is controlled and operated from another location. Seafarers are available on board to take control and to operate the shipboard systems and functions.
- **Degree three:** Remotely controlled ship without seafarers on board: The ship is controlled and operated from another location. There are no seafarers on board.
- **Degree four:** Fully autonomous ship: The operating system of the ship is able to make decisions and determine actions by itself.



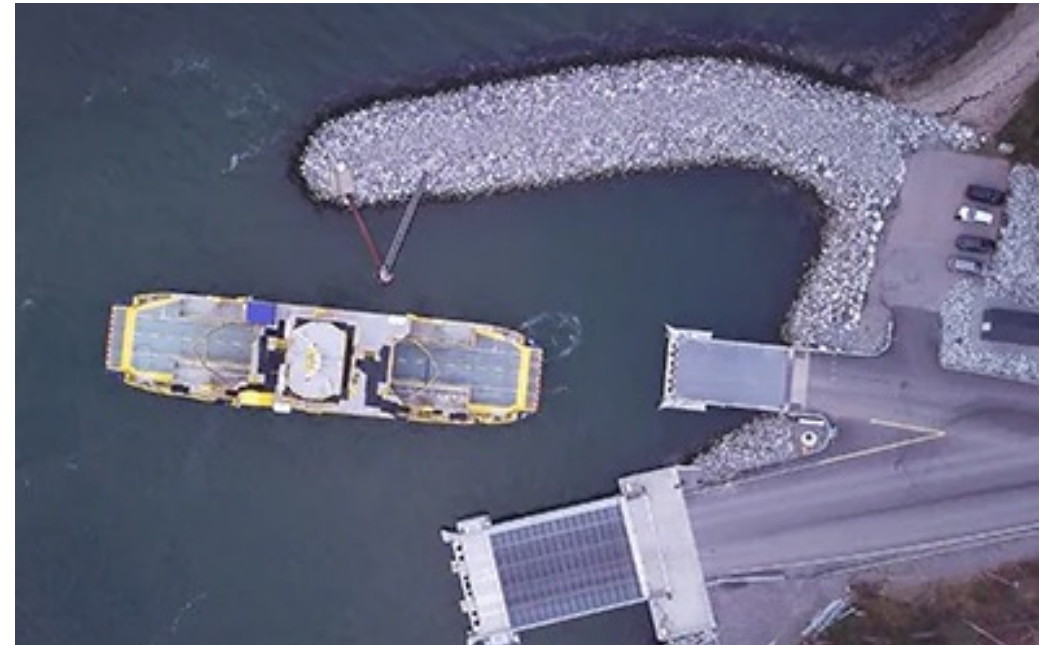
Current state of play – Short term goals

- Industry using ever advancing technologies to automate systems onboard and increase efficiency.
- S101 Chart systems
- GMDSS modernisation
- Improved communication
- Port call optimisations



Short Sea Shipping

- Short term applications
- Short sea ferry services
- Harbour support vessels
- Scientific research
- National feeder services



Medium term goals

- IMO has set a deadline of 1 January 2028 for a goal based, mandatory MASS code
- Potential for 'Unmanned mode' on the Bridge, similar to the UMS in the Engine room
- Advanced Bridge systems can be set up with Radar/Visual guard zones to alert crew when targets are spotted.



Long Term Goals

- Beyond 2028
- Reduction of onboard crew compliment
- Newly designed ships with full capability
- Fully autonomous international shipping



Opportunities

- Safety – reduced risk
- Environmental protection
- Increased cargo carrying capacity
- Integrated supply chain integration
- Seafarer skill transition



Barriers

- Legal implications
- Technology – connectivity
- Technology – life saving
and fire fighting appliances
- Start-up costs
- Regulation
- Security



Seafarers

- Seafarers need to be at the heart of everything we do in the industry.
- ‘Just transition’ to support jobs and digitalisation.
- Training needs to be reevaluated with STCW review.
- Onshore operators skillsets to be determined
- ‘Crewing’ of MASS operation centres

