



# International Chamber of Shipping

Shaping the Future of Shipping



# **The Role of Maritime Automatic Surface Ships (MASS) in shaping the future of the industry**

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刘洋是国际航运公会中国办事处首席代表，负责与中国政府和航运机构在政策和措施等领域进行沟通与协调。他还是海问律师事务所合伙人，拥有中国内地、中国香港和英格兰及威尔士律师执业资格，在国际仲裁和商业诉讼方面拥有丰富的经验。

刘洋在香港特区政府多个法定和咨询机构担任职务，包括特首政策组专家组、国际法律及解决争议服务专家委员会、香港海运港口局、航空发展及三跑道系统咨询委员会等。2022年7月，刘洋获香港特区政府颁授荣誉勋章。

Edward Liu is the principal representative of International Chamber of Shipping (China) Liaison Office, responsible for communication and coordination with the Chinese authorities and shipping organisations in the fields of policies and measures. Qualified in Mainland China, Hong Kong and England & Wales, he is also a partner of Haiwen & Partner LLP and a leading lawyer for commercial dispute resolution.

Edward serves as members of statutory and advisory bodies to the Hong Kong SAR Government, including Chief Executive Policy Unit Expert Group, International Legal and Dispute Resolution Services Expert Group, Hong Kong Maritime and Port Board, and Aviation Development and Three-Runway System Advisory Committee etc.

In July 2022, Edward was awarded Medal of Honour by Hong Kong SAR Government in recognition of his contributions to the development and promotion of legal, arbitration and dispute resolution, and transport related legal services in Hong Kong.



# About International Chamber of Shipping

- [History](#) - Founded in London 1921
- UN IMO first observer since 1961
- Global trade association for shipowners and operators from all sectors and trades
- 40 Member National Shipowners' Associations including China Shipowners' Association and Hong Kong Shipowners' Association
- Represents over 80% of the world merchant fleet with all global bodies that impact shipping



# ICS represents industry with all global bodies which impact shipping



United Nations  
Framework Convention on  
Climate Change



International  
Labour  
Organization



International Chamber of Shipping



World Customs Organization  
Organisation Mondiale des Douanes



United Nations  
UNCITRAL



WORLD TRADE  
ORGANIZATION





ICS is the first shipping industry association to be granted a consultive status by the IMO in 1961



# ICS Aims to serve as the leading global advocate



Regulatory, legal,  
trade policy and  
technical issues



Environmental  
performance

Employment and  
training of seafarers



Development and  
promotion of best  
practice



# International Chamber of Shipping (China) Liaison Office

- Over 6,000 ships in Chinese ownership
- Additional 2,600 ships under Hong Kong, China ownership
- Represents over 15% of the world fleet
- Tremendous growth of the region furthered by the Belt and Road initiative
- ICS (China) Office was set up in November 2019 in recognition of the importance and the influential role that China plays on the international stage.





# **Importance of Maritime Automatic Surface Ships (MASS)**

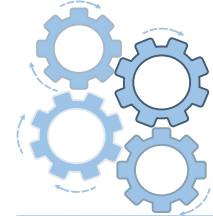


# The development of MASS in the future



## MASS in the past

- Unmanned space in engine toom
- Automation on bridge
- Autopilot
- Dynamic stability calculators



## MASS in the future

- Autonomous ship
- Autonomous code in development by the IMO
- Enable ship owners to reduce number of crew, potentially down to zero
- Intelligent systems



# Advantages of autonomous shipping

## SAFETY



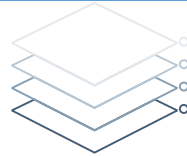
Increased safety through intelligent systems which reduce “human factors”



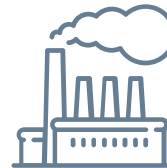
## PRODUCTIVITY

Increased productivity through harmonization of operations and “just on time arrival”

## STORAGE



Removal of crew accommodation for additional areas for cargo carrying



## FUELS

Incorporation of future fuels or battery technology



# Solving upcoming difficulties



## Difficulties

- Difficulty in recruiting seafarers to replace current crews
- Growing retirement rate among seafarers in the near future despite speculations on increase in tonnage



## Solutions and Opportunities

- Autonomous Shipping
- “Cross training” for operators of MASS vessels and seafarers
- Potential jobs for not only operators but also engineers and electric officers



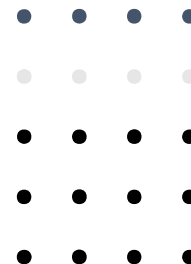
# Challenges and opportunities from a legal perspective





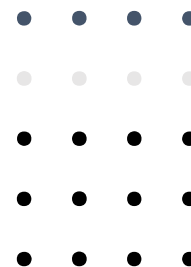
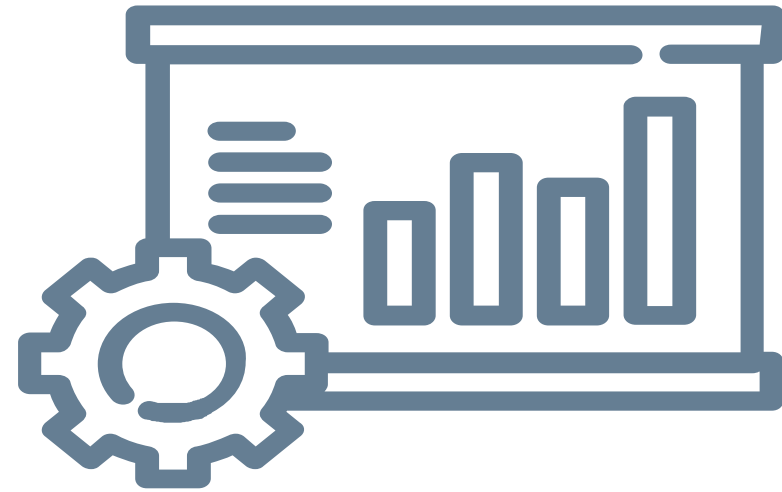
# Potential legal barriers to MASS

- Current regulations drafted with assumption that there will always be a crew and master onboard
- Implications with regards to liability and jurisdiction
- Unclear who is responsible in accidents involving autonomous vessels
- Issues around international law with regards to the location of operating centres and flag state of vessel



# Technological concerns

- Ability of systems to cope with fully automated operations 24/7
- Resilience of systems so as to provide sufficient redundancy and support in case of emergencies
- Start-up costs for building new concept ships
- Cyber and physical security of autonomous vessels



# Regulations on MASS ships

01



Mandatory IMO  
MASS code  
expected to enter  
into force in 2028

02



MASS code  
realizes the  
potential of  
MASS globally  
and covers all  
potential issues

03

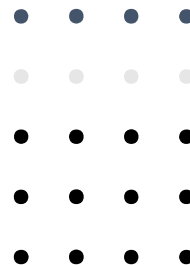


Regulatory  
framework  
enabling safe and  
efficient  
operation



# Conclusion

- Autonomous Shipping has a large part to play in the future
- MASS is happening now and is up to us to welcome and embrace it
- ICS will work hard with all our partners to improve the image of the industry
- Collaboration between all stakeholders is crucial to realize the opportunities MASS has to offer





# International Chamber of Shipping

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## 100 Years of International Chamber of Shipping

**For more information about ICS and the work we do please visit our  
website: <https://www.ics-shipping.org/>**

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