

Shipping Industry Perspective: *Unmanned Surface Vessel Regulation and Preparations for Autonomy at Sea*



John Murray

Marine Director, International Chamber of Shipping (ICS)

- **Marine Autonomous Systems**
 - Transition to the future
 - USV operations now
- **Smarter Ships and USVs**
 - The technology petri-dish
 - Managing the transfer of technology
 - Preparing the user of the future
 - Expect the unexpected
- **Equivalence for USVs – Are you ready?**
 - International regulation not regional
 - Formal safety assessment
 - Informed deliberations
- **Conclusions**
 - Prioritising regulation
 1. The transition to smarter, automated ships
 2. Regulation of USVs – focus on interaction

- *Marine Autonomous Systems*
 - Transition to the future
 - USV operations now
- **Smarter Ships and USVs**
 - The technology petri-dish
 - Managing the transfer of technology
 - Preparing the user of the future
 - Expect the unexpected
- *Equivalence for USVs – Are you ready?*
 - International regulation not regional
 - Formal safety assessment
 - Informed deliberations
- **Conclusions**
 - Prioritising regulation
 1. The transition to smarter, automated ships
 2. Regulation of USVs – focus on interaction

- **Marine Autonomous Systems**
 - Transition to the future
 - USV operations now
- **Smarter Ships and USV**
 - The technology petri-dish
 - Managing the transfer of technology
 - Preparing the user of the future
 - Expect the unexpected
- ***Equivalence* for USVs – Are you ready?**
 - International regulation not regional
 - Formal safety assessment
 - Informed deliberations
- **Conclusions**
 - **Prioritising regulation**
 1. The transition to smarter, automated ships
 2. Regulation of USVs – focus on interaction

- **Marine Autonomous Systems**
 - Transition to the future
 - USV operations now
- **Smarter Ships and USV**
 - The technology petri-dish
 - Managing the transfer of technology
 - Preparing the user of the future
 - Expect the unexpected
- ***Equivalence for USVs – Are you ready?***
 - International regulation not regional
 - Formal safety assessment
 - Informed deliberations
- **Conclusions**
 - **Prioritising regulation**
 1. The transition to smarter, automated ships
 2. Regulation of USVs – focus on interaction

Thank you

John Murray

International Chamber of Shipping (ICS)

www.ics-shipping.org

