

MARITIME SAFETY COMMITTEE  
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## ANY OTHER BUSINESS

### The IMO regulatory framework and its application to Marine Autonomous Systems

Submitted by the United Kingdom, International Association of Institutes of Navigation (IAIN) and the Institute of Marine Engineering, Science and Technology (IMarEST)

#### SUMMARY

<i>Executive Summary:</i>	This submission provides information to the Maritime Safety Committee on an initiative to explore the inclusion of the operation of Marine Autonomous Systems (MAS) within the existing IMO regulatory framework to ensure safe, secure, environmentally sound and sustainable operation.
<i>Strategic Direction:</i>	5.2
<i>High-level Action:</i>	5.2.1
<i>Planned Output:</i>	No related provision
<i>Action to be taken:</i>	Paragraph 10
<i>Related documents:</i>	MSC-MEPC.1/Circ.4/Rev.3

1 This document is submitted in accordance with paragraph 6.12.6 of MSC-MEPC.1/Circ.4/Rev.3: *Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies*. The United Kingdom offers information on its national approach to the subject of the provision of a regulatory framework for the safe design, manufacture, operation and disposal of Marine Autonomous Systems (MAS) in general and specifically Unmanned Surface Vehicles (USV) and Unmanned Underwater Vehicles (UUV).

#### Introduction

2 The aim of this information document is to raise awareness, seek engagement and endeavour to foster collaborative working practices among Member States, inter-governmental organizations and non-governmental organizations with a view to ensuring that the increasing numbers of MAS being manufactured are operated within the existing IMO regulatory framework to ensure maritime safety, security and environmental protection.

## Background

3 This document recognizes that the global use of autonomous systems in the maritime sector is growing. Most maritime sectors, such as defence, commercial, hydrographic surveying and scientific ocean research are witnessing a greater deployment of MAS to deliver cost-effective and high-quality results. The United Kingdom Government is committed to developing policies that put safety, security and environmental protection as a priority whilst also recognizing the need to balance commercial interests and sustainable growth of the maritime sector. Significant academic research and commercial research and development (R&D) are being undertaken on technological aspects of MAS, in particular, in the field of autonomous navigation and collision avoidance systems.

4 However, whilst technological solutions are being developed and deployed at greater rates and higher numbers, there is a lack of clarity in the requirements for, and means of complying with, some of the primary pieces of international maritime legislation. It is deemed necessary to seek clarification in these areas to allow MAS designers, builders and operators to demonstrate compliance with the regulations.

5 This document recognizes and reiterates the IMO ethos to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation. It also invites international stakeholder engagement to identify any uncertainties or, indeed, perceived regulatory voids, and to collaborate in addressing the key issues. This can then facilitate adoption of highest practicable standards of maritime safety and security, efficiency of navigation and prevention and control of pollution from ships. Further, it is hoped that the structured approach will also facilitate consideration of the related legal matters and effective implementation of IMO's instruments, with a view to their universal adoption and uniform application.

## Discussion

6 A United Kingdom Government-sponsored working group, the Marine Autonomous Systems Regulatory Working Group (MASRWG), was established, and has been in operation since September 2014 to determine what regulatory gaps exist for MAS and to identify and articulate methods which address these gaps. This process must be timely, reflect industrial growth, and, wherever possible, not require formulation of new regulations and/or standards at international levels.

7 The MASRWG is reviewing all pertinent IMO legislation in order to clarify the feasibility of MAS operation within the regulatory framework. The review comprises of three specific areas:

- **Legal** – identifying legal precedence;
- **Equivalence** – as a starting point identifying equivalence of MAS to manned vessels in terms of, inter alia, classification, registration, insurance and operation; and
- **Skills, training and accreditation** – identifying issues and requirements that will be necessary to provide a basis for MAS operator competence as per relevant standards of training and certification.

8 The MASRWG is seeking to establish technical liaison with MAS international stakeholders with a view to encouraging and facilitating the general adoption of the highest practicable standards in matters concerning maritime safety, security, efficiency of navigation and prevention of marine pollution with the advent of these novel craft.

9 The United Kingdom MASRWG welcomes input from Member States and all maritime stakeholders on any initiatives that could inform the work of the MASRWG.

**Action requested of the Committee**

10 The Committee is requested to note the information provided.

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