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Agenda item 5

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REGULATORY SCOPING EXERCISE FOR THE USE OF MARITIME AUTONOMOUS SURFACE SHIPS (MASS)

Interim guidelines for MASS trials

Submitted by Finland, Japan, Norway, Republic of Korea,
Singapore, United Arab Emirates and BIMCO

SUMMARY

<i>Executive summary:</i>	Given the decisions made at MSC 100, this document discusses the need for Interim guidelines for MASS trial and proposes a structure for such guidelines
<i>Strategic direction, if applicable:</i>	2
<i>Output:</i>	2.7
<i>Action to be taken:</i>	Paragraph 11
<i>Related documents:</i>	MSC 98/23, MSC 99/22, MSC 99/5/3, MSC 99/5/7, MSC 99/5/9, MSC 99/INF.3, MSC 99/INF.8, MSC 99/INF.14, MSC 99/WP.9; MSC 98/23; LEG 105/14; MSC 100/WP.8, MSC 100/20 and MSC 101/INF.17

Background

1 The Maritime Safety Committee, at its ninety-eighth session, agreed on an output for the "Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)", with a target completion date of 2020. MSC 99 gave preliminary consideration to Interim guidelines for MASS trials and invited interested Member States and international organizations to, inter alia, submit proposals to MSC 100 related to the development of interim guidelines for MASS trials with the aim of establishing a harmonized international framework to test MASS operations (MSC 99/22, paragraph 5.27.2).

2 MSC 100 noted the provisional principles for the development of interim guidelines for MASS trials (MSC 100/WP.8, paragraph 23) and invited interested Member States and international organizations to submit proposals to MSC 101 related to the development of interim guidelines for MASS trials (MSC 100/20, paragraph 5.31), for the purpose of establishing international guidelines enabling to try out and test MASS functionality in accordance with the afore-mentioned principles.

3 MASS functionality is, in general, still a disruptive technology and it is premature to establish general regulations for MASS. Therefore, it is necessary to make precautions and sets of rules for try-outs, to collect and share information, so that it becomes possible to survey operations and to examine the potential of MASS operations in international waters.

4 Finland, Norway, the Republic of Korea and the United Kingdom , among others, have already established dedicated areas to operate MASS. Norway has already started extended work due to already existing test arenas for MASS and similar projects, and therefore taken an initiative to establish an informal correspondence group to sketch out Interim guidelines for MASS trials, with great international support.

Interim guidelines for MASS trials

5 The autonomy for MASS is under rapid development. A number of Member States and classification societies have already developed verification standards for MASS.

6 Due to gaps between existing regulatory requirements for conventional ships and autonomous operations, development of regulatory requirements for MASS requires operative statistics and information for autonomous systems and ship operations, as well as test models to be evaluated. Before developing a final international legislation regime for MASS, it is necessary to portray arguments for the potential with regard to safety and risks. Evaluated and described trails seems like the most practicable way ahead.

Principles for the development of guidelines on MASS trials

7 MSC 100 agreed that the Guidelines should be developed in accordance with the following principles:

- .1 single document: the Guidelines should be developed as a single document addressing Administrations, the industry and other relevant stakeholders;
- .2 generic: the Guidelines should be generic;
- .3 not too technical: the Guidelines should be not too technical or prescriptive;
- .4 goal-based: the Guidelines should be goal-based, describing functions and goals to be achieved;
- .5 information sharing: the Guidelines should encourage information sharing, both with the Organization (feedback) and other stakeholders;
- .6 reporting mechanism: the Guidelines should include reporting to the relevant coastal State(s) on the trial(s) to be conducted, so as to enable the dissemination of information on the trials to all ships in the specified area;
- .7 precautionary approach: the Guidelines should ensure the safe, secure and environmentally sound operation of MASS;
- .8 mandatory instruments: the Guidelines should provide that MASS trials are to be in line with mandatory instruments; and
- .9 scope for specific trials: the Guidelines should provide that a scope should be specified for each trial to be conducted (e.g. mooring, navigation, new equipment, etc.).

Progress

8 It is of great importance that the work related to test trials is conducted as scheduled. These matters need to be given a clear mandate or terms of references directly related to MASS. Further investigation should not be delayed due to the extensive ongoing work on the scoping exercise for MASS.

9 As a starting point, the following structure of the guidelines is proposed and has been used in the development of the preliminary draft guidelines:

1. Introduction
 - 1.1 Aim
 - 1.2 Scope
 - 1.2.1 Geographic areas
 - 1.2.2 Level of autonomy
 - 1.3 Structure of the document
2. Definitions
3. Preparatory phase
 - 3.1 [Definition] [specification] of management and responsibility
 - 3.1*bis* Documented responsibility
 - 3.2 Test plan for voyage and phases
 - 3.3 Develop operation principles
 - 3.4 Requirements for establishing test trails [/areas]
 - 3.5 Plan for interaction with other ships
 - 3.6 Risk analysis and mitigation
 - 3.7 Determine regulatory gaps related to planned mission
4. Permissions for trial
 - 4.1 Approvals from authorities
 - 4.2 Consider other installations and activities
 - 4.3 Insurance and liability
 - 4.4 Emergency response
 - 4.5 Other Commercial
5. Execution
 - 5.1 Inform relevant authorities and other parties
 - 5.2 Monitor technical and operational systems
 - 5.3 Monitor traffic and situation around ship
 - 5.4 Execute corrective actions or abort in case of failures
 - 5.5 Register data from trials
 - 5.6 Conduct of MASS trials
6. Post-mission analysis and reporting
 - 6.1 Analysis of data recorded during trials
 - 6.2 Reporting and information sharing

10 The preliminary draft Interim guidelines for MASS test trials is provided in document MSC 101/INF.17.

Action requested of the Committee

- 11 The Committee is invited to:
- .1 note the progress made on the draft Interim guidelines for MASS trials (paragraphs 5 to 9 and document MSC 101/INF.17);
 - .2 consider the information above, including the proposed structure, taking into account the draft Interim guidelines for MASS trials set out in document MSC 101/INF.17; and
 - .3 consider forwarding this document, together with document MSC 101/INF.17, to the MASS working group, if established, and take action as appropriate.
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