Briefing on the funding opportunities in the Black Sea – 9th April 2021

Title
Study for Identification of Competences for MASS Operators in Remote Control Centres (CMORCC)
Funding Instrument
European Maritime Safety Agency (EMSA)
Code
EMSA/OP/2/2021
General information
Maritime Autonomous Surface Ships (MASS) are increasingly becoming a closer and foreseeable reality, backed by the possibilities offered by advances in the fields of automation, sensor technology, digitalisation, data communication and computer technologies and decision-making algorithms. Yet, significant challenges lie ahead, ranging from assessing risk in MASS operations to developing safe MASS trials and establishing a regulatory framework supporting safe and reliable MASS operations. The IMO Maritime Safety Committee (MSC) is currently conducting a Regulatory Scoping Exercise (RSE) aiming at determining how safe, secure and environmentally sound MASS operations might be addressed in IMO instruments. The objective of the RSE is to assess the degree to which the existing regulatory framework under its purview may be affected in order to address MASS operations. Although the introduction of MASS is intended to bring an improvement in operational safety stemming from increased automation and, thus, the reduction of accidents attributed to human actions, the human element will still remain a pivotal part of the safety equation. As MASS concepts with different degrees of autonomy may vary significantly, different degrees of human participation and intervention will be involved, either on board or from outside the ship, in a Remote Control Centre (RCC) that enables the execution of operational control over some or all MASS functions. Several recent MASS projects include the design, construction and testing, in real life conditions, of MASS demonstrators. To ensure that said tests are conducted in a manner that provides, at least, the same degree of safety, security and protection of the environment as that provided by the relevant instruments, the MSC approved interim guidelines for MASS trials. These guidelines establish that any personnel involved in MASS trials, whether remote or onboard, should be appropriately qualified and experienced to safely conduct such trials. In line with the above, maritime authorities of EU Member States together with key industry stakeholders, under the auspices of the Maritime Autonomous Surface Ships (MASS) Expert Group chaired by the European Commission, and with the support of the European Maritime Safety Agency have adopted operational guidelines for trials of MASS, which build on and complement the MSC guidelines. Therefore, the EU operational guidelines require that any personnel involved in MASS trials, whether remote or on board, should be appropriately qualified and experienced to safely conduct MASS trials. It is foreseen that the transfer of functions, sub-functions and decision-making tasks from human to automated execution will generate new operational scenarios which will in turn require new monitoring, supervision and decision-making functions and tasks to be performed by humans. These new functions and tasks would lead to the definition of new specific knowledge and skills and, therefore, competence requirements. This is in addition to the need for the performance of other existing non-automated functions to be transformed as a consequence of the new operational scenarios, thus requiring associated competences to be redefined. These functions would need to be added to the competences required for the performance of non-automated functions and tasks that will be retained even within the MASS concept considered. In summary, the emergence of a new competence framework may be envisaged. Nevertheless, up-to-date, comprehensive research into the qualifications and competence of humans performing MASS functions that may be envisioned and, eventually, may potentially be required in MASS operations, has not been

subject of specific attention yet. This study is intended to be a first endeavour to identify and describe competences for MASS RCC operators. The expected outcome may provide input to the EU Member States and the European Commission, and possibly the IMO, for regulatory purposes, as well as a potential contribution to shape and develop future standards of competence for MASS RCC operators and, consequently, relevant education, training and certification requirements.

Objectives

The main objective of the study is to identify and describe competences that may be required for operators in Remote Control Centres (RCC) of Maritime Autonomous Surface Ships (MASS) in several scenarios for MASS with two of different configurations:

1) 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.
2) Remotely controlled ship without seafarers on board: the ship is controlled and operated from another location; there are no seafarers on board.

The study shall develop proposals of generic MASS RCCs in the operational scenarios considered, for MASS remotely controlled with and without seafarers on board, as described above, and of given types and sizes, develop definitions of MASS RCC operators' functions, sub-functions, tasks and capacities, and the description of consequent competences and the proposal of competency-based curricula for each MASS RCC operator capacity described. For the purpose of the study, competence can be defined as the proficiency required for the proper performance of defined functions and tasks, which incorporates the knowledge, understanding and skills such proficiency needs.

In addition, an RCC is understood as an installation equipped with technology that enables remote control, supervision and monitoring activities carried out by human operators over MASS functions and operations. The study shall describe MASS RCC operators in different capacities, conducting tasks and activities with different levels of responsibility and identify the competences required for the performance of those tasks and activities. The study shall define the operational or management responsibilities of MASS RCC operators in accordance with the operational scenarios considered and shall provide a proposal of competence-based curricula for the MASS RCC operators in the different identified capacities.

It is expected that the study uses information from research and development projects, studies, industrial projects, industrial guidelines, standards, and experiences, including those dealing with other modes of transport and industrial processes, in the development of the specific study objectives.

Deadline for submission

19/04/2021

Project duration

16 months

Financial allocation

200.000,00 €

Partnership

EU Member States (Romania and Bulgaria)

Further Info

https://etendering.ted.europa.eu/cft/cft-document.html?docId=90166