

A Basic Study on Mode of Operation for Maritime Autonomous Surface Ship

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Abstract : As the development of the 4th industrial revolution in the maritime industry has progressed, the technical development of autonomous ships, and the development of international regulations have been accelerated. In particular, the IMO Maritime Safety Committee(MSC) has established a road-map for the development of the non-mandatory goal-based MASS instrument(MASS Code) and started developing a non-mandatory MASS Code at MSC 105th meeting. Many countries are actively participating in the Correspondence Group on the development of MASS Code, and the development of detailed requirements for MASS functions in the MASS Code is underway. Especially, the concept of "Mode of Operation" for MASS functions was mentioned in the Correspondence Group for the first time, and it is expected that discussions on these modes will be conducted from the IMO MASS JWG meeting to held in April 2023. The concept of "Mode of Operation" will be useful in explaining MASS and MASS functions and will be discussed in the future for the development of MASS Code. This paper reviews the contents of the IMCA M 220 document, which provides guidelines on operating modes, to conduct research on the benchmark for setting the operating modes of MASS.

Key words : Mode of Operation, Operational Mode, IMCA M 220, MASS

1. Introduction

The main purpose of developing and introducing Maritime Autonomous Surface Ships is to reduce the most common cause of maritime accidents, which is human error. Currently, discussions are underway to establish system configuration standards based on the mode of operation for autonomous ship operations. The guidelines related to the operating mode of ships are recommended in IMCA M 220, and we intend to conduct research on the configuration of MASS operations based on a review of these guideline s.....(중략).....

Accoding to the IMO MSC Circular 1580, the guidelines for vessels and units with dynamic positioning(DP) system, the operational requirements is proposed in section 4. The system should be checked according to the decision.....(중략).....

4. Conclusion

The aim of the IMCA M 220 document is to provide an overview of methods used in the planning and execution of offshore vessels(중략).....

2. Literature Survey

The previous studies related to the autonomy level and modes of operation of MASS are as follows. Ornulf J.(2017) discussed in paper about different levels of autonomy for ships, which can be categorized into four main(중략).....

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3. Operation Modes introducing IMCA M 220

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