**[INFORMATION SHEET] / [FREQUENTLY ASKED QUESTIONS]**

**VTS WITH A MIX OF CONVENTIONAL, AUTOMATED AND AUTONOMOUS SHIPS**

The increasing use of automation in the operation of ships, along with the anticipated increase in the use of remote control and autonomous operation of key functions, will necessitate a different approach as to how VTS interact with ships to provide information, or issue advice, warnings, and instructions to manage ship traffic and respond to developing unsafe situations.

The IMO roadmap for MASS aims to have the non-mandatory Code adopted in the 1st half of 2025, with a mandatory Code entering into force on 1 January 2032.

In parallel, the IALA VTS Committee is preparing guidance to assist VTS providers prepare for interacting with ship traffic comprising a dynamic mix of conventional, automized and autonomous ships and in a manner that ensures VTS achieves its purpose of mitigating the development of unsafe situations through:

* providing timely and relevant information on factors that may influence ship movements and assist onboard decision-making.
* monitoring and managing ship traffic to ensure the safety and efficiency of ship movements.
* responding to developing unsafe situations.

This document has been compiled in response to common questions being asked by stakeholders as the IMO develops the MASS Code and IALA prepares associated guidance specifically related to VTS in transitioning to interacting with ship traffic comprising a dynamic mix of conventional, automated and autonomous ships.

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| **Note**  The text has been prepared on the draft MASS Code as at MSC108. It is suggested the document be updated regularly as the on-mandatory Code is adopted, the mandatory Code is developed and IALA guidance released. |

1. **Will automated and autonomous ships be subject to existing IMO instruments, as amended, such as SOLAS?**

MASS will be subject to the MASS Code, which will address MASS issues not adequately or fully addressed in the applied base instruments.

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| |  | | --- | | **Draft MASS Code (MSC108/WP.7)**  ***Preamble***   1. *[The Code and the use of MASS are required to conform to the relevant rules of international law, including the United Nations Convention on the Law of the Sea (UNCLOS), and generally accepted international regulations, procedures and practices developed by the International Maritime Organization (IMO) as the competent international organization for global shipping.]* 2. *This Code addresses the functions needed for safe, secure, and environmentally sound operations of MASS insofar as they are not adequately or fully addressed in other applied IMO instruments, while ensuring that required safety levels are maintained when implementing remote controlled or autonomous operation of key functions.* 3. *This Code is intended as supplementary to other IMO instruments, such as SOLAS, and provides a regulatory framework for remotely controlled and autonomous operation of key functions.*   ***1.2 Principles***  *This Code is developed on the principles that it be:*   1. *a) supplementary to any applied base instruments, such as SOLAS, and only address MASS functions as far as they are not adequately or fully addressed in the applied base instruments;* 2. *b) holistic to ensure the objectives, aims and principles of the base instruments are maintained whilst also enabling the MASS functions and operations to be addressed across all instruments;* 3. ***1.3 Objectives*** 4. *In achieving its Purpose, this Code is intended to:* 5. *a) prevent relaxation of the level of accepted standards for design, construction, or operation and ensure a level of safety of that expected of a conventional ship;* 6. *b) enable all ships to safely coexist without impeding or negatively impacting each other, regardless of whether certain functions are remotely controlled or autonomously operated;* 7. *c) allow for the application of solutions that are demonstrably safe, secure, and environmentally sound in performing the designated functions in all defined conditions; and* |  1. **MASS will be required to broadcast status as to who is in command at any time (Master/ Master of a MASS).**  |  | | --- | | **Draft MASS Code (MSC108/WP.7)**  ***1.2 Principles***  *[N.B. Location to be confirmed:*  *The Code is based on the following principles:*  *[.1 there should be a human master responsible for a MASS, regardless of mode of operation;*  *.2 a master of a MASS may not need to be on board, depending on the technology used on the MASS and human presence on board, if any; and*  *.3 regardless of mode of operation, the master of a MASS should have the means to intervene when necessary.*  *.4 several masters may be responsible for a MASS on a single voyage, under certain conditions, and that only one master should be responsible at any given time (further consideration of what those conditions are is required).]]*  **CHAPTER 18 REMOTE OPERATIONS**  **18.2 Functional Requirements**  *To achieve the above-mentioned goal, a ship and ROC should meet the functional requirements of this chapter.*  *18.2.1 A [location/ROC] should be provided to ensure safe, secure, and effective MASS operations [or the automated functions thereof] at any time.*  *EP 1 A [location/ROC] should have:*  *.2 means to enable reliable connectivity and communication between ROC(s) and the ship,* ***third parties*** *and persons on board.*  *.3 facilities to allow access to, and sharing of, certificates and other documents required to demonstrate that the ship is compliant with international, national and regional requirements.*  *18.2.3 Validated and verified systems and interfaces between control station(s) and the ship should be provided to ensure the remote operator can operate the ship safely, securely and effectively.*  *EP 1 This will be accomplished by ensuring the remote operator is able to:*  *.2 send and receive sufficient and accurate information/commands effectively and securely between the ROC, the ship,* ***third parties****, and any shipboard personnel;*  *.4 know the status of the connectivity at the control station(s) and the ship and, where relevant, by third parties.* |  1. **MASS will be required to participate in VTS in the same manner as conventional ships. That is, the same regulatory requirements to provide reports or information required by VTS and obligations with regards to the issue of advice, warnings and instructions as deemed necessary.**  |  | | --- | | *See 2 above.* |  1. **Standards for digital information and data exchange (technology/medium, data elements, format, syntax, etc) will be referenced in other IALA guidance being developed during the 2023-2027 work program, such as:**    1. *Task 1.3.1. - Develop guidance on VTS digital communications (operational aspects).*    2. *Task 2.5.2 - Develop technical service specifications for digital data exchange between VTS and other entities - primarily ships.*    3. *Task 2.8.1 - Develop a Product Specification S-212 under the S-100 framework for VTS.*    4. *Task 2.82 - Review and update Recommendation R0145 (V-145) on the Inter-VTS Exchange Format (IVEF) Service (Output to be a revised Recommendation and associated Guideline including a technical service and/or product specification S-210).*    5. *This document will be complimentary and contribute to the overarching IALA guideline Gnnnn - Developments and implications of maritime autonomous surface ships for coastal authorities being prepared by the DTEC Committee.*] |