Input paper: [[1]](#footnote-1) VTS51-9.2.1

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Input paper for the following Committee(s): check as appropriate Purpose of paper:

**□** ARM **□** ENG **□** PAP **X** Input

**□** ENAV **X** VTS **□** Information

Agenda item [[2]](#footnote-2) 9.2

Technical Domain / Task Number 2 1.1.1

Author(s) / Submitter(s) Task Group 1.2.5

# implications of mass from a vts perspective

# background

The Committee commenced work on Task 1.2.5 – *Develop guidance on the Implications of Maritime Autonomous Surface Ships (MASS) from a VTS Perspective at VTS50*. Key outcomes included:

* Reviewing / updating the Task Register. Key objectives include:
  + To prepare a discussion paper describing the implications of MASS on the provision of VTS and its regulatory and legal framework. The paper should:

1. Clearly and concisely identify:
   * + Trends and opportunities presented by MASS
     + Issues / challenges for the management of ship traffic in a VTS area.
     + In particular, the possible implications for life at sea, safety and efficiency of navigation, protection of the environment and mitigating the development of unsafe situations
     + Options, policies and strategies for VTS to embrace influence MASS.
     + Implications for the regulatory and legal framework for VTS
2. Provide the basis for strategically planning for MASS and determining new work programme tasks associated with the preparation of new/amended IALA guidance (e.g. a new guideline)
   * Provide guidance to assist authorities ensure the safety and efficiency of vessel movements in the VTS area.

A copy of the Task Register is available at *VTS50-13.3.0.2 WP VTS Task Register 2018-2022*.

* Preparing ‘Guiding Principles’ to assist the Committee prepare guidance in a manner that will assist authorities interact with all ships and contribute to the safety and efficiency of ship movements in the VTS area, recognising:
  + The advent of MASS within VTS areas and their interaction with conventional ships.
  + The data and information exchange between MASS, conventional ships, VTS and allied services.
  + The role of VTS in contributing to the safety and efficiency of navigation and the protection of the environment through:
    - The provision of timely and relevant information on factors that may influence the ship's movements and assist on-board decision making;
    - The monitoring and management of ship traffic to ensure the safety and efficiency of ship movements; and
    - Responding to developing unsafe situations.

A copy of the Guiding Principles is available at *VTS50-13.3.1.5 TG-1.2.5 Guiding Principles.*

* Preparing a preliminary draft document (*VTS50-13.3.1.6 WP TG.2.5 Draft Guidance on the implications of maritime autonomous surface ships from a VTS perspective*).
* Formation of a Task Group (TG1.2.5) to progress the task for consideration at VTS51.

# introduction

Participants of the Task Group included:

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| --- | --- | --- |
| **Surname** | **Name** | **Affiliation** |
| Trainor | Neil | Australian Maritime Safety Authority |
| Abercrombie | Kerrie | Australian Maritime Safety Authority |
| Li | Yuanhang | China Maritime Safety Administration |
| Li | Xiao Hui | China Maritime Safety Administration |
| Ming | Hu Yuan | China Maritime Safety Administration |
| Rucun | Jia | China Maritime Safety Administration |
| Fan | Xiwei | China Maritime Safety Administration |
| Talja | Sari | Fintraffic Vessel Traffic Services Ltd |
| Sobott | Toni | Finnish Transport Infrastructure Agency |
| Martikainen | Tuomas | Finnish Transport Infrastructure Agency |
| Noguchi | Hideki | Japan Coast Guard |
| Remi | Hoeve | Ministry of Infrastructure and Water Management |
| Aaltonen | Matti | Transport and communications Agency Traficom |
| Carlos | Salinas | SASEMAR |
| Uyà | Àfrica | Spanish Maritime Safety and Rescue Agency. |
| Sundklev | Monica | Swedish Transport Agency |
| Karlsson | Fredrik | Swedish Maritime Administration |
| Eade | Peter | VISSIM |
| Drenth | Martijn | Dutch Pilots' Corporation |
| Rostopshin | Dmitry | Wärtsilä |
| Mathis | Darin | US Coast Guard |

The Group met 8 times following VTS 50 via MS Teams. The reports from each meeting are available on the IALA file share in the VTS folder at:

[*https://nextcloud.iala-aism.org/index.php/apps/files/?dir=/Committees/VTS/Post%20VTS50%20Intersessional%20TGs/Task%201.2.5%20-%20Implications%20of%20MASS%20from%20a%20VTS%20Perspective&fileid=118586*](https://nextcloud.iala-aism.org/index.php/apps/files/?dir=/Committees/VTS/Post%20VTS50%20Intersessional%20TGs/Task%201.2.5%20-%20Implications%20of%20MASS%20from%20a%20VTS%20Perspective&fileid=118586)

These include:

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| --- | --- | --- |
| **Meeting** | **Date** | **File Name** |
| TG 1.1.3-01 | 27 April 2021 | *TG 1.2.5-01 - Report from Meeting 1* |
| TG 1.1.3-02 | 18 May 2021 | *TG 1.2.5-02 - Report from Meeting 2* |
| TG 1.1.3-03 | 2 June 2021 | *TG 1.2.5-03 - Report from Meeting 3* |
| TG 1.1.3-04 | 16 June 2021 | *TG 1.2.5-04 - Report from Meeting 4* |
| TG 1.1.3-05 | 1 July 2021 | *TG 1.2.5-05 - Report from Meeting 5* |
| TG 1.1.3-06 | 15 July 2021 | *TG 1.2.5-06 - Report from Meeting 6* |
| TG 1.1.3-07 | 29 July 2021 | *TG 1.2.5-07 - Report from Meeting 7* |
| TG 1.1.3-08 | 12 Aug 2021 | *TG 1.2.5-08 - Report from Meeting 8* |

# Discussion

In undertaking its task, the Group:

* Reviewing the outcomes from:
  + VTS50 with regards to Tasks 1.2.5 (the ‘Guiding principles’ and the preliminary draft document as described above.
  + The 14th IALA Symposium (12-16 April 2021).
  + The IALA Workshop on Marine Aids to Navigation in the autonomous world (24-28 May 2021) specifically related to VTS and MASS.
  + MSC103 (5 – 14 May) regarding the *Regulatory Scoping Exercise for the Use of MASS* (MSC.1/Circ.1638).

This provided the basis to gain a common understanding of MASS amongst the Group through development of a matrix to further explore the degrees of autonomy, likely assumptions and implications.

* Undertook a scoping exercise on possible interactions between VTS and MASS to explore likely implications, such as:
  + How ships could meet their reporting requirements by digital means
  + How VTS receives, assimilates and processes data and information from MASS.
  + Ensuring communications convey the same meaning and intent, irrespective of whether provided by VHF voice or digitally,
  + How does VTS interact with both conventional ships and MASS.
  + How does the VTS interact with the entity in control of the ship (Master/RCC/automated systems).
  + How VTS manages ship traffic, including:
    - A mix of conventional ships and MASS.
    - The use of message markers such as warning, advice and instruction to achieve its purpose.
  + How VTS responds to the development of unsafe situations (conventional ships and MASS).
  + Knowing the degree of MASS for individual ships.

Key outcomes from the Group include:

* **A draft discussion paper** - describing the implications of MASS on the provision of VTS and its regulatory and legal framework for the Committees consideration. (*VTS51-9.2.1.1 Input TG.1.2.5 Draft Discussion paper - Implications of MASS from a VTS perspective*).

It is the view of the Group that the Discussion Paper is pivotal to gaining a common understanding of MASS and its implications for VTS and provide a foundation for preparing guidance.

* Proposed work programme items for the Committees consideration – These include:
  + **Digital VTS Communications** - Noting there is currently no guidance available for establishing a global framework for standardising digital interaction between VTS, ships and other entities the Group suggests there is a need for a new work programme task programme task to provide guidance for digital interaction between VTS, ships (whether conventional or autonomous) and remote control centres, including:
    - How ships can meet their reporting requirements by digital means
    - How VTS can achieve its purpose by providing information or issuing advice, warnings and instructions by digital means.

It was recognised that development of such guidance would also assist:

* + - Manufacturers in developing ship and shore applications for digitally exchanging data
    - VTS authorities prepare standardized operating procedures for digital communications
  + **Ensuring VTS Guidance documents evolve with the advent of MASS** – To ensure IALA Standards specifically related to the establishment and operation of VTS evolve with the advent of MASS and continue to provide an effective framework for achieving worldwide harmonisation of VTS through a scoping exercise to:
    - Identify guidance requiring updating/amendment.
    - Identify additional guidance required with the advent of MASS.
    - Provide a framework for planning the preparation of amended/new guidance that reflects the conclusions described in the Discussion Paper - Implications of MASS from a VTS perspective, as amended, particularly with regards to the assumptions, implications and expected timeframes:

It is the view of the Group that these tasks should be discrete tasks undertaken by a respective working group/task group. This would facilitate TG 1.2.5 to

With regards to preparation of the guidance material, as described in the Task Register, the Group was of the view that preparation of guidance be paused, noting:

* Existing guidance available for MASS trials such as:
  + The IMO Interim Guidelines for MASS Trials (MSC.1/Circ.1604).
  + EU Operational Guidelines for Safe, Secure and Sustainable Trials of Maritime Autonomous Surface Ships (MASS).
  + MASS UK Industry Conduct Principles and Code of Practice.
* The importance of the Discussion Paper to achieve a common understanding of MASS and its implications for VTS within the Committee and a foundation for preparing appropriate guidance documents.

No amendments are proposed to the following documents from VTS50:

* The contents of Task Register for this task (*VTS50-13.3.0.2 VTS Task Register 2018-2022 - Rev2 (2021-03-31)*)
* The Guiding Principles (*VTS50-13.3.1.8 WP Guiding Principles - Future VTS (1.0)*)

# Action requested of the Committee

The Committee is requested to consider the draft discussion paper prepared by TG 1.2.5

ENCLOSUREs:

1. VTS51-9.2.1.1 Input TG.1.2.5 Draft Discussion paper - Implications of MASS from a VTS perspective
2. VTS51-9.2.1.2 Proposed new task – VTS Digital Communications
3. VTS51-9.2.1.3 Proposed new task - MASS - Implications for IALA Guidance

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)