VTS55-8.1.1 Input Paper – Output from TG1.1.3 – Guidance on Provision of VTS to Conventional and Autonomous Ships

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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 [[1]](#footnote-1) 8.1

Technical Domain / Task Number 2 1.1.3

Author(s) / Submitter(s) Intersessional Group 1.1.3

# Guidance on Provision of VTS to Conventional and Autonomous Ships

# background

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

* **Discussion Paper** - Preparing a Discussion Paper to assist the Committee achieve a common understanding of MASS and its implications on the provision of VTS, focussing on:
  + The ‘operational requirements’ for managing ship traffic and the interaction between VTS, ships (both conventional and autonomous), allied services and ROCs through mix of traditional VHF voice, digital communications, and automated data exchange; and
  + Clearly and concisely identifying:
    - Trends and opportunities presented by MASS.
    - Issues / challenges / expectations for the management of ship traffic in a VTS area.
    - Options, policies, and strategies for VTS to embrace / influence MASS.
    - Implications for the regulatory and legal framework for VTS.
    - Implications for IALA Standards relating to VTS.
* **Guidance** – Preparing guidance to assist VTS providers contribute to the safety and efficiency of vessel movements in the VTS area with the advent of MASS commenced at VTS54.

At VTS54 the Committee concluded that the Discussion Paper has provided a valuable contribution to assist the Committee achieve a common understanding of MASS and its implications on the provision of VTS and it was timely to begin focussing on preparing guidance to assist VTS providers prepare for interacting with ship traffic comprising a dynamic mix of conventional, automized and autonomous ships.

A first draft of the guideline was prepared at VTS54, and the task group was requested to continue working on draft guideline intersessionally for further consideration at VTS55.

# Discussion

TG1.3.3 met 3 times since VTS54. Participants included:

| **Surname** | **First Name** | **Affiliation** | **Country** |
| --- | --- | --- | --- |
| Trainor | Neil | Australian Maritime Safety Authority | Australia |
| Abercrombie | Kerrie | Australian Maritime Safety Authority | Australia |
| Liu | Jinkai | China Maritime Safety Administration | China |
| Hansen | Dorte | Defence Command Denmark Naval Staff | Denmark |
| Rostopshin | Dmitry | DiNav Marine | Finland |
| van Dorsser | Harmen | Port of Rotterdam Authority | Netherlands |
| Salinas | Carlos | Spanish Maritime Safety Agency | Spain |
| Diaz | Raquel Rojo | Spanish Maritime Safety Agency | Spain |

Key outcomes from the intersessional work include:

1. **Review of MASS related developments** **since VTS54**, including**:**

* **IALA MASS Workshop - IALA HQ (2-3 October)** and the document entitled *The Future of Maritime Autonomous Surface Ships (MASS)* which considers the outlook for the gradual adoption of MASS over the next twenty years and potential drivers and challenges for the technology. A copy of the document is at [*https://www.iala-aism.org/technical/mass/*](https://www.iala-aism.org/technical/mass/)*.*
* **IALA MASS Task Force (6 March)** with regards to the development of an overarching IALA MASS Recommendation and Guideline.
* **IMO Intersessional Working Group on Maritime Autonomous Surface Ships (30 Oct - 3 Nov)** and the Groups report to MSC 108 ((VTS55-8.1.1.2 *MSC\108\MSC 108-4-1*).
* **IALA webinar** entitled *Sailing into the Future of Autonomous Ships*. A recording is available at [*https://www.youtube.com/watch?v=mUiQY7Eq444*](https://www.youtube.com/watch?v=mUiQY7Eq444)*.*
* **Situational Awareness** - inclusion of the definition of ‘Situational Awareness” in the International Dictionary of Marine Aids to Navigation following the VTS Committees request at VTS54. That is:

*Situational awareness refers to the ability to identify, process, and comprehend the critical elements of information about what is happening in the surrounding environment at any given time.*

*It involves being aware of what is happening around you and understanding how that information, events, and your own actions will impact your goals and objectives, both immediately and in the near future.*

1. **Draft Guideline on Implications of MASS from a VTS Perspective**

General discussion highlighted the importance of:

* Situational awareness for maintaining the safety and efficiency of navigation and support the protection of the environment within a VTS area is for both the VTS and individual ships both within a VTS and between VTS and allied services, automated systems, Masters/MASS masters and Remote Operation Centres with a dynamic mix of conventional, automized and autonomous ships is fundamental to the safety and efficiency of navigation, contribute to the safety of life at sea and support the protection of the environment.
* The significance and difference of the terms interaction and communication, noting the IMO resolution for VTS uses the term ‘interaction’ in the definition of VTS. That is – “*the capability to interact with vessel traffic and respond to developing situations”*. In general:
  + Communication - refers to the act of sharing information.
  + Interaction - refers to acting in such a manner so as to affect the other.
  + The key difference between ‘communication’ and ‘interaction’ is that ‘interaction’ is a broader term while ‘communication’ is a part of the ‘interaction’

Noting this and the review of MASS related development since VTS54 the Group completed a revision of the draft guideline.

Participants also noted there is little documented information available on the operational implications from “MASS Testbeds” around the world with regards to the safety and efficiency of navigation as most have been outside VTS areas or if so, in a controlled environment, and suggested that IALA members be encouraged to share any information available at VTS55.

# Action requested of the Committee

**The Committee** is requested to note draft revised Guideline to assist VTS providers interact with vessel traffic, regardless of whether certain functions are remotely controlled or autonomously operated and respond to developing situations within a VTS area (*VTS55-8.1.1.1) Draft Guideline on Provision of VTS to Autonomous and Conventional Ships*).

**Committee members** involved with “MASS Testbeds” are requested to, where possible, share information they may have with regards to the outcomes and specifically any operational implications from a VTS perspective.

**Attachments**

1. *VTS55-8.1.1.1 Draft Guideline on Provision of VTS to Autonomous and Conventional Ships.*
2. *VTS55-8.1.1.2 MSC\108\MSC 108-4-1.*
3. *VTS55-8.1.2 Draft Guideline MASS implications for Shore Authorities* *(DTEC2)*

1. Leave open if uncertain [↑](#footnote-ref-1)