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As at VTS53

DISCUSSION PAPER

IMPLICATIONS OF MARITIME AUTONOMOUS SURFACE SHIPS FROM A VTS PERSPECTIVE

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DOCUMENT REVISION

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1. DOCUMENT PURPOSE

The purpose of the discussion paper is to assist the Committee achieve a common understanding of MASS and its implications on the provision of VTS by clearly and concisely identifying:

- Trends and opportunities presented by MASS.
- Issues / challenges 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.

The document supports IALA's *Strategic Vision* and *Current Drivers and Trends* by providing a means to assist the Committee:

- Monitor the advent of MASS and its associated implications for VTS.
- Strategically plan for MASS and determine new work programme tasks associated with the preparation of new/amended IALA guidance.
- Develop guidance to assist authorities ensure the safety and efficiency of vessel movements in the VTS area, recognising:
 - The advent of MASS and their interaction with conventional manned vessels within VTS areas.
 - The interaction process of autonomous vessels with conventional traffic.
 - The information flow between MASS and shore authorities; and
 - The related information exchange with conventional traffic.

Note

The advent of MASS will be ongoing for many years, and it is intended that this document will be reviewed and updated, as appropriate by the VTS Committee to reflect:

- Amendments to IALA policy documents, including:
 - *Strategic Vision*.
 - *Current Drivers and Trends*.
 - *Position on the Development of Marine Aids to Navigation Services 2019*.
- Outcomes from the MASS Task Force.
- New / revised IMO instruments specifically related to MASS.

It is not the intention for this document to address the issues/implications identified. This will be achieved through new/amended work programme tasks adopted by the Committee.

2. EXECUTIVE SUMMARY

The advent of MASS will have significant implications for how VTS contributes to the safety of life at sea, safety and efficiency of navigation and the protection of the environment within the VTS area by mitigating the development of unsafe situations.

This includes how VTS will interact with conventional ships, autonomous ships, and control centres (remote and/or local) to mitigate the development of unsafe situations through:

- Providing timely and relevant information on factors that may influence the ship's movements and assist onboard decision-making.
- Monitoring and managing ship traffic.
- Responding to developing unsafe situations.

A key consideration in moving forward will be balancing the benefits derived from new and advancing technologies with safety, efficiency, protection of the environment and security concerns will be a primary consideration for VTS as MASS transitions from 'local' trial environments to operational scenarios.

1. Issues / challenges for the management of ship traffic in a VTS area

The implications for VTS have been identified with regards to the advent of MASS, noting the assumptions described in Section 3.3, include.

Degree of autonomy ¹	Implications for VTS
Degree one Ship with automated processes and decision support	Minimal - There is a need to monitor advances in the automated process and decision support onboard
Degree two Remotely controlled ship with seafarers on board	<ul style="list-style-type: none"> • Managing ship traffic comprising both MASS and conventional ships • Digital interaction with ships, RCCs and other stakeholders to: <ul style="list-style-type: none"> ○ Exchange information ○ Provision of advice, warning, and instruction • Managing Interaction with multiple RCCs • Operational and procedural changes associated with the above • Provision of advice, warning, and instructions to the RCC with responsibility for the vessel. • Communications and interaction with participating ships (Voice / data exchange). This may include communications between ships (MASS and Traditional).
Degree three Remotely controlled ship without seafarers on board	<ul style="list-style-type: none"> • As above, plus: • Emerging situation where ship needs to be contained / controlled to mitigate incident (national gov't, VTS, other agencies)
Degree four Fully autonomous ship	As above, plus: <ol style="list-style-type: none"> 1. Operational and procedural changes associated managing Degree four MASS 2. VTS should be able to request that the RCC retakes control of the MASS 4, changing its operational status to MASS 3

¹ The degrees of autonomy are as defined by the IMO for the purposes of the Regulatory Scoping Exercise completed at the 103rd Session of the MSC in May 2021

2. Embracing and influencing the development of mass

To facilitate strategically planning for MASS and ensure VTS continues to contribute to safety of life at sea, safety and efficiency of navigation and the protection of the environment within the VTS area by mitigating the development of unsafe situations the following strategies have been adopted:

- **Discussion Paper** - The purpose of the discussion paper (this document) is to assist the Committee:
 - Achieve a common understanding of MASS by providing a mechanism to monitor the advent of MASS and its associated implications for VTS.
 - Strategically plan for MASS and determine new work programme tasks associated with the preparation of new/amended IALA guidance.
- **Case Studies** - The ongoing use of 'Case Studies' to assist gaining a greater understanding of MASS and its implications by monitoring their development/outcomes and identifying opportunities for involvement/engagement. A copy can be download from - <https://www.iala-aism.org/technical/mass/>
- **Position Paper** - Preparation of a concise "Position Paper" to articulate and communicate the Committee's opinion and intentions on key considerations for the management of ship traffic to ensure the safety and efficiency of ship movements by mitigating the development of unsafe situations are considered in the IMO's preparation of a mandatory instrument to address MASS operations.
- **Fast Tracking Adoption of New/Revised IALA Guidance** - Two new Tasks already adopted:
 - Ensuring VTS Guidance Documents evolve with the Advent of Mass
 - Digital VTS Communications
- **IALA Policy Documents** - Key documents associated with the IALA Strategic Vision 2018-2026 should be regularly reviewed by the VTS Committee with a view to recommending updates to reflect the advent of MASS and provide the policy framework to facilitate embracing these developments, including:
 - Position on the Development of Marine Aids to Navigation Services 2019
 - Current Drivers and Trends:

3. Implications for the regulatory and legal framework for VTS

Current expectations are there are no implications for the IMO regulatory regime for VTS with the advent of MASS, noting:

- The IMO Regulatory Scoping Exercise completed in May 2021 (Section 3.1.1) did not identify any implications associated with SOLAS regulation V/12 (Vessel Traffic Services).
 - IMO Resolution A.1158(32), adopted by the IMO Assembly in December 2021, has 'future proofed' the Guidelines as much as possible to accommodate new trends, such as the development, adoption and implementation of Maritime Services, e-navigation and other evolving instruments aimed at the facilitation of safe, secure, and efficient maritime traffic
4. **Implications for IALA Standards relating to VTS** - The implications for IALA Standards relating to VTS with the advent of MASS are significant, noting the role of IALA in contributing significantly to the development of internationally harmonized guidance for vessel traffic services (Refer Section 3.6).

3. DISCUSSION

IALA’s *Current Drivers and Trends* document serves as guidance as to how IALA can reach its strategic goals with a long-term horizon and perspective. Nine trends and developments have been identified to “*be monitored closely and when required, appropriate action should be taken such as an adjustment of the priorities and/or structure of the organization*”.

The “*Development of autonomous, automated and unmanned vessels*” is one of these nine trends and developments. Key aspects and implications identified with regards to MASS include:

- “*The further development of autonomous vessels could lead to increased safety and efficiency*”
- “*Today some vessels are to some extent semi-automated or semi-autonomous*”
- “*The development is expected to continue with unmanned vessels as the ultimate stage*”
- “*The trend will have an implication on the infrastructure and lead to fewer human errors*”
- “*It will also require reliable and resilient Positioning, Navigation and Timing (PNT) and connectivity in terms of integrated and corresponding systems and machine-readable signals in cases where no crew are present*”

Recognising VTS will have a key role in the advent of MASS this document has been prepared to collate opinions and ideas as a basis for informed discussion on the advent of MASS and achieve a common understanding of MASS and its implications for VTS.

3.1. OVERVIEW

3.1.1. MOVING TO A GOAL-BASED INSTRUMENT FOR MASS

At MSC105 in April 2022 the IMO Maritime Safety Committee adopted the road map for the development of a goal-based instrument for MASS. Key components include:

- Development of the content of the instrument(s), including consideration of common issues and framework of the MASS instrument(s) and development of provisions of MASS instrument(s).
- Amendment process for the entry into force of the instrument – initially non-mandatory code for cargo vessels only. The intention is to include passenger vessels at future time, and ultimately introduce a mandatory code.
- Amendments to existing conventions that are necessary for MASS (for example, COLREG to address issues identified, STCW to potentially address remote operator).

The road map aims to have the non-mandatory MASS Code finalized in the 2nd half of 2024, in conjunction with amendments to existing instruments necessary to support the code.

The key elements of the roadmap and milestones where engagement from the VTS community and IALA is required to facilitate inclusion of shore-based requirements for managing ship traffic are highlighted below.

IALA Engagement Opportunities	MSC 106 1-9 Nov 22	MSC 107 1st half 2023	MSC 108 1st half 2024	MSC 109 2nd half 2024	MSC 110 1st half 2025 Adoption of MASS Code
No input	Deadline has passed				
Input Paper		Information Paper on shore considerations			
Input Paper			TBD		
Input Paper				TBD	
Input Paper					TBD

Noting the timeline above, the key milestones for IALA to engage include:

MSC	IMO WORK PLAN	IALA Milestones
<p>MSC 106 (2 to 11 Nov 2022)</p>	<p>Consideration of key principles and common understanding of the purpose and objectives for the new instrument</p>	<p>Note Deadline for input papers to MSC less than 4 pages is 13 September VTS53 19-23 September – Therefore, too late for committee input</p> <p>Comments VTS is not mentioned in the RSE</p>
	<p>Commence consideration of the common potential gaps and/or themes identified during the Regulatory Scoping Exercise (RSE) (MSC.1/Circ.1638, section 5) starting with the high priority items (MSC.1/Circ.1638, paragraphs 6.11.1 to 6.11.3), including:</p> <ul style="list-style-type: none"> • identification of which potential gaps should be addressed prior to drafting instruments • identification of potential gaps which should be addressed while an instrument is being drafted <p>High priority items (MSC.1/Circ.1638, paragraphs 6.11.1 to 6.11.3), include but are not limited to:</p> <ul style="list-style-type: none"> • consideration, together with relevant documents, whether to amend the definition for MASS and degrees of autonomy (including the respective definition) • meaning of the terms master, crew or responsible person • remote control station/centre • determination of the remote operator as a seafarer 	
	<p>Commence development of glossary/terminology, to be further developed throughout the process of drafting</p> <ul style="list-style-type: none"> • development should take into account previous submissions made to the Committee 	
	<p>Commence consideration of the scope and framework of the mandatory and/or non-mandatory instrument to be developed - (including structure of instrument, areas it should encompass, parts/chapters, etc.) for a goal-based instrument (MASS Code) and other associated non-mandatory instruments</p>	
	<p>Commence development of provisions for a non- mandatory goal-based code</p>	
	<p>Considerations of gaps not covered by the RSE but important for the development of a MASS Code</p>	
	<p>identifying issues for possible consideration by a Joint MSC/LEG/FAL Working Group (JWG)</p>	
	<p>Consider the need and timing to:</p> <ul style="list-style-type: none"> • involve sub-committees¹ 	

MSC	IMO WORK PLAN	IALA Milestones
	<ul style="list-style-type: none"> initiate overall coordination with other committees liaise with other international organizations such as ILO, ISO, IHO, IALA and IMSO 	
	Update this road map	
MSC 107 (1st half 2023)	If necessary, continue: <ul style="list-style-type: none"> consideration of common potential gaps and/or themes consideration of glossary/terminology identifying issues for possible consideration by a Joint MSC/LEG/FAL Working Group (JWG) 	Proposed Action: Input paper from IALA, highlighting shore-based requirements for managing ship traffic.
	Continue the development of the non-mandatory MASS Code <ul style="list-style-type: none"> continue to review the scope and framework develop provisions for a goal-based instrument, taking into account the input from sub-committees, as appropriate 	
	In the process of developing provisions, consider the impact and identify changes to existing IMO instruments and make recommendation on how to address the changes to those instruments, as appropriate, also taking into account any recommendations from the Joint MSC/LEG/FAL Working Group (JWG). In doing so, the necessary amendments should focus on those classified as "High-priority" ² during the RSE: <ul style="list-style-type: none"> SOLAS chapters II-1, II-2, III, IV, V, VI, VII, IX, XI-1 and XI-2; COLREG; STCW Convention and Code; STCW-F Convention; 1966 LL Convention and 1988 Protocol thereto; 1979 SAR Convention; FSS Code; IMSBC Code; IMDG Code; TONNAGE 1969; IBC Code; and IGC Code 	
	Consider the involvement of sub-committees ³	
	Update this road map	
MSC 108 (1st half 2024)	If necessary, continue: <ul style="list-style-type: none"> consideration of common potential gaps and/or themes consideration of glossary/terminology identifying issues for possible consideration by a Joint MSC/LEG/FAL Working Group (JWG) 	

MSC	IMO WORK PLAN	IALA Milestones
	Continue the development of the non-mandatory MASS Code <ul style="list-style-type: none"> continue to review the scope and framework develop provisions for a goal-based instrument, taking into account the input from sub-committees, as appropriate 	
	Decision on the means to adopt the mandatory instrument (Code): implementation through one Convention or through several conventions. If needed, develop amendments to existing instruments necessary for the entry into force of the new instrument and need to be approved and/or adopted at the same time as the new Code	
	continue consideration of any subsequent amendments to other existing IMO instruments, impacted by the entry into force of the new Code, including the <i>Interim Guidelines on MASS Trials</i> (MSC.1/Circ.1604)	
	finalize the non-mandatory MASS Code as annex to a draft MSC resolution	
	Consider the procedures for amending existing IMO instruments <ul style="list-style-type: none"> consider whether amendments to those instruments could be done under the existing output, or whether there is a need for the MASS Working Group to develop new outputs for this work 	
	Update this road map	
MSC 109 (2nd half 2024)	Finalization and adoption of the new non-mandatory MASS Code	
	Finalization of the draft mandatory MASS Code, based on the approved non-mandatory MASS Code	
	Finalization and approval of amendments to existing instruments necessary for the entry into force of the new instrument	
	Continue the review of existing IMO instruments, under the purview of MSC, with a focus on those classified as "High-priority" during the RSE	
	Identification of future work <ul style="list-style-type: none"> consider whether a new output would be needed, or the existing output should be amended 	
	Update this road map	
MSC 110 (1st half 2025)	Adoption of a mandatory MASS Code ^{4 5} and associated Convention(s) giving effect to the new MASS Code	
	Adoption and/or final approval of amendments to existing instruments necessary for the entry into force of the new	

MSC	IMO WORK PLAN	IALA Milestones
	instrument	
	Finalize the review of existing IMO instruments with a focus on those classified as "High-priority" during the RSE; and agree on remaining future work and the way forward	

¹ Tasks for the sub-committees will be included in this road map when agreed by the Committee.

² Medium and low priority instruments in accordance with the outcome of the RSE will be dealt with at a later date (MSC.1/Circ.1638, paragraphs 6.8.1 to 6.9.3).

³ Tasks for the sub-committees will be included in this road map when agreed by the Committee. ⁴ Adoption should take into account the progress made by other Committees and the JWG, if established.

⁵ Entry into force date of 1 January 2028 means adoption on 1 July 2026 at the latest (first half of 2026).

3.2. OPPORTUNITIES

Developments currently underway that provide an opportunity to strategically plan for MASS and determine work programme tasks associated with the preparation of new/amended IALA guidance specifically related to VTS include:

1. IALA engagement:

There exists a need to address the shore-side element, VTS and allied services within the IMO MASS Roadmap and the development of the goal-based MASS instrument. Near-term opportunities exist to engage with the IMO MASS Correspondence Group in the development of the MASS instrument in advance of MSC107.

It will also be helpful to engage with IHO as more and more bathymetric, and hydrographic data is gathered and shared via the S-100 standard for use by conventional ships, MASS, and VTS to support safe navigation and voyage planning.

2. Case Studies - MASS Trials and 'Test Beds' - The use of case studies.

The increasing number of trials and 'test beds' are being conducted globally and a number of "case studies" have been identified that may assist gaining a greater understanding of MASS and its implications by monitoring their development/outcomes and identifying opportunities for involvement/engagement.

Members are encouraged to include VTS providers in your local or national trials of MASS and to submit information and lessons learned to IALA Committees and the IALA MASS Trials website - <https://www.iala-aism.org/technical/mass/>.

3. Seeking early adoption of digital communications and automated data exchange

New tasks captured in the Committee's work programme to address opportunities to explore requirements and capabilities for digital communications and automated data exchange to enhance the provision of VTS services. Examples include Digital VTS Communications, VTS Technical Service Specification and Digital Route Exchange.

Within Resolution A.1158(32), IMO addressed the general principle that effective harmonized data exchange and information-sharing is fundamental to the overall operational efficiency and safety. VTS providers are encouraged to make use of automated reporting where possible

3.3. ISSUES / CHALLENGES FOR THE MANAGEMENT OF SHIP TRAFFIC IN A VTS AREA

The advent of MASS will present issues and challenges for VTS operations and will undoubtedly contribute to major changes to how VTS interacts with participating ships and manages ship traffic to ensure the safety and efficiency of ship movements by VTS. Questions to be considered include, for example:

- **VTS Operations:**
 - How VTS receives, assimilates, and processes data and information from MASS.
 - How does the VTS interact with the entity in command of a MASS (Master/RCC/automated onboard command systems).
 - How VTS manages ship traffic, including:
 - A mix of conventional ships and MASS.
 - The means of providing 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.
 - Managing interaction with multiple RCC's.
 - Responding to situations where a ship needs to be contained / controlled
- **Communications and interaction**
 - Embracing digital communications.
 - Data and information exchange, including automated exchange.
 - Managing a mix of VHF voice, digital communications, and automated data exchange.
 - The need for MASS to communicate their status.

The advent of MASS will invariably be associated with VTS managing 'big data', interacting with MASS using digital means, and possibly centralised, distributed and/or virtualised VTS 'centres' in the future.

Recognising the considerable work identified in the IMO Regulatory Scoping to determine how the safe, secure, and environmentally sound operation of Maritime Autonomous Surface Ships (MASS) may be introduced in IMO instruments (*Refer to Section 3.5*) and the change processes associated with these, identifying the issues, challenges, and implications for VTS has been approached by adopting key assumptions.

It is recognised these assumptions will change as the advent of MASS evolves and the framework provided by international conventions is amended accordingly, however, achieving a common understanding of these provides a platform to facilitate discussion and analyses in exploring the implications of MASS for VTS.

3.3.1. OVERARCHING ASSUMPTIONS

Consideration of the implications of MASS from a VTS perspective have been prepared based on the following overall assumptions:

- MASS will be required to participate in VTS. That is, subject to the same:
 - Regulatory reporting requirements, and
 - Obligations with regards to the issue of advice, warnings and instructions as deemed necessary.
- MASS will be subject to COLREG, as amended.
- MASS will be required to broadcast status as to who/what is in command at any time (Master/RCC/automated onboard command systems).

3.3.2. DEGREE OF AUTONOMY, ASSUMPTIONS, AND IMPLICATIONS FOR VTS

The implications of MASS from a VTS perspective have been identified in the table below, noting the overarching assumptions regarding MASS described in Section 3.3.1.

Degree of autonomy	Assumption/s	Implications for VTS
<p>Degree one Ship with automated processes and decision support.</p> <ul style="list-style-type: none"> Seafarers are on board to operate and control shipboard systems and functions. Some operations may be automated and at times be unsupervised but with seafarers on board ready to take control. 	<p>MASS of degree one is considered as a conventional ship with some additional functions to support human decision making on board.</p> <p>The master and crew of the ship are in control of all ship operations at all times.</p>	<p>Minimal</p> <p>There is a need to monitor advances in the automated process and decision support onboard</p>
<p>Degree two Remotely controlled ship with seafarers on board:</p> <ul style="list-style-type: none"> 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. 	<p>MASS of degree two is controlled and operated from the RCC.</p> <ul style="list-style-type: none"> Seafarers considered as a back-up should remote control experience problems/fail. <p>The RCC may release control and operation to the master/crew.</p> <p>No matter if MASS can be operated from another location, seafarers on board are assumed to be able to meet all the operation and control requirements.</p>	<ul style="list-style-type: none"> Managing ship traffic comprising both MASS and conventional ships Digital interaction with ships, RCCs and other stakeholders to: <ul style="list-style-type: none"> Exchange information Provide advice, warnings, and instruction Managing Interaction with multiple RCCs Operational and procedural changes associated with the above Provision of advice, warnings, and instructions to the RCC with responsibility for the vessel. Communications and interaction with participating ships (Voice / data exchange). This may include communications between ships (MASS and Traditional).
<p>Degree three Remotely controlled ship without seafarers on board:</p> <ul style="list-style-type: none"> The ship is controlled and operated from another location. There are no seafarers on board. 	<p>The ship is controlled and operated from the RCC with no seafarers on board.</p>	<ul style="list-style-type: none"> As above, plus: Conditions where a ship needs to be contained / controlled to mitigate incident to prevent unsafe situations
<p>Degree four Fully autonomous ship:</p> <ul style="list-style-type: none"> The operating system of the ship is able to make decisions and determine actions by itself. There are no seafarers on board. 	<p>The operating system of the ship is able to make decisions and determine actions by itself.</p> <p>A remote-control centre may exist for MASS 4 but will have minimal impact on voyages except to define destinations and a route plan</p> <p>The remote-control centre could take control of the MASS 4 if necessary and</p>	<p>As above, plus:</p> <ul style="list-style-type: none"> Operational and procedural changes associated managing Degree four MASS A VTS may be required to advise or instruct an RCC to take control of a MASS 4 to mitigate a developing unsafe situation.

Degree of autonomy	Assumption/s	Implications for VTS
	in such circumstances would change the vessel status to MASS 3.	

3.4. EMBRACING AND INFLUENCING THE DEVELOPMENT OF MASS.

To facilitate strategically planning for MASS and ensure VTS continues to contribute to safety of life at sea, safety and efficiency of navigation and the protection of the environment within the VTS area by mitigating the development of unsafe situations the following strategies have been adopted:

3.4.1. DISCUSSION PAPER

The purpose of the discussion paper (this document) is to assist the Committee achieve a common understanding of MASS and its implications on the provision of VTS by clearly and concisely identifying:

- Trends and opportunities presented by MASS.
- Issues / challenges 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.

The advent of MASS will be ongoing for many years, and it is intended that this document will be reviewed and updated, as appropriate, by the VTS Committee at each meeting.

3.4.2. CASE STUDIES

The ongoing use of ‘Case Studies’ to assist gaining a greater understanding of MASS and its implications by monitoring their development/outcomes and identifying opportunities for involvement/engagement.

3.4.3. POSITION PAPER

Preparation of a concise ‘Position Paper’ to articulate and communicate the Committee’s opinion and intentions on key considerations for the management of ship traffic to ensure the safety and efficiency of ship movements by mitigating the development of unsafe situations are considered in the IMO’s preparation of a mandatory instrument to address MASS operations.

Items to be considered in a ‘Position Paper’ include:

1. What is required to manage ship traffic and the interactions between conventional and autonomous ships, VTS and RCC’s, including any gaps.

- Changes to the IMO Regulatory Regime
 - Development of IMO goal-based MASS instrument, including:
 - MASS terminology and definitions, including an internationally agreed definition of MASS and clarifying the meaning of the term “master”, “crew” or “responsible person”, particularly in Degrees Three (remotely controlled ship) and Four (fully autonomous ship).”
 - “Other key issues include addressing the functional and operational requirements of the remote-control station/centre and the possible designation of a remote operator as seafarer
 - MASS required to participate in VTS. That is, subject to the same:
 - Regulatory reporting requirements, and
 - Obligations with regards to the issue of advice, warnings and instructions as deemed necessary.

- MASS subject to COLREG.
- MASS required to broadcast status as to who/what is in command at any time (Master/on-board DST, Remote Control Center?)

2. Standards for digital communications, amongst MASS, conventional ships, RCCs, VTS and allied services.

IALA and IMO Standards for all interactions to be undertaken by digital communications / data exchange, including:

- ‘Ships’² to provide reports and information required by a VTS.
- VTS to provide ‘ships’ with information on factors that may influence ship movements and assist ‘onboard decision-making’³.

3. The role of VTS and interaction with RCC’s and autonomous ships

The interaction between VTS providers and RCCs will be a critical consideration in understanding MASS operations. It is essential to consider how will autonomous or remote-controlled vessels interact with Ports, VTS operators, pilots, tugs or other service craft, terminal operators, and other port service managers.

3.5. IMPLICATIONS FOR THE IMO REGULATORY REGIME FOR VTS

Current expectations are there are no implications for the IMO regulatory regime for VTS with the advent of MASS, noting:

- The IMO Regulatory Scoping Exercise completed in May 2021 (Section 3.1.1) did not identify any implications associated with SOLAS regulation V/12 (Vessel Traffic Services).
- IMO Resolution A.1158(32) adopted by the IMO Assembly in December 2021 has ‘future proofed’ the Guidelines as much as possible to accommodate new trends, such as the development, adoption and implementation of Maritime Service Portfolios, e-navigation and other evolving instruments aimed at the facilitation of safe, secure, and efficient maritime traffic and trade through:
 - Recognising applicable IMO instruments and other international guidance
“In complying with these Guidelines, Contracting Governments should take account of applicable IMO instruments and refer to the relevant international guidance prepared and published by appropriate international organizations”. (Section 1.4)
 - Recognising IALA Standards
 - *“NOTING that the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) has contributed significantly to the development of internationally harmonized guidance for vessel traffic services”.*
 - *“IALA is recognized as an important contributor to IMO’s role and responsibilities relating to vessel traffic services”. (Section 1.3)*
 - *“Contracting Governments are encouraged to take into account IALA standards and associated recommendations, guidelines and model courses”. (Section 9.2)*

² ‘ship’ – refers to conventional and autonomous

³ ‘onboard decision-making’ refers to the “responsible entity” for the ‘ship’

3.6. IMPLICATIONS FOR IALA GUIDANCE DOCUMENTS RELATING TO VTS

The implications for IALA Standards relating to VTS with the advent of MASS are significant, noting the role of IALA in contributing significantly to the development of internationally harmonized guidance for vessel traffic services (Refer Section 3.5).

To facilitate this two Work programme Tasks have been identified:

- Ensuring VTS Guidance Documents evolve with the Advent of Mass
- Digital VTS Communications

3.6.1. 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 a new work programme task has been proposed 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*.

Note: Refer to *VTS51-9.2.1.3 Proposed new task - MASS - Implications for IALA Guidance*

3.6.2. DIGITAL VTS COMMUNICATIONS

Consensus is that new/additional guidance will be required, particularly in the short term for VTS digital communications. As a result, the Committee has identified 3 new tasks, including:

- VTS53 Operations Task 1.3.2 -Development of VTS Digital Communications
- VTS52 Guideline on Portrayal of VTS Information
- VTS53 Technical Task on VTS Digital Information Service

4. REFERENCES

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