# MASS Task Force - Meeting 4

**Introduction**

The fourth MASS Task Force (TF) meeting was held as a hybrid meeting on 12 September 2022 at the IALA headquarters. The meeting was held in conjunction with the 47th session of the PAP. The chair of the TF, Maarten Berrevoets chaired the meeting. Physical and online members participated the meeting (See annex).

The Chair thanked all the participants and secretariat for joining the meeting.

**Approval of the agenda and input**

The group agreed on the agenda and the input papers to the meeting.

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| **Number** | **Title** | **Originator** |
| MTF04-2.0 | Agenda | Secretariat |
| MTF04-4.2 | Report of 3rd meeting of the IALA MASS Task Force | MTF03 |
| MTF04-8.1 | IALA guideline on developments and implications of maritime autonomous surface ships for coastal authorities | Jillian Carson-Jackson |
| MTF04-8.2 | IALA MASS Roadmap | Minsu Jeon |
| MTF03-9.0 | Information paper on MASS: IALA’s contribution toward safe operation of MASS | Hideki Noguchi Simon Millyard |
| MTF03-9.1 | Information paper on MASS: IALA’s contribution toward safe operation of MASS / Singapore review | Capt. Segar / Eunice Pui |

**Updates from other international organisations**

**IHO MASS Project team:**

Mark Casey – Chair of IHO MASS Project team informed about the activities pursued on this group and future work. The MASS evolution and gaps are expected to be addressed in S100 due to the different fact that current charts do not fit for the use of MASS. The machine readability is not still achievable due to a number of causes, but the main reason is that charts are designed taking into account that the mariner will interpret the data and text. In addition, the series of S100 standards are not sufficient to cope with the MASS requirements. Thus, IHO undertakes the task to address the MASS developments based on the following objectives:

1. to identify and prioritize MASS navigation requirements.
2. to analyse their impacts on current hydrographic standards and services; and
3. to develop a set of recommendations/issues to be addressed by existing working groups.

The goal being how to make such charts or writing text readable machine to machine. The MASS PT started to meet in December 2021 regularly starting with the Discovery and Reporting phase (now concluded). Each member state has created a written report in order to identify MASS Navigation Requirements gathered in the MASS Nav requirements document. Other activities were identified in this phase (test beds undertaken and degree of autonomy / assessment of data limitations identified / research into machine readable data monitoring etc.

The next steps will come with the Analysis and Recommendations phase with an active participation of the member states. The objective of enhancing cooperation IALA/IHO will be also relevant for the group. The presentation can be found [here](https://nextcloud.iala-aism.org/index.php/s/oHiNR5zX5kjZAHq).

**IMO MSC:**

Hideki Noguchi provided briefed about the discussions in IMO MSC: The last session 105 of the MSC took place on April was agreed to develop a roadmap for goal-based MASS instruments. Targeting from Non mandatory (2025) to mandatory instruments in January 2028. The establishment of Correspondence group to develop draft MASS code includes the 3rd round of meetings and focuses on Navigation function. The elaboration of separate roadmap for MSC / FAL and LEG is a task that will be undertaken with the support of IMO joint working groups. Related to the MSC106 (31 Oct 2022 - 04 Nov 2022) the decision on the need to involve other organisations including IALA will be discussed. In particular, the involvement of AtoN providers including VTS to the communications with MASS.

**IMO FAL:**

Eunice Pui informed that FAL outputs related to MASS should be further progressed during the joint working group in June 2023.

The question on the developments in IMO was addressed, some participants are on the view that while a number of states are developing test and operational MASS; IMO is still discussing on definitions and level of autonomies. They see an increasing need to move forward and do not take the example of IMO. Under IALA scope, IALA should work in parallel and be prepared. Other participants still prefer to wait for the establishment of a clear legal/operational framework in IMO, highlighting the necessity of being careful on how the IALA guidance is expressed. It was also expressed the fact that MASS not only include discussions on man or unmanned ships but the level of automatization / autonomy of tasks onboard and IALA guidance should be aligned with those levels.

Another group EGDH in IMO on harmonisation: development of systems and description on different IMO requirements for digitalisation was also presented as a relevant framework to monitor for IALA.

**Discussion and identification of any gaps/parallel activities of work**

Some participant agreed on the gap related to the size of ships: all type of vessels (regardless of their GT) is included in the definition of levels of autonomy, causing a rough definition of the levels of autonomy. The term used in the road industry defines strategies vs level of autonomy (IMO) – it was proposed to look at these strategies and establish some analogies between both domains, identifying technologies and systems enabling autonomy of ships. The elaboration of risk matrix was also proposed based on the level of service (AtoN / VTS).

**Updates and coordination on work underway in each technical committee with respect to MASS**

ARM:

The topic of MASS ill be discussed and progressed during the Committee session of ARM16 (24 – 28 Oct 2022). It is expected to provide a roadmap for the draft guideline and briefing after this session.

ENAV:

On 27 September, a meeting will be held on how to address the guideline effectively with the other Committees, the MASS TF and the inputs received relevant to the completion of the document.

ENG:

The Committee is looking on developments of the G. with a focus on floating AtoNs and PNT. ENG17 will start formally the work and a special attention will be addressed during the ENG16.

VTS:

Two main work streams:

* Discussion paper – operational considerations for managing ship traffic MASS / RCC / voyage planning – digital data / Intended messages.
* Implications of MASS from a VTS perspective – operations and communications with stakeholders, engaging with the goal-based instruments.

Both documents have been progressed intersessional.

The guideline still needs to integrate the inputs from VTS and ENAV, based on the ToC agreed on PAP and the contributions from the committees to the Guideline:

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| --- | --- |
| Committees | Section to develop in the Guideline |
| ENAV | * General * Communication * Data transfer standards * Cyber Security |
| VTS | * VTS interaction with MASS * Safe and efficient operations |
| ARM | * Management * Portrayal * Spatial Awareness * Interaction with manned vessels * Risk Management & Assessment |
| ENG | * PNT * Position augmentation * Power availability * Conventional AtoN visibility to MASS |
| LAP | * Legal aspect |

**Update on overarching IALA MASS Recommendation and Guideline**

IALA guideline on developments and implications of maritime autonomous surface ships for coastal authorities:

*Action item 1: ENG and VTS Committees are requested to provide inputs to the guideline as depicted in the table of contents of the guideline agreed by the PAP members.*

Roadmap:

The group was on the view that the target presented by Minsu Jeon to finalise the work (expected to be presented to the Council during the 2nd half of 2024) is ambitious but would be aligned with the common expectation from the group and the IALA members to provide guidance on how to manage MASS operation on the coastal areas from the AtoN provider. There was also a requirement expressed by the group to provide an executive Guideline, able to be read relatively fast by the members and interested stakeholders. The group amended the wording on the work plan as reflected in the table below:

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| Meetings | Work plan |
| TF 4 (Sep 2022) | Consider and finalize the draft roadmap and the framework |
| PAP 47 (Sep 2022) | Approve the draft roadmap and the framework |
| Committees and LAP (2nd half 2022) | Continue drafting the relevant chapters |
| Council (December 2022) | Note the development |
| TF 5 (1st half 2023) | Consider the development and provide inputs |
| Committees and LAP (1st half 2023) | No meetings |
| TF 6 (2nd half 2023) | Consider the development and provide inputs |
| Committees and LAP (2nd half 2023) | Continue drafting the relevant chapters |
| TF 7 (1st half 2024) | Consider the development and provide inputs |
| Committees and LAP (1st half 2024) | Continue drafting the relevant chapters |
| TF 8 | Consider the development and provide inputs |
| Committees and LAP (2nd half 2024) | Finalize the IALA MASS guideline |
| Council (2nd half 2024) | Approve the IALA MASS guideline |

**Development and scope of input to IMO MSC**

It was agreed that the document will be an information paper on what IALA is doing related to MASS and AtoN. It was also considered to further develop such input to IMO MSC in the MASS TF rather than send it to the Committees. Thus, avoiding delays on the finalisation of the same.

**Date and venue of next meeting**

*Action item 2: The secretariat will send an invitation for the next meeting.*

The next meeting will address a LAP point of the agenda.

**Annex A List of action items**

*Action item 1: ENG and VTS Committees are requested to provide inputs to the guideline as depicted in the table of contents of the guideline agreed by the PAP members.*

*Action item 2: The secretariat will send an invitation for the next meeting.*

**Annex B Agenda of the meeting**

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**IALA MASS Task Force**

**Meeting four (MTF04) - Agenda**

**12 September 2022, 12.00 UTC**

1. Welcome by the Chair/Vice Chair
2. Approval of the agenda
3. Review of input papers
4. Report from the MTF03
5. Updates from other international organisations
   1. IHO MASS Project Team Mark Casey
   2. IMO MSC Hideki Noguchi
   3. IMO FAL Eunice Pui
6. Discussion and identification of any gaps/parallel activities of work
7. Updates and coordination on work underway in each technical committee with respect to MASS
   1. ARM Dave Lewald
   2. ENAV Jillian Carson-Jackson
   3. ENG Simon Millyard
   4. VTS Neil Trainor
8. Update on overarching IALA MASS Recommendation and Guideline
   1. IALA guideline on developments and implications of maritime autonomous surface ships for coastal authorities Jillian Carson-Jackson
   2. IALA MASS Roadmap Minsu Jeon
9. Development and scope of input to IMO MSC Hideki Noguchi / Simon Millyard
10. Any other business

**Annex C List of participants**

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| **Physical** | **Virtual** |
| Capt. Segar | Jillian Carson-Jackson |
| Eunice Pui | Mark Casey |
| Capt. Henry Sng | Jakob Bang |
| Simon Millyard | Maarten Berrevoets |
| Hideki Noguchi | Valtteri Laine |
| Omar F Eriksson | Neil Trainor |
| Minsu Jeon |  |
| Jaime Alvarez |  |
| Monica Sundklev |  |
| Dave Lewald |  |