IALA ARM COMMITTEE

REPORT OF THE 9 TH SESSION OF THE IALA ATON REQUIREMENTS AND MANAGEMENT (ARM) COMMITTEE

1 to 5 April 2019

Thomas Southall
Committee Secretary

5 April 2019

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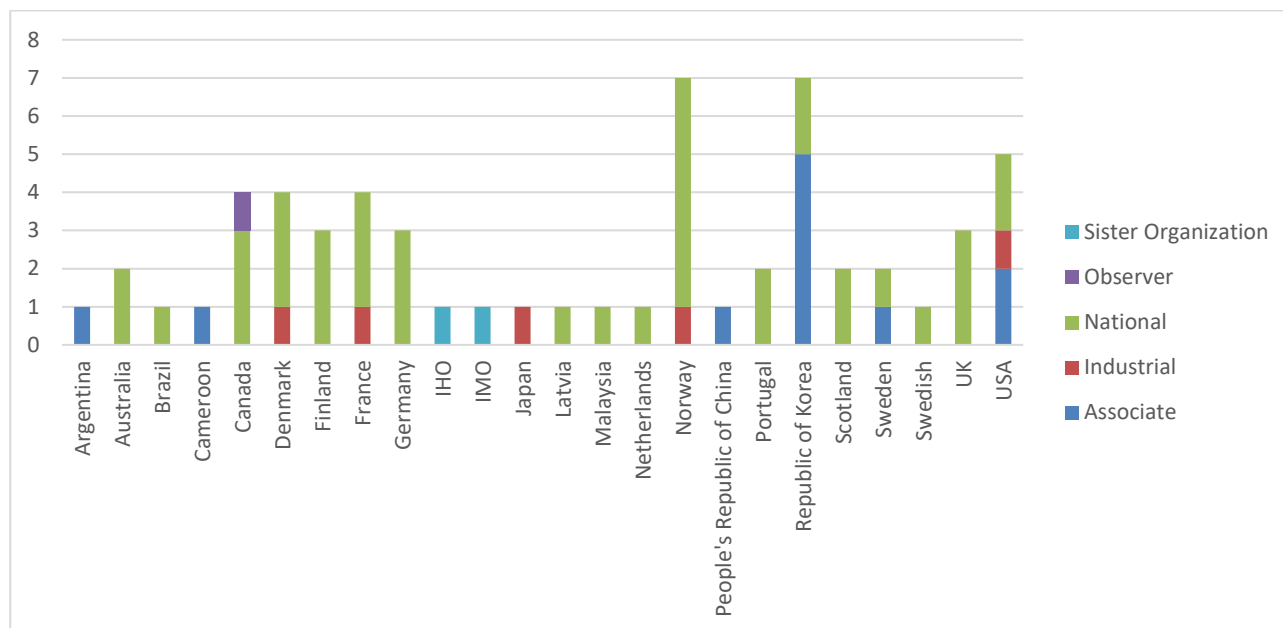# Report of the 9th Session of the IALA

AtoN Requirements and Management (ARM) Committee

1 to 5 April 2019

Executive Summary

The 9th Session of the ARM Committee was held at IALA Headquarters from 1 to 5 April 2019.

The session was attended by 59 participants from 20 countries, of which 40 were National Members, 5 were Industrial Members, 11 were Associate Members, 2 were representing Sister Organizations and 1 was an observer. Nine participants attended for the first time. The following chart shows an analysis of participants.

The Committee continued the work for the 2018-2022 work period. Working in three working groups, the Committee considered 70 input papers including presentations and produced 21 output documents including 3 Guidelines, 1 revised Academy model course, 10 liaison notes and 1 workshop proposal. All Recommendations and Guidelines considered were aligned with the proposed seven standards.

The Committee prepared the following guidelines:

- Draft Guideline on Requirements and Traceability Ed.1.0
- Draft Guideline on Unique Identifiers for Maritime Resources Ed.1.0
- Update to Guideline 1046 Response Plan for Marking New Wrecks Ed.2.0

The Committee updated the following Model Course:

- Update to Model Course L1.3 on Aids to Navigation manager training level 1 – use of the IALA risk management tools Ed.3.0

The Committee prepared the following workshop proposal:

- Draft Workshop Proposal for a Joint IHO/IALA Workshop on S100/S200 Product Specification development and portrayal

The draft ARM Committee task plan and Committee website were updated. Natasha McMahon volunteered to be the ARM Committees liaison with the Secretariat to update the relevant sections of the NAVGUIDE. The following table shows a summary of progress made to date in the four year work period.

Strategy Technical Domain	Tasks	Status
Standard 1010 – AtoN planning and service requirements	21 tasks	All tasks on schedule
Standard 1020 – AtoN Design and delivery	2 Tasks	All tasks on schedule
Standard 1050 Training and Certification	2 Tasks	All tasks on schedule
Standard 1060 Digital communications technologies	2 Tasks	All tasks on schedule
Standard 1070 Information services	14 Tasks	All tasks on schedule
Other	4 Tasks	All tasks on schedule

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Report of the 9th Session of the IALA

AtoN Requirements and Management (ARM) Committee

INTRODUCTION

The 9th session of the AtoN Requirements and Management (ARM) Committee was held from 1 to 5 April 2018 at IALA. The Chairman was Phil Day and the Vice Chairman was Dave Lewald. The Secretary for the meeting was Thomas Southall.

1.   OPENING

The Committee Chair, Mr Phil Day welcomed both new participants and those returning to Committee for the ninth session of the ARM Committee (ARM9) commencing the 2018 to 2022 work period.

1.1   Approval of the agenda

The agenda (ARM9-1.1) was adopted.

1.2   Welcome address from the Secretary-General/Deputy Secretary-General

The Secretary General welcomed all new and returning participants to the 9th meeting of the ARM Committee. Since ARM8, the reorganization of the Secretariat has been completed with Omar Frits Eriksson taking the role of Deputy Secretary General and Dean of the IALA World-Wide Academy, Tom Southall and Kevin Gregory supporting the Technical Committees and Isabelle Bracq joining the Administration and Finance team. The third IALA Preparatory Diplomatic Conference and World-Wide Academy seminar took place in Istanbul last week with excellent support of the Turkish Directorate General of Coastal Safety. The World-Wide Academy seminar focused on the effective implementation of IALA Standards and saw the launch of a series of seven colourful infographics to highlight and promote the suite of standards.

At the Preparatory Diplomatic Conference, over 200 delegates from around the world participated in the review of the draft convention text. Positive progress was made and the process will move forwards with the final Diplomatic Conference in early 2020 after which time the Convention will be open to signatures.

The first World Marine Aids to Navigation Day will be held on the 1st July 2019 with the theme 'successful voyages, sustainable planet'. A major World Marine Aids to Navigation Day event will be hosted by Spain but other IALA members are encouraged to embrace the day with their own unique events.

1.3   Administration and safety briefing

Thomas Southall provided a Safety and Administration briefing. Paper ARM9-1.3 refers.

1.4   Introductions and Apologies

The session was attended by 59 participants from 20 countries, of which 40 were National Members, 5 were Industrial Members, 11 were Associate Members, 1 were observers. Nine participants attended for the first time.
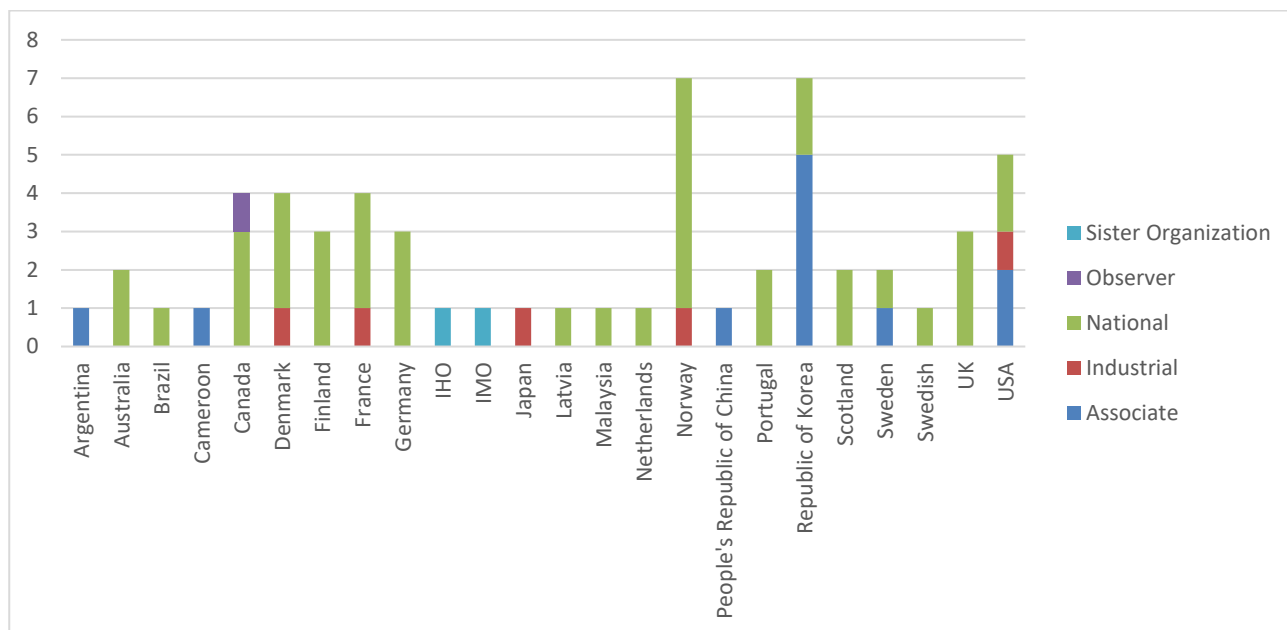
The list of Committee participants who attended ARM9 is attached in Annex B. New participants were welcomed in addition to those returning to the Committee. The Committee noted one apology from participants who were unable to attend listed in Annex B.

The ARM Committee received the news of the death of IALA participant Pierre D'Arcy, Canadian Coast Guard. The Committees thoughts are with his family at this sad time.

The meeting was advised that IALA has a policy regarding compliance with the General Data Protection Regulations and patents. IALA will include a list of participants with their contact information in the report of this meeting. Any participant who wishes to remove their information from the participants list was advised to inform the Committee Secretary as soon as possible.

The following chart shows an analysis of participants.

1.5   Programme for the week

The programme for the week, paper ARM9-1.5, was approved.

2.   REVIEW OF ACTION ITEMS FROM ARM8

Input paper ARM9-2.1 refer. All action items for the IALA Secretariat and participants from ARM8 were noted as complete.

3.   REVIEW OF INPUT PAPERS

It was noted that all input papers were available on the IALA website. It was observed that the input papers for each Working Group (WG) were identifiable from the document number. The Committee considered 70 input papers including presentations.

4.   REPORTS FROM OTHER BODIES

4.1   Report on IALA Council

The Committee noted the report of the 68th Session of the IALA Council held in IALA HQ in December 2018. Papers ARM9-4.1.1 refer.

4.2   Report of the IALA Policy Advisory Panel

The Committee noted a report of the 37th Session of the IALA Policy Advisory Panel from Thomas Southall, held in February 2019, respectively in IALA HQ. As an action of PAP37, a volunteer was sought to act as a

point of contact for the Secretariat for the NAVGUIDE and Natasha McMahon from the Canadian Coast Guard volunteered to fulfil this role. It was noted that the IALA *Index* was renamed as the *Dictionary*. The ARM Committee now has a permanent area allocated to it on the FTP that participants can use to store any documents they wish to retain. The Secretariat also requested input to the IALA Bulletin.

4.3   Report on e-Navigation Underway International Conference

The Committee noted the conclusions of e-Navigation Underway International 2019 held between Copenhagen and Oslo, from 6th to 8th February 2019. Paper ARM9-4.3.1 refers.

4.4   Report on the IALA-IHO Technical Coordination Meeting

The Committee noted a report by Thomas Southall of the IALA-IHO Technical Coordination Meeting. Highlights included:

- That future IALA and IHO Coordination is essential.
- S-200 is a concern for all Committees and maybe a possible topic for a future seminar.
- Work on product specifications is a priority.

4.5   Report on IMO MSC

The Committee noted papers ARM9-4.6.1 - ARM9-4.7.1, which refers to IMO activities.

4.6   Report on IMO Council

The Committee noted papers ARM9-4.6.1 - ARM9-4.7.1, which refers to IMO activities.

4.7   Report on IMO NCSR

The Committee noted papers ARM9-4.6.1 - ARM9-4.7.1, which refers to IMO activities.

4.8   Report on AMRD

The Committee noted the liaison statements from the ITU regarding AMRD (ARM9-4.9.3, ARM9-4.9.4), these were reviewed, and a liaison note to ITU was produced in cooperation with the ENAV Committee (ARM9-12.3.1).

4.9   Report on ITU Activities

The Committee noted the report of the ITU-R WP5B meetings in November 2018 and members were encouraged to support the allocation of channels for VDES-SAT at the World Radio Congress in 2019. Input paper ARM9-4.9.1 refers.

5.   PRESENTATIONS

Four presentations were made during the opening plenary session. The presentations are available on the IALA Committee website.

5.1   Status of AtoN on Submerged Breakwaters in Korea

Mr Junki Bae, K-AtoN, presented the background to issues surrounding the marking of underwater breakwaters. It was highlighted that small fishing and leisure vessels frequently make contact with breakwaters. The presentation then made proposals for marking submerged breakwaters. Input paper ARM9-5.1 refers.

5.2   AutoFerry Project in Trondheim

Professor Thomas Porathe, Norwegian Coastal Administration, gave a presentation on the Autonomous Ferry project in Trondheim. The presentation included an examination of COLREG compliant behaviour and possible combinations of navigation lights for autonomous vessels. Input paper ARM9-5.2 refers.

5.3 Report from the World Wide Academy

Gerardine Delanoye described the recent activity in the Academy since ARM8. Committee participants were encouraged to register for two planned risk seminars taking place on the 20 May 2019 - 24 May 2019 at IALA Headquarters and 18 November 2019 - 22 November 2019 in Colombia. The new IALA document structure was explained to participants. Input paper ARM9-5.3 refers.

5.4 E-Navigation Underway Conferences

Fred Pot, Marine Management Consulting, invited participants to attend the e-Navigation Underway North America conference on 12 to 13 November 2019 in Tampa, Florida. The theme will be Enabling e-Navigation: Today and Tomorrow, Building the Infrastructure and Reaping the Benefits. For more information visit www.e-navnorthamerica.org. Input paper ARM9-5.4 refers.

6. REVIEW OF WORK PROGRAMME AND WG EXPECTATIONS

6.1 Work review

The ARM Committee Task Plan for the 2018-2022 work period was reviewed. Input paper ARM9-6.1.1 and output paper ARM9-12.1.1 refers.

The following shows a summary of progress on the Task Plan at the end of ARM9.

Strategy Technical Domain	Tasks	Status
Standard 1010 – AtoN planning and service requirements	21 tasks	All tasks on schedule
Standard 1020 – AtoN Design and delivery	2 Tasks	All tasks on schedule
Standard 1050 Training and Certification	2 Tasks	All tasks on schedule
Standard 1060 Digital communications technologies	2 Tasks	All tasks on schedule
Standard 1070 Information services	14 Tasks	All tasks on schedule
Other	4 Tasks	All tasks on schedule

Action item:

*The **IALA Secretariat** is requested to forward the ARM Committee Task Plan for 2018-2022, ARM9-12.1.1, to ARM10.*

7. REPORTS FROM RAPPORTEURS

7.1 Working Group 1

The Chair of WG1, Guttorm Tomren, gave a presentation on the status of work on sector lights in Norway. There is currently lots of change including spring to diode. It was noted that information regarding proposed changes by a AtoN Authority would be a good use case for S-125. Input paper ARM9-7.1 refers.

Grant Judson introduced input paper ARM9-9.2.1 from AMSA. He highlighted concerns surrounding MAtoN as laid out in the paper and encouraged the ARM committee to critically evaluate the need to develop the guidance for MAtoN, in particular, R1016 Mobile Aids to Navigation (MAtoN).

7.2 Working Group 2

The Chair, Dave Lewald, welcomed participants new and old to the Working Group. The expectations for the meeting were then described to the Committee, and discussion highlighted that the WG was settled and moving forward with the tasks.

7.3 Working Group 3

The Chair, Roger Barker, introduced the IALA risk assessment toolbox including IWRAP MkII, SIRA and PAWSA. He went on to set out the WG expectations for the week.

7.4 Report from the IMO Secretariat

The IMO Secretariat joined ARM9 and provided an update on NCSR and MASS issues. The discussion highlighted that the IMO scoping exercise for MASS is underway and expected to be complete next year covering ways to accommodate MASS for each of the four degrees of autonomy.

8. ESTABLISH WORKING GROUPS

Three working groups were established, as outlined below. A list of working group participants is at Annex C.

Working Group (WG)	Working Group Chair / Vice Chair
WG1 – Navigational Requirements	Guttorm Tomren / Johan Westerlund
WG2 – Information Services and Portrayal	Dave Lewald / Martin Bransby
WG3 – Risk Management	Roger Barker / Catherine Steenberg

9. WORKING GROUP 1 – NAVIGATIONAL REQUIREMENTS (WG1)

9.1 Response to input papers

The working group reviewed the list of input papers, and a number of output papers were produced, including the below liaison notes/working papers:

9.1.1 ARM9-3.1 Marking of Mooring Buoys

The Committee considered input paper ARM9-3.1 from CEREMA regarding marking and colours on mooring buoys. A few different applications from different countries were collected, and response to French Direction des Affaires Maritimes is written. This is also noted for clarification purposes for the work with revising the MBS. The Committee also forward to ENG a request to inform regarding maximum vertical divergence on lights used on mooring buoys, and if possible try to enhance the vertical divergence.

Task group; Gaelle Nassif, Natasha McMahon, Trevor Harris, Johan Westerlund, Junki Bae, DaeWoong Kang

Action item:

The **IALA Secretariat** is requested to forward ARM9-12.2.4 to FMA in response to the input document 'Marking of mooring buoys' (ARM9-3.1) and ARM9-12.2.2 to ENG regarding mooring buoys.

9.1.2 ARM9-3.2 Port Traffic Signal

The Committee considered the results of the Port Traffic Signal questionnaire. Obtaining uniform regulations will be challenging due to potential implications on long term current practice in various countries. A new guideline would need to be more general in nature.

Task group; Gaelle Nassif, Natasha McMahon, Yves Jacques

Action item:

The **IALA Secretariat** is requested to forward liaison note on Port Traffic Signals ARM9-12.2.3 and its associated Annex ARM9-12.2.3.1 to ENG10 as input to its task on Port Traffic Signals.

9.1.3   ARM9-3.4 Input paper on O-139 Marking of Man-made Offshore Structures

The working group discussed the input paper and proposes that marking of man-made offshore structures should evolve and possibly be more efficient, while still meeting safety requirements. New ways of painting and new science related to conspicuity should be considered for the task (1.5.8) to revise Recommendation O-139, scheduled to commence at ARM 10. After noting the presentation of Korea about the difficulties of marking submerged breakwaters, the Committee suggests that guidance on marking of breakwaters should be included as a new section in O-139. This process might result in a name change of the Recommendation and corresponding Guideline.

An updated paper with input from engineering groups in Germany & Canada will be submitted by Mathias Polschinski, German Federal Waterway and Shipping Administration, prior to ARM10.

Task group; Mathias Polschinski, Junki Bae, Peter Dam, Natasha McMahon, Grant Judson, Alfredo Dominguez, Trever Harris

Action item:

*That **ARM Committee participants** gather data regarding the marking of existing or future windfarms for the scheduled ARM10 discussions on task 1.5.8, and give information on how affected sea-areas are coded such as area to be avoided, caution area etc.*

9.1.4   ARM9-3.8 Liaison note to ARM on 3rd party AtoN provider quality control

Input paper from ENG9 was reviewed and the working group proposes that IALA members with experience on the subject provide examples on 3rd party provider management and quality control. Such examples will be forwarded to ENG. The ARM Committee invites all participants to submit input to ARM based on their experiences regarding 3rd party AtoN provider services. The input may include setup, management and quality control of the 3rd party.

Task group; Alfredo Dominquez, Dave Merrill, Peter Douglas, Natasha McMahon

Action items:

*The **IALA Secretariat** is requested to forward Liaison Note to ENG on 3rd Party Quality Control (ARM9-12.2.6) to inform ENG of ARMs actions to progress task 1.2.1.*

*That **all ARM Committee participants** submit input to ARM based on their experiences regarding 3rd party AtoN provider services. The input may include setup, management and quality control of the 3rd party.*

9.1.5   ARM9-3.10 Liaison note on R1004 Sustainability

The input paper from ENG9 was reviewed. The ARM Committee notes that IALA Recommendation R1004 needs to list both underlying IALA Guidelines (G1137 and G1036) as set out in the IALA document structure approved by Council.

Task group; Gaelle Nassif, Yves Jacques

Action item:

*The **IALA Secretariat** is requested to forward the draft R1004 Recommendation on Sustainability with comments from ARM (ARM9-12.2.1) to ENG10 in response to a request from ENG to review the draft Recommendation.*

9.2 Reformat and review the IALA MBS incorporating MAtoN (Task 1.5.1)

The work on revising the MBS cannot begin until work on a few other matters is completed. However, initial scoping for the task is incorporated with the related task 1.5.3 (see below).

Task group; Trevor Harris, Peter Dam, Vitor Dias, Arlindo Santos

Action item:

*The **IALA Secretariat** is requested to forward 'MBS Review gap analysis initial' as working paper ARM9-12.2.9 to ARM10.*

9.3 Undertake a gap analysis of IALA guidance associated with the MBS, including 1078, The Use of AtoN in the Design of Fairways (June 2011). Identify further work to add to the task plan (Task 1.5.3)

This task was progressed. The work will need to take into consideration discussions on several different topics such as the marking of breakwaters, information regarding mooring buoys, marking of inland waterways, as well as any other updates to the MBS. Work will continue at ARM10.

Task group Dave Merrill, Junki Bae, Johan Westerlund, Risto Lang, Peter Douglas, Natasha McMahon, Alfredo Dominguez

Action item:

The **IALA Secretariat** *is requested to forward (1078 working paper) ARM9-12.2.10 to ARM10.*

9.4 Develop a guideline for the Use of Mobile AtoN (Task 1.5.10)

Task group 9.2 documents: Grant Judson, Trevor Harris, Vitor Dias, Arlindo Santos, Johan Pettersson, Jörg Kuchta

ARM9-9.2 – WP WG1 Draft IALA Guideline on MAtoN (ARM8 Revised)

The group noted the input paper, but on the basis of developing the guiding principles has not made a further amendment. It is proposed that the paper is forwarded to ARM10 as an input.

Action item:

The **IALA Secretariat** *is requested to forward the input guideline working paper ARM9-12.2.11 to ARM10.*

ARM9 -9.2.1 – Input Paper – Mobile AtoN (Australia)

The ARM Committee acknowledged the input paper regarding this issue and appreciated the concerns for the future of MAtoN as raised within the paper.

Based on the feedback provided within this paper, and discussion during plenary, the Committee agreed that WG 1 should develop guiding principles for any further work on MAtoN and that these guiding principles shall be used to guide further development of the MAtoN concept.

The ARM Committee proposes that Recommendation R-1016 should be amended taking into account these guiding principles and with the intent of amending the name for MAtoN to reflect a 'means of marking a hazard', not an aid to navigation.

The Guiding Principles are:

1. The MAtoN is intended to assist both IALA and the State Party in complying with the obligations of Article 8 of the Nairobi International Convention on the Removal of Wrecks, 2007.

2. MAtoN should only be used where the hazard needs to be marked to enhance navigation safety.

3. The use cases previously developed for MAtoN require revision.

4. MAtoN characteristics must be unique, and consideration should be given to Norway's physical characteristics proposal (IALA ARM9-9.2.2), and GRAD light characteristics proposal (IALA ARM9-9.2.3).

5. MAtoN must have a means of automatically and consistently reporting its position, such as a physical AIS AtoN.

6. MAtoN must be physically attached to the hazard therefore IALA does not support or encourage the use of any virtual MAtoN.

7. Any symbology must be approved through IHO and IMO.

8. The Competent Authorities (AtoN) should be involved in approval, monitoring and ensuring recovery of MAtoN.

The suggested Guiding Principles need to be shared with other the all IALA Committees.

Action items:

The **IALA Secretariat** *is requested to forward Liaison Note ARM9-12.2.12 to IALA Committees and PAP.*

The **IALA Secretariat** *to remove Recommendation 1016 from the IALA website until it is reviewed.*

ARM9 – 9.2.2 – Input paper proposal for MAtoN Symbol – Norwegian Coastal Administration

WG1 reviewed the paper, noting the proposed colour scheme for a MAtoN and similarity to an Emergency Wreck Marking Buoy. The ARM committee has developed the principles above to guide further development of MAtoN, and it is recommended that this paper is forwarded to ARM10 and considered in any further design proposals.

The proposal by the Norwegian Coastal Administration, illustrates the linkages to the requirements of Article 8 of the Nairobi International Convention on the Removal of Wrecks, 2007.

Action items:

The **IALA Secretariat** *is requested to forward this as a working paper ARM9-12.2.13 to ARM10.*

ARM9 – 9.2.3 – MAtoN Light character Trial Report (V1.0) General Lighthouse Authority Research and Development Department.

WG1 reviewed the report of GRAD, noting the technical characteristics of the recently developed characteristic for a MAtoN. The committee agreed with that the proposed character was sufficiently unique and was therefore suitable for future use as the MAtoN character.

WG1 express their gratitude for the efforts of GRAD in developing this character.
WG1 proposes that the light character is retained and included in any further work on MAtoN.

Action items:

The **IALA Secretariat** *is requested to forward the trial report ARM9-12.2.14 (ARM9-9.2.3) to ARM10.*

9.5 Develop guidance on AtoN provision in polar regions (Task 1.5.6)

The ARM Committee did not start work on this task during ARM9. The ARM Committee discussed the issue regarding the definition of IALA region A/B in the polar area. LAP is asked to review the document for any legal implications prior to ARM10.

Action items:

The **IALA Secretariat** *is requested to forward Liaison Note ARM9-12.2.8 to LAP19.*

9.6 Review IALA Guideline 1046 Ed.2 Response Plan for Marking New Wrecks (ARM8-12.2.15)

The group reviewed the Guideline. Due to the developments regarding MAtoN Guidance and the thoughts about guiding principles, the working group decided to remove references to MAtoN from the guideline. The document can now be forwarded to Council for approval.

Task group: Alfredo Dominguez, Trevor Harris, Peter Dam, Grant Judson, Vitor Diaz, Mathias Poschinski

Action item:

The **IALA Secretariat** *is requested to forward the revised Guideline 1046 Response Plan for Marking New Wrecks to Council (ARM9-12.2.5) for approval.*

9.7 Review R0143 Provision of virtual aids to navigation and G1081 Virtual AtoN to reflect developments (Task 1.6.1)

Work on this task progressed during the week and will continue at ARM10.

Task group: Yves Jaques, Grant Judson, Natasha McMahon, Joonatan Ahlroos, Jörg Kuchta, Kjell Johansson, Syamsul Aminuddin, Daniel Gama

Action item:

The **IALA Secretariat** *is requested to forward the working paper on draft Recommendation R0143 and Guideline 1081 on Virtual AtoN (ARM8-12.2.10) to ARM10.*

9.8 In association with ENG review G1116 Selection of Rhythmic Characters and Synchronisation of Lights for [Marine] Aids to Navigation (Dec 2015) (Task 2.1.1)

The task group concluded that Recommendation E-110 will not need to be revised until a new character for MAtoN has been decided. Work on G1116 was concluded.

Task group: Joonatan Ahlroos, Johan Westerlund.

Action items:

The **IALA Secretariat** *is requested to forward the draft Guideline 1116 ARM9-12.2.15 (ARM8-12.2.17) to ARM10 for work in conjunction with work on MAtoN.*

9.9 Review relevant sections of NAVGUIDE as requested by Secretariat (Task 3.2.1)

See section 4.2.

10. WORKING GROUP 2 – INFORMATION SERVICES AND PORTRAYAL (WG2)

The working group considered 17 input documents and reviewed the ARM task list from a WG2 perspective.

10.1 Develop guidance on cyber security for AtoN authorities in collaboration with all other Committees (Task 1.2.6)

At the ARM Chairs' meeting, it was decided that work on this wouldn't happen until after the IALA workshop on Cyber Security being organised by the ENG Committee for the northern hemisphere Autumn of 2020 in Canada (cross-refer to task 6.2.2 (section 10.22 below)).

10.2 Review G1084 Procedure of the Authorisation of AIS AtoN (Task 2.2.1)

Work due to commence at ARM 10.

10.3 Provide guidance on the management of requirements and requirements traceability (Task 2.2.2)

Task Leader: Jan-Hendrik Oltmann assisted by Fred Pot.

The task group completed work on guidance for requirements traceability (output ARM9-12.3.2). This was reviewed in the WG and ARM plenary for submission to Council for approval.

Action item:

The **IALA Secretariat** *is requested to forward the draft Guideline on Requirements and Traceability (ARM9-12.3.2) to the Council for approval.*

Jan-Hendrik Oltmann *is requested to provide a reference to a list of available requirements and traceability schemes.*

10.4 Review relevant sections of NAVGUIDE as requested by Secretariat (Task 3.2.1)

No work during this period. The WG notes that Natasha McMahon, Canadian Coastguard, has kindly volunteered to be the liaison with the Secretariat on this matter.

10.5 Review G1050 Management and Monitoring of AIS Information (Dec 2005) (Task 4.1.1)

No work was performed on this during the period due to the current uncertainties around the monitoring of MAtoN and Autonomous Maritime Radio Devices (AMRD). Work to commence once these issues have been addressed.

10.6   Maritime Services (Task 4.2.1)

Task Leader: Jon Leon Ervik, assisted by Javier Yasnikouski

Cross refer 10.7 below.

10.7   Develop guidance on Maritime Services (Task 5.1.1)

Task Leader: Jon Leon Ervik, assisted by Javier Yasnikouski

The WG updated the Draft Guideline on Maritime Services (MS) according to the outcome of IMO NCSR 6. This also includes the new name of the Guideline. The updated draft Guideline now has the same title as the IMO definition, so that misunderstandings can be avoided. This new name is now:

GUIDANCE ON THE DEFINITION AND HARMONIZATION OF THE FORMAT AND STRUCTURE OF MARITIME SERVICES IN THE CONTEXT OF E-NAVIGATION.

All descriptions for the 16 MS were updated accordingly. It was noted that the 16 MS represented the initial list of descriptions of MS, but that new or additional services could be added in the future, if necessary. The guide was also updated with the latest version of the recommended process of steps to be followed for the development of a new MS and the relationship between the different levels of service descriptions.

During the session, further work was discussed. There is a need for a clear description of the current situation and requirements, as well as describing future solutions as a result of digitisation and user needs. This will make it possible to develop a better method for defining technical services and product specifications. One method for this was discussed and will be developed for ARM 10.

Close coordination with the IMO and other relevant organisations is needed to succeed. In this context, it was noted that, while being the domain coordinating body for some of the MS, IALA should also look at how to contribute to the further development of MS being coordinated by other organisations.

Action items:

*That **IALA members** provide input to ARM 10 to progress the work on the further development of MS, in particular, the description of the current situation and requirements, as well as inputs and recommendations for harmonization and the definition of product specifications for existing, or new, associated services.*

*That **ARM Committee members** encourage experts to attend the next session of ARM 10 to progress work on MS.*

*The **IALA Secretariat** is requested to forward the working paper on Maritime Services (ARM9-12.2.16) to ARM10 for further work.*

10.8   New Guideline on Operational considerations for S-200 (S-201 AtoN information and S-230 Application Specific Messages) (Task 5.1.2)

No new work during the period.

10.9   Continue to Develop Product Specification S-201 in the Task Group already assigned (Task 5.1.3)

Task leader: Sewoong Oh, assisted by Eivind Mong, Kimmo Heiskari, Jens Schröder-Fürstenberg and Dave Lewald.

All open questions were resolved. The pending action item is the compilation of a spreadsheet to capture all conceptual ambiguities and ownership of concepts used within S-201 and recommended solutions to any

open questions on these, in preparation for the proposed June 2019 IHO/IALA technical coordination meeting. It is expected that S-201 will be ready for publication following ARM10.

Action items:

*That the **S-201 Task Group** to provide spreadsheet issue log and a liaison note to IALA Secretariat inter-sessionally.*

*That the **S-201 Task Group** to work inter-sessionally to prepare S-201 draft PS for ARM10 with a view to publication thereafter.*

10.10   Develop Annex C to S-201 (Task 5.1.4)

Task leader: Sewoong Oh, assisted by Eivind Mong, Kimmo Heiskari, Jens Schröder-Fürstenberg and LeeAnne Gordon.

An orientation and review discussion on the subject was conducted and some initial drafting took place. This work will be concluded at ARM10.

Action item:

*The **IALA Secretariat** is requested to forward the working paper (ARM9-12.2.24) on Annex C to S-201 to ARM10.*

10.11   Develop Requirements for S-125 (Task 5.1.5)

Orientation briefing was conducted in WG plenary, but no new work was conducted during the session.

10.12   Lead joint workshop with IHO on S-100/200 development and portrayal workshop (Task 6.2.1)

Task leader: Dave Lewald, supported by Martin Bransby, Eivind Mong, Jens Schröder-Fürstenberg and Jon Leon Ervik

An initial proposal has been put together by the task leader and WG with a kind offer of a Committee member to host the workshop. It is proposed that the workshop should take place in Latvia around June 2020/21.

Action item:

*The **IALA Secretariat** is requested to forward the liaison note (ARM9-12.3.8) on a joint workshop with IHO on S-100/200 development and portrayal to Council for approval.*

10.13   Coordination with IHO/WMO for S-100, S-200, and MRN management (S-100/S-200 message coordination with other Committees on S-2xx development) (Task 5.1.6)

The WG discussed the possibility of expanding the scope of the workshop on S-100 planned for 2021 to include other Organisations, such as IMO. However, after further consideration, the WG agreed to recommend that a separate workshop, more generic and high-level, could be conducted in 2020 and be jointly organised with all the main domain coordinating bodies (IMO, IHO, WMO, IALA, IMPA, IMHA) with participation of a broader audience. In this connection, the IMO observer indicated that IMO facilities in London could be used for the delivery of such a workshop. The WG was of the view that such a workshop could provide an opportunity to share experiences in the development and definition of data elements under S-100 and to discuss the further development of technical services associated with maritime services.

Action item:

*The **IALA Secretariat** is requested to liaise with IMO and other domain coordinating bodies in order to discuss the possibility of organizing such a joint workshop for S-100, S-200, and MRN management in 2020. Liaison note (ARM9-12.3.5).*

10.14   Develop guidance on MRN for users (Task 5.1.7)

Task leader: Eivind Mong, supported by Jens Schröder-Fürstenberg, Dave Lewald, LeeAnne Gordon and Martin Bransby.

Work on Unique Identifiers for Marine Resource Names was developed and reviewed extensively in the WG. WG recommends sending the Draft Guideline to Council.

Action item:

The **IALA Secretariat** *is requested to send draft guideline (ARM9-12.3.6) on Unique Identifiers for Marine Resource Names to Council for approval.*

10.15 Develop MRN Registry Submission & Maintenance Guideline for IALA Secretariat (Task 5.1.8)

A note to the secretariat was developed and this is submitted as ARM9-12.3.7.

Action item:

The **IALA Secretariat** *is requested to forward liaison note (ARM9-12.3.7) to the IALA Technical Operations Manager.*

10.16 Develop Recommendation to cover MRN Guidelines (Task 5.1.9)

No work was undertaken during this period. This work should be completed at ARM10.

10.17 Coordinate Committee support for IALA representation at IHO working groups in cooperation with Secretariat (HSSC, S-100WG, NIPWG) (Task 5.1.10)

Task leaders: Jens Schröder-Fürstenberg and Dave Lewald

Both the task leaders attended IHO, Jens Schröder-Fürstenberg in his capacity as chair of the IHO NIPWG Committee and Dave Lewald as IALA rapporteur. Work is ongoing throughout the period.

10.18 Monitor the development of S-201 Testbed (Task 5.1.11)

Sewoong Oh presented an update on the Republic of Korea's prototype S-200 test bed that has already been implemented as a demonstrator of some aspects of S-200. A web-based demonstration of the testbed was shown. The WG agreed that this work should be considered when developing S-200 within the ARM Committee.

ARM participants are invited to submit updates to Sewoong Oh on the progress of this topic to be presented at each ARM meeting. These updates will be used as inputs to the development of S-201. Work in this item will take place throughout the period.

Action item:

That **ARM Committee participants** *are requested to submit updates on the development of S-201 to Sewoong Oh.*

10.19 Review G1072 AtoN Information Exchange and Presentation (Dec 2009) and consider if contents of G1105 can be incorporated (Task 5.2.1)

No work was conducted during ARM9.

10.20 Develop Guideline on ship reporting from the shore-side perspective (Task 5.2.2)

Task leader: Fred Pot, assisted by Jarle Hauge, Jens Schröder-Fürstenberg and Michael Strandberg

The TG acknowledged that IMO Resolution FAL.12(40) directs public authorities to implement the electronic exchange of information about the arrival, stay and departure of the ship, persons and cargo to facilitate clearance processes by 8th April 2019, FAL has limited means to enforce public authorities to implement such systems on this schedule. Implementation of this directive is therefore foreseen to be, at least initially, limited to public authorities that are technologically sophisticated, thus leaving many paper-based ship reporting schemes in effect for the near future.

The objective of the IALA guideline on ship reporting from the shore-side perspective should support FAL with the implementation of the resolution by giving public authorities guidance on providing ship-owners and other parties concerned with the necessary information about the information exchange systems requirements. IALA ARM Committee's Ship Reporting Task directly addresses this objective, with the following proposed outputs in the Guideline:

- Ship Report Template Registry specifications and governance;
- Guideline on ship reporting tools;
- Minimum cybersecurity requirements for sharing ship report information; and,
- Guidance on migration from current ship reporting system to a harmonised and secure electronic system.

An initial scoping exercise was conducted with a working paper to be forwarded to ARM10.

Action Item:

*The **IALA Secretariat** is requested to forward the working paper on Ship Reporting (ARM9-12.2.17) to ARM10.*

10.21 Develop guidance on the symbology and portrayal of AtoN (with WG1) (Task 5.3.1)

No work was undertaken during ARM9. This work will be conducted once the S-201 portrayal is clearly defined.

10.22 Participate in an ENG led a joint workshop on cybersecurity (Task 6.2.2)

The ARM Chair is coordinating this on behalf of the ARM Committee and has already attended an initial coordination meeting. It is envisaged that this workshop will take place in Canada (location TBD) during the period 26-30 October 2020. Cross-refer task 1.2.6 (section 10.1 above).

10.23 Action items from input documents

10.23.1 Review of Input Documents from ITU-R WP5-B and ENAV (ARM9-4.9.1 to ARM9-4.9.5)

The documents were noted by the WG with the following actions and notes for IALA:

- IALA in conjunction with IMO (this was considered at IMO NCSR6) is invited to:
  - o Consider the list of applications for Group A and Group B AMRD;
  - o Provide information on whether these applications are conditional.
- IALA in conjunction with IMO and CIRM is invited to:
  - o Review the work and take action as appropriate.

A liaison note to ITU-R was drafted in conjunction with WG1 and the ENAV Committee in response (ARM9-12.3.1)

Due to the proposed changes in ITU-R M.1375-5 (Technical characteristics for an AIS using TDMA in the VHF maritime mobile frequency band), IALA may need to review and revise its AIS documentation to see what, if anything, needs changing in its guidance on AIS.

Action items:

*The **IALA Secretariat** is requested to liaise with other IALA committees on the revision of AIS documentation due to changes in ITU-R M.1375-5.*

*The **IALA Secretariat** is requested to send the liaison note (ARM9-12.3.1) to ITU-R in response to the input from WP5-B (ARM9-4.9.3).*

10.23.2 Review of draft Recommendation on Sustainability

The WG reviewed a draft of the sustainability Recommendation, with the following comments:

- Article 3 should be reworked to include specific organizations responsible for the implementation of sustainability goals.

- IALA members should look to their own national environmental guidelines in conjunction with this Recommendation.

11. WORKING GROUP 3 – RISK MANAGEMENT (WG3)

As a number of new participants attended WG3, the WG Chair started by giving an introduction to the Working Group and its background.

Thereafter, each WG participant gave an introduction of themselves and their background.

The WG Chair then went through the Task Plan 2018-2022 and the WG commenced its work by agreeing on the draft agenda based on Task Plan 2018-2022:

- Review of G1018 Risk Management and also review of G1123, G1124, and G1138 (Task 1.2.1)
- Review of R0142 Maritime Data Sharing IALA Net (Task 1.2.2)
- Review of G1086 Global Sharing of Maritime Data (Task 1.2.3)
- Review of R0138, G1058 and G1097 (Task 1.2.4)
- Develop Recommendation for marine data sharing for risk assessment analysis (Task 1.2.5)
- Develop document to promulgate IALA risk management toolbox to IMO (Task 1.2.7)
- Review of G1020 in collaboration with WWA (Task 3.1.1)
- Review relevant sections of the NAVGUIDE (Task 3.2.1)
- Cooperation with WWA in providing Risk Seminars (Task 6.1.1)

Prof. Floris Goerlandt gave an excellent presentation on the OPENRISK guideline for Pollution Preparedness and Response Risk Management and its outcome. The presentation brought up some interesting perspectives and the impression is that there are many synergies to the Risk management Guideline 1018 and that the presentation provided good inspiration to the WG in its coming revisions of the Risk Toolbox guidelines.

In addition, Mr Jaehoon Jeong gave another excellent presentation of the AtoN simulator developed by the Korea Institute of Aids to Navigation and its functionality and features. The Korean AtoN simulator concept will be considered in connection with the revision of G1058 and G1097.

Both presenters are highly appreciated for their contribution.

11.1 Review G1018 Risk Management to ensure compatibility with risk toolbox. Includes full review of underlying Risk Toolbox documentation G1123, G1124, G1138 (Task 1.2.1)

A small task group of the WG undertook a thorough and comprehensive revision of the current Risk Management guideline G1018, which was later discussed in a working group plenary session.

The aim of the guideline is to be an overarching document for the Risk Assessment Toolbox and the revision of the guideline should consider all tools in the IALA Risk Assessment Toolbox. Special emphasis must be on guidance of which method or tool to apply to a specific case and how to come to a decision on acceptability. Specific guidance on how to use each tool should be moved to the guidelines for PAWSA, IWRAP, SIRA, and Simulation.

The Chair at this stage amplified the importance of a full review of the risk management documentation to ensure that the flow of information required by the user is clear and succinct and without unnecessary duplication. In recognition of this, the WG understood that there is a significant amount of work required to reorganise the risk documentation which will not be completed for several ARM meetings.

The work with G1018 will continue at ARM10.

The underlying guideline for SIRA (G1138) was reviewed, initially in a small task group and later in a working group plenary session. The purpose of the revision is to investigate and implement the examples of the use

of SIRA provided through the Kiribati report (input paper ARM9-11.11.1) and by AMSA (input paper ARM9-11.12) and consider the need for changes in G1138 accordingly. The work will continue at ARM10.

Further work on the guidelines G1123 and G1124 will be postponed to ARM10.

Action Items:

The **IALA Secretariat** *is requested to forward the working paper ARM9-12.2.18 Guideline 1018 Ed.4 Risk Management as input to ARM10.*

The **IALA Secretariat** *is requested to forward the working paper ARM9-12.2.19 Guideline 1123 Ed.1 The use of IWRAP MkII as input to ARM10.*

The **IALA Secretariat** *is requested to forward the working paper ARM9-12.2.20 Guideline 1124 Ed.1 The use of PAWSA MkII as input to ARM10.*

The **IALA Secretariat** *is requested to forward the working paper ARM9-12.2.21 Guideline 1138 Ed.1 The use of SIRA as input to ARM10.*

11.2 Review R0142 Maritime Data Sharing IALA Net to reflect new title "Maritime data sharing" and the storage and use of historical [AIS and other] data for risk analysis (Task 1.2.2)

Task 1.2.2 will be postponed and be commenced at ARM10. The work related to IALANET will be progressed once the individual expertise in this area will be available from a wider ARM committee membership. The Dean of the WWA, who has to date specific competence in IALANET, will be requested to join ARM10/WG3 in October 2019, if possible.

11.3 Review G1086 Global Sharing of Maritime Data (June 2012) in collaboration with task 1.2.2 (R0142 review) (Task 1.2.3)

Task 1.2.3 will be postponed and be commenced at ARM10. The work related to IALANET will be progressed once the individual expertise in this area is available from a wider ARM committee membership.

11.4 In cooperation with ENG (task 1.2.1) revise R0138 and G1058 and G1097 on simulation use by AtoN authorities (Task 1.2.4)

The WG has considered the liaison note received from the ENG Committee (input paper ARM9-3.9) and thank them for their contribution to the update of the guideline G1097. The WG also note the ENG Committee request that the ARM Committee *"Take responsibility for the finalisation and further development, as appropriate, of the draft Guideline 1097 on Simulation Technology."*

The simulation guidelines G1058 and G1097 were both developed in the first instance by the ARM Committee with appropriate inter-committee liaison and the ARM consider it is appropriate for them to continue with the required reviews with continued liaison with the ENG Committee.

The proposed changes by the ENG Committee to the guideline G1097 (input paper ARM9-3.9.1) will be taken into consideration in the overall revision of the guideline, continuing at ARM10.

Action Items:

The **IALA Secretariat** *is requested to forward the liaison note regarding the task on revising R0138 and G1058 and G1097 on simulation use by AtoN authorities (ARM9-12.4.2) to the ENG Committee.*

The **IALA Secretariat** *is requested to forward the working paper ARM9-12.2.22 (ARM9-11.5) Recommendation R0138 Ed.1 The Use of GIS and Simulation by Aids to Navigation Authorities as input to ARM10.*

The **IALA Secretariat** *is requested to forward the working paper ARM9-12.2.23 (ARM9-11.6) Guideline 1058 Ed.2 Use of Simulations a Tool for Waterway Design and AtoN Planning as input to ARM10.*

*The **IALA Secretariat** is requested to forward the input paper ARM9-3.9.1 Draft Guideline 1097 Ed.1.1 Technical Features and Technology Relevant for Simulation of AtoN-working paper (ENG9-12.10.1) as input to ARM10.*

11.5 Develop Recommendation for marine data sharing for risk assessment analysis or incorporate with R0142 task 1.2.2 (Task 1.2.5)

Task 1.2.5 will be postponed and be commenced at ARM10. The work related to marine data sharing will be progressed once the individual expertise in this area will be available from a wider ARM committee membership.

11.6 Develop document to promulgate IALA risk management toolbox to IMO (SN circular) (Task 1.2.7)

Task 1.2.7 will be started when the full review of guideline G1018 together with the supporting toolbox guidelines have been brought to a significant level of maturity (Task 1.2.4).

11.7 Review G1020 Training Related to [Marine] Aids to Navigation (Dec 2005) (Task 3.1.1)

The IALA Model Course L1.3 on Risk Management has been amended with the latest tool SIRA in the Risk Management Toolbox by the WWA. In WG plenary, the proposed interim updates to Model Course L1.3 on Risk Management Ed 2 December 2015 rev3 (input paper ARM9-11.10.1) have been discussed and besides very minor editorial changes, the WG agrees to the proposed updates.

However, beyond these updates, there is still be a need for further revision, once the review of the overarching risk guideline G1018 has been finalised (Task 1.2.1). It is noted that an update of all references to specific risk assessment toolbox documents is required and the Secretariat/WWA are requested to carry out the update prior to forwarding the document to Council for approval.

Action Item:

*The **IALA Secretariat** is requested to forward the output paper ARM9-12.4.1 Draft IALA Model Course L1.3 on Risk Management Tool Ed 2 to WWA for a final cross-check on references to IALA documentation and to Council for approval.*

11.8 Cooperate with WWA in providing Risk Seminar(s) (Task 6.1.1)

Coordination and cooperation between the WWA, its lecturers and WG 3 are essential for providing guidance to National Members as well as education through the Risk Management Courses provided by WWA.

The WG Chair engaged with the WWA Secretariat in discussion regarding the importance of close engagement and liaison between WG3 and the WWA Secretariat on all aspects of risk management including full cooperation on the provision of regular risk seminars.

12. REVIEW OF OUTPUT AND WORKING PAPERS

The Committee produced 19 output documents including 3 Guidelines, 1 revised Academy model course, 10 liaison notes, 1 workshop proposal. Output papers were reviewed and their disposition agreed as indicated in ANNEX E.

13. ANY OTHER BUSINESS

13.1 IALA Questionnaire

The IALA Questionnaire was reviewed at ARM9. A number of comments were made and the questions updated.

Action Items:

*The **IALA Secretariat** to finalize the IALA Questionnaire (ARM9-12.0.1) taking into account the review of the questions conducted at ARM9.*

*The **IALA Secretariat** to take action as appropriate to send the questionnaire to IALA members for 2019.*

13.2 Committee Website

During ARM9 the Committee website was reviewed and updated.

13.3 IALA and MASS

With more focus upon MASS issues in the maritime world IALA needs to consider what may be required from the association in order to support autonomous shipping. The Committee was requested to determine ways that IALA could be involved with MASS systems and provide input to the ARM Chair to be discussed at PAP38.

Action Item:

*That **ARM Committee participants** are requested to provide input to the ARM Chair on ways that IALA could be involved with MASS systems and provide input to the ARM Chair to be discussed at PAP38*

13.4 Social events

Participants enjoyed a number of social events. On Monday evening, participants savoured other cultures through shared typical food and drink from their home countries. The Committee dinner on Wednesday evening was well attended in the Origines.

14. REVIEW OF SESSION REPORT

The report of the meeting (ARM9-14.1) was considered. Committee Participants were requested to advise any corrections/amendments within one week, following which the final version will be issued via the IALA web site.

Action item:

*The **IALA Secretariat** is requested to forward the summary of the ARM9 Committee report (ARM9-14.1) to Council to note.*

15. DATE AND VENUE OF NEXT MEETINGS

The tenth session of the ARM Committee (ARM10) will be held from 14 to 18 October 2019 at IALA HQ.

For other IALA related events see the news and calendar sections on the IALA web site.

16. CLOSING OF THE MEETING

The Committee Chairman thanked the Vice-Chair, working group chairs, and all Participants for their hard work and effective output during the session. He thanked the IALA Secretariat for their support.

The Committee Chairman then closed the ARM9 meeting and wished everyone a pleasant and safe journey home.

17. LIST OF ANNEXES

1   Agenda

    A copy of the agenda is at ANNEX A.

2   Participants

    A list of participants is at ANNEX A.

3   Working Group Participants

    A list of working group participants is at ANNEX A.

4   Input Papers

    A list of input papers is at ANNEX D.

5   Output and Working papers

      A list of output and working papers is at ANNEX E.

6   Action Items

      A list of action items is at ANNEX F.

9th Meeting of the AtoN Requirements and Management Committee (ARM)

The 9th meeting of the **ARM Committee** (ARM9) will be held from 1– 5 April 2019, at IALA, St. Germain en Laye, France.

The opening plenary will commence at 1300 on Monday 1 April 2019, and the closing plenary will end at approximately 1300 on Friday 5 April.

Committee Chair, Vice-Chair and Working Group Chairpersons are requested to meet at 0900 on Monday 1 April.

Agenda

1.   Opening

    1.1.   Approval of agenda

    1.2.   Welcome address from the Secretary-General/Deputy Secretary-General

    1.3.   Administration and Safety Briefing

    1.4.   Introductions and apologies

    1.5.   Programme for the week

2.   Review of action items from last meeting

    2.1.   Review of action items from ARM8

3.   Review of input papers

4.   Reports from other bodies

    4.1.   Report of the IALA Council

    4.2.   Report of the IALA Policy Advisory Panel

    4.3.   Report on e-Navigation Underway International Conference

    4.4.   Report first IALA-IHO Technical Coordination Meeting

    4.5.   IALA Report on IMO MSC

    4.6.   IALA Report on IMO Council

    4.7.   IALA Report on IMO NCSR

    4.8.   Report on AMRD

    4.9.   Report on ITU activities

5.   Presentations (15 minutes)

    5.1.   Status of AtoN on submerged breakwaters in Korea   JunKi Bae

    5.2.   AutoFerry project in Trondheim, Norway   Thomas Porathe

    5.3.   Report from WWA   Gerardine Delanoye

    5.4.   2019 e-Navigation Underway (North America) Conference   Fred Pot

6.   Review of Task Plan and WG expectations

    6.1.   2018-2022 task plan

7.   Reports from rapporteurs

    7.1.   Working Group 1

    7.2.   Working Group 2

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One apology was received from Bill Cairns.

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Michael Strandberg	Danish Maritime Authority	Denmark/National
Daniel Gama	Almirante Rego	Brazil/National
Natasha McMahon	Canadian Coast Guard	Canada/National
DaeWoong Kang	Ministry of Oceans and Fisheries	Korea/National
YoungMin Lim	Ministry of Oceans and Fisheries	Korea/National
Pierre Franck	Safran Electronics & Defense	France/Industrial

ANNEX C   WORKING GROUP PARTICIPANTS

Working Group 1   Navigational Requirements

	Participants	Organisation / Country
1	Guttorm Tomren (Chair)	Norwegian Coastal Administration, Norway
2	Johan Westerlund (Vice Chair)	Johan Westerlund, Sweden
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16	Sewoong Oh	Korea Research Institute of Ships & Ocean Engineering (KRISO), Republic of Korea
17	Jens Schröder-Fürstenberg	International Hydrographic Organization (IHO)
18	Eivind Mong	Canadian Coast Guard, Canada
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Working Group 3   Risk Management

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31	Ranxuan Ke	Navigation – Aids to Navigation Research, People's Republic of China
32	Thomas Porathe	Norwegian University on Science and Technology, Norway

ANNEX D   LIST OF INPUT PAPERS

All papers are posted on the Committee section of the IALA website

Meeting	Agenda Item	Input Paper Title	Source
ARM9-	1.1	Provisional Agenda	IALA Secretariat
ARM9-	1.5	Programme for the week	IALA Secretariat
ARM9-	2.1	Action items from ARM8	IALA Secretariat
ARM9-	2.1.1	Report of ARM8	IALA Secretariat
ARM9-	3.1	Marking of mooring buoys	CEREMA
ARM9-	3.2	Port Traffic Signal	Gaëlle NASSIF & James COLLOCOTT
ARM9-	3.2.1	Analysis of questionnaire on E-111	Gaëlle NASSIF & James COLLOCOTT
ARM9-	3.3	IALA Annual questionnaire report and proposal	IALA Secretariat
ARM9-	3.3.1	Report IALA Questionnaire 2017 final1	IALA Secretariat
ARM9-	3.3.2	Report IALA Questionnaire 2017 final1	IALA Secretariat
ARM9-	3.4	Input paper on O-139-marking of-man made offshore structures	German Federal Waterway and Shipping Administration
ARM9-	3.5	High-level Minister Symposium - "maritime transportation: harnessing the blue economy for the sustainable development of the Caribbean"	IALA WWA
ARM9-	3.5.1	High level Minister Symposium - Resolution	IALA WWA
ARM9-	3.6	Liaison Note to ENAV and ARM on draft Maritime Services Guideline	VTS46
ARM9-	3.6.1	WP WG1 Draft Guideline on Maritime Services (VTS46-13.3.1)	VTS46
ARM9-	3.6.2	Appendix 1 MS 1-3_merged revised WG 1 VTS46 (VTS46-13.3.1.1)	VTS46
ARM9-	3.7	WP Draft IALA Guideline on MSPs v21 (ENAV22-12.2.3)	ENAV22
ARM9-	3.8	Liaison Note to ARM on 3rd party AtoN provider quality control	ENG9
ARM9-	3.9	Liaison Note to ARM9 on Guidance on Simulation Technology (ENG9-12.10)	ENG9
ARM9-	3.9.1	Draft Guideline 1097 Ed.1.1 Technical Features and Technology Relevant for Simulation of AtoN-working (ENG9-12.10.1)	ENG9
ARM9-	3.10	Liason Note on R1004 Sustainibility	ENG9

ARM9-	3.10.1	Draft Recommendation R1004 Ed1 Sustainability Recommendation	ENG9
ARM9-	4.1.1	Report Council 68 Final (C68-19.1)	IALA Secretariat
ARM9-	4.2.1	Position on the development of AtoN services_Revised PAP36_track changes	IALA Secretariat
ARM9-	4.3.1	Conference Highlights ENUW 2019	IALA Secretariat
ARM9-	4.6.1	Summary report of IMO Council 121	IALA Secretariat
ARM9-	4.7.1	Summary report of IMO NCSR6	IALA Secretariat
ARM9-	4.9.1	IALA Report of ITU-R WP5B meetings November 2018 V20181203	Stefan Bober
ARM9-	4.9.2	Diagram of AMRD in the regulatory framework	Stefan Bober
ARM9-	4.9.3	E Liaison statement to IALA on AMRD	Stefan Bober
ARM9-	4.9.4	E Liaison statement to IALA on revision Rec ITU-R M1371-5	Stefan Bober
ARM9-	4.9.5	IALA_Report_of_ITU_WRC-19_CPM_meeting_Geneva_2019	Stefan Bober
ARM9-	6.1.1	ARM Task Plan updated at ARM8 (ARM8-12.2.1)	ARM8
ARM9-	6.1.2	Council 68 approved work plan	IALA Secretariat
ARM9-	6.1.3	ARM Task Plan updated at ARM8 (ARM8-12.2.1)	ARM8
ARM9-	9.1	WP Draft Guideline G1081-Ed.1.1 Provision of Virtual Aids to Navigation May2013 (ARM8-12.2.10)	ARM8
ARM9-	9.2	WP WG1 Draft IALA Guideline on MAtoN - ARM8 rev oct 2018 (ARM8-12.2.11)	ARM8
ARM9-	9.2.1	Input Paper - Mobile AtoN (Australia)	AMSA
ARM9-	9.2.2	NCA Input paper proposal MAtoN symbol	Norway NCA
ARM9-	9.2.3	Mobile AtoN light character trial report v1.0	GRAD
ARM9-	9.3	WP IALA Regions at the Poles 20180225 (ARM8-12.2.12)	ARM8
ARM9-	9.4	WP Draft IALA Guideline on the Governance of AtoN Service Provision Rev1 (ARM8-12.2.13)	ARM8
ARM9-	9.5	WP Draft Recommendation on Governance of AtoN Service Delivery (ARM8-12.2.14)	ARM8
ARM9-	9.6	WP WG1 IALA Guideline 1046 Ed.2 Response Plan for Marking New Wrecks December 2005 (ARM8-12.2.15)	ARM8
ARM9-	9.7	WP Draft Recommendation E-110-Ed.4 Rhythmic Characters of Lights on AtoN (ARM8-12.2.16)	ARM8
ARM9-	9.8	WP Draft Guideline G1116-Ed.1 Selection of Rhythmic Characters and Synchronisation of AtoN (ARM8-12.2.17)	ARM8
ARM9-	9.9	Enhanced MSP through VTS - Cover Note	IALA DSG
ARM9-	9.9.1	Enhanced MSP through VTS	IALA DSG

ARM9-	10.1	WP Draft IALA Guideline on Requirements Traceability (ARM8-12.2.18)	ARM8
ARM9-	10.2	WP WG2 Draft Proposal for R-Mode workshop 2019 (ARM8-10.17)	ARM8
ARM9-	10.3	WP WG2 Proposal for MRN Management (ENAV21-9.5)	ENAV21
ARM9-	10.4	WP WG2 Management of MRN (ENAV21-14.1.8)	ENAV21
ARM9-	10.5	WG2 Ship Reporting TG ARM9-Input Paper v1.7 Clean Copy	Ship reporting correspondence group
ARM9-	10.6	WG2 S-125 development NIPWG response final	Jens Schröder-Fürstenberg (IHO NIPWG Chair)
ARM9-	10.7	Proposal on the establishment of an Experts Group (EG) on S-200	IALA Secretariat
ARM9-	11.1	WP WG3 Guideline 1018 Ed.3 Risk Management May2013 (ARM8-12.2.2)	ARM8
ARM9-	11.2	WP WG3 Guideline 1123 Ed1 The use of IWRAP MKII-June 2017 (ARM8-12.2.3)	ARM8
ARM9-	11.3	WP WG3 Guideline 1124 Ed1 The use of PAWSA MKII June 2017 (ARM8-12.2.4)	ARM8
ARM9-	11.4	WP WG3 Guideline 1138 Ed.1 The use of SIRA Dec2017 (ARM8-12.2.5)	ARM8
ARM9-	11.5	WP WG3 Recommendation RO138 (O-138) Ed1 Use of GIS and Simulation by AtoN Authorities Dec 2007 (ARM8-12.2.6)	ARM8
ARM9-	11.6	WP WG3 Guideline G1058 Ed.2 Use of Simulation as a Tool for Waterway Design and AtoN Planning June 2011 (ARM8-12.2.7)	ARM8
ARM9-	11.7	WP WG3 Guideline G1097 Ed.1 Technical Features and Technology Relevant for Simulation of AtoN-May2013 (ARM8-12.2.8)	ARM8
ARM9-	11.8	WP IALA Model Course L1.3 on Risk Management Ed 2 December 2015 rev3 (ARM8-12.2.9)	ARM8
ARM9-	11.9	ARM9-11.9 OPENRISK project outcomes	IALA DSG
ARM9-	11.9.1	ARM9-11.9.1 OpenRisk-Guideline-for-pollution-response-at-sea	IALA DSG
ARM9-	11.10	Use of the Risk Management Toolbox-Example	IALA DSG
ARM9-	11.10.1	Risk Assessment - SIRA report_Kiribati	IALA DSG
ARM9-	11.9	Input Paper - Use of the Simplified IALA Risk Assessment tool	AMSA
ARM9-	11.10	Interim update to Model Course L1.3 to include SIRA	IALA WWA
ARM9-	11.10.1	Updates to IALA Model Course L1.3 on Risk Management Ed 2 December 2015 rev3	IALA WWA

ARM9-	11.11	Use of the Risk Management Toolbox-Example	IALA DSG
ARM9-	11.11.1	Risk Assessment - SIRA report_Kiribati	IALA DSG
ARM9-	11.12	Input Paper - Use of the Simplified IALA Risk Assessment tool	AMSA

ANNEX E   LIST OF OUTPUT DOCUMENTS AND WORKING PAPERS

Output documents are submitted for review/action by a body other than the Committee initiating the document.

Number		Output Paper Title	Source	Action
ARM9-	12.0.1	IALA Questionnaire 2019	Committee	To PAP38
ARM9-	12.1.1	ARM Task Plan	Committee	To ARM10
ARM9-	12.2.1	Environmental Management In The Provision Of Marine Aids To Navigation ARM Comments	WG1	To ENG10
ARM9-	12.2.2	Liaison Note ENG Marking of Mooring buoys v02	WG1	To ENG10
ARM9-	12.2.3	Liaison Note to ENG Port Traffic Signals	WG1	To ENG10
ARM9-	12.2.3.1	Analysis of questionnaire on E-111-2-1	WG1	To ENG10
ARM9-	12.2.4	Liaison note to France Re Mooring Buoy	WG1	To DAM (France)
ARM9-	12.2.5	IALA Guideline 1046 Ed.2 Response Plan for Marking New Wrecks	WG1	To Council
ARM9-	12.2.6	Liaison Note to ENG on 3rd Party QC	WG1	To ENG10
ARM9-	12.2.12	Guiding Principles for ongoing MAtoN work AUS et al	WG1	To all Committees and PAP
ARM9-	12.3.1	Liaison Note to ITUWP5B on AMRD	WG2	To ITU
ARM9-	12.3.2	Guideline on Requirements and Traceability	WG2	To Council
ARM9-	12.3.5	Liaison Note to Sec Regarding Proposed Joint S100 Management (003) (4)	WG2	To Secretariat
ARM9-	12.3.6	Draft IALA Guideline Ed.1 on Unique Identifiers for Maritime Resources	WG2	To Council
ARM9-	12.3.7	Draft Management of MRN for secretariat	WG2	To Secretariat
ARM9-	12.3.8	Draft Proposal for a Workshop S100 S200 PS Development (3)	WG2	To Secretariat
ARM9-	14.1	Report 9th Session IALA ARM Committee	IALA	To Council

Working Papers are documents that will remain within the committee for further review.

Number		Working Paper Title	Source	Action
ARM9-	12.2.9	WP MBS Review gap analysis initial	WG1	To ARM10
ARM9-	12.2.10	WP 1078 - The use of AtoN in the design or fairways - Review April 3,19	WG1	To ARM10
ARM9-	12.2.11	WP WG1 Draft IALA Guideline on MAtoN - ARM8 rev oct 2018	WG1	To ARM10
ARM9-	12.2.13	WP NCA Input paper proposal MAtoN symbol (ARM9-9.2.2)	WG1	To ARM10

Number		Working Paper Title	Source	Action
ARM9-	12.2.14	WP RPT-02-MB-19 Mobile AtoN light character trial report v1.0 (ARM9-9.2.3)	WG1	To ARM10
ARM9-	12.2.15	WP DRAFT-1116-Ed.1-Selection-of-Rhythmic-Characters-and-Synchronisation-of-AtoN	WG1	To ARM10
ARM9-	12.2.16	WP - Draft Guidelines on Maritime Services ARM9 v1	WG2	To ARM10
ARM9-	12.2.17	WP- Ship Reporting TG Summary of ARM9 Discussions v1.3	WG2	To ARM10
ARM9-	12.2.18	WP IALA Guideline Risk Management 1018 (ARM9 20190404)	WG3	To ARM10
ARM9-	12.2.19	WP WG3 Guideline 1123 Ed1 The use of IWRAP MKII- June 2017	WG3	To ARM10
ARM9-	12.2.20	WP WG3 Guideline 1124 Ed1 The use of PAWSA MKII June 2017	WG3	To ARM10
ARM9-	12.2.21	WP WG3 Guideline 1138 Ed.1 The use of SIRA Dec2017 (ARM8-12.2.5)_SIRA Task group_040419	WG3	To ARM10
ARM9-	12.2.22	WP WG3 Recommendation RO138 (O-138) Ed1 Use of GIS and Simulation by AtoN Authorities	WG3	To ARM10
ARM9-	12.2.23	WP WG3 Guideline G1058 Ed.2	WG3	To ARM10
ARM9-	12.2.24	WP Draft S-201 Annex C - Implementation guide	WG2	To ARM10

ANNEX F   ACTION ITEMS

Action Items for Secretariat

Action Items for Participants

¶¶

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