



IALA ARM COMMITTEE

REPORT OF THE 17th SESSION OF THE IALA ATON REQUIREMENTS AND MANAGEMENT (ARM) COMMITTEE

23 October – 1 November 2023

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1 October 2023

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International Association of Marine Aids to Navigation and Lighthouse Authorities

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Report of the 17th session of the IALA

IALA AtoN Requirements and Management (ARM) Committee Executive Summary

The 17th session of the IALA AtoN Requirements and Management (ARM) Committee was held from 23 October - 1 November 2023, including the physical week at IALA HQ between 23 - 27 October, with Dave Lewald as Chair and Natasha McMahon as Vice-chair. The Secretary for the meeting was Thomas Southall.

93 participants from 27 countries participated in ARM17. 16 participants attended for the first time.

The ARM Committee considered 39 input papers and produced 13 output papers, including working papers, from three Working Groups.

The meeting was carried out in accordance with the *Committee Arrangements*.

Key outputs completed included:

ARM17-11.2.1 Draft submission to IMO on the IALA MBS

ARM17-11.4.1 Draft submission to IMO on the Safety of Navigation Circular on the Risk Management Toolbox

ARM17-11.4.2 Draft Questionnaire on Risk Management Tools

ARM17-11.4.3 Task proposal on measures to monitor waterway risk

The following liaison notes were approved:

ARM17-11.2.2 Liaison note to all committees on QMS best practice

ARM17-11.2.3 Liaison note to VTS Committee on Recommendation R0132 Quality Management

ARM17-11.2.4 Liaison note to PAP on the review of AIS documentation

ARM17-11.2.5 Liaison note to ENG on the update of the IALA dictionary

ARM17-11.3.1 Liaison note to PAP on S-200 roadmap

ARM17-11.3.2 Liaison note to NIPWG on S-125

ARM17-11.3.2.1 Annex to IHO NIPWG

ARM17-11.3.3 Liaison note to all committees on Cyber Security Guideline

ARM17-11.3.3.1 Draft Cyber Security guideline

ARM17-11.3.4 Liaison note to LAP and PAPs on the document category for the S-200 Product Specification

Overall status of the ARM Committee 2023 - 2027 Work Programme after ARM17:

Standard	Scope	No.	Task	17	18	19	20	21	22	23
S1010 Marine AtoN	Marine AtoN planning	1.2.1	Compile new Guideline on AtoN Buoy Tender requirements and specification				x	x	x	x
	Marine AtoN planning	1.2.2	Compile guidance for buoy tender activities		x	x	x	x		
	Marine AtoN planning	1.2.3	Full review of Guideline G1078 The Use of AtoN in the Design of Fairways						x	x
	Marine AtoN planning	1.2.4	Development of aspects of digital communications, including promoting broadband connectivity for operational technology.			x	x	x	x	x
	Marine AtoN planning	1.2.5	Guidance on the use of simple IOT sensors on physical aids			x	x	x		
	Marine AtoN planning	1.2.6	Develop further guidance for navigators on the use of AtoN	x	x	x	x	x		
	Marine AtoN planning	1.2.7	Prepare an appropriate submission to IMO advising of the publication of the updated MBS highlighting MATON and MASS content.	x						
	Marine AtoN planning	1.2.8	Develop guidance on the provision of AtoN and risk management for autonomous vehicle/vessel operations (Maritime Autonomous Surface Ship, MASS)		x	x	x			
	Marine AtoN planning	1.2.9	Review relevant sections of NAVGUIDE in cooperation with the Secretariat	x	x	x	x	x	x	x

Standard	Scope	No.	Task	17	18	19	20	21	22	23
	Obligations and regulatory compliance	1.1.1	Monitor IMO work on STCW and develop IMO submissions and supporting advice on amendments to STCW in respect of IALAs inclusion within the Convention to cover AtoN training for navigators.	x	x	x	x	x		
	Risk management	1.4.1	Enhancing the safety and efficiency of navigation around offshore installations	x	x	x				
	Quality management	1.5.1	Develop a recommendation and guideline consolidating content from G1030, G1035 and G1004.		x	x	x	x		
	Quality management	1.5.2	Revision of Guideline 1052 on Quality Management in Marine Aids to Navigation Service Delivery	x	x	X				
	Quality management	1.5.3	Revise Recommendation R0132 Quality management for AtoN authorities.	x	x	x				
S1020 AtoN design and delivery	Visual signalling	2.1.1	Consider developing guidance on the marking of test areas for autonomous vessels and vehicles, ice roads and competition and event areas etc				x	x	x	x
	Design, Implementation & Maintenance	2.2.1	Develop Recommendation and Guideline on the use of Drones for AtoN inspection and maintenance	x	x	x	x			
S1050 Training and certification	Training and assessment	5.1.1	Model course on incident response and crisis coordination							
S1060 Digital communication	Harmonized maritime connectivity	6.3.1	Review and update G1062 Establishment of AIS as a [Marine] Aid to Navigation	X						

Standard	Scope	No.	Task	17	18	19	20	21	22	23
on technologies	Wide and medium bandwidth systems	6.1.1	Review G1050 Management and Monitoring of AIS Information	x						
S1010 Marine AtoN	Marine AtoN planning	1.2.1 1	Develop guidance on the provision of Marine AtoN for autonomous vehicle/vessel operations (Maritime Autonomous Surface Ship, MASS).							
	Obligations and regulatory compliance	1.1.2	Consider developing guidance on the certification of technical equipment, information systems and technical infrastructure related to MASS in the domain of IALA							
S1020 AtoN design and delivery	Floating Aids to Navigation	2.3.1	Update G1066 Design of floating AtoN moorings							
S1040 VTS	VTS implementation	4.1.1	Develop guidance on delineating the VTS area							
S1060 Digital communication technologies	Harmonized maritime connectivity	6.3.2	Recommendation for the AIS Service							
	Harmonized maritime connectivity	6.3.3	Review of the contents of A-124 series recommendations							
S1010 Marine AtoN	Risk management	1.4.2	Consider the development of IALA as a facilitator for an ISAC (Information Sharing and Analysis Centre) in relation to cyber security.	x						
	Risk management	1.4.3	Develop guidance on cyber security for Marine AtoN	x	x				x	x
S1050 Training and certification	Accreditation, competency, certification and revalidation	5.2.1	Develop a model course on AtoN Cyber Security arrangements		x	x				

Standard	Scope	No.	Task	17	18	19	20	21	22	23
S1020 AtoN design and delivery	Design, Implementation & Maintenance	2.2.1	Full review of A-126, G1084 and other AIS associated documentation							
	Design, Implementation & Maintenance	2.2.2	Develop an IALA guideline on the Maritime Architecture Framework							
	Design, Implementation & Maintenance	2.2.3	Develop an IALA recommendation and guideline on developing Harmonized Waterway Concept	x	x	x	x	x		
S1050 Training and certification	Accreditation, competency, certification and revalidation	5.2.2	Create S-100 model course	x	x					
S1060 Digital communication technologies	Harmonized maritime connectivity	6.3.4	Define user requirements for Maritime Connectivity, Maritime Internet of Things (IoT), and MRN addressing (may be three subtasks)	x						
S1070 Information services	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.1	Digital Fairway				x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.2	Contribute to the standardization efforts with respect of the requirements of the S-100 domain experts	x	x	x	x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.3	New Guideline on Operational considerations for S-200 (S-201 AtoN information and S-230 Application Specific Messages)		x	x	x	x		
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.4	Continue to Develop Product Specification S-201. Continue development on S-201, specifically on Maintenance, data validation, and harmonization with S-125, S-124, and S-101	x	x	x	x	x	x	x

Standard	Scope	No.	Task	17	18	19	20	21	22	23
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.5	Coordinate with IHO on implementation of IALA PS into S-98	x						
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.6	Continue development on S-125 in coordination with IHO NIPWG	x	x	x	x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.7	Continue development on MRN documentation, considering inputs from IALA Secretariat, other committees, or others as needed	x	x	x	x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.8	Review Guideline G1106 on producing an IALA S-200 series Product Specification		x	x	x			
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.9	Coordinate Committee support and submissions for IALA representation at IHO working groups in cooperation with Secretariat (HSSC, S-100WG, NIPWG)	x	x	x	x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.10	Monitor the development of S-201 Testbed	x	x	x	x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.11	Develop, implement and execute procedures for IALA to add, maintain and harmonize items to the IHO S-100 Feature Concept Dictionary(FCD)	x	x	x	x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.12	Create S-200 Implementation Plan, following similar S-100 Implementation Strategy and/or Roadmap	x	x	x	x	x		
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.13	Develop guidance on the symbology and portrayal of AtoN for charting	x	x	x	x	x	x	x

Standard	Scope	No.	Task	17	18	19	20	21	22	23
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.1 4	Development of technical service specifications for the provision of AtoN information	x	x	x	x	x	x	x
	Data models and data encoding (IVEF, S-100, S-200, ASM)	7.1.1 5	Review Guideline G1159 on ship reporting from the shore-side perspective		x	x	x	x		
S1050 Training and certification	Training and assessment	5.1.2	Training in implementation of digital solutions (data analytics & maritime informatics)					x	x	x
S1010 Marine AtoN	Risk management	1.4.4	Review Risk Management related documentation. Update as per ongoing risk toolbox developments.	x	x	x	x	x	x	X
	Risk management	1.4.5	Develop a method to quantify and evaluate various risk mitigation options	x	x	x	X			
	Risk management	1.4.6	Encourage IALA members and other organisations to share historic AIS and other vessel tracking data with IALA. IALA aims to use such data for risk assessment, research and training purposes.		x			x	X	
	Risk management	1.4.7	Conduct a global scan of current risk analysis tools and identify potential candidates for inclusion within the IALA Risk Management Toolbox.	x	x		X			
	Risk management	1.4.8	Monitor the IRMAS reporting tool, ensuring it meets the requirements for future records of risk management. Ensure the form is modified as required.	X						
	Risk management	1.4.9	Ensure long term sustainable supportability for IWRAP Software.			x	x	x	X	

Standard	Scope	No.	Task	17	18	19	20	21	22	23
	Risk management	1.4.1 0	Guideline for Risk Assessment of Cyber Security threats	x			x	x	x	X
S1050 Training and certification	Training and assessment	5.1.3	WWA lesson plans to review	x	x	x	x	x	x	x

Legend:

Blank: Ongoing or scheduled task
 Light orange: To Council to note or approve
 Light grey: Task completed or deleted
 X: Prolonged task

Legend for task numbering:

Digit 1: WG 1, 2 or 3
 Digit 2: Standard Scope No.; Other standards = 8; Standard not available = 9
 Digit 3: In sequence (1, 2, 3 etc.)
 Digit 4: Sub task a, b, c...(if needed)

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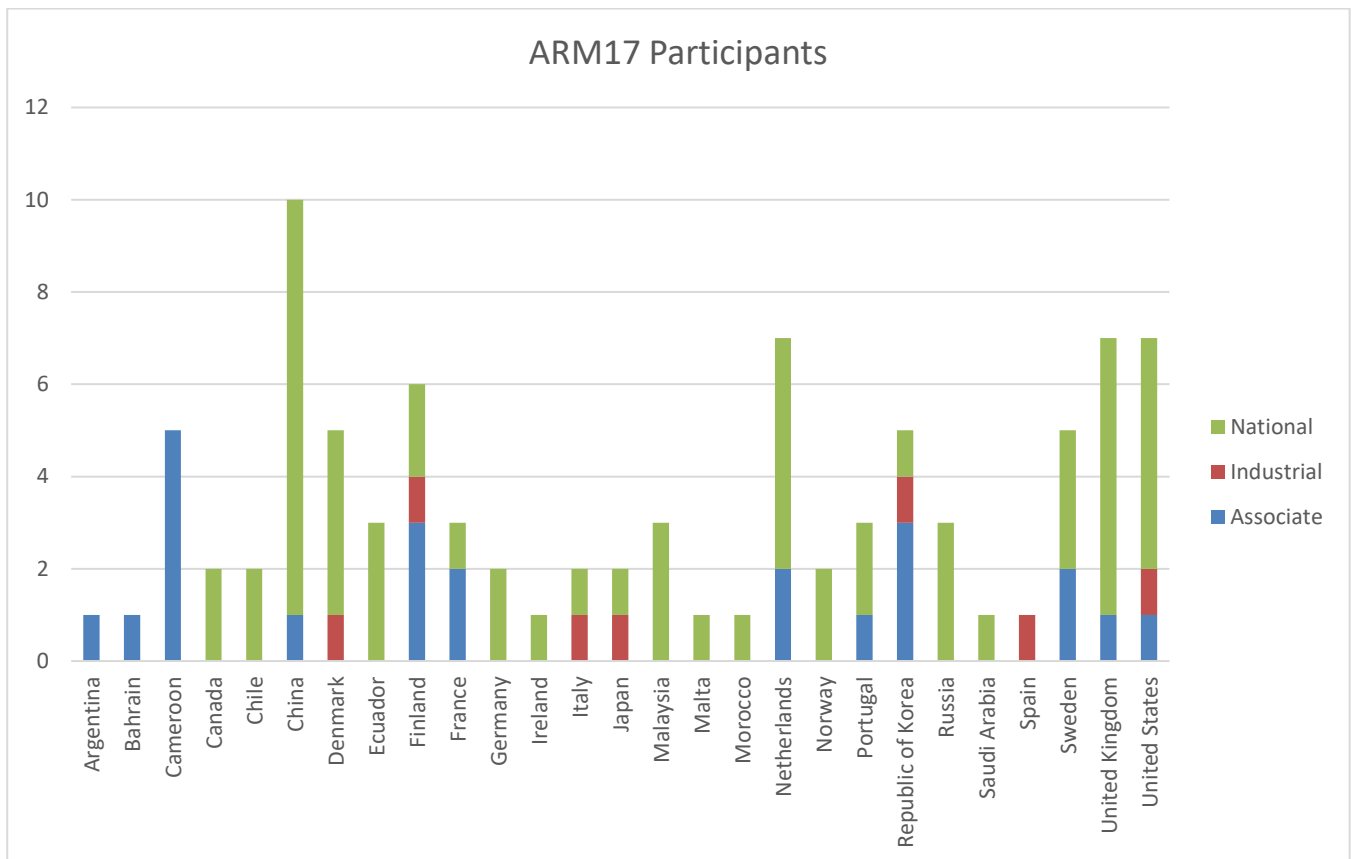
Report of the 17th session of the IALA AtoN Requirements and Management (ARM) Committee

1. INTRODUCTION

The 17th meeting of the ARM Committee was held from 23 – 27 October 2023 with Dave Lewald as Chair and Natasha McMahon as Vice-chair. The Secretary for the meeting was Thomas Southall.

The physical week began on Monday 23 October with the opening plenary and continued until Friday 27 October, followed by an approval period and the virtual closing plenary on 1 November. The Chair welcomed everybody, both old as well as new participants, to the meeting following the IALA Conference in Brazil earlier in the year and was pleased to see so many faces at IALA HQ.

93 participants from 27 countries participated in ARM17. 16 participants attended for the first time. A breakdown of the participants is shown in the graph below.



1.1 Welcome from the Secretary-General

In his welcoming speech, the Secretary-General congratulated the appointment of the Chair and Vice-chair of the Committee and welcomed everyone to the meeting. He began by reflecting on the success of the Conference and General Assembly in Rio de Janeiro in June and expressed gratitude to Brazil for their hard work in organizing it. He also acknowledged the industrial members' contributions, particularly the impressive exhibition and Industrial members evening.

Francis announced that the next conference would be in India in 2027 and encouraged attendees to explore the highlights from the previous conference, including those specifically related to ARM.

He acknowledged the busy schedule for the meeting, with numerous input documents and pending work from the previous period. The Secretary-General expressed special interest in several papers, including proposals for new guidelines on Bouy tenders and AtoN training within the STCW framework, water aerodromes, instruments in the risk tool box, S-100, and cyber security, emphasizing the importance of these topics. Additionally, he mentioned the ongoing focus on Maritime Autonomous Surface Ships (MASS) and shared insights from a recent workshop hosted by IALA, which involved stakeholders discussing investment scenarios and future developments in MASS.

Francis then updated the audience on the progress of transforming IALA into an Intergovernmental Organization (IGO) and noted that 25 states had ratified the Convention so far. He anticipated that IALA would become an IGO when 30 states ratified, possibly within the year. Singapore have generously offered to host the first General Assembly of the new IGO.

In closing, the Secretary-General thanked the attendees for their dedication and contributions, emphasizing the spirit of the IALA family. He looked forward to further discussions and interactions during the week.

1.2 Approval of the agenda

The agenda was reviewed and approved (ARM17-1.2.1).

1.3 Apologies

Dawn Seepersad and Gael Nassif submitted their apologies to the Secretariat. A list of participants who attended ARM17 can be found on IALA Dashboard for ARM and in Annex B.



1.4 Working Arrangements

The following statement on the IALA General Data Protection Policy was made by the Committee Secretary:

IALA complies with the General Data Protection Regulations of the European Union. IALA will include a list of participants with their contact information in the report of this meeting. Any participant who wishes to remove their contact details from the participants list should advise the Committee Secretary as soon as possible.

The following question was asked by the Committee Secretary:

If anyone present has knowledge of any patents, including pending Patents, held either by themselves or by other organisations or individuals, the use of which may be required to practice or implement the content of IALA Documents being developed or worked on in this Committee to inform the IALA Secretariat.

No patents were noted.

The Committee Secretary provided all participants with a briefing on the *Committee Working Arrangements* document and tools available to them. This brief included an overview of the ARM17 Action Plan that had been agreed by the ARM Committee Management Team (CMT) to be progressed during ARM17 through Task Groups (TG). Each task had a deadline for expressions of interest to participate to the specified Task Group Leader (TGL) by a certain date.

Task items that were worked on at ARM17 were displayed in the *Action Plan*, which can be found on IALA Dashboard for ARM.

2. REVIEW OF ACTION ITEMS FROM ARM16

The Committee Secretary confirms that all Secretariat actions from ARM16 were completed (input paper ARM17-2.1.1).

3. REPORTS FROM OTHER BODIES

3.1 IALA

3.1.1 IALA Council

Minsu Jeon, the Technical Operations Manager reported on three council meetings that have taken place since the last ARM Committee meeting. Notably, all of these council meetings were held in Brazil.

The first of these meetings was the 76th session of the Council, which occurred from December 12 to December 16, 2022. Given that this session marked the culmination of the previous work program spanning from 2018 to 2023, several significant developments transpired. The Council approved a substantial number of draft documents encompassing standards, recommendations, and guidelines. These documents were subsequently endorsed by the General Assembly. Among these approved documents were ones pertaining to the strategic vision, an amendment to the constitution, Recommendation R1001 Maritime Buoyage System Edition 2.0, and a suite of standards Edition 2.0. Furthermore, Guideline G1139, which addressed the Technical Specification of VHF Data Exchange System (VDES), was revoked. Additionally, the VTS Committee requested the Council to withdraw two documents: Recommendation R0120 (VTS in Inland Waterways) and Recommendation R1014 (Portrayal of VTS Information and Data). A substantial number of guidelines, totalling 15, were completed by the VTS Committee. The Council also approved a proposal from the ARM Committee for the second IHO IALA workshop on S 100 and 200, scheduled to take place in Annapolis, USA, in 2024. Lastly, the council designated Cap Spartel Lighthouse in Morocco as the Heritage Lighthouse of the Year for 2023.

Council 77 convened on May 28 this year in Brazil, during this session, the group made note of the report from PAP49 and an extraordinary session of the ENAV Committee.

Finally, the 78th session of the Council was held on June 3 in the same location, with newly elected councillors participating. This session marked the approval of the committee structure for the work period spanning from 2023 to 2027. A significant change involved the renaming of the ENAV Committee to the DTEC Committee. The Council also endorsed the appointment of new chairs for the ENG and ARM Committees, along with a new vice-chair for the ARM Committee, as well as re-appointing chairs and vice-chairs for VTS and ENAV Committees and vice-chair for ENG Committee.

3.1.2 IALA Policy Advisory Panel

Minsu Jeon, IALA Technical Operations Manager, reported that the 50th session of PAP was held between 6 - 8 September 2023.

The PAP agreed to the adoption of an online work programme database. This database will be helpful in the management of tasks assigned to the various committees. It promises to streamline committee operations and enhance efficiency within the organization.

The PAP also considered the draft new terms of reference for the committees and subsidiary bodies for the future intergovernmental organization (IGO).

Furthermore, discussion considered establishing a liaison with the International Civil Aviation Organization (ICAO) regarding the marking of seaplane operational areas. This liaison aims to foster collaboration and ensure the smooth functioning of seaplane operations in alignment with international standards.

The PAP session provided valuable updates on IALA's involvement in the ongoing Standards of Training, Certification, and Watchkeeping (STCW) review, the review of the Automatic Identification System (AIS) documents, developments related to S-200, and progress with MRN.

3.1.3 IALA Conference and General Assembly 2023

Minsu Jeon, informed participants that the IALA Conference provided a platform for delving into a wide array of presentations encompassing various technical aspects within IALA's scope. Over the course of the Conference, approximately 140 presentations were delivered, spanning both plenary sessions and the speaker's corner, and all of these presentations can be accessed via the file-sharing platform. This opportunity proved invaluable for staying abreast of ongoing technical advancements and gaining insights into forthcoming developments.

Upon examining the conclusions drawn from the conference, some trends were prominently discussed, with a notable focus on sustainability, in alignment with the United Nations Sustainable Development Goals (SDGs). The cooperative relationship between the International Hydrographic Organization (IHO) and IALA was emphasized as well.

A considerable number of presentations delved into the realm of autonomy and the human dimension, a topic magnified by the influence of digitalization in the maritime field. The Conference also highlighted that it is equally crucial not to lose sight of the importance of physical Aids to Navigation (AtoN) for mariners.

During the week of the Conference, the General Assembly convened. Several significant decisions were reached during this Assembly:

- An amendment to the Constitution was approved.
- Revised standards were adopted.
- The revised Maritime Buoyage System (MBS) was approved.
- A strategic vision for the organization was approved.

Furthermore, the General Assembly elected the members who now constitute the new Council of IALA.

3.2 IMO

Minsu Jeon reported relevant results from IMO meetings since the last Committee (NCSR10 and MSC107) meeting starting with NCSR10.

At NCSR10 IALA presented five papers, and delivered a presentation on MRN which was well received by many of the member States.

IALA had submitted document NCSR 10/7/1, proposing updated and new descriptions on Maritime Services for VTS and Aids to Navigation. This submission was approved without any changes. As an outcome, VTS 1, 2, and 3 have been consolidated into a singular description on VTS under MS1. The updated AtoN description is now the second point on the list of the descriptions (MS2).

IALA had also submitted a proposal to amend on the aids to navigation and VTS part of the IMSAS manual, and it was well received and has been forwarded to the IMO III sub-committee. The proposal is intended to be incorporated into the development of a new III Code Implementation Guide. This guidance will provide essential advice for countries undergoing audits, ensuring a more efficient and comprehensive evaluation process.

NCSR also approved a revision of resolution MSC.530(106) on Performance standards for ECDIS that introduces new ECDIS functionalities for a standardized digital exchange of ships' route plans between ships and shore. This approval may signify an opening step, potentially paving the way for broader data exchanges between ECDIS systems and coastal States.

3.3 Digital@Sea

Minsu Jeon reported that Digital@Sea Asia Pacific took place in Korea which included a capacity building workshop. This event attracted a substantial pool of expertise in the maritime domain.

Looking ahead, the next conference, Digital@Sea International, is scheduled for 30 – 31 January 2024, in Copenhagen, Denmark. Subsequently, another conference in North America is planned for 8 – 9 May 2024, in Atlantic Beach, Florida, USA.

3.4 IHO

Minsu Jeon, reported that regarding International Hydrographic Organization (IHO) matters, IALA continues to be actively engaged in several initiatives. IALA is active in IHO Hydrographic Services and Standards Committee (HSSC) meetings and additionally, the World-Wide Academy (WWA) has joined regional hydrographic Commission meetings, demonstrating a cooperative approach to regional discussions.

A second joint workshop between IHO and IALA has been scheduled for next year and IALA is poised to resume its regular technical cooperation meetings with the IHO later in the current year.

3.5 ITU

Minsu Jeon informed the Committee on IALA / ITU matters highlighting that the ITU Working Party 5B convened for its latest meeting from 10 – 21 July this year in Geneva. This gathering marked the conclusion of the study cycle spanning from 2019 to 2023. Representing IALA at this meeting was Stefan Bober.

A focus of WP5B centered on two key objectives:

- Revision of several recommendations.
- Introduction of two ITU study questions: one pertaining to VHF digital voice and the other concerning VDES R-mode.

It is noteworthy that the preparation of documents for the upcoming World Radiocommunication Conference 2023 (WRC23) had been completed during the previous meeting. WRC23 is scheduled to take place in Dubai, UAE, from 20 November - 15 December 2023.

IALA maintains a specific interest in the maritime mobile service, encompassing the Global Maritime Distress and Safety System (GMDSS) and the radio determination service. IALA places particular emphasis on the development of technologies such as VDES, AIS, AMRD, VHF digital voice, and VDES R-mode.

3.6 Joint IHO/IALA workshop on S100/S200

The Chair updated the Committee on the arrangements that are ongoing to arrange the 2nd IHO IALA workshop on S-100/200 which will be held 9 – 13 September 2024 at the US Naval Academy, Annapolis, USA.

3.7 IALA MASS workshop

Minsu Jeon reported outlines IALA's recent work in the field of MASS. He introduced two events:

- IALA MASS Workshop (2-3 October 2023, IALA HQ): This workshop brought together a diverse group of stakeholders from the global maritime community. Its primary objective was to explore potential future scenarios for the development of MASS. During the workshop, attendees had access to insightful

presentations, now available on the IALA fileshare platform. The workshop's outcomes have proven to be exceptionally compelling, with a comprehensive report on its findings and discussions set to be released soon.

- IALA Mass TF (4 October 2023, IALA HQ): The IALA MASS Task Force met in a hybrid format, continuing their crucial work in this domain. While this meeting preceded the ARM 17 session and could not incorporate the latest committee updates, the group made substantial progress by revising the roadmap for MASS TF deliverables and activities, ensuring alignment with their objectives.

4. PRESENTATIONS

All presentations given at ARM17 can be found on the fileshare (login necessary). The following presentations were given at ARM17:

- IALA World Wide Academy Update / Latifa Oumouzoune, IALA
- Update on S-200 series PS and testbed / Minsu Jeon, IALA / Dr Sewoong Oh, KRISO
- Securing AIS and VDES / Dr Alan Grant, GRAD

5. WORK PROGRAMME MANAGEMENT

5.1 Work Programme 2023 – 2027, Task Plan, Task Register

The Task Plan was updated to reflect the new 2023 – 2027 Work Programme and throughout the session, the new document and the Task Registers were updated by the Vice-chair and the Working Group Chairs, these were noted by the Committee. They will both be forwarded to ARM18 as working papers.

Action item(s)

The Secretariat is requested to forward the WP ARM Committee Task Plan (ARM17-11.5.1.1) and WP ARM Committee Task Register (ARM17-11.5.1.2) as working papers to ARM18 for further development.

5.2 Action Plan for ARM17

The ARM17 Action Plan, which can be found on IALA Dashboard for ARM, was noted by the Committee.

6. REVIEW OF INPUT PAPERS

The input papers for ARM17 consisted of new input papers as well as working papers from the previous session. The input paper list (ARM17-6.1.1) did not include the working papers from ARM16. The working paper list (ARM17-6.1.2) was a separate input document.

7. ESTABLISH WORKING GROUPS

The Chair outlined the procedure to be followed by working groups, after which three working groups were established and their tasks outlined. The Working Group chairs and vice-chairs were introduced. Full lists of working group participants can be found in Annex F.

Working Group (WG)	Working Group Chair / Vice-Chair
WG1 – Navigational Requirements	Guttorm Tomren (Chair), Johan Westerlund (Vice-chair)

WG2 – Information Services and Portrayal	Peter Hooijmans (Chair), LeeAnne Gordon (Vice-chair)
WG3 – Risk Management	John Stone (Chair), Kevin Gregory (Vice-chair)

8. WORKING GROUP 1 – NAVIGATIONAL REQUIREMENTS (WG1)

ARM17 has been an exciting first session of the new work period, the working group were thrilled to gather again and welcomed some new members. Several input papers have been considered by the various WG1 task groups with 5 liaison notes drafted as output. The work plan for the upcoming four years was processed, and tasks assigned.

8.1 Task 1.2.6 – Develop further guidance for navigators on the use of AtoN

Task leader: Sophie Platten

Guideline G1173 was published on 16th December 2022 and the task is therefore completed.

8.2 Task 1.2.7 – Prepare an appropriate submission to IMO advising of the publication of the updated MBS highlighting MATON and MASS content

Task leader: Natasha McMahon

With the revision of the MBS approved at IALAs XXIIst Conference, General Assembly, June 2023, the IMO SN.1/Circ. 297 should be updated to reflect the new edition of the MBS to all member states. A proposed draft memo to revise SN.1/ circ. 297 for input to IMO/MSC, reflects edition 2.0 of the MBS and is included as an output paper for approval by ARM.

Action item:

The Secretariat is requested to forward the draft proposal to revise SN.1/ circ. 297 regarding the MBS (ARM17-11.2.1) to Council for approval and subsequent submission to the IMO.

8.3 1.2.8 Develop guidance on the provision of AtoN and risk management for autonomous vehicle/vessel operations (Maritime Autonomous Surface Ship, MASS)

Task Group Leader – Nigel Hare

At the opening plenary Guttorm Tomren announced that Nigel Hare, UK Trinity House, has agreed to be the MASS task group leader for ARM. In order to bring Nigel up to speed with the latest developments on MASS in IALA, in particular, the very successful workshop held on 2-3 October, the Secretary-General gave an update at a meeting during ARM 17 on Wednesday 25 October. Present at the meeting was the MASS TASK Force leader Maarten Berrevoets, Dave Lewald, Natasha McMahon, Jacob Bang, Guttorm Tomren and Nigel Hare as well as online participants from China MSA, Liu Jiangna and Luo Ziwen.

The discussion moved onto immediate future IALA activity. Maarten Berrevoets noted that the task group was due to meet next in St Germain on 5 February and Nigel Hare and Dave Lewald confirmed they will be attending. Guttorm Tomren and Nigel Hare then agreed that planned work in ARM on MASS would subsequently be discussed and agreed during ARM 18.

Action Items:

The Secretariat is invited to note the new appointment of Nigel Hare as ARM MASS TG leader and to make the MASS Task Force aware of his appointment where appropriate.

8.4 Task 1.2.9 – Review relevant sections of NAVGUIDE in cooperation with the Secretariat

Task group leader: Dave Merrill

No work was conducted on the NAVGUIDE in ARM17 as current version of NAVGUIDE was printed in 2023. We will conduct review and edits in future ARM Committee Meetings. Our group did notice that definitions in the NAVGUIDE don't always match the definitions in the IALA Dictionary. Guidance from the ARM Chair and/or Secretariat on a desire to match these definitions would help us as we move forward.

Whereas we don't anticipate intersessional meetings between ARM17 and ARM18, we may hold these later in the work period.

Action items:

The Secretariat to consider and provide input to ARM18 regarding the matching of definitions between the NAVGUIDE and the IALA Dictionary.

8.5 Task 1.1.1 – Monitor IMO work on STCW and develop IMO submissions and supporting advice on amendments to STCW in respect of IALAs inclusion within the Convention to cover AtoN training for navigators

Task leader: Sophie Platten

The task group during ARM17 gathered information regarding previous suggestions on the best way progress the task, Phil Day was contacted and provided clarification on previous plan for the task. Minsu Jeon has assisted in providing clarification on IMO proposal process and provided the task group with a template for the proposal. The task group has commenced drafting the IMO proposal document. The task group plans to use the time between ARM17 and ARM18 to research and collate current syllabus and training materials and hold an intersessional meeting to review and plan for ARM18. The group will continue with the draft IMO proposal in ARM18 and commence working on proposed amendments to update the STCW Model Courses 7.01, pertaining to Master and Chief Mate, and 7.03, related to the Officer in Charge of a Navigational Watch.

Action item:

The Secretariat is requested to liaise with IMO on the ARM task 1.1.1 to update STCW and to clarify the process to fulfill this task.

Committee participants are invited to join the intersessional task group (Virtual meetings) working on Task 1.1.1 – Monitor IMO work on STCW and develop IMO submissions to adjust model courses for training of mariners relating to AtoN and to express their interest to Sophie Platten (sophie.platten@trinityhouse.co.uk) by 30 November 2023, noting the dates and times of the intersessional meetings, January 2024, will be published on the IALA ARM Committee Dashboard.

The task group leader of task 1.1.1 will submit input to the Secretariat in order for a draft input paper to IMO HTW Sub-Committee regarding STCW to be forwarded to Council for approval and subsequent submission to the IMO by 1 December 2023.

The Intersessional Task Group Leader to provide input on the intersessional work on task 1.1.1 to ARM18.

8.6 Task 1.4.1 – Enhancing the safety and efficiency of navigation around offshore installations

Task leader: Trevor Harris

The task group formed to develop the requested guideline and worked on the document for the whole period of ARM17. The group recognised that developing guidance on enhancing navigational safety around OREI would involve many aspects of safety of navigation such as ship routing, lighting and marking and VTS. The group was aware that the IMO already has regulation and guidance on many aspects of safety of navigation. Before continuing developing this guideline it was felt discussions should be held between IALA and IMO seeking confirmation on the scope and direction on further developing this guideline.

Action items:

The Secretariat is requested to liaise with the IMO Maritime Safety Division regarding the scope and direction of task 1.4.1 – Enhancing the safety and efficiency of navigation around offshore installations at the earliest opportunity. The IMO response should be provided back to the ARM Committee.

That the Secretariat forwards (ARM17-11.5.2.1) WP draft guideline on enhancing the safety and efficiency of navigation around offshore installations as a working paper to ARM18 for further development.

8.7 Task 1.5.2 – Revision of Guideline 1052 on Quality Management in AtoN Service Delivery

Task leader: Johan Westerlund

Work was progressed on the guideline, taking the input from China MSA into consideration. A liaison note was drafted to request IALA members to provide examples of best practice with Quality Management Systems in their organisations, in order for the task group to gain a wider understanding of how various authorities have implemented QMS.

Action items:

The Secretariat is requested to forward liaison note (ARM17-11.2.2) to all committees on Quality Management in AtoN Service Delivery for their consideration.

That the Secretariat forwards (ARM17-11.5.2.2) WP draft Guideline G1052 Quality-Management-Systems-for-AtoN-Service-Delivery as a working paper to ARM18 for further development.

8.8 Task 1.5.3 – Revise Recommendation R0132 Quality management for AtoN authorities

Task leader: Johan Westerlund

The revised recommendation is mostly completed, all that remains is adding reference to the VTS QMS guideline currently being developed by the VTS committee. Once that guideline has been completed. A liaison note to the VTS committee was drafted, asking for feedback if there is anything else in the recommendation the committee considers in need of updating.

Action items:

The Secretariat is requested to forward liaison note (ARM17-11.2.3) to the VTS Committee on Quality Management for their consideration.

That the Secretariat forwards (ARM17-11.5.2.3) WP ARM16-7.2.1.1 Draft Revised R0132 Quality Management for Aids to Navigation Authorities as a working paper to ARM18 for further development.

8.9 Task 2.2.1 – Develop Recommendation and Guideline on the use of Drones for AtoN inspection and maintenance

Task leader: Naehyuk Yoo

The task group conducted hybrid meetings during ARM17 and commenced developing guidance documents on the Use of Drones for AtoN Inspection. Scoping was undertaken and each task group member shared their national legislation and guidance on drone operation, and draft Recommendation and Guideline were developed for finalization at ARM18.

Action Items:

That the Secretariat forwards (ARM17-11.5.2.4) WP Draft Recommendation on the use of Drones for AtoN inspection and maintenance and (ARM17-11.5.2.5) WP Draft Guideline on the use of Drones for AtoN inspection and maintenance as working papers to ARM18 for further development.

That Participants are invited to review (ARM17-11.5.2.4) WP Draft Recommendation on the use of Drones for AtoN inspection and maintenance and (ARM17-11.5.2.5) WP Draft Guideline on the use of Drones for AtoN inspection and maintenance and provide input to ARM18.

8.10 Task 2.2.2 – Full review of A-126, G1084 and other AIS associated documents

Task group leader: Peter Douglas

An action plan was produced which proposes:

- The archiving of R0124 and Associated Appendices. This series of technical documents (with numerous appendices) is the largest single body of IALA AIS material. It contains much useful information but is no longer being actively developed or maintained. We recommend that this material should be archived so as to still be available for reference purposes in the medium term.
- The retirement of Recommendation R0123 – the Provision of Shore-based AIS. This document has not been substantially updated since 2007 and is largely duplicated in the new VTS document G1111-4 – Producing requirements for AIS.
- The retirement of Recommendation R0144 – Harmonized Implementation of Application Specific Messages. This document dates from 2011 and refers to an urgent need for harmonization. The relevant detail is contained within Guideline G1095.
- The consolidation of Recommendation R0126 – The Use of AIS in Marine AtoN and Recommendation R0143 – Virtual AtoN within a revised version of R0126 which will be repurposed as a brief summary of available IALA documentation on the same subject.

Action item:

The Secretariat is requested to forward liaison note (ARM17-11.2.4) to PAP on the review of AIS documentation.

8.11 Task 6.3.1 – Review and update G1062 Establishment of AIS as a Marine Aid to Navigation

Task leader: Peter Douglas

The following guidelines are to be merged into a single Guideline document if possible:

- R0126 The Use of the Automatic Identification System (AIS) in Marine Aid to Navigation Services (Existing content)
- R0143 Provision of Virtual AtoN
- G1081 Virtual AtoN
- G1082 An Overview of AIS
- G1062 The establishment of AIS as an Aid to Navigation
- G1084 Authorisation of AIS AtoN
- G1098 The Application of AIS - AtoN on Buoys
- G1095 Harmonised Implementation of Application-Specific Messages (ASM)
- G1050 The Management and Monitoring of AIS Information

The following guidelines have been scoped out of this review:

- G1129 The retransmission of SBAS Corrections using MF-Radiobeacon and AIS, as the use of AIS is a relatively small component of a larger document

- G1086 The Global Sharing of Maritime Data & Information, as the use of AIS is only one component of a larger document
- G1111-4 Producing Requirements for AIS, as this is one of a series of VTS documents

Action item:

The Secretariat are requested to make available the documents listed in the ARM17 report under task 6.3.1 – Review and update G1062 Establishment of AIS as a Marine Aid to Navigation in the Fileshare in word format.

8.12 Task 6.1.1 – Review G1050 Management and Monitoring of AIS Information

Task leader: Peter Douglas, coordinated with ARM WG3

See previous comment above.

8.13 Other Tasks/input papers

Dictionary – Update IALA Dictionary

Task group leader: Dave Merrill

Received a draft of two Dictionary changes from ENG via Liaison Note ARM17-6.2.1 dated 09 March 2022. One was Luminous Range and the second, Nominal Range. WG1 reviewed these proposed definitions, but is not ready to recommend approval without further information and explanation from ENG.

The ENG Liaison note also included a request to replace “Sea Mile” with “Nautical Mile” in all IALA publications. This is in keeping with previous IALA policy. WG1 concurs. We conducted a word search and identified 3 documents that still use Sea Mile. We will share these with the Secretariat and ask that his staff make the appropriate edits.

Finally, the ENG Liaison note included a request for IALA to use the acronym “M” as the official IALA designation for Nautical Mile.” WG1 does not agree with the request and instead recommends using “NM” as the official IALA abbreviation for Nautical Mile and that this be captured in the Dictionary.

Action items:

The Secretariat is requested to forward liaison note (ARM17-11.2.5) to ENG on the update of the IALA dictionary.

That the Task Group Leader, Dave Merrill, arranges an intersessional meeting with the ENG Chair and other relevant members regarding definitions proposed by ENG. The goal of this meeting is to get further clarification on what impact these new definitions will have on both existing and future AtoN design.

General Overview of a Floating AtoN (previously as Navigational Requirements and Considerations for Establishment of Buoyage)

Task group leader: Dave Merrill

At ENG16, ARM Committee was requested to provide their review and comment on the Navigation Requirements and Considerations of a draft guideline previously titled as Navigational Requirements and Consideration for Establishment of Buoyage.

ENG WG1 relooked at the title of the document and retitled it as “General Overview of a Floating AtoN” as a working title. The main purpose of this guideline is to provide an overview of the characteristic of a floating AtoN to a new user or inexperienced entity. The document looks to provide a brief description of the individual components of a floating AtoN, and other operational requirements for the lifecycle for deployment of a floating AtoN including responsibilities and relevant national requirements. This document seeks to point the reader to the existing IALA Guidelines and Recommendations for their further reading.

ENG requested the ARM Committee to review and comment on the draft guideline.

Task group started reviewing the paper during the week. The initial review was completed, but to enable a wider review the input paper should be forwarded to ARM18 as an working paper for final review.

Review on various documents received from DTEC

At ARM17, ARM Committee was requested to provide their review and comment on input papers regarding IOT and evolving technologies named “MS@MS”. The ARM Committee did not have time for a full review of mentioned documents and will have a more in-depth evaluation at ARM18.

Action item:

That the Secretariat forwards (ARM17-11.5.2.6) WP ARM17-6.2.3 LN ARM ENG on Technology review MS@MS (DTEC1-12.3.2.1), (ARM17-11.5.2.7) WP ARM17-6.2.3.1 LN ARM ENG on Technology review MS@MS (DTEC1-12.3.2.1), (ARM17-11.5.2.8) WP ARM17-6.2.3.2 Completed Review of Radio-free wireless comms MS@MS (DTEC1-12.3.2.1.2), (ARM17-11.5.2.9) WP ARM17-7.3.2 LN ARM ENG on Developments on the Maritime Internet of Things (DTEC1-12.3.2.2) as working papers to ARM18 for further development.

ICAO input paper

During the meeting a teams-meeting was arranged between ICAO and IALA ARM Committee members. ICAO explained their input paper. During the meeting it was agreed that IALA will provide feedback on the drafted guideline and expert advice where relevant. This will initially be by Trevor Harris intersessionally by December 2023, and submitted to ARM Chair and Vice-chair and IALA Secretariate.

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

During ARM17 the group planned and reviewed the task register and planned the work for the coming session periods. The formed task groups either started the new tasks and/or progressed the tasks which were carried over from the previous session period.

9.1 1.4.2 Consider the development of IALA as a facilitator for an ISAC (Information Sharing and Analysis Centre) in relation to cyber security.

Task group leader: Martijn Ebben.

The outcome of the discussion was that it was thought that IALA can never be a facilitator of an ISAC, as an ISAC is built upon trust and member consensus on new members. This implies that IALA members may be denied ISAC membership, which is in conflict with the secularity of IALA. Instead, guidance for members of ISACs has been included in the draft guideline on cyber security.

It is suggested that IALA launches a cyber security page on the website that can be filled with actual information, like possible ISACs to join.

Action item:

That the Secretariat gives consideration to adding a cybersecurity webpage that includes information about known ISACs.

9.2 1.4.3 Develop guidance on cyber security for Marine AtoN.

Task group leader: Martijn Ebben

Addressed input papers ARM17-8.7.1, ARM17-8.7.1.1, ARM17-8.7.2, ARM17-8.7.2.1, and ARM17-8.7.3.1. The comments made in the input papers were discussed and processed where appropriate. The updated draft

guideline can be sent to all committees for a final review with an accompanying Liaison Note. It is intended that the guideline is forwarded to Council following ARM18.

Action item:

The Secretariat is requested to forward liaison note (ARM17-11.3.3) to all committees on Cyber Security Guideline for their consideration.

9.3 2.2.3 Develop an IALA Recommendation and Guideline on developing Harmonized Waterway Concept

Task group lead: Amilynn Adams

Task group members are drafting the guideline based on experience with constructing harmonized waterways datasets. Task group members are involved to gain understanding of the benefit, application, and design of a harmonized waterways system. Task group members indicated that they would seek technical personnel within their administrations to discuss and possibly participate in evaluating the draft Guidance document. The task group leader has provided an overview presentation as a working document for consultation by task members and for task members to share with technical personnel within their administrations.

Intersessional work is planned, to progress the document. The first is tentatively scheduled for November 2023.

Action item:

Committee participants are invited to join the intersessional task group (Virtual meetings) working on 2.2.3 Develop an IALA Recommendation and Guideline on developing Harmonized Waterway Concept and to express their interest to Amilynn Adams (amilynn.e.adams@uscg.mil) by 3 November 2023, noting the dates and times of the intersessional meetings will be published on the IALA ARM Committee Dashboard.

The Intersessional Task Group Leader to provide input on the intersessional work on task 2.2.3 to ARM18.

That the Secretariat forwards (ARM17-11.5.3.1) WP's on task 2.2.3 as working papers to ARM18 for further development.

9.4 7.1.2 Contribute to the standardization efforts with respect of the requirements of the S-100 domain experts

Task group leader: Amilynn Adams

Addressed input paper ARM17-6.2.5. The task group drafted working document of the Operational Interaction Diagram as requested. The diagram will be progressed intersessionally.

Action item:

That the Secretariat forwards (ARM17-11.5.3.2) WP's on task 7.1.2 as working papers to ARM18 for further development.

9.5 7.1.4 Continue to Develop Product Specification S-201. Continue development on S-201, specifically on Maintenance, data validation, and harmonization with S-125, S-124, and S-101

Task group leader: Dr. Sewoong Oh

The working group addressed input paper ARM17-8.4.5 Proposal of converting S-201 to IALA guideline. The working group agreed that there is an urgent need to elevate the official status and visibility of Product Specifications among IALA members. However, the working group felt it was more appropriate to request a new category of IALA document for Product Specifications and agreed to draft a Liaison note from ARM to PAP and LAP on the document category for the S-200 Product Specification. This would allow Product Specifications to be referenced as mandatory technical documents.

The working group addressed input ARM17-8.4.2. Demonstration of Aton Service based on S-124 S-125 data model. The working group appreciated the presentation. The feedback of the sea trial will be considered to be included in future updates of the product specification.

Action item:

The Secretariat is requested to forward liaison note (ARM17-11.3.4) to LAP and PAP on the document category for the S-200 Product Specification for their consideration.

9.6 7.1.6 Continue development on S-125 in coordination with IHO NIPWG.

Task group leader: Dr. Sewoong Oh

Addressed input papers ARM17-8.4.4, ARM17-8.4.4.1, ARM17-8.4.1.

The task group reviewed the comments from IHO NIPWG and agreed to draft Liaison note to IHO NIPWG on the response.

The task group also reviewed comments from China MSA and made notes during the discussion for inclusion in future updates. The conclusions are:

1. Agree with the recommendation to avoid portrayal of status symbol when something has reverted back to design state.
2. There is a need to enable mariners to see the change sequence, including when something has returned to design state, but this should not be done in the chart view.
3. More investigation is needed to understand well what the user needs are regarding information provided when an issue is resolved and the AtoN status returns to design state.
4. S-98 Annex C seems like the best place for describing the need of a dialogue window to support S-100 based product's update information.
5. KRISO will investigate the possibility to use XSLT portrayal to remove change symbol of S-125 when an issue reverts back to design state.
6. S-125 should be enhanced in its next version to include feature level updating as per S-100 ed.5.x

These working conclusions will be further considered at ARM18.

Action item:

The secretariat is requested to forward the Liaison note (ARM17-11.3.2) to NIPWG on S-125 and annex (ARM17-11.3.2.1) to Council for approval and subsequent submission to the IHO.

9.7 7.1.7 Continue development on MRN documentation, considering inputs from IALA Secretariat, other committees, or others as needed.

Task group leader: LeeAnne Gordon

This was discussed in Working Group Plenary, but no development was continued during this session. Interested parties, members, and Secretariat are encouraged to submit proposals for future expansion of MRN to future ARM Committee Meetings.

Action item:

That members submit input for the future expansion of MRN to future ARM Committee Meetings.

9.8 7.1.9 Coordinate Committee support and submissions for IALA representation at IHO working groups in cooperation with Secretariat (HSSC, S-100WG, NIPWG)

Task group leader: Eivind Mong

The working group addressed input paper ARM17-6.2.5; the document was discussed and noted. WG 2 stood up a task group to address this work under task 7.1.2. No further action is needed at this time.

9.9 7.1.10 Monitor the development of S-201 Testbed

Task group leader: Dr. Sewoong Oh

Addressed input documents ARM17-8.4.3, ARM17-8.4.3.1. The current version of the S-200 testbed was demonstrated to the working group. IALA members are requested to test and give feedback on the testbed. The working group acknowledged the significance of the AtoN Portal and the need to adopt this platform under the IALA domain. When the URL is updated, the working group requests the IALA secretariat to forward the information to members to support continued population and development of the S-200 testbed.

Action item:

That the Secretariat is requested to formalize the URL for the AtoN Portal and forward to members when appropriate.

9.10 7.1.11 Develop, implement and execute procedures for IALA to add, maintain and harmonize items to the IHO S-100 Feature Concept Dictionary (FCD)

Task group leader: Peter Hooijmans

A first impact assessment was performed to determine the scope of the work. It was concluded that alignment with S-99 is necessary as for example the feature concept dictionary (FCD) does not exist in the latest version of IHO S-99 and was replaced by a concept dictionary (CD) and data dictionary (DD).

Action item:

That the Secretariat forwards (ARM17-11.5.3.3) WP draft guideline G1087 ed 4.0 as working papers to ARM18 for further development.

9.11 7.1.12 Create S-200 Implementation Plan, following similar S-100 Implementation Strategy and/or Roadmap

Task group leader: Peter Hooijmans

The Task Group looked at the IHO "Implementation Decade" documents and concluded that a similar approach would be beneficial for the IALA S-200 implementation plan. However, there are few concrete milestones to inform such a roadmap. The Task Group drafted a Liaison Note to PAP requesting additional information on potential milestones. In addition, the task group examined existing roadmaps from IHO, Canada, and the United States (NOAA) for parallel information that could be used in future discussions.

Action item:

The Secretariat is requested to forward liaison note (ARM17-11.3.1) to LAP and PAP on S-200 roadmap for their consideration.

That the Secretariat forwards (ARM17-11.5.3.4) WP's on task 7.1.12 as working papers to ARM18 for further development.

9.12 7.1.13 Develop guidance on the symbology and portrayal of AtoN for charting

Task group leader: Eivind Mong

Discussion with WG1 chair on S-101 portrayal task group discussions regarding Emergency Wreck Marking Buoy symbols. It was agreed that the WG1 recommendation of using a circle with a vertical division between blue and yellow halves was acceptable feedback to IHO.

9.13 7.1.14 Development of technical service specifications for the provision of AtoN information

Task group leader: Thomas Christensen

The Task Group discussed and progressed the document describing the 'Marine Aids to Navigation (AtoN): Technical Specification for the Provision of AtoN Information Service to End-users'. Two intersessional VTC meetings were proposed (Tuesday 28 November 1300 – 1500 UTC and 17 January 1300 – 1500 UTC) to progress this further - and provide as input to ARM18.

The group also looked at work done regarding technical services in the VTS committee, including a roadmap for describing technical services. In this roadmap the versioning principles of technical services specifications was aligned with the versioning principles of IHO Technical Resolution 2/2007, which are also used for S-100 and IHO S-100 based product specifications; in which version 1.0.0 is a "final draft" - which is released for testing, and version 2.0.0 would be defined as an operational version released for implementation. It is furthermore proposed that version 1.0.0 specifications are published by the committee for testing purposes only - whereas version 2.0.0 and beyond would have to be adopted by the IALA council. The Task Group proposes to adopt this mechanism.

Also, it was stated that the Service Specification would be implemented and tested in practice in the context of the Open Digital Incubator initiative (digitalincubator.maritimeconnectivity.net) - which would provide feedback to the committee. Anyone that wishes to take part of this testing are welcome to join this initiative.

The Task Group aims to have a mature (version 1.0.0 candidate) Technical Service Specifications after ARM18, which then will be sent as a liaison note to IHO NIPWG for comments.

Action items:

Committee participants are invited to join the intersessional task group (Virtual meetings) working on 7.1.14 Development of technical service specifications for the provision of AtoN information and to express their interest to Thomas Christensen (thomas@dmc.international) by 15 November 2023, noting the dates and times of the intersessional meetings will be published on the IALA ARM Committee Dashboard.

The Intersessional Task Group Leader to provide input on the intersessional work on task 7.1.14 to ARM18.

That the Secretariat forwards (ARM17-11.5.3.5) WP Draft technical service specification Provision of AtoN Information Service to End users (edits 26 Oct 2023) as a working paper to ARM18 for further development.

9.14 7.1.15 Review Guideline G1159 on ship reporting from the shore-side perspective

Task group leader: Michael Strandberg

During ARM17 the task group met virtually to discuss the current situation and considered possible next steps that IALA (and IHO) could take to encourage development and adoption of a single world-wide standard for information exchanges.

The task group concluded that this task is on hold pending development and adoption of a single detailed technical standard for information exchanges between ship and shore within the MSW framework.

Action item:

That the Secretariat forwards (ARM17-11.5.3.6) WP's on MSW task 7.1.15 as a working paper to ARM18 for further development.

9.15 Other tasks

The working group discussed and noted the input documents ARM17-6.2.3, ARM17-6.2.3.1, and ARM17-6.2.3.2.

The working group reviewed the terms of reference (TOR) and made amendments as deemed appropriate.

Action item:

The Secretariat is requested to publish the content of the amended TOR on the relevant committee dashboard section.

10. WORKING GROUP 3 – RISK MANAGEMENT (WG3)

The Working Group was a relatively small working group and it was therefore decided by the Chair to complete most meetings as a rolling working group plenary. The group contained between 12 and 17 participants who remained in WG3 for the week. The group worked as a hybrid meeting with 3-4 virtual participants attending for a large part of the week.

Several participants, including the WG Chair, were new to the WG3. Thus, the WG Chair started by introducing the new Work Programme and leading a discussion to explain and clarify each task item. Further discussion was then had to set the action plan for the week.

10.1 1.4.4 Review Risk Management related documentation. Update as per ongoing risk toolbox developments

Task group leader: Kevin Gregory

The updates to the IMO Safety of Navigation Circular related to the IALA Risk Management Toolbox were finalized by WG3. The document is now in a position for approval and submission to the IMO following confirmation of the appropriate procedure.

WG3 held a discussion on the planned roadmap for the routine review of risk management related documentation, recalling that all documents had a comprehensive review during the last work programme period.

Action item:

The Secretariat is requested to forward ARM17-11.4.1 IMO Safety of Navigation Circular on the IALA Risk Management Toolbox to Council for approval and subsequent submission to the IMO.

10.2 1.4.5 Develop a method to quantify and evaluate various risk mitigation options

Task group leader: Sarah Robinson

The task group developed a task register with the objective to develop a method to identify and prioritize risk mitigation options, based on risk reduction effectiveness, and produce accompanying guidance.

The IALA Risk Management toolbox tools do not provide explicit guidance or methodology regarding the effectiveness of risk mitigation options, nor is there explicit guidance on selecting risk mitigation options based on wider criteria, such as costs.

The suggested approach is to develop a methodology to assist toolbox users to define how much risk reduction on their specific waterway may occur for a certain risk mitigation option.

The expected outcome is a methodology that provides examples of risk mitigation options related to typical risks; facilitates comparison of the risk reduction effectiveness of risk mitigation options; and assists with risk mitigation option selection based on risk reduction effectiveness and other information (e.g., cost, policy, accountability).

10.3 1.4.6 Encourage IALA members and other organisations to share historic AIS and other vessel tracking data with IALA. IALA aims to use such data for risk assessment, research and training purposes.

WG3 had a preliminary discussion related to this task in conjunction with the Dean of the IALA World-Wide Academy. WG3 agreed to defer the bulk of this task until later in the work programme to enable further consideration in the light of wider developments, including task 1.4.7 and 1.4.9. However, WG3 agreed to undertake a preliminary review of G1086 at ARM18 to identify core areas that may need detailed review or amendment, in addition to identifying potential new content.

10.4 1.4.7 Conduct a global scan of current risk analysis tools and identify potential candidates for inclusion within the IALA Risk Management Toolbox

A discussion was held with respect to the processes that may be used to identify new and emerging risk analysis tools and potential candidates for inclusion in the IALA Risk Management Toolbox.

A short questionnaire, with potential follow-up interview, was developed for circulation to IALA Members and potentially others with an interest in risk management, such as risk management alumni of the World-Wide Academy.

A discussion also took place with the Dean of the IALA World-Wide Academy and it was suggested that an Academy supported seminar on future risk management tools may be of value. It was agreed upon to scope the seminar at ARM18.

Action item:

The Secretariat is requested to distribute ARM17-11.4.2 IALA Risk Management Toolbox questionnaire to IALA Members and World-Wide Academy risk management alumni.

10.5 1.4.8 Monitor the IRMAS reporting tool, ensuring it meets the requirements for future records of risk management. Ensure the form is modified as required

A discussion was held with respect to the value the IRMAS reporting tool provided as a tool in the IALA Risk Management Toolbox. The WG agreed that Administrations should maintain a repository of risk analyses, to include identified risk mitigations, there was not consensus that the form was beneficial. In general, the WG saw some benefit in the OPRA for small decisions/projects, such as temporary relocation of AtoN, but if adopted as an additional tool in the IALA Risk Management Toolbox, it should be separate from the IRMAS form.

The WG concluded further discussion of this task could be incorporated into task 1.4.7.

10.6 1.4.9 Ensure long term sustainable supportability for IWRAP Software

This task was discussed in plenary along with the Dean of the IALA World-Wide Academy. The history and current status of the IWRAP software was discussed. It was suggested to revisit this task in conjunction with task 1.4.7 and the planned seminar on future risk management tools.

10.7 1.4.10 Guideline for Risk Assessment of Cyber Security threats

The general scope of this task was discussed. Because this task is complementary to WG2 task 1.4.3, the WG agreed to defer this task until a later stage of the work programme when an initial draft is complete.

WG3 Chair discussed this with the task manager for WG2 task 1.4.2, and agreed WG3 will review the preliminary draft section on risk management at ARM18.

10.8 Other tasks

Input Paper ARM17-9.1.1, *Research into risk control option benefits and effectiveness methodologies* was submitted by the IALA World-Wide Academy seeking the opinion of the committee on the value of providing IALA specific guidance on cost-benefit and cost-effectiveness techniques for risk control options.

WG3 discussed and concluded that explicit cost-benefit tools were not a necessary addition to IALA Risk Management or Procurement guidance.

It was agreed that:

- Reduction of risk level (albeit relative, and waterway specific) was implicit in the risk assessment methodologies. The assessor can determine the risk reduction by comparing existing, and residual risk

levels for a particular scenario. The agreed reduction in risk level could be an appraisal of cost effectiveness.

- While it may be possible to identify organizational-specific benefits, such as AtoN provision fees, pilotage, or conservancy charges, other benefits were not limited to the organisational level as they may impact regional or even global areas. This therefore makes the comparison of large, monetised benefits with organizational costs rather arbitrary.
- It was felt the benefit calculation methodologies presented in Table 1 could be used to add to a persuasive qualitative description of need.
- With regard to training materials currently included in the Procurement and Risk Management course, the group recommended the WWA should:
 - Present the information in Table 1: Examples of benefit/effective outcome calculation of input paper ARM17-9.1.1 to provide students with ways to present and/or calculate wider qualitative benefits in a business case document; but
 - not include a recommendation to undertake a specific monetized cost-benefit comparison as part of a navigational risk-related mitigation appraisal.
- The WG concluded it was potentially more beneficial to look to task number 1.4.5, which refers to a methodology to assist in any comparison of risk mitigation options. The group undertook to do this as part of the intended agenda.

10.9 5.1.3 WWA lesson plans to review

The WG reviewed the World-Wide Academy's current Risk Management course curriculum to determine if any modules needed to be updated with new information from the previous work programme. It was recommended the courses should be updated to include:

- Provide an explanation of the IMO Formal Safety Assessment (FSA)
- Provide higher level risk management references
- Within the scope of SOLA, provide wider uses of risk management outside of regulations 12 and 13
- Consider developing refresher courses for World-Wide Academy alumni

10.10 Other discussion of interest

Waterways Analysis and Management System (WAMS) project

The ARM Chair provided a brief on the United States' ongoing Waterways Analysis and Management System (WAMS) project. The project is reaching its final stages of implementation and is intended to provide waterways managers with an IT suite of decision support tools aimed to evaluate and monitor the risks and risk mitigations throughout a particular waterway. Further, the ARM Chair offered to provide a follow-on brief with a demonstration of the prototype system to the WG during ARM18.

New task proposal for the development of measures for and a method to monitor waterway risk

The WG prepared a proposal for a new task related to the development of measures for and a method to monitor waterway risk. This would include the effectiveness of risk mitigations, qualitative validation with stakeholders, and re-evaluation of risks. The WG considered that there was a need for this task as the risk management process, as described in Guideline G1018, includes a monitoring component, but there is no guidance on how to monitor and no tools in the Risk Management toolbox to assist administrations and stakeholders in this process.

Action item:

The Secretariat is requested to forward ARM17-11.4.3 task proposal on the development of measures for and a method to monitor waterway risk to the Council for approval.

11. ANY OTHER BUSINESS

No matters arising.

12. SUMMARY OF OUTPUT AND WORKING PAPERS

The Working Group Chairs reported on the work carried out by their Working Groups.

Outputs from ARM17 were approved by the Committee using the approval procedure. The output documents and working papers are listed in Annex D.

13. REVIEW OF SESSION REPORT

The draft report of the meeting (ARM17-12.1) was approved by the Committee at the Closing Plenary.

14. DATE AND VENUE OF NEXT MEETINGS

ARM18 is planned to be held between 15 – 19 April 2024 at IALA Headquarters, Saint Germain-en-Laye, France.

Other IALA events will be publicised on the IALA website.

15. CLOSING OF THE MEETING

The Chair thanked all Committee participants again for all the engagement and hard work and looked forward to seeing everybody again at ARM18.

He also hoped that everyone could take the IALA survey that is sent out after every Committee meeting in order to receive feedback for continuous improvements.

Secretary-General, Francis Zachariae, thanked all participants for their work.

Finally, the Chair asked if there were any final comments that participants wished to make; there were none.

16. LIST OF ANNEXES

A. Agenda

A copy of the agenda is at Annex A.

B. Participants list

A list of participants is at Annex B.

C. Input Papers

A list of input papers is at Annex C.

D. Output and Working papers

A list of output and working papers is at Annex D.

E. Action Items

A list of action items is at Annex E.

F. Working Group Participants Lists

Lists of working group participants is at Annex F



17th Meeting of the AtoN Requirements and Management Committee (ARM17)

The opening plenary of the 17th meeting of the ARM Committee will commence at 10:30 local time on Monday 23 October 2023, and the closing plenary will be held online at 14:00 – 16:00 UTC on Wednesday 1 November 2023.

Provisional Agenda

1. Introduction
 - 1.1. Welcome address from the Secretary-General
 - 1.2. Approval of agenda
 - 1.3. Apologies and introductions
 - 1.4. Working arrangements
2. Review of action items
3. Reports from other bodies Minsu Jeon
 - 3.1. IALA
 - 3.1.1. IALA Council
 - 3.1.2. IALA Policy Advisory Panel (PAP)
 - 3.1.3. IALA Conference and General Assembly 2023
 - 3.2. IMO MJ/HN
 - 3.3. Digital@Sea
 - 3.4. IHO/ITU MJ/HN
 - 3.5. Joint IHO/IALA workshop on S100/S200 Dave Lewald
 - 3.6. IALA MASS workshop MJ
4. Presentations
 - 4.1. IALA World Wide Academy update Latifa Oumouzoune
 - 4.2. Update on S-200 series PS data models Minsu Jeon
5. Work Programme management
 - 5.1. Work Programme 2023 – 2027, Task Plan, Task Register
 - 5.2. Action plan for ARM17
6. Review of input papers
 - 6.1. Input papers
 - 6.2. Input papers not related to an existing task

7. Establish WG1 - Navigational requirements
 - 7.1. Obligations and regulatory compliance
 - 7.2. Quality management
 - 7.3. AtoN planning
 - 7.4. Virtual marking
 - 7.5. Visual signalling
 - 7.6. Capacity building (NAVGUIDE)
 - 7.7. Additional tasks/work
8. Establish WG2 - Information services and portrayal
 - 8.1. Design, implementation and maintenance
 - 8.2. Wide/Medium bandwidth systems (AIS & VDES)
 - 8.3. Harmonised maritime connectivity framework (CMDS) Maritime IoT (Intelligent sensors, Aton monitoring)
 - 8.4. Data models and data encoding (IVEF, S-100, S-200, ASM)
 - 8.5. Data exchange systems (Traffic Information)
 - 8.6. Terminology, symbology, and portrayal
 - 8.7. Additional tasks/work
9. Establish WG3 - Risk management
 - 9.1. Risk management
 - 9.2. Training and certification
 - 9.3. Seminar
 - 9.4. Additional tasks/work
10. Any other business
11. Summary of output and working papers
 - 11.1. Committee wide
 - 11.2. WG1 output
 - 11.3. WG2 output
 - 11.4. WG3 output
 - 11.5. Working papers
12. Review of session report
13. Date and venue of next meeting
14. Close of the meeting

ANNEX B

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All papers are posted on the Committee section of the IALA website. Items in blue = late or updated paper.

Meeting	Paper Number	Input Paper Title	Source	WG Allocation
ARM17-	1.2.1	Provisional Agenda	Secretariat	All
ARM17-	2.1	Action Items from ARM16	Secretariat	All
ARM17-	1.4.1	Programme of the physical week	Secretariat	All
ARM17-	3.1.3.1	IALA Conference summary	Secretariat	All
ARM17-	3.2.1	IALA report on IMO NCSR10	Secretariat	All
ARM17-	5.1.1	Committee task plan	ARM CMT	All
ARM17-	6.0	Input paper committee meeting template	Secretariat	All
ARM17-	6.1.1	Input paper list	Secretariat	All
ARM17-	6.1.2	Working paper list	Secretariat	All
ARM17-	6.2.1	Liaison note to ARM on definition of nominal range (ENG15-12.1.3)	ENG	WG1
ARM17-	6.2.2	Input paper on OpenRisk II	Finnish Transport and Comms Agency	WG3
ARM17-	6.2.3	LN ARM ENG on Technology review MS@MS (DTEC1-12.3.2.1)	DTEC	WG1 and 2
ARM17-	6.2.3.1	Metal Surface at Magnetic Substance wave	DTEC	WG1 and 2
ARM17-	6.2.3.2	Completed Review of Radio-free wireless comms MS@MS (DTEC1-12.3.2.1.2)	DTEC	WG1 and 2
ARM17-	6.2.4	Water Aerodromes – Areas of Collaboration Between ICAO and IALA	ICAO	WG1
ARM17-	6.2.5	NIPWG10 outcomes relevant to IALA	IHO-NIPWG Chair	WG2
ARM17-	6.2.6	Liaison note to ARM on General Overview of Floating AtoN (ENG17-13.1.2)	ENG17	WG1
ARM17-	7.2.1	LN to ARM on Quality Management System for VTS	VTS	WG1
ARM17-	7.2.2	Proposals on the Revision of IALA Guideline 1052 on Quality Management Systems for Aids to Navigation Service Delivery	China MSA	WG1

Meeting	Paper Number	Input Paper Title	Source	WG Allocation
ARM17-	7.3.1	Liaison note to ARM regarding Buoy Tender Crew Training (ENG16-12.2.5)	ENG	WG1
ARM17-	7.3.2	LN ARM ENG on Developments on the Maritime Internet of Things (DTEC1-12.3.2.2)	DTEC	WG1 and 2
ARM17-	7.3.3	Enhancement of AtoN training within STCW framework	Secretariat	WG1
ARM17-	7.3.4	Proposal for guideline on design of buoy tender	Secretariat	WG1
ARM17-	7.7.1	Input paper on Navigating around OREI	Trinity House and AMSA	WG1
ARM17-	8.4.1	Proposal for portrayal of Updated Data Method of S125 on ECDIS	China MSA	WG2
ARM17-	8.4.2	Demonstration of Aton Service based on S-124 S-125 data model	KRISO et al	WG2
ARM17-	8.4.3	S-200 testbed comments and Proposed Aton Portal	KRISO et al	WG2
ARM17-	8.4.3.1	S-200 testbed comments and Proposed Aton Portal (Annex)	KRISO et al	WG2
ARM17-	8.4.4	Discussion on IHO S-125 Comments	KRISO et al	WG2
ARM17-	8.4.4.1	Discussion on IHO S-125 Comments (Annex)	KRISO et al	WG2
ARM17-	8.4.5	Proposal of converting S-201 to IALA guideline	KRISO et al	WG2
ARM17-	8.7.1	Liaison note from VTS to ARM and DTEC on cyber security guideline (VTS54-12.3.1)	VTS	WG2
ARM17-	8.7.1.1	Revised Draft Guideline on Cyber Security (VTS54-12.3.1.1)	VTS	WG2
ARM17-	8.7.2	LN ARM ENG on Cyber Security guideline (DTEC1-12.3.1.1)	DTEC	WG2
ARM17-	8.7.2.1	Draft Guideline on Cyber Security (DTEC1-12.3.1.1.1)	DTEC	WG2
ARM17-	8.7.3	Liaison note to ARM on the progress of cyber security tasks (ENG17-13.1.3)	ENG	WG2
ARM17-	8.7.3.1	ENG comments on draft cyber security guideline	ENG	WG2
ARM17-	9.1.1	Input paper on cost benefit techniques research	IALA WWA	WG3

Working papers from ARM16

Meeting	Paper Number	Output Paper Title	Source	Action
ARM16-	11.5.2.1	WP draft Guideline G1052 Quality-Management-Systems-for-AtoN-Service	WG1	To ARM17
ARM16-	11.5.2.2	WP Liaison Note from VTS52 to PAP and ARM on Guideline 1052 Quality Management Systems for AtoN Service Delivery	WG1	To ARM17
ARM16-	11.5.2.3	WP MASS Guideline	WG1	To ARM17
ARM16-	11.5.2.4	Various MASS documents file	WG1	To ARM17
ARM16-	11.5.2.5	Various AIS documents file	WG1	To ARM17

Output documents are submitted to a body other than the Committee initiating the document for further review/action or as information.

Meeting	Paper Number	Output Paper Title	Source	Action
ARM17-	11.2.1	Draft submission to IMO on the IALA MBS	WG1	to Council
ARM17-	11.2.2	Liaison note to all committees on QMS best practice	WG1	to all committees
ARM17-	11.2.3	Liaison note to VTS Committee on Recommendation R0132 Quality Management	WG1	to VTS
ARM17-	11.2.4	Liaison note to PAP on the review of AIS documentation	WG1	to PAP
ARM17-	11.2.5	Liaison note to ENG on the update of the IALA dictionary	WG1	to ENG
ARM17-	11.3.1	Liaison note to PAP on S-200 roadmap	WG2	to PAP
ARM17-	11.3.2	Liaison note to NIPWG on S-125	WG2	to IHO NIPWG
ARM17-	11.3.2.1	Annex to IHO NIPWG	WG2	to IHO NIPWG
ARM17-	11.3.3	Liaison note to all committees on Cyber Security Guideline	WG2	to all committees
ARM17-	11.3.3.1	Draft Cyber Security guideline	WG2	to all committees
ARM17-	11.3.4	Liaison note to LAP and PAPs on the document category for the S-200 Product Specification	WG2	to LAP and PAP
ARM17-	11.4.1	Draft submission to IMO on the Safety of Navigation Circular on the Risk Management Toolbox	WG3	to Council
ARM17-	11.4.2	Draft Questionnaire on Risk Management Tools	WG3	to Secretariat
ARM17-	11.4.3	Task proposal on measures to monitor waterway risk	WG3	to Council

Working papers will remain within the Committee for further review during ARM18.

Meeting	Paper Number	Working Paper Title	Source	Action
ARM17-	11.5.1.1	WP ARM Committee Task Plan	CMT	To ARM18
ARM17-	11.5.1.2	WP ARM Committee Task Register	CMT	To ARM18
ARM17-	11.5.2.1	WP draft guideline on enhancing the safety and efficiency of navigation around offshore installations	WG1	To ARM18

Meeting	Paper Number	Working Paper Title	Source	Action
ARM17-	11.5.2.2	WP draft Guideline G1052 Quality-Management-Systems-for-AtoN-Service-Delivery	WG1	To ARM18
ARM17-	11.5.2.3	WP ARM16-7.2.1.1 Draft Revised R0132 Quality Management for Aids to Navigation Authorities	WG1	To ARM18
ARM17-	11.5.2.4	WP Draft Recommendation on the use of Drones for AtoN inspection and maintenance	WG1	To ARM18
ARM17-	11.5.2.5	WP Draft Guideline on the use of Drones for AtoN inspection and maintenance	WG1	To ARM18
ARM17-	11.5.2.6	WP ARM17-6.2.3 LN ARM ENG on Technology review MS@MS (DTEC1-12.3.2.1)	WG1	To ARM18
ARM17-	11.5.2.7	WP ARM17-6.2.3.1 LN ARM ENG on Technology review MS@MS (DTEC1-12.3.2.1)	WG1	To ARM18
ARM17-	11.5.2.8	WP ARM17-6.2.3.2 Completed Review of Radio-free wireless comms MS@MS (DTEC1-12.3.2.1.2)	WG1	To ARM18
ARM17-	11.5.2.9	WP ARM17-7.3.2 LN ARM ENG on Developments on the Maritime Internet of Things (DTEC1-12.3.2.2)	WG1	To ARM18
ARM17-	11.5.3.1	WPs on task 2.2.3	WG2	To ARM18
ARM17-	11.5.3.2	WP's on task 7.1.2	WG2	To ARM18
ARM17-	11.5.3.3	WP draft guideline G1087 ed 4.0	WG2	To ARM18
ARM17-	11.5.3.4	WP's on task 7.1.12	WG2	To ARM18
ARM17-	11.5.3.5	WP Draft technical service specification Provision of AtoN Information Service to End users (edits 26 Oct 2023)	WG2	To ARM18
ARM17-	11.5.3.6	WP's on MSW task 7.1.15	WG2	To ARM18

Action Items for the IALA Secretariat

1. The Secretariat is requested to forward the WP ARM Committee Task Plan (ARM17-11.5.1.1) and WP ARM Committee Task Register (ARM17-11.5.1.2) as working papers to ARM18 for further development. 19
2. The Secretariat is requested to forward the draft proposal to revise SN.1/ circ. 297 regarding the MBS (ARM17-11.2.1) to Council for approval and subsequent submission to the IMO. 20
3. The Secretariat is invited to note the new appointment of Nigel Hare as ARM MASS TG leader and to make the MASS Task Force aware of his appointment where appropriate. 20
4. The Secretariat to consider and provide input to ARM18 regarding the matching of definitions between the NAVGUIDE and the IALA Dictionary. 21
5. The Secretariat is requested to liaise with IMO on the ARM task 1.1.1 to update STCW and to clarify the process to fulfill this task. 21
6. The Secretariat is requested to liaise with the IMO Maritime Safety Division regarding the scope and direction of task 1.4.1 – Enhancing the safety and efficiency of navigation around offshore installations at the earliest opportunity. The IMO response should be provided back to the ARM Committee. 22
7. That the Secretariat forwards (ARM17-11.5.2.1) WP draft guideline on enhancing the safety and efficiency of navigation around offshore installations as a working paper to ARM18 for further development. 22
8. The Secretariat is requested to forward liaison note (ARM17-11.2.2) to all committees on Quality Management in AtoN Service Delivery for their consideration. 22
9. That the Secretariat forwards (ARM17-11.5.2.2) WP draft Guideline G1052 Quality-Management-Systems-for-AtoN-Service-Delivery as a working paper to ARM18 for further development. 22
10. The Secretariat is requested to forward liaison note (ARM17-11.2.3) to the VTS Committee on Quality Management for their consideration. 22
11. That the Secretariat forwards (ARM17-11.5.2.3) WP ARM16-7.2.1.1 Draft Revised R0132 Quality Management for Aids to Navigation Authorities as a working paper to ARM18 for further development. 22
12. That the Secretariat forwards (ARM17-11.5.2.4) WP Draft Recommendation on the use of Drones for AtoN inspection and maintenance and (ARM17-11.5.2.5) WP Draft Guideline on the use of Drones for AtoN inspection and maintenance as working papers to ARM18 for further development. 22
13. The Secretariat is requested to forward liaison note (ARM17-11.2.4) to PAP on the review of AIS documentation. 23
14. The Secretariat are requested to make available the documents listed in the ARM17 report under task 6.3.1 – Review and update G1062 Establishment of AIS as a Marine Aid to Navigation in the Fileshare in word format. 24
15. The Secretariat is requested to forward liaison note (ARM17-11.2.5) to ENG on the update of the IALA dictionary. 24

16. That the Secretariat forwards (ARM17-11.5.2.6) WP ARM17-6.2.3 LN ARM ENG on Technology review MS@MS (DTEC1-12.3.2.1), (ARM17-11.5.2.7) WP ARM17-6.2.3.1 LN ARM ENG on Technology review MS@MS (DTEC1-12.3.2.1), (ARM17-11.5.2.8) WP ARM17-6.2.3.2 Completed Review of Radio-free wireless comms MS@MS (DTEC1-12.3.2.1.2), (ARM17-11.5.2.9) WP ARM17-7.3.2 LN ARM ENG on Developments on the Maritime Internet of Things (DTEC1-12.3.2.2) as working papers to ARM18 for further development. 25
17. That the Secretariat gives consideration to adding a cybersecurity webpage that includes information about known ISACs. 25
18. The Secretariat is requested to forward liaison note (ARM17-11.3.3) to all committees on Cyber Security Guideline for their consideration. 26
19. That the Secretariat forwards (ARM17-11.5.3.1) WP's on task 2.2.3 as working papers to ARM18 for further development. 26
20. That the Secretariat forwards (ARM17-11.5.3.2) WP's on task 7.1.2 as working papers to ARM18 for further development. 26
21. The Secretariat is requested to forward liaison note (ARM17-11.3.4) to LAP and PAP on the document category for the S-200 Product Specification for their consideration. 27
22. The secretariat is requested to forward the Liaison note (ARM17-11.3.2) to NIPWG on S-125 and annex (ARM17-11.3.2.1) to Council for approval and subsequent submission to the IHO. 27
23. That the Secretariat is requested to formalize the URL for the AtoN Portal and forward to members when appropriate. 28
24. That the Secretariat forwards (ARM17-11.5.3.3) WP draft guideline G1087 ed 4.0 as working papers to ARM18 for further development. 28
25. The Secretariat is requested to forward liaison note (ARM17-11.3.1) to LAP and PAP on S-200 roadmap for their consideration. 28
26. That the Secretariat forwards (ARM17-11.5.3.4) WP's on task 7.1.12 as working papers to ARM18 for further development. 28
27. That the Secretariat forwards (ARM17-11.5.3.5) WP Draft technical service specification Provision of AtoN Information Service to End users (edits 26 Oct 2023) as a working paper to ARM18 for further development. 29
28. That the Secretariat forwards (ARM17-11.5.3.6) WP's on MSW task 7.1.15 as a working paper to ARM18 for further development. 29
29. The Secretariat is requested to publish the content of the amended TOR on the relevant committee dashboard section. 29
30. The Secretariat is requested to forward ARM17-11.4.1 IMO Safety of Navigation Circular on the IALA Risk Management Toolbox to Council for approval and subsequent submission to the IMO. 30
31. The Secretariat is requested to distribute ARM17-11.4.2 IALA Risk Management Toolbox questionnaire to IALA Members and World-Wide Academy risk management alumni. 31
32. The Secretariat is requested to forward ARM17-11.4.3 task proposal on the development of measures for and a method to monitor waterway risk to the Council for approval. 33

Action Items for Participants

33. Committee participants are invited to join the intersessional task group (Virtual meetings) working on Task 1.1.1 – Monitor IMO work on STCW and develop IMO submissions to adjust model courses for training of mariners relating to AtoN and to express their interest to Sophie Platten (sophie.platten@trinityhouse.co.uk) by 30 November 2023, noting the dates and times of the intersessional meetings, January 2024, will be published on the IALA ARM Committee Dashboard. 21
34. The task group leader of task 1.1.1 will submit input to the Secretariat in order for a draft input paper to IMO HTW Sub-Committee regarding STCW to be forwarded to Council for approval and subsequent submission to the IMO by 1 December 2023. 21
35. The Intersessional Task Group Leader to provide input on the intersessional work on task 1.1.1 to ARM18. 21
36. That Participants are invited to review (ARM17-11.5.2.4) WP Draft Recommendation on the use of Drones for AtoN inspection and maintenance and (ARM17-11.5.2.5) WP Draft Guideline on the use of Drones for AtoN inspection and maintenance and provide input to ARM18. 23
37. That the Task Group Leader, Dave Merrill, arranges an intersessional meeting with the ENG Chair and other relevant members regarding definitions proposed by ENG. The goal of this meeting is to get further clarification on what impact these new definitions will have on both existing and future AtoN design. 24
38. Committee participants are invited to join the intersessional task group (Virtual meetings) working on 2.2.3 Develop an IALA Recommendation and Guideline on developing Harmonized Waterway Concept and to express their interest to Amilynn Adams (amilynn.e.adams@uscg.mil) by 3 November 2023, noting the dates and times of the intersessional meetings will be published on the IALA ARM Committee Dashboard. 26
39. The Intersessional Task Group Leader to provide input on the intersessional work on task 2.2.3 to ARM18. 26
40. That members submit input for the future expansion of MRN to future ARM Committee Meetings. 27
41. Committee participants are invited to join the intersessional task group (Virtual meetings) working on 7.1.14 Development of technical service specifications for the provision of AtoN information and to express their interest to Thomas Christensen (thomas@dmc.international) by 15 November 2023, noting the dates and times of the intersessional meetings will be published on the IALA ARM Committee Dashboard. 29
42. The Intersessional Task Group Leader to provide input on the intersessional work on task 7.1.14 to ARM18. 29

Working Group 1

Navigational Requirements

Chair – Guttorm Tomren Vice-chair – Johan Westerlund

Members	Organisation	Task Group No.	Online (x)
Johan Westerlund	SMA	1.5.2, 1.5.3	
Liu Jiangna	China MSA	1.5.2, 1.5.3	X
Chang Peng	China MSA	1.5.2, 1.5.3, 1.4.1	X
Peter Douglas	NLB	2.2.2, 6.3.1, 6.1.1	
Giampaolo Raffa	Italian Navy	2.2.2, 6.3.1, 6.1.1	
Henrika Björkell-Virta	FTCA	2.2.2, 6.3.1, 6.1.1	
Mats Hörström	Swedish Transport Agency	2.2.2, 6.3.1, 6.1.1	
Kjell Johansson	SMA	2.2.2, 6.3.1, 6.1.1	
Luo Ziwen	China MSA	2.2.2, 6.3.1, 6.1.1	X
Sophie Platten	Trinity House	1.1.1, 2.2.1	
Laura Snoep	Min Infrastructure	1.1.1, 2.2.1	
Mika Lehtola	FTIA	1.1.1	
Joonatan Ahlroos	FTIA	1.1.1	
Kharin Azmi	Maritime Department Malaysia	1.1.1	
Mohamed Khurshid	MENAS	1.1.1	
Chanelle Marie Mbotto Edimo	Autorite Portuaire Nationale (Cameroon)	1.1.1	
Madeline Nnomo Evina	Autorite Portuaire Nationale (Cameroon)	1.1.1	
Cyrille Serge Elvis Bidzougou	Autorite Portuaire Nationale (Cameroon)	1.1.1, 2.2.1	
Alan Grant	GRAD	2.2.1	
Naehyuk Yoo	Korea Institute of AtoN	2.2.1, 1.4.1	
Heetae Kim	Maritime Oceans and Fisheires	2.2.1, 1.4.1	
Anthony Parker	MSM	2.2.1	
Dave Merrill	U.S. Coast Guard	1.2.9, Dictionary	
Øyvind Schrøder	Norwegian Coastal Administration	1.2.9, Dictionary	
Trevor Harris	General Lighthouse Authorities of the UK and Ireland	1.4.1	
Nigel Hare	General Lighthouse Authorities of the UK and Ireland	1.4.1	
Joris Brouwers	Ministry of Infrastructure and Waterways	1.4.1	

Members	Organisation	Task Group No.	Online (x)
Maarten Berrovoets	Ministry of Infrastructure and Water Management	1.4.1	
Mahesh Alimchandani	Australian Maritime Safety Authority	1.4.1	
Peter Dam	Danish Maritime Authority	1.4.1	
Isabel Maria Bué	Portuguese Hydrographic Institute	1.4.1	
Janina Tapia Cotrino	Finnish Transport and Communications Agency	1.4.1	
Abdullah Burhanudin		1.4.1	

Working Group 2

Information Services and Portrayal

Chair – Peter Hooijmans, Vice-chair – LeeAnne Gordon

Members	Organisation	Task Group No.	Online (x)
Peter Hooijmans	Ministry of Infrastructure and Water Managements		
LeeAnne Gordon	NGA		
Martijn Ebben	Port of Rotterdam Authority		
Fred Pot	BM Bergman Marine		
Thomas Christensen	AlVeNautics		
Amilynn Adams	US Coast Guard		
W. Christian Adams	US Coast Guard		X
Fredrik Karlsson	Swedish Maritime Administration		
Sewoong Oh	KRISO		
Eivind Mong	Canadian Coast Guard		
Ulla Bjorndal Moller	Danish Maritime Authority		
Alison Contreras	UK Hydrographic Office		
Minsu Jeon	IALA Secretariat		
Hidecki Noguchi	Japan Coast Guard		
Nikolaos Vastardis	GRAD		X
Yang Yang Shen	China Maritime Safety Administration		X
Fabien Piotrowski	Cerema		
Taehee Kim	KRISO		
Yunjee Kim	KRISO		
Treboul Alidou	Federal Waterways and Shipping Administration		
Xavier Hernoe	Direction générale des affaires maritimes, de la p		
Alan Grant	General Lighthouse Authorities of the UK and Ireland		

Working Group 3**Risk Management**

Chair – John Stone, U.S. Coast Guard Vice-chair - Kevin Gregory, Trinity House

Members	Organisation	Task Group No.	Online (x)
Jakob Bang	Danish Maritime Authority	The group worked in plenary	
Gu Chunjie	China Maritime Safety Administration	The group worked in plenary	X
Joseph Daly	Commissioners of Irish Lights	The group worked in plenary	
Raul Escalante	Hidrovia S.A.	The group worked in plenary	
Sarah Robinson	IALA WWA Consultant	The group worked in plenary	
Ernst Bolt	Ministry of Infrastructure and Water Management	The group worked in plenary	
Yvonne Koldenhof	MARIN	The group worked in plenary	
Valterri Laine	Finnish Transport and Communications Agency	The group worked in plenary	
Arlindo Santos	Direção de Faróis	The group worked in plenary	
Filipe Vieira	Direção de Faróis	The group worked in plenary	
Zhimin Zhang	China Maritime Safety Administration	The group worked in plenary	X
Jaime Alvarez	IALA	The group worked in plenary	
Dawn Seepersad	IALA WWA	The group worked in plenary	X
Niels Arndal	FORCE Technology	The group worked in plenary	
Floris Goerlandt	Dalhousie University	The group worked in plenary	



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Association Internationale de Signalisation Maritime