



## **IALA ARM COMMITTEE**

# **REPORT OF THE 8<sup>TH</sup> SESSION OF THE IALA ATON REQUIREMENTS AND MANAGEMENT (ARM) COMMITTEE**

**22 to 26 October 2018**

**Seamus Doyle**  
Committee Secretary

**27 October 2018**

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International Association of Marine Aids to Navigation and Lighthouse Authorities  
Association Internationale de Signalisation Maritime

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# Report of the 8<sup>th</sup> Session of the IALA

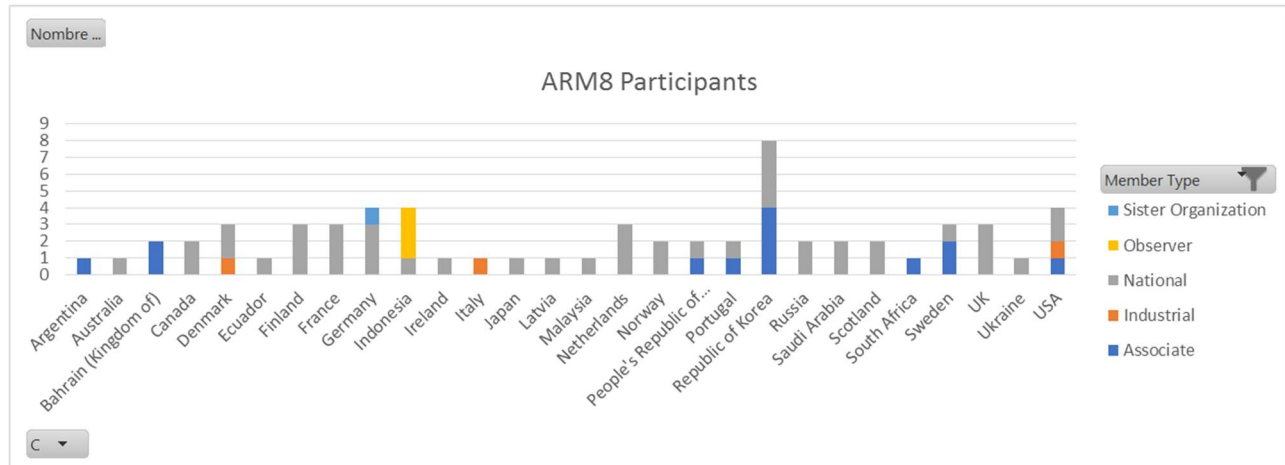
## AtoN Requirements and Management (ARM) Committee

### 22 to 26 October 2018

### Executive Summary

The 8<sup>th</sup> Session of the ARM Committee was held at IALA Headquarters from 22<sup>nd</sup> to 26<sup>th</sup> October 2018.

The session was attended by 64 participants from 28 countries, of which 44 were National Members, 3 were Industrial Members, 13 were Associate Members, 3 was an observer and 1 was an observer. Seventeen participants attended for the first time. The following chart shows an analysis of participants.



The Committee commenced the work for the 2018-2022 work period, including the new role of the ARM Committee regarding operational aspects of Maritime Services which fits well with the overall strategy of IALA and the evolution of the maritime sector.

Working in three working groups, the Committee considered 98 input papers including presentations and produced 15 output documents including 1 revised Academy model course, 10 liaison notes, 1 workshop proposal and 17 working papers. All Recommendations and Guidelines considered were aligned with the proposed seven Standards.

The Committee produced the following Model Course:

- Draft Model Course L1.2 Master of AtoN Management Ed.1\_20181024.

The Committee prepared the following workshop proposal:

- Draft Cyber Security Workshop Proposal

The following liaison notes were prepared:

- Draft Liaison Note IALA to ITU-WP5B on AMRD;
- Liaison Note ARM to ENG re Racons in busy harbours;
- Liaison Note ARM to IALA Committees re MAtoN lights;
- Liaison Note ARM to ENG & ENAV on VDES R-Mode;
- Draft Liaison Note IALA to IMO-NCSR on AMRD;
- Liaison Note ARM to Secretariat Questionnaire on use of E-111 in Port Traffic Signals;
- Draft Input to IHO NIPWG Proposal for the Development of S-125 Product Specification;
- Liaison note ARM to Secretariat on MS 8 Vessel Shore Reporting briefing to HGDM2 with two attachments;
- Liaison note to ENAV on Development of AMRD – Draft IALA Recommendation and Guideline;
- Liaison ARM to ENAV Suggestions regarding workshop on developing an IOC for e-Navigation.

The draft ARM Committee task plan for the work period 2018-2022 aligned with the seven IALA Standards was updated and session details were added. 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	3 Tasks	All tasks on schedule

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# **Report of the 8<sup>th</sup> Session of the IALA**

## **AtoN Requirements and Management (ARM) Committee**

### **INTRODUCTION**

The 8<sup>th</sup> session of the AtoN Requirements and Management (ARM) Committee was held from 22<sup>nd</sup> to 26<sup>th</sup> October 2018 at IALA. The Chairman was Phil Day and the Vice Chairman was Dave Lewald. The Secretary for the meeting was Seamus Doyle.

### **1. OPENING**

The Committee Chair, Mr Phil Day welcomed both new participants and those returning to Committee for the eighth session of the ARM Committee (ARM8) commencing the 2018 to 2022 work period.

#### **1.1 Approval of the agenda**

The agenda (ARM8-1.1) was adopted.

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

The Secretary-General of IALA, Mr Zachariae, welcomed all participants to IALA, including those attending the ARM Committee for the first time. He congratulated Phil Day and Dave Lewald on their re-nomination as ARM Chair and Vice-Chair of the Committee. He referred to the very successful IALA 19th Conference and thanked Korea for their outstanding management of the Conference and their hospitality in Incheon. The Conference and the General Assembly were very productive. He noted that there are three new IALA members on the Council. The new strategic mission and seven IALA Standards were approved by General Assembly. A fantastic lighthouse exhibition was widely admired and the Incheon Declaration was adopted. A World Lighthouse Day is planned for 1 July 2019 to mark the anniversary of the founding of IALA.

He noted that the new 2018-2022 work period is now commencing. Changes to the Secretariat with the employment of two new permanent staff members, Kevin Gregory and Tom Southall, with termination of contracts with Michael Card, Stephen Bennett, Wim van der Heijden and Seamus Doyle in December 2018. Omar Frits Eriksson will take on the role of Deputy Secretary-General in addition to his existing role as Dean of the WWA. Responding to changes in the marine sector, he noted the transfer of work on Maritime Services from ENAV to ARM and the new Radionavigation Services working group in ENG, transferring this work from the ENAV Committee. He referred to the UN Sustainability Goals and noted that the Committee work will include environmental considerations. IALA needs to be capable of reacting quickly and intersessional correspondence groups may be a way of achieving this.

He referred to input paper ARM8-4.6, IALA Position-on-the-development-of-AtoN-services-2017-12-15, noting that this is an important document for the Committee as it sets out the IALA envisioned plan for AtoN.

The IGO project is progressing well with the next preparatory conference planned for March 2019 in Istanbul. A special meeting of the LAP is dealing with outstanding issues.

#### **1.3 Administration and safety briefing**

Seamus Doyle provided a Safety and Administration briefing. Paper ARM8-1.3 refers.

#### **1.4 Introductions and Apologies**

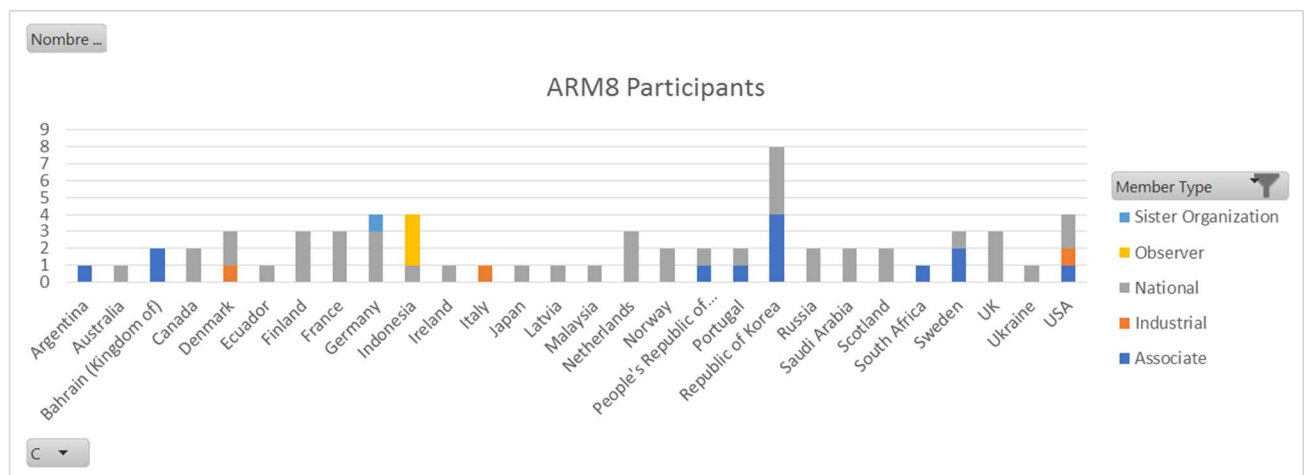
The session was attended by 64 participants from 28 countries, of which 44 were National Members, 3 were Industrial Members, 13 were Associate Members, 3 were observers. Seventeen participants attended for the first time.



The list of Committee Members who attended ARM8 is shown in ANNEX B. New participants were welcomed in addition to those returning to the Committee. The Committee noted no apologies from Members who were unable to attend.

The meeting was advised that IALA has a policy regarding compliance with the General Data Protection Regulations. 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 should advise 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 ARM8-1.5, was approved.

## 2. REVIEW OF ACTION ITEMS FROM ARM7

Input papers ARM8-2.1 and ARM8-2.2 refer. Action items for the IALA Secretariat from ARM7 were noted as complete. WG chairs were requested to review Members actions.

## 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 98 input papers including presentations.

## 4. REPORTS FROM OTHER BODIES

### 4.1 Report on 65<sup>th</sup>, 66<sup>th</sup> and 67<sup>th</sup> Sessions of the IALA Council 2017-12 and 2018-06

The Committee noted the report of the 65<sup>th</sup> Session of the IALA Council held in IALA HQ in December 2017 and the reports of the 66<sup>th</sup> and 67<sup>th</sup> Sessions of the IALA Council held in Incheon, Republic of Korea, in May and June 2018 respectively. Papers ARM8-4.11, ARM8-4.1.2 and ARM8-4.1.3 refer.

## **4.2 Report of the 34<sup>th</sup>, 35<sup>th</sup> and 36<sup>th</sup> Sessions of the IALA Policy Advisory Panel**

The Committee noted the reports of the 34<sup>th</sup>, 35<sup>th</sup> and 36<sup>th</sup> Sessions of the IALA Policy Advisory Panel (PAP34, PAP35, PAP36), held in October 2017, February 2018 and September 2018 respectively in IALA HQ. Papers ARM8-4.2.1, ARM8-4.2.2, ARM8-4.2.3 refer.

## **4.3 Report on 19<sup>th</sup> IALA Conference 2018**

The Committee noted the report of the 19<sup>th</sup> IALA Conference held in Incheon, Republic of Korea, from 27<sup>th</sup> May to 2<sup>nd</sup> June 2018. Paper ARM8-4.3 refers.

## **4.4 Report on the IALA Seminar on Arctic Navigation Nov 2017**

The Committee noted the report of the IALA Seminar on Arctic Navigation, from 9<sup>th</sup> to 10<sup>th</sup> November 2017 in IALA HQ. Paper ARM8-4.4 refers.

## **4.5 PIANC MarCom WG Report 161 2018 Wind Farms - interaction between offshore wind farms and marine navigation**

The Committee noted the PIANC MarCom WG Report 161 2018 Wind Farms dealing with interaction between offshore wind farms and marine navigation. Paper ARM8-4.5 refers.

## **4.6 IALA position on the development of AtoN services 2017-12-15**

The Committee noted the input paper on IALA position on the development of AtoN services. Paper ARM8-4.6 refers.

## **4.7 Report e-Navigation Underway International 2018 Conference**

The Committee noted the report of the e-Navigation Underway International 2018 Conference, from 24<sup>th</sup> to 26<sup>th</sup> January 2018 on board DFDS ferry sailing between Copenhagen and Oslo. Paper ARM8-4.7 refers.

## **4.8 Report first IALA-IHO Technical Coordination Meeting**

The Committee noted the report of the first IALA-IHO Technical Coordination Meeting, from 27<sup>th</sup> to 28<sup>th</sup> June 2018. Paper ARM8-4.8 refers.

## **4.9 Joint submission of draft Template for maritime services to the IMO**

The Committee noted the report of the Joint submission of draft Template for maritime services to the IMO. Paper ARM8-4.9 refers.

## **4.10 IALA Report 14<sup>th</sup> meeting Joint IMO-ITU Expert group on Maritime Radiocommunication Matters**

The Committee noted the report of the IALA Report on the 14<sup>th</sup> meeting Joint IMO-ITU Expert group on Maritime Radiocommunication Matters, from 3<sup>rd</sup> to 7<sup>th</sup> September 2018 in IMO Headquarters, London. Paper ARM8-4.10 refers.

## **4.11 IALA Report on IMO MSC99**

The Committee noted the IALA Report on IMO MSC99. Paper ARM8-4.11 refers.

## **4.12 IALA Report on IMO NCSR5**

The Committee noted the IALA Report on IMO NCSR5. Paper ARM8-4.12 refers.

## **4.13 IALA Report on IMO Council 120**

The Committee noted the IALA Report on IMO Council 120. Paper ARM8-4.13 refers.



#### **4.14 IALA Report on meetings of ITU-R WP5B**

The Committee noted the IALA Report on Report of ITU-R WP5B Meeting 6<sup>th</sup> to 17<sup>th</sup> November 2017 And Report of ITU-R WP5B meeting 21<sup>st</sup> May to 1<sup>st</sup> June 2018. Paper ARM8-4.14 refers.

### **5. PRESENTATIONS**

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

#### **5.1 IALA World-Wide Academy (WWA) – Gerardine Delanoye**

Gerardine Delanoye described the recent activity in the Academy since ARM7. Input paper ARM8-5.1 refers.

#### **5.2 Update on S-200**

Dave Lewald, US Coast Guard, explained the use of S-201 in the USCG to transfer AtoN data between AtoN authorities and hydrographic offices. Paper ARM8-5.2 refers. He noted that software to transition from S-57 to S-201 may be provided by USCG to IALA in 2019.

#### **5.3 IALA guidance on the marking of breakwaters**

Grant Judson, AMSA, clarified a shortfall of IALA guidance on the marking of breakwaters and proposed that IALA may wish to include this in the work program.

In discussion it was noted that as a result of serious incidents, breakwaters often ended up being marked with some form of lighting. Litigation cases in USA have been won and lost.

In Canada no AtoN marks on breakwaters is a big issue as well as access to some marked breakwaters due to cost. Disposable AtoN (drop in and replace on failure) and projector systems have been considered.

Guidance on marking of breakwaters is required and will be included in ARM's 2018-2022 workplan. A risk assessment for hazards considering both qualitative and quantitative aspects should always be conducted for such hazards.

#### **5.4 E-Navigation Underway Conferences**

Seamus Doyle invited participants to attend the e-Navigation Underway North America conference on 6<sup>th</sup> to 7<sup>th</sup> November 2018 and the e-Navigation Underway International conference during the week of 4<sup>th</sup> to 8<sup>th</sup> February 2019. He also announced dates for a workshop on Harmonising the Delivery of VTS Voice Communications in Korea, the World Marine Aids to Navigation day and the 14<sup>th</sup> IALA Symposium. Paper ARM8-5.4 refers.

#### **5.5 IHO NIPWG update**

Jens Schröder-Fürstenberg presented an update on the activities of the IHO NIPWG. Paper ARM8-5.5 refers.

In discussion it was noted that liaison between the IALA ARM Committee and the IHO is both essential and very beneficial.

#### **5.6 The performance of AtoN design and planning with AtoN simulation**

JunKi Bae, Korea Institute of Aids to Navigation, described a project for evaluating the performance of AtoN design and planning using AtoN simulation. Paper ARM8-5.6 refers.

In discussion it was noted that the buoy simulation includes lantern divergence and roll characteristics of the buoys. AtoN such as sector lights and PEL lights are included in the simulator. Racons are also included but it is unclear if radar land returns are included.

A request to use the simulator for evaluation of synchronised lights was raised.

The opinion of pilots was sought to help verify the AtoN simulator.

### Action item

*The Secretariat is requested to confirm with Mr Bae the accuracy of the comments re lights in the note on his presentation in section 5.6 of the ARM8 report.*

## 5.7 MENAS AtoN Monitoring Project

Mahdi al Mosawi described the MENAS AtoN monitoring project. The project uses repeaters to extend the range of monitoring of Message 21. Paper ARM8-5.7 refers.

In discussion it was noted that the system is fitted on all MENAS buoys.

Updates from satellite reporting is scheduled for every six hours which is satisfactory for the intended use but is insufficient for traffic analysis or IWRAP. Selected data is downloaded. Higher frequency of satellite downloads would require a change in service provider, necessitating new receivers on all stations.

Spoofing is a risk that cannot be mitigated.

## 5.8 Demonstration of possible MAtoN light

Martin Bransby demonstrated a yellow light which could be used for MAtoN. Tests conducted by the GLA Research and Development (GRAD) indicated that a light character of 3 flashes (flickering at 5 Hz) + 2 flash gives good discrimination of the flickering flashes at 3NM range. Yellow colour is within the IALA chromaticity limits. The duty cycle was no more than 48.1%. It was noted that the maximum required range for a MAtoN light is 5NM. Paper ENG8-5.8 refers.

The Chair thanked all speakers for the presentations which are available on the ARM8 page in the Committee section of the IALA website.

# 6. REVIEW OF WORK PROGRAMME AND WG EXPECTATIONS

## 6.1 Work review

The ARM Committee Task Plan for the 2018-2022 work period was finalised. Paper ARM8-12.2.1 refers.

It was noted that the new role of the ARM Committee regarding operational aspects of Maritime Services fits well with the overall strategy of IALA and the evolution of the maritime sector.

The following shows a summary of progress on the Task Plan at the end of ARM8.

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	3 Tasks	All tasks on schedule

### Action item

*The Secretariat is requested to forward the ARM Committee Task Plan for 2018-2022, ARM8-12.2.1, to ARM9.*

# 7. REPORTS FROM RAPPORTEURS

It was agreed that rapporteurs will consist of reports from WGs on work in progress in the WGs. This will commence at ARM9. Fred Pot will also report on ship reporting.

### Action item

*The Secretariat is requested to include rapporteur reports on the agenda for ARM9 in accordance with section 7 of the ARM8 report.*

## 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 liaison notes

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 ARM8-12.1.2 Liaison note to ENG regarding racons in busy harbours

The Committee considered input paper ARM8-9.13 in which concern was raised by ENG regarding poor performance of racons in busy harbours. The response ARM8-12.1.2 is to be sent to ENG.

### Action item

*The Secretariat is requested to forward ARM8-12.1.2 to ENG9.*

#### 9.1.2 ARM8-12.1.6 Liaison note to ENG regarding VDES R-mode

The Committee considered input paper ARM8-9.14. The liaison note ARM8-12.1.6 gives ARM comments regarding the input document. ENG should consider providing further information on the subject as input to ARM9.

### Action item

*The Secretariat is requested to forward ARM8-12.1.6 to ENG9.*

#### 9.1.3 ARM8-12.1.8 Liaison note to Secretariat regarding questionnaire for E-111

The Committee considered input paper ARM8-9.12. The liaison note ARM8-12.1.8 requests the IALA secretariat to send the questionnaire as indicated, insuring that the update to the Recommendation E-111 meets the needs of the members. The responses are to be collated for the input paper to ARM9.

### Action item

*The IALA Secretariat is requested to arrange the questionnaire as indicated in ARM8-12.1.8, and collate the responses for the input paper to ARM9 in cooperation with Gaele Nassif and James Collocott..*

#### 9.1.4 ARM8-12.2.12 Working paper for ARM9, defining IALA region A/B in polar regions.

Input paper ARM8-9.1. The input paper was not altered, but discussed briefly during the meeting. Member states are requested to provide input on the subject for ARM9.

## 9.2 Develop guidance on regulatory/legal framework for AtoN Authorities (Task 1.1.1)

The Committee considered input paper ARM8-11.8.1 Draft Model Course L1.2 Master of AtoN Management Ed.1 and amended it to output paper ARM8-12.1.4. In considering the paper the Committee agreed that ARM should provide guidance in terms of the requirement, composition and authority of a national maritime committee. It was also agreed that ARM should provide guidance in terms of the content of a strategic plan for AtoN service delivery.

#### New Recommendation and new Guideline

Several input papers were received regarding proposed new Guideline(s) describing purpose, management, legislation needs, regulation needs, perhaps with examples of legislation and regulation clauses to assist understanding. Work on this task is planned to continue at ARM9.

The Committee prepared a liaison note to LAP regarding maritime law, ARM8-12.1.5 refers. The liaison note requests LAP to consider the content and provide comments for improvement and submit it as input to ARM9.

#### *Action items:*

*The Secretariat is requested to forward the document ARM8-12.1.4 Master of Aids to Navigation Management to Council for approval.*

*The Secretariat is requested to forward ARM8-12.2.13/ARM8-12.2.14 as working papers to ARM9.*

*The Secretariat is requested to forward ARM8-12.1.5 to the LAP.*

### **9.3 Revise G1054 Preparing for a Voluntary IMO Audit on Aids to Navigation Service Delivery (Nov 2006) (Task 1.1.2)**

Revised Guideline to reflect change of IMO audit status. Work on this task is planned to begin at ARM10.

### **9.4 Revised Guideline G1052 Quality Management in [Marine] Aids to Navigation Service Delivery (Dec 2013), removing ISO copied text (Task 1.4.1)**

Revised guideline to remove copied ISO text. Work on this task is planned to begin at ARM10.

### **9.5 Reformat and review the IALA MBS incorporating MAtoN (Task 1.5.1)**

The Committee concluded that work on revising the MBS cannot begin until work on a few other matters is completed. This includes the Guideline on the use of MAtoN and other related issues such as the updated guidance on reflective materials, complementary information in the IALA NAVGUIDE about the use of special marks and discussions on the marking of breakwaters.

### **9.6 Assist ENAV with development of radio aspects of MAtoN and AMRD with IEC and ITU (Task 1.5.2)**

Several input papers on the topic of AMRD were considered. An urgent request from ENAV to consider liaison note ARM8-9.12 to ITU was considered and three liaison notes were prepared.

#### *Action items:*

*The Secretariat is requested to forward the liaison note ARM8-12.1.1 to ITU WP 5B.*

*The Secretariat is requested to forward the liaison note ARM8-12.1.7 to NSCR6.*

*The Secretariat is requested to forward the liaison note ARM8-12.1.12 to ENAV23.*

### **9.7 Undertake 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 at ARM8 (Task 1.5.3)**

Task Leader: Joris Brouwers. Assisted by: Aigars Gailis, Trevor Harris, Vitor Dias, Johan Pettersson, Jörg Kuchta, Grant Judson and Peter Dam.

This task was commenced. The work will need to take into consideration discussions on the marking of breakwaters, as well as any other updates to the MBS. Work will continue at ARM9.

The Committee prepared working paper ARM8-12.2.15, review on Guideline 1046 Response plan for marking new wrecks, for ARM9. The document considers the future use of MAtoN.

*Action item*

*The Secretariat is requested to forward ARM8-12.2.15 to ARM9.*

### **9.8 Develop guidance for navigators on the use of AtoN (Task 1.5.4)**

Work on this task is planned to begin at ARM11.

### **9.9 Develop guideline for the Use of Mobile AtoN**

Task Leader: Joris Brouwers. Assisted by: Aigars Gailis, Trevor Harris, Vitor Dias, Johan Pettersson, Jörg Kuchta, Grant Judson and Peter Dam.

Work continued on the draft guideline for the use of Mobile AtoN (input paper ARM7-12.2.3) taking into consideration the comment from Council on the Recommendation. The intent is to intersessionally collect use cases and information from IALA members, in order to create a more complete draft at ARM9 that can be liaised to other committees, with the aim to finalise the guideline at ARM10.

The Committee prepared a Liaison note to ENG/ENAV regarding MAtoN character, ARM8-12.1.3 refers. The liaison note invites member states to provide input regarding the potential flash character to be developed, as input to ARM9.

*Action items:*

*The Secretariat is requested to forward the draft Guideline on Mobile AtoN (ARM8-12.2.11) to ARM9.*

*The Secretariat is requested to forward ARM8-12.1.3 to ENG9 and ENAV23.*

### **9.10 Develop guidance on AtoN provision in polar regions (Task 1.5.6)**

Work on the Guideline is planned to begin at ARM11.

### **9.11 Develop guidance on the provision of AtoN for autonomous vehicle/vessel operations (Task 1.5.7)**

Work on the Guideline is planned to begin at ARM11. Development within the industry should be monitored by member states and the task plan might be adjusted accordingly.

### **9.12 Review and update Recommendation R-0139 on the Marking of Man-Made Offshore Structures to reflect trends in the proliferation of wind farms (Task 1.5.8)**

Work on this task is planned to begin at ARM10. The Committee noted that the input paper ARM8-4.5 provides useful input to this task.

### **9.13 Identify options for the future use of DGNSS stations in conjunction with ENG review of Recommendation R-150 (Task 1.5.9)**

Work on this task is planned to begin at ARM10.

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

Task leader: Yves Jaques. Assisted by: Dave Merrill, Mats Hörström, Joonatan Ahlroos, JunKi Bae, Thomas Porathe,

Work on this task was started and progressed during the week. Work will continue at ARM9.

#### *Action item*

*The Secretariat is requested to forward the draft Guideline 1081 on Virtual AtoN (ARM8-12.2.10) to ARM9.*

### **9.15 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)**

Task group: Mats Hörström, Joonatan Ahlroos, Johan Westerlund.

Work on this task started during the week and will continue at ARM9.

#### *Action items:*

*The Secretariat is requested to forward the draft Recommendation E-110 (ARM8-12.2.16) and draft Guideline 1116 (ARM8-12.2.17) to ARM9.*

### **9.16 Review relevant sections of NAVGUIDE as requested by Secretariat (Task 3.2.1)**

The structure of updates to the NAVGUIDE has changed since the previous work period. Coordination will now be performed by the Secretariat, the Committee will focus on revising the relevant sections as needed.

#### *Action item*

*The IALA Secretariat is requested to provide a plan for review of the NAVGUIDE showing the sections allocated to the ARM Committee with the relevant sections of the NAVGUIDE in Word format to ARM9.*

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

The working group considered 35 input documents.

### **10.1 e-Navigation**

Jan-Hendrik Oltmann gave a presentation on the development of e-Navigation to bring the WG up to speed on what had happened over the years within the ENAV Committee. He also commented on requirements management and that this wasn't tackled by IALA. He suggested that there should be an IALA requirements management system that collates requirements that cover the whole remit of IALA. Jan-Hendrik Oltmann volunteered to produce a working paper on this matter.

#### *Action item*

*Jan-Hendrik Oltmann is requested to submit an input paper on IALA requirements management system, which collates requirements that cover the whole remit of IALA, to ARM9.*

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

The Chair considered that the WG did not have the expertise within the group to commence this task before the proposed workshop that will be delivered in conjunction with the ENG Committee. Input paper ARM8-10.16 on the draft proposal for a workshop on cyber security was considered and amended, paper ARM8-12.1.9 refers. The date of the workshop has been proposed as October 2020. The Committee thought that it may be better to have the workshop in the summer so as to not clash with the normal round of IALA committee meetings. It also considered that user requirements should be developed prior to the workshop as input and this work will be commenced during ARM9.

It was agreed that ISO 27000 and IMO FAL.6/Circ-16 dated 30 May 2013 should be considered as part of this task.

#### *Action item*

*The IALA Secretariat is requested to send output document ARM8-12.1.9 to Council to approve the proposed workshop on cyber security and to PAP37 to discuss the date of the workshop.*

### **10.3 Review G1084 Procedure of the Authorisation of AIS AtoN (Task 2.2.1)**



It was agreed that this task should be addressed at ARM9 and completed in ARM10.

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

The Chair suggested that the WG should have an output on this at the end of every session as required. The WG identified the need to coordinate any NAVGUIDE updates with other ARM WGs. The Committee also identified that the IALA secretariat needs to set “ground rules” on NAVGUIDE development.

##### *Action item*

*The IALA secretariat is requested to set “ground rules” on NAVGUIDE development (see report section 10.4).*

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

It was agreed that this task should be subject to periodic review in conjunction with WG3 and should be addressed in ARM9 and ARM10.

#### **10.6 Digital Maritime Services (Task 4.2.1)**

A discussion was held around the area of digital maritime services and it was identified that the Committee needs to develop guidance, structure and content around Maritime Services (MS) within the IALA remit, specifically on MS 17 and 19 on AtoN and PNT respectively. However, it was noted that a lot of information already exists in other parts of IALA documentation. It was decided that this would be developed throughout the working period with output at ARM14.

There was some confusion regarding this work item and item 5.1.1 and the tasks and expected outputs were redefined in the task plan ARM8-12.2.1 (cross reference discussion in 10.7 below). There was also some confusion as to what IALA’s plan is for the development and maintenance within the proposed Guideline on Maritime Services such as telemedical which are outside the IALA remit.

The Committee discussed MS8 “vessel shore reporting” regarding the development of guidance for this maritime service. No international body has assumed the role of coordinating body for this MS yet. The ARM Committee would eventually like to let the coordinating body know that IALA is conducting work in this area and to request that IALA work is considered in this coordination. The Committee prepared a liaison note (ARM8-12.1.11) to the secretariat requesting that the secretariat brief the IALA attendees of the forthcoming IMO/IHO HGDM2 meeting to ensure that this item is discussed at the HGDM meeting.

##### *Action items*

*The IALA Secretariat is requested to consider what is the best way to deal with information in IALA documentation that is outside IALA areas of responsibility in the context of the proposed MS Guideline and seek advice of the LAP.*

*The IALA Secretariat is requested to brief the attendees of the HGDM2 on vessel shore reporting in accordance with paper ARM8-12.1.11 and attachments ARM8-12.1.11.1 and ARM8-12.1.11.2.*

#### **10.7 Develop guidance on Maritime Services (Task 5.1.1)**

It was agreed that there should be continued development and delivery of S-201 product specifications with the people already assigned in the erstwhile ENAV WG1 and then go on to develop Annex C. It was further agreed that requirements for S-125 should be developed. The Maritime Resource Name (MRN) concept was discussed and noted that this is an important area for IALA and that this will need coordination with other committees, especially ENAV. A sub group on MRN was set up and volunteers included Dave Lewald, Martin Bransby, Eivind Mong, Sewoong Oh, Fred Pot, Jin-Gee Jeon and Minsu Jeon.

Task 5.1.1 is a large item with a great deal of work required over the next 4 years. It was agreed that this item should be broken down into smaller pieces.

Tasks 4.2.1 and 5.1.1 appear to contain some similar pieces of work and this was confusing. It was decided that the expected outputs from 4.2.1 (that hadn’t been completed) should be transferred to task 5.1.1. The task plan was updated (see 10.6 above).

### **10.8 Coordinate Committee support for IALA representation at IHO working groups in cooperation with Secretariat (HSSC, S-100WG, NIPWG) (Task 5.1.2)**

It was considered that there is sufficient IALA representation at IHO and that this should continue. The Chair suggested that the Committee should provide input to the IHO meetings as required. Work in this item is planned to take place throughout the 2018-2022 work period. IALA continues to benefit from IHO attendance at ARM.

### **10.9 Monitor the development of S-201 Testbed (Task 5.1.3)**

Jin-Gee Jeon gave a presentation on the Korean S-200 product description test bed. The testbed will be delivered with cooperation between the Korean Ministry of Oceans and Fisheries, the Korean Research Institute of Shipping and Oceans and IALA.

Sewoong Oh presented an update on the S-200 and prototype test beds that have already been implemented as beta version demonstrators of some aspects of S-200. A web-based demonstration of the test bed was shown, followed by useful discussions and clarifications on the proposed testing and implementation methods.

The Committee agreed that this work should be considered when developing S-200 within the ARM Committee.

ARM members were invited to submit updates 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**

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

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

There was discussion on whether these two Guidelines were related and what the task was. The strategy technical domain 5.2 is incorrect. This should be changed to "Data Exchange systems (AtoN Information)". This will be addressed when the work is conducted in ARM9 onwards.

### **10.11 Develop Guideline on ship reporting from the shore-side perspective (Task 5.2.2)**

Fred Pot gave a presentation on standardised and automated ship reporting and how such reporting systems can reduce the administrative burden on the bridge team. Ship reports are not harmonised and ship crews spend a lot of time completing reports at a time which is important for the safe navigation of the vessel. Mr Pot proposed that IALA should develop and maintain a register of ship report templates. Concerns were raised on who would do the work, what the infrastructure would be and how that would work. Work on this matter will commence at ARM9.

Discussion around what this should entail revealed that IEC 63173/S-421 on route exchange should be considered. Fred Pot volunteered to lead this work. He also agreed that he will present on this in the rapporteur section of ARM9 as discussed in the plenary session. Volunteers for a task group (TG), coordinated by Fred Pot, were Minsu Jeon, Jens Schröder-Fürstenberg and Dave Lewald. Members of the Committee are invited to participate in this TG. Work in this item will commence at ARM9 (during which the task will be assessed) through to ARM11.

### **10.12 Develop guidance on the symbology and portrayal of AtoN (Task 5.3.1)**

The work of the former ENAV S-201 task group will continue commencing at ARM9 and onwards. This TG will be chaired by Sewoong Oh.

### **10.13 Lead joint workshop with IHO on S-100/200 and portrayal workshop (Task 6.2.1)**

Task 6.2.1 will be progressed at ARM9.



#### 10.14 Participate in ENG led joint workshop on cyber security (Task 6.2.2)

See comments in section 10.2 above. Work in this item will take place throughout the work period.

#### 10.15 Action items from input documents

ARM8-10.15 on suggestions regarding a workshop on developing an initial operating capability for e-Navigation. A liaison note to the ENAV Committee drafted suggesting amendments and noting that the suggested date was inconvenient for ARM as the proposed date would make it difficult for ARM Committee members to attend as it is the week after ARM9. Paper ARM8-12.1.13 refers.

ARM8-10.6 on “Proposals re S-125 navigation services (enhance list of lights) product specification (PS)”. This paper was considered in some depth by the working group and the Committee thought it appropriate to communicate with the IHO’s Nautical Information Provision Working Group (NIPWG) to suggest that IALA could draft the S-125 PS.

##### *Action item*

*The IALA Secretariat is requested to send Liaison note ARM8.12.1.12 to ENAV23.*

*The IALA Secretariat is request to forward paper ARM8-12.1.13 to ENAV23.*

*The IALA Secretariat is requested to send the drafted NIPWG input paper to IHO by early January 2019, paper ARM8-12.1.10 refers.*

#### 10.16 Maritime Resource Name

Eivind Mong gave an overview of the history of the Maritime Resource Name (MRN) concept, followed by an informative presentation on the IHO approach to MRN. This approach means that authorities will not be required to reassign numbering of the list of lights for instance. The Chair stated that the way forward with the development of MRN should now be within the ARM WG2. The Chair stated that IALA needs to develop guidance on MRN management and guidance for users. An IALA Recommendation should also be developed to cover the Guidelines

##### *Action item*

*The IALA Secretariat is requested to forward papers ENAV21-9.5 and ENAV21-14.1.8 to WG2 at ARM9.*

#### 10.17 R-Mode workshop

ARM8-10.17 on R-Mode workshop. This was discussed and it was proposed that this should be an action item for ARM9 to discuss user requirements as an input to the workshop.

##### *Action item*

*The IALA Secretariat is requested to forward paper ARM8-10.17 to WG2 at ARM9 in order that the Committee can discuss and define user requirements for R-Mode.*

#### 10.18 Other

It was agreed that there is a need for guidance on the management of requirements and requirements traceability. Jan-Hendrik Oltmann led a drafting group on this matter and produced a draft Guideline. The Committee suggests that this could be guidance placed under Standard 1020 on AtoN design and delivery.

##### *Action item*

*The IALA Secretariat is requested to forward the working paper ARM 12.2.18 to ARM9.*

*The Secretariat is requested to add a new task 2.2.2 under Standard 1020 from ARM8 report section 10.18.*

## **11. WORKING GROUP 3 – RISK MANAGEMENT (WG3)**

The Task Plan 2018-2022 was reviewed.

### **11.1 Review G1018 Risk Management to ensure compatibility with risk toolbox. (Task 1.2.1)**

The Committee undertook a comprehensive analysis of the current document, initially individually and then in discussion with smaller task groups and finally in a working group plenary session. It was agreed that the review of G1018 Risk Management should include review of G1123, G1124, and G1138.

The Committee agreed that the current Guideline 1018 is too extensive, too difficult to use and does not provide sufficient guidance.

The aim of the Guideline 1018 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 on 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 underlying guidelines for PAWSA, IWRAP, SIRA, and Simulation were reviewed to identify any overlap between these guidelines and G1018 and the need for amendments or restructuring between the guidelines and G1018.

Task 1.2.1 task description was amended.

#### **Action Items:**

*The Secretariat is requested to forward the working paper ARM8-12.2.2 (ARM8-11.2) Draft Guideline 1018 Ed.4 Risk Management as input to ARM9 for WG3.*

*The Secretariat is requested to forward the working paper ARM8-12.2.3 (ARM8-11.4) Draft Guideline 1123 Ed.1 The use of IWRAP MkII as input to ARM9 for WG3.*

*The Secretariat is requested to forward the working paper ARM8-12.2.4 (ARM8-11.5) Draft Guideline 1124 Ed.1 The use of PAWSA MkII as input to ARM9 for WG3.*

*The Secretariat is requested to forward the working paper ARM8-12.2.5 (ARM8-11.7) Draft Guideline 1138 Ed.1 The use of SIRA as input to ARM9 for WG3.*

### **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 commence at ARM9. The work related to IALANET will be progressed once the individual expertise in this area is available from the wider ARM committee membership.

### **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 commence at ARM9. 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 Committee has considered the liaison note received from the ENG Committee and note their intention to commence the updating of guideline G1097 and their proposal for updating of Guideline G1058. WG3 will take the lead of G1058 and will ensure that any comments from other committees will be incorporated into the revised document in due course. Work commenced on the revision of G1058 to assess overarching issues with the current document and the process for the revision.

Initial work on the simulation documentation has been analysis of the individual documents to ascertain areas directly applicable to the overarching risk Guideline G1018.

#### **Action Items:**

*The Secretariat is requested to forward the working paper ARM8-12.2.6 Recommendation R0138 Ed.2 The Use of GIS and Simulation by Aids to Navigation Authorities as input to ARM9 for WG3.*

*The Secretariat is requested to forward the working paper ARM8-12.2.7 (ARM8-11.3) Guideline 1058 Ed.2 Use of Simulations a Tool for Waterway Design and AtoN Planning as input to ARM9 for WG3.*

*The Committee Secretary is requested to forward the working paper ARM8-12.2.8 Guideline 1097 Ed.1 Technical Features and Technology relevant for Simulation of AtoN as input to ARM9 for WG3.*

#### **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 commence at ARM9. The work related to IALANET will be progressed once the individual expertise in this area is available from the wider ARM Committee membership.

#### **11.6 Develop document to promulgate IALA risk management tool box to IMO (SN circular) (Task 1.2.7)**

Task 1.2.7 will commence when the full review of Guideline G1018 together with the supporting toolbox guidelines in Task 1.2.4 have been brought to a significant level of maturity.

#### **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 needs to be amended with the latest tool SIRA in the Risk Management Toolbox.

A comparison between the current model course and amendments made to the document by the WWA has been initiated. However, beyond these amendments, there might be a need for further revision, once the review of the overarching risk Guideline G1018 has been finalised (see Task 1.2.1). Hence, this task will continue during the following ARM meetings.

#### **Action Items:**

*The Secretariat is requested to forward the working paper ARM8-12.2.9 (ARM8-11.6) Draft IALA Model Course L1.3 on Risk Management Tool Ed 2 as input to ARM9 for WG3.*

#### **11.8 Review relevant sections of NAVGUIDE as requested by Secretariat (Task 3.2.1)**

On completion of the revision of G1018 suggested amendments to the NAVGUIDE text will be provided.

#### **11.9 Cooperate with WWA in providing Risk Seminar(s) (Task 6.1.1)**

The Committee noted that one Risk Management Course is planned for 2019, most likely taking place at IALA HQ and an additional course is planned for South America. However, finalisation of these dates is still to be confirmed. The ARM Chair and WG3 Chair engaged with the WWA Secretariat in discussion of the coordinating the South American Risk Workshop with the ARM meeting in the same period. It seems probable that the events may need to be separate, but the possibilities will be explored.

Although there is an increasing interest in the Risk Management Course, there is still a need to raise awareness of the existence of the courses. During assessment of Guideline G1123, the use of IWRAP MkII, G1124 on the use of PAWSA MkII, G1138 on the use of SIRA, and G1058 on the use of Simulation as a Tool for Waterway Design and AtoN Planning, it is evident that getting the proper skills in the use of the tools through attendance at a Risk Toolbox Workshop is very important.

### **12. REVIEW OF OUTPUT AND WORKING PAPERS**

The Committee considered 98 input papers including presentations and produced 15 output documents including 1 revised Academy model course, 10 liaison notes, 1 workshop proposal and 17 working papers. Output papers were reviewed and their disposition agreed as indicated in ANNEX E.

The following question was asked of all attendees:

*Does anyone present have the 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?*

### 13. ANY OTHER BUSINESS

#### 13.1 IALA Questionnaire

The returns from the 2017 IALA Questionnaire have all been received and consolidated into an Excel database format. The IALA Secretariat is responsible for the analysis and summary report on the Questionnaire. It was agreed that there is no need for Portugal to host the Questionnaire further.

##### *Action item*

*The IALA Secretariat is requested complete the analysis of the 2017 IALA Questionnaire.*

#### 13.2 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 Chez Lulu.

The traditional football match was played on Tuesday evening against a local team. The ARM Committee scored a decisive win over the home side.



### 14. REVIEW OF SESSION REPORT

The report of the meeting (ENG8-14.1) 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.

It was noted that input paper ARM8-4.5 should be considered under task item 1.5.8, review of Recommendation R0138.

##### *Action item*

*The Secretariat is requested to forward the summary of the ARM8 Committee report (ARM8-14.1) to Council to note.*

### 15. DATE AND VENUE OF NEXT MEETINGS

The ninth session of the ARM Committee (ARM9) will be held from 1<sup>st</sup> to 5<sup>th</sup> April 2019 in 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.

He noted that a great start had been made on the work of the Committee for the 4 year work period. Co-operation with the ENAV Committee is progressing well.

The Committee bade farewell to Seamus Doyle who was stepping down as secretary to the Committee after one session. Mr Doyle thanked the Committee for their appreciation and good wishes for the future.

The Committee Chairman then closed the ARM8 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 B.
- 3     Working Group Participants  
      A list of working group participants is at ANNEX C.
- 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.

## 8<sup>th</sup> Meeting of the AtoN Requirements and Management Committee (ARM)

The 8<sup>th</sup> meeting of the ARM Committee (ARM8) will be held from 22 – 26 October 2018, at IALA, St. Germain en Laye, France.

The opening plenary will commence at 1300 on Monday 22 October 2018, and the closing plenary will end at approximately 1300 on Friday 26 October.

Committee Chair, Vice-Chair and Working Group Chairpersons are requested to meet at 0900 on Monday 22 October.

### 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 ARM7
3. Review of input papers
4. Reports from other bodies
  - 4.1. Report on 65<sup>th</sup>, 66<sup>th</sup> and 67<sup>th</sup> Sessions of the IALA Council 2017-12 and 2018-06
  - 4.2. Report of the 34<sup>th</sup>, 35<sup>th</sup> and 36<sup>th</sup> sessions of the IALA Policy Advisory Panel
  - 4.3. Report on 19<sup>th</sup> IALA Conference 2018
  - 4.4. Report on the IALA Seminar on arctic navigation Nov 2017
  - 4.5. PIANC MarCom WG Report 161 2018 Wind Farms - interaction between offshore wind farms and marine navigation
  - 4.6. IALA Position-on-the-development-of-AtoN-services-2017-12-15
  - 4.7. Report on e-Navigation Underway International 2018 conference
  - 4.8. Report first IALA-IHO Technical Coordination Meeting
  - 4.9. Joint submission of draft Template for maritime services to the IMO
  - 4.10. IALA Report 14<sup>th</sup> meeting Joint IMO-ITU Expert Group on Maritime Radiocommunication Matters
  - 4.11. IALA Report on IMO MSC99
  - 4.12. IALA Report on IMO Council 120
  - 4.13. IALA Report on IMO NCSR5
  - 4.14. IALA Report on meetings of ITU-R WP5B
5. Presentations (15 minutes)
  - 5.1. Report from WWA Gerardine Delanoye
  - 5.2. Update on S-200 Dave Lewald
  - 5.3. IALA guidance on the marking of breakwaters Grant Judson

- |      |  |                           |
|------|--|---------------------------|
| 5.4. | e-Navigation Underway Conferences                                | Seamus Doyle              |
| 5.5. | IHO NIPWG update   | Jens Schröder-Fürstenberg |
| 5.6. | The performance of AtoN design and planning with AtoN simulation | JunKi Bae                 |
| 5.7. | MENAS AtoN Monitoring Project                                    | Mahdi al Mosawi           |
6. Review of Task Plan and WG expectations
    - 6.1. 2018-2022 task plan
  7. Reports from rapporteurs
    - 7.1. Nomination of Rapporteurs
  8. Establish Working Groups
  9. WG1 - Navigational requirements
  10. WG2 - Information Services and Portrayal
  11. WG3 - Risk management
  12. Review of output and working papers
    - 12.1. ARM task plan
    - 12.2. WG1
    - 12.3. WG2
    - 12.4. WG3
  13. Any Other Business
  14. Review of session report
  15. Date and venue of next meeting
  16. Close of the meeting



## ANNEX B

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Oleksandr Shchypstov	State Hydrographic Service of Ukraine	Ukraine
Jiali Chen	China MSA	China
Chupang Wu	Government of Macao Special Administrative Region Marine and Water Bureau under China MSA	China
Raed Muar	Saudi Ports Authority « Mawani »	Saudi Arabia
Naji Alsehli	Saudi Ports Authority « Mawani »	Saudi Arabia
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Muhammad Ali Malawat	Directorate of Navigation Directorate General of Sea Transportation	Indonesia
Prasetyadi	Indonesia Port Corporation	Indonesia
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## Working Group 1

## Navigational Requirements

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4	JunKi Bae	Korean Association of Aids to Navigation, Republic of Korea
5	Joris Brouwers	Ministry of Infrastructure and Water Management, Netherlands
6	James Collocott	South African Maritime Safety Authority, South Africa
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11	Peter Douglas	Northern Lighthouse Board, Scotland
12	Aigars Gailis	Latvian Hydrographic Service / Latvia
13	Trevor Harris	Trinity House, UK
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## Information Services and Portrayal

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2	Martin Bransby (Vice Chair)	GLA Research and Development, UK & Ireland

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3	Eivind Mong	Canadian Coast Guard, Canada
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6	Kang Miyoung	Ministry of Oceans and fisheries, Republic of Korea
7	Ranxuan Ke	Navigation – Aids to Navigation Research, People’s Republic of China
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9	Kinji Takeuchi	Japan Coast Guard, Japan
10	Chupang Wu	Government of Macao Special Administration, People’s Republic of China
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14	Xavier Hernoë	Direction Affaires Maritimes, France

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15	Oleksandr Shchypstov	State Hydrographic Service of Ukraine

## ANNEX D LIST OF INPUT PAPERS

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

Number	Input Paper Title	Source	Presented by / WG
ARM8- 1.1	Draft Agenda (20181010)	IALA Secretariat	Phil Day
ARM8- 1.3	Presentation Safety & Admin briefing 20180911	IALA Secretariat	Seamus Doyle
ARM8- 1.5	Programme for the week (20180725)	IALA Secretariat	Phil Day
ARM8- 2.1	Action Items from ARM7	ARM7	Seamus Doyle
ARM8- 2.2	(ARM7-14) Report ARM7	ARM7	Phil Day
ARM8- 3.1	Input paper Committee template February 2017	IALA Secretariat	Seamus Doyle
ARM8- 4.1.1	(C65-19.1) Report Council 65	IALA Secretariat	Phil Day
ARM8- 4.1.2	(C66-20.1) Report Council 66_Final-Rev	IALA Secretariat	Phil Day
ARM8- 4.1.3	Report Council 67 Final	IALA Secretariat	Phil Day
ARM8- 4.2.1	(PAP34-18.1) Draft Report PAP34_V2	IALA Secretariat	Phil Day
ARM8- 4.2.2	(PAP35-18.1) Draft Report PAP35_V1	IALA Secretariat	Phil Day
ARM8- 4.2.3	(PAP36-11.1) Draft Report PAP36_V2	IALA Secretariat	Phil Day
ARM8- 4.3	Report on 19th IALA Conference 2018	IALA Secretariat	Phil Day
ARM8- 4.4	Report on the IALA Seminar on arctic navigation Nov 2017	IALA Secretariat	Phil Day / WG1
ARM8- 4.5	PIANC MarCom WG Report 161 Wind Farms - interaction between offshore wind farms and marine navigation	PIANC/ Phil Day	Information paper
ARM8- 4.6	IALA Position-on-the-development-of-AtoN-services-2017-12-15	IALA Secretariat	Phil Day
ARM8- 4.7	Report e-Navigation Underway International 2018	IALA Secretariat	Phil Day
ARM8- 4.8	IALA-IHO Technical Coordination Meeting v3	IALA Secretariat	Phil Day
ARM8- 4.9	Joint submission of draft Template for maritime services to the IMO	IALA Secretariat	Phil Day
ARM8- 4.10	IALA Report 14th meeting Joint IMO-ITU Expert group on Maritime Radiocommunication Matters	Stefan Bober	Phil Day
ARM8- 4.11	Report on IMO MSC99	IALA Secretariat	Phil Day
ARM8- 4.12	Report on IMO NCSR5	IALA Secretariat	Phil Day / WG2
ARM8- 4.13	Report on IMO Council 120	IALA Secretariat	Phil Day
ARM8- 4.14	Report on meetings of ITU-R WP5B	Stefan Bober	Phil Day
ARM8- 5.1	Presentation Report from WWA	Gerardine Delanoye	Gerardine Delanoye
ARM8- 5.2	Presentation Use of S-201 to transfer AtoN Data between AtoN Authorities and Hydrographic Offices	Dave Lewald	Dave Lewald
ARM8- 5.2.1	Use of S-201 to Transfer AtoN Data Between AtoNAuthorities and Hydrographic Offices	Dave Lewald	Dave Lewald / WG2
ARM8- 5.3	Presentation IALA guidance on the marking of breakwaters	Grant Judson	Grant Judson
ARM8- 5.4	Presentation e-Navigation Underway Conferences	IALA Secretariat	Seamus Doyle
ARM8- 5.5	Presentation IHO NIPWG update	Jens Schröder-Fürstenberg	Jens Schröder-Fürstenberg
ARM8- 5.6	Presentation the performance of AtoN design and planning with AtoN simulation	JunKi Bae	JunKi Bae
ARM8- 5.7	Presentation MENAS AtoN Monitoring Project	Mahdi al Mosawi	Mahdi al Mosawi
ARM8- 5.8	Demonstration MAtoN light	Martin Bransby	Martin Bransby

Number	Input Paper Title	Source	Presented by / WG
ARM8- 6.1	(PAP36) ARM Task Plan 2018-2022 20181003	PAP36	Phil Day
ARM8- 6.1.1	ARM Recommendations guidelines and Work plan post ARM7 Oct2017	ARM7	Phil Day
ARM8- 6.1.2	(PAP36-13.3) Committee responsibilities Information services	PAP36	Phil Day
ARM8- 9.1	IALA Regions at the Poles 20180225 shgb	Stephen Bennett	WG1
ARM8- 9.2	AMRD liaison with ENAV and ITU	ENAV WG3 intersessional	WG1
ARM8- 9.2.1	Jan2018-ESTEC-output04a- Liaison to ARM re ITU liaison on AMRD rev1	ENAV WG3 intersessional	WG1
ARM8- 9.2.2	Jan2018-ESTEC-output04b-Liaison from ITU WP5B on AMRD for ARM	ENAV WG3 intersessional	WG1
ARM8- 9.2.3	Jan2018-ESTEC-output03-Draft Liaison note to ITU-R WP5B(May) on AMRD - rev1	ENAV WG3 intersessional	WG1 for information
ARM8- 9.3	LN-IALA-29032018 Liaison note CIRM to IALA on the use of racons in busy harbours	Richard Doherty	WG1
ARM8- 9.4	Draft IALA Recommendation R#### on Governance of AtoN Service Delivery Rev1 20181017	Stephen Bennett, WWA Kevin Gregory	WG1
ARM8- 9.5	Draft IALA Guideline on the Governance of AtoN Service Provision Rev1 20181017	Stephen Bennett, WWA Kevin Gregory	WG1
ARM8- 9.6	WWA on Maritime Law	ARM7	WG1
ARM8- 9.7	(ARM7-12.2.2) WG1 IALA Guideline 1046 Ed.2 Response Plan for Marking New Wrecks December 2005 ARM7 - October 2017	ARM7	WG1
ARM8- 9.8	(ARM7-12.2.3) WG1 IALA Guideline MAtoN ARM6 - October 2017	ARM7	WG1
ARM8- 9.9	Draft Model Course L1.2 Master of AtoN Management new edition 20180612 shgb – update from ENG8 at ENG8-11.8.1	WWA	WG1
ARM8- 9.10	(ENAV22-12.1.1) Liaison ENAV to ARM on AMRD Draft docs	ENAV22	WG1
ARM8- 9.10.1	(ENAV22-12.1.2) draft IALA Recommendation on AMRD-For ARM	ENAV22	WG1
ARM8- 9.10.2	(ENAV22-12.1.3) draft IALA Guideline on AMRD- For ARM	ENAV22	WG1
ARM8- 9.11	(ENAV22-12.1.4) Liaison-IALA to ITU-WP5B on AMRD	ENAV22	WG1
ARM8- 9.12	(ENG8-12.1.19) Liaison Note on E-111 Port Traffic Signals	ENG8	WG1
ARM8- 9.13	(ENG8-12.1.24) Liaison Note to ARM8 re Racons in busy harbours post plenary	ENG8	WG1
ARM8- 9.14	(ENG8-12.1.25) Liaison Note to ARM & ENAV re VDES R-Mode system requirements comments post plenary	ENG8	WG1
ARM8- 10.1	(ENAV21-14.2.5) Draft IALA Guideline on Maritime Service Portfolios - Digitising Maritime Services (v13) WMO	Neil Moodie WMO	WG2
ARM8- 10.2	Ship reporting ARM Task 5.2.2 v1.2	Fred Pot	WG2
ARM8- 10.2.1	(PAP34-8.1.2) Liaison from ENAV to PAP on ship reporting	Fred Pot	WG2
ARM8- 10.2.2	Ship Reporting CG Charter v1.3	Fred Pot	WG2



Number	Input Paper Title	Source	Presented by / WG
ARM8- 10.3	For awareness_ WMO has established a global network of National Marine Services Focal Points to contribute to marine safety	Neil Moodie WMO	WG2
ARM8- 10.4.1	S-201 0.0.7 overview	Phil Day	WG2
ARM8- 10.4.2	S-201 Product Specification - draft 0 0 7 July 2017 - main document	Phil Day	WG2
ARM8- 10.4.3	S-201 - Annex A	Phil Day	WG2
ARM8- 10.4.4	S-201 - Annex B1	Phil Day	WG2
ARM8- 10.4.4.1	S-201 - Annex B1 zip file	Phil Day	WG2
ARM8- 10.4.5	S-201 - Annex B2	Phil Day	WG2
ARM8- 10.4.6	S-201 - Annex C	Phil Day	WG2
ARM8- 10.4.7	S-201 - Annex D1	Phil Day	WG2
ARM8- 10.4.8	S-201 - Annex E	Phil Day	WG2
ARM8- 10.4.9	S-201 - Annex F	Phil Day	WG2
ARM8- 10.4.10	S-201 - Annex G	Phil Day	WG2
ARM8- 10.4.11	S-201 - Annex H	Phil Day	WG2
ARM8- 10.5	Ship Report Registry Description v1.2	Fred Pot	WG2
ARM8- 10.5.1	WG2 Presentation Standardized and Automated Ship Reporting v1.1	Fred Pot	WG2
ARM8- 10.6	Proposal re S-125 Navigation Services (enhanced List of Lights) Product Specification	Dave Lewald	WG2 / All
ARM8- 10.7	Status of the S-201 Product Specification Development	Dave Lewald	WG2 / All
ARM8- 10.8	Proposed way forward of S-201 AtoN Product Specification	Sewoong Oh	WG2
ARM8- 10.9	S-200 test bed project	Sewoong Oh	WG2
ARM8- 10.10	Introduction to Marine Resource Name (MRN) Concept	Dave Lewald	WG2
ARM8- 10.11	(ENAV22-12.1.12) S-211 Context	ENAV22	WG2
ARM8- 10.12	(ENAV22-12.1.13) Liaison to IALA Secretariat reach out for emerging tech	ENAV22	WG2/ All
ARM8- 10.13	(ENAV22-12.1.20) Liaison ENAV to ARM on Maritime Services	ENAV22	WG2
ARM8- 10.14	(ENAV22-12.2.3) Draft IALA Guideline on MSPs v21	ENAV22	WG2
ARM8- 10.15	ENAV22-12.1.16 Liaison ENAV to Council to hold a Workshop on Initial Operating Capability (IOC) for e-Navigation	Jon Leon Ervik	WG2/ All information
ARM8- 10.16	(ENG8-12.1.9) Liaison Note to ARM8 on the Cyber Security Workshop	ENG8	WG2
ARM8- 10.16.1	(ENG8-12.1.10) Draft Cyber Security Workshop Proposal	ENG8	WG2
ARM8- 10.17	(ENG8-12.1.23) Draft Proposal for R-Mode workshop 2019 post plenary	ENG8	WG2
ARM8- 10.18	Information paper on harmonized AtoN change terms	Eivind Mong	WG2
ARM8- 10.19	HGDM2 joint input WMO-IHO-IMPA-IALA to HGDM2 final (003)	IALA Secretariat	WG2
ARM8- 11.1	Recommendation R1002 Ed1 Risk Management for Marine Aids to Navigation-June 2017.	IALA Secretariat	WG3
ARM8- 11.2	Guideline 1018 Ed.3 Risk Management_May2013	IALA Secretariat	WG3
ARM8- 11.3	Guideline 1058 Ed.2 Use of Simulation as a Tool for Waterway Design and AtoN Planning June 2011	IALA Secretariat	WG3
ARM8- 11.4	Guideline 1123 Ed1 The use of IWRAP MKII-June 2017	IALA Secretariat	WG3
ARM8- 11.5	Guideline 1124 Ed1 The use of PAWSA MKII_June 2017	IALA Secretariat	WG3

Number	Input Paper Title	Source	Presented by / WG
ARM8- 11.6	IALA Model Course L1.3 on Risk Management Ed 2 December 2015 rev3	IALA Secretariat	WG3
ARM8- 11.7	Guideline 1138 Ed.1 The use of SIRA_Dec2017	IALA Secretariat	WG3
ARM8- 11.8	(ENG8-12.1.14) Liaison Note to ARM8 on Proposed Draft Model Course L1.2	ENG8	WG3
ARM8- 11.8.1	(ENG8-12.1.2) Draft Model Course L1.2 Master of AtoN Management Ed.1	ENG8	WG1
ARM8- 11.9	(ENG8-12.1.8) Liaison note ENG8 to ARM8 on simulation guideline update	ENG8	WG3

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

Number	Output Paper Title	Source	Action
ARM8- 12.1.1	(ARM8-9.11) Liaison-IALA to ITU-WP5B on AMRD ARM output	WG1	To Council early To ITU WP 5B
ARM8- 12.1.2	Liaison Note ARM to ENG re Racons in busy harbours	WG1	To ENG9
ARM8- 12.1.3	Liaison Note ARM to IALA Committees re MAtoN lights	WG1	To ENG9 ENAV23
ARM8- 12.1.4	Draft Model Course L1.2 Master of AtoN Management Ed.1_20181024	WG1	To Council
ARM8- 12.1.5	(ARM8-11.9.6) WWA on Maritime Law_20181024	WG1	To LAP
ARM8- 12.1.6	(ARM8-9.14) Liaison Note ARM to ENG & ENAV on VDES R-Mode	WG1	To ENG9 ENAV23
ARM8- 12.1.7	Draft Liaison Note IALA to IMO-NCSR on AMRD 20181024	WG1	To Council early To NCSR6
ARM8- 12.1.8	Liaison Note ARM to Secretariat Questionnaire on use of E-111 in Port Traffic Signals_20181025	WG1	To Secretariat To ENG9 To VTS46
ARM8- 12.1.9	(ARM8-10.16.1) Draft Cyber Security Workshop Proposal	WG2	To Council To PAP
ARM8- 12.1.10	(ARM8-10.6) Input to IHO NIPWG Proposal for the Development of S-125 PS	WG2	To Council To IHO NIPWG
ARM8- 12.1.11	Liaison note ARM to Secretariat MS 8 Vessel Shore Reporting briefing to HGDM2	WG2	To Secretariat
ARM8- 12.1.11.1	Attachment 1 to Liaison note ARM8 to Secretariat on MS 8 Vessel Shore Reporting	WG2	To Secretariat
ARM8- 12.1.11.2	Attachment 2 to Liaison note ARM8 to Secretariat on MS 8 Vessel Shore Reporting Presentation v1.1	WG2	To Secretariat
ARM8- 12.1.12	Liaison note to ENAV on Development of AMRD – Draft IALA Recommendation and Guideline	WG1	To ENAV23
ARM8- 12.1.13	Liaison ARM to ENAV Suggestions regarding workshop on developing an IOC for e-Navigation	WG2	To ENAV23
ARM8- 14.1	Report on session 8 of the ARM Committee (ARM8)	IALA Sec	To Council for noting

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

Number	Working Paper Title	Source	Action
ARM8- 12.2.1	ARM Task Plan updated at ARM8	Vice Chair	To ARM9
ARM8- 12.2.2	(ARM8-11.2) Draft Guideline 1018 Ed.4 Risk Management	WG3	To ARM9
ARM8- 12.2.3	(ARM8-11.4) Draft Guideline 1123 Ed.1 The use of IWRAP MkII	WG3	To ARM9
ARM8- 12.2.4	(ARM8-11.5) Draft Guideline 1124 Ed.1 The use of PAWSA MkII	WG3	To ARM9
ARM8- 12.2.5	(ARM8-11.7) Draft Guideline 1138 Ed.1 The use of SIRA	WG3	To ARM9
ARM8- 12.2.6	Recommendation R0138 Ed.2 The Use of GIS and Simulation by Aids to Navigation Authorities	WG3	To ARM9

Number	Working Paper Title	Source	Action
ARM8- 12.2.7	Guideline 1058 Ed.2 Use of Simulations a Tool for Waterway Design and AtoN Planning	WG3	To ARM9
ARM8- 12.2.8	Guideline 1097 Ed.1 Technical Features and Technology relevant for Simulation of AtoN	WG3	To ARM9
ARM8- 12.2.9	(ARM8-11.6) IALA Model Course L1.3 on Risk Management Ed 2 December 2015 rev3.	WG3	To ARM9
ARM8- 12.2.10	Draft Guideline G1081-Ed.1.1 Provision of Virtual Aids to Navigation May2013	WG1	To ARM9
ARM8- 12.2.11	(ARM8 9.8) WG1 Draft IALA Guideline on MAtoN - ARM8 rev oct 2018	WG1	To ARM9
ARM8- 12.2.12	(ARM8-9.1) IALA Regions at the Poles 20180225 shgb	WG1	To ARM9
ARM8- 12.2.13	(ARM8-9.5) Draft IALA Guideline on the Governance of AtoN Service Provision Rev1 20181025	WG1	To ARM9
ARM8- 12.2.14	(ARM 8-9.4 Draft Recommendation on Governance of AtoN Service Delivery 20181024	WG1	To ARM9
ARM8- 12.2.15	WG1 IALA Guideline 1046 Ed.2 Response Plan for Marking New Wrecks December 2005 - ARM8	WG1	To ARM9
ARM8- 12.2.16	Draft Recommendation E-110-Ed.4 Rhythmic Characters of Lights on AtoN 181023	WG1	To ARM9
ARM8- 12.2.17	Draft Guideline G1116-Ed.1 Selection of Rhythmic Characters and Synchronisation of AtoN 181023	WG1	To ARM9
ARM8- 12.2.18	ARM8-12.2.18 Draft IALA Guideline on Requirements Traceability	WG2	To ARM9

*Action Items for Secretariat*

1. The Secretariat is requested to confirm with Mr Bae the accuracy of the comments re lights in the note on his presentation in section 5.6 of the ARM8 report. 10
2. The Secretariat is requested to forward the ARM Committee Task Plan for 2018-2022, ARM8-12.2.1, to ARM9. 10
3. The Secretariat is requested to include rapporteur reports on the agenda for ARM9 in accordance with section 7 of the ARM8 report. 11
4. The Secretariat is requested to forward ARM8-12.1.2 to ENG9. 11
5. The Secretariat is requested to forward ARM8-12.1.6 to ENG9. 11
6. The IALA Secretariat is requested to arrange the questionnaire as indicated in ARM8-12.1.8, and collate the responses for the input paper to ARM9 in cooperation with Gaelle Nassif and James Collocott.. 11
7. The Secretariat is requested to forward the document ARM8-12.1.4 Master of Aids to Navigation Management to Council for approval. 12
8. The Secretariat is requested to forward ARM8-12.2.13/ARM8-12.2.14 as working papers to ARM9. 12
9. The Secretariat is requested to forward ARM8-12.1.5 to the LAP. 12
10. The Secretariat is requested to forward the liaison note ARM8-12.1.1 to ITU WP 5B. 12
11. The Secretariat is requested to forward the liaison note ARM8-12.1.7 to NSCR6. 12
12. The Secretariat is requested to forward the liaison note ARM8-12.1.12 to ENAV23. 12
13. The Secretariat is requested to forward ARM8-12.2.15 to ARM9. 13
14. The Secretariat is requested to forward the draft Guideline on Mobile AtoN (ARM8-12.2.11) to ARM9. 13
15. The Secretariat is requested to forward ARM8-12.1.3 to ENG9 and ENAV23. 13
16. The Secretariat is requested to forward the draft Guideline 1081 on Virtual AtoN (ARM8-12.2.10) to ARM9. 14
17. The Secretariat is requested to forward the draft Recommendation E-110 (ARM8-12.2.16) and draft Guideline 1116 (ARM8-12.2.17) to ARM9. 14
18. The IALA Secretariat is requested to provide a plan for review of the NAVGUIDE showing the sections allocated to the ARM Committee with the relevant sections of the NAVGUIDE in Word format to ARM9. 14
19. The IALA Secretariat is requested to send output document ARM8-12.1.9 to Council to approve the proposed workshop on cyber security and to PAP37 to discuss the date of the workshop. 14
20. The IALA secretariat is requested to set “ground rules” on NAVGUIDE development (see report section 10.4). 15
21. The IALA Secretariat is requested to consider what is the best way to deal with information in IALA documentation that is outside IALA areas of responsibility in the context of the proposed MS Guideline and seek advice of the LAP. 15
22. The IALA Secretariat is requested to brief the attendees of the HGDM2 on vessel shore reporting in accordance with paper ARM8-12.1.11 and attachments ARM8-12.1.11.1 and ARM8-12.1.11.2. 15
23. The IALA Secretariat is requested to send Liaison note ARM8.12.1.12 to ENAV23. 17
24. The IALA Secretariat is request to forward paper ARM8-12.1.13 to ENAV23. 17
25. The IALA Secretariat is requested to send the drafted NIPWG input paper to IHO by early January 2019, paper ARM8-12.1.10 refers. 17

26.	The IALA Secretariat is requested to forward papers ENAV21-9.5 and ENAV21-14.1.8 to WG2 at ARM9.	17
27.	The IALA Secretariat is requested to forward paper ARM8-10.17 to WG2 at ARM9 in order that the Committee can discuss and define user requirements for R-Mode.	17
28.	The IALA Secretariat is requested to forward the working paper ARM 12.2.18 to ARM9.	17
29.	The Secretariat is requested to add a new task 2.2.2 under Standard 1020 from ARM8 report section 10.18.	17
30.	The Secretariat is requested to forward the working paper ARM8-12.2.2 (ARM8-11.2) Draft Guideline 1018 Ed.4 Risk Management as input to ARM9 for WG3.	18
31.	The Secretariat is requested to forward the working paper ARM8-12.2.3 (ARM8-11.4) Draft Guideline 1123 Ed.1 The use of IWRAP MkII as input to ARM9 for WG3.	18
32.	The Secretariat is requested to forward the working paper ARM8-12.2.4 (ARM8-11.5) Draft Guideline 1124 Ed.1 The use of PAWSA MkII as input to ARM9 for WG3.	18
33.	The Secretariat is requested to forward the working paper ARM8-12.2.5 (ARM8-11.7) Draft Guideline 1138 Ed.1 The use of SIRA as input to ARM9 for WG3.	18
34.	The Secretariat is requested to forward the working paper ARM8-12.2.6 Recommendation R0138 Ed.2 The Use of GIS and Simulation by Aids to Navigation Authorities as input to ARM9 for WG3.	19
35.	The Secretariat is requested to forward the working paper ARM8-12.2.7 (ARM8-11.3) Guideline 1058 Ed.2 Use of Simulations a Tool for Waterway Design and AtoN Planning as input to ARM9 for WG3.	19
36.	The Committee Secretary is requested to forward the working paper ARM8-12.2.8 Guideline 1097 Ed.1 Technical Features and Technology relevant for Simulation of AtoN as input to ARM9 for WG3.	19
37.	The Secretariat is requested to forward the working paper ARM8-12.2.9 (ARM8-11.6) Draft IALA Model Course L1.3 on Risk Management Tool Ed 2 as input to ARM9 for WG3.	19
38.	The IALA Secretariat is requested complete the analysis of the 2017 IALA Questionnaire.	20
39.	The Secretariat is requested to forward the summary of the ARM8 Committee report (ARM8-14.1) to Council to note.	20

#### *Action Items for Members*

40.	Jan-Hendrik Oltmann is requested to submit an input paper on IALA requirements management system, which collates requirements that cover the whole remit of IALA, to ARM9.	14
41.	Committee participants are requested to submit updates on the development of S-201.	16



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