REPORT OF THE 7TH SESSION OF THE

IALA ATON REQUIREMENTS AND

MANAGEMENT (ARM) COMMITTEE

23 to 27 October 2017

Wim van der Heijden
Committee Secretary

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Report of the 7th Session of the IALA
AtoN Requirements and Management (ARM) Committee
Executive Summary

The 7th Session of the ARM Committee was held at IALA Headquarters from 23 to 27 October 2017.

51 Delegates from 25 countries and one Sister Organisation participated in ARM7; 9 participants for the first time.

This was the seventh meeting for the 2014-2018 Work Programme and the ARM Committee considered 40 input papers and produced 15 output papers of three Working Groups.

Key outputs included:

Completion and/or revision of the following Recommendations and Guidelines:

- Recommendation R1015 on Marking of hazardous wrecks;
- Recommendation R1016 on Mobile AtoN (MAtoN);
- Guideline G1137 on AtoN Management in protected areas;
- Guideline G1138 on the use of SIRA.
- Recommendation O-130 Categorisation and Availability Objectives for Short Range Aids to Navigation (revision);

The following liaison notes to Council were prepared:

- to approve the draft Recommendation R1015;

- to approve the other draft Recommendations and Guidelines as given above;

- to approve a Liaison to ITU on Autonomous Maritime Radio Devices with accompanying briefing note using the early approval procedure by e-mail correspondence.

Additional liaison notes were prepared as follows:

- To ENAV on S-201;

- To IHO on portrayal issues;

- To Korea on pictograms.

The SG approved the invitation from Argentina to organise an ARM Committee meeting in Buenos Aires in spring 2020.

The draft new Work Programme for the Committee (2018-2022) was completed and reviewed. It will be forwarded to PAP35 for further consideration.

Overall status of the ARM Committee 2014-2018 Work Programme after ARM7:

Task	Start Session	Planned End Session	Revised End Session	Progress Indicator			Status Overview
				Green	**Yellow**	**Red**	
TD#1 – Requirements for AtoN systems							
1.1.1 Contribute to standards generated by Secretariat	4	7		☒	☐	☐	Completed ARM6
1.1.2 Workshop on AIS AtoN (real and virtual)	2	4	5	☒	☐	☐	Initiated ARM2 Completed ARM5
1.1.3 Guideline on the marking of wrecks as defined by the Nairobi Wreck Convention	4	7	WP 18-22	☒	☐	☐	Ongoing WP 18-22
1.1.4 Guideline on the use of pictograms on AtoN	3	5	7	☒	☐	☐	Commenced ARM3 Completed ARM6
1.1.5				☐	☐	☒	Task merged with 1.1.4 ARM3
1.1.6 Guideline on the use of mobile AtoN	4	7̶	WP 18-22	☐	☒	☐	Recommendation completed ARM7
1.2.1 Populate S-100 as requested by ENAV Committee	1	7	WP 18-22	☒	☐	☐	Commenced ARM1 Ongoing WP 18-22
TD#2 – Management for AtoN services							
2.1.1 Develop guidance for AtoN authorities on disaster recovery	1	4	6	☒	☐	☐	Commenced ARM1 Completed ARM6
2.1.2 Contribute to standards generated by Secretariat	4	7		☒	☐	☐	Completed ARM6
2.1.3 Consider guidance for authorities on the use of enavigation services	4	7		☐	☐	☒	Stopped due to ENAV progression
2.5.1 Develop guidance on the management of AtoN in environmentally protected areas	2	7		☒	☐	☐	Commenced ARM2 Completed ARM7
TD#3 – Marine Spatial Planning							
3.1.1 Develop guidance for AtoN authorities on the use of Marine Spatial Planning	1	4	6	☒	☐	☐	Commenced ARM1 Completed ARM6
3.4.1 Oversee development of Risk Management Toolbox	4	7	WP 18-22	☒	☒	☐	New task ARM4 WG3 Ongoing WP 18-22
3.4.2 Develop guidance on PAWSA	4	7		☒	☐	☐	New task ARM4 WG3 Completed ARM6
3.4.3 Develop guidance on SQUART / ISTAR (SIRA)	4	7		☒	☐	☐	New task ARM4 WG3 Completed ARM7
3.4.4 Develop guidance on use of IWRAP	5	7		☒	☐	☐	New task ARM4 WG3 Completed ARM6
3.4.5 Training / workshop / seminar in association with WWA	5	7̶	WP 18-22	☐	☒	☐	New task ARM4 WG3
3.4.6 IALANET	5	7	WP 18-22	☒	☐	☐	New task ARM4 WG3 Ongoing WP 18-22
TD#4 – International coordination and liaison							
4.1.1				☐	☐	☒	Task cancelled ARM3
4.2.1				☐	☐	☒	Task cancelled ARM3
4.2.2 Coordinate a limited review of the IALA Navguide to incorporate amended guidelines and recommendations and other necessary updates via wiki	1	7		☒	☐	☐	Commenced ARM1 Completed ARM7
4.2.3				☐	☐	☒	Task cancelled ARM3
4.2.4				☐	☐	☒	Task cancelled ARM3
4.2.5 Amend IALA dictionary as appropriate including harmonisation of definition of AtoN	1	7		☒	☐	☐	Commenced ARM1 Completed ARM5 and ARM7
4.2.6 Map existing ARM documentation to 7 overarching standards	3	7		☒	☐	☐	New task ARM3 Commenced ARM3 Completed ARM6
4.2.7 Rewrite ARM documentation to meet new document structure in conjunction with IALA assistance	3	7	WP 18-22	☒	☐	☐	New task ARM3 Commenced ARM3 Ongoing WP 18-22

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Report of the 7th Session of the IALA

AtoN Requirements and Management (ARM) Committee

1.   INTRODUCTION

The 7th meeting of the ARM Committee was held from 23 to 27 October 2017 at IALA with Phil Day as Chair. Roger Barker assisted him due to the absence of the Vice-Chair. The Secretary for the meeting was Wim van der Heijden.

51 Delegates from 25 countries and one Sister Organisation participated in ARM7; 9 participants for the first time.
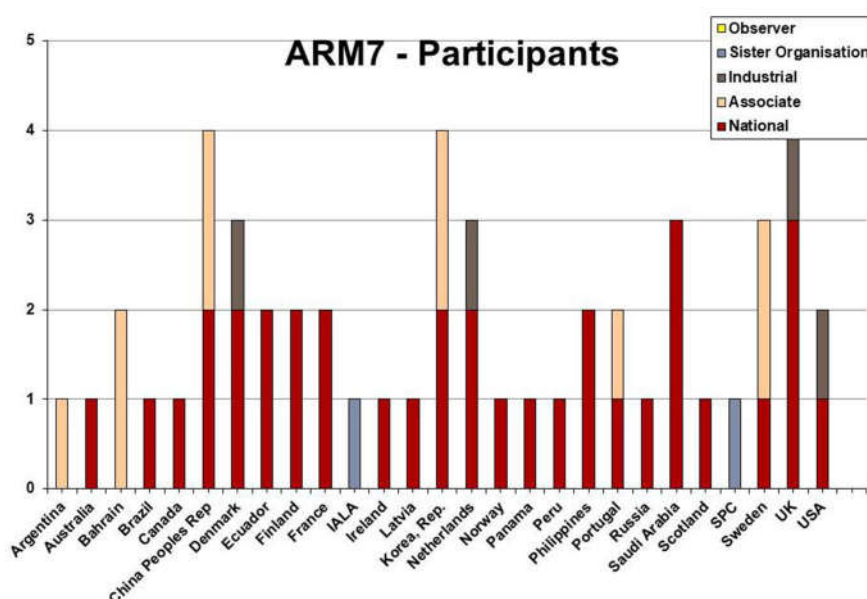
The Chair opened the meeting and invited the Secretary-General Francis Zachariae to speak. He welcomed all, in particular all new participants, for the ARM Committee meeting in the renovated IALA Headquarter which was recently opened. He mentioned the growth of the IALA Membership and focussed on the ongoing developments from NGO to IGO.

Information was given on the proposed new structure of the Committees for the Work Period 2018-2022. Some tasks of the ENAV Committee will go to ENG and ARM.

The Core Values of IALA were highlighted: Credible, Dynamic, Result-oriented and Connecting. The new Technical Operations Manager, Minsu Jeon was introduced. Upcoming events were presented in particular the 19th IALA Conference in 2018.The participants were informed that just a few places for the Industrial Members exhibition are still available.

Paper ARM7-1.0 (presentation) refers.

The Committee Chair welcomed all participants to ARM7 once again in Saint Germain en Laye. This being the seventh and last session of the working period 2014-2018. He made a special welcome to members participating for the first time. He thanked the US Coast Guard for hosting and organising ARM6 in Seattle, WA, USA, and Korean Ministry of Oceans and Fisheries for organising ARM5 in Seoul, Korea.

1.1 Administrative announcements

Paper ARM7-1.1 (presentation) refers

The Secretary carried out the safety and administration brief which is also available at the registration desk.

He highlighted on the acronym used for Aids to Navigation which has been amended to Marine Aids to Navigation at PAP33 with AtoN as acronym. All text references should use Marine Aids to Navigation. The acronym MAtoN will be used for Mobile AtoN.

The following question was asked:

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?

No patents were noted.

1.2 Approval of the agenda

The agenda was reviewed and adopted (ARM7-1.2).

1.3 Introductions and apologies

Individual Committee members were asked to introduce themselves.

The Committee noted apologies from members who were unable to attend as given in ANNEX B.

1.4 Programme for the week

The Chair explained the programme for the week (ARM7-1.4). Members were attended on the meeting of Working Group 3 on Tuesday and Wednesday followed by the Committee dinner. The ice-breaking event to be held on Monday just after the closing of the plenary session in order to get to know each other, the new members in particular. The traditional football match will be played on Tuesday afternoon.

2. REVIEW OF ACTION ITEMS FROM ARM6

Input paper ARM7-2.1 refers.

It was noted that all IALA Secretariat actions and actions of Committee Members from ARM6 had been completed.

3. REVIEW OF INPUT PAPERS

The input papers were reviewed and appointed to the working groups or were noted by the Committee (no further action required). As well as on the IALA web they are also temporary available on the file share system.

4. REPORTS FROM OTHER BODIES

4.1 IALA Council

The Committee noted the Council report, 64th Session, IALA, June 2017, paper ARM7-4.1.1 refers.

ARM related issues included the approval of Justin Kimura as Vice Chair for the remaining time of this working period and the approval of eleven new Recommendations and Guidelines as produced during ARM6. The new rule regarding Committee Chair and Vice-Chair length of service was noted.

4.2 IALA Policy Advisory Panel

The Committee noted the PAP33 report, paper ARM7-4.2.1 refers.

PAP34 was held just the week before ARM7 and no report is available yet. The focus of PAP34 was the review of the Standards, the Strategy Plan and the future Committee structure.

4.3 IMO

There were no new reports from IMO meetings received for this session.

4.4 ITU

The Committee noted the report from ITU WP5B (ARM7-4.4.1) on Autonomous Maritime Radio Devices and the ITU documents (ARM7-4.4.2 and ARM7-4.4.3). Related action will be discussed in WG1.

5. REPORTS FROM RAPPORTEURS

5.1 Autonomous vessels and "mobile AtoN's"

Rapporteur: Guttorm Tomren

Paper ARM7-5.1 (presentation) refers.

Several initiatives in Norway with respect to autonomous vessels were presented including an autonomous ferry which is coming into operation. Some challenges concerning the use of mobile AtoN were highlighted and questions of responsibility were raised.

5.2 E-Navigation in developing countries

Rapporteur: Omar Frits Eriksson

Paper ARM7-5.2 (presentation) refers.

Most relevant aspect of e-Navigation is connectivity. The presentation showed mobile telephone coverage in several parts of the world indicating that connection is not always guaranteed. The number of ships using satellite connection is increasing. Embryonic e-Navigation for all users was introduced based on browser or App interfaces. A couple of web based applications were shown and can further be developed to a world-wide maritime web and open source applications.

5.3   IHO liaison

Rapporteur: Guttorm Tomren

Paper ARM7-3.2.3 refers

A number of discrepancies between paper and ECDIS charts were highlighted as examples where portrayal improvements are proposed for AtoN. Committee members were asked to provide new examples to Guttorm Tomren who is the IALA accredited representative at IHO portrayal task group.

6.   PRESENTATIONS

6.1   Characters for Mobile AtoN (MAtoN)

Martin Bransby showed some proposed light characters to be used for MAtoN to demonstrate the visual effect of different flickering characters. Feedback from the Committee on the characters was requested.

6.2   Drifting Wreckage

Paper ARM7-6.2 (presentation) refers.

Hee Tae Kim presented some cases of wreckage in Korea and the responding actions taken. The Korea Operational Oceanographic System (KOOS) was introduced. One application is the prediction of oil or floating wreckage spreading with a high resolution.

6.3   Guidance on breakwater and submerged breakwaters

Paper ARM7-6.3 (presentation) refers.

Jun Ki Bae introduced the review of the Maritime Buoyage System with respect to the proposed inclusion of breakwater and submerged breakwaters. Competent Authority regulations can lead to local markings to protect coastal facilities, which were illustrated by a couple of examples.

6.4   IALA World Wide Academy (WWA)

Paper ARM7-6.4 (presentation) refers.

Omar Frits Eriksson showed some traffic density plots to illustrate the relationship between the amount of traffic and the Accredited VTS and AtoN Training Organizations. It showed that there are gaps between the existing training organisations and those in need. The WWA made over 1200 Recommendations in 30 missions to advise members.

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The Chair thanked all speakers for the presentations which are available on the ARM7 page in the Committee section of the IALA website.

7.   ESTABLISH WORKING GROUPS

The Chair outlined the procedure to be followed by working groups, including the associated paperwork, after which WG1, WG2 and WG3 were established and their tasks outlined. A list of working group participants is at Annex C.

Working Group (WG)	Working Group Chair / Vice Chair
WG1 – Navigational Requirements	Roger Barker / Jorge Teles
WG2 – Continuous Improvement	Guttorm Tomren / Johan Westerlund
WG3 – Risk Management	Omar Frits Eriksson / Roger Barker

8.   WORKING GROUP 1 – NAVIGATIONAL REQUIREMENTS (WG1)

The WG commenced its work by reviewing the agenda items and tasks assigned. The Chair provided clarification on what work needed to be finished at the current session and on the tasks that would progress to the next work period.

8.1   Develop guidance on the Marking of Wrecks as defined by the Nairobi Wreck Convention (Task 1.1.3)

Task Leader: Jean-Luc Fontan
The WG finished the draft recommendation on the marking of hazardous wrecks. Further work was made on the revision of IALA Guideline 1046 in order to incorporate the provisions for the marking of drifting wrecks.
The WG also proposed changes to the IALA Dictionary.

Action item:

*The **Committee Secretary** is requested to forward the draft Recommendation R1015 on Marking of Wrecks (ARM7-12.1.12) and the accompanying Liaison Note to Council (ARM7-12.1.15) for approval.*

*The **Committee Secretary** is requested to forward the draft revised Guideline 1046 (ARM7-12.2.2) to ARM8 for further consideration.*

*The **Committee Secretary** is requested to forward the new definitions (ARM7-12.1.14) to the IALA Secretariat to adapt changes in the IALA Dictionary.*

8.2   Develop guidance on the use of Mobile AtoN (Task 1.1.6)

Task Leader: Alfredo Dominguez
The WG reviewed the draft recommendation and guideline for Mobile AtoN (MAtoN) and continued the development of both documents. The WG started by reviewing the liaison notes received from ENAV, ENG and VTS Committees and included the comments provided in the MAtoN documentation.
The draft recommendation on the use of MAtoN is finished and ready to be submitted to Council for approval.
The draft guideline still needs further work. There is still a need for defining if there should be a new character for a colored light that could represent a MAtoN. Following a presentation from the GLA regarding a proposed new character for the MAtoN, and the ENG Committee input, it was decided that further testing is needed on that area.
The input papers ARM7-4.4.1 to 4.4.3 were analyzed and were answered by email by the Chair.

Action items:

*The **Committee Secretary** is requested to forward the draft Recommendation R1016 on Mobile AtoN (ARM7-12.1.13) to Council for approval.*

*The **Committee Secretary** is requested to forward the draft Guideline on Mobile AtoN (ARM7-12.2.3) to ARM8 for further consideration.*

8.3   Consider guidance for authorities on the use of enavigation services (Task 2.1.3 shared with WG2)

Task Leader: Roger Barker
Task was closed after ARM6.

9.   WORKING GROUP 2 – CONTINUOUS IMPROVEMENT (WG2)

The working group progressed and finalised tasks as detailed below. An input paper from Korean Association of Aids to Navigation concerning external feedback on the new Pictograms guideline was also discussed. Input paper from WWA where reviewed. In addition, an input paper from the NHS about ENC portrayal was reviewed and additional input provided.

Some WG members participated on both Risk Management (WG3) and WG2.

The Chair provided a brief overview of the objectives for this meeting and input papers were reviewed.

The Chair advised that the priority tasks for WG2 at ARM7 were:

- To finalise the development of guidance on the Management of AtoN in Environmentally Protected Areas. (Task 2.5.1).
- To finalise the updating and revision of the IALA NAVGUIDE including use of IALA-Wiki. (Task 4.2.2).
- To amend the IALA Dictionary as appropriate including harmonisation of definition of AtoN (Task 4.2.5).
- To populate S-100 as requested by the ENAV Committee (Task 1.2.1). This included considering an input paper from ENAV, detailing actions taken following ARM liaison note from ARM6.
- Rewrite existing ARM documentation to meet new document structure in conjunction with IALA assistance (Task 4.2.7 shared with WG1).

9.1   Develop guidance on the Management of AtoN in Environmentally Protected Areas - Task 2.5.1

Task Leader: Gaelle Nassif

Assisted by: Youki Mallette, Andrey Oleynikov, Bo Hermanson, Yeong-jae Kim, Ivan Vargas

The guideline was finalised and proofread during ARM7.

Action item:

*The **Committee Secretary** is requested to forward the draft Guideline G1137 on the Management of AtoN in EPA (ARM7-12.1.6) to Council for approval.*

9.2   Update and revision of the IALA NAVGUIDE including use of IALA-Wiki - Task 4.2.2

Task leader: Dave Merrill
Assisted by: David Hayes, Martin Bransby, Johan Westerlund, Youki Mallette, Guttorm Tomren, David Jeffkins, Christian Herrlich

Input for ARM7 was received from ENAV with a completely revised chapter 4 to be amended to the NAVGUIDE. In addition, the VTS committee sent a liaison note stating the VTS section has been updated. Both committees also provided updated tracking tables. The forwarded changes were noted and amended

to the NAVGUIDE section of the IALA WIKI. The NAVGUIDE section of the IALA WIKI is thereby up to date and ready for extraction and publication.

The ARM Committee acknowledges the contributions of the other IALA Committees.

Action item:

The **Committee Secretary** *is requested to lock the NAVGUIDE section of the IALA WIKI in preparation of publication.*

The **Committee Secretary** *is requested to forward the Tracking Table (ARM12.2.4) to ARM8 for further use.*

9.3   Amend the IALA Dictionary as appropriate including harmonisation of definition of AtoN - Task 4.2.5

Task Leader: Dave Merrill

Assisted by: Youki Mallette, Johan Westerlund

Work progressed on this task during ARM7. The group found that the proposed change to the definition of Fog Signal and Audible Signal had not been added to the dictionary, so this proposed change was resubmitted.

Action items:

ARM members *are requested to provide relevant changes to the IALA Dictionary to the task leader prior to ARM8 (david.merrill@uscg.mil).*

The **Committee Secretary** *is requested to forward output paper (ARM7-12.1.7) to the IALA Secretariat and advise on how to adopt changes to the IALA Dictionary in the future.*

9.4   Populate S-100 as requested by the ENAV Committee - Task 1.2.1

Task Leader: Martin Bransby
Assisted by: Johan Westerlund

A liaison note was received from ENAV Committee regarding the input provided from ARM after ARM6. ENAV Committee has noted the input provided and updated the documentation accordingly in S-201 version 0.0.7. In addition ENAV Committee requested some clarification from ARM regarding attributes for pictograms, as well as general approval of the documents. Clarification was provided as requested and the documentation considered.

Action items:

The **Committee Secretary** *is requested to forward output paper ARM7-12.1.8 to the ENAV committee.*

9.5   Rewrite existing ARM documentation to meet new document structure in conjunction with IALA assistance - Task 4.2.7 (shared with WG1)

Task Leader: Cathrine Steenberg
Assisted by: Guttorm Tomren

Mapping of documents was completed prior to ARM6 and two documents were rewritten and finalised during ARM6. No additional documents edited during ARM7 due to the task leader working in WG3 and finalisation of other tasks taking higher priority.

The task remains for the 2018-2022 work period.

9.6   Input Papers reviewed by Working Group 2

The following input papers, not directly linked to ARM Committee work program tasks, were also reviewed by members:

- ARM7-3.2.1 WWA on Maritime Law – Input from the WWA in which the Academy Board explains the need for Target States to be given clearer directions on the inclusion of articles relating to the safety of navigation in their maritime law. A draft example of such directions was included, with a proposal to consider writing a recommendation and guideline on the subject. The committee discussed the matter and noted that such guidance is needed and could be included as a task for the ARM committee during the 2018-2022 work period.

Action item:

The **Committee Secretary** *is requested to forward the WWA paper on Maritime Law (ARM7-12.2.1) as working paper to ARM8 for further consideration.*

- ARM7-3.2.3 – NHS-examples_Maris-ECDIS_20072017 – As a part of the liaison with IHO, Guttorm Tomren is participating in meetings at IHO regarding S-100WG and ENCWG work. During the last meeting, a task group was formed regarding display issues with ENC charts. SHOM (France) is leading the group. IALA also participates in this task group. The input paper from NHS is an example of subjects to be discussed.
  The ARM Committee provided additional input regarding portrayal of AtoN in ENC charts. The output paper will be sent to the task group by email.

Action item:

Guttorm Tomren *is requested to forward the input regarding portrayal to the IHO task group.*

- ARM7-3.2.4 – Proposal revise of Pictogram – The Korean Association of Aids to Navigation forwarded a request from industrial actors in Korea that the guideline should maybe contain more detailed advice. The committee discussed this and decided no revision of the guideline itself is necessary, the guideline offers flexibility for the Competent Authority to implement further regulations concerning pictograms, the symbols and usage listed in the guideline are examples, not a complete list of allowable pictograms.

Action item:

The **Committee Secretary** *is requested to forward the liaison note on pictograms to the Korean Association of Aids to Navigation (ARM7-12.1.9) to inform the authors.*

10. WORKING GROUP 3 – RISK MANAGEMENT (WG3)

The WG commenced its work by agreeing on the draft agenda from the ARM7 plenary session:

1.1. Oversee development of Risk Management Toolbox (Task 3.4.1)

1.2. Develop guidance on ISTAR (SQUART) (Task 3.4.3)

1.3. Training / workshop / seminar in association with WWA (Task 3.4.5)

1.4. IALANET (Task 3.4.6)

10.1 Oversee development of Risk Management Toolbox – Task 3.4.1

The IALA Risk Management toolbox and the need for further improvement and development were discussed around the table and the WG identified the following topics:

- Cyber risk
  - risk of tampering with connected AtoN,
  - risk associated with non-regulated virtual aids,
  - interference with ship board systems.
- What happens when vessels become autonomous?
  - Political environment, support from Government (AtoN),

o   Risk modelling using autonomous agents,

  o   Assessment of simulations (benchmarking against the perfect human model).

Increasing connectivity exposes AtoN to increased possibility of cyber-attack (e.g. monitoring of AtoN), hence there must be a future need for a generic guideline as to how to deal with it. However, besides one example within the WG of unauthorised virtual AtoN, the WG has no experience with cyber-attack. Nevertheless, it is a growing concern and it would be relevant to collect additional examples within the Committee, if any.

The WG Chair informed that the provider of IWRAP, Gatehouse, participates in the Risk Assessment Courses and picks up user experience, resulting in added functionality in their regular releases.

The WG concluded that by including the RAMS method to the IALA Risk Management toolbox, the toolbox is fit for purpose as it stands at the moment.

The WG Chair asked for possible research topics where research is needed in order to support the work of the IALA committees. Potential research topics identified were:

- Causation factors (IWRAP). Methods to quantify Causation Factors.

- Inventory and analysis of near misses and real incidents using AIS data and other available information.

FORCE Technology expressed an interest in cooperation on developing a method to assess risk associated with the operation of autonomous vessels.

Action item:

WG3 *recommend the* **ARM Committee** *to get rapporteurs for the next committee period concerning experience with cyber risk and autonomous vessels.*

10.2   Develop guidance on RAMS (ISTAR) (SQUART) – Task 3.4.3

Input paper ARM7-10.2.1 and the accompanying spreadsheets were opened for discussion in the working group. The text in the guideline required further discussion and revision before finalizing it for approval in Council.

The WG decided that the guideline should focus on the process of RAMS rather than how to use the spreadsheet. The WG decided that the guideline should stand alone with any required forms for completion being included as annexes to the document. Hence, the spreadsheet itself will not be included in the guideline. One of the annexes will include the Risk Assessment Matrix.

Additional annexes were made providing examples of hazards and scenarios.

Ernst Bolt raised his concern of the current naming of the tool, RAMS. The concern is that "simple" indicates that the entire risk assessment will be simple, which is a misconception. However, no better naming of the tool was decided. During the plenary Committee meeting it was decided to rename it to "The use of the Simplified IALA Risk Assessment Method (SIRA)".

Action item:

The **Committee Secretary** *is requested to forward the draft Guideline G1138 on the use of SIRA (ARM7-12.1.11) to Council to approve.*

10.3   Training / workshop / seminar in association with WWA – Task 3.4.5

The Chair informed that two Risk Management Courses are planned for 2018. One course in South Africa and one in Japan.

Although there is an increasing interest for the Risk Management Course, there is still at need to raise awareness of the existence of the courses.

The WWA has looked into the need for developing a refresher course for IWRAP, but finds that there most likely will be a bigger need for a course for advanced users of IWRAP in the future.

10.4   IALANET – Task 3.4.6

The IALANET has now been moved from Danish Maritime Authority and is now hosted by IALA.

The Chair gave a presentation about IALANET. The presentation focussed on future functionality such as detection of abnormal behaviour (possible near misses) and a store for retrieval of AIS data for IWRAP. These functionalities are currently in the process of being developed.

Action item:

WG3 *is encouraged to consider ongoing benefits of sharing data through the IALANET and other value propositions such as data sharing system, trusted AIS repository, AIS-store, AIS coverage analysis, Risk levels on global scale.*

11.   REVIEW OF WORK PROGRAMME

11.1   Current Work Programme (2014 – 2018)

Input papers ARM7-11.1.1 and ARM7-11.1.2 refers.

The overall status table of the ARM Work Programme 2014 -2018 was reviewed and updated.

11.2   Future Work Programme (2018 – 2022)

Input papers ARM7-11.2.1 and ARM7-11.2.2 refers

The draft Work Programme 2018 – 2022 was completed, presented and discussed. New suggestions from the Working Groups have been incorporated.

Action item:

*The **Committee Secretary** is requested to forward the draft ARM Work Programme (2018 – 2022) (ARM7-11.2.3) to PAP35 for consideration.*

Task	Start Session	Planned End Session	Revised End Session	Progress Indicator			Status Overview
				Green	**Yellow**	**Red**	
TD#1 – Requirements for AtoN systems							
1.1.1 Contribute to standards generated by Secretariat	4	7		☒	☐	☐	Completed ARM6
1.1.2 Workshop on AIS AtoN (real and virtual)	2	4	5	☒	☐	☐	Initiated ARM2 Completed ARM5
1.1.3 Guideline on the marking of wrecks as defined by the Nairobi Wreck Convention	4	7	WP 18-22	☒	☐	☐	Ongoing WP 18-22
1.1.4 Guideline on the use of pictograms on AtoN	3	5	7	☒	☐	☐	Commenced ARM3 Completed ARM6
1.1.5				☐	☐	☒	Task merged with 1.1.4 ARM3
1.1.6 Guideline on the use of mobile AtoN	4	~~7~~	WP 18-22	☐	☒	☐	Recommendation completed ARM7
1.2.1 Populate S-100 as requested by ENAV Committee	1	7	WP 18-22	☒	☐	☐	Commenced ARM1 Ongoing WP 18-22
TD#2 – Management for AtoN services							
2.1.1 Develop guidance for AtoN authorities on disaster recovery	1	4	6	☒	☐	☐	Commenced ARM1 Completed ARM6
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3.1.1 Develop guidance for AtoN authorities on the use of Marine Spatial Planning	1	4	6	☒	☐	☐	Commenced ARM1 Completed ARM6
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3.4.3 Develop guidance on SQUART / ISTAR (SIRA)	4	7		☒	☐	☐	New task ARM4 WG3 Completed ARM7
3.4.4 Develop guidance on use of IWRAP	5	7		☒	☐	☐	New task ARM4 WG3 Completed ARM6
3.4.5 Training / workshop / seminar in association with WWA	5	~~7~~	WP 18-22	☐	☒	☐	New task ARM4 WG3
3.4.6 IALANET	5	7	WP 18-22	☒	☐	☐	New task ARM4 WG3 Ongoing WP 18-22
TD#4 – International coordination and liaison							
4.1.1				☐	☐	☒	Task cancelled ARM3
4.2.1				☐	☐	☒	Task cancelled ARM3
4.2.2 Coordinate a limited review of the IALA Navguide to incorporate amended guidelines and recommendations and other necessary updates via wiki	1	7		☒	☐	☐	Commenced ARM1 Completed ARM7
4.2.3				☐	☐	☒	Task cancelled ARM3
4.2.4				☐	☐	☒	Task cancelled ARM3
4.2.5 Amend IALA dictionary as appropriate including harmonisation of definition of AtoN	1	7		☒	☐	☐	Commenced ARM1 Completed ARM5 and ARM7
4.2.6 Map existing ARM documentation to 7 overarching standards	3	7		☒	☐	☐	New task ARM3 Commenced ARM3 Completed ARM6
4.2.7 Rewrite ARM documentation to meet new document structure in conjunction with IALA assistance	3	7	WP 18-22	☒	☐	☐	New task ARM3 Commenced ARM3 Ongoing WP 18-22

12.   REVIEW OF OUTPUT AND WORKING PAPERS

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

The output documents listed at Annex E were reviewed and agreed.

The Committee Secretary was requested to forward the output documents, as indicated earlier in the report.

The Chair then thanked the Chairs, Vice Chairs and members of the working groups for all their efforts during the week.

13.   ANY OTHER BUSINESS

13.1   19th IALA Conference 2018

Paper ARM7-6.5 (presentation) refers.

Jaehoon Jeong presented the 19th IALA Conference in Incheon, Republic of Korea which will be from 27 May till 2 June 2018. The theme for the Conference is "Successful voyages, sustainable planet – A new era for Marine Aids to Navigation in a Connected World". For further information and registration: www.Iala2018korea.org.

13.2   Future Committee and Working Group office holders

The Chair asked for nominations for people who will be interested in Working Group Chairs and Vice-Chairs for the 2018-2022 Working period. He also asked for National Members who would be interested in being Committee Vice-Chair. He noted the final decision on this position is approval by Council.

13.3   Football match

The traditional football match was played on Tuesday against a local team. Unfortunately the ARM Committee was defeated.

14.   REVIEW OF SESSION REPORT

The report of the meeting (ARM7-14) was reviewed and approved by the Committee on the 27th October 2017. Deadline for comments and corrections can be submitted until 10 November 2017.

Action Item:

The **Committee Secretary** is requested to forward the summary of the report of ARM7 (ARM7-14) after completion (deadline 10 November 2017) to the IALA Council, to note.

15.   DATE AND VENUE OF NEXT MEETINGS

19th IALA Conference will be from 28 May till 2 June 2018, Incheon, Republic of Korea.

ARM8 will be in 15 till 19 October 2018 at IALA HQ, Saint Germain en Laye, France.

The Committee received an invitation from Argentina to have an ARM Committee meeting in Buenos Aires. This will take place in April 2020. The SG was asked to confirm the invitation.

For other IALA related events see the overview on the IALA web site.

16.   CLOSING OF THE MEETING

The Chair thanked Jean-Luc Fontan for his contributions to the Committee during 14 years and for his efforts to make the Committee dinners a great success. He wished him success in the future after his retirement.

The Chair again expressed his thanks for all the hard work done during the meeting and the last four years.

He then closed the ARM7 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.

7th Meeting of the AtoN Requirements and Management Committee (ARM)

The 7th meeting of the **ARM Committee** will be held from 23 – 27 October 2017, at IALA, St. Germain en Laye, France.

The opening plenary will commence at 1300 on Monday 23 October 2017, and the closing plenary will end at approximately 1300 on Friday 27 October.

Committee Chair, Vice-Chair and Working Group Chairpersons are requested to meet at 0900 on Monday 23 October.

Agenda

2.   Introduction

    2.1.   Administration and Safety Briefing

    2.2.   Approval of agenda

    2.3.   Apologies and introductions

    2.4.   Programme for the week

3.   Review of action items from last meeting

    3.1.   Review of action items from ARM6

    3.2.   Final Report from ARM6 - for reference

4.   Review of input papers

    4.1.   IALA Standards

    4.2.   ARM Committee related input

    4.3.   Input from other Committees

5.   Reports from other bodies:

    5.1.   IALA Council – 64th Session, June 2017

    5.2.   Policy Advisory Panel (PAP) & Legal Advisory Panel (LAP)

    5.3.   IMO

    5.4.   ITU

6.   Reports from rapporteurs

    •   Autonomous vessels and Mobile AtoN's   Guttorm Tomren

    •   e-Navigation in developing countries   Omar Frits Eriksson

7.   Presentations

    •   Characters for Mobile AtoN (MAtoN)   Martin Bransby

    •   Drifting Wreckage   Hee Tae Kim

    •   Guidance on breakwater and submerged breakwaters   JunKi Bae

    •   World Wide Academy   Omar Frits Eriksson

8. Establish Working Groups

9. WG1 - Navigational requirements

   9.1. Develop guidance on the marking of wrecks as defined by the Nairobi Wreck Convention (Task 1.1.3)

   9.2. Develop guidance on the use of mobile AtoN (Task 1.1.6)

   9.3. Consider guidance for authorities on the use of enavigation services (Task 2.1.3 shared with WG2)

10. WG2 - Continuous improvement

    10.1. Develop guidance on the management of AtoN in environmentally protected areas (Task 2.5.1)

    10.2. Coordinate a limited review of the IALA NAVGUIDE to incorporate amended recommendations and guidelines and other necessary update via IALA Wiki (Task 4.2.2)

    10.3. Amend IALA Dictionary as appropriate including harmonisation of definition of AtoN (Task 4.2.5)

    10.4. Populate S-100 as requested by the ENAV Committee (Task 1.2.1)

    10.5. Rewrite ARM documentation to meet new document structure in conjunction with IALA assistance (Task 4.2.7 shared with WG1)

11. WG3 - Risk management

    11.1. Oversee development of Risk Management Toolbox (Task 3.4.1)

    11.2. Develop guidance on RAMS (ISTAR) (SQUART) (Task 3.4.3)

    11.3. Training / workshop / seminar in association with WWA (Task 3.4.5)

    11.4. IALANET (Task 3.4.6)

12. Work Programme

    12.1. Current Work Programme (2014 – 2018)

    12.2. Future Work Programme (2018 -2022)

13. Review of output and working papers

    13.1. Output papers

    13.2. Working papers

14. Any Other Business

    14.1. 19th IALA Conference 2018 presentation

15. Review of session report

16. Date and venue of next meeting

17. Close of the meeting

ANNEX B   **ARM7 PARTICIPANTS**

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Apologies were received from the following.

Name	Organisation	Country
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Marek Ledochowski	Maritime Office Gdynia	Poland

New Members

Name	Organisation	Country
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Joonatan AHLROOS	Finnish Transport Agency	Finland
Huang JIANSHE	Jimei University	China
Musaed AL DREES	Saudi Arabia Ports Authority	Saudi Arabia
Faisal JARBOA	Saudi Arabia Ports Authority	Saudi Arabia
Capt Maher AL HAMDI	Saudi Arabia Ports Authority	Saudi Arabia
Marco NIEUWENHUIZE	Orga Offshore	Netherlands
Mariana DE CASTRO MICHIMOTO	Centro de Sinalizacao Nautica Almirante Moraes Rego	Brazil
Grant HUDSON	AMSA	Australia

Observers

Name	Organisation	Country
none		

ANNEX C   WORKING GROUP PARTICIPANTS

Working Group 1   Navigational Requirements

	Name	Organisation / Country
1	Roger Barker (Chair)	THLS / England and Wales
2	Jorge Teles (Vice Chair)	Direccao de Farois / Portugal
3	Aigars Gailis	Latvian Hydrographic Service / Latvia
4	Alfredo Dominguez	Tideland / USA
5	Donette Dolina	Philippines Coast Guard / Philippines
6	Donggen Luo	China Maritime Safety Adm. / People's Rep. of China
7	Grant Judson	AMSA / Australia
8	Hee Tae Kim	Ministry of Oceans and Fisheries / Republic of Korea
9	Huang Jianshe	Jimei University / People's Rep. of China
10	Jean-Luc Fontan	Direction des Affairs Maritimes / France
11	Joris Brouwers	Ministry of Infrastructure / the Netherlands
12	Manuel Ruidias	Peruvian Navy / Peru
13	Mariana Michimoto	CAMR / Brazil
14	Marko Nieuwenhuize	Orga Offshore / the Netherlands
15	Oscar Belwa	Philippines Coast Guard / Philippines
16	Peter Dam	Danish Maritime Authority / Denmark
17	Risto Lang	Finnish Transport Agency / Finland
18	Rogelio Valencia	Panama Maritime Authority / Panama
19	Rory Mullins	Commissioners of Irish Lights / Ireland
20	Tony Taylor	Pharos Marine / UK
21	Vitor Dias	Portuguese Lighthouse Authority / Portugal

Working Group 2   Continuous Improvement

	Name	Organisation / Country
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11	YongLi Wang	Maritime Safety Administration / China
12	Youki Mallette	Canadian Coast Guard / Canada

Working Group 3   Risk Management

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1	Omar Frits Eriksson (Chair)	IALA
2	Roger Barker (Vice Chair)	THLS / England and Wales
3	Abbas Bushehri	MENAS / Bahrain
4	Catherine Steenberg	Force Technology / Denmark
5	Ernst Bolt	Ministry of Infrastructure and Environment / the Netherlands
6	Faisal Jarboa	SEAPA / Saudi Arabia
7	Jaehoon Jeong	Korean Association of Aids to Navigation / Rep. of Korea
8	Jakob Bang	DMA / Denmark
9	Jeong Sik Kim	Ministry of Oceans and Fisheries / Republic of Korea
10	Johan Pettersson	Swedish Transport Agency / Sweden
11	Ke Ranxuan	Research Center, Navigation Aids Technology / Peoples Rep. of China
12	Maher Al Hamdi	SEAPA / Saudi Arabia
13	Mats Hörström	Swedish Transport Agency / Sweden
14	Minsu Jeon	SPC
15	Musaed Al Drees	SEAPA / Saudi Arabia
16	Raul Escalante	Hidrovia SA / Argentina

ANNEX D   LIST OF INPUT PAPERS

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

	Document number	Agenda item	Title
1.	ARM7-1.2	1.2	Agenda
2.	ARM7-1.4	1.4	Programme for the week
3.	ARM7-2.1	2.1	Actions items ARM6
4.	ARM7-2.2	2.2	(ARM6-14) Report of ARM6
5.	ARM7-3.2.1	3.2	WWA on Maritime Law
6.	ARM7-3.2.2	3.2	e-Navigation Underway Asia-Pacific Conference Report 170905
7.	ARM7-3.2.3	3.2	NHS-examples_Maris-ECDIS_20072017
8.	ARM7-3.2.4	3.2	Proposal revise of Pictogram
9.	ARM7-3.3.1	3.3	(ENG7-11.1.32) Liaison to ARM on disparity between editions of Guideline 1041 v2 post plenary
10.	ARM7-3.3.2	3.3	(ENG6-11.1.19) Draft IALA Recommendation on Good Practice
11.	ARM7-4.1.1	4.1	(C64-19.1) Approved report of Council 64
12.	ARM7-4.2.1	4.2	(PAP33-18.8) Report PAP38
13.	ARM7-4.2.2	4.2	(PAP33-18.10) Draft Strategic Vision 2018-2026
14.	ARM7-4.2.3	4.2	(LAP17-23.5) IALA Patent Policy approved by LAP
15.	ARM7-4.2.4	4.2	(LAP18-22.3) Information on patents
16.	ARM7-4.4.1	4.4	20170612 Report of ITU-R WP5B meeting 22 May to 2nd June 2017
17.	ARM7-4.4.2	4.4	WP5B-TD-117E
18.	ARM7-4.4.3	4.4	R15-WP5B-170522-TD-0120!!MSW-E WD Report AMRD
19.	ARM7-8.1.1	8.1	(ARM6-12.2.4) WG1 IALA Recommendation on Marking Drifting Wreckage ARM6 - April 2017
20.	ARM7-8.1.2	8.1	(ARM6-12.2.5) WG1 IALA Guideline 1046 Ed.2 Response Plan for Marking New Wrecks December 2005 ARM6 - April 2017
21.	ARM7-8.2.1	8.2	(ARM6-12.2.6) WG1 IALA Recommendation MAtoN ARM6 - 26 April 2017
22.	ARM7-8.2.2	8.2	(ARM6-12.2.7) WG1 IALA Guideline MAtoN ARM6 - April 26 2017
23.	ARM7-8.2.3	8.2	(ENAV21-14.1.25) Liaison to ARM MAtoN - rev1 post plenary
24.	ARM7-8.2.4	8.2	(VTS44-12.1.13) Liaison VTS to ARM on MAtoNs
25.	ARM7-8.2.5	8.2	(VTS44-12.1.14) Annex 1-VTS respons to ARM7_(ARM6-12.2.6-WG1 IALA Recommendation MAtoN ARM6 - 26 April 2017)
26.	ARM7-8.2.6	8.2	(VTS44-12.1.15) Annex 2_VTS respons to ARM7_(ARM6-12.2.7) WG1 IALA Guideline MAtoN ARM6 - April 26 2017)
27.	ARM7-8.2.7	8.2	(ENG7-11.1.31) Liaison to ARM on Mobile AtoN
28.	ARM7-9.1.1	9.1	(ARM6-12.2.2) WG2-Draft Guideline on EPA 2017-04-27 01

	Document number	Agenda item	Title
29.	ARM7-9.2.1	9.2	(ARM6-12.2.1) WG2-navguide_2015_tracking_table 02
30.	ARM7-9.2.2	9.2	(ENAV21-14.1.1) Final draft IALA NAVGUIDE Ch 4 on ENAV post plenary1
31.	ARM7-9.2.3	9.2	(VTS44-12.1.2) Liaison VTS to ARM on NAVGUIDE
32.	ARM7-9.2.4	9.2	(VTS44-12.1.3) VTS -navguide_2015_tracking_table 02
33.	ARM7-9.2.5	9.2	(ENG7-11.1.34) Liaison Note to ARM re NAVGUIDE revision
34.	ARM7-9.2.6	9.2	(ENG7-11.1.33) Navguide 2015 tracking table - updated ENG7
35.	ARM7-9.4.1	9.4	(ENAV21-9.11) Revision of AtoN Information Product Specification S-201
36.	ARM7-10.2.1	10.2	(ARM6-12.2.3) WG3 Working Paper 1 Draft Guideline on the use of RAMS
37.	ARM7-11.1.1	11.1	(ARM6-11.1.3) ARM Work Programme 2014-2018 revised ARM6
38.	ARM7-11.1.2	11.1	Overall status of the ARM Committee 2014 after ARM6
39.	ARM7-11.2.1	11.2	(ARM6-11.2.2) ARM Work Programme 2018-2022 revised ARM6
40.	ARM7-11.2.2	11.2	Sweden sta+sma new work period

Presentations given by rapporteurs and presenters

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

Document number	Agenda item	Title
ARM7-1.0	1	SG Welcome
ARM7-1.1	1	General information ARM7
ARM7-5.1	5	Autonomous vessels and mobile AtoNs
ARM7-5.2	5	ENAV in Developing Countries
ARM7-6.2	6	Drifting Wreckage
ARM7-6.3	6	Guidance on breakwater and submerged breakwaters
ARM7-6.4	6	WWA brief to ARM7
ARM7-13.1	13	19th IALA Conference Promotional Presentation

ANNEX E LIST OF OUTPUT DOCUMENTS AND WORKING PAPERS

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

Number	Title	Status
ARM7-14	Report ARM7	To Council to note
ARM7-12.1.1	Draft Liaison note to ITU-R WP5B on MAtoN rev1	To Council to approve
ARM7-12.1.2	Liaison ARM to Council on liaison note to ITU-WP5B	To Council to note
ARM7-12.1.3	Briefing note - ITU delegates - WP5B - Nov 2017 – rev2	To Council to note
ARM7-12.1.4	Recommendation R0130(O-130) Ed3.1 Categorisation and Availability Objectives for Short Range Aids to Navigation	To Council to approve
ARM7-12.1.5	Liaison ARM to Council on draft Recommendations and Guidelines	To Council to note
ARM7-12.1.6	Draft Guideline G1137 on AtoN Management in protected areas	To Council to approve
ARM7-12.1.7	ARM WG2 Dictionary amendment proposal form_resubmitted	To Secretariat to action
ARM7-12.1.8	ARM Input to ENAV on S-201	To ENAV to action
ARM7-12.1.9	Liaison ARM Korea_on_pictograms v02	To Korea to inform
ARM7-12.1.10	IHO input on ENC presentation	Guttorm Tomren to IHO to action
ARM7-12.1.11	Draft Guideline G1138 on the use of SIRA	To Council to approve
ARM7-12.1.12	Draft Recommendation R1015 on Marking of Hazardous Wrecks	To Council to approve
ARM7-12.1.13	Draft Recommendation R1016 on Mobile AtoN	To Council to approve
ARM7-12.1.14	ARM WG1 Dictionary amendment proposal Hazard plus Wreck	To Secretariat to action
ARM7-12.1.15	ARM7 Input to Council on Marking of hazardous wrecks	To Council to note
ARM7-11.2.3	ARM Work Programme 2018-2022 revised ARM7	To PAP to consider

e-Mails are submitted for answer/review/action to external parties and other Committees.

Number	Title	Status

Working papers will remain within the Committee for further review during ARM8.

Number	Title
ARM7-12.2.1	(ARM7-3.2.1) WWA on Maritime Law
ARM7-12.2.2	(ARM7-8.1.2) WG1 IALA Guideline 1046 Ed.2 Response Plan for Marking New Wrecks December 2005 ARM7 - October 2017
ARM7-12.2.3	(ARM7-8.2.2) WG1 IALA Guideline MAtoN ARM6 - October 2017
ARM7-12.2.4	(ARM7-9.2.1) WG2-navguide_2015_tracking_table 02-1 thurs02

ANNEX F   **ACTION ITEMS**

Action Items for Secretariat

Action Items for Members

IALA