



IALA ENG COMMITTEE

REPORT OF THE 18th SESSION OF THE IALA ENGINEERING AND SUSTAINABILITY (ENG) COMMITTEE

8 - 18 April 2024

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18 April 2024

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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 session 18th of the IALA Engineering and Sustainability (ENG18) Committee

Executive Summary

The 18th meeting of the ENG Committee (ENG18) was held from 8 to 18 April 2024, chaired by Alwyn Williams and vice-chaired by Michel Cousquer. The technical officer for the meeting was Jaime Alvarez.

There were 104 registered participants, 26 for the first time, from 29 countries.

This was the second meeting for the 2023-2027 Work Programme and the Committee considered 45 input papers and produced 8 output papers.

Key highlights:

- The ENG Committee progressed on the finalization or review of the following Guidelines to be forwarded to ARM committee:
 - ENG18-13.0.1.1 Draft Guideline on Cyber Security
 - ENG18-13.1.1.1 Draft Guideline on General Overview of a Floating AtoN
- The ENG Committee concluded the following liaison notes:
 - ENG18-13.0.1 Liaison note to ARM on the Cyber Security guideline
 - ENG18-13.1.1 Liaison note to ARM on General Overview of Floating AtoN
 - ENG18-13.2.1 Draft Liaison note to RTCM on the update of RTCM 10402.3 Standard
 - ENG18-13.2.3 Liaison to MASS on Enhanced Radar Positioning Systems
- The ENG Committee concluded the following inputs:
 - ENG18-13.2.2 Proposal for new IALA Dictionary definitions related to R-Mode
 - ENG18-13.2.4 Revised Workshop proposal on future radionavigation and radiocommunication systems
- The ENG Committee decided to send back to ENG19 to provide further content and clarifications the following working documents:
 - ENG18-13.1.2 Liaison note to the WWA on Task Round Robin Light Measurement
 - ENG18-13.2.5 Draft Guideline on Medium Frequency R-Mode signal structure and navigation message

Planned intersessional work before ENG19:

- Frank Herman and Partel Keskula will work intersessional to review and amend existing documentation ready for detailed comment among the group at ENG19.
- The task group in charge of the task ENG-2.3.4 Update G1066 Design of floating AtoN moorings is entitled to create a list of Visual images that were drafted and the task group plans to work as a group to incorporate visuals and further edits intersessional.
- The task ENG-6.3.1 Update G1008 Remote control and monitoring of AtoN will continue intersessional including the subtasks of IoT protocol and RCMS.
- Two intersessional meetings are expected to be scheduled before ENG19 aiming at working on the input paper "Recognition of Augmentation Systems in the WWRNS" to present a mature draft in ENG19 for the final comments, endorsement and approval. Interested participants are invited to contact José Luis Martin jose-luis.martin@essp-sas.eu.

- It is planned that the draft guideline on GNSS Satellite Based Precise Point Positioning (PPP) Maritime Service should be further developed intersessional with the aim to provide input to ENG19. Committee members who are interested in contributing to this guideline are invited to provide their interest by E-Mail to gbcouple@163.com.

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Report of the session 18th of the IALA Engineering and Sustainability (ENG18) Committee

GENERAL

The 18th meeting of the ENG Committee (ENG18) was held from 8 to 18 April 2024, chaired by Alwyn Williams and vice-chaired by Michel Cousquer. The technical officer for the meeting was Jaime Alvarez.

There were 104 registered participants, 26 for the first time, from 29 countries.

This was the second meeting for the 2023-2027 Work Programme and the Committee considered 45 input papers and produced 8 output papers.



1. INTRODUCTION

1.1 Welcome from the Secretary-General

The Secretary-General, Francis Zachariae, welcomed all participants on-site and online and was glad to see them during the ENG18 session.

The Secretary-General, noticed with special interest the input papers received from China, Korea, EUSPA, industrial members and individuals that contribute highly. It was also noted the number of inputs on moorings, light performance, remote monitoring, battery management proving the different participants expertise, and importance to create this forum in IALA for sharing experience and knowledge.

The Secretary-General recognised the nature of the work being more and more transversal, thus including other committees, some examples such as S-200, Cyber security and MASS show this. The MASS report from the workshop held in the HQ – October 2023, which is an input paper and available on the website addresses relevant conclusions and useful to guide the IALA members in the right direction when it comes to the future autonomy of ships.

The heritage and culture forum was highlighted due to its development and great interest from IALA membership. The WAtON Day in Genova on 2-3 July will be the place to celebrate the Lighthouse of the Year – the Lanterna of Genova.

The Secretary-General, addressed the process of transforming IALA into an Inter-governmental Organization with a current status of 27 ratifications made by the parliaments of the different states, other two ratifications or accessions to the Convention are in the pipeline. When 30 States have ratified, accepted or acceded to the Convention, IALA will be an IGO.

The Secretary-General wished all the participants good luck and thanked them once again for their contribution to the IALA family over this busy period.

1.2 Approval of the agenda

The agenda (ENG18-1.2.1) was reviewed and adopted.

1.3 Introductions and apologies

The Chair welcomed all participants, both in-person and online, especially the new participants of the Committee.

See **Error! Reference source not found.** for the list of attendees and new participants.

No apologies were received.

1.4 Working arrangements

The following statements were read to Committee members:

IALA is required to comply with the General Data Protection Regulations of the European Union. In the report of this meeting, IALA will include a list of participants with their contact information. Any participant who wishes to remove their personal information from the participants' list should advise the Committee Secretary as soon as possible.

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

2. REVIEW OF ACTION ITEMS FROM ENG17

2.1 Action Items – IALA Secretariat

All action items from ENG18 (ENG18-2.1.1) were covered before the present meeting.

2.2 Action Items – ENG Committee Participants

The Chair reviewed the progress of the action items with no further comment.

3. REVIEW OF INPUT PAPERS

3.1 Review of input papers to ENG18

Late input papers were received, and are highlighted in the list of input papers in ANNEX C.

4. REPORTS FROM OTHER BODIES

4.1 IALA

4.1.1 IALA Council

Minsu Jeon, the Technical Operations Manager, reported on various key outcomes and decisions made at the Council 79 held from December 11 to 14 2023, at the Headquarters. This session marked the beginning of the new 2023 - 2027 work period. A significant outcome was the approval of the revised committee work program.

During the meeting, several documents were approved by the Council, including Guideline G1180 focusing on Resilient Position, Navigation, and Timing, the updated Model Course C0103-2 for VTS Supervisor training, and Guideline G1181 addressing VDES VHF Data Link (VDL) Integrity monitoring. Additionally, the Council endorsed a workshop proposal concerning the VTS competent authority, with Italy offering to host the event.

A decision was made to select the Faro di Genova 'Lanterna' in Italy as the Heritage Lighthouse for the year 2024.

The Secretariat presented a paper to the Council on the necessity for more frequent updates to manuals, highlighting the rapid pace of technological evolution and the need for timely updates to ensure relevance and effectiveness. The request for authorization to implement a new process allowing committees to expedite the publication of updates to manuals was approved.

The Council also expressed interest in the progress of the Maritime Connectivity Platform, tasking the Secretariat with preparing a detailed report for presentation at the 80th Council meeting in June.

Furthermore, a councillor requested the generation of a harmonized list of work item progress status. Discussion followed regarding the means of providing an overview of the status to the work that led to the Secretariat's agreeing evaluate the means of reporting to ensure consistency in reporting in the new work program online platform.

4.1.2 IALA Policy Advisory Panel

Minsu Jeon, reported that the 52th session of PAP which took place from 6th to 8th February 2024. Key highlights included the decision to implement new work programme tools for upcoming committee seasons and the approval of draft Terms of Reference (ToRs) for Committees and Subsidiary Bodies within the new Intergovernmental Organization (IGO) for submission to the inaugural General Assembly.

Additionally, updates were provided on various matters, including IALA's involvement in the review of the STCW Code, AIS document review, S-200 development, document management and data harmonization.

4.1.2.1 Sustainability WS

Alwyn Williams reported on the arrangements for going on the workshop on Sustainability that will take place in Dublin the 6 to 10 October 2025. The technical programme will be soon available on the IALA website.

4.1.2.2 AtoN engineering WS

Greg Hansen (AMSA) provided the updated information on the workshop on AtoN engineering that will be held in Sydney the 14 to 18 October. The workshop will be followed by the ENG19 Committee.

Registrations are open through this link: <https://www.iala-aism.org/product/workshop-on-aton-engineering/>

Additional information through this link: <https://events.iala-aism.org/aton-engineering-workshop/>

4.1.2.3 Future on future radionavigation and radiocommunication systems WS

Hideki Noguchi presented the ongoing work to prepare the input to the Council80 in June 2024 regarding the Workshop proposal on future radionavigation and radiocommunication systems WS. The input ENG18-3.2.0.7.1 Revised Workshop proposal on future radionavigation and radiocommunication systems refers to this topic.

4.1.3 2023-2027 Work Plan and task register

Michel Cousquer (ENG committee vice chair) informed the committee about the task register website that is being put in place and will provide the participants with an overview of the tasks within this period.

4.1.4 World Wide Academy

Latifa Oumouzoune provided the Academy update (Training and Capacity building activities) during the previous years with a focus on the expected work to be done on bringing up to date the content of the modules including DTEC, VTS and the future workshop on AtoN engineering discussions.

4.2 Update on MASS task group

Minsu Jeon explained the work done in IALA in regard to the progress on the guidance that IALA wishes to promulgate for AtoN Authorities, service providers, and industrials among other stakeholders to cope with the provision of AtoN in areas where MASS is or is expected to be deployed.

4.3 IMO

Hideki Noguchi provided a summary of milestones reached during the recent IMO meetings – The input paper ENG18-4.5.1 IALA Report Joint IMO-ITU Expert group 9th to 13th October 2023 was addressed:

- Briefing on the outcome of relevant IMO and ITU bodies
- Draft performance standards for NAVDAT and amendments to resolution MSC.509(105)
- Revision of resolution A.1001(25) - Provision of recognised mobile satellite services for the global maritime distress and safety system (GMDSS)
- Consideration of matters related to VDES
- Improving the security and integrity aspects of AIS
- Presentation on "AIS security" by Gareth Wimpenny, CIRM
- Presentation on "VHF Data Exchange System" by Hideki Noguchi, Japan

4.4 IHO

Minsu Jeon, reported on recent activities with the IHO. A liaison note was issued to NIPWG regarding S-125, furthermore, plans were discussed for the joint workshop to be held in the United States later in the year. Coordination meetings are currently underway for this event. During discussions, it was highlighted that the completion of S-125 is essential for the progression of S-124 and the IHO will be invited to Headquarters for further liaison and discussions on this and other matters.

Emphasis was also placed on the significance of IALA's attendance at the Regional Hydrographic Commissions, underscoring the importance of collaboration and engagement between IALA and hydrographic commissions at the regional level for promoting the workaround AtoN.

4.5 ITU

4.5.1 ITU-R WP5B

The summary of ITU related activities addressed in the result of WRC-23 in Dubai is available in the full report under the reference ENG18-4.5.1.

4.6 RTCM

Stig Erik continued with the update on RTCM, the late input paper ENG18-4.6.1 RTCM SC104 Liaison Note on DGNSS provides the view of RTCM regarding the standard RTCM 10402.3 and proposes rather than updating the RTCM 10402.X standard with new generic multi-constellation, multifrequency messages that RTCM believe will not be used, RTCM proposes to keep the existing RTCM 10402.3 standard to support legacy users. This standard could be amended to add support for R-mode as proposed in the IALA Liaison note.

D@S North America Conference will be hosted by RTCM followed by the RTCM assembly. The event will take place on May 8th-9th, 2024, in Atlantic Beach, FL, USA with the theme of "Evolving Navigation through e-Navigation."

4.7 PIANC

Minsu Jeon provided an update on PIANC:

- Recent publications on:
 - fender guidelines;
 - air pollution and carbon emissions indicators for inland waters;
 - crisis management of accidents in navigation hydraulic structures; and
 - best practices in the planning and management of multimodal logistics platforms along inland waterways.
- Setting up of a PIANC EnviCom Working Group 256 on 'Understanding Blue Carbon: a Practical Guide.

- Upcoming events
 - PIANC-APAC Asia Pacific Conference 2024: August 27, 2024 in Sydney, Australia.
 - PIANC World Congress: 35th PIANC World Congress on 29 April – 03 May 2024, Cape Town, South Africa.
 - NordPIANC Meeting 2024: September 3, 2024 - September 5, 2024, Norway.
 - PIANC-IADC Conference: October 18, 2024 in Vietnam.

4.8 CIE

CIE Division 2 have their annual meeting in Paris at the end of May. On 2nd June, they are hosting a seminar at the Bureau International des Poids et Mesures, Paris, to celebrate the centenary anniversary of the visual response curve, $V(\lambda)$. There are no work updates directly relevant to IALA at this time.

5. ADVERTISING PRESENTATIONS

The following presentations were provided during the WG sessions. The recording can be watched [here](#).

1. Integrity for high accuracy system Roberto Capua (RTCM)
2. ORMObASS (R-Mode in the Baltic Sea) Stefan Gewies (DLR)
3. IWETT (use of E-GNSS/SBAS for inland navigation) Gergely Mezo (ROSE)
4. EGNOS Maritime Service and IEC standard publication Jose-Luis Martin (ESSP)
5. Development of procedures and requirements for the recognition of augmentation systems in the World-wide radionavigation system Jose-Luis Martin (ESSP)
6. RIPTIDE Project Florin Mistrapau (GMV)
7. Public Private Partnerships (PPPs) in the lighthouse operations in Japan Kinji Takeuchi (Japan Coast Guard)
8. Amoy Harbor Master Office (Ke Ranxuan, Navigation Institute of JiMei University)
9. A Report on the Fresnel 2023 Seminar (Jonghun KIM, Paichai University, Republic of Korea)

6. OVERVIEW OF PLANNED WORK FOR ENG18

The working group Chairs informed participants about the tasks expected to be developed during the Committee session. Such tasks and activities could be consulted in the task register <https://www.iala-task-register.com/committee-homepage?id=2>.

- 7.1. WG 1 - Visual and Physical AtoN - Malcolm Nicholson
- 7.2. WG 3 - Radionavigation Services – Michael Hoppe
- 7.4. WG 4 - Heritage & Culture - Peter Hill

7. ESTABLISH WORKING GROUPS AND TASK GROUPS

Working Group		Working Group Chair	Working Group Vice Chair
WG 1	Visual and Physical AtoN	Malcolm Nicholson	Lingyan Wang, Aw Eng Soon
WG 3	Radionavigation Services	Michael Hoppe	Jeffrey van Gills*
WG 4	The Heritage & Culture	Peter Hill	Jonghun Kim

(*)During ENG18, Jeffrey van Gills chaired the WG2.

8. WORKING GROUP 1 – PHYSICAL ATO N

The working group consisted of 39 members in person and 12 virtual and considered 15 input papers. The main task of the group was to update the task register and progress the tasks. The group reviewed the Cyber Security Guideline to be forwarded to ARM Committee.

Action Item

The Secretariat is requested to forward the Output Paper ENG18-13.0.1.1 Draft Guideline on Cyber Security to ARM18.

8.1 ENG-2.1.1 Update G1043 Light sources used in visual AtoN

This task is due to start at ENG21.

8.2 ENG-2.1.2 Update G1048 LED technologies and their use in signal lights

This task is due to start at ENG21.

8.3 ENG-2.1.3 Develop a guideline on Port Traffic Signals

No input was received for this task.

8.4 ENG-2.1.4 Update R0112 Leading lights

The task group carried out an initial review of previous output papers from ENG14, proposed by Frank Herman and Partel Keskula and will work intersessionally to review and amend existing documentation ready for detailed comment among the group at ENG19.

The original Task Register programme is on track and still looks achievable to be able to complete the task completely by ENG21.

8.5 ENG-2.1.5 Update G1061 Light application illumination of structures

This task is due to start at ENG22

8.6 ENG-2.1.6 Update R0203 (E200-3) on the definition of marine signal lights

The Task Group met during the ENG18 working period. The meetings were hybrid and attended by 8 participants from 7 different countries (3 online, 5 in person).

The task group reviewed the draft Guideline. The group edited the wording throughout and removed surplus or conflicting information to align the Guideline with the recommendations in R0203 on the Definition of marine signal lights terms and measurement.

The group discussed how much background measurement principal concepts to include to support the direct guidance on R0203.

Additional required content was identified. Some of this can be taken from input papers already received from WSV.

The group discussed the architecture and flow of the document compared to that in R0203. This will be considered as work continues to maximise accessibility when used in conjunction with R0203.

Related documents

ENG17-3.1.1.13.2 Annex B Draft IALA Guideline - Measurement of Marine Lights Performance 1.

Action Item

Lingyan Wang and **Link Powell** are requested to update the draft guideline intersessionally as discussed in ENG18 committee meeting and submit as input to ENG19.

8.7 ENG-2.1.7 Develop Guidance on monitoring of function and degradation of AtoN light sources

This task is due to start at ENG20.

8.8 ENG-2.1.8 Update G1041 Sector Lights

This task is due to start during ENG21.

8.9 ENG-2.2.1 Update G1037 Data collection for AtoN performance calculation

To be reviewed during ENG19.

8.10 ENG-2.2.2 Update G1077 Maintenance of AtoN

Progress was made on refining the content of the revised G1077 Developing a Maintenance Strategy for Aids to Navigation to provide a structured document to enable AtoN providers with the development of a strategy.

1. Further work will be required to identify and link related documents and provide suitable supporting examples within the Annexes.
2. A review of related documents will need to be undertaken to ensure any references to G1077 remain relevant given that the content has been revised.
3. A review of annexes from the G1077 has identified a number of guidelines that will need to be updated, deleted or amended and this will need to be reviewed in more detail.

8.11 ENG-2.2.3 Develop Guideline on complimentary use of AtoN

This task requires a review of its purpose, which will be carried out during ENG19.

8.12 ENG-2.2.4 Update and Amalgamate the Guidelines G1108, G1136 and G1175

Continuous progress on this task by amalgamating the Guidelines on Hot climates, Polar climates, and extreme climates with a view to provide members with a coordinated document. Intersessional meetings were arranged too. Some specific information was edited in Annex. The estimated advance of the task is 80 % and will be finished during ENG19.

8.13 ENG-2.5.1 Update G1064 Integrated power system lanterns (Solar LED lanterns)

This task is due to start during ENG21.

8.14 ENG-2.3.1 Develop guidance quantifying floating AtoN characteristics

The Task Group met five times during ENG18 working period, where renaming and substantial editing work on the draft Guideline was completed. The meetings were hybrid and attended by 14 participants from 8 different countries (2 online, 14 in person).

The content of the draft Guideline was reviewed with duplications/ surplus information being removed and sections reordered within the document.

The outcome ENG18-13.1.1 Liaison note to ARM on General Overview of Floating AtoN has been drafted to request comments on the whole content of the renamed and reworked Guideline.

Members of WG1 with an interest in this draft Guideline are requested to review the document as it currently stands and comments and corrections are welcomed.

Action Item

The Secretariat is requested to forward ENG18-13.1.1 Liaison note on General Overview of Floating AtoN and the ENG18-13.1.1.1 Draft Guideline to ARM19.

8.15 ENG-2.3.2 Creating overview guidance on maintenance of floating AtoN

This task is an amendment to provide members with guidance on the maintenance of floating AtoN.

Action Item

That Committee participants are requested to submit input papers to ENG19 on their experiences of maintaining floating AtoN.

8.16 ENG-2.3.3 Update Recommendation R0107 (E-107) Moorings for floating AtoN

This task will be started once ENG-2.3.4 has been completed.

8.17 ENG-2.3.4 Update G1066 Design of floating AtoN moorings

The Task Group reviewed the existing Guideline G1066.

A revised outline for the Guideline has been developed, the guideline will provide a greater explanation of moorings to help the reader understand the impact of choices that affect swing radius and sinker size. This leads to the calculations with a clear knowledge of the factors affecting the results of the calculations.

The Calculation Symbols have been harmonized / standardized and the equations updated and reformatted to make the equations easier to read and understand for less technical readers.

A list of Visual images to be created has been drafted and the task group plans to work as a group to incorporate visuals and further edits intersessionally.

Related documents

Working Copy of G1066 WIP – Location: WG1> Task 2.4.1 – G1066 Moorings>04 Working Folder.

8.18 ENG-2.4.1 Review and update as necessary G1036, the Green Guide

This task will be considered during the Sustainability Workshop to be held in October 2025.

8.19 ENG-2.4.2 Guidance on through life environmental impact

This task will be considered during the Sustainability Workshop to be held in October 2025.

8.20 ENG-6.3.1 Update G1008 Remote control and monitoring of AtoN

8.20.1 IoT

The Task Group met twice during ENG18 work period, to review the draft guideline which had been progressed intersessionally.

During the first session, a detailed proposal was presented to the group on the mechanism to capture and exchange information. It was extensively discussed and updated. This can now be finalised as an appendix to the draft guideline.

Further input was then captured from the task group members, and consideration was taken regarding the input from liaison note ENG17 3.0.9.

Work will continue intersessionally, to progress the guideline to a condition that will allow a final review at ENG20.

8.20.2 Related documents

Draft Guideline - A Harmonised IoT Protocol for Visual AtoN - 10-04-24 Rev B – Location: WG1> Task 6.3.1 - IoT Protocol>04 output papers.

Draft protocol IALA-IoT revision 10.4.2024 Rev A – Location: WG1> Task 6.3.1 - IoT Protocol>04 output papers.

8.20.3 RCMS

The Task Group met once during ENG18 work period, allowing members from different countries (Portugal, Korea, Finland, Norway, France, Germany, China, Spain, Denmark, GB) to present their approaches to RCMS. This generated significant discussion and ideas for the review and update of the existing guidelines.

China MSA then presented and explained their input paper ENG18 3.2.1.4 Proposal on the revision of chapter 5. This generated ideas around, and discussion on, how various national members approach the decision process to establish a RCMS on an asset.

A brief review of the progress on the guideline then allowed reflection on what areas need updating.

Work will continue intersessionally, looking at the structure of these subject areas and identifying what is still relevant from the existing guidelines.

8.20.4 Related documents

ENG18-6.3.1 G1008-Ed3-Draft UPDATE Remote Control and Monitoring 11-04-24 Rev B – Location: WG1>Task 6.3.1 Review and update G1008 remote control and monitoring of AtoN>04 output papers.

RCMS - Idea on content for the revised guideline G1008 - 11-04-24 Rev B – Location: WG1>Task 6.3.1 Review and update G1008 remote control and monitoring of AtoN>04 output papers.

9. WORKING GROUP 2 – RADIONAVIGATION

The WG Chair expressed their gratitude to WG participants for their hard work and perseverance this week. The WG Chair and Vice Chair would also like to thank all the Task Group leaders for their time and effort in progressing their work items.

WG2 was informed about the existence of a webtool for monitoring the tasks in the working plan. The updated tasks are reflected in the report for the specific task. <https://www.iala-task-register.com/>. The chair will work together with the Secretariat and task leaders to update the task register.

Working documents have been placed in a folder marked as such within each task's sub-folder on the IALA file share.

9.1 The working group reviewed the following input documents

9.2 ENG-3.1.1 Develop guidance on timing and synchronization

The Committee reviewed input paper ENG18-3.2.2.2 “Development of Galileo Timing Receiver Standard in line with Future Galileo Timing Service”. No work was progressed during this session on the Timing and Synchronisation Guideline. The latest version (ENG16) is available on the file share as a working paper. It is planned that this work will continue during succeeding sessions. The work plan was updated accordingly.

9.3 ENG-3.1.2 World-Wide Radio Navigation Plan review

No work was progressed during this session on the review of the World-wide Radio Navigation Plan. Further work will be done at the ENG AtoN workshop in Sydney and ENG19.

9.4 ENG-3.2.1 R-Mode development

The draft Guideline on “MF R-Mode signal structure and navigation message” was further developed intersessionally and provided a mature input to ENG18.

The draft guideline on “MF R-Mode signal structure and navigation message” was reviewed and amended during the meeting and a final version was generated which should become an output of ENG-18. The committee thanked the task group for the effort they spent developing the guideline.

During the drafting of the Guideline, it was recognised that the terms Ranging Mode (R-Mode) and differential R-Mode (DR-Mode) are not part of the IALA Dictionary. The Committee developed a proposal for definitions of both terms. Furthermore, the Committee propose to amend the definition of “Differential system” in the IALA dictionary to reflect the latest technological developments.

During the silent approval period, the draft guideline was reviewed. It was appreciated the work on the signal structure and the message format developed with RTCM. In parallel, some comments were raised regarding

the benefit of referencing the achievable accuracy and other operational performance parameters of the concept and the skywave improvements that can be performed. It was then proposed to continue the task in ENG19.

Action item

*The **Secretariat** is requested to forward the working paper “MF R-Mode signal structure and navigation message” to ENG19 for further consideration.*

*The **Secretariat** is requested to forward “ENG18-13.2.2 Proposal for new IALA Dictionary definitions related to R-Mode” to Council for approval.*

9.5 ENG-3.3.1 Augmentation Systems

The Committee reviewed the input paper ENG18-3.2.2.7 “IMO Recognition Augmentation Systems (draft for discussion)” and the information given during the presentation. There are planned two additional intersessional meetings from now on until ENG19 committee to work on the input paper “Recognition of Augmentation Systems in the WWRNS” with the intention to present a mature draft in ENG19 for the final comments, endorsement and approval.

Action item

*That **Committee participants** interested in supporting the development of “Recognition for Augmentation Systems in the WWRNS” between ENG18 and ENG19 are invited to contact José Luis Martin (jose-luis.martin@essp-sas.eu).*

9.6 ENG-3.3.2 High accuracy positioning systems

The Committee noted the input paper ENG18-3.2.2.1 “Draft Guideline on GNSS Satellite-based Precise Point Positioning (PPP) Service”. Further, the committee noted the input paper ENG18-3.2.2.2 and a presentation on “Galileo High Accuracy Service for Maritime”.

The Committee worked further on the draft guideline for GNSS Satellite Based Precise Point Positioning (PPP) Maritime Service, which should be continued over the next sessions.

It is planned that the draft guideline on GNSS Satellite Based Precise Point Positioning (PPP) Maritime Service should be further developed intersessionally with the aim to provide input to ENG19. It is planned that the work will be progressed in correspondence between interested members. Committee members who are interested in contributing to this guideline are invited to provide their interest by E-Mail to qbcouple@163.com.

Action item

*That **Committee participants** interested in supporting the development of the Guideline on GNSS Satellite Based Precise Point Positioning (PPP) Maritime Service between sessions are invited to contact the task leader Qian Sun (qbcouple@163.com).*

9.7 ENG-3.4.1 Radar & Enhanced Racon Positioning

The Committee reviewed the work of the MASS Task Group (paper ENG18-3.2.0.2) and created a liaison note to the MASS Task Group reminding the group of the Enhanced Radar Positioning System (ERPS). The liaison note also draws attention to the very important, but not immediately obvious, feature that racons used for ERPS provide non-ambiguous identification of landmarks. The liaison note concludes that this feature might be useful for MASS navigation.

The Committee composed and reviewed a concept IMO document, and this concept is placed on the fileshare in the TG Racon\IMO Liaison.

Action item

*The **Secretariat** is requested to forward the liaison note ENG18-13.2.3 on Enhanced Radar Positioning Systems to the MASS task force.*

9.8 ENG-8.1.1 PNT technology review

9.8.1 Presentations

During the meeting, there were 7 presentations given on PNT related technology and projects.

- High integrity standardisation in RTCM SC-134 given by Roberto Capua, RTCM SC chair;
- ORMOBASS (R-Mode in the Baltic Sea) given by Stefan Gewies, DLR;
- IWETT (use of E-GNSS/SBAS for inland navigation) given by Gergely Mezo, ROSE;
- EGNOS Maritime Service and IEC standard publication given by Jose-Luis Martin, ESSP;
- Development of procedures and requirements for the recognition of augmentation systems in the Worldwide radionavigation system given by Jose-Luis Martin, ESSP;
- RIPTIDE Project given by Florin Mistrapau, GMV;
- And S-240 developments given by Han Younghoon, KRISO.

The presentations are placed in the Presentations folder on the fileshare.

9.8.2 Liaison with RTCM

The Committee noted the input paper “Liaison note from RTCM” and created a liaison note to RTCM on “regarding update of RTCM 10402.3 Standard”.

Action item

*The **Secretariat** is requested to forward the liaison note “ENG18-13.2.1 RTCM Liaison note draft 2024-04-10b” to the Council for approval.*

9.8.3 Review and update current documentation under the purview of PNT WG

The Committee has worked together with the DTEC on a proposal for a Workshop. The proposal was finished during this Committee meeting.

Action item

*The **Secretariat** is requested to forward the “ENG18-13.2.4 Draft Revised Workshop proposal on future radionavigation and radiocommunication systems” to the Council for approval.*

9.8.4 Input to MSP, Integrity considerations for resilient PNT, cybersecurity impact for PNT data, datum considerations

The Committee reviewed the Liaison note from the ARM to all committees (ENG18-3.2.0.5) on Progress on Cyber Security Guideline. Some amendments were made and the updated section was forwarded to the chair of the ENG Committee for further consideration.

9.8.5 Monitor developments in GNSS, DGNSS, radar, resilient PNT, e-Pelorus, terrestrial systems, R-Mode, inertial and any other relevant areas etc.

The Committee reviewed input paper ENG18-3.2.2.9 “Liaison note to ENG on VDE-SAT”. No work was progressed during this session.

9.8.6 Develop and maintain relevant product specifications

The Committee reviewed input paper ENG18-3.2.2.3 “Progress of S-240 update” and the information given during the presentation. The committee also requested to review and test it before ENG 19.

The Committee reviewed the work plan and identified work to be carried out over the next sessions with respect to R-Mode. The work plan was updated accordingly.

9.8.7 Draft Guideline on future of marine radiobeacon DGPS-DGNSS

The Committee reviewed the latest version of the Draft Guideline “on future of marine radiobeacon DGPS-DGNSS” which was an output of the IALA ENG15 meeting. Furthermore, the Committee identified that there are existing Recommendations and Guidelines related to radiobeacons which must be considered. The Committee propose to update these documents while developing the Guideline “on future of marine radiobeacon DGPS-DGNSS” to get a consistent set of documents.

The Committee is aware that the new Guideline shall especially give Guidance to administrations that intend to discontinue or maintain the DGNSS service.

10. WORKING GROUP 3 – THE HERITAGE & CULTURE

ENG WG3 – Heritage Forum considers its overall objective to be:

“To further the declaration and recommendations contained within the Incheon Declaration and within IALA Recommendation R1005 – ‘Conserving the built heritage of lighthouses and other aids to navigation’.

Over the course of ENG 18, WG3 received the participation of 17 people for all or part of the WG’s work or presentations (including online participants).

Meetings were chaired by **Peter Hill**. **Jonghun Kim** and **Sarah-Jane Lakshman** were joint Vice-Chair.

10.1 Presentations

WG3 were pleased to receive the following general presentations, which were all well received and generated some interesting discussion;

1. Presentation: Public Private Partnerships (PPPs) in the lighthouse operations in Japan (*Cdr. Kinji Takeuchi, Japan Coast Guard*).
2. Amoy Harbor Master Office (*Ke Ranxuan, Navigation Institute of JiMei University*)
3. A Report on the Fresnel 2023 Seminar (*Jonghun KIM, Paichai University, Republic of Korea*)

Further presentations specific to WG3 tasks were received within other parts of the agenda.

10.2 ENG TASK Register / Work Plan 2023-2027

WG3 went through all its tasks within the Task Register led by the respective Task Leaders.

10.2.1 ENG-1.1.2 Navguide review - To review the relevant NAVGUIDE section for updates

Task Leader: Sarah-Jane Lakshman, AMSA

Sarah-Jane Lakshman (AMSA) produced a draft proposed revision for the relevant Heritage and Culture section of the Navguide, which was circulated for comment, agreed, and submitted to IALA Secretariat. It was noted that the Navguide is now a living document and may be updated regularly.

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SECTION 4.16 PRESERVATION OF HISTORIC AIDS TO NAVIGATION AMENDMENTS

Examples of work accomplished to date:

- the creation an **online** IALA database for recording details of historic lighthouses;
- the development of The Heritage Lighthouse of the Year **accolade**, based on international nominations and **presented** on World AtoN Day each year”

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Action item

The **Secretariat** is requested to update the Heritage and Culture section of the NAVGUIDE with the revised text submitted by Sarah-Jane Lakshman (AMSA).

10.2.2 ENG-2.6.1 Maintain the Heritage web page on the IALA website

Task Leaders: Seong Woo Son, Korea Institute of Aids to Navigation and Gillian Burns, NLB.

The Heritage webpages have been updated to show Heritage Lighthouse of the Year 2024 – Faro Di Genova ‘Lanterna’, Italy. Seong Woo Son agreed to ensure that, in discussion with the IALA Secretariat, he is familiar with the process for updating the website over the course of ENG18 to be ready to add the nominations for IALA HLY 2025 ahead of ENG19.

Action item

Seong Woo Son and Gillian Burns are requested to coordinate WG3 work maintaining the Heritage Web Page through to completion within the Task Period and **Korea Institute of Aids to Navigation and NLB** respectively are requested to support them in this.

The **Secretariat** is requested to assist the editing team with the IALA Heritage website editing as required.

10.2.3 ENG-2.6.2 Production of Technical or Guidance document on ‘good practice in modernising heritage lighthouses whilst minimising negative heritage impact’

Task Leader: Sarah-Jane Lakshman, AMSA

Sarah-Jane Lakshman produced and presented an excellent initial draft of this new guideline. All agreed that it was shaping into something that would be practical and really useful to lighthouse authorities.

WG3 participants were requested to send examples of good practice in sensitive alterations to the Task Leader by the end of ENG18 – or intersessionally if that were not possible.

Action item

Sarah-Jane Lakshman is requested to continue coordinating WG3 work in the production of a Technical or Guidance document on ‘good practice in modernising heritage lighthouses whilst minimising negative heritage impact’ and **AMSA** is requested to support them in this.

10.2.4 ENG-2.6.3 Manage the process for the IALA HLY accolade

Task Leader: Peter HILL, Trinity House

The process for selection of IALA HLY was reviewed and agreed to be fit for purpose for 2025.

Plans for World AtoN Day celebrations in Genoa (home of IALA HLY 2024) to include 2 days of activities were noted and greeted with enthusiasm. WG3 intend to send representation.

WG3 noted the finalised plaque which had been brought to IALA Headquarters ready for presentation to Faro Di Genova ‘Lanterna’, Italy at World AtoN Day 2024. It was felt to be superbly designed and executed and WG3 expressed their sincere gratitude to the Republic of Korea for its production and sponsorship.

The need for hi-resolution images to be used in the production of the plaque was raised by ROK. Upon determination of future IALA HLY accolades, these will be requested immediately from the nominee by the Task Leader and provided to ROK.

Action item

Peter Hill is requested to continue coordinating WG3 work Managing the process for the IALA HLY Accolade through to completion within the Task Period and **Trinity House** is requested to support them in this.

10.2.5 ENG-2.6.4 Write the Heritage module for the WWA L1.1 AtoN Manager course

Task Leader: Ke Raxuan, Navigation Institute of JiMei University

Ke Raxuan produced a detailed and beautifully presented a presentation a model for the kind of resource intended to accompany the module. The outline of the presentation followed the course outline of the WWA Level 1 C005 course ‘Historic Lighthouse Projects’ but after some discussion, it was decided that, the output should be more focussed on the specific needs of AtoN Managers (as this was whom the WWA Level 1 C001 course was aimed at) and also because the module would be just 90 minutes long it needed to be more focussed. Nevertheless, the presentation by Ke Raxuan was considered to provide a very useful model for that which would ultimately comprise part of the output of this task.

Some time was then spent discussing and agreeing to the general objectives of the module which would then allow a framework of content to be agreed. The focus would be on practical solutions and there was to be considerable synergy with the output of Task ENG-2.6.2 Production of Technical or Guidance document on 'good practice in modernising heritage lighthouses whilst minimising negative heritage impact'. WG3 participants would provide useful case studies to the Task Leader by 30 April 2024. The task output (when completed) will comprise a presentation with accompanying notes, allowing the course tutor to easily (and without particular heritage expertise) deliver the module in a consistent manner.

The Dean of WWA and the IALA Advisor were present for the discussions and provided helpful direction. Further discussion led to a conclusion that a heritage and culture module for the WWA Level 1 C002 Master of AtoN Management course should also be written and that the WWA Level 1 C005 Historic Lighthouse Course would also benefit from review and relaunch. Both these were seen as likely tasks for the next task period.

Action item

Ke Raxuan is requested to continue coordinating WG3 work in creating the Heritage Module for the WWA L1.1 AtoN Manager Course through to completion within the Task Period and the **Navigation Institute of JiMei University** is requested to support them in this.

10.2.6 ENG-2.6.5a Review Guideline G1080 Ed.1 The Selection and Display of Heritage Artefacts, Dec 2011

Task Leader: Jiwon Sim, Korea Institute of Aids to Navigation

The following Input Papers were presented by Jiwon Sim and discussed;

Input Paper ENG18-3.0 Plan about the revision of guideline to G1080)

The existing structure of the guidance document was thought to be adequate excepting that the scope should be widened to include a section on retaining artefacts to include a hierarchy of preference for the keeping of artefacts – including those removed from buildings (in order of preference; retain in building, retain in ownership and on display, retain in ownership in storage, transfer ownership to public body, transfer ownership to other).

The question of management of electronic artefacts was also discussed (photos, plans, videos, sound recordings etc). How these are increasingly the way that artefacts are stored and the need to ensure that they are stored securely, easy to access, backed up, updated in format and considered for display. The Task Leader agreed to include this in the revised guideline.

WG3 participants were requested to send comments as well as suitable case studies to the Task Leader by the end of ENG18 – or intersessionally if that were not possible.

Action item

Jiwon Sim is requested to continue coordinating WG3 work in reviewing IALA Guidance document G1080 Ed.1 through to completion by Autumn 2025 (ENG21) and **Korea Institute of Aids to Navigation** is requested to support them in this.

10.2.7 ENG-2.6.5b Review Guideline; G1093 Ed.1 The Management of Surplus Lighthouse Property, Dec 2012

Task Leader: Naehyuk Yoo, Korea Institute of Aids to Navigation

The following Input Papers were presented by Naehyuk Yoo and discussed;

ENG18-3.2.3.2 Request for Survey on Nations Experiences for G1093 Revision)

The group expressed concerns that the existing Guideline was not adequately focussed on heritage and culture aspects and aspirations. Surplus AtoN are likely to be sold by lighthouse authorities and the only heritage consideration is likely to be whether they are sold to a community / public organisation that will continue to conserve the lighthouse and maximise its cultural potential. This would always be preferable. The Guideline should focus more on situations where there is surplus property ancillary to a working AtoN.

There is a hierarchy of preference here, the first being to retain ownership but facilitate complementary use (this connects with other Guidance documents. This retains the integrity of the heritage asset and also allows the lighthouse authority to retain a degree of control. The second is to lease out property and the third is to sell. If an ancillary surplus property is to be leased out or sold, then the guidance document should assist lighthouse authorities in considering heritage and cultural objectives in doing so (also briefly the practical consequences on the ongoing operation of the AtoN).

Surplus equipment (that could be defined as artefacts) is a matter perhaps best addressed under the Artefacts Guideline.

The Task Leader requested WG3 participants to submit examples of good practice where Lighthouse authorities have leased or sold surplus property in a way that protects the heritage and cultural aspects of that property and the wider site or of examples where it has retained and conserved the property even though it had no use, that ensure the same, and to do so by the end of ENG18 – or intersessionally if that were not possible.

Action item

Naehyuk Yoo is requested to continue to coordinate WG3 work in reviewing IALA Guidance G1093 Ed.1 for completion and **Korea Institute of Aids to Navigation** is requested to support them in this.

10.2.8 ENG-2.6.6 Review Guideline; G1063 Agreements for Complementary use of Lighthouses

Task Leader: Juan Liu, China Maritime Safety Administration (MSA)

Juan LIU presented a second draft of the revised guideline incorporating changes suggested at ENG17 and intersessionally prior to ENG18. Further suggestions for changes were made – including ensuring a clear delineation from and continuity with the Complementary Lighthouse Use Manual.

WG3 participants were requested to study the latest revised text and send comments as well as suitable case studies to the Task Leader by the end of ENG18 – or intersessionally if that were not possible.

Action item

Juan Liu is requested to continue coordinating WG3 work in reviewing IALA Guidance document G1063 through to completion in Autumn 2025 (ENG21) and **China Maritime Safety Administration (MSA)** is requested to support them in this.

10.2.9 ENG-2.6.7a Review Guideline G1074 Ed.1 Branding and Marketing of Historic Lighthouses

Task Leader: Zhenyu Guo, China Maritime Safety Administration (MSA)

The following Input Papers were presented by Zhenyu GUO and discussed;

Input Paper: ENG18-3.2.3.1 Proposal for updating G1074 The Branding and Marketing of Historic Lighthouses

Input Paper: ENG18-3.2.3.1.1 Annex G1074 The Branding and Marketing of Historic Lighthouses revised draft

Considerable progress had been made on guideline G1074 – principally by the Task Leader for which WG3 were grateful. Further suggestions for changes were made – including ensure a clear delineation from and continuity with the Complementary Lighthouse Use Manual.

It was agreed to change the name of the document to replace ‘Historic’ with ‘Heritage’.

WG3 participants were requested to study the latest revised text and send comments as well as suitable case studies to the Task Leader by the end of ENG18 – or intersessionally if that were not possible

Action item

Zhenyu Guo is requested to continue coordinating WG3 work in reviewing IALA Guidance documents G1074 Ed.1 for completion by Autumn 2025 (ENG21) and G1075 Ed.1 for completion by Spring 2026 (ENG22) and **China Maritime Safety Administration (MSA)** is requested to support them in this.

10.2.10 ENG-2.6.7b Revise Guideline G1075 Ed.1 A Business Plan for the complementary use of a Historic Lighthouse

This item was not scheduled for progression at ENG18

Action item

Zhenyu Guo is requested to continue coordinating WG3 work in reviewing IALA Guidance documents G1074 Ed.1 for completion by Autumn 2025 (ENG21) and G1075 Ed.1 for completion by Spring 2026 (ENG22) and **China Maritime Safety Administration (MSA)** is requested to support them in this.

10.3 Input Paper ENG18-3.0 The Proposal for the systematic management of World Lighthouse Heritage

WG3 Discussed the above Input Paper submitted by Mr. Bae Yong Chan (Ministry of Oceans and Fisheries, ROK). WG3 concluded not to take up the Paper and the paper was considered as a discussion paper, however, it generated significant discussion.

Whilst potential merits in the idea were identified by some in the group, concerns were raised that if the suggestion required the establishment of a permanent organization under the name of IALA, this would possibly require amendments to the draft General Regulations of the International Organization for Marine Aids to Navigation. The vast majority of the said regulations have already been consented among member states. Furthermore, as the Secretary-General informed at the opening plenary, 28 states have already ratified, accepted and acceded to the Convention, meaning that the Convention could come into effect in the very near future - suggesting that such a proposal may not be appropriate at this point and at this session of the Committee. Views were also expressed that heritage was already considered at WG3 and that WG3 worked very well in its current capacity. The establishment of a new heritage organisation on heritage may potentially cause confusion and additional burden to members.

More generally, the consensus was that the Input Paper did not contain sufficient information on precisely what was being proposed, how it would work, and how it would be resourced or managed in order that the concept and its workings could be properly explored or understood. ROK was invited, (should they wish to do so) to put together a clearer and fully worked-through proposal that addressed the concerns expressed and to submit to PAP, however, that invitation does not comprise a proposed action from WG3 and indeed no action is formally proposed at this stage.

11. REVIEW OF OUTPUT AND WORKING PAPERS

The Committee reviewed and endorsed the reports of each Working Group. The Committee approved the output and working documents as indicated in ANNEX D.

It was decided that ENG18-13.1.2 Liaison note to the WWA on Task Round Robin Light Measurement will be placed as a working paper for ENG19 to work further on the goals and the scope of the of the measurement exercise and better optimise the ressources from the Competent Authotities and interested parties. Recognising the opportunity to involve many participants, it was also decided to work intersessional.

12. REVIEW OF SESSION REPORT

The report of the meeting (ENG18-13.1) was considered and approved. Committee Participants were requested to advise any corrections/amendments within one week, following which the final version of the report will be issued via the IALA website.

Action item

*The **Secretariat** is requested to forward the summary of the ENG18 Committee report (ENG18-13.1) to the Council to note.*

13. DATE AND VENUE OF NEXT MEETING

The next session of the ENG Committee is planned to be held from 21 to 25 October 2024 in Sydney, Australia. Other IALA events will be publicised on the IALA [website](#).

14. WORLD AIDS-TO-NAVIGATION DAY, GENOA, ITALY 2ND TO 3RD JULY

The information and registration can be found in the IALA website: <https://www.iala-aism.org/product/waton-day-2/>

15. ENGINEERING WORKSHOP, SYDNEY, AUSTRALIA 14TH TO 18TH OCTOBER

A dedicated website is in place to provide further information and registration <https://events.iala-aism.org/>

16. CLOSE OF THE MEETING

The discussion on collecting the input papers and old recommendation and guidelines deprecated was addressed and will be deferred to the next PAP meeting. The Github platform seems to be a candidate tool to amalgamate this. The statement on patents was recalled.

Francis Zachariae congratulated the work done by the Chairs with special attention to Jeffrey van Gills who chaired the WG2 after the announcement that Michael Hoppe wouldn't join the committee. Secretary-General thanked the perfect bring your own Soiree that was possible with the support of the generous participants. It was also recognised the Korean delegation present to the next host country of the Heritage Lighthouse of the Year, Italy and finally Secretary General expressed his gratitude to the the host countries of the upcoming workshops.

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 Input Papers
 A list of input papers is at ANNEX C.
- 4 Output and Working papers
 A list of output and working papers is at ANNEX D.
- 5 Action Items
 A list of action items is at 0.



18th Session of the AtoN Engineering and Sustainability Committee (ENG18)

AGENDA

Opening Plenary

Start 10:00 CEST (08:00 UTC), 8th April 2024

1. Introduction
 - 1.1. Welcome address from the Secretary-General Francis Zachariae
 - 1.2. Approval of the agenda Alwyn Williams
 - 1.3. Apologies and Introductions Alwyn Williams
 - 1.4. Working arrangements Jaime Alvarez
 - 1.5. ENG committee structure Alwyn Williams
 - 1.5.1. WG1 Overview
 - 1.5.2. WG2 Overview
 - 1.5.3. WG3 Overview
2. Review of action items from last meeting Alwyn Williams / Jaime Alvarez
 - 2.1. Review of action items from ENG17
3. Review of input papers Alwyn Williams
 - 3.1. Review of input papers to ENG18 Jaime Alvarez
 - 3.2. Input papers for action/allocation
4. Reports from other bodies
 - 4.1. IALA
 - 4.1.1. IALA Council Minsu Jeon
 - 4.1.1.1. Documents approved by Council Minsu Jeon
 - 4.1.2. Policy Advisory Panel (PAP) Minsu Jeon
 - 4.1.2.1. Sustainability WS Alwyn Williams
 - 4.1.2.2. AtoN engineering WS Greg Hansen
 - 4.1.2.3. Future Radiocommunication and radionavigation Hideki Noguchi
 - 4.1.3. 2023-2027 Work Plan and task register Michel Cousquer
 - 4.1.4. WWA Latifa Oumouzoune
 - 4.2. Update on MASS task group Minsu Jeon
 - 4.3. IMO Hideki Noguchi
 - 4.4. IHO Minsu Jeon
 - 4.5. ITU Minsu Jeon

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| 4.6. RTCM | Stig Erik |
| 4.7. PIANC | Minsu Jeon |
| 4.8. CIE | Alwyn Williams |

5. Advertising Presentations (planned during the working period)

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| 5.1. S100 / S200 Overview | Minsu Jeon |
| 5.2. Working group presentations: | Jaime Alvarez |
| 5.2.1. WG1: Monday 8 – 16:00 CEST | |
| 5.2.2. WG2: Tuesday 9 – starting at 09.00 CEST | |
| 5.2.2.1. Integrity for high accuracy system | Roberto Capua (RTCM) |
| 5.2.2.2. UK PNT considerations | Mark Brammer (National PNT Office, UK) |
| 5.2.2.3. ORMOBASS (R-Mode in the Baltic Sea) | Stefan Gewies (DLR) |
| 5.2.2.4. IWETT (use of E-GNSS/SBAS for inland navigation) | Gergely Mezo (ROSE) |
| 5.2.2.5. EGNOS Maritime Service and IEC standard publication | Jose-Luis Martin (ESSP) |
| 5.2.2.6. Development of procedures and requirements for the recognition of augmentation systems in the World-wide radionavigation system | Jose-Luis Martin (ESSP) |
| 5.2.2.7. RIPTIDE Project | Florin Mistrapau (GMV) |
| 5.2.3. WG3: Tuesday 9 – 14:00 CEST | |
| 5.2.3.1. Public Private Partnerships (PPPs) in the lighthouse operations in Japan | Kinji Takeuchi (Japan Coast Guard) |

6. Overview of planned work for ENG18

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|--|-------------------|
| 6.1. WG 1 - Visual & Physical AtoN | Malcolm Nicholson |
| 6.2. WG 2 - Radionavigation Services | Michael Hoppe |
| 6.3. WG 3 - Heritage and culture forum | Peter Hill |

7. Establish Working Groups and Task Groups

End of Opening Plenary

Approx. 13:00 CEST (11:00 UTC), 8th April

Working Groups to Progress Work Plan

14:00 CEST (12:00 UTC), 8th April to 17:30 CEST (15:30 UTC), 11th April

Closing of the physical week Plenary

Start 09:00 CEST (07:00 UTC), 12th April

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|-------|--|-------------------|
| 8. | Report from Working Groups and Secretariat | |
| 8.1. | WG 1 – Visual & Physical AtoN | Malcolm Nicholson |
| 8.2. | WG 2 – Radionavigation Services | Michael Hoppe |
| 8.3. | WG 3 – Heritage and Culture forum | Peter Hill |
| 8.4. | Session Report | Jaime Alvarez |
| 9. | Summary of Output Papers for Review | Jaime Alvarez |
| 9.1. | Process for Comments | Jaime Alvarez |
| 9.2. | Cyber security Guideline approval | Alwyn Williams |
| 10. | Close of Main Session | Alwyn Williams |
| 10.1. | WAtON Day, Genoa | |

Closing of the physical week Adjourned for Approval Period of Output Documents

Session adjourns approximately 13:00 CEST (11:00 UTC), 12th April

Closing Plenary

Session recommences 12:00 CEST (10:00 UTC), 18th April on Microsoft Teams

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| 11. | Opening of Online Session | Alwyn Williams |
| 12. | Review of Documents with Comments or Outstanding Issues | Jaime Alvarez |
| 13. | Review of Documents Approved | Jaime Alvarez |
| 14. | Date and venue of next meeting | Alwyn Williams |
| 15. | Close of Session | Alwyn Williams |

End of Closing Plenary and Session

Approx. 13:00 CEST (11:00 UTC), 18th April

The list of ENG16 registered participants is available through this link: <https://www.iala-aism.org/committee-dashboards/eng-dashboard/resources-eng/>

ANNEX C LIST OF INPUT PAPERS

All papers were posted to the Committee website

Meeting	Agenda Item	Input Paper Title	Source	Action
ENG18-	1.2.1	Draft Agenda ENG18	IALA	All
ENG18-	1.2.2	Programme for the week	IALA	All
ENG18-	2.1	Report of ENG17 (ENG17-14.1)	IALA	All
ENG18-	2.1.1	Review of action items from ENG17	IALA	All
ENG18-	3.0	Input paper Committee meeting template	IALA	All
ENG18-	3.0.1	List of Input papers	IALA	All
ENG18-	3.2.0.1	Workshop proposal on future radionavigation and radiocommunication systems	DTEC Chair	All
ENG18-	3.2.0.2	The Future of MASS 2024	IALA	All
ENG18-	3.2.0.3	WP Guideline on developments and implications of MASS for coastal authorities_rev1	DTEC2	All
ENG18-	3.2.0.4	Liaison note to ENG on the update of the IALA dictionary	ARM	All
ENG18-	3.2.0.5	Liaison from ARM to all committees on cyber security guideline	ARM	All
ENG18-	3.2.0.5.2	Liaison note to ARM and ENG on Cyber Security guideline (DTEC2-12.2.1.1)	VTS55/DTEC2	All
ENG18-	3.2.0.5.2.1	Draft Guideline on Cyber Security (DTEC2-12.2.1.2_v0.3)	VTS55/DTEC2	All
ENG18-	3.2.0.6	Liaison note to ARM, ENG, VTS on Tech Review Summary Table	DTEC2	All
ENG18-	3.2.0.7	Liaison note to ENG on Workshop on future radionavigation and radiocommunication systems	DTEC2	All
ENG18-	3.2.0.7.1	Revised Workshop proposal on future radionavigation and radiocommunication systems	DTEC2	All
ENG18-	3.2.1.1	Application of Combined Moorings with Special Construction	China MSA	WG1
ENG18-	3.2.1.2	Conversion Measurement Method of Effective Intensity in the Draft Guideline of Measurement of Marine Lights Performance	China MSA	WG1
ENG18-	3.2.1.3	Development of Guideline on Meteorological and Oceanographic Data Dissemination	China MSA	WG1
ENG18-	3.2.1.4	Proposal on the Revision of Chapter 5 - Objectives of the Guideline G1008 on Remote Control and Monitoring of Marine Aids to Navigation	China MSA	WG1
ENG18-	3.2.1.4.1	Annex Comparison of the Advantages and Disadvantages of the AtoN with or without RCMS	China MSA	WG1

ENG18-	3.2.1.5	Safe Lithium Battery Management Strategies for Marine Buoy Systems	Quantum Solution	WG1
ENG18-	3.2.1.6	G1066 Formula Correction on Minimum weight of sinker for taut moorings	Puertos del Estado	WG1
ENG18-	3.2.1.7	A Harmonised IoT Protocol For Visual AtoN	Intersessional	WG1
ENG18-	3.2.2.1	Draft Guideline on GNSS Satellite-based Precise Point Positioning (PPP) Service	China MSA	WG2
ENG18-	3.2.2.2	Development of Galileo Timing receiver Standard in line with Future Galileo Timing Service	GMV	WG2
ENG18-	3.2.2.3	Progress of S-240 update	KRISO	WG2
ENG18-	3.2.2.4	RIPTIDE Project Phase 2_v1.0	GMV	WG2
ENG18-	3.2.2.5	EGNOS maritime service and IEC standard publication	EUSPA	WG2
ENG18-	3.2.2.5.1	Survey EGNOS maritime Service's feedback	EUSPA	WG2
ENG18-	3.2.2.6	IMO Recognition Augmentation Systems (draft for discussion)	EUSPA	WG2
ENG18-	3.2.2.7	Proposal for Maritime webinar of SBAS in the IALA WWA	ESSP	WG2
ENG18-	3.2.2.8	Intersessional work on draft of IALA Guideline on Medium Frequency R-Mode signal structure and navigation message	ENG Intersessional	WG2
ENG18-	3.2.2.8.1	Draft Guideline on Medium Frequency R-Mode signal structure and navigation message	ENG Intersessional	WG2
ENG18-	3.2.2.9	Liaison note to ENG on VDE-SAT	DTEC2	WG2
ENG18-	3.2.3.1	Proposal for updating G1074 The Branding and Marketing of Historic Lighthouses	China MSA	WG3
ENG18-	3.2.3.1.1	Annex G1074 The Branding and Marketing of Historic Lighthouses (revised draft)	China MSA	WG3
ENG18-	3.2.3.2	Request for Survey on Nations Experiences for G1093 Revision	KATON	WG3
ENG18-	3.2.3.3	Plan about the revision of guideline to G1080	KATON	WG3
ENG18-	3.2.3.4	The Proposal for the systematic management of World Lighthouse Heritage	MOF	WG3
ENG18-	3.2.3.5	Report on the Fresnel Seminar 2023	Pachai University	WG3
ENG18-	4.1.1	Final Report Council79 (C79-19.1)	IALA	All
ENG18-	4.1.2	Report of PAP51 (PAP51-7.1)	IALA	All
ENG18-	4.1.2.1	Report of PAP52 (PAP52-13.1)	IALA	All
ENG18-	4.1.3.1	Task List Traffic Lights after ENG17	IALA	All
ENG18-	4.1.3.2	Report Council 79	IALA	All
ENG18-	4.1.4	Report Policy Advisory Panel 25 (LAP25-20.1)	IALA	All
ENG18-	4.1.5	Work programme 2023-2027	IALA	All
ENG18-	4.5.1	Report of Joint IMO-ITU Expert group 9th to 13th October 2023	Stefan Bober	All
ENG18-	4.5.2	Report of ITU WRC-23 Dubai 20 November to 15 Dec 2023	Stefan Bober	All

ENG18-	4.5.3	Report of IEC TC80 WG 15 - AIS and VDES	Stefan Bober	All
ENG18-	4.6	RTCM report	RTCM	All
ENG18-	4.6.1	RTCM SC104 Liaison Note on DGNSS	RTCM	WG2

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

Meeting	Agenda Item	Input Paper Title	Source	Action
ENG18-	13.0.1	Liaison note from ENG to ARM on the Cyber Security guideline	ENG18	ARM18
ENG18-	13.0.1.1	Draft Guideline on Cyber Security (ENG WG1 WG2 Edits)	ENG18	ARM18
ENG18-	13.1.1	Liaison note to ARM on General Overview of Floating AtoN	ENG18	ARM19
ENG18-	13.1.1.1	Draft Guideline GXXXX on General Overview of a Floating AtoN	ENG18	ARM19
ENG18-	13.2.1	Draft Liaison note to RTCM on the update of RTCM 10402.3 Standard	ENG18	Council
ENG18-	13.2.2	Proposal for new IALA Dictionary definitions related to R-Mode	ENG18	Council
ENG18-	13.2.3	Draft Liaison to MASS TF on Enhanced Radar Positioning Systems	ENG18	MASS TF
ENG18-	13.2.4	Revised Workshop proposal on future radionavigation and radiocommunication systems	ENG18	Council

Working papers will remain within the Committee for further review during ENG18.

Meeting	Agenda Item	Input Paper Title	Source	Action
ENG18-	13.2.5	Draft Guideline on Medium Frequency R-Mode signal structure and navigation message	ENG18	ENG19
ENG18-	13.1.2	Liaison note to the WWA on Task Round Robin Light Measurement	ENG18	ENG19

Action Items for Secretariat

1. **The Secretariat** is requested to forward the Output Paper ENG18-13.0.1.1 Draft Guideline on Cyber Security to ARM18 13
2. **The Secretariat** is requested to forward ENG18-13.1.1 Liaison note on General Overview of Floating AtoN and the ENG18-13.1.1.1 Draft Guideline to ARM19. 14
3. The **Secretariat** is requested to forward the working paper “MF R-Mode signal structure and navigation message” to ENG19 for further consideration. 17
4. The **Secretariat** is requested to forward “ENG18-13.2.2 Proposal for new IALA Dictionary definitions related to R-Mode” to Council for approval. 17
5. The **Secretariat** is requested to forward the liaison note ENG18-13.2.3 on Enhanced Radar Positioning Systems to the MASS task force. 17
6. The **Secretariat** is requested to forward the liaison note “ENG18-13.2.1 RTCM Liaison note draft 2024-04-10b” to the Council for approval. 18
7. The **Secretariat** is requested to forward the “ENG18-13.2.4 Draft Revised Workshop proposal on future radionavigation and radiocommunication systems” to the Council for approval. 18
8. The **Secretariat** is requested to update the Heritage and Culture section of the NAVGUIDE with the revised text submitted by Sarah-Jane Lakshman (AMSA). 19
9. The **Secretariat** is requested to assist the editing team with the IALA Heritage website editing as required. 20
10. The **Secretariat** is requested to forward the summary of the ENG18 Committee report (ENG18-13.1) to the Council to note. 24

Action Items for Participants

11. **Lingyan Wang** and **Link Powell** are requested to update the draft guideline intersessionally as discussed in ENG18 committee meeting and submit as input to ENG19. 13
12. **That Committee participants** are requested to submit input papers to ENG19 on their experiences of maintaining floating AtoN. 15
13. **That Committee participants** interested in supporting the development of “Recognition for Augmentation Systems in the WWRNS” between ENG18 and ENG19 are invited to contact José Luis Martin (jose-luis.martin@essp-sas.eu). 17
14. That **Committee participants** interested in supporting the development of the Guideline on GNSS Satellite Based Precise Point Positioning (PPP) Maritime Service between sessions are invited to contact the task leader Qian Sun (qbcouple@163.com). 17
15. **Seong Woo Son** and **Gillian Burns** are requested to coordinate WG3 work maintaining the Heritage Web Page through to completion within the Task Period and **Korea Institute of Aids to Navigation** and **NLB respectively** are requested to support them in this. 20
16. **Sarah-Jane Lakshman** is requested to continue coordinating WG3 work in the production of a Technical or Guidance document on ‘good practice in modernising heritage lighthouses whilst minimising negative heritage impact’ and **AMSA** is requested to support them in this. 20
17. **Peter Hill** is requested to continue coordinating WG3 work Managing the process for the IALA HLY Accolade through to completion within the Task Period and **Trinity House** is requested to support them in this. 20

18. **Ke Raxuan** is requested to continue coordinating WG3 work in creating the Heritage Module for the WWA L1.1 AtoN Manager Course through to completion within the Task Period and the **Navigation Institute of JiMei University** is requested to support them in this. 21
19. **Jiwon Sim** is requested to continue coordinating WG3 work in reviewing IALA Guidance document G1080 Ed.1 through to completion by Autumn 2025 (ENG21) and **Korea Institute of Aids to Navigation** is requested to support them in this. 21
20. **Naehyuk Yoo** is requested to continue to coordinate WG3 work in reviewing IALA Guidance G1093 Ed.1 for completion and **Korea Institute of Aids to Navigation** is requested to support them in this. 22
21. **Juan Liu** is requested to continue coordinating WG3 work in reviewing IALA Guidance document G1063 Ed.1 through to completion in Autumn 2025 (ENG21) and **China Maritime Safety Administration (MSA)** is requested to support them in this. 22
22. **Zhenyu Guo** is requested to continue coordinating WG3 work in reviewing IALA Guidance documents G1074 Ed.1 for completion by Autumn 2025 (ENG21) and G1075 Ed.1 for completion by Spring 2026 (ENG22) and **China Maritime Safety Administration (MSA)** is requested to support them in this. 22
23. **Zhenyu Guo** is requested to continue coordinating WG3 work in reviewing IALA Guidance documents G1074 Ed.1 for completion by Autumn 2025 (ENG21) and G1075 Ed.1 for completion by Spring 2026 (ENG22) and **China Maritime Safety Administration (MSA)** is requested to support them in this. 23



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