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**Input paper for the following Committee(s):** **Purpose of paper:**

(Select as appropriate)

ARM  ENG  PAP  Input

ENAV VTS  Information

**Agenda item** [[1]](#footnote-1) n.n

**Technical domain/ Task number** 2 …………………………………

**Author(s)/Submitter(s)** ENG21

Developing Low-cost, Co-Designed Marine Aids to Navigation for Small Island Developing States (SIDS) and Least Developed Countries (LDC) (AtoN for SIDS) project [[2]](#footnote-2)

# Summary

This document proposes the inclusion of a new task in the ARM Committee’s work plan, the “AtoN for SIDS” project.

This project is described in Annex B. It aims to address the challenges faced by Small Island Developing States (SIDS) and Least Developed Countries (LDC) in implementing IALA-compliant Marine Aids to Navigation (AtoN). These challenges include high costs, limited access to proprietary components, lack of technical expertise, and vandalism.

Co-funded by Lloyds Register Foundation and IFAN up to £1 million, the project will be externally managed and involve collaboration with the Royal College of Art (RCA) and Hawkshill Consulting Limited (HCL). The initiative will span three years and include committee-based work, intersessional activities, and stakeholder workshops in selected SIDS.

The project’s goals are to develop low-cost, co-designed AtoN solutions tailored to the constraints of SIDS and LDCs, improve safety of navigation, and enhance stakeholder engagement. Expected outcomes include evidence-based identification of constraints, practical AtoN designs, trial implementations, and a comprehensive IALA publication. This publication will feature specifications, technical drawings, assembly instructions, maintenance regimes, and sourcing guidance, distributed through accessible platforms.

The ARM Committee is requested to formally adopt the project into its work plan and acknowledge the ENG Committee’s in-principle support in work on the task.

The project partners will proceed with the work and seek advice and comments from the committee.

## Purpose of the document

The purpose of this input paper is to provide the ARM Committee with information to consider and propose that the AtoN for SIDS project be added to the ARM work plan as a specific task.

## Related documents

Presentation “*Developing Low-cost, Co-Designed Marine Aids to Navigation for SIDS & LDC - October 20*25”

# Action requested of the Committee

The Committee is requested to:

1. Consider adding a new task to the ARM Work Plan as described in Annexes A and B to this paper.

2. Note the Liaison note from the ENG21 Committee confirming their in-principle support to the proposed way forward.

1. Task Description

| ARM Committee Work Programme | | | |
| --- | --- | --- | --- |
| Standard | [S1020 Marin](https://www.iala.int/product/s1060/)e Aids to Navigation Design and Delivery | | |
| Topic Area | - | | |
| Task | Support the development of the Low-Cost, Co-Designed Marine Aids to Navigation for Small Island Developing States (SIDS) and Least Developed Countries (LDC) (AtoN for SIDS) Project | | |
| Objectives of the task | The project’s goals are to develop low-cost, co-designed AtoN solutions tailored to the constraints of SIDS and LDCs, improve the safety of navigation, and enhance stakeholder engagement. | | |
| Expected outcome | Expected outcomes include evidence-based identification of constraints, practical AtoN designs, trial implementations, and a comprehensive IALA publication. | | |
| Compelling need | The project aims to address the challenges faced by Small Island Developing States (SIDS) and Least Developed Countries (LDCs) in implementing IALA-compliant Marine Aids to Navigation (AtoN). These challenges include high costs, limited access to proprietary components, lack of technical expertise, and vandalism.  See Annex B for further description | | |
| Strategic Alignment | Goal Goals 1 and 2  Strategy SDG 9, 14, 17 and others | | |
| Scope | Full scope to be defined through Year 1 research and testing phase | | |
| Brief and concise description of the work to be undertaken and programme milestones | See Figure 1 of Annex B for programme and description of work activities | | |
| Expected numbers of sessions for completion | *Session number:*  *17 18 19 20 21 22 23*  x  x  X  X  X  X  x | | |
| Committee notes | Origins |  | |
|  | Agreed by session | TD# | Comments |
|  |  |  |
|  | Approved by Council | *(Council Session)* | *(Date)* |
|  | Revision Notes: |  | |

1. Project description
   1. Background

In 2022, the IFAN-funded Pacific Safety of Navigation Project Phase III highlighted challenges faced by competent authorities in the Pacific Islands when installing and maintaining IALA-compliant Marine Aids to Navigation (AtoN). Issues such as high cost of available AtoN products, limited availability of proprietary components, lack of technical expertise, and post-installation vandalism were identified as key obstacles by some Pacific Small Island Developing States (SIDS) and Least Developed Countries (LDC).

IFAN committed to reassessing the requirements, constraints and designs of IALA compliant AtoN, with the goal of producing a sustainable, and practical guide for AtoN, tailored for logistically restricted SIDS and LDC. IFAN has partnered with Lloyds Register Foundation to fund a project to achieve this. The Solomon Islands and Vanuatu are examples of SIDS vocal in their need for focused guidance on ensuring IALA compliant AtoN provision within the context of these constraint

* 1. Discussion
     1. How? and WheN?

The project will be funded externally to IALA (see 3.2 below) with joint funding of approximately £900k - £1000k. the project will also be managed and facilitated externally to IALA with direct liaison with the ARM and ENG committees with optimal input from committee members, intersessional working and input papers to respective committees to report on intersessional progress and seek opinion.

A three-year outline programme of activities is shown in Figure 1:

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1. 3 Year programme of activities
   * 1. Who?

Lloyds Register Foundation and IFAN have committed in principle (subject to IALA adoption of the project into the ARM committee work plan) to fund the review of the requirements, constraints and designs of IALA compliant AtoN and has partnered with:

* The Royal College of Art (RCA), with the intention of employing its research and design capabilities to develop the AtoN design
* Hawkshill Consulting Limited (HCL, Sarah Robinson) to coordinate Committee input and liaison and ensure IALA compliant design at all stages.

Intersessional work will be led by the RCA and liaison with Committees by HCL, both of whom will become Affiliate IALA members, if the committee agree to adopt the project on the ARM work plan. Stakeholder liaison is to be jointly managed between RCA and HCL, with advice on key stakeholders from the IALA Secretariat.

Support and direct input from the IALA ENG and ARM committees will ensure that the work we undertake is compliant with IALA Standards, whichever may apply to the AtoN under consideration. These standards could include, but not be limited to materials, design or procedures.

It is intended that representatives from the committees will travel and work with stakeholders to co-design, test, finalise and disseminate low cost AtoN solutions that are suitable for SIDS and LDC communities.

A governing advisory board will be established, including representatives from LRF, IFAN and IALA.

* + 1. Where?
* **Committee based work** - Assuming confirmation of adoption of the project within the Work Plan at Council 03 in December 2025, the project will be initiated within the ARM Committee as the “Recommendation” level advisers, agreeing the fundamental requirements for the project and the initial relevant recommendations.
* The ENG committee will then provide the “Guideline” level advice. Whilst only Recommendations, rather than Guidelines are Normative or Informative, and thereby indicating conformance to the relevant Standard, for the purposes of the project the advice of the ENG Committee on the relevant “compliance” aspects of the current Guidelines will be sought.
* RCA/HCL will join as Affiliate members and attend ARM and ENG committees for the duration of the project.
* **Intersessional work** - This work will be undertaken remotely by RCA and HCL will liaise with the committees to ensure two-way transfer of information. It is anticipated that there will be two intersessional in person liaison meetings involving the RCA, HCL and committee representatives, held either in Paris or London.

• **Workshops** – A series of co-design workshops onsite in years 1 and 2 with key stakeholders will be undertaken in selected SID states(s). RCA/HCL and representative Committee members would participate in the workshops.

* + 1. Benefits

The desired outcomes include a combination of strategic and operational, and short- and long-term outcomes:

* Evidence based identification of the key constraints currently limiting provision of IALA compliant AtoN by SIDS and LDS
* Constraint-driven designed AtoN solutions intended for practical implementation by SIDS and LDS
* Trial implementation of AtoN designs to facilitate iterative improvement and provide successful case study examples. Case studies should also include mitigation strategies for obstacles to implementation.
* Stakeholder based evidence for successful AtoN design, installation, operation, maintenance and end of life management. Measures of success will include implementation of the solution and compliance with IALA standards and will therefore include short-term deliverables and longer-term impact measures.

The expected benefits of the project include:

* Improved practical and sustainable solutions for AtoN provision in SIDS and LDS
* Improved integration of technical AtoN designs into SIDS and LDC national guidance and best practice.
* Improved harmonization of SIDS and LDC AtoN with IALA standards.
* Improved safety of navigation in SIDS and LDC
* Improved community stakeholder engagement through the project activities, resulting in reduced cases of vandalism or innocent damage to AtoN
* Demonstration of successful interorganizational working and appropriate allocation of funding streams

The immediate and tangible output from the project would be an IALA publication, facilitating the production of locally produced low cost AtoN that would be distributed through various means. It would include:

* Descriptive specifications for the Marine Aid/s to Navigation
* Technical drawings for the Marine Aids/ to Navigation
* Step by step instructions for the Marine Aids/ to Navigation assembly/construction
* Descriptive maintenance regimes
* Potential sources of raw materials and components
* References to IALA and other design standards used in the design

The publication would be distributed with due consideration to the type and ease of access by the end users but could include:

* A dedicated web page with additional information and links
* Video or films describing the construction and sourcing of materials to be held on an open-source platform e.g., YouTube

At this stage it is anticipated that the resulting publication would demonstrate the application of existing IALA recommendations and guidelines, rather than resulting in a new IALA technical principles. There is the possibility of course that any new or useful open-source information that arises from the project could be submitted for inclusion into existing or even new IALA guidance through the usual IALA committee processes.

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