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| **ENG Committee**  **working groups**  **Terms of reference** |
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ENG9-12.1

(ENG9-7.1)

# Document Revision

Revisions to the IALA Document are to be noted in the table prior to the issue of a revised document.

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| **Date** | **Page / Section Revised** | **Requirement for Revision** |
| 23 August 2018 | New Document | Draft to ENG8 |
| 21 March 2019 | Reviewed and updated at ENG9 | To update on the IALA website. |
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# Purpose of this Document

The purpose of this document is to maintain a register of ENG Working Groups Terms of Reference for 2018-22.

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# Introduction

Clause 1.3 in the Policy and Procedures section of the IALA Basic Documents states that a Committee should carry out its work in accordance with the following Terms of Reference.

1. The purpose of a Committee is to create draft Documents, for example draft standards, recommendations, guidelines, and manuals.
2. These documents should be directed to meeting the Goals of the Strategic Vision, with effort concentrated on documents required by the content of the Priorities for the period 2014-2018 in the Strategic Vision.
3. The Committee should work to a Work Programme which has been agreed by the PAP (Policy Advisory Panel), and this Work Programme should clearly show the deliverables as the draft documents indicated in (1) and (2) above.
4. The Committee’s progress with its work and achievement of its deliverables should be reported to PAP and Council at regular intervals.

The following sets out the particular terms of reference for the ENG Committee for the work period 2018-2022.

# Committee Structure

The AtoN Engineering & Sustainability Committee (ENG) is structured into four Working Groups to deliver the 2018 – 2022 work plan. They are:

* WG1 - Light & Vision Physics;
* WG2 - Technical Knowledge and Sustainability;
* WG3 – Radionavigation Services;
* WG4 – Heritage Forum.

# Terms of Reference for the ENG Visual & Physical AtoN Working Group (WG1)

## Introduction

Visual AtoN are an essential element of safe and efficient maritime navigation. While the range of visual AtoN has reduced with the increasing use of electronic navigation systems, the need for short range AtoN, good spatial awareness, efficiency and cost effectiveness of visual AtoN service provision has increased.

## Scope

The review, update and development of IALA documents and knowledge transfer that supports the ENG Committee Work Programme 2018 – 2022 and IALA strategy. The support of technical workshops.

## Topics and activities

* Visual perception & marine signalling;
* Range and Colour;
* Light and Vision Physics;
* Buoys visual aspects;
* Beacons & day marks;
* S-100 registry support
* Document review & production;
* IALA Wiki development and use;
* Identification and delivery of potential Standards;
* Navguide updates;
* Technical updates.

## Deliverables

* Appropriate draft Standards, Recommendations, Guidelines, Model Courses and Manuals, etc., to fulfil the tasks assigned to the Working Group in the Committee Work Programme;
* Information and relevant subtasks requested from other Working Groups within the Committee for them to fulfil their tasks;
* Draft liaison notes etc. as appropriate;
* Support for the technical workshops.

# Terms of Reference for the ENG Knowledge and Sustainability Working Group (WG2))

## Introduction

Effective technical management with attention to standards, quality control, information sharing and training are essential elements of AtoN service provision to support efficient and environmentally friendly marine navigation.

## Scope

The review, update and development of IALA documents and knowledge transfer that support the ENG Committee Work Programme 2018 – 2022 and IALA strategy. The support and delivery of technical workshops. Provide a forum for knowledge sharing on asset management of heritage lighthouses & estates.

## Topics and activities

* Sustainability and Environmental responsibility;
* World Wide Academy;
* Technical workshops;
* Buoys and beacons structural aspects and moorings;
* Civil Engineering & structural maintenance;
* Maintenance and commissioning;
* Work in extreme environments;
* Power systems;
* Remote control, monitoring and telematics;
* Audible signals;
* Document review & production;
* IALA Wiki development and use.
* Identification and delivery of potential Standards;
* Commissioning & audit;
* e-Navigation implementation;
* Health & Safety;
* Technical updates;
* Cyber security;

## Deliverables

* Appropriate draft Standards, Recommendations, Guidelines, Manuals, Model Courses and Product Specifications, etc., to fulfil the tasks assigned to the Working Group in the Committee work programme;
* Information and relevant subtasks requested from other Working Groups within the Committee for them to fulfil their tasks;
* Draft liaison notes etc. as appropriate.
* Technical workshop(s) as detailed in the Committee work programme.

# Terms of Reference for the ENG Radionavigation Services Working Group (WG3)

## Introduction

Reliable position-fixing (with redundancy) is a fundamental requirement for navigation and e-navigation. This requirement has since expanded to cover all aspects of Positioning, Navigation and Timing (PNT) inputs required by both ship and shore to enable e-Navigation.

## Scope

All aspects of Positioning, Navigation and Timing systems including resilience, reliability and integrity.

## Topics and activities

* World-Wide Radionavigation Plan (WWRNP);
* PNT Requirements for e-Navigation;
* Radar technology, and associated aids to navigation;
* Terrestrial positioning systems;
* GNSS and its augmentation;
* The requirement for terrestrial backup systems for GNSS;
* Systems using Signals of Opportunity;
* Visual & optical positioning/navigation techniques;
* Inertial navigation techniques;
* Effective fusion and integration of available PNT data;
* PNT Performance Monitoring;
* Development of the IALA Marine Beacon DGNSS concept;
* Liaison with IMO, IEC, ITU, CIRM, RTCM and other bodies on PNT matters.

## Deliverables

* Appropriate draft Standards, Recommendations, Guidelines, Model Courses, Manuals, Product Specifications, etc., to fulfil the tasks assigned to the Working Group in the Committee Work Programme;
* Information and relevant subtasks requested from other Working Groups within the Committee for them to fulfil their tasks;
* Draft liaison notes etc. as appropriate;
* Support for Technical Workshops.

# Terms of Reference for the ENG Heritage Forum (WG4)

## Introduction

Aids to navigation have a valued heritage and the history of lighthouses has an attraction for many outside the world of aids to navigation service providers and users.

In many littoral countries lighthouses and similar aids to navigation and also artefacts and publications associated with them form an important part of the national heritage and are being recorded and preserved for future generations.

## Scope

All aspects of Heritage, including the preservation and maintenance of lighthouses of heritage interest, and also the preservation of artefacts and documents.

## Topics and activities

* Exchange of information and experience in maintenance and preservation of lighthouses;
* Asset management of heritage buildings.

## Deliverables

* Develop a World Heritage Lighthouse Cyber Centre, accessible via the IALA website;
* Develop a database on World Heritage Lighthouses;
* Manage the ‘World Heritage Lighthouse of the Year proposal (related to the ‘World AtoN Day’;
* Support the WWA on Heritage Model Courses
* Deliver an Heritage Seminar.