**IALA Committee work programme 2023-2027**

# BACKGROUND

In accordance with the general regulation, Committees and PAP have prepared the Work Programme (WP) for the next quadrennial for approval of the Council 77 session. The purpose of the WP is to clearly identify any items of work with outcomes and priorities, taking account of the strategic vision, the current drivers and trends, and the IALA position document on the development of marine AtoN.

The Work Programme will cascade down to the work plan of the committees, which could detail the tasks assigned. This document contains summarized work items proposed by the committees so far to give the Council brief information on the planned work of the committees for 2023-2027.

The table doesn’t include updating the other documents (e.g., manuals and WWRNP), liaison with related bodies and events such as workshops and seminars. Committees will continue the work on these.

PAP will continue work on this document, and the final Work Programme, 2023-2027, will be approved at Council 78 on 3 June 2023 in Brazil.

# THE COMMITTEE IS REQUESTED TO

Update the Work Programme.

1. Draft committee work programme 2023-2027

| Reference to Standards | scope | Title | Description | Expected outcome | Committee | Committee work item no. | Related documents |
| --- | --- | --- | --- | --- | --- | --- | --- |
| S1010 | 1.1 AtoN planning | Compile new Guideline on AtoN Tender requirements and specification – Led by ARM with ENG support. | New Guideline on Tender requirements. | Guideline | ENG | Not assigned yet |  |
|  |  | Providing guidance on the process to implement developments of innovation | Develop guidance for IALA members on going from development test bed/ trial reporting to implementation:   * Identify best practice in the implementation of innovative solutions; * Define the process to move from ‘development’ to ‘implementation’; * Develop guidance to assist IALA members in the implementation of solutions developed through test beds noting technology readiness levels; * Establish links to existing IALA documentation; * Review existing documentation (i.e. ACCSEAS work) * Identify a way to share lessons learned in implementing innovative solutions (IALA ‘body of knowledge’ or similar); * Identify when liaison with other competent authorities and / or organizations may be required;   Assist IALA and IALA members when technology is mature enough to recommend implementation. | New IALA guideline on implementing the results of test beds, with a sample ‘template’ roadmap – implementing existing technologies / new technologies to meet a need.  Identification of a body of knowledge / sharing of best practices within the IALA membership. | ENAV | Not assigned yet |  |
|  | 1.2 Obligations and regulatory compliance | Providing guidance on the certification of technical equipment, information systems and technical infrastructure related to MASS in the domain of IALA | Develop guidance for IALA members and certification/standardization bodies (e.g. IEC) on certification of technical MASS equipment, information systems and technical infrastructure in the domain of IALA:   * Identify existing certification procedures and performance test specifications for technical MASS equipment and infrastructure; * Identify (shoreside) infrastructure and counterparts on the shipside within the remit of IALA that are envisioned for being utilized by MASS applications, focusing on AtoNs including VTS and Maritime Services; * Seek input from IALA members on their experiences and processes for certification of maritime equipment and infrastructure; * Seek input from experts in IEC/ISO on the procedures and performance test specifications for MASS equipment and infrastructure; * Develop guidance for the certification of such technical systems and infrastructure to support certification/standardization bodies; * Develop guidance for IALA members on how such technical systems must be certified; * Link with Innovation Hub * Refer to existing IALA documents (i.e. G1107) * Review existing documentation (i.e., IMO documents, IEC/ISO standards, existing procedures from certification/standardization bodies, such as DNV, Bureau Veritas or Lloyds Register, procedures identified in 3GPP (device specific))   Identify when liaison with other competent authorities and / or organizations may be required, especially with IMO and/or IEC; | New IALA guidance document(s) on the certification of technical equipment, information systems and technical infrastructure related to MASS in the domain of IALA | ENAV, ENG, ARM, VTS | Not assigned yet |  |
|  | 1.3 Level of service |  | Compile a Recommendation to incorporate all references relating to the Categorization, Availability Objectives (G1030), Availability and Reliability for Short Range Aids to Navigation (G1035), Calculation of Availability (G1004) and relevant text appearing in the 2018 & draft 2023 NAVGuides that are not cross-referenced in the aforementioned Guidelines. | Recommendation | ARM | Not assigned yet |  |
|  | 1.4 Risk mangent | DEVELOP Guidance on Risk Assessment and Certification Methods in the context of e-Navigation | Development of guidance documents on Risk Assessment and Certification Methods in the context of e-Navigation. | Recommendation or Guideline | ENAV | ENAV-2.6.1 |  |
|  | 1.5 Quality management | Develop a guideline on quality management system for VTS | Develop a guideline on quality management system for VTS | New Guideline | VTS | VTS-1.8.1 |  |
| S1020 | 2.1 visual signaling | Update G1043 | Review & update guideline 1043 on Light sources and amalgamate with Guideline on modern equipment in traditional lighthouses | New amalgamated Guideline | ENG | Not assigned yet |  |
|  |  | Update Guideline 1048 | Update Guideline 1048 LED Technologies and their use in signal lights | Revise Guideline | ENG | Not assigned yet |  |
|  |  | Develop guideline on Port Traffic Signals | Develop a new guideline on Port Traffic Signals | New Guideline | ENG | Not assigned yet |  |
|  |  | Update E-112 | Update E-112 Leading Lights and 1023 Leading Lines into a guideline | New Guideline | ENG | Not assigned yet |  |
|  |  | Update G1061 | Complete Guideline 1061 (2008) on Illumination of Structures | Revise Guideline | ENG | Not assigned yet |  |
|  | 2.2 Range and performance | Update E200-3 | Update E200-3 on Light measurement into a guideline | New Guideline | ENG | Not assigned yet |  |
|  |  | Develop a Guidance on monitoring of function | Develop Guidance on monitoring of function and degradation of AtoN light sources | Add to G1077 | ENG | Not assigned yet |  |
|  |  | Update Guideline 1041 | Update Guideline 1041 on Sector Lights to define ‘Angle of Uncertainty’ | Revise Guideline | ENG | Not assigned yet |  |
|  | 2.3 Design, Implementation & Maintenance | Update G1035 | Update G1035 Availability and reliability of AtoN – theory and examples 2.0 Provides a method of calculating availability and reliability calculation with a view to enabling members to provide a cost-effective AtoN service. | Revise Guideline | ENG | Not assigned yet |  |
|  |  | Update G1037 | Update G1037 Data collection for AtoN performance calculation 2.0 Provides details of methods that can be used to collect information on the availability and reliability of AtoN equipment. | Revise Guideline | ENG | Not assigned yet |  |
|  |  | Update G1077 | Update G1077 Maintenance of AtoN 1.0 Information to help develop a maintenance strategy. Several annexes are attached to provide detailed information on the activities involved in the maintenance. | Revise Guideline | ENG | Not assigned yet |  |
|  |  | Develop Guideline on complimentary use of AtoN | Develop Guideline on complimentary use of AtoN. Eg. Tsunami monitoring, Met Hydro monitoring, Private communications platforms etc. | New guideline on Complimentary use of AtoN | ENG | Not assigned yet |  |
|  |  | Develop Guideline on meteorological and oceanographical data disemination | Develop Guideline on meteorological and oceanographical data disemination | New Guideline | ENG | Not assigned yet |  |
|  |  | Update and Amalgamate the Guidelines G1108 and G1136 | Update and Amalgamate the Guidelines 1108, 1136 and new guideline “AtoN equipment and structures exposed to extreme environmental conditions into one guideline” | New single Guideline on AtoN in extreme environmental conditions | ENG | Not assigned yet |  |
|  |  | Update G1007 | Update G1007 Lighthouse maintenance structural composition, constructions, accommodation facilities and physical and environmental effects. | Revise Guideline | ENG | Not assigned yet |  |
|  |  | Update G1064 | Update G1064 Integrated power system lanterns (Solar LED lanterns) | Revise Guideline | ENG | Not assigned yet |  |
|  | 2.4 Floating Aids to Navigation | Develop guidance quantifying characteristics | Develop guidance quantifying characteristics to meet nautical and operational requirements and ways to verify them | New guideline | ENG | Not assigned yet |  |
|  |  | Develop new guideline on radar reflector (reflection) properties | Develop new guideline on radar reflector (reflection) properties | New guideline on radar reflectors. | ENG | Not assigned yet |  |
|  |  | Creating an overview guidance on floating AtoN | Creating an overview guidance on floating AtoN | New Guideline on floating AtoN | ENG | Not assigned yet |  |
|  |  | Update Recommendation E-107 | Update Recommendation E-107 Moorings for floating AtoN 2.0 Technical recommendation on moorings. | Updated Recommendation on moorings for floating AtoN | ENG | Not assigned yet |  |
|  |  | Update G1066 | Update G1066 Design of floating AtoN moorings 1.1 General consideration on mooring materials, and comparison of mooring loads and design. | Updated Guideline on Design of floating AtoN moorings | ENG | Not assigned yet |  |
|  | 2.5 Environment & Sustainability | Review and update as necessary G1036, the Green Guide | Review and update as necessary G1036, the Green Guide | Revise guideline on Environmental and Sustainability responsibilities. | ENG | Not assigned yet |  |
|  | 2.6 Heritage and Culture | Maintain the Heritage web page on the IALA website | Maintain the Heritage web page on the IALA website | Updated Heritage web page | ENG | Not assigned yet |  |
|  |  | Develop Guidance on modern equipment in traditional lighthouses | Develop Guidance on modern equipment in traditional lighthouses | New Guideline | ENG | Not assigned yet |  |
|  |  | Heritage LH of the Year award | Heritage LH of the Year award | Maintain the Award | ENG | Not assigned yet |  |
|  |  | Write the Heritage module for the WWA L1.1 AtoN Manager course | Write the Heritage module for the WWA L1.1 AtoN Manager course | New module on Heritage to include in the L1.1 course. | ENG | Not assigned yet |  |
|  |  | Review of documents | Review of documents | All documents pertinent to heritage reviewed | ENG | Not assigned yet |  |
|  |  | Update G1063 ENG Dec 2008 Agreement for complementary use of lighthouse property.  What should the agreement contain and safety aspect of the agreement including examples of few countries. | Update G1063 ENG Dec 2008 Agreement for complementary use of lighthouse property.  What should the agreement contain and safety aspect of the agreement including examples of few countries. | Updated Guideline | ENG | Not assigned yet |  |
|  |  | Review Guidelines 1074, 1075 & 1076 on Branding, Business plans and Building Conditioning for content and relevance. | Review Guidelines 1074, 1075 & 1076 on Branding, Business plans and Building Conditioning for content and relevance. | Reviewed guidelines | ENG | Not assigned yet |  |
| S1030 | 3.1 Satellite positioning and timing | Guidance on timing and synchronization | New Guideline on the need and potential solutions | New Gudeline | ENG | Not assigned yet |  |
|  | 3.2 Terrestrial positioning and timing (including eLoran, eChayka, R-mode) | R-Mode development | Development of R-Mode Guideline  Coordination of R-Mode test beds | New Gudeline | ENG | Not assigned yet |  |
|  | 3.3 Racon & radar positioning | Radar & Ehanced Racon positioning | Development of eRacon/eRadar technology  Review related IALA documents |  | ENG | Not assigned yet |  |
|  | 3.4 Augmentation services (SBAS & DGNSS) | Augmentation systems | Watching brief on DGNSS developments, both SBAS and marine Radiobeacon and update IALA documents as necessary |  | ENG | Not assigned yet |  |
|  |  | High accuracy systems | Guidance on new systems and how they can be used | New Gudeline | ENG | Not assigned yet |  |
|  | 3.7 PNT technology review | Monitor developments in radionavigation topics for information exchange and development of appropriate guidance (inc. resilient PNT, cyber security, timing aspects etc). | Rapporteur reports and new documents as required. |  | ENG | Not assigned yet |  |
| S1040 | 4.1 VTS implementation | guidance for establishing a compliance and enforcement framework by participating ships | Develop guidance for establishing a compliance and enforcement framework by participating ships | New Gudeline | VTS | VTS-1.1.2 |  |
|  |  | MASS related | a) Develop a Guideline on the implications of maritime autonomous surface ships (MASS) from a VTS perspective.  b) Assess the implications associated with the advent of MASS on IALA Standards specifically related to the establishment and operation of VTS (scoping exercise) | New Gudeline | VTS | VTS-1.1.3 |  |
|  |  | Develop guidance on delineating the VTS area | Develop guidance on delineating the VTS area | New Gudeline | VTS | VTS-1.1.4 |  |
|  |  | policy and regulatory framework | Develop guidance to assist competent authorities for VTS establish an appropriate policy and regulatory framework to meet their obligations. | New Gudeline | VTS | VTS-1.1.5 |  |
|  |  | Future VTS | Proceed with the “living document” on “Future VTS”, including emerging technologies and Human Element |  |  | VTS-1.9.4 |  |
|  | 4.2 VTS communication | guidance on VTS digital communications | Develop guidance on VTS digital communications (operational aspects ) | New Gudeline | VTS | VTS-1.3.1 |  |
|  |  | Revision of IMO Resolution A.918(22) | Revision of IMO Resolution A.918(22) IMO Standard Marine Communication Phrases (prepare note IMO in time) | Revised IMO Resolution | VTS | VTS-1.3.2 |  |
|  | 4.5 VTS technologies | portrayal of VTS information | Revise GXXXX on portrayal of VTS information developed at previous WP | New Gudeline | VTS | VTS-2.5.1 |  |
|  |  | Develop technical service specifications | Develop technical service specifications for digital data exchange between VTS and other entities - primarily ships. | New Technical service | VTS | VTS-2.5.2 |  |
|  |  | Update G1111-1 | Update G1111-1 to include guidance on VTS Management Information Systems | Revised guideline | VTS | VTS-2.6.1 |  |
|  |  | Develop a Product Specification | Develop a Product Specification S-212 under the S-100 framework for VTS | New Product specification | VTS | VTS-2.8.1 |  |
|  |  | Review and update Recommendation R0145 | Review and update Recommendation R0145 (V-145) on the Inter-VTS Exchange Format (IVEF) Service (Output to be a revised Recommendation and associated Guideline including a technical service and/or product specification S-210) | Revised recommendation | VTS | VTS-2.8.2 |  |
| S1050 | 5.1 Training and assessment |  | Develop a training course and make relevant training material available to enhance mariners’ understanding of Marine Aids to Navigation (AtoN) and to facilitate the effective use thereof. | Model course | ARM | Not assigned yet |  |
|  |  | WWA lesson plans to review |  | Review and updating of the WWA Lesson plans as requested by the Academy | ENG | Not assigned yet |  |
|  |  | Training in implementation of digital solutions (data analytics & maritime informatics) | Develop guidance for IALA members on skills sets related to the digital environment (data analytics, maritime informatics). Work with IALA WWA on possible model course / integration of digital intelligence into existing IALA model courses:   * Scan industry / related industries and identify skill sets required in an increasingly digital environment * Identify existing training on digital intelligence, data analytics, maritime informatics * Working with IALA WWA identify requirements of IALA members regarding training to address digital developments * Based on analysis / gap analysis develop a guideline on training to support the implementation of digital technologies in the AtoN / Port environment   If determined appropriate, work with IALA WWA to develop a model course / content for existing model courses related to digital intelligence. | New IALA guideline on digital intelligence in the port and AtoN environment.  Development of content for possible training programs related to digital intelligence (with IALA WWA) | ENAV | Not assigned yet |  |
|  |  | Aptitudes required by VTS operators | Aptitudes required by VTS operators [aptitude/psychometric testing] |  | VTS | VTS-3.4.1 |  |
|  |  | Revision of G1103 | Revision of G1103 on Train the Trainer | Revised guideline | VTS | VTS-3.8.1 |  |
|  |  | Remote training in VTS | Develop a Guideline for Remote training in VTS | New guideline | VTS | VTS-3.8.2 |  |
|  |  | stress or trauma in VTS operations | Develop guidance for dealing with stress or trauma in VTS operations | New guideline | VTS | VTS-3.8.3 |  |
|  |  | Revision of G1027 on Simulation in VTS training | Revision of G1027 on Simulation in VTS training | Revised guideline | VTS | VTS-3.8.4 |  |
|  |  | English Language Competency | Consider including English Language Competency requirements in VTS operations | New guideline | VTS | VTS-3.8.5 |  |
| S1060 | 6.2 Harmonised maritime connectivity | Update G1008 May 2009 Remote control and monitoring of AtoN 2.0 Objectives of remote control and monitoring, and technical aspects such as communication links, display, maintenance and integration with other systems. |  | Revised Guideline | ENG | Not assigned yet |  |
|  |  | Digital communication | Develop a Guideline for migrating current analogue VHF voice communications to digital VHF voice communications:   * Define the elements within current analogue VHF voice communications; * Define the new possibilities with digital VHF voice communication systems; * Develop guidance to assist Contracting States and Competent authorities to migrate their current analogue VHF voice system to a mixture of analogue VHF communications and digital voice VHF communications; * Establish links to existing IALA documentation; * Liaise with other bodies such as IMO, ITU, IHMA, IMPA, CIRM, ETSI, RTCM, CEPT on this matter. * Liaise with IALA VTS Committees as appropriate * Take into consideration outputs from related IALA workshops and seminars * Consider the impact and implications of MASS with regards to communications and data exchange within the AtoN environment.   Develop a working document towards a preliminary draft new ITU-R Recommendation for digital VHF marine radio to be submitted to ITU-R WP5B as a proposal. | New and/or amended IALA guidelines providing guidance to Contracting States and Competent Authorities in regard to migrate to digital VHF voice communications | ENAV | Not assigned yet |  |
|  |  | Develop a Guideline for VDES VDL integrity monitoring | Provide references and advice for authorities to monitor the integrity of VDL.   * Internally, make VDES VDL operating normally.   Externally, specify the common services and functions of the AIS/VDES VDL monitoring system or platform. | IALA Guideline for VDES VDL integrity monitoring | ENAV | Not assigned yet |  |
|  |  | Develop Guidelines on VDES Authentication Techniques | Describe potential methods for authenticating VDES transmissions, including VDES R-Mode signals.  Provide basis for the development of an international standard for VDES authentication, so that all mariners can have trust in e-navigation communications and future resilient positioning, navigation and timing solutions based on VDES. | IALA Guideline on VDES Authentication Techniques | ENAV | Not assigned yet |  |
|  |  | Develop Guidelines on VDES resource sharing and coordination/cooperation | Establishment of international cooperation and resource sharing and management on VDES terrestrial and satellite communication | An IALA Guideline that provides framework of VDES resource sharing and coordination / cooperation for VDES satellites providers, VDES land-stations and VDES users to realize smooth and effective VDES communications on both official and private communications. | ENAV | Not assigned yet |  |
|  |  | Review und update R1007 The VHF Data Exchange System (VDES) for shore infrastructure (June 2017) | Update to the latest development of AIS | Reviewed Recommendation 1007 | ENAV | Not assigned yet |  |
|  |  | Liaison with ITU on Recommendation ITU-R.M 2092-1 | LN to ITU WP5B in regards with the Recommendation ITU-R.M 2092-1: Consider future development of VDES | Liaison note | ENAV | Not assigned yet |  |
|  |  | Liaison with IEC on the Test standard for VDES | Test standard for VDES: Contribute to the development of VDES test standard | Liaison note and input document | ENAV | Not assigned yet |  |
|  |  | Communications channels for [public service] digital information services in coastal areas | Single new Recommendation on (free-to-air, non-commercial) communications channels to be used by coastal authorities for digital information transfer between ship and shore in coastal areas  may absorb A-123 and A-124 | Guideline | ENAV | Not assigned yet |  |
|  |  | New IALA Guideline on VDES system integration into ship and shore side | Develop documentation on the integration and operations of VDES for different user groups - leveraging the capabilities VDES provide and maintain them by managing the resource by optimized operations. | Guideline | ENAV | Not assigned yet |  |
|  |  | Review und update G1082 An Overview of AIS, (June 2016) | Update to the latest development of AIS | Reviewed Guideline 1082 | ENAV | Not assigned yet |  |
|  |  | Review und update G1062 Establishment of AIS as a [Marine] Aid to Navigation (Dec 2008) | Update to the latest development of AIS; This revision must be reflected in G1022, i.e MAtoN | Reviewed Guideline 1062 | ENAV | Not assigned yet |  |
|  |  | Recommendation for the AIS Service | Develop Recommendation for the AIS Service  Planned in draft Standard 1060 (supersedes A-124). Move recommendation A-124 content to Recommendation R1008 remainder to Guideline(s) | New Recommendation | ENAV | Not assigned yet |  |
|  |  | New Guideline for R 1008 | A-124 APPENDIX 0 to APPENDIX 19 become Guidelines for Recommendation R1008: Move recommendation A-124 content to Recommendation R1008 remainder to Guideline(s) | New Guideline | ENAV | Not assigned yet |  |
|  |  | NAVDAT development | Draft Recommendation and Guideline for Digital navigational data system (NAVDAT) considering shore based infrastructure | New Recommendation and Guideline | ENAV | Not assigned yet |  |
|  | 6.3 Wide and medium bandwidth systems | Harmonized implementation of Application Specific Message (ASM) | Review und update e-Nav 144 and G1095 - Update to the latest development of ASM | Recommendation and guideline | ENAV | Not assigned yet |  |
| S1070 | 7.1 Digitalisation and Digital Platforms | Definition of a vision for digitalization of shipping and maritime transportation | Development of a vision for digitalization of shipping and maritime transportation - Document sketching the IALA vision on digitalization of waterways and shipping:   * Definition if scenarios for shipping and maritime transportation in a digitalized world   Development of a vision and recommendation on digitalization. | IALA Rxxxx Digitalisation of Shipping and Waterways | ENAV | ENAV-1.1 |  |
|  |  | Digital Fairway | Develop guidance for IALA members on the developments and implementation of the digital fairway:   * Review guidance on the use of simulation in fairway / AtoN (IALA G1058 and G1097); * Identify best practice in development and use of digital twins; * Provide guidance on the use of digital twins for fairways / aids to navigation provision; * Identify uses of digital fairway for planning, monitoring and maintenance * Identify options to share information on the fairway infrastructure and services in a digital format with users * Link with, for example, IMT-2020 (5G) and beyond for data exchange, AI/ML, S100, Identify opportunities to enhance sustainability through the use of technology / digital twins for fairways and AtoNs. | New IALA guideline on implementing the development and implementation of digital fairways. | ENAV | Not assigned yet | G1058, G1097 |
|  |  | Definition of a Roadmap for Digitalization | Roadmap to guide IALA and its members on their way for a digital transformation of shipping and waterways: Identified Technologies and roadmap | IALA Rxxxx Recommendation on a Roadmap for Digitalization | ENAV | ENAV-1.2 | [G1157](https://www.iala-aism.org/product/g1157/). G1161 |
|  |  | Definition of a Guideline for Risk Assessment and Cyber Security | Definition of a Guideline for Risk Assessment and Cyber Security including Risk assessment methods Identification of risks, Identification of counter measures, Identification of core elements to ensure cyber security | IALA Gxxxx on Risk Assessment on Digitalisation and Cyber Security | ENAV | ENAV-1.3 |  |
|  |  | Development and definition of a system architecture for digital waterways and shipping to update the CSSA (G1114) | Development of a System Architecture Concept for Digitalized Waterways and Maritime Transformation: Architecture Pattern, Architecture Overview, Architecture Details / Platforms / Services | IALA G1114 New Vision on Systems Architecture for Digitalized Waterways (was CSSA) | ENAV | ENAV-2.1 | G1114 |
|  |  | Development of a recommendation for digital platforms | Definition of a Platform as the MCP for the Implementation of the proposed Architecture (G1114 Update): Definition of the architecture based on Updated G1114, Description of platform elements | IALA Gxxxx Digital Platforms | ENAV | ENAV-2.2 | G1114 |
|  |  | Specification of a guideline for the implementation of digital platforms and necessary technical services | Basic Concepts and guideline for developers on technical services adjusted to the digital platform concepts. | IALA G1128 Update Specification of Technical Services | ENAV | ENAV-2.3 | G1128, G1155 |
|  |  | Development of standards for the implementation and using of the supporting infrastructure (technical services) | Number of Technical Services to support the proposed platform covering:   * Identification / Identity Management and Services * Digital authentication and encryption * Resource and Services registries   Communication/messaging support (Maritime Massaging Service) | IALA Sxxxx-xxxx Standardised Technical Services | ENAV | ENAV-2.4 | G1128 |
|  |  | Management of MRN | Provision of the MRN Management |  | ENAV | ENAV-3.1 | G1164 |
|  |  | Management of digital certificates for seeding a trust hierarchy for its members | Service for providing root certificates and endorsement of members |  | ENAV | ENAV-3.2 |  |
|  |  | Supporting and supervision of a digital incubation initiative |  |  | ENAV | ENAV-3.3 |  |
|  |  | Contribute to the standardization efforts of IHO with respect of the requirements of the domain experts and digitalizes maritime transportation and waterways | Support and contribute to international standardization efforts (IMO, IHO, WMO) |  | ENAV | ENAV-4.1 |  |
|  |  | Support of the domain experts | Recommendation, Guidelines and Standards of other committee of domain experts - Advice on digital technologies |  | ENAV | ENAV-4.2 |  |
|  |  | Update Recommendation and Standards | Ongoing Review and Update of existing Recommendation and Standards | G1143, G1128, G1157, G1117, R1019, G1161 and others | ENAV | ENAV-5.1 |  |