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| ENAV Committee  Work programme task register |
|  |
| 2014 – 18 |

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# **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** |
| 14 Oct 2014 | New Document | Draft considered at ENAV15 and approved |
| 24 April 2015 | Whole section | Reviewed at ENAV 16 and approved |
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# Purpose of this Document

The purpose of this document is to maintain a register of ENAV Committee Work Programme Tasks for 2014-18 which describes:

* The current status of each Task
* How the Task is linked to IALA’s Strategic Alignment
* Key changes to the Task during its development

Note: A copy of IALA’s Strategic Vision 2014-18 is at Annex 1.

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| **TASK** | 1.1.1. Review and update NAVGUID Chapter 4, section 4.5.2 – 4.5.5 | | | |
| Objectives of the task | Update NAVGUIDE | | | |
| Expected outcome | Updated NAVGUIDE | | | |
| Strategic Alignment | **Goal** - G1  **Strategy** – S1  **Priority** – P3 | | | |
| Scope (Describe key items that are in scope/out of scope) | Review and update NAVGUIDE in accordance with the development of e-navigation | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Each session of the Committee, since this work is the standing task | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 |  |  |  |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.1.2. Review and update NAVGUID Chapter 4, section 4.1 -4.7 excluding subsection under 4.5 | | | |
| Objectives of the task | Update NAVGUIDE | | | |
| Expected outcome | Updated NAVGUIDE | | | |
| Strategic Alignment | **Goal** - G1  **Strategy** – S1  **Priority** – P3 | | | |
| Scope (Describe key items that are in scope/out of scope) | Review and update NAVGUIDE in accordance with the development of e-navigation | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Each session of the Committee, since this work is the standing task | | | |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.1.3. Review and update NAVGUID Chapter 4, section 4.10 - 4.12 | | | |
| Objectives of the task | Update NAVGUIDE | | | |
| Expected outcome | Updated NAVGUIDE | | | |
| Strategic Alignment | **Goal** - G1  **Strategy** – S1  **Priority** – P3 | | | |
| Scope (Describe key items that are in scope/out of scope) | Review and update NAVGUIDE in accordance with the development of e-navigation | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Each session of the Committee, since this work is the standing task | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.1.4. Review and update NAVGUID Chapter 4, section 4.5.1 | | | |
| Objectives of the task | Update NAVGUIDE | | | |
| Expected outcome | Updated NAVGUIDE | | | |
| Strategic Alignment | **Goal** - G1  **Strategy** – S1  **Priority** – P3 | | | |
| Scope (Describe key items that are in scope/out of scope) | Review and update NAVGUIDE in accordance with the development of e-navigation | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Each session of the Committee, since this work is the standing task | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.1.5. Review and update NAVGUID Chapter 4, section 4.8- 4.9 | | | |
| Objectives of the task | Update NAVGUIDE | | | |
| Expected outcome | Updated NAVGUIDE | | | |
| Strategic Alignment | **Goal** - G1  **Strategy** – S1  **Priority** – P3 | | | |
| Scope (Describe key items that are in scope/out of scope) | Review and update NAVGUIDE in accordance with the development of e-navigation | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Each session of the Committee, since this work is the standing task | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.2.1. Develop Product Specification on AtoN Information | | | |
| Objectives of the task | Prepare an S-100 Product Specification for AtoN Information | | | |
| Expected outcome | Completed PS for inclusion in the Registry | | | |
| Strategic Alignment | **Goal** - G1  **Strategy** – S1, S3  **Priority** - | | | |
| Scope (Describe key items that are in scope/out of scope) | AtoN information for exchange between service providers (e.g. lighthouse authorities) and hydrographic offices | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Finalisation of data model – 02/15 * Completion of Feature Catalog 03/15 * XML encoding examples for testing 04/15 * Validation tests 05/15 * Finalisation of draft PS 10/15 (ENAV17) * 1st edition complete 10/16 (ENAV19) | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 |  |  |  |
| **1.1** | **17/3/16** | Additional milestone for ENAV19 | Clarity of development plan |



| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.3.1. Revision Guideline 1106 | | | |
| Objectives of the task | Review and amendments to guideline 1106 to ensure harmonization between PS’s and or services and remove duplication with guideline 1087. | | | |
| Expected outcome | New Guideline 1106 ‘Producing an IALA S-100 Product Specification’  Amendment to guideline 1087 to maintain alignment with guideline 1106. | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3:.  **Priority** – P3: | | | |
| Scope (Describe key items that are in scope/out of scope) | See Objective. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * ENAV 17 submit amended guideline 1106 for approval. * ENAV18 submit amended guideline 1087 for approval | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 |  |  |  |
| **1.1** | **23-04-2015** | Number of document corrected | **1.1** |
|  | **1.2** | **17-03-2016** | Additional objective and milestone | **To include changes to 1087.** |

| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.3.2. Amend S-100 for Service Orientation | | | |
| Objectives of the task | To support IHO in the recognized needed amendments to S-100. This is needed to support service orientation.  IALA proposes that the S-100 document is made more generic in general by removing terms like dataset and file identifier where applicable; e-Navigation services may transfer data that is not geographical in nature, such as ship reporting. In particular, Part 4 requires revision to improve the support for the concept of e-Navigation, such as services metadata and a new appendix is required for data services. | | | |
| Expected outcome | IALA will provide S-100 WG with proposed changes to IHO S-100 Universal Hydrographic Data Model. It is recommended that the work involved in revising the IHO S-100 Universal Hydrographic Data Model is carried out in close collaboration between the two organizations; IHO and IALA. | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3:.  **Priority** – P3: | | | |
| Scope (Describe key items that are in scope/out of scope) | In scope:  Amendments  Out scope:  Approval process of IHO. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones / Remaining key milestones for completing the task include:   * ENAV 16, Principles clear. Global idea for chapter 4a of S-100 and first draft. * Collaboration with IHO S-100 WG done by correspondence and by intersessional meeting with representatives of IHO S-100 WG. * ENAV 17, S-100 revised committee approved for input to HSSC7 | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 15-10-2014 |  |  |
| 1.1 | 23-04-2915 | TSMAD renamed S-100WG | IHO HSSC reorganisation |

| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.4.1. Develop VDES Message Structures | | | |
| Objectives of the task | Develop the lower level (not application level) message structures necessary to support VDES communications with e-Navigation; | | | |
| Expected outcome | Message structures capable of supporting VDES communications between ship and shore, shore and ship and ship to ship. | | | |
| Strategic Alignment | **Goal** - G1: Ensure aids to navigation and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies are harmonised through international cooperation and the provision of standards  **Strategy** - S1: Develop standards suitable for direct citation by States in areas deemed important by the General Assembly, and continue to improve strong governance, including document policy and procedure for standards.  **Priority** - P2: Deliver a limited suite of high level standards suitable for direct citation by States and by other international organisations. | | | |
| Scope (Describe key items that are in scope/out of scope) | Define message structures necessary to support VDES; | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:Create message structures applicable to the communication methodology to support current e-Navigation services and future services as defined by WG 1/4 | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 1.4.2. Assist in the Development of e-NAV Message Structure | | | |
| Objectives of the task | Assist in the development of e-NAV message structures to ensure that the needs of the communication layer are addressed; | | | |
| Expected outcome | Contribute to the work of WG1/4 | | | |
| Strategic Alignment | **Goal** - G1: Ensure aids to navigation and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies are harmonised through international cooperation and the provision of standards  **Strategy** - S1: Develop standards suitable for direct citation by States in areas deemed important by the General Assembly, and continue to improve strong governance, including document policy and procedure for standards.  **Priority** - P2: Deliver a limited suite of high level standards suitable for direct citation by States and by other international organisations. | | | |
| Scope (Describe key items that are in scope/out of scope) | Work with WG1/4 to ensure that the service level message structures are comprehensive to accommodate the physical layer; | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  Define the needs of the physical (comms) level and communicate those to WG1/4;  Coordinate with WG1/4 to ensure message structures accommodate comms requirements for VDES and in the future all possible comms paths will be considered. | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 2.1.1. Update the Marine Radio Communication Plan | | | |
| Objectives of the task | To provide guidance for IALA Membership on existing and planned radio technologies and the impact within the maritime community. | | | |
| Expected outcome | Marine Radio Communication Plan | | | |
| Strategic Alignment | **Goal** – G2: Ensure an efficient global network of aids to navigation and services for safety of navigation through capacity building and the sharing of expertise.  **Strateg**y - S2: Continue to develop capacity building activities to improve the global operations and management of aids to navigation systems and related services.  **Priority** – P6: Develop a forward plan for future delivery of aids to navigation systems and related services including VTS, taking account of developments in technology and changing needs. | | | |
| Scope (Describe key items that are in scope/out of scope) | To give guidance on the maritime communications technologies in place and possible candidate technologies for future capacity needs. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones / Remaining key milestones for completing the task include:   1. Document to be reviewed at ENAV20; 2. Complete any necessary edits at ENAV21 and forward to council for approval; | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 2.1.2. Develop Recommendation on VDES | | | |
| Objectives of the task | Complete the ITU Recommendation ITU-R M.xx describing behavior across the VDES channels; | | | |
| Expected outcome | ITU Recommendation ITU-R M.xx | | | |
| Strategic Alignment | **Goal** – G2: Ensure an efficient global network of aids to navigation and services for safety of navigation through capacity building and the sharing of expertise.  **Strateg**y – S1: Position IALA as a source of standards, knowledge, and expertise that will enable States to undertake and share the technical development of aids to navigation, in accordance with UNCLOS, SOLAS, and other obligations.  **Priority** – P2: Deliver a limited suite of high level standards suitable for direct citation by States and by other international organisations. | | | |
| Scope (Describe key items that are in scope/out of scope) | To develop the ITU recommendation for the VFH Data Exchange System (VDES) | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  Describe required terrestrial behavior for the ASM (application specific messages) channels;  Describe required terrestrial behavior for the VDE (VHF data exchange) channels;  Describe required satellite behavior for the VDES; | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 2.2.1. Update IALA Recommendations and Guidelines for AIS and VDES | | | |
| Objectives of the task | To update, as necessary, existing recommendations and guidelines for AIS and develop same foe VDES; | | | |
| Expected outcome | Updated AIS documents, New VDES documents;  Disciplined approach to the review cycle similar to IEC; | | | |
| Strategic Alignment | **Goal** – G1: Ensure aids to navigation and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies are harmonised through international cooperation and the provision of standards.  **Strateg**y – S1: Develop standards suitable for direct citation by States in areas deemed important by the General Assembly, and continue to improve strong governance, including document policy and procedure for standards.  **Priority** – P2: Deliver a limited suite of high level standards suitable for direct citation by States and by other international organisations. | | | |
| Scope (Describe key items that are in scope/out of scope) | Review existing IALA AIS documentation and develop new VDES documentation; | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  This is an on-going task that must be considered at every meeting to both meet the evolving uses of AIS which is part of VDES  Ensure that the impact of VDES on the AIS system is carefully considered.  To establish a disciplined approach to the review and publication of AIS and VDES documents. | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 |  |  |  |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 2.3.1. Manage Application Specific Message (ASM) catalogue | | | |
| Objectives of the task | Ensure that the existing ASM catalogue is understood and capable of handling requirements driven by the VDES; | | | |
| Expected outcome | Updated catalogue | | | |
| Strategic Alignment | **Goal** – G2: Ensure an efficient global network of aids to navigation and services for safety of navigation through capacity building and the sharing of expertise.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority** – P6: Develop a forward delivery of aids to navigation systems and related services including VTS, taking account of developments in technology and changing needs. | | | |
| Scope (Describe key items that are in scope/out of scope) | Update the existing ASM Catalogue; | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  Include considerations for VDES channels (ASM, VDE) during ENAV 20 and 21; | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 |  |  |  |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 2.4.1. Monitor Developments with GMDSS Modernization | | | |
| Objectives of the task | Ensure that the VDES, and any other applicable communications technology, consider and accommodate the needs of GMDSS. | | | |
| Expected outcome | Report on the current status of GMDSS modernization and how this work impacts e-navigation in general. | | | |
| Strategic Alignment | **Goal** – G1: Ensure aids to navigation and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies are harmonised through international cooperation and the provision of standards.  **Strateg**y – S3: Harmonize the information structure, MSP, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P6: Develop a forward plan for future delivery of aids to navigation systems and related services including VTS, taking account of developments in technology and changing needs. | | | |
| Scope (Describe key items that are in scope/out of scope) | Monitor and contribute, as necessary, to GMDSS modernization; | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  Establish a rapporteur on GMDSS for WG3;  Contribute to GMDSS modernization as necessary;  Accommodate GMDSS needs within the e-Navigation communications activities; | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 |  |  |  |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.1. Develop Guidelines on eLoran, including data formats and ASF. | | | |
| Objectives of the task | Develop Guidelines on eLoran service provision to ensure standardisation of approach including definition of data formats for elements such as ASF. | | | |
| Expected outcome | eLoran service provision Guideline. | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strategy** – G2 S3 – Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority** - P3 - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | This document should capture all elements of eLoran service provision, including the hardware, verification, signal in space characteristics and data formats. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * First complete draft by ENAV18 * Final document by end of ENAV19 | | | |
| **Task Revision**  Task Leader:  Jiwon Seo | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment and expected sessions | Correct omission and align with workplan. |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.2. Develop a Product Specification on eLoran data, DGNSS-beacon corrections, and data exchange | | | |
| Objectives of the task | *To develop a Product Specification on eLoran data, DGNSS-beacon corrections, and data exchange* | | | |
| Expected outcome | Product specification document on:  - eLoran data (e.g. almanac, ASF values)  - DGNSS-beacon information (almanac, status etc)  - Data exchange between different service providers | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strategy** – G2 S3 – Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority** – P3 – Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | Develop a product specification, as base for seamless implementation of technology for: manufacturers, service providers and maritime end-user. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  X  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Definitions of key terms * User requirements, but should include data to be exchanged. * Data & system integrity. * What systems are available now and in the future * Liaison with RTCM SC127 (eLoran) and others * Liaison with DGNSS Service providers | | | |
| **Task Revision**  Task leaders:  Mr Cho (IALA) & Dr Williams (GLA) | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment | Correct omission and error. |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.3. Develop Recommendation on PNT relevant services & systems that can contribute to Resilient PNT | | | |
| Objectives of the task | Overarching concept of resilient PNT, taking into account the different PNT services & systems available today and expected in the future, and how resilience can be achieved. | | | |
| Expected outcome | Recommendation of resilient PNT services and systems. Expect reference to other recommendations and guidelines on how resilient PNT can be achieved, the approaches available and what it means to the mariner.  Linked documents:  Guideline on port and harbour high accuracy systems and services  Guideline on the maritime use of SBAS.  Guideline on techniques used in Portable Pilot Units.  Guideline on the provision and use of marine beacon R-mode  Guideline on techniques used for on-board PNT data processing.  Guideline on PNT performance status message for eNAV services  And other relevant Recommendations and Guidelines. | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strategy** – G2 S3 – Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority** – P3 – Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation | | | |
| Scope *(Describe key items that are in scope/out of scope)* | All PNT systems are in scope but it may not be necessary to link each and every Guideline and Recommendation. | | | |
| Expected Sessions for Completion: | *Session number:*  *15 16 17 18 19 20 21*  X  X  X  X  X  XX | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Development of an overarching recommendation that covers: * Definitions of key terms – including resilience etc * User requirements (ref IMO documents), but should include data to be exchanged. * Data & system integrity. * What systems are available now and in the future * How the different systems can be combined to offer resilience (algorithms etc) | | | |
| **Task Revision**  Task leader:  WG5 Chair. | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | All | Correct reference to guidelines; update expected sessions and strategic alignment. |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.4. Produce a guideline on high accuracy systems | | | |
| Objectives of the task | To provide guidance for port/ harbour authorities as well as pilots approaching port/harbour areas concerning the implementation and use of systems and services applicable for high accuracy positioning and navigation in port and harbour areas. | | | |
| Expected outcome | IALA Guideline on port and harbour high accuracy systems and services | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation and short range aids to navigation, taking into account new technologies and sustainability  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios and data modelling for e-Navigation  Driving factors are:   * Cost efficient systems and services to install and provide solutions for high accuracy (cm) navigation and positioning * Future ideas for full automatic vessels * The interest of port and harbours to increase the capacity and density of passing vessels without decreased requirements on safety | | | |
| Scope (Describe key items that are in scope/out of scope) | * Consolidation of requirements for high accuracy systems and services serving for port and docking manoeuvres e.g. as described in IMO resolution A.915 for future GNSS. * Integrity and its potential impact an safety which will lead to an overall integrity concept for the whole system used in harbour areas * Identification of appropriate service concepts and techniques for the port stakeholders * Proposals for required hardware/software which has to be installed on ship and shore with a specific focus on GNSS related augmentation techniques like RTK and PPP but also considering other technologies like optical systems and methods (e.g. laser ranging, etc.) * Architecture design of the whole system * Interface specification (output channel, data format, required bandwidth etc.) * Operational and application aspects in form of a table/matrix describing benefits and drawbacks of different systems and services | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Review on existing systems and services used or in preparation for high accuracy positioning and navigation in harbours and dedicated technologies for e-NAV18 * Development of the guideline for the implementation of systems and services in port and harbour areas for e-NAV19 * Document to be reviewed at e-NAV20 and forwarded to Council for approval * Approval by Council | | | |
| **Task Revision**  Task leader  Thoralf Noack | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment & scope | Correct error in reference and merger of 3.1.6 |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.5. Develop a Guideline on the maritime use of SBAS | | | |
| Objectives of the task | Provide guidance on the use and applications based on SBAS | | | |
| Expected outcome | Guideline with a clear description of SBAS use and applications and how SBAS contributes to achieve resilient PNT in the maritime domain.  Additionally the intention would be to provide reference information as input for further recommendations and standards development. | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation and short range aids to navigation, taking into account new technologies and sustainability  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | The scope will be to provide an overview of SBAS systems’ current and future applications detailing how they can contribute to a resilient PNT service, and to provide recommendations on the steps required for adoption of SBAS. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | * Description of SBAS System * SBAS benefits and limitations * Identification of the different existing SBAS systems, coverage and performances * SBAS Services description and status, including current use of SBAS by the maritime community * SBAS future developments eg. Extension of SBAS coverages, new versions… * Potential use of SBAS in maritime including:  1. SBAS Signal In Space (SIS) 2. SBAS over DGNSS messages (IALA Beacon) 3. SBAS over Automatic Identification System (AIS) 4. SBAS based Virtual Reference Stations (VRS) 5. SBAS over other data channels under development such as VDES (VHF Data Exchange System) and LDC (Loran Data Channel)  * Consideration on how SBAS can be used in a resilient PNT system * Pre-requisite for the adoption of SBAS | | | |
| **Task Revision**  Task Leader:  Manuel Lopez Martinez | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment | Correct omission |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.9. Update (Maintain) IALA R-121 | | | |
| Objectives of the task | This Recommendation R-121 considers the generation and broadcast of code based corrections with a focus on the maritime domain taking into account current technical realizations after 2004. | | | |
| Expected outcome | Updated Version of IALA Recommendation R-121 with associated guideline. | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation and short range aids to navigation, taking into account new technologies and sustainability  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | Recommends National Members and other appropriate Authorities providing, or intending to provide, DGNSS services in the frequency band 283.5 – 325 kHz, to use the Minimum Standards set out in the Guidelines. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | 1. Restructure the document with the opportunity to use the same structure for possible future DGNSS systems (e.g. DGNSS via AIS, MGBAS, etc.) 2. Implement new options for DGNSS reengineering (classic approach and VRS) 3. Service based architecture (divide into GNSS Augmentation Service and MF transmission service) to follow modular system design and to fit into eNavigation architecture 4. Improved explanation of requirements 5. Provide extended information on operational aspects for the service provider 6. Output document of eNav15 | | | |
| **Task Revision**  Task leader  WG5 Vice Chair | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Expected outcome, Strategic alignment and scope | Reflect change to Recommendation and Guideline. |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.10. Developing Guideline on DGNSS Radiobeacon coverage prediction | | | |
| Objectives of the task | Provide guidance to service providers on how to predict radiobeacon coverage areas. | | | |
| Expected outcome | Guideline that provides suitable mechanism and examples of how to predict the coverage area and what factors should be considered. | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation and short range aids to navigation, taking into account new technologies and sustainability  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide guidance on how coverage should be calculated, taking into account:   * Ground conductivity * Millington’s method * ITU propagation curves * Interference * Night time fading   This guidance may make reference to software solutions but is not intended to act as a marketing tool for such systems. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Draft report (end of ENAV18) * Final report (end of ENAV19) | | | |
| **Task Revision**  Task Leader  WG5 Chair | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment | Correct ommision |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.11. Monitor developments in GNSS, DGNSS, radar, resilient PNT, ePelorus, terrestrial systems, inertial and any other relevant areas etc. | | | |
| Objectives of the task | To keep the WG informed of the most recent developments regarding GNSS, DGNSS, radar, resilient PNT, ePolorus, terrestrial systems, inertial and any other relevant areas regarding radionavigation and PNT. | | | |
| Expected outcome | Sharing of general information on developments regarding PNT related systems. | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and service for the safety of navigation, through capacity building and sharing of expertise.  **Strategy** – G2 S3 – Coordinate the future development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability  **Priority** - P6 – Develop a forward plan for future delivery of aids to navigation systems and related services, including VTS, taking account of developments in technology and changing needs | | | |
| Scope (Describe key items that are in scope/out of scope) | Update of information regarding existing GNSS systems.  Inform on planned GNSS systems.  Development regarding DGNSS (new msg’s etc.)  Development regarding eLoran, R-mode etc.  NT radar and eRacon development  Development of Inertial navigation systems  Any updates regarding ePolorus | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  XX  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Follow developments and present short brief on the latest developments regarding GNSS, DGNSS, radionavigation, PNT terrestrial system etc. | | | |
| **Task Revision**  Task leader:  WG5 Chair | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment | Correct omission |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.13 Liaise with IMO on PNT matters (including revision of Res. A.915) | | | |
| Objectives of the task | Liaison activities with the IMO, covering all elements relating to PNT. This can include liaison notes through to the development of IALA input documents on items such as the revision of A.915. | | | |
| Expected outcome | Liaison notes and draft input documents as required. | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation and short range aids to navigation, taking into account new technologies and sustainability  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | The scope will vary depending on the topic at hand. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x  x  x  x | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Liaison note on the need to retire A.915 and the outline of a proposed new maritime operational requirements document. – Planned output of ENAV18 * Extended Maritime operational requirements document, with draft requirement figures for further consideration – planned input for ENAV19, or ENAV18 if possible. | | | |
| **Task Revision**  Task leader:  WG5 Vice Chair | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment and milestones | Correct omission and update expected outcome based on current knowledge. |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.14. Maintain IALA Documents relevant to PNT | | | |
| Objectives of the task | Maintain PNT Working Group relevant Recommendations, Guidelines and other IALA documents (e.g. WWRNP, R-135). | | | |
| Expected outcome | The outputs of this task are input papers to committees responsible for the documents referenced in the input paper. The purpose of the input papers is to create a work items to update IALA documents as needed. | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strategy** – S3: Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | Review all existing documentation and consider whether it remains extant, requires modification or retirement. Generate list of actions in first instance and then update work task accordingly.  Identify Recommendations which, if required, need to be split into Recommendations and Guidelines. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * All IALA Recommendations, Guidelines and other publications reviewed in order to identify those with PNT relevance. * PNT relevant documents identified at the milestone above reviewed for timeliness and accuracy. * Input papers to future committee sessions written and submitted for documents identified at the milestone above that need revision. * Task updated as needed. | | | |
| **Task Revision**  **1.0**  Task Leader:  WG5 Chair | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 14 October 2014 | NEW |  |
| 1.1 | 21.04.15 | Scope | Expanded to reflect consideration of concise Recommendations and more in depth Guidelines. |

| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 3.1.15. Liaison with IEC, ITU, CIRM, RTCM and other bodies on PNT matters | | | |
| Objectives of the task | To communicate with other relevant organisations regarding matters of standards or recommendations within the organisations areas of responsibility. | | | |
| Expected outcome | Create liaison notes from IALA to other organisations  Receive, process and respond appropriately to received liaison notes | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation and short range aids to navigation, taking into account new technologies and sustainability  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | Consider any update as necessary. Expected to cover the update to ITU-R M.823 once RTCM SC104 generic broadcast messages are approved. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  This is an ongoing task in support to other tasks witjin the PNT area | | | |
| **Task Revision**  Task leader:  WG Chair | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.1 | 21.04.15 | Strategic alignment and scope | Correct for omission and add clarification on expected activites. |
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| **ENAV Committee – 2014-18 Work Programme** | | | | | | |
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| **TASK** | 3.1.16. Develop a Guideline on the provision and use of marine beacon R-mode | | | | | |
| Objectives of the task | Once deemed a viable service, this task will develop a Guideline on the provision and use of marine beacon R-mode services. | | | | | |
| Expected outcome | Guideline informing service providers on how to install maintain and operate marine beacon R-mode services. | | | | | |
| Strategic Alignment | **Goal** – G2 – All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise.  **Strateg**y – S3: Coordinate the further development of VTS, e-Navigation and short range aids to navigation, taking into account new technologies and sustainability  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios and data modelling for e-Navigation | | | | | |
| Scope (Describe key items that are in scope/out of scope) | Consider how R-mode services could be used in different parts of the world, taking into account channel separation, geography and installation differences. Give guidance on R-mode performance in areas of good station geometry and in locations where the geometry is not ideal.  Include reference to interference study. | | | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  x  x  x  x | | | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  Confirmation of viability of system  Results of interference study  Updates on R-mode developments, inc. receiver availability, station modifications, test beds and results. | | | | | |
| **Task Revision**  Task Leader:  WG5 Vice Chair | **Ver.** | **Date** | | **Part / Section Revised** | | **Requirement for Revision** |
| 1.0 | 21.04.15 | | All | | New task |
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| **ENAV Committee – 2014-18 Work Programme** | | | | | | |
| **TASK** | 4.1.1. Gather and present information on test beds (including results) globally; | | | | | |
| Objectives of the task | To provide opportunity to IALA membership and other stakeholders to have  knowledge of intended test-beds on e-navigation, their progress and results | | | | | |
| Expected outcome | * Various forms of reporting | | | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results. | | | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  Xx  X | | | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones / Remaining key milestones for completing the task include:   * Ongoing process | | | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | | **Requirement for Revision** | |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
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| **TASK** | 4.1.2. Maintain global repository for test-bed results; | | | |
| Objectives of the task | To collect, monitor and categorize the results of e-navigation test beds for the benefit of parties involved in the development of e-navigation and for the work by IMO, IALA and other organisations. | | | |
| Expected outcome | * Web portal ownership and hosting | | | |
| Strategic Alignment | **Goal –** G2: All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **Strategy -** S3: Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority –** P9: Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results. | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Ongoing process | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 4.1.3. Encourage test bed project managers to provide information and results to IALA for posting at www.e-navigation.net; | | | |
| Objectives of the task | To support task 4.1.2 in order to achieve the highest level of participation and contribution to collect relevant data and information | | | |
| Expected outcome | * Communication by IALA Secretariat and website | | | |
| Strategic Alignment | **Goal –** G2: All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **Strategy –** S3: Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority -** P9: Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.1.4. Update IALA Guideline 1107 on the reporting of results of e-navigation test beds | | | |
| Objectives of the task | To improve the Guideline in accordance with latest developments, for further guidance and clarification of parties involved in reporting test beds results, | | | |
| Expected outcome | * Reviewed Guideline 1107 | | | |
| Strategic Alignment | **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **Strategy -** S3: Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority -** P9: Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.2.1 Monitor test bed outcomes (lessons learnt) and advise the membership as approriate | | | |
| Objectives of the task | Evaluation and analysing of test bed outcomes, provision of information and guidance to parties involved with the implementation and further development of services and the utilization of technologies | | | |
| Expected outcome | * Monitor and communicate | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.3.1 Provide guidance to IALA members to formulate the scope and topics of their testbeds | | | |
| Objectives of the task | To provide assistance and guidance to IALA members who have the intention to establish test beds on e-navigation | | | |
| Expected outcome | * Guidance and technical cooperation initiatives | | | |
| Strategic Alignment | **Goal -** G2: All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **Strategy -** S3: Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority -** P9: Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.3.2. Jointly (with Working Group 1) develop an IALA Seminar on maritime digital infrastructure and test beds in 2016/17 | | | |
| Objectives of the task | To organize and provide in a platform where information on aims, progress and results of test beds can be presented, shared and discussed, feedback can be provided for the benefit of a) potential providers and users of functional and technical services in e-navigation, and b) future work on e-navigation. | | | |
| Expected outcome | * Proposal with the aim for approval by Council * Seminar on e-Navigation * Information sharing on test beds / Feedback of IALA membership | | | |
| Strategic Alignment | **Goal -** G2: All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **Strategy -** S3: Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority -** P9: Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.3.3. Risk assessment and management plan | | | |
| Objectives of the task | On-going assessment and mitigation of risks in e- Navigation development and implementation from the point of view of IALA. | | | |
| Expected outcome | A living Risks management plan reviewed annually | | | |
| Strategic Alignment | G1 -  G1 - S1 to S3  P3  Contributes to the following tasks of the SIP : T1 (HCD), T2( usability), T11 (SQA), T14( CMDS), T15( communications), T17( MSPs) | | | |
| Scope (Describe key items that are in scope/out of scope) | Keep a central view of potential risks in The IALA domain and propose actions for all IALA bodies including e-NAV/WG1. Some actions might need IMO decisions. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  Rev  Rev  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Annual review *includes:*  **Method**   * Identification of risk * Description * Rationale * Likelihood * Potential impact * Mitigation measures with input from other WG   + List with entity in charge   + Description   + Schedule   + Indicator   + … * …   **Risk portfolio (draft)**   * Complexity * Quality deficiencies or excesses in the engineering process   + Reliability   + Availability   + Maintainability   + Security, including cyber-security   + Validation/approval process   + ..... * Communications adequacy * Configuration management of regulations and standards * Phasing * Detailed specs for interoperability * Unsufficient teamwork * Overspecification, too many and/or too complex standards | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 4.3.4. Revise and maintain E-navigation roadmap | | | |
| Objectives of the task | Produce and maintain an IALA roadmap | | | |
| Expected outcome | A new roadmap including defined IALA tasks | | | |
| Strategic Alignment | G1  G1-S1 G1-S3 | | | |
| Scope (Describe key items that are in scope/out of scope) | To describe the process of collaboration between the different IGO’To describe the milestones of IALA work in relation to IMO SIP milestones  To verify consistency and completeness of IALA works on e-navigation | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  rev  rev  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:   * Monitor MSC decision * Gather tasks from all WG into a roadmap * Comparison within IALA domain between SIP and ENAV committee tasks list | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 4.4.2. Maintain fora to discuss test bed-related issues | | | |
| Objectives of the task | To establish fora for IALA membership where test bed related issues, views and proposals can be discussed, either verbally or in writing. | | | |
| Expected outcome | * Establish and maintain fora | | | |
| Strategic Alignment | **Goal -** G2: All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **Strategy -** S3: Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **Priority -** P9: Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.5.1. Liaise with IMO on e-navigation implementation and related regulatory matters | | | |
| Objectives of the task | The implementation of e-navigation solutions and the provision and use of potential services (Maritime Service Portfolio) may be constrained by (inter)national, regional or local regulations, as well as the mandatory or voluntary requirements for equipment and infrastructure both aboard and ashore | | | |
| Expected outcome | * Liaison notes | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.5.2. Monitor and analyse the execution of relevant tasks, in particular those in the IMO Strategy Implementation Plan | | | |
| Objectives of the task | To maintain an overview on the progress and status of tasks listed in the IMO Strategy Implementation Plan (SIP) and executed by IALA and its members, which could be subject to reporting to the IMO, to other international organisations and stakeholders of e-navigation; an overall status document is to be used in support of a project wise and coordinated approach for the implementation / further development of the concept | | | |
| Expected outcome | * Overall status document * Liaison notes | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.5.3. Provide implementation guidance on developments in the e-Navigation domain, in cooperation with other IGO/NGOs; | | | |
| Objectives of the task | To inform all stakeholders on relevant developments in respect to e-navigation that may affect the implementation of e-navigation on international, regional, national or local level; IALA therefore could exchange information with other NGO’s/IGOs and seek for a joint guidance, where appropriate to its members and other stakeholders | | | |
| Expected outcome | * Information bulletins * Guidance | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.5.4. Provide guidance and support to the decision-making process related to the implementation of e-navigation | | | |
| Objectives of the task | The implementation of e-navigation services may affect legislation, organizational and responsibility aspects, the level of service provision, procedures, equipment and infrastructure, training as well as financial aspects, Guidance should be provided to competent authorities and service providers In order to assist them in their decision-making processes in respect to the implementation of services. | | | |
| Expected outcome | * Guideline on support for decision-making to e-navigation implementation | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
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| **TASK** | 4.5.5. Support IMO with the future development and implementation of e-navigation and contribute to related tasks; | | | |
| Objectives of the task | IALA is considered to be one of the most important contributors for the development of e-navigation with a specific focus on the service provision from shore for the benefit of safe and efficient navigation and the protection of the marine environment.  The development of the interaction between ship and shore under e-navigation is an ongoing journey. Therefore IALA should continue its support to IMO during the future development and implementation of e-navigation and its contribution to the execution of related tasks (SIP) and identified remaining tasks and future services. | | | |
| Expected outcome | * Liaison notes * Information documents * Submissions with proposals (through IALA’s national members participating in IMO) | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 4.5.6. Monitor ship board developments in order to provide appropriate e-Navigation services; | | | |
| Objectives of the task | The provision of appropriate e-navigation services by competent authorities and service providers will be essential in order to respond properly to evolving user needs as well as to the development of ship borne equipment and requirements. Monitoring and reporting of ship borne developments are instruments to supports IALA’s work on e-navigation with the focus on the shore based developments and services; | | | |
| Expected outcome | * Rapporteur Reports | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  XX  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 4.5.7. Inform IALA’s Legal Advisory Panel (LAP) of any apparent legal implications of emerging implementation issues | | | |
| Objectives of the task | As the implementation of e-navigation services progresses and experiences will be gained during test beds it is likely that legal constraints (e.g. on the distribution of data), liability issues and consequences for legislation will be identified. This may lead to further requests from Committees and IALA membership for advise by the Legal Advisory Panel, either for the progress of the organizations work or for guidance during implementation plans. The task should cover the identification and listing of these constraints, issues and implications in order to inform LAP and request for advise where appropriate | | | |
| Expected outcome | * Liaison notes * Input to other fora and organisations | | | |
| Strategic Alignment | **G1** - Aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, are harmonised through international cooperation and the provision of standards;  **S3** - Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system  **P3** - Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation  **G2** - All coastal states have contributed to an efficient global network of aids to navigation and services for the safety of navigation, through capacity building and the sharing of expertise  **S3** - Coordinate the further development of VTS, e-Navigation, and short range aids to navigation, taking into account new technologies and sustainability.  **P9** - Promote the demonstration of e-Navigation services, through the provision of test beds, and the harmonisation of results | | | |
| Scope (Describe key items that are in scope/out of scope) |  | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include: | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.2. MSP1 VTS Information Service (IS) / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP1 information. | | | |
| Expected outcome | IALA Liaison Note   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above.   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 17/10/2014 |  | Document created with commencement of 2014-18 Work Programme |
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| **TASK** | 5.1.3. MSP2 Navigational Assistance Service (NAS) / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP2 information. | | | |
| Expected outcome | IALA Liaison Note   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above.   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 17/10/2014 |  | Document created with commencement of 2014-18 Work Programme |
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| **TASK** | 5.1.4. MSP3 Traffic Organization Service (TOS) / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP3 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.5. MSP4 Local Port Service (LPS) / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP4 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.6. MSP5 Maritime Safety Information (MSI) Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP5 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.7. MSP6 Pilotage Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP6 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 17/10/2014 |  | Document created with commencement of 2014-18 Work Programme |
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| **TASK** | 5.1.8. MSP7 Tugs Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP7 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 17/10/2014 |  | Document created with commencement of 2014-18 Work Programme |
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| **TASK** | 5.1.9. MSP8 Vessel Shore Reporting / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP8 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.10. MSP9 Telemedical Maritime Assistance Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP9 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.11. MSP10 Maritime Assistance Service (MAS) / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP10 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 17/10/2014 |  | Document created with commencement of 2014-18 Work Programme |
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| **TASK** | 5.1.12. MSP11 Nautical Chart Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP11 information. | | | |
| Expected outcome | IALA Liaison Note – [*add text from IALA*]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope *(Describe key items that are in scope/out of scope)* | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | *Session number:*  *15 16 17 18 19 20 21*  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 17/10/2014 |  | Document created with commencement of 2014-18 Work Programme |
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| **TASK** | 5.1.13. MSP12 Nautical Publications Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP12 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.14. MSP13 Ice Navigation Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP13 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 17/10/2014 |  | Document created with commencement of 2014-18 Work Programme |
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| **TASK** | 5.1.15 MSP14 Meteorological Information Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP14 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.16. MSP15 Real-Time Hydrographic and Environmental Information Services / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP15 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.17. MSP16 Search and Rescue (SAR) Service / Operational User Needs | | | |
| Objectives of the task | To provide necessary attribute for the development of Product Specification of MSP16 information. | | | |
| Expected outcome | IALA Liaison Note – [add text from IALA]   * To be developed | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.  **Strateg**y – S3: Harmonize the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system.  **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation.. | | | |
| Scope (Describe key items that are in scope/out of scope) | Provide the operational content of this e-Navigation service (i.e. non-technical) aspects of e-Navigation.  To be developed | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Liaison note will be delivered in accordance with session number above. Key milestones / Remaining key milestones for completing the task include:   * To be developed | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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| **TASK** | 5.1.18. Develop Recommendation on Common Shore based System Architecture | | | |
| Objectives of the task | To assist administrations in the efficient deployment of their operational and technical services to the mariner and to the maritime community.  This task is on hold as the result of ENAV 16 Action Item 48. The task description will be reviewed at ENAV 19 based on the output from IALA Workshop on Shore Based Infrastructure. | | | |
| Expected outcome | IALA Recommendations - Recommendations provide direction to IALA members on uniform procedures and processes that will facilitate IALA objectives. IALA recommendations contain information on how members should plan, operate and manage Aids to Navigation. Recommendations may reference relevant International Standards and IALA Guidelines.   * Revision of IALA Recommendation e-Nav 140 on the e-Navigation Architecture – the shore-based perspective * Recommendation on the Common Shore-based System Architecture (CSSA) - System Layout * Recommendation on the CSSA Generic Service Model   IALA Guidelines - Guidelines provide detailed information on an aspect of a specific subject, indicating options, best practices and suggestions for implementation. IALA Guidelines relate to planning, operating and managing Aids to Navigation   * e.g. Guideline on M2M Interfacing within the Common Shore-based System (CSS) | | | |
| Strategic Alignment | **Goal** - G1: Ensure that aids to navigation systems and related services, including e-Navigation, Vessel Traffic Services, and emerging technologies, through international cooperation and the provision of standards are harmonised.   |  | | --- | | **Strateg**y –  S1: Develop standards suitable for direct citation by States in areas deemed important by the General Assembly, and continue to improve strong governance, including document policy and procedure for standards.  S3: Harmonise the information structure, Maritime Service Portfolios, and communications for e-Navigation by creating standards, and by cooperation with other IGOs, to achieve worldwide interoperability of shore and ship systems, including IMO sustainability goals for a maritime transport system. |   **Priority** – P3: Develop guidance on positioning, communications, Maritime Service Portfolios, and data modelling for e-Navigation | | | |
| Scope (Describe key items that are in scope/out of scope) | Compare the bullets at line “expected outcome” (see above). | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21 | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | Key milestones for completing the task include:  ENAV16 (April 2015)   * Finalization of Draft Revision of e-Nav 140 (based on input from all Committees by then) * Finalization of Draft Recommendation on the CSSA System Layout * Forward finalized Draft Rev. e-Nav 140 + Draft Rec on CSSA System Layout to Council61 (Sept 2015) for approval * Continue Work on Draft Recommendation CSSA generic Service Model with the goal to finalize those appendices which have been assessed “quite mature”   ENAV17(October 2015)   * Finalize Draft Recommendation on the CSSA generic Service Model main part + mature appendices: forward to other committees for comments | for Council for approval * Start work on Guideline on M2M Interfacing within the Common Shore-based System (CSS)   ENAV18-21( 2016ff)  Work on remaining appendices of CSSA generic Service Model to finalize them step by step;  Work towards finalization of Guideline on M2M Interfacing within the Common Shore-based System (CSS).  Potential means of work:   * Intersessional meeting * CSSA Workshop CSSA-2 * Correspondence group | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
| 1.0 | 15 Oct 2014 | Created from scratch | - |
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| **ENAV Committee – 2014-18 Work Programme** | | | | |
| --- | --- | --- | --- | --- |
| **TASK** | 5.1.19. Advice IALA on appropriate ways forward in contributing to establishing an internationally agreed e-navigation infrastructure and its governance | | | |
| Objectives of the task | To advice IALA of how to be involved in the standardization of infrastructure and governance for secure interoperable information exchanges between stakeholders in the maritime sector. | | | |
| Expected outcome | Based on the conclusion 3 of the IALA 2014 Conference (ENAV15-4.2.3): “There is an emerging consensus to adopt the Maritime Cloud concept as a logical infrastructure for e-navigation, with communications standardisation and resilient PNT” three deliveries are proposed. These are an information paper followed by recommendations and guidelines as needed. | | | |
| Strategic Alignment | **Goal** - G1:  **Strategy** - S3  **Priority** – P2, P3, P9 | | | |
| Scope (Describe key items that are in scope/out of scope) | The scope is to facilitate the global implementation of e-navigation services as currently defined within the IMO SIP and further refined by reflecting the emergence of digitalization for the maritime sector. | | | |
| Expected Sessions for Completion: | Session number:  15 16 17 18 19 20 21  X  X  X  X  X  X  X | | | |
| Brief and concise description of the work to be undertaken and programme milestones where appropriate. | A number of deliverables will be made over time that will describe the Maritime Cloud in a relatively high level of detail. This would serve as a base to position the legacy of IALA and to propose a way forward for which role that IALA should take in an emerging service ecosystem characterized with a high degree of information sharing.  Furthermore, the deliverables will describe how SeaSWIM building on the Maritime Cloud will facilitate STM, and propose how IALA should react to SeaSWIM and STM.   * Delivery 1 (e-NAV 18): A draft guideline on unique identifiers for maritime resources (MRN; Maritime Resource Names) * Deliverable 2 (e-NAV 19): An input paper describing the need for and solutions for identity management and security. * Deliverable 3 (e-NAV 19): An input paper describing meta specification for e-Navigation services * Delivery 4 (e-NAV 19): An information paper on how SeaSWIM built on the Maritime Cloud supports STM. * Delivery 5 (e-NAV 19): A position paper on how IALA should react on SeaSWIM and STM. * Delivery 6 (draft for a discussion at e-NAV 20? and then further developed at e-nav 21?)**:** Guideline of how IALA could function as a part of a larger federation governing and monitoring utilization of e-Navigation services among maritime stakeholders * Delivery 7 (ENAV19): Identification of cyber security issues related to the implementation of E-navigation infrastructures. * Delivery 8 (ENAV21): Guideline on appropriate consideration of cyber security within E-navigation infrastructures. | | | |
| **Task Revision** | **Ver.** | **Date** | **Part / Section Revised** | **Requirement for Revision** |
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# Annex 1: IALA’s Strategic Vision 2014-2026 (Approved by IALA Council C56 – 2013-12-11)

