**th Nautical Information Provision Working Group (NIPWG) Meeting**

**13 –16 September 2022**

**Niterói, Brazil & VTC, Worldwide**

Annex A: List of Action items

Annex B: HSSC 14 Action items

Annex C: Agenda

Annex D: List of Attendees

Annex E: Provisional Time Schedule

Annex F: Updated NIPWG Work Plan

**1. Welcome and announcements**

**1.1 Chair welcome**

Eivind Mong opened NIPWG9 by welcoming new and returning members and thanked the Directoria de Hidrografia e Navegação (DHN) for organizing the meeting.

Logistics and building safety were also discussed.

**1.2 Host welcome**

Vice-Admiral Renato Garcia Arruda, the Director of DHN, welcomed the participants.

**2. Introductions**

**3. Adoption of NIPWG9 Agenda**

NIPWG agreed and adopted the NIPWG9 Agenda (Annex C).

**3.1 Adoption NIPWG8 Minutes**

The meeting approved the Final Minutes of NIPWG8 with no modifications as circulated.

**3.2 Corrections**

None noted.

**4. 2022 VTC meetings minutes and actions**

**4.1 Review of outstanding NIPWG actions**

(Annex A)

**4.2 Review outstanding HSSC 14 actions**

(Annex F)

**4.3 Roadmap for the S-100 Implementation Decade (2020-2030): quick review of proposals submitted to Council-6 of interest to NIPWG (See in particular Docs. C6-04.1A and Annexes, Annex B to C6-04.2A, C6-04.4A, and WEND S-100-IGIF Matrix1 discussed at IRCC).**

The meeting took note and discussed the council-6 roadmap strategy.

(<https://iho.int/en/s-100-implementation-strategy>)

* Directed to C6-04.4A
* Directed to Circular Letter CL31\_2022\_EN\_v1 <https://iho.int/uploads/user/circular_letters/eng_2022/CL31_2022_EN_v1.pdf>
  + Specifically, paras 7 and 8

Discussion culminated with it being stressed that this is now a very real, very tight timeline (3.25 years).

**4.4 Intended use and distribution of S-1xx products**

Discussion surrounding how there are too many product specifications and how they need to be simplified, especially in order for organisation’s ‘non-technical’ professionals to be able to market the products.

Members were asked to consider where to assign resources, as the products specs should ‘simply’ be able to provide enough information to communicate to senior management/organisations what is needed to achieve these products.

S-125 discussed at length. Noted there is a need to eliminate suspicions between agencies, and illustrate we are working towards a shared goal; providing better services for the mariner.

Members asked to also consider who will be, and how often they will be, updating the s-1xx products (i.e. would it be hourly updates of current data or two-week old data)? It needs to be defined as to what we expect in terms of coverage, updates and turnover (of the source information into the product). Can ‘sister organisations’ support each other, i.e. with turnovers etc., to benefit operational use of the mariners.

In conclusion we need to adjust specs/layers/definitions/etc, as nothing is written in stone yet, so it is still up for debate until we are happy (refer to Table 1 and 2 in doc)

ACTION ITEM 01 - Working group asked to determine whether they agree with the information provided in the two tables and definitions? If any adjustments/anything missing is thought of, please provide comments to Eivind. by 30th NOV 2022 - ALL

**5. Reports from other working groups**

**5.1 Report from IALA/IHO S-100/S-200 Workshop**

Presentation 05.1A (SE)

Discussion was had on the relationship between S-125 and S-124 and, although S-124 was not discussed during the workshop, it was noted that for now the status information within S-125 is using partially the same data as in S124. The producer nation therefore should coordinate S-124 and S-125 data, although S-124 should be prioritised as it will be assumed to be the most relevant, up to date and complete set of data.

NIPWG members asked to encourage discussions on S-124 and S-125 at a deeper level within organisations, and raise these conversations to a higher level. This is because they appear not to be understood well by HOs, as they’re not providing the data contained within them currently.

The following was additionally noted:

* If an agency is to take a part in providing information, there is an issue of liability, and that needs to be cleared at national level before being put in operation.
* Standards for training of watchkeepers etc. will need to me updated/altered.
* As we move towards true digitalisation, rules and descriptions have to be understood by machines – they have no imagination, so rules need to be very accurate as they will be followed to the letter. No human will be checking whether this data/information is making sense.
* As we start taking apart data, it has been discovered that data and values have been assumed and are not always correct. I.e. just because there were no accidents, it does not mean the products are up to date.
  + Stefan’s recommendations, noted in the paper, are important to address.

Questions to be further addressed:

* Is S-125 used for temporary aton’s? or will they only be S-101.

*See Action Item 21.*

ACTION ITEM 02: Please read Stefan’s paper, discuss and come back by Thursday as to whether you agree with the recommendations from the workshop on S-125 and/or whether you want more clarifications and descriptions, so that they can be provided to IALA in Oct. (COMPLETED 15/09/2022)

ACTION ITEM 03: Decide on definition for what a Nautical Publication Information Overlay actually is. ALL. NIPWG 9 (Fri) (COMPLETED 15/09/2022)

**UPDATE (15/09/2022):**

The term NPIO was discussed during NIPWG-9 and decided not to be of any use in describing the nautical publication specifications.

ACTION ITEM 23 – Request that SO (Dr. OH) and his role as IALA/ARM…S-125 task group lead, and his involvement with the S-128 task group, to please review the introduction of S-125 and S-128 and try to replace the NPIO term with a better description of the product specifications intended use. SO. NIPWG-10.

ACTION ITEM 24 – Invite all task groups to consider the updated descriptions in S-125 and S-128 when conducting their next product specifications review. ALL. NIPWG-10

ACTION ITEM 25 - Chair team to draft a paper for the ARM committee for the recommendations for S-125 from the IALA/IHO S-100/S-200 Workshop, including the comments made during NIPWG-9 regarding temporary navigational aids, when the deployments are shorter than the update frequency of the ENC update period, given as a further use case. Chair team. Sep/30/22.

Noted that the outcome of the workshop provides the content to answer Action HSSC14/47 = (formerly Action HSSC13/40)

ACTION ITEM 26 – Chair team to provide an input to HSSC15 reporting on the outcomes of the workshop, with regards to how S-201, S-101, S-125 and S-124 will work in relation to each other. Chair Team. 6-weeks before HSSC-15.

**13. NIPWG Member updates**

**13.1 World Port Index update presentation and demonstration (NGA)**

Presentation 13.1A (MK)

NIPWG noted the presentation.

ACTION ITEM 04 - NGA are invited to present the presentation on WPI to the S-130 PT, for their consideration, as the names of water bodies may not be included as such in the S-130 product specification (use of Unique Identifiers instead). JS/MK. NIPWG-10.

ACTION ITEM 05 – NGA is encouraged to ensure the interface for WPI is developed so that it guarantees harmonization with S-1xx products, specifically S-131 (to reduce/remove any possibility of duplicate efforts from users/providers). JS/MK. NIPWG-10.

ACTION ITEM 06 – NGA will update NIPWG when public facing website of the World Port Index is live. JS. NIPWG-10.

**13.2 ePublisher presentation and demonstration (NGA)**

Presentation 13.2A (JS)

NIPWG noted the presentation.

**13.3 Next generation sailing directions (UKHO)**

Presentation 13.3A (JM)

NIPWG noted the presentation.

UKHO, and other NIPWG members, were asked to consider whether resources should be spent on a product that is not going to fully support S-1xx products. UKHO has world-wide coverage, which could benefit S-1xx products greatly, but if not careful it could be seen as creating a potentially competitive product.

It was suggested by NIPWG members that a gap analysis be performed and reported back to the group.

**13.4 ADMIRALTY Marine Data Portal (UKHO)**

Presentation 13.4A (JM)

NIPWG noted the presentation.

Link for exchange set catalogue: <https://us06st1.zoom.us/web_client/6orpgrb/html/externalLinkPage.html?ref=https://data.admiralty.co.uk/portal/apps/sites/#/marine-data-portal/pages/s-100>

**13.5 Considerations for Data (BSH)**

Presentation 13.5A (PS)

NIPWG noted the presentation.

It was noted during the presentation that it’s not always clear who is responsible for what data and that relationships are not always formalized between source provider and product creator and is therefore necessary to stress the need to start formalizing these relationships in preparation of S-100 based nautical publication services.

**Note.** It should be taken into consideration that it does not/should not have to be the sole burden of the HO to source and provide such data.

ACTION ITEM 07: A statement needs to be created for the need to cooperate across governments and to identify the best organization to provide data services to ensure the best possible whole service for the end user, and sent as a circular letter within NIPWG and in copy to the S-100WG . PS, JM, MS, YLF, SR, SS 30th NOV 2022

**9. S-126 Items**

**9.1 S-126: Standing up a task group/appointing task group leader**

Current timeline for S-126 is End of 2024.

ACTION ITEM 08 - To replace VTC 01/2022, Action Item 02: Group to be officially organized, volunteers: JC, JP, MS (lead? TBC by Sep 30th), JS, SR, MK, RM (? TBC by Sep 30th)

**9.2 S-126 product specification update and plans**

Not discussed.

**14. Any other business**

**14.2 IACS Submissions to MSC 106**

**14.2.A MSC\_106-XX-X\_Consequential Amendments to SOLAS V 19.2.1**

Attention was drawn to Paragraphs 4 and 5.

It was noted that IHO has a plan to define what s-1xx will provide what functionality within current SOLAS regulations. When done, IHO will inform IMO, and therefore no change is needed at this current time.

ACTION ITEM 09: Chair group to work on a statement to provide to the IHO so they can in turn formulate a response to MSC 106. Chair Team. VTC-04 (2022).

**14.2.B MSC\_106-XX-X\_Comment on the draft revised performance standards for ECDIS GCT KP Clean**

It was decided that it should be left to the IMO, with NIPWG continuing to monitor.

**8. S-125 Items**

**8.1 S-125 product specification update and plans (IALA)**

**8.2 Report of S-125 Development**

Presentation 08.2A (SO)

Presentation was noted by NIPWG.

ACTION ITEM 10: Provide an input paper from NIPWG to the IALA ARM committee working group 2, recommending that S-201 should hold all features and attributes of S-125, to permit the creation of S-125 products by non-ATON authorities, such as; HOs. With reference to outcome of the IALA IHO S100/S200 workshop and NIPWG-9 discussion.

Chair Team to draft on behalf of NIPWG. Fri 23rd Sep 2022.

**12. S-131 Items**

**12.1 S-131 Product Specification Update**

Presentation 12.1A (RM)

Presentation was noted by NIPWG.

ACTION ITEM 11: Feedback requested to review the product specification, DCEG Feature Catalogue and GML schemas (using the review form). Feedback to be sent RM, CC’ing SE and EM. ALL. Oct 19th 2022

(See slide 5 of presentation 12.1A)

ACTION ITEM 12: Review the DCEG styles in S-131 draft and S-127 1.0.0 and advise on preferred format for the feature tables in the DCEG, as to which is better to read, by providing feedback to RM. ALL. Oct 19th 2022

(See slide 5 of presentation 12.1A)

**12.2 S-131 Project Update**

Presentation 12.2A (SR)

Presentation was noted by NIPWG.

* + 1. **Update on system development**
* Update from IIC (JP):
  + Working on backend server for the API, which is progressing, initial concept work completed, reusing quite a lot of the OGC leftover methodology. Ensuring and validating data storage and that it’s in a 131 format and has a feature catalogue.
  + Plan is start development work in the cloud and mirror to the live site as it is developed.
  + Hoping work to be finished on API for S-100 – to show that the data is flowing to and from servers.
  + Challenge is to ensure participant ports do not have to transform all existing data in to a S-131 form that they’re not comfortable with.

**12.2.1A S-131 DB project update on system development**

Presentation 12.2.1A (SJC)

Presentation and demo of the system was noted by NIPWG.

It was noted that data errors were found in the source material in GISIS (IMO), for the overlay information. Project team was requested to investigate whether they can export the data and pass this on to the IMO through the official channels.

The Global Location Data Platform from Rotterdam was discussed and influence the design of the S-131 database GUI.

It was noted that the system is not yet ready for the first ports to be invited to test the system.

There are plans for a project team meeting in Singapore, in the 2nd half of 2023.

ACTION ITEM 13: SR to please organize a project update meeting in September 22. SR . Sep 22.

**11. S-128 Items**

**11.3 Brief history of current NIPWG product specifications (EM)**

Brief on how NIPWG has developed over time, how we are in a paradigm shift, transferring from textual information used by humans to technical information used by computers.

**6. S-122 Items**

**6.2 OGC Project update (IIC)**

Presentation 6.2A (JP)

* OGC pilot has been extended and is running up in the Arctic, NGA and Canada are involved. Very MSDI focused.

Presentation was noted by NIPWG.

IHO Secretariate noted that by only trying to embrace navigation purposes and MSDI issues in one project, then nothing will be achieved. Products related to safe navigation should be the priority, which has already been decided by HSSC, but this does not/should not prevent NIPWG from making some provisions to re-use S-122 data in the future for MSDI. In addition, it is important to note that a (valid) concern was raised by France for C-6, relating to the possible confusion in the naming of products verses their use. NIPWG members are invited to review the support paper: Doc C6-04.2B (<https://iho.int/uploads/user/About%2520IHO/Council/council6/C6_2022_04.2B_EN_paper_France_S100_navigation_purpose.pdf> )

ACTION ITEM 14 – JP to inform NIPWG when OGC report is published to allow NIPWG members to review and feedback as required. JP. NIPWG 10

**6.1 S-122 product specification update and plans**

VTC-04 will be planned in Dec (note S100 WG meeting scheduled for 5th to 13th Dec).

It was noted that the working group have previously put HSSC on notice for funding needs on updating product specifications within its remit. In order to access special project funs, NIPWG needs to provide an assessment on how much funding is required and what the tasks to be accomplished are.

ACTION ITEM 15 – Working group members to volunteer to be part of S-122 task group and assist with finding individuals within own organizations who will be able to effectively contribute. To be decided in time for a task group to be formed at next VTC (04). All. VTC-04 (Dec-22).

**7. S-123 Items**

**7.1 S-123 Task Group Updates (BG)**

Presentation 7.1A (BG)

Presentation was noted by NIPWG.

Discussion was had surrounding the WEND principles and the challenges ECDIS manufacturers will have when ensuring machine readability, with the different layers of radio coverage and national radio services, and their overlaps between different countries, ensuring they are effectively displayed. Mixed datasets are potentially the way forward.

ACTION ITEM 16 – Input paper from NIPWG to S-100WG on how the mixed datasets containing coverage outside a nations EEZ and national boundary should be created in accordance with the S-100 Framework. Chair Team, supported by HA. 15th Nov 2022.

Discussion was had on differences between GMDSS Sea Areas and how each service provider would be illustrated to the user. For instance, to simply allow countries to input themselves which service is being used to support GMDSS Area 3.

S-123 task group to continue. Accepted by all NIPWG members present.

ACTION ITEM 17 – S-123 task group to come up with a proposal of how the data model should change (see slide 3). BG. VTC-04 (Dec-22)

**7.2 S-123 Product specification update and plans**

Attendees were invited to update NIPWG on the plans and progress made with their own organizations S-123 data coverage.

Discussion noted that tools and contractors with the right skill level are available and now is the time investigate implications of S-123 data creation since the group is close to commencing edition 2.0 development.

**13. NIPWG Member Updates**

**13.6 Presentation on the Canadian experience with coordinating government departments for S-100 services (Chair team)**

Presentation (13.6A) (EM)

Added to agenda. Approved by all attendees.

Presentation was noted by NIPWG.

**7. S-123 Items**

**7.3 Update on portrayal (CCG)**

* Presentation 7.3A (EM)
* Presentation 7.3B (EK – IIC)

Endorsement granted to CCG to continue work as presented.

**UPDATE (14/03/2022):**

Noted that Portrayal needs to be task orientated and that the standards need to seamlessly integrate.

It is also important to remember that the S-52 color tokens help prepare portrayal for support of night mode and dusk/dawn mode.

**11. S-128 Items**

**11.1 S-128 Product specification update (IK/SO)**

* Presentation 11.1A (SO)
* Presentation 11.1B (SS)
* UKHO paper 11.1C (JM)

**Discussion topic 1 –**

Understand the requirement for S-128 to fulfill the role for port state control inspections.

* Recommendations can then be forwarded on to HSSC and WEND etc.

**Discussion topic 2 –**

WG needs to consider categorization of products within the S-128 data model to consider the future S-10x data and various maritime services

**Discussion topic 3 –**

IHO Secretariate confirmed that INToGIS3 is simply a means for the IHO to communicate available data product coverage globally. NIPWG therefore endorsed INToGIS3 as an agreeable use case for S-128.

Noted that ENC coverage is provided by the RENCs, so it’s a relationship between the IHO and the RENCs.

**Discussion topic 4 –**

Create a standing task to continue to evolve the validation checks as required.

Welcome any proposals for validation checks that should be included in the product specification.

There are generic tests being developed, which should not be duplicated, but we should also ensure that specific checks are being carried out (i.e., what is necessary at the product level) and these should be included in the product specification and added to as the project evolves.

**Discussion topic 5 –**

Concluded that the S-128 data product does not need to be encrypted but to note that it is mandatory for the producer to digitally sign the product.

**Discussion topic 6 –**

It was noted that IALA has the guideline G1128, which is guidance on technical e-navigation services (<https://www.iala-aism.org/product/g1128/>). S-124 and S-125 also have draft technical service documents which can also be used as examples to study of actual instances for service specifications.

Throughout the development of S-128, NIPWG members are encouraged to look for where there is text in the products and decide whether this is required, as text is not compatible with machine readability.

**Test plan of S-128 –**

Proposed that NIPWG members try to achieve a description of the service, which delivers S-104 and S-111, all the way down to the time schedule, so that in a machine-readable way the time stamps can be written, and the latest data sent to the ship is visible within the parameters of the service.

**NOTE:** There is no requirement in place for how often a s-104 and s-111 product is to be created; it’s up to the user to determine this and create a service for what they need. S-104 may be annual, or it could be 4 times a day, so s-128 need to be able to describe that full range of availability of products in a way that the machine can understand what is required.

Recommend that detailed scenarios should be included, in such a wide range of scenarios and options, so that during the modeling this can be considered.

Discussed that we could encourage WMO to take note of S-128 so that they can prepare for the same standard of service as is provided through IHO and WMO (with relation to S-411, S-4xx, Sea Ice etc.).

ACTION ITEM 18 - A review of which services should consider using S-128 products and services will be completed by SE and HP. NIPWG-10.

Once the review by SE and HP is complete, NIPWG will communicate through IHO secretariate with relevant bodies/organizations to see how they may consider S-128 as a tool.

Working group members encouraged to share experiences on their test beds with S-128 task group.

A1, A2 and A3, pendant on IHO and UKHO test beds, were endorsed by NIPWG.

Recommended, however, that if test beds are different, an A4 task should be added to monitor UKHO test beds.

All remaining proposed tasks and work items approved, with minor adjustments as discussed in the meeting.

Chair welcomes UKHO to conduct this activity and encourages others to do the same.

Chair proposes to endorse S-128 to continue work.

* Accepted by Attendees.

ACTION ITEM 19: S-128 task group to review the link between task specific products and the model in S-128. And add ‘B’ work items, such as to ‘investigate potential impacts on the data model when considering automatic creation of S-128 product from existing S-1xx and S-57 products. i.e., is there sufficient simplicity in the model so that you can take the coverage of one model and make it part of S-128 (look into automation tasks)’. S-128 Working Group. VTC-04 (Dec-22)

**10. S-127 Items**

**10.2 International Taskforce Port Call Optimization UKC Diagram (BvS)**

* Document 10.2A

Discussion surrounding safety margins, and differences between static and dynamic UKCs took place. Aside from action item, group endorsed the picture.

ACTION ITEM 20 – Requested that BvS take back to the task group that a definition for best draft estimate should be made, including the discussion of whether the term safety margin should be defined and then included in either the best draft estimate, or in the description of margin for ship’s draft. With also links to definitions of each section, highlighting NET UKC (including whether this considers protection of certain seabeds) and definition of ‘baseline’ (i.e., is it the true echo sounder reading). BvS. VTC-04 (Dec-22).

**11. S-128 Items**

**11.2 Product classification (YLF)**

Presentation 11.2A (YLF)

Presentation noted by NIPWG.

Recommendation to make changes to the data model and modify the enumeration of the product and list the special purpose type, under type.

Discussion encouraged on ‘gap descriptions’ and what is the minimum information that should be included in a sailing direction (etc) which is required for safe navigation, when moving away from paper charts and towards electronic navigational charts.

ACTION ITEM 21 – YLF invited to describe the gap between French SDs and S-100 based nautical publications. YLF. VTC-04 (Dec-22).

Recommend S-128 task group consider the e-navigation systems/services and see if that can be used to classify what is necessary for safe navigation.

ACTION ITEM 22 – With reference to the action from HSSC14/87, NIPWG should prepare a clarification and definition of ENDS for HSSC-15, following the adoption of amendments to MSC.232(82) (which are up for approval at MSC in November). ALL. VTC-04 (Dec-22).

**10. S-127 Items**

**10.1 S-127 Product specification update**

* EA: Update - Technical and editorial comments were sent to relevant members in July. Confirmation that changes are pending for the project.

**10.3 S-127 Data capture report (IIC)**

* Presentation 10.3A (EP)

Discussion had surrounding GML and encoding information attributes, which will be discussed further outside of NIPWG-9 between interested parties.

ACTION ITEM 27 – RM to create a space within the NIPWG wiki, to commence dialogue on best practices in creation of S-12x data. RM. VTC-04 (Dec-22)

ACTION ITEM 28 - NIPWG members to make use of the NIWPG wiki in the dialogue on improving the DCEG on all S-12x products. ALL. NIPWG-10

Comments noted from China that there are generic rules that can apply across products, and these should be captured for use by multiple DCEGs.

NIPWG members strongly encouraged to embark on the same journey/exercise as presented.

This will help the group and their organizations discover the challenges which lie ahead and enable the resolution of these to commence.

Members are therefore further encouraged to introduce forums and areas to exchange effective communication so as to move forward the product specifications. Whether that is within own organizations, between sister organizations or between HOs and industry.

ACTION ITEM 29 – New S-127 task group to organize first meeting. EK (Oct-22)

Interested participants invited to take part in the S-127 task-group.

IIC (Group Lead), NGA (JS, MK), RM, CCG, SE, LY, SJC, YLF

**14. Any other business**

**14.1 Suggestions for changes to the Encoding of Restricted Area Navigational in S-127…Product Specification**

Presentation 14.1A (LY)

Presentation noted by NIPWG.

ACTION ITEM 30 - China are invited to submit sample test to MK (NGA) so that NP2 data samples can be updated. LY. VTC-04 (Dec-22)

ACTION ITEM 31 - The newly established S-127 task group are also invited to take note of the proposals made by China and to implement them into the S-127 product specifications. S-127 task group. VTC-04 (Dec-22)

ACTION ITEM 32 - China was invited to submit S-127 change proposals to EA. LY. VTC-04 (Dec-22).

Note that RM’s suggestion that the next edition of S-127 product specification should take in to account the development on the GI registry, the S-101 product specification and any relevant other product specifications, to ensure harmonization between these and S-127.

**14.3 Review of draft minutes**

The Meeting reviewed and adopted the draft Minutes of NIPWG9. The final Minutes will be prepared by the Secretary servicing this Meeting in close co-operation with all participants.

The meeting renewed the request to deliver the meeting papers at least 3 weeks before the meeting. Papers submitted after that deadline will be handled as Information (INF) papers. The meeting agreed that submitters of INF papers could not expect that the submitted topic will be discussed during that meeting. Exceptions due to papers discussing urgent matters are on Chair group’s decision.

**14.4 Date and place of next meeting**

NIPWG will conduct the next VTC meeting, VTC-04-2022, on the 14th December 2022 (TBC).

NIPWG10 will be held in …, from the 12th to 15th September 2023 (Date and Venue TBC – back-up venue is Monaco)

Chair thanked DHN for the excellent hosting of the working group meeting, especially noting the brilliant support of Rodrigo Obino and his staff.

**Annex A: List of Action Items**

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| --- | --- | --- | --- | --- |
| **#** | **Action Item** | **Agenda Item** | **Assigned** | **Status** |
| **NIPWG 9 – Hybrid meeting 03/22** | | | |  |
| 01 | Working group asked to determine whether they agree with the information provided in the two tables and definitions? If any adjustments/anything missing is thought of, please provide comments to EM. | 4.4 | All | 30th NOV 2022 |
| 02 | Please read SE’s paper, discuss and come back by Thursday as to whether you agree with the recommendations from the workshop on S-125 and/or whether you want more clarifications and descriptions, so that they can be provided to IALA in Oct. | 5.1 | All | COMPLETED  See action item 20 |
| 03 | Decide on definition for what a Nautical Publication Information Overlay actually is. | 5.1 | All | COMPLETED  See action item 19 |
| 04 | NGA are invited to present the presentation on WPI to the S-130 PT, for their consideration, as the names of water bodies may not be included as such in the S-130 product specification (use of Unique Identifiers instead). | 13.1 | JS/MK | NIPWG-10 |
| 05 | NGA is encouraged to ensure the interface for WPI is developed so that it guarantees harmonization with S-1xx products, specifically S-131 (to reduce/remove any possibility of duplicate efforts from users/providers). | 13.1 | JS/MK | NIPWG-10 |
| 06 | NGA will update NIPWG when public facing website of the World Port Index is live. | 13.1 | JS | NIPWG-10 |
| 07 | A statement needs to be created for the need to cooperate across governments and to identify the best organization to provide data services to ensure the best possible whole service for the end user, and sent as a circular letter within NIPWG and in copy to the S-100WG. | 13.5 | PS, JM, MS, YLF, SR, SS | 30th Nov 2022 |
| 08 | To replace VTC 01/2022, Action Item 02:  S-126 task group to be officially organized, volunteers: JC, JP, JS, SR, MK, RM (? TBC by Sep 30th)  Lead: MS (TBC by Sep 30th)  Current timeline for S-126 is End of 2024 | 9.1 | Chair team  JC, JP, MS, JS, SR, MK, RM | ? |
| 09 | Chair group to work on a statement to provide to the IHO so they can in turn formulate a response to MSC 106. | 14.2A | Chair team | VTC-04  (Dec-222) |
| 10 | Provide an input paper from NIPWG to the IALA ARM committee working group 2, recommending that S-201 should hold all features and attributes of S-125, to permit the creation of S-125 products by non-ATON authorities, such as; HOs. With reference to outcome of the IALA IHO S100/S200 workshop and NIPWG-9 discussion. | 8.2A | Chair Team to draft on behalf of NIPWG | 23rd Sep 2022. |
| 11 | Feedback requested to review the product specification, DCEG Feature Catalogue and GML schemas (using the review form). Feedback to be sent RM, CC’ing SE and EM.  (See slide 5 of presentation 12.1A) | 12.1A | All | 19th Oct 2022 |
| 12 | Review the DCEG styles in S-131 draft and S-127 1.0.0 and advise on preferred format for the feature tables in the DCEG, as to which is better to read, by providing feedback to RM.  (See slide 5 of presentation 12.1A) | 12.1A | All | 19th Oct 2022 |
| 13 | SR to please organize a project update meeting in September 2022. | 12.2.1A | SR | Sep 2022 |
| 14 | JP to inform NIPWG when OGC report is published to allow NIPWG members to review and feedback as required | 6.2 | JP | NIPWG 10 |
| 15 | Working group members to volunteer to be part of S-122 task group and assist with finding individuals within own organizations who will be able to effectively contribute. To be decided in time for a task group to be formed at next VTC (04). | 6.1 | All | VTC-04  (Dec-22) |
| 16 | Input paper from NIPWG to S-100WG on how the mixed datasets containing coverage outside a nations EEZ and national boundary should be created in accordance with the S-100 Framework. | 7.1A | Chair Team  Supported by HA | 15th Nov 2022 |
| 17 | S-123 task group to come up with a proposal of how the data model should change (see slide 3). | 7.1A | BG | VTC-04  (Dec-22) |
| 18 | A review of which services should consider using S-128 products and services will be completed by SE and HP. | 11.1 | SE, HP | NIPWG-10 |
| 19 | S-128 task group to review the link between task specific products and the model in S-128. And add ‘B’ work items, such as to ‘investigate potential impacts on the data model when considering automatic creation of S-128 product from existing S-1xx and S-57 products. i.e. is there sufficient simplicity in the model so that you can take the coverage of one model and make it part of S-128 (look into automation tasks)’. | 11.1 | S-128 Working Group | VTC-04  (Dec-22) |
| 20 | Requested that BvS take back to the task group that a definition for best draft estimate should be made, including the discussion of whether the term safety margin should be defined and then included in either the best draft estimate, or in the description of margin for ship’s draft. With also links to definitions of each section, highlighting NET UKC (including whether this considers protection of certain seabeds) and definition of ‘baseline’ (i.e., is it the true echo sounder reading) | 11.2 | BvS | VTC-04  (Dec-22) |
| 21 | YLF invited to describe the gap between French SDs and the S-100 based nautical publications. | 11.2 | BvS | VTC-04  (Dec-22) |
| 22 | With reference to the action from HSSC14/87, NIPWG should prepare a clarification and definition of ENDS for HSSC-15, following the adoption of amendments to MSC.232(82) (which are up for approval at MSC in November). | 11.2 | ALL | ? |
| 23 | Request that SO (Dr. Oh) and his role as IALA/ARM…S-125 task group lead, and his involvement with the S-128 task group, to please review the introduction of S-125 and S-128 and try to replace the NPIO term with a better description of the product specifications intended use. | 5.1 | SO | NIPWG-10 |
| 24 | Invite all task groups to consider the updated descriptions in S-125 and S-128 when conducting their next product specifications review. | 5.1 | ALL | NIPWG-10 |
| 25 | Chair team to draft a paper for the ARM committee for the recommendations for S-125 from the IALA/IHO S-100/S-200 Workshop, including the comments made during NIPWG-9 regarding temporary navigational aids, when the deployments are shorter than the update frequency of the ENC update period, given as a further use case. | 5.1 | Chair Team | Sep-2022 |
| 26 | Chair team to provide an input to HSSC15 reporting on the outcomes of the workshop, with regards to how S-201, S-101, S-125 and S-124 will work in relation to each other. | 5.1 | Chair Team | HSSC-15  (6-weeks before) |
| 27 | RM to create a space within the NIPWG wiki, to commence dialogue on best practices in creation of S-12x data. | 10.3 | RM | VTC-04  (Dec-22) |
| 28 | NIPWG members to make use of the NIWPG wiki in the dialogue on improving the DCEG on all S-12x products. | 10.3 | ALL | NIPWG-10 |
| 29 | New S-127 task group to organize first meeting.  Interested participants invited to take part in the S-127 task-group.  IIC (Group Lead), NGA (JS, MK), RM, CCG, SE, LY, SJC, YLF | 10.3 | EK | Oct-2022 |
| 30 | China invited to submit sample test to MK (NGA) so that NP2 data samples can be updated. | 14.1 | LY | VTC-04  (Dec-22) |
| 31 | The newly established S-127 task group are also invited to take note of the proposals made by China and to implement them into the S-127 product specifications. | 14.1 | S-127 task group | VTC-04  (Dec-22) |
| 32 | China was invited to submit S-127 change proposals to EA. | 14.1 | LY | VTC-04  (Dec-22) |

|  |  |
| --- | --- |
| EM | Eivind Mong |
| SE | Stefan Engström |
| JS | Jason Strom |
| MK | Michael Kushla |
| JC | Jens Christiansen |
| JP | Jonathan Pritchard |
| RM | Raphael Malyankar |
| MS | Matilde Skar |
| SR | Sarah Rahr |
| HA | Hugh Astle |
| BG | Bridget Gagné |
| HP | Hannu Peiponen |
| BvS | Ben van Scherpenzeel |
| SO | Seewong OH |
| EK | Ed Kuwalek |
| IIC | IIC Technologies |
| CCG | Canadian Coast Guard |
| SJC | Shwu-Jing Chang |
| YLF | Yves Le Franc |
| LY | Lyu Yuxiao |

**Variance Details:**

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| Xxxxx |

**Corrective Actions:**

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| Xxxxx |

**Annex B: Agenda (as conducted)**

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| **9th Meeting of the Nautical Information Provision Working Group (NIPWG)**  **13 – 16 September 2022; Niteroi, Brazil** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Tuesday, 13 September** | | | |
| 1 | 1.1 | Chair welcome |  |
| 1.2 | Host welcome |  |
| 1.3 | Announcements (chair/host) |  |
| 2 | | Introductions | All |
| 3 | | Adopting the agenda | Chair |
| 4 | 4.1 | Review outstanding NIPWG actions | Chair |
| 4.2 | Review outstanding HSSC 14 actions | Chair |
| 4.3 | Roadmap for the S-100 Implementation Decade (2020-2030): quick review of proposals submitted to Council-6 | IHO/Chair |
| 4.4 | Intended use and distribution of S-1xx products | EM |
| 5 | 5.1 | Report from IALA/IHO S-100/S-200 Workshop | SE |
| ***Lunch 12:30 - 13:30*** | | | |
| 13 | 13.1 | World Port Index update presentation and demonstration (NGA) | MK |
| 13.2 | ePublisher presentation and demonstration (NGA) | JS |
| 13.3 | Next generation sailing directions (UKHO) | JM |
| 13.4 | ADMIRALTY Marine Data Portal (UKHO) | JM |
| 13.5 | S-131 – Considerations for Data (BSH) | PS |
| 9 | 9.1 | S-126: Standing up a task group/appointing task group leader |  |
| 9.2 | S-126 product specification update and plans |  |
| 14 | 14.2A | MSC\_106-XX-X\_Consequential Amendments to SOLAS V 19.2.1 | EM |
| 14.2B | MSC\_106-XX-X\_Comment on the draft revised performance standards for ECDIS GCT KP Clean | EM |
| **Wednesday, 14 September** | | | |
| 8 | 8.1 | S-125 product specification update and plans (IALA) |  |
| 8.2A | Report of S-125 Development | SO |
| 12 | 12.1 | S-131 product specification update | RM |
| 12.2 | S-131 project update | SR |
| 12.2.1 | Update on system development | JP + SJC |
| 12.2.1.A | S-131 DB project update on system development | SJC |
| 11 | 11.3 | Brief history of current NIPWG product specifications | EM |
| 6 | 6.2 | OGC Project update (IIC) | JP |
| ***Lunch 12:30 - 13:30*** | | | |
| 6 | 6.1 | S-122 product specification update and plans | EM |
| 7 | 7.1 | S-123 task group update | BG |
| 7.2 | S-123 product specification update and plans | All |
| 13 | 13.6 | Presentation on the Canadian experience with coordinating government departments for S-100 services | EM |
| 7 | 7.3A | Update on portrayal (CCG) | EM |
| 7.3B | Update on portrayal (IIC) | EK |
| **Thursday, 15 September** | | | |
| 11 | 11.1 | S-128 product specification update | IK |
| 10 | 10.2 | International Taskforce Port Call Optimization UKC Diagram | BvS |
| ***Lunch 12:30 - 13:30*** | | | |
| 11 | 11.2 | Product Classification | YLF |
| 7 | 7.3B | Continuation from update on portrayal (by IIC) | EK |
| **Friday, 16 September** | | | |
| 10 | 10.1 | S-127 product specification update | EA |
|  | 10.3 | S-127 data capture report (IIC) | JP |
| 14 | 14.1 | Suggestions for Changes to the Encoding of Restricted Area Navigational in S-127…Product Specification (1.0.0) | LY |
| 14.2 | Review Action Items | All |
| 14.3 | Review minutes | All |
| 14.4 | Date and place of next meeting | All |
| ***Lunch 13:00 - 13:30*** | | | |

Table of names

|  |  |
| --- | --- |
| EM | Eivind Mong |
| SE | Stefan Engström |
| MK | Michael Kushla |
| JS | Jason Strom |
| JM | Johanna Marks |
| PS | Philipp Schwedas |
| SO | Seewong Oh |
| RM | Raphael Malyankar |
| SR | Sarah Rahr |
| JP | Jonathan Pritchard |
| SJC | Shwu-Jing Chang |
| BG | Bridget Gagné |
| EK | Ed Kuwalek |
| IK | Izzy Kim |
| BvS | Ben van Scherpenzeel |
| YLF | Yves Le Franc |
| EA | Elana Armanino |
| LY | Lyu Yuxiao |

Table of Acronyms

|  |  |
| --- | --- |
| HSSC | Hydrographic Services and Standards Committee |
| M-3 | Resolutions of the International Hydrographic Organization |
| DF-mode | Dual Fuel Mode |
| GML | Geography Markup Language |
| GISIS | Global Integrated Shipping Information System |

**Work sessions:** *(LT = UTC-5)*

|  |  |  |  |
| --- | --- | --- | --- |
| Tuesday | Wednesday | Thursday | Friday |
| 09:00 – 10:30 | 09:00 – 10:30 | 09:00 – 10:30 | 09:00 – 10:30 |
| 11:00 – 12:30 | 11:00 – 12:30 | 11:00 – 12:30 | 11:00 – 13:00 |
| 13:30 – 15:00 | 13:30 – 15:00 | 13:30 – 15:00 |  |
| 15:00 – 17:30 | 15:00 – 17:00 | 15:00 – 17:00 |  |
|  |  |  |  |

**Annex C: List of Attendees see IHO Registration site**[NIPWG-9 Registered Attendees](https://iho.int/uploads/user/Services%20and%20Standards/NIPWG/NIPWG9/NIPWG9_2022_01B_List_of_Participants.pdf)

|  |  |  |
| --- | --- | --- |
| **NIPWG-9 Attendance**  *As noted by DHN* | | |
| **IHO Member-States** | | |
| AUSTRALIA | ALPER CELEBI | Australian Hydrographic Office (AHO) |
| BRAZIL | ANDRÉ BIONDI | Directorate of Hydrography and Navigation (DHN) |
| GUILHERME PONTES |
| CANADA | EIVIND MONG (Chair) | Canadian Coast Guard (CCG) |
| BRIDGET GAGNÉ \* |
| SARAH RAHR \* | Canadian Hydrographic Service (CHS) |
| CHINA | CHANGLIN CHEN \* | China Navy Hydrographic Office (CNHO) |
| WEIGUO XU \* | China Maritime Safety Administration (China MSA) |
| LINGZHI WU \* |
| YUE JIANG \* |
| CHAO WANG \* |
| LYU YUXIAO \* |
| XUJING SU \* |
| COLOMBIA | DAVID MINA \* | Ministerio de Defensa Nacional - Dirección General Marítima (DIMAR) |
| MARIO TAPIAS \* |
| DENMARK | JAKOB CHRISTENSEN \* | Danish Geodata Agency - Geodatastyrelsen (GST) |
| JENS CHRISTIANSEN \* |
| FINLAND | STEFAN ENGSTRÖM  (Vice-Chair) | Finnish Transport and Communication Agency |
| FRANCE | YVES LE FRANC | Service Hydrographique et Océanographique de la Marine (Shom) |
| GERMANY | PHILIPP SCHWEDAS | Bundesamt Für Seeschifffahrt und Hydrographie (BSH) |
| INDIA | HARSHVARDHAN SAVARNA \* | India National Hydrographic Office (INHO) |
| ITALY | ELENA ARMANINO \* | Istituto Idrografico della Marina (IIM) |
| JAPAN | TADASHI YAMAMOTO \* | Japan Hydrographic and Oceanographic Department (JHOD) Japan Coast Guard |
| KOSEI TAKAHASHI \* |
| NETHERLANDS | WILFRED DEN TOOM | Hydrographic Service - Royal Netherlands Navy (NLHO) |
| NORWAY | MATILDE SKJÆVELAND SKÅR | Norwegian Hydrographic Service (NHS) |
| POLAND | PIOTR PASZTELAN | Hydrographic Office of the Polish Navy |
| REPUBLIC OF KOREA | JIHYUN SON \* | Korea Hydrographic and Oceanographic Agency (KHOA) |
| SEWOONG OH \* |
| DONGWOO KANG \* |
| SPAIN | MIGUEL ANGEL LOBEIRAS DE LA CRUZ | Instituto Hidrográfico de la Marina (IHM) |
| UK | JOHANNA MARKS | United Kingdom Hydrographic Office (UKHO) |
| LAURA HALL-KING |
| USA | JASON STROM | National Geospatial-Intelligence Agency (NGA) |
| MICHAEL KUSHLA |
| **Non-Governmental International Organizations (NGIO)** | | |
|  | GREGOR STEVENS | International Chamber of Shipping (ICS) |
| HANNU PEIPONEN | International Electrotechnical Commission (IEC) |
| BEN VAN SCHERPENZEEL \* | International Harbour Masters’ Association (IHMA) |
| **Technical Experts** | | |
|  | YANN CORLAY \* | GEOMOD |
| ED KUWALEK | IIC Technologies |
| JONATHAN PRITCHARD \* |
| RAPHAEL MALYANKAR | Portolan Sciences |
| SVEIN SKJAEVELAND \* | PRIMAR |
| HUGH ASTLE \* | Teledyne Geospatial (CARIS) |
| SHWU-JING CHANG \* | National Taiwan Ocean University |
| **IHO Secretariat** | | |
|  | YVES GUILLAM \* | IHO Assistant Director |
| **Observers** | | |
| BRAZIL | CARLOS PÊGAS | Directorate of Hydrography and Navigation (DHN) |
| NICKOLÁS ROSCHER |
| EDSON MAGNO |
| RODRIGO OBINO |
| CESAR REINERT |
| FLÁVIA MANDARINO |

Annex D: **Updated NIPWG Work Plan**

# NIPWG WORK PLAN 2022-23 *(approved by HSSC14 and revised at NIPWG9)*

**Tasks**

|  |  |
| --- | --- |
| D | Maintain Publication S-12 “Standardization of List of Lights and Fog Signals” (IHO Task 2.8.1) |
|  | *Left intentionally blank* |
| F | Establish and monitor, in liaison with the S-100WG, the project teams required to specify and develop nautical information layers for use in ECDIS (IHO Task 2.3) |
| G | Develop high level specifications for maritime services as defined by IMO in the context of e-navigation covering the provision of hydrographic services to mariners in accordance with the IMO e-navigation strategy implementation plan (IHO Task 2.5.2) |
| H | Develop a test and implementation plan for the development of the maritime services as defined by IMO (IHO Task 2.5.2) |
| I | Maintain IHO Resolutions in M-3 relating to Nautical Publications as required (IHO Task 2.1) |
| J | Liaise with other HSSC WGs and other IHO and international bodies (IHO Task 2.1.8) |
| K | Conduct the 2022 and 2023 meetings of the NIPWG and its sub-group(s) and project team(s) (IHO Task 2.1) |

**Work items**

| **Work item** | **Title** | **Priority**  H-high M-medium  L-low | **Next Milestone** | **Start Date** | **End Date** | **Status**  P – Planned O – Ongoing C – Completed  S – Superseded | **Contact Person(s)** | **Related Pubs / Standard** | **Remarks** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D.1 | Monitor and assess proposals for amending S- 12 | M | Next meeting | 2014 | Permanent | O |  | S-12 | In close liaison with IALA; see J.5.1 |
| F.1 | Assess the progress and perspectives of developing S-100 product specifications for NP data and propose the way forward for consideration by HSSC | H |  | 2015 | Permanent | O |  |  | To be considered in the context of the IMO e-navigation strategy implementation.  NIPWG to consider establishing one or more project team(s) in liaison with S-100WG as required (see J.3), in particular to continue the development of Product Specifications currently assigned to the NIPWG. |
| F.2 | Investigate the interaction between S-100 based Nautical Publication products and ENC in ECDIS | H | Next meeting | 2015 | Permanent | O | Chair/Sec |  | In close liaison with the S-100 WG |
| F.3 | Model the NP data where required. | H | Next meeting | 2004 | Permanent | O | Chair/Sec |  | S-100 related.  To be included in Hydro domain of the FCD Register. |
| F.4 | Review of objects and attributes  Propose amendments to HYDRO domain of the GI Registry | H | Next meeting | 2004 | Permanent | O | Chair/Sec |  | S-100 related.  Incorporate in GI Registry if appropriate. |
| F.8.1 | Develop S-1xx Nautical Information Product Specification |  |  |  |  |  |  |  |  |
| F.8.1.2 | For Marine Navigational Services | L | Next meeting | 2013 |  | O | Chair/Sec | S-125 | In progress. IALA developing draft, NIPWG, see J.5.1 |
| F.8.1.4 | For Marine Physical Environment | L | Next meeting | 2013 | 2026 | O | Chair/Sec | S-126 | Task group has been formed. |
| F.8.1.5 | Catalog of nautical products | H | Next meeting | 2016 | 2024 | O | Chair/Sec | S-128 | In progress.  Development continued by KHOA. |
| F.8.1.6 | Marine Harbour Infrastructure | H | Next meeting | 2020 | 2023 | O | Chair/Sec | S-131 | Contracted; delivery date Q3/2022 dependent on S-100 Ed 5 progress. |
| F.8.2 | Draft Data Classification and Encoding Guides |  |  |  |  |  |  |  | Document for NPs similar to: Use of the Object Catalog. |
| F.8.2.1 | For Marine Navigational Services | L |  | - |  | O | Chair/Sec | S-125 | In close liaison with IALA, see J.5.1. |
| F.8.2.2 | For Physical Environment | L | Next meeting | 2022 | 2026 | O | Chair/Sec | S-126 | Task group has been formed. |
| F.8.2.3 | For Digital Catalogue of Nautical Product | H | Next meeting | 2016 | 2024 | O | Chair/Sec | S-128 | In progress. |
| F.8.2.4 | For Marine Harbour Infrastructure | H | Next meeting | 2020 | 2023 | O | Chair/Sec | S-131 |  |
| F.8.3 | Monitor and Maintain NIPWG Product Specification | H | Next meeting | 2019 |  | O | Chair/Sec |  | S-122, S-123 and S-127 under 2 year revision cycle.  S-123 Task group formed to review comments received and recommend next steps. |
| G.1 | Monitor the requirements for, and provision of, nautical information in e-navigation test-beds  Produce NP1 sample data sets | M |  |  |  | O | Mike Kushla |  | According to the tasks assigned by HSSC4. Collection of information to be modelled. |
| G.3 | Rules and guidelines for displaying nautical information in ECDIS and in maritime services as defined by IMO |  |  |  |  |  |  |  |  |
| G.3.1 | Develop basic display principles for NP data intended for use in ECDIS (NP3) | M |  | 2008 |  | O | Chair/Sec |  | Close co-operation with NCWG and S-100WG required. Interoperability Spec to be considered. |
| G.3.2 | Monitor and contribute to the development of IMO guidelines showing how navigation information received by communications equipment can be displayed in a harmonized way and what equipment functionality is necessary. | M |  | 2015 |  | O |  |  | e-nav IMO Strategy Implementation Plan, Task T13 (HSSC6-07.1A refers)  Interim guidelines released by IMO. Continue to monitor development. |
| I.1 | Maintain and extend resolutions in M-3 relating to Nautical Publications. | M | Next meeting | 2012 | Permanent | O | Chair/Sec NIPWG | M-3 | A review is required due for the harmonization of M-3 information and potential Prod Specs content. |
| J.3 | Liaise with other HSSC WG | M |  | 2004 | Permanent | O | Chair/Sec NIPWG |  |  |
| J.3.1 | Liaise with the NCWG | M |  |  | Permanent | O | Chair/Sec NIPWG |  | Establish joint project teams as required and endorsed by HSSC. |
| J.3.2 | Liaise with the ENCWG | L |  |  | Permanent | O | Chair/Sec NIPWG |  |  |
| J.3.3 | Liaise with the S-100WG | H |  |  | Permanent | O | Chair/Sec NIPWG |  | Establish joint project teams as required and endorsed by HSSC. |
| J.4 | Liaise with IRCC |  |  |  |  |  |  |  |  |
| J.4.1 | Liaise with WWNWS Sub-Committee |  |  |  |  |  |  | S-124 | Monitor developments of S-124 Project Team. |
| J.5 | Liaise with other international bodies which contribute to nautical information | H |  | 2015 | Permanent | O | Chair/Sec NIPWG |  |  |
| J.5.1 | Liaise with IALA | H |  | 2013 | Permanent | O | Chair/Sec NIPWG |  | IALA ARM and ENAV Committees. |
| J.5.2 | Liaise with International Harbor Masters’ Association (IHMA) | M |  | 2015 | Permanent | O | Chair/Sec NIPWG |  |  |
| J.5.3 | Liaise with International Cable Protection Committee (ICPC) | L |  | 2016 | Permanent | O | Chair/Sec NIPWG |  |  |

**Meetings** (Task K)

|  |  |  |
| --- | --- | --- |
| **Date** | **Location** | **Activity** |
| Sept 2022 | Niteroi, Brazil | NIPWG9 |
| Sept 2023 | Monaco | NIPWG10 |
|  |  |  |
| **Note:** Additional VTC meetings held approximately 3 times per year. | | |

Chair: Eivind Mong, Canadian Coast Guard, CA Email: Eivind.Mong@dfo-mpo.gc.ca  
Vice Chair: Stefan Engström, Traficom, FI Email: Stefan.Engstrom@traficom.fi  
Secretary: Laura Hall-King, UKHO, UK Email: laura.hall-king@ukho.gov.uk

Top three work items:

* Initiate prototype implementation of existing S-1xx products in an S-100 based environment to explore governance architecture and service delivery mechanism
* Develop S-1xx nautical information Product Specifications
* Coordinate the IHO contributions to the definition and harmonisation of maritime services as defined by IMO within the remit of IHO