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

**20th June 2023 – VTC, Worldwide**

1. **Welcome**

* Chair opened the NIPWG VTC by welcoming new and returning members

1. **Review of Action Items**

See Annex A.

* PS: Action Item 11 VTC-01(2023), [Link](https://www.bsh.de/EN/PUBLICATIONS/Product_catalogue/product_catalogue_node.html;jsessionid=47C0D64CFED235BA3E35C6B4DEB3725D.live11291) to test data, S-128 test data is found under the Download heading.

1. **Review of other Working Group Reports**
   1. **Update on IMO Expert Group on Data Harmonization (EGDH)**

* NIPWG noted the presentation.
* RM: Question regarding how much of an overlap between IMO Compendium and S-131.
* SE: Currently there is not much of an overlap. The main overlap to date is the ‘just in time concept’. The features are already in accordance with the IHO registry; however, the IMO Compendium has no mandatory input unlike S-131, this is being looked at going forwards. 
  1. **Data Quality Working Group (DQWG) guidance**
* NIPWG noted the presentation.
* EM: Important for NIPWG to take note in our work to develop operational versions of S-122, S-123, S-127 and S-128. More urgent for S-128.
* EM & RM: S-122 1.0.0 and S-123 1.0.0 preceded the development of S-97 Part C. however Data Quality with need to be kept in mind moving forwards.
* RM: Question: Are DQWG also planning to do cross checks of feature catalogues, e.g., comparing S-122 FC to S-101 FC? Cross checking FC across different product specifications is of much use.
* LW: Yes, its requested by S-101PT and is beneficial to the interoperability, suggest with try to do this first and if we find it is not necessary, we can change this plan.

**Action Item 01:** Task Group leads to prepare plans on how to implement Data Quality based on the recommended template of the Data Quality chapter of ‘S-1XX Data Product Specifications’ developed by DQWG. All Task Groups. NIPWG-10.

**Action Item 02:** Agenda Item on DQWG and to identify a DQWG focal point/liaison within NIPWG. Chair Team. NIPWG-10.

1. **HSSC 15 outcomes**

* See Annex A, updated to include action items that arose from HSSC-15.
* EM: The priority is moving S-128 to version 2.0 by the end of March 2024.
* YG: NIPWG members requested to please review HSSC-15 bulletin and stake holder presentations. There are important questions asked by several of the OEMs that need to be resolved as S-100 is implemented by IHO member states.

1. **MRN Implementation**

* NIPWG noted the presentation.
* EM: There is ambiguities and IHO Level guidance is necessary, NIPWG will start drafting guidance to take to HSSC.
* YG: Thank you to Germany. Assigning an MRN to each feature doesn’t seem realistic in the time frame ahead of us.
* SS: Presented PRIMAR response.
* EM: Several questions have arisen following MRN discussion. There is confusion and recommendations considering when information is being linked/referenced between different layers to enable the system to identify these objects. Nautical Publications (SDs and coast pilots) have a Narrative and there is no means to capture this. A proposal is the Norwegian approach of using route templates, with sections including a reference to relevant objects. MRN seems to be a solution to this type of referencing, but we need to be mindful in how it is implemented so that managing MRN is not putting too much overhead on data producers.
* **Action Item 03:** NIPWG to create IHO level guidance for use of MRN. SR, JP (lead), RJ, PS, RM, RB, SO, JSC, MK. NIPWG-10.

**5.1 MRN Specification for organizational identifiers**

* NIPWG noted the presentation.
* RM: Question: What is the scope of these MRN’s, how does this relate to feature identifiers, and can it be expanded to include feature identifiers?
* JP: They identify organisations that are members of the IHO’s data protection scheme implementing part 15 under edition 5. It doesn’t relate to any feature identifiers at all. FOIDs are currently being used in ENCs but are not totally persistent but there are S-58 validations that deal with persistent of FOIDs within datasets plus updates. The name space could be expanded but there is no requirement within feature identifiers, you could define a new one within the IHOs name space.
* RM: All individual features only need a globally unique identifier; the remaining can be constructed from producer information contained within the dataset. FOIDs are not globally unique and can be reused and not sufficient to identify features persistently. Requirement to generate a global unique identifier for individual features and ensure it is persistent.
* EM & JP: GB00 and 540 both identity UK, identifier links the old way with the new way and therefore creates a unique identifier for that producer. Both are currently in use and there doesn’t appear to be a problem because there is no ‘one to many’ relationships between the numeric identifiers and the alphanumeric identifiers.
* EM: No objections from members. NIPWG gives endorsement to JP’s proposal.

1. **UKC Definitions Proposal update**

* NIPWG noted update

**Action Item 04**: Clarify the intention of definitions: “Margin to cater for uncertainties…” then submit to the register. Chair Group, RM & BvS. 30th June 2023

1. **NIPWG Wiki Status update**

* RM: Wiki pages have been created for each task group: Home page: [Link](http://wp12183585.server-he.de/npubwiki/wiki/index.php/Main_Page). Up to each task group to populate. If members need accounts to email EM and RM. Forgotten usernames, on the home page, left side, under Tools > Special pages>Users and rights. RM can upload documents if required.
* EM: The Wiki is our sandbox and history and all things NIPWG. Encourage all members to make use of it.

1. **Product Specification Updates**
   1. **S-122 – Marine Protected Areas**
      1. Task Group Update

* JP: No progress since last meeting. Next VTC 6th of July. Canada have joined the group and Geoscience Australia who are keen to use S-122 with marine geo regulation. Draft of input papers for S-122 on 6th July and will report back at NIPWG-10. 
  1. **S-123 – Marine Radio Services**
     1. Task Group Update
* NIPWG noted the update.
* MK: Using percentages may give a false impression of accuracy.
* EM: NIPWG has no objections to the proposal of the task group to simplify guidance.

* NIPWG noted the presentation: NIPWG-VTC02-08.2.1A.
* EM: Project teams’ proposal is to address the gaps that have been discovered during review and test production.
* RM: Transmission and broadcasts are synonyms in the dictionary will need to be tied up. Flattish model to a hierarchical model which maybe ok.
* HA: Most of the changes address the issues identified and provide an approach to solving them. Testing would be useful to confirm.
* EM: This proposal provides the way forwards for the next edition of S-123.
  1. **S-125 – Marine Aids to Navigation**
     1. Development Update
* NIPWG noted update.
* AC: Comment: Conversations and questions on going on how it would work in Australia. In Australia many different jurisdictions creating the different services, with multiple different S-125 producers, potentially one national S-124 provider but potentially local regional S-124 producers. AUS HO would produce S-101, lots of discussion on how all the different products would interact in the different waterways.

**Action Item 05**: UKHO to provide comments on S-125. JM. 31st July 2023.

* 1. **S-127- Marine Traffic Management**
     1. Task Group update.
* NIPWG noted the update, presented by EM.

**Action Item 06**: Forward SHOM comments on S-127 to Task Group. EM. 30th June 2023.

* 1. **S-128 – Catalogue of Nautical Products**
     1. S-128 Test Bed update
* NIPWG noted update.
* EM: NIPWG asked to considerably speed up the development timeline for S-128 to align with the IEC developments. It is considered necessary to expediate this work and expect all involved to push this forward and to provide support to Korea who are leading this work.

Korea is willing to provide a service, S-128 test data can be created using INToGIS using the metadata of the various products. Thank you for providing this.

Each manufacturer will have a need to create S-128 and so will the RENCs for their service and the two may not be equal. There is a need to create S-128 catalogues at many levels and used as appropriate at the various levels of the distribution chain.

* 1. **S-131 – Marine Harbour Infrastructure**
     1. Project Update
* NIPWG noted the update.
* EM: Concern around the complexity of the GUI. Can superports/superusers from ports be invited to give some feedback to the GUI earlier than Q4?
* SR: Some ports to assist during this summer, agreed it would be more valuable to get user feedback on their capabilities and accessibility for the average user. Will seek feedback from both superport and smaller port users.
* EM: Need to define the happy medium that most users will leave with.
* MK: Question: What are inherited attributes?
* RM: Attributes defined in super-classes. Easiest to explain looking at an appropriate UML diagram or suitable sections from the feature catalogue printout.
* EM & SS: S-131 data model can be downloaded from IHOs draft publications page [Link](https://iho.int/en/draft-publications) and on the IHO Registry (testbed repository) page [Link](https://registry.iho.int/testbed/list.do).

1. **Best Practices of Product creation**

* NIPWG noted the presentation.
* EM: Data producers/authorities will not be making their own production tools. How can we ensure consistencies across software? And do we want to do that due to software production companies may use these create competition with rivals’ companies. However, guidance could be created.
* RM: What type of regulation should be captured in the object attribute model and what could be left as text should be part of discussion. Start with addressing how much of the regulation in SDs should be captured in the NIPWG model.
* EM & RM: common questions focus on how/why it is being done not what the best practice is.

**Action Item 07**: Current guidance on data capture from S-131 to be posted on Wiki in a common page for members to refer to. RM. NIPWG-10.

1. **GAP Analysis Discussion continuation and Recap**

* NIPWG-VTC03-06.8A Presentation (VTC-02/22), Continue from Slide 12 (previous slides discussed at dedicated GAP Analysis meetings (21/03/23 & 17/04/23)
* EM: Review highlights the expected result of more testing and using the product specifications the more we see that guidance and experience is necessary to move the familiar printed publications into a vector product. Biggest miss is the narrative in NP is still of a value, still not a good way to capture this in S-12x product specifications. Template routes to capture narrative is an option. Highlights importance of clear useful identifiers.

All items SHOM has identified needs to be reviewed and decided if they should be included in product specifications. Several existing information in NPs are not useful anymore and can be dropped.

**Action Item 08**: Share an editable version of SHOM Presentation for Task groups to annotate. Chair Team. 31st July 2023.

**Action Item 09**: Review SHOM presentation and mark up items which belong to each Task Group. Task Group Leads. NIPWG-10.

1. **Brief on the Canadian Mariners Workshop**

* NIPWG noted the presentation
* RM: S-98 Annex C addresses a similar issue to "S-nnn' vs. name, but for graphical indexes. The idea is to use the (approx) 3-letter acronym, e.g., MPA instead of S-122. The concept can carry over to pick reports.

1. **Next Meetings**
   1. **Next VTC:** XX December 2023
   2. **NIPWG-10:** 12th to 15th September 2023, Monaco

* EM&YG**:** IALA/IHO Workshop on S-100&S-200. Next meeting Annapolis, Maryland, USA September 2024. Encourage members to attend. May impact the dates of NIPWG-11. More details to be sent when information becomes available.

**Table of names & initials:**

|  |  |
| --- | --- |
| PS | Phillip Schwedas |
| RM | Raphael Malyankar |
| SE | Stefan Engström |
| EM | Eivind Mong |
| LW | Lingzhi WU |
| YG | Yves Guillam |
| SS | Svein Skjaeveland |
| JP | Jonathan Pritchard |
| SR | Sarah Rahr |
| RJ | Robin Jefferies |
| RB | Roderick Bera |
| SO | Seewong OH |
| JSC | Jens Søe Christiansen |
| MK | Michael Kushla |
| BvS | Ben van Scherpenzeel |
| BG | Bridget Gagné |
| HA | Hugh Astle |
| JM | Jo Marks |
| AC | Alper Celebi |

**Table of Acronyms:**

|  |  |
| --- | --- |
| EGDH | Expert Group on Data Harmonization |
| DQWG | Data Quality Working Group |
| TSM | Test Strategy Meeting |
| MRN | Maritime Resource Names |
| HSSC | Hydrographic Services and Standards Committee |
| FC | Feature Catalogue |
| FOID | Feature Object Identifier |
| RENC | Regional ENC Coordinating Centre |
| GUI | Graphical User Interface |
| NP | Nautical Publication |
| IEC | International Electrotechnical Commission |

**Annex A: Action Items**

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| **#** | **Action Item** | **Agenda Item** | **Assigned** | **Status** |
| **NIPWG 9, 2022 – Hybrid Meeting** | | | |  |
| 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 |
| 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-03~~  ~~(Dec-22)~~  VTC-02  (Jun-23)  In Progress |
| 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,  YLF | ~~VTC-01~~  ~~(Mar-23)~~  End of Mar-23  COMPLETED |
| 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 |
| 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  (June 2023)  (6-weeks before)  COMPLETED |
| 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-03  (Dec-22)  COMPLETED |
| 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 |
| **NIPWG VTC-03** | | | | |
| 1 | JP to prepare an input paper on how an MRN should be formatted to identify data producers and other roles within the scope of the IHO data protection scheme, by the scheme administrator; the IHO secretariat. | 3.2 | JP | ~~Mar 1~~~~st~~ ~~2023~~  COMPLETED |
| 2 | Prepare input paper for NIPWG to review in preparation for next TSM (Mar-23). Combined with Action 1 above. | 3.2 | RM, JP, SS | ~~Feb 17~~~~th~~ ~~2023~~  Nov 2023  In Progress |
| **NIPWG VTC-01 (2023)** | | | | |
| 1 | Related to Action Item 22 (NIPWG-9); SHOM to provide input on ENDS definition. | 2 | YLF | 31st March 2023 COMPLETED |
| 2 | A dedicated meeting to further discuss the Gap Analysis Study (Action Item 7, VTC 01-23) to be organised for all NIPWG members. Time to also be set aside at VTC-02-2023 to discuss further | 2 | Chair Team | 3rd March 2023 In Progress |
| 3 | NIPWG members encouraged to review and comment on NIPWG Work Plan | 2.1 | All NIPWG | 17th March 2023  COMPLETED |
| 4 | Review List of action items from DQWG last meeting (held in Feb 7-9, 2023) when released. Chair Team, All S-12x Task Group Leads. | 3 | Chair Team, S-12x Task Group Leads | VTC-02  (Jun 2023)  In Progress |
| 5 | Invite DQWG Chair to next meeting (VTC-02). | 3 | EM | VTC-02  (Jun 2023)  COMPLETED |
| 6 | Task Group leads to continue to discuss the topic of GML within their teams (who are working on GML products), for further refinement, and send ongoing input to RM. | 4 | All Task Groups | VTC-02  (Jun 2023)  On Going |
| 7 | RM & BvS to discuss updates required in the GI Registry, which have been submitted and need to be clarified | 5 | RM & BvS | VTC-02  (Jun 2023)  COMPLETED |
| 8 | All to review NIPWG-VTC01-06.0A and provide ideas for best practice on how S-12x information should be presented in production and for end user. | 6 | All NIPWG | VTC-02  (Jun 2023)  On Going |
| 9 | Submit the Concepts for Associations presentation to S100WG TSM for information. | 6 | RM | 7th March 2023 COMPLETED |
| 10 | Produce NIPWG input paper on draft product specification | 7.3.1 | SO & Chair Team | VTC-02  (Jun 2023)  COMPLETED |
| 11 | Please download and view the German S-128 test data, and feedback comparisons and observations to PS | 7.5.1 | All NIPWG | ~~VTC-02~~  ~~(Jun 2023)~~  NIPWG-10 |
| 12 | NIPWG to prepare spreadsheet or table for discussion with IHO GI Registry Meeting. Chair Team. | 7.6.2 | Chair Team | ~~VTC-02~~  ~~(Jun 2023)~~  NIPWG-10 |
| 13 | RM adjudicate the S-131 comments received and review with chair team. | 7.6.2 | RM & Chair Team | 31st March 2023  COMPLETED |
| 14 | RM to update the S-131 product specification using substantive comments. | 7.6.2 | RM | April 10th 2023  COMPLETED |
| **NIPWG VTC-02 (2023)** | | | | |
| 1 | Task Group leads to prepare plans on how to implement Data Quality based on the recommended template of the Data Quality chapter of ‘S-1XX Data Product Specifications’ developed by DQWG. | 3.2 | All Task Groups Leads | NIPWG-10 |
| 2 | Agenda Item on DQWG and to identify a DQWG focal point/liaison within NIPWG. | 3.2 | Chair Team | NIPWG-10 |
| 3 | NIPWG to create IHO level guidance for use of MRN. | 5 | SR, JP (lead), RJ, PS, RM, RB, SO, JSC, MK | NIPWG-10 |
| 4 | Clarify the intention of definitions: “Margin to cater for uncertainties…” and then submit to the register. | 6 | Chair Group, RM & BvS | 30th June 2023 COMPLETED |
| 5 | UKHO to provide comments on S-125 | 8.3.1 | JM | 31st July 2023 |
| 6 | Forward SHOM comments on S-127 to Task Group | 8.4.1 | EM | 30th June 2023 COMPLETED |
| 7 | Current guidance on data capture from S-131 to be posted on Wiki in a common page for members to refer to. | 9 | RM | NIPWG-10 |
| 8 | Share an editable version of SHOM Presentation for Task groups to annotate. | 10 | Chair Team | 31st July 2023. |
| 9 | Review SHOM presentation and mark up items which belong to each Task Group. | 10 | All Task Groups | NIPWG-10. |

**Annex B: NIPWG List of Decisions & Action Items Arising from HSSC-15**

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| **5.3** **Nautical Information Provision (NIPWG)** | | | | | |
| 5.3A | S-100 System Architecture, IMO’s Maritime Services | HSSC15/36  (former HSSC14/44, HSSC13/35) | Noting different expectations, **HSSC** welcomed the offer made by **NIPWG** in liaison with **S-100WG** to complement the S-100 System Architecture by a submission paper addressing the what/how/when the S-100 based products should work together in a future S-100 ECDIS environment. | **HSSC-16** | In progress with Canadian Coast Guard and other agencies |
| 5.3A | Maritime Services, e-navigation | HSSC14/45 (former HSSC13/37, HSSC12/32, HSSC11/36) | **HSSC** tasked the responsible **HSSC WGs** [and will invite also the **IRCC/WWNWS-SC**] to review the initial descriptions of “*Maritime Services in context of e-navigation*” under their remit and to provide them to **NIPWG** for further action if appropriate.  **NIPWG** to send reminders as appropriate. | **Permanent**  **Deadline to be confirmed by NIPWG** | Closed |
| 5.3A | Maritime Services, e-navigation | HSSC15/37  (former HSSC 14/46, HSSC13/38) | **HSSC** tasked **NIPWG** to act as the responsible IHO WG to monitor and contribute to the IMO Expert Group on Data Harmonization (EGDH). | **Permanent** | In progress (engaged with IMO EGDH) |
| 5.3A | Scale Dependent (SD)/Scale Independent (SI) | HSSC15/38  (former HSSC 14/47, HSSC13/40) | After having considered an IALA outline paper describing how S-201, S-124, S-125 may work together, **HSSC** tasked **NIPWG** to provide a paper discussing SD/SI data handling aspects. | **HSSC-16** | In progress |
| 5.3A | S-100 Whole Picture | HSSC15/39  (former HSSC14/49, HSSC13/41) | **HSSC** welcomed the offer by **NIPWG** to develop an outline paper, in liaison with **S-100WG**, describing the whole S100 picture in close cooperation with stakeholders, inside and outside the IHO community and with IMO in particular. | **HSSC-16** | In progress |
| 5.3A | S-12x (S-122, S-123, …) | HSSC15/40 (former HSSC14/50) | **HSSC** noted the status report on the development of the new Edition of these Product Specifications to be aligned with S-100 Ed. 5.1.0 and the remaining challenges (Portrayal, etc.). | **HSSC-15** | All products in the process of being aligned with S-100 Ed. 5.1.0 except S-131 |
| 5.3B | S-128 | HSSC14/52 | **HSSC** advised **NIPWG** to liaise with **S-100WG** on issues identified regarding responsibility of stakeholders in producing and distributing S-128 and for **NIPWG** to provide an input paper to WENDWG13. | **WENDWG-13/HSSC-15** | Noted in agenda of WENDWG13, discussed at S-100WG7. Complete. |
| 5.3A | S-12x | HSSC15/41 | **HSSC** noted the possible S-128 scenarios (fig. 2 in Doc. HSSC15-05.3A) and the progress made on other S-12x products in NIPWG portfolio (work on track for S-122, S-123, S-125, S-127). |  |  |
| 5.3A | S-126 | HSSC15/42 | Noting the lack of resources available and other high priority products, **HSSC** agreed to put on hold the development of S-126 until further notice and/or recommendation from NIPWG. |  | Decision |
| 5.3B | S-131 | HSSC15/43 | **HSSC** commended **NIPWG** and **partners** for the work done on S-131 and approved Ed. 1.0.0 of S-131 for initial implementation, testing and evaluation.  Alignment with S-100 Ed. 5.1.0 to be considered. | **HSSC-16** | Decision |
| 5.3A, 7.1B | S-124 | HSSC15/44 | Noting the endorsement from the S-100WG, **HSSC** commended the WWNWSC and S-124PT for their work and approved Ed. 1.0.0 of S-124 – *Navigational Warnings* - for initial implementation, testing and evaluation.  **HSSC Chair** to report to IRCC (since the WWNW-SC is under its remit). | **IRCC-15** | Decision |
| 5.3 | S-125 | HSSC15/45 | **HSSC** invited **NIPWG** to deliver at the next S-100WG meeting, a presentation on the concept and various options for the operational implementation of S-125 in the future, as well as on interoperability issues with S-101 and S-124. | **S-100WG8**  **HSSC-16** |  |

**Annex C: Agenda**

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|  |  |  |  |
|  | **Welcome** | Chair |  |
|  | **Review of Action Items** | Chair | 10min |
|  | **Review of other Working Group reports** | Chair | 10min |
|  | **Update on IMO Expert Group on Data Harmonization (EGDH)** | Stefan Engström | 5min |
|  | **HSSC 15 outcomes** | Chair / Yves Guillam | 10min |
|  | **MRN Implementation** | Philipp Schwedas | 10min |
| **5.1** | **MRN Specification for organizational identifiers** | Jonathan Pritchard | 5min |
|  | **UKC Definitions Proposal update** | Stefan Engström | 5min |
|  | **NIPWG Wiki Status update** | Raphael Malyankar | 5min |
|  | **Product Specification updates** |  |  |
|  | **S-122 – Marine Protected Areas** |  |  |
|  | Task Group Update | Jonathan Pritchard | 5min |
|  | **S-123 – Marine Radio Services** |  |  |
|  | Task Group update | Bridget Gagné | 20min |
|  | **S-125 – Marine Aids to Navigation** |  |  |
|  | Development update | Dr Sewoong Oh | 10min |
|  | **S-127 – Marine Traffic Management** |  |  |
|  | Task Group update | Ed Kuwalek | 10min |
|  | **S-128 – Catalogue of Nautical Products** |  |  |
|  | S-128 Test Bed update | Izzy Kim | 10min |
|  | **S-131 – Marine Harbour Infrastructure** |  |  |
|  | Project update | Sarah Rahr | 10min |
|  | **Best Practices of Product creation** | Raphael Malyankar | 10min |
| **3.2** | **Data Quality Working Group (DQWG) guidance** | Lingzhi Wu | 20min |
|  | **GAP Analysis Discussion continuation and Recap** | Chair | 15min |
|  | **Brief on the Canadian Mariners Workshop** | Eivind Mong | 10min |
|  | **Next meetings** | Chair | 5min |
|  | NIPWG 10: 12th to 15th September 2023, Monaco |  |  |
|  | Next VTC: XX December 2023 |  |  |

**Annex D: List of Attendees**

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| --- | --- | --- | --- | --- |
|  |  |  | Day | |
| **Registered Attendees** | | | 1 | 2 |
| **Name** | **Country** | **Organization / Company** | **Y/N** | **Y/N** |
| **IHO MEMBER STATES** | | | | |
| Alper CELEBI | Australia | Australian Hydrographic Office | Y | Y |
| Bridget GAGNÉ | Canada | Canadian Hydrographic Service (CHS) | Y | Y |
| Sarah RAHR | Canada | Canadian Hydrographic Service (CHS) | Y | Y |
| Eivind MONG | Canada | Canadian Hydrographic Service (CHS) - Chair | Y | Y |
| Robin JEFFERIES | Canada | Canadian Hydrographic Service (CHS) | Y | Y |
| Lingzhi WU | China | China Maritime Safety Administration (China MSA) | Y | N |
| Jens Søe CHRISTIANSEN | Denmark | Danish Geodata Agency/Geodatastyrelsen (GST) | Y | N |
| Stefan ENGSTRÖM | Finland | Finnish Transport Agency Hydrographic Office | Y | Y |
| Roderick BERA | France | Service Hydrographique et Oceanographique de la Marine (SHOM) | Y | N |
| Yves LE FRANC | France | Service Hydrographique et Oceanographique de la Marine (SHOM) | N | Y |
| Philipp SCHWEDAS | Germany | Bundesamt für Seeschifffaahrt & Hydrographie (BSH) | Y | Y |
| Elena ARMANINO | Italy | Istituto Idrografico Della Marina | Y | N |
| Tetsuichiro YABUKI | Japan | Japan Coast Guard (JCG) | Y | Y |
| Wilfred VAN TOOM | Netherlands | Hydrographic Service - Royal Netherlands Navy (NLHO) | Y | Y |
| Audu IDU | Nigeria | Nigerian Navy Hydrographic Office | N | N |
| Abubakar Aminu GIGINYA | Nigeria | Nigerian Navy Hydrographic Office | N | N |
| Matilde Skæveland SKÅR | Norway | Norwegian Hydrographic Service | Y | Y |
| John Morten KLINGSHEIM | Norway | Norwegian Coastal Administration | Y | Y |
| Ruel MACAYAN | Philippines | National Mapping and Resource Information Authority (NAMRIA) | N | N |
| Piotr PASZTELAN | Poland | Hydrographic Office of the Polish Navy | Y | Y |
| Iji KIM | Republic of Korea | Korea Hydrographic and Oceanographic Agency (KHOA) | N | N |
| Miguel Angel LOBEIRAS DE LA CRUZ | Spain | Instituto Hidrografico de la Marine | Y | N |
| Christopher GILL | UK | UK Hydrographic Office | Y | N |
| James WESTON | UK | UK Hydrographic Office (UKHO) - Secretary | Y | Y |
| Marcy KLIMEK | UK | UK Hydrographic Office (UKHO) | Y | Y |
| Mohd Shukri MOHAMAD YAAKOB | United Arab Emirates | Dubai Municipality | N | N |
| Michael KUSHLA | USA | National Geospatial-Intelligence Agency (NGA) | Y | Y |
| Jason STROM | USA | National Geospatial-Intelligence Agency (NGA) | Y | N |
| **INDUSTRY & TECHNICAL EXPERTS** | | | | |
| Raphael MALYANKAR |  | Portolan Sciences | Y | Y |
| Harin OH |  | GreenBlue INC | Y | N |
| Ed KUWALEK |  | IIC Technologies | N | N |
| Jonathan PRITCHARD |  | IIC Technologies | Y | N |
| Gregor STEVENS |  | International Chamber of Shipping (ICS) | N | N |
| Yves GUILLAM |  | International Hydrographic Office (IHO) | Y | Y |
| Seewong OH |  | Korea Research Institute of Ships & Ocean Engineering (KRISO) | Y | Y |
| HyunSoo CHOI |  | Korea Research Institute of Ships & Ocean Engineering (KRISO) | Y | Y |
| Shwu-Jing CHANG |  | National Taiwan Ocean University (NTOU) | Y | Y |
| Svein SKJAEVELAND |  | PRIMAR | Y | Y |
| Hugh ASTLE |  | Teledyne Geospatial | Y | Y |
| Virgil ZETTERLIND |  |  | Y | Y |
| **Non-Registered Attendees** | | | | |
| **Name** | **Country** | **Organization / Company** | **Y/N** | **Y/N** |
| **IHO MEMBER STATES** | | | | |
| Lyu Yuxiao | China | China Maritime Safety Administration (China MSA) | Y | Y |
| Richard Flapper | Netherlands | Hydrographic Service - Royal Netherlands Navy (NLHO) | Y | N |
| Jo Marks | UK | UK Hydrographic Office (UKHO) | Y | Y |
| **INDUSTRY & TECHNICAL EXPERTS** | | | | |
| Abri Kampfer |  | International Hydrographic Office (IHO) | Y | N |
| Su Marks |  | IC-ENC | Y | N |
| Jo Gyeongmin |  | BLUEMAP | Y | Y |
| Dongwoo Kang |  | Korea Research Institute of Ships & Ocean Engineering (KRISO) | Y | N |
| Michael Bergmann |  | Bergmann Marine | N | Y |
| Xian Shixin |  |  | Y | N |