

**4th Nautical Information Provision Working Group (NIPWG) Meeting
Visualisation of Nautical Information Workshop (VONI)
22 – 26 May 2017 – University of New Hampshire, Durham, USA**

Annex A: List of Action items
Annex B: Agenda
Annex C: List of Attendees
Annex D: Updated NIPWG Work Plan

1. Opening and administrative arrangements

1.1 Opening remarks

Jens SCHRÖDER-FÜRSTENBERG opened NIPWG4 by welcoming new and returning members and attendees participating only the VONI workshop. Logistics and building safety were also discussed.

1.2 Opening address on behalf of the University of New Hampshire

The NIPWG Chair welcomed the participants and thanked the UNH especially Briana SULLIVAN for organizing the meeting and the workshop

1.3 Introductions

Due to the large number of new members, no introductions were made. The decision to merge NIPWG4 and the visualization workshop was made with the hope to improve the technical view of experienced NIPWG members by providing more technical expertise. The VONI and NIPWG4 were also merged in consideration of HO's budget constraints.

2. Adoption of VONI and NIPWG4 Agenda

NIPWG and VONI agreed and adopted the NIPWG4 and VONI Agenda with slight modifications as circulated.

VONI Workshop

The workshop agenda focused on seven topics.

WP1 Introduction

Introduction to the workshop by Briana and Jens.

WP2 Demo outline

S- 122 MPA

- Anthropocene Institute: test bed for MPA display by Virgil ZETTERLIND

Mariner services, routing guide and harbour infrastructure.

- Web-based presentation of Norwegian Pilot information, NPUB provision and cyber security by Anniken PUNTERVOLD

Note: FOR REASONS OF ECONOMY, THE DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

- Web-based iCPilot by Briana.

S-124 Nav Warnings.

- Canada: Nav Warning system of the future by Eivind MONG.

(S-1XX) NTM Viewers

- KHOA: Service for Safety of Navigation by Inyoung PARK
- Denmark: Nautical information provision in the digital Greenland Port and Bridge Information System (www.gronlandskehavnelods.dk) by Allan IDD JENSEN
- UNH: ChUM - Chart Updates Mashup
- JHOD: NTM and NAVAREA viewer by Kenji NAITO
- KHOA: BaRoView for multiple datasets in 3-D

WP3 Data examples

- S-111/S-112 current/tide data examples/discussion by Briana
- S-412 weather data examples/discussion by Joe PHILLIPS
- US eMSI group needs/concerns discussion by Brian TETREULT

Open discussion on the following topics led by Jens

- Description of use cases
- What is needed? (by Hydro Offices)
- What users want to see by OEM's?

WP4 Production systems

Production systems: examples and questionnaire results

- US Coast Pilot Production System and discussion by Scott SHERMAN and Tom LOEPER
- BSH Production System by Jens
- Data provision, level of granularity; pro and cons by Jens
- Tour of the UNH Data Visualization Research Lab by UNH staff

Organized discussion on HO's current systems by Briana

- Similarities – where are there similarities between the HO's production systems
- Similarities between the current NIPWG data models and HO's data

Execution

- How do HO's make this happen? How to get from the current format(s) to a S-100 structure
- How do the attributes and features discussed in the meetings tie into the final product that is expected from the product specifications developed?

WP5 Brainstorming

Brainstorming

- Visual outputs in ECDIS, discussion of graphical solutions and open topics left from previous sessions.

WP6 Technical Workshop

Live demonstrations of the various software tools were given. An example was the use of S-122 GML product.

WP 7 Review of Workshop results

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Comments and suggestions from the group to begin using the new tools which are available:

- 1) Need to be more “XML aware”
- 2) Test creating valid MPA products (starting with a standard like MPA’s)
- 3) S-100 group needs to create a “how to” handbook for how to use S-100, including the process flow for building data models and adding to the registry
- 4) Action Item 4/WP1 - Approach the IHO for continuous maintenance of the wiki**
- 5) Web-based data delivery from demos on day 1 (no harmonization)
 - a. How to connect the dots between the web and the pilothouse
 - b. What to do with the non-ECDIS world. We need to remember not to only think in ECDIS only terms
- 6) Excellent Workshop
- 7) Simplify the process to generate XML files with tools and help in the data generation
- 8) Need to create and focus on priorities while developing the specifications
- 9) Our data model should be comprehensive (elaborate), but that does not mean it has to be complicated for the users
- 10) Check lists are needed for
 - a. Use cases (back/front of bridge, mariner and non-mariner, etc.)
 - b. Simple output desired
- 11) Need easier to use production tools for the HO’s and a path on how to transition to using Prod. Specs.
 - a. There is a big investment in time and money
 - b. There is a lack of common tools and support for leveraging them
- 12) The Prod Specs developed to this point are not one to one replacements for the publications
- 13) Clearer view on how to proceed in the future
- 14) Action Item 4/WP2 – Agenda item for the NIPWG5 – Develop a roadmap on how to assist HOs to convert their current data into S-10x products**
- 15) Need to keep in mind interoperability moving forward
- 16) We are an IHO working group and we have very specific Terms of Reference that can cause problems with expectations but the IHO has a more broad view to provide data to many stakeholders
- 17) Keep in mind things that are not on the bridge at all such as reports, etc.
- 18) Wiki use and value for all WG’s
- 19) Usefulness of prose in NPUBS . . . human reader would benefit as well from a leaner version of the products

3. Adoption NIPWG3 Minutes

The meeting approved the Final Minutes of NIPWG3 with no modifications as circulated.

3.1 Corrections

None noted.

3.2 Review of Action Items from NIPWG3

Planned tasks for this Reporting Period						
Action Item	Actor	Task Description	Start Date	Target End Date	Percent Complete	Task Status

Note: FOR REASONS OF ECONOMY, THE DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

0/1	TP	Complete MPA Product Specification for circulation to HOs	04/2011		100	Completed
0/2	NIPWG	Circulate the MPA Product Specification inside HOs and obtain comment			100	completed
0/5	NIPWG	Revisit the test case paper SNPWG 18-8.1				Closed, to be reopened if necessary
1/10	NIPWG	First, NIPWG needs to advance the harmonization discussion between S-101 and S-122. After that, we need to update the MPA Application Schema (without context features) according to the harmonization process. Next we need to generate the Feature Catalog. The Application Schema and Feature Catalog will be sent to KHOA for testing. If the Portrayal portion is incomplete, we can use the KHOA portrayal catalog builder for testing.	07/2015	03/2017		Closed
1/15	YB	Monitor progress of the EAHC e-MIO project and provide an update at NIPWG2	07/2015	05/2017		Closed, reopened as NIPWG 4/24
2/04	BvS, ML	Investigate the gaps of the NIPWG data model by investigating requests when approaching a harbor	04/2016	12/2017		Closed, reopened as NIPWG 4/10
2/09	WdT, JS-F	Include relevant Mariners Handbook parts in the Physical Environment test data set and to initiate the first mapping	04/2016	08/2016	50	Closed, reopened as NIPWG 4/25
2/15	IP, JS-F	KHOA will collect test data Product Catalog from member states for testing purposes and Jens will prepare a NIPWG letter for the request to member states.	04/2016	07/2016	100	Completed
3/01	BS	Develop a matrix which shows the interrelation of various ProdSpecs which are under the HSSC responsibility (example – currents off the Dutch coast or the classification of winds and storms worldwide).	12/2016	05/2017	100	Completed

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		Develop a running list of examples of how product specifications interact with each other current as well as examples of how they might be shown to support each other at the same time. This will be an ongoing brief at the beginning of each meeting.				
3/02	JS-F	Incorporate the request of the completion of the DCEG builder development in the NIPWG report to S-100 WG.	12/2016	03/2017	100	Completed
3/03	WdT, MK	Compare the current Register entries against the UML diagrams on the Wiki page.	12/2016	02/2017	100	Completed
3/04	JS-F	Generate a NIPWG letter requesting members to investigate if any of this information is provided in any member state publications if the proposals have an impact on the stakeholders.	12/2016	03/2017	100	Completed
3/05	JS-F	Generate a NIPWG letter by the end of December requesting members to review and approve the MPA DCEG Part 1, 2, 3 by the end of March 2017.	12/2016	12/2016	100	Completed
3/06	WdT	Check with his office to see if they can allocate time to finalize the DCEG. Initially, the current version of the DCEG will need to be edited. This includes combining comments from AI 3/05 submitted by NIPWG and to incorporate them into the DCEG draft if appropriate. A timeline will be delivered as part of the letter.	01/2017	03/2017	100	Completed
3/07	JS-F	Generate a request to contract out the Prod Spec development.	12/2016	01/2017	100	Completed
3/08	WdT	Create a short status report for HSSC-9's consideration benchmarking existing features of physical characteristics existing in S-101, S-411 and S-412, assessing the	12/2016	05/2017	100	Completed

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		added values of S-126 items and collect any other use cases. This is to justify the reason NIPWG is “putting on hold” the work.				
3/09	MK, JS-F	Provide Stefan with a schematic diagram of the Traffic Management Prod Spec	12/2016	03/2017	100	Completed
	SE	Create a draft UML diagram.	03/2017	05/2017	100	Completed
3/10	YG, TL	Investigate using a contract to complete the Prod Spec including items like the UML diagram and DCEG for S-123.	12/2016	12/2016	100	Completed
	JS-F	Circulate a requirements document to the group for feedback before final submission.	12/2016	01/2017	100	Completed
3/11	SE	Identify the gaps within S-101 and S-201 which S-125 aimed to address. Letters will be written to S-101 project Team and IALA (ENAV committee) requesting that identified gaps are addressed in their respective Prod Specs. This will allow consideration of the future need of S-125 Prod Spec.	12/2016	03/2017	100	Completed
3/12	SE	Draft a paper for S-100 WG to explain the need for the Marine Resource Name in the S-101 Prod Spec.	12/2016	03/2017	100	Completed
3/13	IP, AK	Consider developing a common approach of the new PRIMAR online catalog and S-128.	12/2016	05/2017	100	Completed
3/14	JS-F	Issue a NIPWG letter asking each member state to consider whether S-128 will support the definition of their products.	12/2016	04/2017	100	Completed
3/15	BS	Include the following examples (from Action Item 3/16 below) of uncertainty in the visualization workshop in May of 2017.	12/2016	04/2017	100	Completed
3/16	AK, AR, MK	Provide examples of uncertainty. AK will provide examples from the Norwegian Pilot on dangerous wave areas, AR will provide examples for radio	12/2016	01/2017	100	Completed

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		service areas and MK will include examples in Traffic Management. For MPA's, refer to NIPWG 1/21.3. All examples will be submitted by the end of January 2017.				
3/17	WdT	Implement the Ice Information compiled by Mike and Ludovico into the Physical Environment data set.	12/2016	05/2017	100	Completed
3/18	JS-F	Report back to TRANSAS on the outcome of the HSSC decision regarding their request for a ProdSpec on regulatory information.	12/2016	01/2017	100	Completed
3/19	NIPWG	The meeting must complete the "workshop template" and provide examples of what and how they would like to see presented and discussed by the end of March 2017.	12/2016	03/2017	100	Completed
3/20	AK	Update NIPWG on the Norwegian policy for meeting carriage requirements and data exchange during NIPWG4.	12/2016	05/2017	100	Completed
3/21	JS-F	Report to HSSC-9 and seek endorsement to combine a workshop with NIPWG-5.	12/2016	08/2017		Closed; no need at the moment
3/22	JS-F	Report to HSSC-9 the consolidated MSP Hydrographic Services and to the potential assignment of parts of this MSP to HSSC WG's.	12/2016	08/2017		Closed, reopened as 4/26
3/23	NIPWG	NIPWG members will contact their national IMO representatives to seek support for the establishment of the HGDM and report back the Chair that they have done so.	12/2016	03/2017	100	Completed
3/24	MK	Update the text box using the ICPC recommendations as well as the UKHO comments (done).	12/2016	12/2016	100	Completed
	JS-F	On behalf of NIPWG, Germany will provide the proposal to the M-3 amendment to the IHO Secretariat by 15 December IAW ACL-10.	12/2016	12/2016	100	Completed

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3/25	NIPWG	NIPWG will monitor the work of the UKCM project team.	12/2016	05/2017	100	Completed
3/26	MK	Incorporate an example of UKCM in the Traffic Management test data set.	12/2016	05/2017	100	Completed
3/27	IP	Send a note to NIPWG when the English language version of the Special Overlay is available.	12/2016	02/2017	100	Completed
3/28	NIPWG	Generate and send a letter to members to be prospective candidates for NIPWG office bearers.	12/2016	04/2017	100	Completed

4 NIPWG status of work overview

The Meeting took note of the presentation on the status of the NIPWG work. This overview was initiated to familiarise new members and to refresh experienced members with the main objectives of the group and the current work status.

6 S-100 related information

6.1 Presentation of the outcome of the recent S-100 meeting

The Meeting took note of the presentation of the results of the recent developments.

Discussion: After the presentation, the group discussed the need for three people to be on the Domain Control Board. The link for GITHUB is:

<https://github.com/IHO-S100WG>

8 Proposed M-3 amendments

The meeting welcomed the Assembly adoption of the proposed M-3 amendment on cable protection.

The meeting took note of the summary of investigations on the impact of proposed M-3 amendments discussed at NIPWG3. Future procedures to amend the revised M-3 resolutions were discussed.

Discussion: Sweden does not oppose the proposed deletion of resolution 9/1962.

Malin LILJENBORG suggested the revision of 5/1937 because of the inconsistency of the header and the content.

Yves GUILLAM suggested that, if there is a need, for addressing the future of the maintenance regime of nautical products in general (NtMs, periodicity, etc.), the possibilities offered by new technologies (POD, near-real time updates, etc.) should be taken into account. This should be addressed as a joint work item for several IHO WGs, if the case is submitted to HSSC meetings for being endorsed as a high/medium priority. Any changes would affect the way HOs are working.

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Action Item 4/01 – Stefan ENGSTRÖM will investigate the reference in IHO resolution 7/2009 concerning time and make a recommendation to the S-100WG if needed. Sept. 2017.

Action Item 4/02 – Edward HOSKEN will review IHO resolution 5/1937 to consider references to numbering of radio stations to make a proposal which may include deletion of the resolution. Sept 2017.

Action Item 4/03 – Jens and Dave LEWALD will consider the NtM entry to propose amendments to HSSC to reflect the digital provision of data updates. Sept 2017.

11 Marine Protected Area Product Specification (S-122)

11.1 Presentation of the development of the S-122 product specification

The Meeting took note of the outcome of the S-122 product specification development. The proposed provision of the results on the NIPWG website was appreciated. The meeting further agreed the proposed continuation of the contract schedule to fulfil the contract. It has been noted that, although the portrayal section remains open, the test data are now ready for testing by third parties.

Discussion: Eivind reminded the group that the reason we went to S-100 was to manage changes more effectively and make system changes easier.

Action Item 4/04 – Eivind MONG/Raphael MALYANKAR will deliver a paper to the S-100 WG about how to effectively handle incremental changes and new versions. (end of Aug).

Action Item 4/05 – As part of the acceptance process, HO's will need to provide comments (by 30 June 2017 to Chair) to complete the contract (by 18 August 2017), set the version number and send it forward to HSSC. Members must use the template as discussed. This is an ongoing item.

Action Item 4/06 – Carlo MARCHI will be the point of contact for the group to collect comments for S-122 and S-123 for anything after the contract is completed (end of June). This is an ongoing item.

Action Item 4/07 – Julia POWELL will initiate a proposal to extend S-100 to include additional metadata to support S-122 and S-123. October 2017.

Action Item 4/08 – NIPWG will check Category of MPA and provide additional suggestions for their nations. 30 June 2017.

12 Radio Services Product Specification (S-123)

12.1 Presentation of the development of the S-123 product specification

The Meeting took note of the outcome of the S-123 product specification development. The proposed provision of the results on the NIPWG website was appreciated. The meeting further agreed the proposed continuation of the contract schedule to fulfil the contract. It has been noted that, although the portrayal section remains open, the test data are now ready for testing by third parties.

Discussion: Action Items 4/05 thru 4/07 apply here as well.

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13 Interoperability of S-100 based Product Specifications

13.1 Presentation of the current development status

The Meeting appreciated the presentation of the S-100WG Chair in that regard. It was noted that this is a very complex topic and that many further investigations are needed. Immediate results cannot be expected.

Discussion: None

14 Navigational Services Product Specification (S-125)

14.1 Feedback of the S-101SubWG and IALA ENAV Committee on addressing data model gaps

Due to the lack of written IALA documents the presenter decided to provide a verbal presentation which was appreciated and noted.

Action Item 4/11 – Stefan will continue to monitor progress of IALA S-201 and S-101 and report back to the NIPWG. This is an ongoing item.

14.2 Feedback of the S-100WG on Marine Resource Name request

Considering that the S-100WG minutes were available only few days prior NIPWG4, the meeting took note of the presentation provided by the S-100WG Chair.

15 Physical Environment Product Specification (S-126)

15.1 Status report for HSSC9, added values of S-126 items

The Meeting took note of the work done on the extension of the test data sample. The meeting also appreciated the work conducted on benchmarking of existing features in other Product Specifications. Further development remains on hold.

Action Item 4/12 – Wilfred DEN TOOM and Briana will create a listing of what has been defined and what items still need to be completed in S-126. This is to be added as a separate tab to Annex A of NIPWG 4.15.1. Nov 2017.

17 Traffic Management Product Specification (S-127)

17.1 Addition of Under Keel Clearance (UKC) information

The meeting took note of the addition of UKC information in S-127, reflecting the request of the UKC Management Project Team (UKCMPT) to integrate UKC information in nautical publications.

Discussion: Awareness of the existence of other UKC system was noted. Integrating the UKC management system depends on the national shipping authorities.

Action Item 4/13 – Jens will check with UKCMPT chair regarding reporting existence of UKCM information in NPUBS. Jul 2017.

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Action Item 4/14 – Mike KUSHLA will check other Under Keel Clearance systems for differences from the Torres Strait and update the Test Data Set as needed. Aug. 2017.

Action Item 4/15 – Jens will check at HSSC9 to see if this is still part of NIPWG's bailiwick.

17.2 Result of the Application Schema (UML) development

The meeting recognised and appreciated the work done on the generic UML development.

17.3 Further development of Prod Spec.

The meeting recognised and appreciated the work done for the development of S-122 and S-123 by Portolan Sciences and supported the idea to outsource the S-127 completion.

Action Item 4/16 – Jens will seek endorsement of HSSC9 to outsource the completion of S-127. Nov. 2017.

19 Catalog of Nautical Products Product Specification (S-128)

19.1 Presentation of content

The Meeting took note and discussed the development of the Catalog of Nautical Products ProdSpec.

Action Item 4/17 – Inyoung PARK will provide an updated data model to NGA. Sept. 2017.

Action Item 4/18 – Josh CLAYTON will a conduct the UML check and forward it to the chair. Nov. 2017.

Action Item 4/19 – Jens will distribute a letter to the NIPWG to check if all the comments have been incorporated in the updated model. Dec 2017.

41 MSC/NCSR

41.1 Presentation of the results related to NIPWG work

The Meeting agrees with the principles of NIPWG 4 41.1.

Discussion: Provisions were discussed and data can be provided in various ways. NIPWG considers that the IHO supports MSP development through the delivery of data standards rather than driving service delivery requirements.

Action Item 4/20 – NIPWG will continue to monitor the developments of S-124 and will consider the outcome of MSC 98 and the outcome of the meeting of Harmonization Group on Data Modelling (HGDM). Ongoing.

Action Item 4/21 – Dave will attend the initial HGDM meeting as a NIPWG observer and report back to the NIPWG5. Mar 2018.

43 IMO's e-Navigation Maritime Service Portfolio Discussion

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43.1 Presentation of the status

The Meeting took notice of the status report.

Action Item 4/22 – Jens will update the NIPWG 43.1 paper and circulate for review prior to posting on the NIPWG website in the misc. section. Aug 2017

45 IMO's e-Navigation strategy

45.1 Summary of the recent IALA eNAV meeting(s)

The meeting took note of the presentation.

45.2 Status of the e-Navigation services (MSPs) developments

The meeting took note of the presentation.

45.3 Tentative Overview on the IMO's Maritime Service Portfolio Program

The meeting took note of the presentation.

45.4 Discussion of the potential NIPWG contributions

The NIPWG decided to stand ready and support the development of the guidance on definition and harmonization of the format and structure of MSPs which will be addressed by MSC in 2018 – 2019. We remain confident that NIPWG's development of Prod.Specs. is convergent with the IMO eNAV implementation strategy.

50 ToR review

The Meeting reviewed and discussed the current ToR.

Discussion: No substantial amendments needed.

Action Item 4/23 – Yves will make editorial changes to the TOR to remove references to Secretariat, etc. Jun.2017

53 Work plan for the NIPWG

The Meeting reviewed and completed the NIPWG work plan.

55 Election of NIPWG Office bearers

Since NIPWG4 was the first meeting after the Assembly, the election of office bearers was conducted.

The new NIPWG officers are:

Chair: Jens

Vice Chair: Edward

Tom Loeper (NOAA) will support the NIPWG as secretary.

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57 Any other business

57.1 Review of IHO NIPWG website (Miscellaneous / Divers table)

The meeting took note and agreed on the proposed information provision on the miscellaneous section.

57.2 Review of the IHMA Port Call Standards

The meeting took note of the development done by the IHMA on port information provision and the recommendation made at HSSC8 on this matter.

Action Item 4/09 – Malin will provide a request to the IHMA to provide references to the sources of the definitions where possible. June 2017.

Action Item 4/10 – Malin will cross check the IHMA paper with the NPUB data model and provide the gap analysis. Dec 2017.

57.3 Review of draft minutes

The Meeting reviewed and adopted the draft Minutes of NIPWG4. 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. Exceptions due to papers which are discussing urgent matters are on Chair group's decision.

57.4 Assembly decisions and review of relevant HSSC actions

The meeting took note of the presentation by Yves.

57.5 Farewell to Alain ROUAULT

The Chair as well as the rest of the NIPWG thanked Alain ROUAULT for his many years of service and contributions to the WG and wishes him all the best in retirement.

59 Date and place of next meeting

The NIPWG5 meeting will be held in Genoa (Italy) 12-16 March 2018.

The next meetings are proposed to be held:

NIPWG6 in Rostock, Germany in January of 2019

NIPWG7 in St. Petersburg (tbc – Monaco as an alternate) in November 2019

Annex A: List of Action Items

Planned tasks for this Reporting Period						
Action Item	Actor	Task Description	Start Date	Target End Date	Percent Complete	Task Status
4/WP1	JS-F	Approach the IHO for continuous maintenance of the wiki	05/2017	07/2017		
4/WP2	JS-F	Agenda item for the NIPWG5 – Develop a roadmap on how to assist HOs to convert their current data into S-10x products	05/2017	03/2018		
4/01	SE	investigate the reference in IHO resolution 7/2009 concerning time and make a recommendation to the S-100WG if needed.	05/2017	09/2017		
4/02	EH	review IHO resolution 5/1937 to consider references to numbering of radio stations to make a proposal which may include deletion of the resolution.	05/2017	09/2017		
4/03	JS-F DL	consider the NtM entry to propose amendments to HSSC to reflect the digital provision of data updates.	05/2017	09/2017		
4/04	EM, RM	deliver a paper to the S-100 WG about how to effectively handle incremental changes and new versions.	05/2017	08/2017		
4/05	NIPWG	to provide comments (by 30 June 2017 to Chair) to complete the contract (by 18 August 2017), set the version number and send it forward to HSSC. Members must use the template as discussed.	05/2017	Ongoing		
4/06	CM	will be the point of contact for the group to collect comments for S-122 & S-123 for anything after the contract is completed (end of June). This is an ongoing item.	05/2017	Ongoing		

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4/07	Mrs. JP	will initiate a proposal to extend S-100 to include additional metadata to support S-122 and S-123. October 2017.	05/2017	10/2017		
4/08	NIPWG	will check Category of MPA and provide additional suggestions for their nations.	05/2017	06/2017		
4/09	ML	provide a request to the IHMA to provide references to the sources of the definitions where possible.	05/2017	06/2017		
4/10	ML	cross check the IHMA paper with the NPUB data model and provide the gap analysis.	05/2017	12/2017		
4/11	SE	will continue to monitor progress of IALA S-201 and S-101 and report back to the NIPWG.	05/2017	Ongoing		
4/12	WdT, BS	will create a listing of what has been defined and what items still need to be completed in S-126. This is to be added as a separate tab to Annex A of NIPWG 4.15.1.	05/2017	11/2017		
4/13	JS-F	will check with UKCMPT chair regarding reporting existence of UKCM information in NPUBS.	05/2017	07/2017		
4/14	MK	will check other Under Keel Clearance systems for differences from the Torres Strait and update TDS as needed.	05/2017	08/2017		
4/15	JS-F	will check at HSSC9 to see if this is still part of NIPWG's bailiwick.	05/2017	11/2017		
4/16	JS-F	to seek endorsement of HSSC9 to outsource the completion of S-127. Nov. 2017.	05/2017	11/2017		
4/17	IP	will provide an updated data model to NGA	05/2017	09/2017		
4/18	JC	will a conduct an UML check and forward it to the chair.	05/2017	11/2017		
4/19	JS-F	will distribute a letter to the NIPWG to check if all the comments have been incorporated in the updated model	05/2017	12/2017		

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4/20	NIPWG	will continue to monitor the developments of S-124 and will consider the outcome of MSC 98 and the outcome of the meeting of Harmonization Group on Data Modelling (HGDM).	05/2017			ongoing
4/21	DL	will attend the initial HGDM meeting as a NIPWG observer and report back to the NIPWG5	05/2017	03/2018		
4/22	JS-F	will update the NIPWG 43.1 paper and circulate for review prior to posting on the NIPWG website in the misc. section.	05/2017	08/2017		
4/23	YG	will make editorial changes to the TOR to remove references to Secretariat, etc	05/2017	07/2017		
4/24	IP	Monitor progress of the EAHC e-MIO project and provide an update at NIPWG if appropriate	07/2015			ex 1/15 Ongoing
4/25	WdT	Include relevant Mariners Handbook parts in the Physical Environment test data set and to initiate the first mapping	04/2016		50	ex 2/09 On hold
4/26	JS-F	Report to HSSC-9 the consolidated MSP Hydrographic Services and to the potential assignment of parts of this MSP to HSSC WG's.	12/2016	08/2017		ex 3/22

Variance Details:

Xxxxx

Corrective Actions:

Xxxxx

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Annex B: Agenda

Agenda (as conducted)

**4th Meeting of the Nautical Information Provision Working Group (NIPWG)
In conjunction with the visualisation of nautical information workshop
22–26 May 2017, Durham (New Hampshire), USA**

No.	Agenda Item	Lead	Time	Docs
	Monday, 22 May Forenoon (Visualisation Workshop)			
1.	Opening and administrative arrangements	JS-F	9 am	
	Opening address on behalf of the UNH			
2.	Adoption of the Agenda	JS-F		4-2
	Interaction of HSSC/IRCC ProdSpec			
W1	Introduction to the workshop and Demos	BS	9:20 am	
W2	Demo Outline			
S-122 MPA	Anthropocene Institute: test-bed for MPA display	VZ	9:25 am	WP2-1
S-126 (phys. env), mariner services, routing guide, harbour infrastructure	NO: 1. Web-based presentation of Norwegian Pilot information	AP	09:45 am	WP2-3
	2. Web-based NPUB provision and (Cyber) Security			
	UNH: iCPilot	BS	10:00 am	
S-124 Nav Warnings	Canada: Nav Warning system of the future	EM	10:05 am	WP2-5
	BREAK		10:20 am	
NTM Viewers (S-1xx)	KHOA - Service for Safety navigation	IP	10:35 am	WP2-6
	DK: „Nautical information provision in the digital Danish Port and Bridge Information System (www.danskehavnelods.dk)”	AJ	11:00 am	WP2-7
	UNH - ChUM - Chart Updates Mashup	BS	11:20 am	
	(JHOD) - NTM and NAVAREA viewer	KN	11.40 am	WP2-9
Multiple products viewed together	BaRoView (KHOA) multiple datasets in 3D	IP	12:00 pm	WP2-10
	<i>LUNCH – Holloway Commons Meal Hall UNH MUB</i>		12:30 pm	
	Monday, 22 May Afternoon (Visualisation Workshop)			

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W3	S-111/S-126 current/tide data examples/discussion	BS	1:30 pm	WP3-1
	S-412 weather data examples/discussion	JP	2:00 pm	WP3-2
	US eMSI group needs/concerns discussion	BT	2:30 pm	WP3-3
	<i>BREAK – Group Pictures</i>		3pm	
	Open Discussion on following topics <ul style="list-style-type: none"> • description of use cases of the data, • what is needed? (by HOs) • what users want to see (by OEM) 	JS-F	3:20 pm	
User requirements	<ul style="list-style-type: none"> • <i>END OF DAY 1</i> 		5 pm	

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No.	Agenda Item	Lead	Time	Docs
	Tuesday, 23 May Forenoon (Visualisation Workshop)			
W4	Production systems: Examples and Questionnaire Results	JS-F	9 am	
	US Coast Pilot system	TL	9:15 am	
	US Production system	TL	9:45 am	
	<i>BREAK tour of the Data Visualization Research Lab</i>		10:15 am	
	BSH Publication system	JS-F	10:30 am	
	Data provision (level of granularity pro/cons)	JS-F	10:45 am	
	Organized Discussion on HO's current systems <ul style="list-style-type: none"> • Similarities <ul style="list-style-type: none"> ○ Where are there similarities between the HO's production systems? ○ Similarities between the current NIPWG data models and HO's data. 	JS-F/ BS	11:00 am	
	<ul style="list-style-type: none"> • Needs <ul style="list-style-type: none"> ○ What are the specific data elements requested by HO's which must be provided to the mariner? ○ Identification of gaps between the outline and the request of HO's 	JS-F	11:40 am	
	<i>LUNCH – Memorial Union Building Dining Hall</i>		12:00 pm	
	Tuesday, 23 May Afternoon (Visualisation Workshop)			
	<ul style="list-style-type: none"> • Execution <ul style="list-style-type: none"> ○ How do HO's make it happen? <i>how to get from the current format(s) to a S-100 conformant structure</i> ○ How do the attributes and features discussed in the meetings tie into the final product that is expected from the product specifications developed? 	JS-F	1:00 pm	WP4-3 Annex A Annex B Annex C
	Workshop interrupted			
13	Interoperability of S-100 based Product Specifications			
13.1	Update on the development status	Mrs. JP+ EM	1:40 pm	4-13.1
13.2	Discussion on the paper	JS-F		
	Workshop resumed			
W5	Brainstorming <ul style="list-style-type: none"> • Visual outputs in ECDIS, Discussion of graphical solutions and open topics left from previous sessions 	JS-F	3:00 pm	
	<i>END OF DAY 2</i>		4:00 pm	
	Evening Excursion UNH facilities (survey/research boat) and Group Dinner (attendee's expense and shared transport costs)			

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No.	Agenda Item	Lead	Time	Docs
	Wednesday, 24 May Forenoon (Visualisation Workshop)			
	Summary of the lessons learned from M-T	JS-F	9 am	
W6	Technical Workshop Objective: each HO leaves with their MPA data mapped to current S-122 data structure. <ul style="list-style-type: none"> • Introduce the NIPWG Wiki site • Introduce the IHO registry • Show how NIPWG Wiki and IHO registry work together 	JS-F/ BS	9:20 am	
	<i>BREAK</i>		10:25 am	
	<ul style="list-style-type: none"> • Walk through the S-122 XSD file to create S-122 GML (product) • open discussion about the mappings and questions about the data structure, verify that all needs are met 	BS/ VZ	10:45 am	WP6-2
W7	Review of the Workshop results <ul style="list-style-type: none"> • Results achieved • Items which have not been discussed 	JS-F	11:35 am	
	<i>END OF WORKSHOP</i>			
	<i>LUNCH – Thai Smile</i>		12:30 pm	

	Wednesday, 24 May Afternoon (NIPWG general issues)		
3.	Minutes of NIPWG3	TL	4-3
3.1	Amendments to the minutes	TL	
3.2	Review of Action Items from NIPWG3	TL	
4	NIPWG status of work (overview)	JS-F	4-4
6	S-100 related information		
6.1	Outcome of the S-100WG meeting	Mrs. JP	4-6.1
7	Assembly related information		
7.1	Overview of Assembly decisions affecting NIPWG	YG	verbal
8	M-3		
8.1	Outcome of the impact paper	JS-F	4-8.1
8.2	Discussion on the paper	JS-F	

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No.	Agenda Item	Lead	Documents
	Thursday, 25 May Forenoon (NIPWG ProdSpecs)		
11	Marine Protected Area Product Specification (S-122)		
11.1	Presentation of the Product Specification (contracted)	EM+ RM	4-11.1+12.1 Annex A Annex B
11.2	Discussion on the paper	JS-F	
12	ProdSpec Radio Services (S-123)		
12.1	Presentation of the Product Specification (contracted)	EM+ RM	4-11.1+12.1 Annex A Annex B
12.2	Discussion on the paper	JS-F	
57	Any other business		
57.1	Review of IHO NIPWG website (Miscellaneous / Divers table)	JS-F	4-57.1
57.2	Review of the IHMA Port Call Standards	ML	4.57.2 Annex
	Thursday, 25 May Afternoon (NIPWG ProdSpecs)		
14	ProdSpec Navigational Services (S-125)		
14.1	Feedback of the S-101SubWG and IALA ENAV Committee on addresses data model gaps	SE	4-14.1
14.2	Feedback of the S-100WG on Marine Resource Name request	Mrs. JP	4-14.2
14.3	Discussion on the paper	JS-F	
15	ProdSpec Physical Environment (S-126)		
15.1	Status report for HSSC9, added values of S-126 items	WdT	4-15.1 Annex A
15.2	Discussion on the paper	JS-F	
17	ProdSpec Traffic Management (S-127)		
17.1	Addition of UKC information	MK	4-17.1 Annex A

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			Annex B Presentation
17.2	Result of the Application Schema (UML) development	MK+ SE+ JS-F	4-17.2
17.3	Discussion on the paper	JS-F	
19	ProdSpec Catalogue of Nautical Products (S-128)		
19.1	Presentation of the work status	IP	4-19.1
19.2	Discussion on the paper	JS-F	
50	ToR review	MK; J S-F	See NIPWG website
53	Work plan for the NIPWG (status of HSSC8 action items)	JS-F	See NIPWG and HSSC websites
59	Dates and places of next meeting(s)	JS-F	

No.	Agenda Item	Lead	Documents
	Friday, 25 May (NIPWG e-nav)		
55	Election of the new office bearer		
55.1	Nominees and election procedure	JS-F	4-55.1
41	MSC/ NCSR		
41.1	Presentation of the results related to NIPWG work	JS-F	4-41.1
41.2	Discussion of what is relevant for NIPWG work	JS-F	
43	IMO's e-Navigation Maritime Service Portfolio Discussion		
43.1	Presentation of the status	JS-F	4-43.1
43.2	Discussion of the development coordination	JS-F	
45	IMO's e-Navigation strategy		
45.1	Summary of the recent IALA eNAV meeting(s)	JE	4-45.1
45.2	Status of the e-Navigation services (MSPs) developments	JE	4-45.2

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45.3	Tentative Overview on the IMO's Maritime Service Portfolio Program	JS-F	4-45.3 Annex
45.4	Discussion of the potential NIPWG contributions	J S-F	

AJ	Allan Jensen (DK)
AP	Anniken Puntervold (NO/ NHS)
BS	Briana Sullivan (U.S./ UNH)
BT	Brian Tetreault (U.S./ USACE)
DL	Dave Lewald (U.S./ USCG)
EM	Eivind Mong (Portolan Sciences)
IP	Inyoung Park(KHOA/ ROK)
JC	Joshua Clayton (U.S./ NGA)
JE	Jon Leon Ervik, (NO, IALA rep)
Mr. JP	Joe Phillips (U.S./ NOAA)
Mrs. JP	Julia Powell (U.S./NOAA)
JS-F	Jens Schröder-Fürstenberg (GE)
KN	Kenji Naito (JP)
MK	Mike Kushla (U.S./ NGA)
ML	Malin Liljenborg (SE)
RM	Raphael Malyankar (Portolan Sciences)
SE	Stefan Engström (FI)
TL	Thomas Loeper (U.S./ NOAA)
VZ	Virgil Zetterlind (U.S./ Anthropocene Institute)
WdT	Wilfred den Toom (NL)
YG	Yves Guillam (IHO Sec.)

Work sessions:

Monday	Tuesday	Wednesday	Thursday	Friday
0900–1030	0900–1030	0900–1030	0900–1030	0900–1030
1045–1240	1045–1220	1045–1200	1045–1200	1045–1400
1340–1500	1330–1500	1330–1500	1330–1500	
1515–1800	1515–1600	1515–1900	1515–1900	

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Annex C: List of Attendees

NAUTICAL INFORMATION PROVISION WORKING GROUP (NIPWG)

* Visualisation of nautical information workshop

[A Working Group of the Hydrographic Services and Standards Committee (HSSC)]

Durham, 22 – 26 May 2017

List of Participants

IHO MS	Name	email
Brazil	Ana Emilia de Souza Silva	anaemiliasouza@yahoo.com.br
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	Brian Tetreault	brian.j.tetreault@usace.army.mil
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Tom Loeper	thomas.loeper@noaa.gov	
IHO	Yves Guillam	adcs@iho.int
Technical Experts		
US (SPAWAR)	Searith Jacobs	sjacobs@wrsystems.com
US (NOAA Weather)	* Joseph Phillips	joseph.t.phillips@noaa.gov
US (Antrophocene Institute)	Virgil Zetterlind	virgil@anthinst.org

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US (UNH)	Briana Sullivan Steven Johnson	briana@ccom.unh.edu overcooked.lobster@ccom.unh.edu
US (Portolan Sciences)	Raphael Malyankar Eivind Mong	raphaelm@portolansciences.com eivind@mail4mong.name
CA (IIC Technologies))	Christopher Hudson Gerd Glang	Chris.Hudson@iictechnologies.com gerd.glang@iictechnologies.com
GE (SevenCs)	Holger Bothien	bo@sevencs.com

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Annex D: Updated NIPWG Work Plan

NIPWG WORK PLAN 2017-18 *(approved by HSSC8 and revised at NIPWG4)***Tasks**

D	Maintain Publication S-12 “Standardization of List of Lights and Fog Signals” (IHO Task 2.6.3.2)
E	Maintain Publication S-49 “Recommendations concerning Mariners’ Routeing Guides” (IHO Task 2.6.3.3)
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 2.6.2)
G	Develop high level specifications for a combined Marine Service Portfolio (MSP) covering the provision of hydrographic services to mariners in accordance with the IMO e-navigation strategy implementation plan
H	Develop a test and implementation plan for the development of the MSP “hydrographic services”
I	Maintain IHO Resolutions in M-3 relating to Nautical Publications as required (IHO Task 2.6.3.1)
J	Liaise with other HSSC WG’s and other IHO and international bodies
K	Conduct the 2017 and 2018 meetings of the NIPWG and its sub-group(s) and project team(s) (IHO Task 2.6.1)

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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.4
F.1	Assess the progress and perspectives of developing specifications for NP data layers in ECDIS 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.2), in particular to continue the development of Product Specifications currently assigned to the NIPWG.
F.2	Investigate the interaction between Marine Protected Area Product and ENC in ECDIS	H	Draft Product Specification for Marine Protected Areas (S-122) released in 2018	2015	Permanent	O	Chair/Sec		In close liaison with the S-100 WG. On target for endorsement by Council - 2.
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	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related.

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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
F.5	Propose amendments to HYDRO domain of the FCD Register	H		2005	Permanent	O	Chair/Sec		S-100 related. To be included in the FCD register
F.8.1	Develop S-12n - Nautical Information Product Specification								
F.8.1.1	For Radio Services	H	NIPWG 4	2012	2019	O	Chair/Sec	S-123	
F.8.1.2	For Navigational services	L	NIPWG 4	2013		P	Chair/Sec	S-125	On Hold
F.8.1.3	For Traffic management	H	NIPWG 4	2013	2021	O	Chair/Sec	S-127	
F.8.1.3.1	For Marine Protected Areas	H	NIPWG 4	2011	2019	O	Chair/Sec	S-122	
F.8.1.4	For Physical environment	L	NIPWG 4	2013		P	Chair/Sec	S-126	On Hold
F.8.1.5	Catalog of nautical products	H	NIPWG 4	2016	2021	O	Chair/Sec	S-128	
G.1	Monitor the requirements for and provision of nautical information in e-navigation test-beds Produce NP1 sample data								According to the tasks assigned by HSSC4. Collection of information to be modelled

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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
	sets								
G.1.1	For Radio Services	H	NIPWG3	2012	2017	C	Chair/Sec	S-123	
G.1.2	For Navigational services	H	NIPWG3	2012	2017	C	Chair/Sec	S-125	
G.1.3	For Traffic management	H	NIPWG3	2012	2018	O	Chair/Sec	S-127	
G.1.4	For Physical environment	L	NIPWG3	2013		O	Chair/Sec	S-126	
G.1.5	For Marine Protected Areas	H	NIPWG3	2013	2016	C	Chair/Sec	S-122	Action HSSC8/04
G.3	Rules and guidelines for displaying nautical information in ECDIS and in combined Marine Service Portfolios								
G.3.1	Develop basic display principles for NP data intended for use in ECDIS (NP3)	H		2008		O	Chair/Sec	S-52	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	M		2015	2019	O		S-52	e-nav IMO Strategy Implementation Plan, Task T13 (HSSC6-07.1A refers) Output number 5.2.6.2 of NCSR biennial agenda 2016-

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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
	communications equipment can be displayed in a harmonized way and what equipment functionality is necessary.								17
G.4	Initiate consideration of the architecture of the MSP "hydrographic services"	M		2013		C	Chair NIPWG		To be considered in the context of the IMO e-navigation strategy implementation plan e-nav IMO Strategy Implementation Plan, Task T17 (HSSC6-07.1A refers).
G.5	Contribute to considering the future of paper charts in the perspective of the establishment of MSPs	M		2014		O			Subject to request from NCWG
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 ProdSpecs content
J.0	Liaise with the NCWG	M			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required and endorsed by HSSC.
J.1	Liaise with the ENCWG	M			Permanent	O	Chair/Sec NIPWG		
J.2	Liaise with the S-100WG	H			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required and endorsed by HSSC.
J.2.1	Draft Data Classification and								Document for NPs similar to Use of the Object Catalog

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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
	Encoding Guides								
J.2.1.1	For Marine Protected Areas	H	Next meeting	2011	2017	C	Chair/Sec	S-122	
J.2.1.2	For Radio Services	H	Next meeting	2015	2017	C	Chair/Sec	S-123	
J.2.3	Draft Product Specification								
J.2.3.1	For Radio Services	H	NIPWG4	2014	2017	C	Chair/Sec	S-123	
J.2.3.2	For Navigational services	L		-		P	Chair/Sec	S-125	
J.2.3.3	For Traffic management	H		2011	2021	O	Chair/Sec	S-127	Depends on contract award
J.2.3.4	For Marine Protected Areas	H	Next meeting	2011	2017	C	Chair/Sec	S-122	
J.2.3.5	For Physical environment	L		-	-	P	Chair/Sec	S-126	
J.2.3.6	For Digital Catalog of Nautical Products	H	Next meeting	2016	2021	O	Chair/Sec	S-128	
J.3	Liaise with other HSSC WG	M		2004	Permanent	O	Chair/Sec NIPWG		
J.4	Liaise with IRCC								
J.4.1	Liaise with WWNWS Sub-Committee							S-124	Monitor developments of S-124 Correspondence Group
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 e-Nav Committee	H		2013	Permanent	O	Chair/Sec NIPWG		
J.5.2	Liaise with International Harbor	L		2015	Permanent	O	Chair/Sec NIPWG		See outcome HSSC8 Section 7.10 of the minutes

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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
	Masters' Association								
J.5.3	Liaise with International Cable Protection Committee (ICPC)	M	Dec. 2016	2016	2017	O	Chair/Sec NIPWG		MOU signed between IHO and ICPC.

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Meetings (Task K)

Date	Location	Activity
12–16 March 2018	Genoa, Italy	NIPWG5
Jan 2019	Rostock, Germany	NIPWG6
Nov 2019	St. Petersburg, Russian Federation – tbc (fallback Monaco)	NIPWG7
Sept 2020	Brest (tbc), France	NIPWG8

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