

**2<sup>nd</sup> Nautical Information Provisions (NIPWG) Meeting  
21 – 24 March 2016 – IHO, Monaco**

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 NIPWG2 by welcoming new and returning members. Logistics and building safety were also discussed.

### **1.2 Opening address on behalf of IHB**

Director Gilles Bessero welcomed the participants and highlighted the importance of the working group in preparing tomorrow's services in support of the mariner. He also drew the attention on the need to focus not only on the building blocks but also on the architecture, confirming the IHO's request for tangible outputs from NIPWG to address e-navigation and Marine Service Portfolios issues.

### **1.3 Introductions**

Due to the large size of the group, no introductions were made. Jens recommended that we make introductions to each other during breaks and other activities.

## **2. Adoption of NIPWG2 Agenda**

NIPWG agreed and adopted the NIPWG2 Agenda with slight modifications as circulated.

## **3. Adoption NIPWG1 Minutes**

The meeting approved the Final Minutes of NIPWG1 with no modifications as circulated.

### **3.1 Corrections**

None noted.

### **3.2 Review of Action Items from NIPWG1**

Planned tasks for this Reporting Period						
Action Item	Actor	Task Description	Start Date	Target End Date	Percent Complete	Task Status
0/1	TBN	Complete MPA Product Specification for circulation to HOs	04/2011		70	
0/2	NIPWG	Circulate the MPA Product Specification inside HOs and obtain comment				Depends on 1/1

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0/3	TP+JR	Investigate the possibility of taking the MPA work completed to date and creating a web service as an interim solution.			40	Postponed until a product specification is established
0/4	TP	Create a Word file concerning M-3 for the NP section to be placed on the Wiki for NIPWG updates if required by the NIPWG				If it becomes necessary
0/5	NIPWG	Revisit the test case paper SNPWG 18-8.1				Decide how to proceed.
1/1	RM	Forward the SNPWG/NIPWG paper on the Registry handling requests to Yong again for submission to S-100WG for consideration.	07/2015	08/2015		Completed
1/2	EH	Check the status and encourage the progress of the NIPWG request on Data Quality for non-bathymetric data from the DQWG.	07/2015	07/2015		Completed
1/3	JS-F	In conjunction with the S-100 WG and NCWG initiate a submission to HSSC7 to establish a Project Team for the S-122 portrayal development.	07/2015	11/2015		Completed
1/4	EH	Monitor Avanti developments and report back items of interest to NIPWG.	07/2015	03/2016		Completed
1/5	JS-F/YB/RM	Write a proposal for the next S-100WG meeting on how to include Context Features (perhaps including multiple scopes in the ProdSpecs).	07/2015			Completed
1/6	NIPWG/JS-F	Review the current DCEG draft document and initiate a NIPWG letter tasking the group to review and comment on the document.	07/2015	09/2015		Completed
1/7	NIPWG/WdT	Review the current version of S-126 and provide feedback on missing elements of physical environment. Wilfred den Toom will collect the comments and incorporate them into the test dataset sample.	07/2015	03/2016		Completed
1/8	JS-F	Work to map the S-123 test data set and update the data model if required. SHOM will provide advice as needed.	07/2015	03/2016		Completed

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1/9	Finland/Mexico/France	Develop first draft of the Navigational Services Test Data sample with support from Denmark. France will deliver the sections that were originally stored in the Radio Services data sample set.	07/2015	03/2016		Completed
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	03/2016		Ongoing
1/11	JS-F/YB	Write a paper for submission to HSSC 7 to create a new ProdSpec for a Catalog of Nautical Products.	07/2015	09/2015		Completed
1/12	JS-F	Write a letter to the group asking for more examples of fuzzy boundaries.	07/2015	08/2015		Completed
1/13	NIPWG	Consider how to implement the global approach of the provision of the nautical information in the perspective of a consolidated MSP.	07/2015	03/2016		Implemented in NIPWG's ToR
1/14	JS-F	Make a recommendation at HSSC7 to invite the S-100 WG to develop a scheme for the unique identifiers within S-100.	07/2015	09/2015		Completed
1/15	YB	Monitor progress of the EAHC e-MIO project and provide an update at NIPWG2	07/2015	03/2016		Ongoing
1/16	TP, RM, BS	Provide the Chairman with information on the use of agnostic tags which should be incorporated into S-100	07/2015	09/2015		Completed
1/17	JS-F	Suggest to HSSC7 that the S-100 WG be tasked to consider incorporating agnostic tags into S-100.	07/2015	09/2015		Completed

1/18	MK	Update the style harmonization paper and send the results to the Chairman.	07/2015	08/2015		Completed
1/19	JS-F	Forward the style harmonization paper to the data sample test developer	08/2015	08/2015		Completed
1/20	MK, WdT, SE	Implement the style harmonization change to their test data sample	08/2019	03/2016		Completed
1/21	JS-F	Draft a paper to NCWG for further consideration with recommendations that they invite the UNH to participate in the development of the data quality portrayal.	07/2015	08/2015		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 status.

#### 5 HSSC related reports

##### 5.1 Information on HSSC7 affecting NIPWG

The Meeting took note of the presentation of the HSSC7 outcome.

Discussion: None

##### 5.2 Information on S100-WG activities

The Meeting took note of the presentation of the results of the recent S-100WG meeting.

Discussion: None

#### 6 S-100 related information

##### 6.1 Data Classification and Encoding Guide (DCEG) builder

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

Discussion: None

##### 6.2 Status of the S-100 Registry

The Meeting took note of the presentation of the recent S-100 Registry development.

Discussion: None

**Action Item 2/01 – Wilfred and Jens to contribute to the next phase of the S-100 registry development.**

### 6.3 Status of the S-100 extension proposed by NIPWG

The Meeting took note of the presentation of the status of the extensions provided to improve the S-100. There was an additional extension that was not mentioned in the agenda. The use of PDF will be supported with some restrictions and a caution to limit the use of PDFs.

Discussion:

Annex A. Sailing Directions were originally written to be companion documents to the paper charts, not exact representations. They were not meant to as precise as a chart and it is not expected that a mariner would navigate using publications only. For instance, items like rules and regulations, temporary high wave areas, fishing regulations and some light ranges may not be easily depicted. On the other hand, prose cannot be easily depicted by a machine. Proximity to a harbor is not machine-readable so there needs to be some degree of precision.

Publications are going through a paradigm shift just as ENC's did a few years back. For instance, dangerous wave areas can be shown with boundaries on a chart but individual dangerous waves cannot be depicted. The final comment was to consider keeping both options open. There will always be a need for prose but most SD information can be displayed more precisely.

Annex B. No action taken on establishing a common domain. S-100 WG requests NIPWG to wait 18 months before submitting requests for change of the registry structure. NIPWG needs to request a common domain from HSSC.

Annex C. S-100 WG will include a statement in S-100 saying that when unique identifiers are needed, the IALA Maritime Resource Name proposal should be used, if/when approved. There are major benefits of unique identifiers for most users. One of the questions to answer is who are the authorities or originators for specific features. Unique identifiers will not solve all of our problems, especially, when there are 2 instances of the same feature – which authority takes precedence and how does a machine determine that. Data models cannot resolve inconsistencies in the data.

**Action Item 2/02 – Jens will write a proposal on how to manage the issue of modelling fuzzy areas by providing defined areas.**

**Action Item 2/03 – Jens will address a request to HSSC 8 to create a common domain**

### 6.4 Status of the development progress of the S-100 FC Builder

The Meeting took note of the presentation of the status of the S-100 Feature Catalogue Builder.

Discussion: None

## 7 Update on S-124 development

### 7.1 Presentation of the current status of the S-124 (Navigational Warnings) development

The Meeting took note of the further development of the Navigational Warnings (S-124) Product Specification and the cooperation between NIPWG and the S-124 development CG.

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Discussion: None

## 7.2 Area messaging formats

The Meeting took note of the presentation of the status of area messaging formats.

Discussion: For the North American Right Whale (NARW) migration patterns, there is an application available from NOAA but it is not ECDIS-based. It is currently an internet only application. We as a group have to look beyond ECDIS-only information and we need to keep those avenues open.

## 9 Motorways & Electronic Navigation by Intelligence at Sea (MONALISA) Project (follow up)

### 9.1 Brief on MONALISA 2.0 project and report

The Meeting took note of the completion of the MONALISA project. It was noted that the STM validation project is building on the outcome of MONALISA.

Discussion: None

## 11 International Harbour Masters Association (IHMA) activities related to Access to Validated Nautical Information (AVANTI)

### 11.1 Presentation of activities

The Meeting took note of the presentation on the development of the AVANTI project.

Discussion: None

### 11.2 Sweden's implementation plan of the AVANTI idea

The Meeting took note of the presentation on the importance of giving HO guidelines regarding Additional Nautical Information.

Discussion: The NIPWG goal is not to have a strictly formatted method to create and display SD. The goal of NIPWG is to establish a model that every nation can use for their particular need. There will not be a single solution that will fit every national situation. The focus should be on standardizing content and data exchange.

**Action Item 2/04 – IHMA and Sweden will investigate the gaps of the NIPWG data model by investigating requests when approaching a harbour.**

## 13 Discussion of the IHO Strategic Plan

The meeting provided input to the IHO Strategic Plan and the IHO 3-year work plan.

Discussion: Several items to think about – the items SNPWG needed were not immediately accepted by TSMAD and it took a small change in thinking to incorporate SNPWG needs. S-100 is now a global standard not just an IHO standard; rather it requires a global data modelling harmonization. Also there is a real interdependence between the HOs and the ports to provide the mariner with the best information.

## 20 Marine Protected Area Product Specification (S-122)

### 20.1 Status of the work of the ProdSpec

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The Meeting discussed and considered the development of the MPA ProdSpec. The Meeting took note of the work status.

### **20.3 Portrayal of the MPA feature (as a use case for a generic approach to the portrayal system)**

The Meeting took note of the presentation and discussed how NIPWG could participate in the portrayal development.

Discussion: Portrayal of MPA's has been an ongoing issue for several years. NIPWG believes that portrayal should be specified by NCWG. NCWG believes that we need to recommend how MPA's need to be displayed. Another line of thought is to give industry the exact specifications and let them solve the problem.

There are additional complicating factors including; will MPA's only be displayed on an ECDIS or will they also be displayed on other systems such as an ECS, will only the boundary be displayed or will other attributes be displayed as well such as text for regulations and restrictions, will this be an overlay or part of the ENC. The portrayal of textual information provided by the pick report will be part of the portrayal catalog and consequently part of the ProdSpec.

A possible solution is for NIPWG to generate some examples or use cases for other working groups and industry can create some possible solutions to this problem. At a minimum we need to describe the boundary and the information content.

After further discussion, the group decided not to submit a request to have the NCWG to devise a portrayal method during their next meeting. A similar cartographic problem from the Netherlands for restrictions in an existing ESSA on paper charts is either something we can build on or it is something that will limit future opportunities.

NIPWG will accept the offer from the Anthropocene Institute to create examples from existing MPAs to get a better view of what is needed and this will be the basis of a request to the NCWG of MPA portrayal (to include both spatial and textual information).

The expectation is to complete the portrayal request for MPAs at the next NIPWG meeting.

**Action Item 2/05 – Jens and Tom provide Yves a few discussion points for the upcoming NCWG meeting.**

**Action Item 2/06 – Jens to provide a paper to HSSC8 on the continuing MPA portrayal efforts.**

### **20.4 Discussion of the current status of the DCEG, excl. data model**

The Meeting took note of the presentation and discussed the further procedure of the DCEG development.

Discussion: There were several major topics of the DCEG that were discussed. Image parameters were the first point of discussion. Scale, what scales should be selected or should this be scale independent?

It was announced that the DCEG will be sent out section by section for review and that the tacit approval procedure applies. Members were reminded that if nothing is said, than

the member tacitly approves of the document. Requests on document improvements have to be associated with an appropriate proposal.

**Action Item 2/07 – NIPWG members will review the DCEG sections which will be provided by the Chair for comments and offer comments back to the chair.**

## **20.5 Model harmonization of S-101 and S-122, Dialog with the S-101 DCEG group (NIPWG wiki work)**

The Meeting took note of the presentation and discussed the data model harmonization and the possible effects on the ProdSpec development.

Discussion: Norway has generously agreed to support the model harmonization effort. NIPWG needs to negotiate with the S-100 WG to devise a common data model.

## **20.6 Extension of the MPA model**

The Meeting took note of the presentation and discussed the proposed implementation of the MARPOL areas into the MPA model. In particular, the meeting discussed the maintenance procedure if the responsibility of the MARPOL data will be shifted from a private company to the HOs.

Discussion: The discussion started with a question. Should MARPOL be part of the S-122 ProdSpec or should it be included under another ProdSpec or under a completely separate ProdSpec? This is an item that really does not have “a home” now in the current NIPWG structure. It is not something of prime concern for NIPWG. Some parts of MARPOL have worldwide relevance and not something that can be easily be depicted.

**Action Item 2/08 – Jens to draft a paper to HSSC8 providing some alternative solutions and recommendations on how to handle MARPOL.**

## **22 Physical Environment Product Specification (S-126)**

The Meeting discussed and considered the development of the Physical Environment ProdSpec test sample data.

### **22.1 Presentation of extended content**

The Meeting took note of the work status.

### **22.2 Discussion of the draft paper**

The Meeting discussed whether the draft is still sufficient for the purpose or whether extensions are needed.

Discussion: Should the Mariners Handbook information be included in this ProdSpec? Should the reference information be included or should it be included in some other ProduSpec or stored separately? A mariner at sea cannot be expected to download a large document while in transit. NIPWG agreed that the Mariners Handbook should be included in the text.

**Action Item 2/09 – Wilfred and Jens to include relevant Mariners Handbook parts in the test data set and to initiate the first mapping.**



## 24 Traffic Management Product Specification (S-127)

The Meeting discussed and considered the development of the Traffic Management ProdSpec.

### 24.1 Presentation of content (stable)

The Meeting took note of the work status.

### 24.2 Discussion of the draft paper

The Meeting discussed whether the draft is still sufficient for the purpose or whether extensions are requested.

Discussion: Again, the discussion revolved around several global items like International Port Closure Signals, ISPS (International Ship and Port Facility Security) Reporting Requirements and AMVER. Since these topics are global, do they need to be included and mapped here?

**Action Item 2/10 – Jens to include other items such as AMVER, ISPS Reporting Requirements, etc. in the HSSC8 paper (see Action Item 2/08).**

**Action Item 2/11 – Mike and Ludovico to check how complete the Canadian, U.S. and other Arctic country navigation documents for ice related information is for the relevant test data sets.**

**Action Item 2/12 - Mike and Ludovico to complete a preliminary mapping as well as assign geometries to the features of the Traffic Management test data sample.**

## 26 Radio Services Product Specification (S-123)

The Meeting discussed and considered the development of the Radio Services ProdSpec.

### 26.1 Presentation of content (stable) and mapping

The Meeting took note of the work status.

### 26.2 Discussion of the draft paper

The Meeting considered and discussed the draft paper and the open issues.

Discussion: Many of the discrepancies and the associated comments about the mapping were highlighted. The Chairman also showed work that was recently completed on the Radio Services ProdSpec.

**Action Item 2/13 – Ludovico to provide Alain with some additional information about AIS stations along the coast of Italy including transmission content.**

## 28 Navigational Services Product Specification (S-125)

The Meeting discussed and considered the development of the Navigational Services ProdSpec

### 28.1 Presentation of content

The Meeting took note of the work status.

## 28.2 Discussion of the draft paper

The Meeting discussed the draft paper and provided suggestions for the further development.

Discussion: To take an example like the List of Lights, in an ideal world, AToN updates would be automatically streamed to the Mariner and automatically be combined with the chart image. The AToN information would come directly from the provider and bypass the Hydrographic Office to the mariner. In the near- to mid-term, AToN changes pushed to the HO's could be "flagged" and the cartographic staff would evaluate the change, incorporate the change in the ENC and then push it to the mariner as part of the weekly ENC update.

**Action Item 2/14 - Dave and Stefan will investigate the current content and build a framework considering that the next S-100 edition enables interoperability and employs Unique Identifiers.**

## 29 Catalog of Nautical Products Product Specification (S-128)

The Meeting discussed and considered the development of the Catalogue of Nautical Products ProdSpec.

### 29.1 Presentation of content

The Meeting took note of the work status.

### 29.2 Discussion of the draft paper

The Meeting took note of the draft paper and discussed the procedure.

Discussion: Is there a real requirement for a Catalog of Nautical Products? From the IHO perspective, the mariner wants to know what products an HO provide, the availability of those products and when the products were last updated. The catalog needs to address all formats of services, charts and publications. It is assumed that HO's will produce products in an S-100 environment. Consequently, the exchange of the meta data should be based on S-100 framework and S-128 ProdSpec.

**Action Item 2/15 - KHOA will collect test data from member states for testing purposes and Jens will prepare a NIPWG letter for the request to member states.**

## 30 Outcome of the third IMO Sub-Committee on Navigation, Communications and Search and Rescue meeting (NCSR3)

The Meeting discussed and considered the outcome of the NCSR3 relevant for the NIPWG work.

### 30.1 Presentation of the NCSR3 outcome related to NIPWG work plan

The Meeting took note of the presentation and agreed that the following items are relevant to the WG.

Item 6: Additional modules to the Revised Performance Standards for Integrated Navigation Systems (INS) relating to the harmonization of bridge design and display of information

Item 9: Guidelines for the harmonized display of navigation information received via communications equipment

Item 13: Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated Navigation Display Systems

Item 28: Development of guidance on the Standardized (or S) Mode of operation of navigation equipment.

### **30.2 Discussion of the NIPWG contributions**

The Meeting discussed the engagement and the potential submissions and decided a schedule on the NIPWG contributions to NCSR4.

Discussion: Does NIPWG have an expected outcome or series of outcomes it would like from NCSR? NIPWG members attending NCSR meetings can monitor events that occur but members are not currently in a position to do anything more. The IHO only needs to be concerned about NCSR items related to the harmonized display and the message itself and nothing else. Gilles recommended that member states will be informed via HSSC that if no contributions will be made on this topic, member states will have to live with the consequences.

**Action Item 2/16 – Jon Leon will report back on items 9 and 10 (ship reports), Dave can report back on item 13 and Michael Bergmann will report back on items 6 and 28.**

## **33 IMO's e-Navigation Maritime Service Portfolio (MSP) Discussion**

The Meeting discussed and considered the latest development of the MSP discussion.

### **33.1 Presentation of the status**

The Meeting took note of the presentation.

### **33.2 Discussion of the development coordination**

The Meeting discussed the engagement and the coordination of the NIPWG engagement in the MSP development.

Discussion: NIPWG should help to drive the development of MSP's not wait and be passive observers.

**Action Item 2/17 – Jens to send a NIPWG letter to the group asking for recommendations and ideas to help with the development of MSPs relevant to the IHO.**

## **35 IMO's e-Navigation strategy**

The Meeting discussed and considered the latest development of the IMO e-Navigation strategy.

### **35.2 Presentation of the status**

The Meeting took note of the presentation.

### **35.3 Discussion of the development coordination**

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The Meeting discussed the IALA work and developed a NIPWG position on it.

Discussion: Several papers were of concern to NIPWG

First, IALA is requesting an S-100 change to create a process for streaming data as opposed to just sending discrete files with a beginning and an end. This is VTS oriented and does not include AIS. The hope is that this change will make it into version 3.0 of S-100.

Second, a paper was submitted to IALA concerning the portrayal of sector lights on ENC's. The current portrayal is confusing to the mariner who is not able to determine the intent of the light. New physical light configurations are getting much better and more complicated but it is getting difficult to encode all the details for an ENC. Portrayal of the light is the responsibility of the HO, the light authority is responsible to provide guidance of the actual portrayal. The group was reminded that this does not have to be completely portrayed on the display. Details of the light can be explained in pic reports or SD's for example. This paper is in the IALA approval process.

The next two papers dealt with the idea of having shore-based facilities delivering services to a mariner - MSPs. The IMO e-Nav concept is to have 16 Maritime Service Portfolios. One of the papers concerned how IALA and IHO will coordinate and collaborate in the definition and development of the MSP.

Finally, a paper discussing IALA's role in developing the shore-based aspects of e-navigation through a dedicated technical committee, seminars and workshops designed to improve the understanding of both the benefits and limitations of e-navigation. IALA has also provided significant technical input into the development of IMO's e-navigation Strategy Implementation Plan. IALA is volunteering to take a coordinating role in the development of MSPs.

**Action Item 2/18 – Edward will attend and represent NIPWG at the IALA workshop in late May 2016. A draft paper will be circulated for review before the workshop. Note: the paper will have a very short response time.**

### **35.4 Discussion of the revised guidelines and criteria for ship reporting systems.**

The Meeting discussed the IMO developments on ship reporting systems. Currently there are around 1,600 types of ship reports from all around the world. Ideally, that would be reduced to just one report that would work for the entire world.

Discussion: Ship reporting is an idea that needs to be supported at the IMO level. This is not something that NIPWG can affect. NIPWG contributed an appropriate data model for a single world-wide report and NIPWG no longer needs to monitor ship reporting system development unless otherwise requested.

## **37 IHO specifications and the Polar Code**

The Meeting discussed and considered the effects of the revised Polar Code IHO specifications.

### **37.1 Improvement of the current IHO specifications to implement the Polar Code**

The Meeting took note of the presentation. The Meeting further considered the next steps.

Discussion: IHO is very grateful for the work done by Mike Kushla. Yves also did a short presentation expanding on the work done by NGA. There were also brief presentations by Yves and Tom demonstrating work completed on web-based Arctic Voyage Planning Guides (AVPGs). CIRM offered the services of several mariners to review the work done by members of the Arctic Regional Hydrographic Commission.

**Action Item 2/19 – Tom will offer the CIRM service of mariners to review the AVPG posted on the internet.**

### **39 Unique Identifiers and their operational use**

The Meeting took note of the IALA developments on Unique Identifiers.

#### **39.1 Status of IALA proposal on Marine Resource Names (MRN)**

The Meeting took note of the presentation.

Discussion: This concept was discussed by the S-100 WG and it was received positively. This does not solve every problem with items like AToNs that are covered by multiple nations so there are still issues that need to be resolved. This does not force an international resolution but it does provide an opportunity for member states to fix an existing problem.

### **21 ToR review**

The Meeting reviewed and discussed the current ToR.

Discussion: No amendments needed.

### **22 Work plan for the NIPWG**

The Meeting reviewed and discussed the NIPWG work plan.

Discussion: See updated work plan on the IHO website.

### **23 Any other business**

The Meeting reviewed and adopted the draft Minutes of NIPWG2. The final Minutes will be prepared by the secretary servicing this Meeting in close co-operation with all participants.

The Meeting discussed the further procedure to provide harmonised information on cable protection in nautical publications.

Discussion: Discussion started with the Memorandum of Understanding with the International Cable Protection Committee (ICPC).

**Action Item 2/20 - Alain, Ludovico and Mike develop a text block for the protection of undersea cables to comply with the MOU with ICPC.**

### **24 Date and place of next meeting**

The NIPWG3 meeting will be held in Busan, Republic of Korea, 5 - 9 December 2016.

The next meetings are proposed to be held:  
NIPWG Workshop at University of New Hampshire, May 2017

NIPWG4 in Italy (location tentative) Early September 2017  
NIPWG5 in Rostock, Germany in May of 2018

## 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
0/1	TP	Complete MPA Product Specification for circulation to HOs	04/2011		70	
0/2	NIPWG	Circulate the MPA Product Specification inside HOs and obtain comment				Depends on 1/1
0/3	TP+JR	Investigate the possibility of taking the MPA work completed to date and creating a web service as an interim solution.			40	Postponed until a product specification is established
0/4	TP	Create a word file concerning M-3 for the NP section to be placed on the Wiki for NIPWG updates if required by the NIPWG				If it becomes necessary
0/5	NIPWG	Revisit the test case paper SNPWG 18-8.1				Decide how to proceed.
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	03/2016		Ongoing
1/15	YB	Monitor progress of the EAHC e-MIO project and provide an update at NIPWG2	07/2015	03/2016		Ongoing
2/01	WdT JS-F	Contribute to the next phase of the S-100 <b>registry</b> development.	04/2016			Depends on registry development progress
2/02	JS-F	Write a proposal on how to manage the issue of modelling fuzzy areas by providing defined areas	04/2016	08/2016		

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2/03	JS-F	Address a request to HSSC 8 to create a common domain	04/2016	11/2016		
2/04	BvS, ML	Investigate the gaps of the NIPWG data model by investigating requests when approaching a harbour	04/2016	12/2016		
2/05	JS-F, TL	Provide Yves a few discussion points for the upcoming NCWG meeting.	04/2016	04/2016		
2/06	JS-F	Provide a paper to HSSC8 on the continuing MPA portrayal efforts.	04/2016	11/2016		
2/07	NIPWG	Members review the MPA DCEG sections which will be provided by the Chair for comments and offer comments back to the chair.	04/2016	12/2016		Response of the review request according to the due date defined in the associated letter
2/08	JS-F	Draft a paper to HSSC8 providing some alternative solutions and recommendations on how to handle MARPOL.	04/2016	11/2016		
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		
2/10	JS-F	Include other items such as AMVER, ISPS Reporting Requirements, etc. in the HSSC8 paper (see Action Item 2/08).	04/2016	11/2016		
2/11	MK, LS	Check how complete the Canadian, U.S. and other Arctic country navigation documents for ice related information is for the relevant test data sets.	04/2016	12/2016		
2/12	MK, LS	Complete a preliminary mapping as well as assign geometries to the features of the Traffic Management test data sample.	04/2016	12/2016		
2/13	LS	Provide Alain with some additional information about AIS stations along the coast of Italy including transmission content.	04/2016	06/2016		
2/14	DL, SE	Investigate the current content of the Navigation Services test data set and build a framework considering	04/2016	12/2016		

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		the next S-100 edition enables interoperability and employs Unique Identifiers.				
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		
2/16	JLE, DL, MB	Will report back on items 9 and 10 (ship reports), Dave can report back on item 13 and Michael Bergmann will report back on items 6 and 28.	04/2016	12/2016		
2/17	JS-F	Send a NIPWG letter to the group asking for recommendations and ideas to help with the development of MSPs relevant to the IHO.	04/2016	07/2016		
2/18	EH	Attend and represent NIPWG at the IALA workshop in late May 2016. A draft paper will be circulated for review before the workshop. Note: the paper will have a very short response time.	04/2016	05/2016		Note: The paper will have a very short response time.
2/19	TL	Offer the CIRM service of mariners to review the AVPG posted on the internet.	04/2016	06/2016		
2/20	AR, LS & MK	Develop a text block for the protection of undersea cables to comply with the MOU with ICPC	04/2016	12/2016		

**Variance Details:**

Xxxxx
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**Corrective Actions:**

Xxxxx

## Annex B: Agenda

## Agenda (as conducted)

**2<sup>nd</sup> Meeting of the Nautical Information Provision Working Group (NIPWG)  
21–24 March 2016, IHB Monaco, Monaco**

## Agenda (as conducted)

No.	Agenda Item	Lead	Documents
	<b>Monday, 21 March</b>		
1.	Opening and administrative arrangements	YG	
	Opening address on behalf of the IHB	GB	
2.	Adoption of the Agenda	JS-F	2-2
3.	Minutes of NIPWG1	TL	2-3
3.1	Amendments to the minutes	TL	
3.2	Review of Action Items from NIPWG1	TL	
4	NIPWG status of work (overview)	JS-F	2-4
5.	HSSC related reports		
5.1	Information on HSSC7 affecting NIPWG	JS-F	2-5.1
5.2	Information on S-100WG activities	EM	2-5.2
6	S-100 related information		
6.1	Update on DCEG builder development	YB	
6.2	Status of the S-100 Registry	YB	2-6.2
6.3	Status of the S-100 extension proposed by NIPWG	JS-F; EM	2-6.3 Annex A Annex B Annex C
6.4	Status of the development progress of the S-100 FC Builder	YB	2-6.4
6.5	Discussion on the papers	JS-F	
11	International Harbour Master Association (IHMA) activities related to AVANTI		
11.1	Presentation of the activities	BvS	2-11.1
11.2	Sweden's implementation plan of the AVANTI idea	ML	2-11.2

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11.3	Discussion of the paper and on how to proceed	JS-F	
7	Update on S-124 development		
7.1	Presentation of the current status of the S-124 (Navigational warnings) development	AR	2-7.1
7.2	Area Messaging Formats	KI	2-7.2
7.2	Discussion of the development coordination	JS-F	
9	MONALISA Project (follow up)		
9.1	Brief on MONALISA 2.0 project end report	KI	
9.2	Discussion of the paper, what could be useful for NIPWG work?	JS-F	
13	Discussion on the IHO Strategic Plan		
13.1	Introduction of the method	JS-F	2-13.1
	Minutes notes of the day's items		

	<b>Tuesday, 22 March (NPUB ProdSpec day)</b>		
20	Marine Protected Area Product Specification (S-122)		
20.1	Status of work of the ProdSpec		
20.3	Portrayal of the MPA feature (as a use case for a generic approach to the portrayal issue)	JS-F	2-20.3
20.4	Discussion of the current status of the DCEG, excl. data model	JS-F	2-20.4
20.5	Model harmonisation S-101 and S-122, Dialog with S-101 DCEG group (NIPWG wiki work)	JS-F	2-20.5
20.6	Extension of the MPA model	KI	2-20.6
20.7	Discussion on how to proceed	JS-F	
22	ProdSpec Physical Environment (S-126)		
22.1	Presentation of extended content	WdT	2-22.1 Annex A
22.2	Discussion on the draft paper	JS-F	
24	ProdSpec Traffic Management (S-127)		
24.1	Presentation of content (stable)	MK	2-24.1 Annex A
24.2	Discussion on the draft paper	JS-F	
26.	ProdSpec Radio Services (S-123)		
26.1	Presentation of content (stable) and mapping	AR JS-F	2-26.1 Annex A, Annex B
26.2	Discussion on the mapping draft	JS-F	
28	ProdSpec Navigational Services (S-125)		
28.1	Presentation of content	SE	2-28.1
28.2	Discussion on the draft paper	JS-F	
29	ProdSpec Catalogue of Nautical Products (S-128)		
29.1	Presentation of work plan	IP	2-29.1
29.2	Discussion of the paper	JS-F	
	Minutes notes of the day's items		

	<b>Wednesday, 23 March (IMO / e-Navigation day)</b>		
30	Outcome of NCSR3		
30.1	Presentation of the NCSR3 outcome related to NIPWG work plan	JS-F	
30.2	Discussion of the NIPWG contributions	JS-F	
33	IMO's e-Navigation Maritime Service Portfolio Discussion		
33.1	Presentation of the status	JS-F	2-33.1
33.2	Discussion of the development coordination	JS-F	
35	IMO's e-Navigation strategy		
35.1	Summary of IALA eNAV 18	EH	2-35.1 Annex A Annex B
35.2	IALA developments of e-Navigation services	JEL+ EH	2-35.2 Doc 1 Doc 2 Doc 3
35.3	Discussion of the current status and the NIPWG position	JS-F	
37	IHO specifications and the Polar Code		
37.1	Improvement of the current IHO specifications to implement the Polar Code	TL+M K	2-37.1 Annex: POLAR Code Annex: ppt on Polar Code
39	Unique Identifiers and their operational use		
39.1	Status of IALA proposal on MRN	EH	2-39.1 2-39.1a
40	ToR review	MK; J S-F	2-40
	Minutes notes of the day's items		

	<b>Thursday, 24 March (NIPWG administration day)</b>		
43	Work plan for the NIPWG (reflecting HSSC7 outcome)	JS-F	2-43
46	Any other business (Review of draft minutes), (Harmonisation of cable protection information in NPUBS) (Strategic Discussions, result of discussions based on item 13 (Monday)) (Status of HSSC7 action items assigned to NIPWG)	JS-F	
49	Date and place of next meeting(s)	JS-F	

AR	Alain Rouault (FR)
BvS	Ben van Scherpenzeel (IHMA)
GB	Gilles Bessero (IHB)
EH	Edward Hosken (UK)
EM	Eivind Mong (Jeppesen Marine)
IP	Inyoung PARK(ROK)
JE	Jon Leon Ervik, (NO, IALA rep)
JS-F	Jens Schröder-Fürstenberg (GE)
KI	Konstantin Ivanov (TRANSAS)
MK	Mike Kushla (U.S./NGA)
ML	Malin Liljenborg (SE)
SE	Stefan Engström (FI)
TL	Thomas Loeper (U.S./NOAA)
WdT	Wilfred den Toom (NL)
YB	Yong Baek (ROK)
YG	Yves Guillam (IHB)

## Work sessions:

Monday - Wednesday: AM and PM

Thursday: AM

Session AM1 0900 – 1030

Session AM2 1045 – 1200

Session PM1 1330 – 1500

Session PM2 1515 – 1630 (1700 as the latest possible finish time)

## Annex C: List of Attendees

## NAUTICAL INFORMATION PROVISIONS WORKING GROUP (NIPWG)

[A Working Group of the Hydrographic Services and Standards Committee (HSSC)]  
Monaco, 21 – 24 March 2016

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### List of Confirmed Participants

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## Annex D: Updated NIPWG Work Plan

### NIPWG WORK PLAN 2016-17 *(approved by HSSC7 and revised at NIPWG2)*

#### 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 WGs and other IHO and international bodies
K	Conduct the 2016 and 2017 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 NIPWG 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	Next HSSC meeting	2015	Permanent	P			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	M	Draft Product Specification for Marine Protected Areas (S-122) released in 2016	2015	Permanent	O	Chair/Sec		In close liaison with the S-100 WG Awaiting portrayal specification from NCWG. Awaiting data quality specification from DQWG.
F.3	Model the NP data where required.	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related. To be included in NPUBS domain of the next version of the FCD Register when available.
F.4	Review of objects and attributes	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related.

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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.6	Propose amendments to AtoN domain of the FCD Register	H	Next meeting	2014	<del>2017</del> 2018	O	Chair/Sec	S-125	To improve the current definitions and attribute values at the FCD register
F.7	Populate the NPUBS domain of the FCD Register	H		2006	Permanent	O	Chair/Sec		S-100 related. Awaiting Registry improvements
F.8.1	Develop S-12n - Nautical Information Product Specification								<del>Liaise with WWNWS-Sub committee</del>
F.8.1.1	For Radio Services	H	Next NIPWG meeting	2012		O	Chair/Sec	S-123	<del>Liaise with WWNWS-Sub committee</del>
F.8.1.2	For Navigational services	H	Next NIPWG meeting	2013		O	Chair/Sec	S-125	
F.8.1.3	For Traffic management	H	Next NIPWG meeting	2013		O	Chair/Sec	S-127	
F.8.1.3.1	For Marine Protected Areas	H	Next NIPWG meeting	2011	2018	O	Chair/Sec	S-122	Awaiting completion Feature Catalogue Builder, data model harmonization between S-101 and S-122, portrayal and quality parts
F.8.1.4	For Physical environment	H	Next NIPWG meeting	2013	<del>2016</del>	O	Chair/Sec	S-126	
F.8.1.5	Catalogue of nautical products	H	Next NIPWG meeting	2016		O	Chair/Sec	S-128	

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G.1	Monitor the requirements for and provision of nautical information in e-navigation test-beds Produce NP1 sample data sets	M							According to the tasks assigned by HSSC4. Collection of information to be modelled
G.1.1	For Radio Services	H		2012	2016	C	Chair/Sec	S-123	
G.1.2	For Navigational services	H		2012	2017	O	Chair/Sec	S-125	
G.1.3	For Traffic management	H		2012	2016	C	Chair/Sec	S-127	
G.1.4	For Physical environment	H		2013	2016	C	Chair/Sec	S-126	
G.2	Set up a test bed ECDIS	M		-	-	P	Chair/Sec		To be considered in liaison with S-100WG. <b>Contribute to test bed strategy.</b>
G.3	Rules and guidelines for displaying nautical information in ECDIS and in combined Marine Service Portfolios								
G.3.1	Develop basic display rules for NP data intended for use in ECDIS (NP3)	M		2008	2016*	O	Chair/Sec	S-52	Close co-operation with NCWG and S-100WG required  *end date depends on NCWG schedule

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G.3.2	Develop 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	2019	P		S-52	e-nav IMO Strategy Implementation Plan, Task T13 (HSSC6-07.1A refers) Output number 5.2.6.2 of NCSR biennial agenda 2016-17
G.4	Initiate consideration of the architecture of the MSP “hydrographic services”	M		2013		O	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					Subject to request from NCWG
I.1	Maintain and extend resolutions in M-3 relating to Nautical Publications	M	Next meeting	2012	Permanent	⊖P	Chair/Sec NIPWG	M-3	A review is <del>scheduled</del> required for the <del>due to</del> harmonization of M3 information and potential ProdSpecs content.
J.0	Liaise with the NCWG				Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required and endorsed by HSSC.
J.1	Liaise with the ENCWG	H			Permanent	O	Chair/Sec NIPWG		

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J.2	Liaise with the S-100WG	H			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required <b>and endorsed by HSSC.</b>
J.2.1	Draft Data Classification and Encoding Guides								Document for NPs similar to Use of the Object Catalogue.
J.2.1.1	For Marine Protected Areas	H	Next meeting	2011	<del>2016</del> 2018	O	Chair/Sec	S-122	To be harmonized with S-101 DCEG
J.2.1.2	For Radio Services	M		2015		P	Chair/Sec	S-123	Depends on modelling progress
J.2.3	Draft Product Specifications								
J.2.3.1	For Radio Services	H		2014		O	Chair/Sec	S-123	
J.2.3.2	For Navigational services	H		-		P	Chair/Sec	S-125	
J.2.3.3	For Traffic management	H		2011		O	Chair/Sec	S-127	The start date is in-line with the MPA ProdSpec development
J.2.3.4	For Marine Protected Areas	H	Next meeting	2011	<del>2017</del> 2018	O	Chair/Sec	S-122	
J.2.3.5	For Physical environment	H		-	-	P	Chair/Sec	S-126	
J.2.3.6	For Digital Catalogue of Nautical Publications Products	H		2016	2018	P	Chair/Sec	S-128	
J.3	Liaise with other HSSC WG	H		2004	Permanent	O	Chair/Sec NIPWG		Including DPSWG, DQWG, TWCWG, etc.
J.4	IRCC								

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J.4.1	WWNWS							S-124	Monitor developments of S-124 correspondence group
J.5	Liaise with other international bodies which contributes 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		As advised by HSSC4 (in liaison with S-100WG).
J.5.2	International Harbour Masters' Association	H		2015	Permanent	O	Chair/Sec NIPWG		Considering AVANTI development
J.5.3	International Cable Protection Committee (ICPC)			2016					Note intended MOU between IHO and ICPC as proposed at HSSC7.

### Meetings (Task K)

Date	Location	Activity
29 June – 3 July 2015	IHB, Monaco	NIPWG-1
21-24 March 2016	IHB, Monaco	NIPWG-2
5-9 Dec. 2016	Busan, Republic of Korea	NIPWG-3
May 2017	University of New Hampshire	NIPWG visualization of nautical information workshop
Early Sep 2017	Italy (location tbd)	NIPWG-4
May 2018	Rostock (tbc)	NIPWG-5

Chair: Jens Schröder-Fürstenberg, BSH, GE

Vice Chair: Edward Hosken, UKHO, UK

Secretary: Thomas Loeper, NOAA, USA

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