**19th Standardization of Nautical Publications Working Group (SNPWG)/
1st Nautical Information Provisions (NIPWG) Meeting
29 June – 3 July 2015 – IHO, Monaco**

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

1. Opening and administrative arrangements

1.1 Opening remarks
Jens SCHRÖDER-FÜRSTENBERG opened SNPWG19 by welcoming new and returning members. Jens followed by stressing the importance of our working group as it pertains to navigation safety by developing a common structure for publications information as a complement to ECDIS and other electronic devices.

Tony PHAROAH welcomed the members on behalf of the International Hydrographic Bureau (IHB) and discussed meeting logistics. Highlights of the schedule for the week were discussed by Tony and Jens. Tom LOEPER was acting as secretary. Logistics and building safety were also discussed.

1.2 Opening address on behalf of IHB
Gilles BESSERO who spoke on behalf of the IHB and he also welcomed the new and returning members of the SNPWG/NIPWG. He was pleased to have our meeting take place during the World Hydrography Day celebration which was postponed slightly this year to benefit from the call in Monaco harbor of *Kojima*, the training ship of Japan Coast Guard. The celebration will take place on board the ship and HSH Prince Albert II of Monaco is expected to honor the event by his presence.

Gilles emphasized the importance of the NIPWG work under the new Terms of Reference (TOR). He also recalled that the International Maritime Organization (IMO) had adopted an e-navigation (e-NAV) strategy implementation plan. The focus is on making life easier for the mariner and in particular to ensure that he is provided with easy and timely access to relevant, up-to-date and harmonized information for berth-to-berth operations. Current IT allows this but there is still a long way to go to meet that objective, in particular at the level which concerns us, the level of Hydrographic Offices (HO). Gilles said there is a need to develop, specify and implement new ways to provide the appropriate information through a single window and that there is a need to think through how the Maritime Service Portfolios (MSPs) dealing with nautical information should be arranged and delivered.

NIPWG is meant to lead the way and develop solutions in liaison with all relevant partners, both within the IHO structure and outside it. Expectations are high, the work load is significant, he wishes us a productive meeting!

1.3 Introductions
There were many new participants attending the meeting so formal introductions were made by all members of the group.

2. Adoption of Agenda

SNPWG agreed and adopted the Agenda with slight modifications as circulated.

3. Adoption SNPWG 18 Minutes

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1

The Final Minutes of SNPWG 18 were approved with slight modifications as circulated.

3.1 Corrections
For item 13, Change the last sentence to: The group believes the mariner should have the freedom/option to select what is displayed.

For item 26.1, change the two instances of South Korea to Republic of Korea (ROK).

3.2 Review of Action Items from SNPWG 18

Planned tasks for this Reporting Period						
Action Item	Actor	Task Description	Start Date	Target End Date	Percent Complete	Task Status
14/10	TP	Complete MPA Product Specification for circulation to HOs	04/2011		60	Transfer to NIPWG 1
14/11	SNPWG	Circulate inside HOs and obtain comment				Transfer to NIPWG 1
15/2	EM+JR	Forward to TSMAD for consideration to change date information by values and text			100	Incorporated into S-100 ver. 2
15/9	EM	Await the next joint TSMAD/DIPWG meeting in Feb 2015 and the outcome of DIPWG portrayal work. Eivind will liaise with TSMAD/ DIPWG and report back to the SNPWG.			100	Completed
15/11	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 stable dataset is available and product specification are established
16/1	JN/PA/OH	Give a presentation at SNPWG 17 outlining current developments along with giving a greater interpretation of their plans.				Overtaken by events
16/2	IHB/Jepp/CARIS	Put an update of the MPA Product Specification on the IHO/SNPWG site.			100	Completed
16/9	DK, FI, US (PA/TBN/MK)	Create the Navigational services (include navigational marks) NP1 Data sample and present it at SNPWG17 NP1.			20	Transfer to NIPWG 1
16/14	TP	Create a Word file concerning M-3 for the NP section to be placed on the Wiki for SNPWG updates.				Transfer to NIPWG 1
17/11	UK, VE (RD/LV)	Prepare the draft of land features to extend the test dataset	04/2014	12/2014	Nearly completed	Transfer to NIPWG 1

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2

17/15	IHB (TP)	Revise the latest MPA Product Specification draft document to reflect the latest metadata developments in S-100 Ver. 2.	04/2014	12/2014	100	Completed
18/1	JS-F	Populate the revised version of the S-122 DCEG which reflects the latest discussion by the end of January 2015 and initiate the first group review.	12/14	01/2015	100	Completed
18/2	JS-F/ SNPWG	Review the current context feature set and propose extensions if needed by the end of March 2015. A SNPWG letter will be sent in January to all members tasking them to complete the review.	01/15	06/15	100	Completed
18/3	AR/ SNPWG	Continue with the development of the Radio Services ProdSpec and the group will continue to review and forward comments.	12/2014	06/2015		Transfer to NIPWG 1
18/4	MK/ SNPWG	Continue with the development of the Traffic Management ProdSpec and the group will continue to review and forward comments.	12/2014	06/2015		Transfer to NIPWG 1
18/5	AR, MK, RD	Begin to create an in-house SNPWG style for presenting and coding test data sets. The first review will be made during the next meeting in June 2015.				Transfer to NIPWG 1
18/6	EM	Forward the proposed definition on Category of Temporal Variation Value 4 to DQWG for further consideration and submission to TSMAD.	12/2014	02/2015	100	Completed
18/7	RD/ SNPWG	Continue with the development of the Physical Environment ProdSpec and the group will continue to review and forward comments.	12/2014	06/2015		Transfer to NIPWG 1
18/8	CARIS	Develop a draft proposal for submission to the new S-100 WG on introducing the possibilities to build associations between S-100 based product specifications by June 2015.	12/2014	06/2015	100	Completed
18/9	JS-F/RM	Develop a practical use case to illustrate the concept of Association Class by June 2015.	12/2014	06/2015	100	Completed

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18/10	SHOM/ CARIS	Check the content of the FR LoL and provide proposals for enumeration candidates by June 2015.	12/2014	06/2015	100	Completed
18/11	SNPWG	Revisit the test case paper 18-8.1	06/2015	06/2015		Transfer to NIPWG 1 – decide how to proceed.

Transition to NIPWG 1

2. Adoption of the Agenda

3. Election of the Chair, Vice Chair and appointment of the secretary
Nominations for Chair (Jens SCHRÖDER-FÜRSTENBERG), Vice Chair (Edward HOSKEN) and appointment of the secretary (Tom LOEPER) were put forward to formally transition from SNPWG 19 to NIPWG 1. All members were in agreement. Jens Schröder-Fürstenberg was elected Chair, Edward Hosken was elected Vice Chair and Tom Loeper was appointed Secretary.

4. NIPWG status of work (overview)

The Chairman gave a short presentation detailing the main objectives and the current status of the work. Jens reminded the group that we need to ask for HSSC permission to alter our work plans. We also need to remember the procedures on how to request work from other groups.

Jens discussed the relationships between working groups and tasks. He gave some history on why the Marine Protected Area (MPA) was selected as our first ProdSpec. It was a request from the U.S. He told the group that we had to update our timelines for development and the dependencies between HSSC groups. There was a question from Edward on how the other ProdSpecs were decided. We as a group decided that since we had a positive experience developing the MPA ProdSpec, we broke the information currently stored in N-Pubs into manageable thematic information blocks that could be assigned to individuals within the group who are subject-matter experts. Briana SULLIVAN asked if we are still thinking about books or are we moving more towards a feature-based system. Jens gave a history about how we arrived at our current status of developing ProdSpecs and how we arrived at the current situation of transitioning from paper-based books to more data-centric information systems.

5. HSSC Related Reports

5.1 Information on TSMAD (and the successor) activities
Yong BAEK gave a brief synopsis of what occurred at the last TSMAD meeting.

Documents published since DQWG9 and SNPWG18:
S-100 – Universal Hydrographic Data Model (Edition 2.0.0): Edition 2.0.0 includes numerous clarifications, corrections and extensions intended to accommodate the requirements of new S-100 based ProdSpecs. The major extension for this Edition is the inclusion of Part 9 – Portrayal Model.

Discussion Topics of the TSMAD of interest to DQWG/NIPWG:
S-100 IHO Registry (current status):

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4

NOAA is currently providing support for the database back-ups and will troubleshoot any other issues that may come up. While testing the proposed interface, it was found that some of the functionality was not working as intended. Therefore NOAA will be "patching" the web-interface as an interim solution. It is expected that these fixes will be finalized by late July 2015.

The UKHO is currently acting as the front end registry administrator and will be uploading the content that has been approved by the S-101 Project Team to the Registry. Edward noted that the Registry is not easy to use and there are few people who understand its current complexity. NIPWG expresses concerns about the limited resources available to handle the Registry sufficiently.

Feature Catalogue Builder (current status and future plans):
The Republic of Korea (ROK) has generously supported the development of the feature catalogue builder (FCB). The FCB is currently connected to a test version of the IHO Registry that ROK is maintaining for testing and development. As part of the testing process a baseline version of the S-101 feature catalogue has been created. Once the S-100 Registry has been stabilized the next step is to establish a connection between the FCB and the Registry for use by other IHO working groups. It is hoped that this activity will be finalized in early 2016.

IHO Registry (future plans):
S-100 Edition 2.0.0 added code lists, and some other extensions to the underlying model, therefore the existing IHO Registry will need to be extended and harmonized. In addition, support for the product specification register and the revisions to S-99 will also have to be addressed as well as the connection to the FCB. The S-100 WG is working to update the Registry to 2.0.0 and provide a comprehensive update to the web-interfaces. Because of the resources required for this project there is no current estimated completion time as it is being done on a volunteer basis.

IHO Portrayal Register (current status and future plans):
The portrayal register is currently a collection of unrelated tables that hold basic content based on S-52. These tables are not compliant with the S-100 portrayal model that was included in Edition 2.0.0 and are missing the primary-foreign key relationships that are conducive to good database design. There is currently only a basic interface that allows users to view the content, but there is not an interface that allows submitting organizations to upload content. In addition, consideration should be given for the need to develop separate "portrayal dictionaries" based on domains. For example, the World Meteorological Organization has a domain for weather information on the feature concept dictionary; there should be a similar domain for portrayal of weather related information.

The following activities still need to take place:
• Update the underlying database to existing portrayal register model based on S-100 Part 2
• Develop portrayal domains for non-hydro information such as weather
• Migrate the existing register data into the new database
• Develop a web-interface that allows for submitting organizations to upload register information.
• Update the Portrayal Catalog Builder to point to the new tables. The S-100 Working Group Chair is working with the IHB to allocate S-52 Presentation Library funds to complete some of the above tasks.

S-100 Test Cases:
Initial test cases have been developed for implementation in S-100 test beds. These test cases have been developed principally for the implementation of S-101 Feature and Portrayal Catalogues and S-101 datasets in an S-100 ECDIS, but by extension will be expanded to include interaction with other S-100 based ProdSpecs.

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S-101:
The draft S-101 ENC ProdSpec documentation was "baselined" in April 2014, allowing for the development of draft S-101 Feature and Portrayal Catalogues; and development of S-101 datasets for use in S-100 test beds. In order to facilitate the creation of the Feature Catalogue, KHOA has done a significant amount of work in developing a FCB; while the development of a Portrayal Catalogue Builder is progressing on an IHB contract. The S-100WG/S-101 Project Team continues to liaise with the DQWG to develop a new data model for bathymetric data quality in S-101 ("CATZOC replacement"). As a result of the proposed CSPCWG changes to S-4 and INT1 in regard to maintained/dredged areas, a review of some of the enumerate values for the Quality of Sounding attribute will be required. The planned operational release date for S-101 as included in the S-101 Roadmap is the end of 2018, however this is thought to be a "best guess" considering the amount of work that remains to be completed.

S-102:
An update to the S-102 Bathymetric Surface ProdSpec is required to incorporate changes to the Bathymetric Attributed Grid Specification which forms the basis for S-102; and to extend the ProdSpec to include S-102 portrayal.

S-112:
The first draft of S-112 – Dynamic Water Level Data Transfer ProdSpec, was presented at HSSC6 and subsequently at TSMAD29/DIPWG7. This draft has been prepared by the UKHO with the assistance of MPA Singapore, utilizing practices used within the Malacca and Singapore Straits Marine Electronic Highways project. The intention is to use an AIS application-specific message broadcasting meteorological and oceanographic specific information, part of which is water level information, to supply tidal polygon correction information as measured in real-time. Further work is required, in terms of both the draft S-112 and S-100 itself, and it is expected that this will form a significant part of discussions at the next TWCWG meeting. It is intended that this ProdSpec could be used in both S-57 and S-100 ECDIS.

CGHR Outcomes:
The recommendations of the Correspondence Group on HSSC Working Groups' Restructuring (CGHR), as approved at HSSC6, saw the replacement of the TSMAD and DIPWG with the S-100WG and the ENCWG. As a result, TSMAD29-DIPWG7 was the final joint meeting of the TSMAD and DIPWG. Elections for the Executives for the new Working Groups were held, and confirmation of commitment of Member States to the Working Groups as indicated in responses to IHO CL76/2014 obtained (with amendments).

The executives of the new S-100WG are: Chair – Julia Powell (US); Vice-Chair – Yong Baek (ROK); Secretary – Eivind Mong (Jeppesen Marine). The executives of the new ENCWG are: Chair, Tom Mellor (UK); the Vice-Chair is vacant; and Tony was appointed Secretary.

Action Item 1/1 – Raphael MALYANKAR will forward the SNPWG/NIPWG paper on the Registry handling requests to Yong again for submission to S-100WG for consideration.

Action Item 1/2 – Edward will check the status and encourage the progress of the NIPWG request on Data Quality for non-bathymetric data from the DQWG.

5.2 Information on DIPWG (and the successor) activities
Tony presented a short summary on the DIPWG issues addressed at the joint TSMAD/DIPWG meeting. It is anticipated that the NCWG will work in close association with the ENCWG and the S-101 Project Team (S-100WG). It was stressed that members of other HSSC Working Groups would be welcome to participate in the S-101 Project Team.

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5.3 Information on NCWG activities
Jens presented a summary on the WG meeting noting radio activated signals, LED light pipes and secondary fairways.

Action Item 1/3 – Jens in conjunction with the S-100 WG and NCWG will initiate a submission to HSSC7 to establish a Project Team for the S-122 portrayal development.

14.0 MONALISA 2.0 Project (follow up)

14.1 Presentation of the ongoing work
Raphael presented work recently completed on the MONALISA 2.0 Project. The test areas chosen were along several coasts of different countries mostly in the Mediterranean and Baltic Seas. Areas included protected bird and fish areas as well as MPA's. The final conference will be in November of this year.

14.2 Discussion of the paper

MONALISA is an EU funded project. Originally, the MONALISA 2.0 project was for determining dynamic route plans but more importantly it was to be a sea traffic management system. MONALISA 2.0 was to be a land-based system to establish traffic lanes or shore-based controls of sea-lanes, very similar to aircraft traffic control. The group is advised to continue monitoring progress on the project and any follow-on projects.

22. Relation with the International Harbor Master Association (IHMA)

22.1 Presentation of the activities related to "berth-to-berth operations"
Gilles gave a brief summary on the status of the IHMA initiative on Port Call Optimization. IHMA is a Non-Governmental International Organization (NGIO) and is accredited as an IHO observer. IHMA has 200 members from 40 different countries. They are really promoting berth-to-berth passage planning. The two types of data they are concerned with are port data (vessel berth compatibility) and event data (planning).

Two core issues concern us. The first one is the standardization, collection and dissemination of nautical information while the second is to define, standardize and implement MSP's in the context of the e-NAV strategy implementation plan. Action requested of NIPWG is to note the report and also to consider the recommendation that the NIPWG considers ways and means to coordinate the relevant tasks of the work plan with the IHMA initiative on the Port Call Optimization.

22.2 Discussion of the paper and on how to proceed
Mike KUSHLA asked what the data flow was to be with this process. Another question that was raised was that there may be parallel data flow pipes which will leave the mariner confused about sources. Which flow will be official and which source or sources are not official? Jens recommended that IHMA supply the data model behind the services and we can try to minimize and close the gaps in the model. Edward said that a prototype system (AVANTI) does exist but it is still being developed and requirements are still being collected.

Several members suggested we invite an IHMA representative to the next meeting but we decided that would be premature at this point.

A liaison to the IHMA will be incorporated into the work plan.

Action Item 1/4 – Edward will monitor Avanti developments and report back items of interest to NIPWG.

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7

17. Progress on the development of S-240 for DGNSS Station Information

17.1 Presentation of the status of the S-240 ProdSpec
KRISO is in the process of developing an S-100 based version of the IALA DGNSS Station Almanac. This almanac is a document published and maintained by IALA covering 406 stations across 46 countries. The Almanac is posted on their website but it is difficult to update. The solution is to use XML which is also the format used for depicting information on top of the ENC. The stations would be shown as small circles that are clickable to show all the details of the selected station. This would appear as a pick report on the base ENC.

9. Context features for NIPWG ProdSpec

9.1 Context features for all NIPWG ProdSpec and additional Context Features supporting particular NIPWG ProdSpec
Raphael presented a paper on Context Features in support of NIPWG ProdSpecs. S-100 Edition 2.0.0 does not provide appropriate techniques for the integration or interoperability of datasets of different kinds. The NIPWG discussed which context features would be needed to provide a geo-referential charted background to the "core features" in the MPA ProdSpec. The "core" feature types are those defined in the application schema for the overlay version of the product, i.e. the set of feature types directly relevant for the data product. For example, in S-122 (MPA), the "core" features are Marine Protected Area, Traffic Control Area and Restricted Area. A set of context features would also be needed if MPA products would be provided as individual products and probably, on devices other than ECDIS. The discussion was expanded from context features for S-122 to context features for all N-Pub product specifications. SNPWG Letter 03/2013 (Annex 3) listed a set of candidate context features for the MPA (S-122) ProdSpec. An updated set was later posted on the NIPWG Wiki and members were requested to review it in SNPWG letter 01/2015 focusing on the review of the context features. Questions on duplication in different themes and of the addition of missing features were part of the feedback.

9.2 Discussion
The discussion of paper started when Edward reminded the group that S-100 Edition 2.0.0 does not provide appropriate techniques for the integration or interoperability of various ProdSpecs and that this is a problem for all WG's. Jon Leon ERVIK suggested that the IHO is perhaps the best organization to coordinate the issue. Tony proposed that we make a recommendation to the next S-100WG on how to include Context Features.

N-Pub data is expected to be scale independent when being delivered as a standalone product. Scale dependency should be taken into consideration when there is interaction between N-Pub data and other S-100 based products.

After much discussion, we decided that NIPWG will provide the basic data for the S-100 environment. Standalone or companion products will be addressed at a later date because of the complexity of the problem.

Action Item 1/5 – Yong, Raphael and Jens will write a proposal for the next S-100WG meeting on how to include Context Features (perhaps including multiple scopes in the ProdSpecs).

8. Marine Protected Area ProdSpec (S-122)

8.1 S-122 showcase based on the U.S. North American Right Whale (NARW) test data set
Raphael opened the discussion with the improvements that were made to the S-122 ProdSpec for the NARW. All the demonstration data was collected from sources

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8

available for free on the internet including the U.S. Code of Federal Regulations, NOAA's Coast Pilot and ENC's. The demonstration illustrated that a number of information overlays were required to create the NARW area. Manuel Ricardo LOPEZ CRUZ noted that this is a very difficult concept to model because of the spatial, regulatory, static and dynamic elements that need to be combined to create the overlay.

8.2 Status of work on the ProdSpec
Tony displayed the corrections and updates added to the ProdSpec including UML syntax, statements about clarifications, updates and revisions to the document, the additional wire diagrams from the Wiki, sample text about data quality, etc. The latest template that was released earlier this year was used to update the ProdSpec. The annexes include application schema diagrams and placeholders for portrayal. NIPWG is still waiting for guidance on data quality and portrayal. The Feature Catalog and the application schema need to be updated by NIPWG.

8.3 Portrayal of the MPA feature
Portrayal instructions were requested from DIPWG. We requested that the areas be marked in shades of green possibly using dashed or T-lines. Since DIPWG is no longer in existence, the request was passed along to Nautical Cartography Working Group (NCWG). Furuno examined the shades of green that can be seen on a day screen and what shades are currently in use and recommended a color formula to use for the MPA borders. Briana said it might be a good idea to examine other colors (possibly as a research project at the University of New Hampshire [UNH]) (See action item 1.3). Once an effective color is selected, we can recommend the portrayal request to the relevant HSSC working group.

8.4 Status and discussion of the current DCEG, excluding the data model
The task to write an MPA Data Capture and Encoding Guide (DCEG) was restarted from an earlier effort.

The DCEG is divided into 15 different sections which is in line with the latest S-101 DCEG so both encoding guides will be in harmony. The work on the encoding guide impacts the development of other ProdSpecs.

The members are invited to carefully review the DCEG so that data modellers will be able to complete their task without question. Yong had some comments from previous S-101 DCEG work completed by the S-101 project team. S-100WG is working on the development of a database solution to connect and harmonize the Feature Catalog and the encoding guide. He recommended that we focus on the general instructions and be certain that they are clear for the benefit of the end user.

Action Item 1/6 – Jens will review the current DCEG draft document and will initiate a NIPWG letter tasking the group to review and comment on the document.

8.5 Model harmonization S-101 and S-122, Dialog with S-101 DCEG group
Raphael summarized changes in the model which are included on the NIPWG Wiki. Both the S-101 and the S-122 data models should be changed for better harmonization. NIPWG made several requests to the S-101 project team to harmonize the data so the end user can see information as expected. Jon Leon asked if this information will be available across all platforms – yes, again the concept of code once and use many times across all platforms.

8.6 Association Classes, "use case"
Raphael discussed "use cases" to describe association classes. The classes describe relationships between who (types of vessels) and what (the text of a regulation), or

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9

between types of vessels and where (geographic features). The idea is to simplify the modelling work.

27. Harmonization of Maritime and Terrestrial Vector Data

David Jeronimo GUADARRAMA MENDOZA presented a paper concerning the harmonizing of nautical and terrestrial vector data. Members of the terrestrial contingent attended the Meso American Hydrographic Commission in 2014 to discuss ways of working together with national and regional experts especially on common items like data.

15. ProdSpec Physical Environment (S-126)

15.1 Presentation of content
Edward presented a paper of work recently completed on the Physical Environment ProdSpec (S-126). Most of the main headings of S-126 are covered by existing ProdSpecs from other groups. Items that are not covered by other ProdSpecs are textually based and may not be suitable for the current model. It was suggested that we ask ourselves what does the mariner and other end-users really need, how they want to access it and how it will be displayed on an ECDIS and other devices. Work on S-126 is too focused on trying to replicate information in existing publications rather than an appreciation of what S-126 will aim to achieve in combination with other S-100 products. The requirements for S-126 need to be clearly defined before we can progress in a meaningful way. The test data set is fairly complete. How can we move forward from here?

15.2 Discussion of the draft paper
The discussion started with a short history of why and how we arrived at our current situation. Sailing Directions narratives from different nations cover a broad spectrum of content from very concise descriptions to more lengthy versions. The topic of long and descriptive narratives is useful to some users and not required by others. Briana suggested that the narrative information is very important to many users and it should be preserved and that there will be new modes of presenting narrative information in the future. Edward suggested that the S-126 test data set is at a fairly mature stage now and we should move forward with it to develop an S-100-based proof of concept.

Action Item 1/7 – The group will 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.

11. ProdSpec Traffic Management (S-127)

11.1 Presentation of content
Mike presented a paper of work recently completed on the Traffic Management ProdSpec (S-127). A schematic was shown with the three main topics of Ship Reporting Systems, Traffic Control Services and Regulatory Requirements. There were a few additions under the major headings.

11.2 Discussion of the draft paper
Jon Leon started the discussion by saying that the IMO fully supports S-100 but when it comes to ship reporting, it appears that no organization so far has taken ownership of the domain. First, the goal is to harmonize all the different ship reporting systems due to all the slight variations in the data items required in accordance with IMO e-NAV solution Second, there is no one body that controls every aspect of ship reports. Multiple agencies require multiple vessel reports in many countries. Jon Leon suggested that organizations like IALA and IHO should support IMO on the harmonization efforts. Jens

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10

suggested that the S-127 test data set sample is fairly stable now and we should move forward with it to develop an S-100-based proof of concept.

10. ProdSpec Radio Services (S-123)

10.1 Presentation of content
Alain ROUAULT presented a paper of work recently completed on the Radio Services ProdSpec (S-123). He gave a brief history of the development of the ProdSpec covering the past 6 years back to SNPWG 10 in 2009. Alain reported that there were only minor modifications to the current document. There was a brief mention of the Maritime Cloud which was presented at the last meeting in Rostock.

10.2 Discussion of the draft paper
Jens started the discussion by saying that the content in S-123 is very stable. The next stage is mapping the test data sample. If the mapping does not work as expected, NIPWG will need to make alterations to the test data set sample during the next meeting. Jens suggested that we should move forward with it to develop an S-100-based proof of concept.

Action Item 1/8 – Jens will work to map the test S-123 data set and update the data model if required. SHOM will provide advice as needed.

12. Additional Light information

12.1 Presentation and discussion of further improvements of the List of Lights (LoL) data model
Jens presented a draft paper on light information which is required to be encoded and stored on paper charts, in ENCs and LoL publications. In most HO's, the data source for light information put in the LoL publications are different from the data source used to populate ENCs or paper charts. This paper proposes a model for lights information used in the LoL documents. The model relies as much as possible on the current S-57 light model by using the information already coded in ENCs with additional information wherever needed. The annex provides UML diagrams modelling the information released in the LoL.

12.2 Discussion of the draft paper
Jens started the discussion by saying that we are responsible for sharing the core data. We may be responsible for showing additional information that is not displayed on the chart. A new class for AIS equipment was proposed as well to cover virtual Aids to Navigation. Alain reported that it was difficult to access all the documents which are scattered across multiple sites. This makes it very difficult to determine what information is correct. Edward reported that KRISO and Jeppesen are working on the ProdSpec Aids to Navigation Information (S-201) on behalf of IALA e-NAV committee but there was no status on how far along the development has progressed. It might contain Aids to Navigation attributes that HO's and the user may not need but the content will be standardized.

Action Item 1/9 – Finland and Mexico will develop the 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.

21. S-100 related information

21.1 Status of the development progress of the S-10x simple viewer
Sewoong OH gave a presentation and demonstration of an S-100 simple viewer. KHOA has been promoting an R&D project on S-100 simple viewer development to cope with S-100 as

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11

an HO and to support the S-100/S-101 test bed of the IHO. The S-100 simple viewer of KHOA has been used to test S-100 product specifications such as S-101, S-111 and can be used to verify S-10X ProdSpecs developed by NIPWG. It will be also used to test interoperability with other S-100 based products. NIPWG took note of the progress of the viewer development and will provide recommendations that may be helpful in future developments of the S-100 Simple Viewer when the first NIPWG ProdSpecs are available for testing.

Action Item 1/10 – 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.

21.2 Proposal of a new S-10x ProdSpec on Catalog of Nautical Charts and Publications

Yong presented a paper proposing a new ProdSpec (S-10x) for a Catalog of Nautical Charts and Publications. The IHO and the KHOA have been cooperating on a web-based GIS management system development project to improve the INT Chart service of S-11 Part B. In the project, developing a standard format was required to facilitate exchanging lists of products among users and Member States. Meanwhile, the IMO Strategy Implementation Plan for e-navigation supports the delivery of nautical chart and publication services. Developing a standard on exchanging lists of nautical charts and publications was needed to support the shore-based e-NAV services. After reviewing the need to develop an S-100 based standard on lists of nautical charts and publications, this paper aims to seek comments from relevant experts to propose a new S-100 based ProdSpec to the IHO.

The discussion started with everyone agreeing that this is a great idea, there is a need and every HO should be doing this. NIPWG welcomes the initiative and will support the submission of a paper to HSSC7 for consideration.

Action Item 1/11 – Yong and Jens will write a paper for submission to HSSC 7 to create a new ProdSpec for a Catalog of Nautical Products.

21.3 Use of approximate areas for nautical information specifications

Raphael presented a paper on a potential problem with the S-122 GML data sample. The problem was with approximate areas in S-100, and is relevant to several NIPWG data products.

The NARW sighting areas in the S-122 sample are encoded as relatively large regions in and near U.S. waters where the right whale population may be present. In contrast to seasonal management areas, critical habitat, and dynamic management areas, the boundaries of the "sighting areas" in the S-122 sample do not seem to be published in official publications as restricted areas or marine protected areas of one type or another. They appear to be significant mainly as locations where right whales are more likely to be found.

Similar questions have been brought up in previous SNPWG meetings, in the context of Physical Environment (S-126) and Radio Services (S-123) product specifications. The solution suggested was applying the attribute quality of position to the relevant boundary on the spatial attribute with value 4 (approximate). This approach may not be suitable for all cases where fuzzy areas exist – areas that do not have well-defined boundaries.

Edward opened the discussion talking about an academic study he conducted in 1987 about fuzzy boundaries and how at the time, computing power was insufficient to depict borders

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12

that are not well defined and suggested that more recent research and development may be available.

Action Item 1/12 – Jens will write a letter to the group asking for more examples of fuzzy boundaries.

19. IMO's e-NAV MSP Discussion

19.1 Presentation of the IALA work
Jon Leon presented some of the latest IMO documents, current work plan and implementation plans. The process was started approximately 9 years ago when accident analysis showed that 65% of accidents were due to human error. The intention of e-NAV is to increase safety, standardize equipment and make the job easier for the navigator. The IMO FSA has proven that the 5 e-NAV solutions reduce risk and are cost beneficial. e-NAV must reduce risk and be cost beneficial. There are 16 MSP's and several of them involve the IHO. IALA represents many shore-based authorities. This situation requires close cooperation between IALA and IHO to implement the concept.

19.2 Discussion of the paper
NIPWG discussed the status of MSP and recognized that there needs to be further clarification in some areas. IHO working groups are responsible for delivering the specifications for Member States to provide information to the mariner in relation with the development of MSP's. The importance of the close relation between IALA and IHO has been recognized.

20. Update on S-124 development

20.1 Presentation of the current status of the S-124 (Navigational warnings) development
Yves LE FRANC presented a paper on the progress of S-124 Navigational Warnings development. The product specification is expected to contribute to the technical infrastructure of e-NAV as designed by IMO and to the modernization of the Global Maritime Distress and Safety Systems (GMDSS). The objective is to develop an S-100 product specification for Navigational Warnings (MSI/NW) to improve dissemination and integration within bridge systems and shore systems via a digital format.

20.2 Discussion of the paper
NIPWG proposes that the S-124 Correspondence Group (CG) liaise with the relevant IALA bodies to ensure harmonized development of MSP's.

Action Item 1/13 – NIPWG to consider how to implement the global approach of the provision of the nautical information in the perspective of a consolidated MSP. This issue is beyond the framework set by the ToR of S-124 CG.

16. IMO's e-NAV strategy

16.2 Discussion activities to harmonize MSI data model between Jeppesen, KRISO and DMA
Sewoong presented a paper about KRISO and Jeppesen drafting the MSI data model and a test case for the MSI Service of e-NAV. Meanwhile, DMA developed the MSI-NM which is a website and editor that has been developed as part of the ACCSEAS WP6 MSI-NM (T&P) project. This paper describes the progress of activities on the harmonization of MSI data models and sharing the interim discussion results.

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13

The responsibility of the deliverables between S-124 CG, NIPWG and the KRISO/Jeppesen/DMA team was discussed. NIPWG agreed that the S-124 CG and NIPWG may use parts of the entire KRISO/Jeppesen/DMA team project work.

16.1 Discussion of the current e-NAV developments and the NIPWG position

The IMO e-NAV concept is based on initiatives originated by the IMO and supported by many other maritime organizations such as the IHO, the IALA and BIMCO. The overall aim is to improve safety at sea by providing needed information, in an electronic format, to the bridge team to enhance the safety and efficiency of marine navigation.

As one necessary precondition, the improvement of the information exchange between the various stakeholders has been identified. Consequently, the IMO developed a High Level Action Plan for the coordination of the e-NAV work. At the 94th session the Maritime Safety Committee (MSC94) approved the e-NAV Strategy Implementation Plan (SIP) as the basis for the e-NAV work.

Until IMO provides more specific information, we will restrict our work to the following items:
   - Maritime Safety Information Service (MSI)
   - Nautical Chart Service
   - Nautical Publications Service
   - Real-time hydrographic and environmental information service

Note that the activities of other groups may drive some of our future work but NIPWG will need refinement and amplification of our work.

16.3 IALA Recommendation on the use of Navigation Unique Identifiers
Edward presented information on a draft paper for Navigation Unique Identifiers from IALA e-NAV Committee. The use of unique identifiers is a necessary development of e-NAV to maintain harmonization across domains and services. Navigationally unique objects such as aids to navigation, VTS products and services and other maritime services require identification numbers to avoid duplication and misalignment.

The discussion started with NIPWG needing navigation unique identifiers. NIPWG initially requested unique identifiers during SNPWG 16 held in Silver Spring, MD in 2013. Tony said that if we have a mechanism to uniquely identify items, it will have a lifetime that can be registered and used for information exchange between computers. The unique identifiers could be for lights, buoys, bridges, etc. He said there are examples in other working groups that we should examine and solve the problem internally within the IHO. Other bodies such as IALA also depend on this.

Action Item 1/14 – Jens will make a recommendation at HSSC7 to invite the S-100 WG to develop a scheme for the unique identifiers within S-100.

23. e-MIO project of the EAHC (follow-up)

23.1 Presentation of the ongoing work
Yong delivered a presentation on work by the EAHC. It recognized the importance of the blue economy as well as the need to protect marine environment and organized e-MIO WG led by the ROK to promote the test bed project on Marine Environment MIO (Marine Information Overlay). The e-MIO WG presented the progress of the test bed project in the 17th SNPWG and 6th HSSC meeting. This paper introduces the progress and plan of test bed project by EAHC e-MIO WG.

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14

Currently in the stage of e-MIO Test Bed Establishment, major activities of the e-MIO WG include preparation of a draft of Marine Environment ProdSpec, production of test dataset, and development of e-MIO Viewer. To finalize the e-MIO Test Bed Establishment Stage (2013-2014), the e-MIO WG is planning to report outcomes of the following research at the 4th EAHC CHC meeting in Japan in 2015:

- Preparation of e-MIO Product Specification (draft)
- Sample dataset produced in accordance with the e-MIO Product Specification
- Outcomes of the development of e-MIO Viewer
- Guidelines for e-MIO establishment as a reference for Member States.

23.2 Discussion of the paper

Jens said it was good to combine the work between e-MIO and the MPA work of the NIPWG. NIPWG noted the plans to complete S-122 which were developed during the meeting and that this fits well with the status of the establishment of the test bed. S-122 may be extended to incorporate e-MIO development.

Action Item 1/15 – Yong will monitor progress and provide an update at NIPWG2.

6. Tagging of Coast Pilot Features to the U.S. raster charts and the comparison of various U.S. marine databases

6.1 Presentation on the challenges, the current status and the prospects

Tom gave a short presentation of work completed by the Coast Pilot group on efforts to accurately geo-tag place names across all nine volumes of the Coast Pilot. Talking points included a short history of national geographic naming efforts, initial vision of the project, expanded requirements, results and future plans. There was also a live demonstration of the results.

6.2 Coast Pilot data structure

Briana delivered a presentation on the data structure of the U.S. Coast Pilot. She went through a general breakdown of the chapter material and displayed the data schematic as a tree. The challenge is that the information is organized as a paper document not something that is data-centric and easily used in an ECDIS or on other electronic devices. She demonstrated new ways of overlaying live Coast Pilot data on top of NOAA charts.

Alberto NEVES thought the work was still too publication-centric and should be more focused on the mariner and the ENC. Briana explained that the difficult part is the proper markup of the text and proper tagging of the data. Tony and Briana had a discussion about the use of agnostic tags. They also discussed moving into the web services direction. Again the discussion returned to the need for Navigation Unique Identifiers.

Action Item 1/16 – Tony, Raphael and Briana need to provide the Chairman with information on the use of agnostic tags which should be incorporated into S-100.

Action Item 1/17 – Jens to suggest to HSSC7 that the S-100 WG should be tasked to consider the incorporation of agnostic tags into S-100.

6.3 Presentation and status of the NGA geotagging project

Mike did a presentation on progress made in NGA with the Geo-tagging effort. There are two contractors doing the work and NGA provides Framemaker files them for tagging. Completion of all 42 books should be complete by September of 2015. Most of the features are points but there were a small percentage of polygons and lines. There is an

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15

ability to edit and create new geo-tags. Ultimately, the idea is to tag once and use many times across all NGA products.

6.4 Presentation of localized texts using S-124
Yves presented a paper on a requirement for localized texts. During the S-124 CG work, the team identified an aspect of the information that needs to be considered for the data modelling that have common characteristics. The presentation focused on Navigational Warnings, T and P NM's chart corrections, SD's, etc. The entire text is referred to locations with such a model.

7. Test Data set portrayal and harmonization

7.1 Presentation of the results by the sub-wg
Mike did a presentation on the harmonization of test data set formats such as telephone and fax numbers, time (local/UTC), dates, lat/long, text formats and paragraph indentations.
Mike also presented an initial proposed sample template for on-screen display of links to navigational information contained in the various test data sets.

7.2 Discussion of how to proceed
The group discussed the proposed formatting options and decisions have been made for all the items still in question.
The group recognized the proposed sample template for on-screen display. It was agreed that the sample template is a good basis and it should become an input paper when the S-Mode discussion for the presentation of nautical information on ECDIS systems becomes relevant.

Action Item 1/18 – Mike will update the paper and send the results to the Chairman.

Action Item 1/19 – Jens will forward the paper to the data sample test developer.

Action Item 1/20 – Data sample developer will implement the change.

18. Portrayal of data quality indicators for bathymetric data

18.1 Presentation of the proposal
Jens presented a paper on the ENCs Bathymetric Data Quality information which is currently encoded by M_QUAL/CATZOC. It has been reported that the mariners are not familiar with the meaning of the associated S-52 symbols used for the portrayal of the different CATZOC categories. The HSSC assigned a work item to the DQWG to revise the principles of data quality classification resulting in a less complex and more intuitive solution. The DQWG reported to HSSC6 that this work is planned to be finalized soon. A draft paper was sent forward to the recent TSMAD meeting and the developed data quality classification has been incorporated into the new S-101 Product Specification.

As a result, the HSSC6 assigned a task to the SNPWG(NIPWG) / CSPCWG(NCWG) to draft a portrayal solution for the proposed new data quality classification of bathymetric data. This paper provided information on the findings of this work developed by the German members of both WGs and seeks feedback from the NIPWG on the proposed portrayal solution.

18.2 Discussion of the draft paper and on how to proceed
The proposal has been noted by NIPWG. Several graphical representations were shown to the group. Stefan ENGSTRÖM noted that the dot density be reversed to cover areas of high uncertainty with different shades of coverage. The UNH is working on the problem of uncertainty and the depiction of it on an ECDIS. Uncertainty is driven by parameters such as quality. One of the big issues will be screen clutter which is a

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16

growing problem. Edward pointed out that this item is a portrayal issue and is really not part of the NIPWG's bailiwick. Jens recommended that the work should be assigned to UNH and they provide feedback.

Action Item 1/21 – Jens will 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.

28. ToR review (see also SNPWG 18-21.1 and 18-21.1 Annex)

NIPWG reviewed the ToR and accepted them but recognize that as our understanding of e-NAV matures, the ToR may need to be modified in the future. This is in regards to the term, Nautical Information.

29. Work plan for the NIPWG (reflecting HSSC6 outcome)

See Annex D for NIPWG workplan for 2016-2017.

30. Any other business

30.1 Hydrographic Dictionary PoC
Tom will be the NIPWG Point of Contact for the Hydrographic Dictionary WG.

30.2 Mexican INF Paper
NIPWG proposed to bring the paper to the MSDIWG's attention.

31. Date and Location of the next meeting

The date of the next meeting is 21 – 25 March 2016.
The venue is tentatively Cambridge, UK (alternatively Monaco). Yiorgos PALIERAKIS is checking on the possibility of meeting in Cambridge, UK.

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17

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.
1/1	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		
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		
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		
1/4	EH	Monitor Avanti developments and report back items of interest to NIPWG.	07/2015	03/2016		
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			
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		

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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		
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		
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		
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		
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		
1/12	JS-F	Write a letter to the group asking for more examples of fuzzy boundaries.	07/2015	08/2015		
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		
1/14	JS-F	Make a recommendation at HSSC7 to invite the S-100 WG to develop a scheme for the unique	07/2015	09/2015		

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		identifiers within S-100.				
1/15	YB	Monitor progress of the EAHC e-MIO project and provide an update at NIPWG2	07/2015	03/2016		
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		
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		
1/18	MK	Update the style harmonization paper and send the results to the Chairman.	07/2015	08/2015		
1/19	JS-F	Forward the style harmonization paper to the data sample test developer	08/2015	08/2015		
1/20	MK, WdT, SE	Implement the style harmonization change to their test data sample	08/2019	03/2016		
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		

Variance Details:

Xxxxx

Corrective Actions:

Xxxxx

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20

Annex B: Agenda

19ᵗʰ Meeting of the Standardization of Nautical Publications Working Group (SNPWG) **1ˢᵗ Meeting of the Nautical Information Provision Working Group (NIPWG)** **29 June – 3 July, IHB Monaco, Monaco**	

Agenda (as conducted)

No.	Agenda Item	Lead	Documents
	Monday, 29 June		
1.	Opening and administrative arrangements	TP	
	Opening address on behalf of the IHB	GB	
2.	Adoption of the Agenda	JS-F	19-2
3.	Minutes of SNPWG 18	TL	19-3
3.1	Amendments to the minutes	TL	
3.2	Review of Action Items from SNPWG 18	TL	
	Transition to NIPWG 1		
2.	Adoption of the Agenda	JS-F	1-2
3.	Election of the Chair, Vice Chair and the appointment of the secretary	TP	1-3
4	NIPWG status of work (overview)	JS-F	1-4
5.	HSSC related reports		
5.1	Information on TSMAD (and the successor) activities	YB	1-5.1
5.2	Information on DIPWG (and the successor) activities	TP	1-5.2
5.3	Information on NCWG activities	JS-F	1-5.3
14	MONALISA Project (follow up)		
14.1	Presentation of the ongoing work	RM	
14.2	Discussion of the paper	JS-F	
22	Relation with the International Harbour Master Association (IHMA)		
22.1	Presentation of the activities related to "berth-to berth operations"	GB	1-22.1
22.2	Discussion of the paper and on how to proceed	JS-F	
17	Progress on the development of S-240 for DGNSS Station Information		
17.1	Presentation of the status of the S-240 Product Specification	SO	1-17.1
	Minutes notes of the day's items		

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	Tuesday, 30 June		
9	Context features for NIPWG ProdSpec		
9.1	Context features for all NIPWG ProdSpec and additional Context Features supporting particular NIPWG ProdSpec	RM	1-9.1 and Annex
9.2	Discussion	JS-F	
8	Marine Protected Area Product Specification (S-122)		
8.1	S-122 showcase based on the U.S. NARW tests sample data set	RM;EM	1-8.1 and Annex
8.2	Status of work of the ProdSpec	TP	1-8.2
8.3	Portrayal of the MPA feature	JS-F	1-8.3
8.4	Status and discussion of the current status of the DCEG, excl. data model	JS-F	1-8.4 and Annex
8.5	Model harmonisation S-101 and S-122, Dialog with S-101 DCEG group	RM	1-8.5
8.6	Association classes, use case	RM	1-8.6
8.7	Discussion on how to proceed	JS-F	
27	Harmonisation of Maritime and Terrestrial Vector Data	RL	1-INF1 and Annex
	18:00 Reception on the Japan Coast Guard Training Ship *"Kojima"*		
	Minutes notes of the day's items		

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	Wednesday, 1 July		
15	ProdSpec Physical Environment (S-126)		
15.1	Presentation of content	EH	
15.2	Discussion on the draft paper	JS-F	
11	ProdSpec Traffic Management (S-127)		
11.1	Presentation of content	MK	1-11.1 and Annexes A+B, 1-11.2
11.2	Discussion on the draft paper	JS-F	
10.	ProdSpec Radio Services (S-123)		
10.1	Presentation of content	AR	1-10.1
10.2	Discussion on the draft paper	JS-F	
12	Additional light information		
12.1	Presentation and discussion of further improvements of the LoL data model	AR; JS-F	1-12.1
12.2	Discussion on how to proceed, Contact to the relevant IALA committee (see also doc NIPWG 1-16.3)	JS-F	
21	S-100 related information		
21.1	Status of the development progress of the S-10x simple viewer	YB	1-21.1 1-5.1
21.2	Proposal of a new S-10x ProdSpec on Catalogue of Nautical Charts and Publications	YB	1-21.2
21.3	Use of approximate areas for nautical information specifications	RM	1-21.3
21.4	Discussion on the papers	JS-F	
	Minutes notes of the day's items		

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23

	Thursday, 2 July		
19	IMO's e-navigation MSP Discussion		
	Presentation of the IALA work	JE	
	Discussion of the development coordination	JS-F	
20	Update on S-124 development		
20.1	Presentation of the current status of the S-124 (Navigational warnings) development	YF	1-20.1
20.2	Discussion of the development coordination	JS-F	
16	IMO's e-navigation strategy		
16.2	Discussion activities to harmonize MSI data model between Jeppesen, KRISO and DMA	SO	1-16.2
16.1	Discussion of the current developments and the NIPWG position	JS-F	1-16.1
16.3	IALA Recommendation on the Use of Navigation Unique Identifiers	JS-F/JE	1-16.3
23	e-MIO project of the EAHC (follow up)		
23.1	Presentation of the ongoing work	YB	1-23.1
23.2	Discussion of the paper	JS-F	
	Review of the forenoon session's minutes		
6	Tagging of Coast Pilot Features to the U.S. raster charts and the comparison of various US Marine databases		
6.1	Presentation on the challenges, the current status and the prospects	TL	1-6.1
6.3	Coast Pilot Data Structure	BS	1-6.3
6.2	Presentation and status of the NGA geotagging project	MK	1-6.2
6.4	Requirement for localised text information	YF	
7	Test Data set portrayal and harmonisation		
7.1	Presentation of the results by the sub-wg	MK	1-7.1 and Annexes A+B
7.2	Discussion on how to proceed	JS-F	
18	Portrayal of data quality indicators for bathymetric data		
18.1	Presentation of the proposal	JS-F	1-18.1
18.2	Discussion of the draft paper and on how to proceed	JS-F	
	Minutes notes of the day's items		

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	Friday, 3 July		
28	ToR review (see also SNPWG 18-21.1 and 18-21.1 Annex)	MK; JS-F	1-28 and Annexes A+B
29	Work plan for the NIPWG (reflecting HSSC6 outcome)	JS-F	
30	Any other business

(Review of draft minutes),

(Appointment as the NIPWG Point of Contact to the Hydrographic Dictionary WG),

(Discussion of the Mexican INF Paper)

(more) | JS-F | |
| | | | |
| 31 | Date and place of next meeting | JS-F | |

AR	Alain Rouault (FR)
BS	Briana Sullivan (U.S./UNH)
GB	Gilles Bessero (IHB)
EH	Edward Hosken (UK)
JE	Jon Leon Ervik, (NO, IALA rep)
JS-F	Jens Schröder-Fürstenberg (GE)
MK	Mike Kushla (U.S./NGA)
RL	Ricardo Lopez (MX)
RM	Raphael Malyankar (Jeppesen Marine)
SO	Sewoong Oh (ROK)
TP	Tony Pharaoh (IHB)
TL	Thomas Loeper (U.S./NOAA)
YB	Yong Baek (ROK)
YF	Yves le Franc (FR)

Work sessions:
Monday - Thursday: AM and PM
Friday: AM

Session AM1   0900 – 1030
Session AM2   1045 – 1200
Session PM1   1330 – 1500
Session PM2   1515 – 1630

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

Annex C: List of Attendees

NAUTICAL INFORMATION PROVISIONS
WORKING GROUP (NIPWG)

[A Working Group of the Hydrographic Services and Standards Committee (HSSC)]
Monaco, 29 June – 3 July 2015

List of Confirmed Participants

IHO MS	Name	email
Finland	Stefan Engström	Stefan.Engstrom@liikennevirasto.fi
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Japan (JHOD)	Kazufumi Matsumoto	ico@jodc.go.jp
ROK (KHOA)	Yong Baek	ybaek@korea.kr
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Mexico	David Jeronimo GUADARRAMA MENDOZA	asunext.hidro@gmail.com
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USA (NGA)	Mike Kushla	Michael.S.Kushla@nga.mil
IHB	Gilles Bessero	dtech@iho.int
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Technical Experts

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NOVACO	Yiorgos Palierakis	yiorgos.palierakis@novaco.co.uk
ROK (KRISO)	Sewoong Oh	osw@kriso.re.kr
UNH	Briana Sullivan	briana@ccom.unh.edu

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Annex D: Updated NIPWG Work Plan

NIPWG WORK PLAN 2016-17

NIPWG 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 2.3.2.7)
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 Tasks 2.3.1 and 2.6.1)

Work items

Work item[1]	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			S-12	In close liaison with IALA; see J.4

Work item[1]	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.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							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		2015	Permanent	O	Chair/Sec		In close liaison with the S-100 WG
F.3	Model the NP data where required.	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related. To be included in NPUBS domain of the FCD Register
F.4	Review of objects and attributes	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related.
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

Work item[1]	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.6	Propose amendments to AtoN domain of the FCD Register	H	Next meeting	2014	2017	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								Liaise with WWNWS-Sub committee
F.8.1.1	For Radio Services	H		2012		O	Chair/Sec	S-123	
F.8.1.2	For Navigational services	H		2013		O	Chair/Sec	S-125	
F.8.1.3	For Traffic management	H		2013		O	Chair/Sec	S-127	
F.8.1.3.1	For Marine Protected Areas	H		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	12/2014	2013	2016	O	Chair/Sec	S-126	

Work item[1]	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
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	2014	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	2015	C	Chair/Sec	S-127	
G.1.4	For Physical environment	H		2013	2015	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
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

Work item[1]	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
G.3.2	Develop guidelines showing how navigation information received by communications equipment can be displayed in a harmonised 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)
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	O	Chair/Sec NIPWG	M-3	A review is scheduled due to 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

Work item[1]	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
J.1	Liaise with the ENCWG	H			Permanent	O	Chair/Sec NIPWG		
J.2	Liaise with the S-100WG	H			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required
J.2.1	Draft Data Capture 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	2016	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 Specification								
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	2017	O	Chair/Sec	S-122	
J.2.3.5	For Physical environment	H		-	-	P	Chair/Sec	S-126	

Work item[1]	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
J.3	Liaise with other HSSC WG	H		2004	Permanent	O	Chair/Sec NIPWG		Including DPSWG, DQWG, TWCWG, etc.
J.4	Liaise with IALA e-Nav Committee	H		2013	Permanent	O	Chair/Sec NIPWG		As advised by HSSC4 (in liaison with S-100WG).
J.5	Liaise with other international bodies which contributes to nautical information	H		2015	Permanent	O	Chair/Sec NIPWG		
J.5.1	International Harbour Master Association	H		2015	Permanent	O	Chair/Sec NIPWG		Considering AVANTI development

Meetings (Task K)

Date	Location	Activity
7-11 Apr 2014	Rostock, Germany	SNPWG 17
1-4 Dec 2014	Cadiz, Spain	SNPWG 18
29 June – 3 July 2015	IHB, Monaco	NIPWG-1
21-25 March 2016	IHB, Monaco (Tentatively Cambridge. UK)	NIPWG-2
2017	TBD	NIPWG-3

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