Report of the Nautical Information Provision WG (NIPWG)

Submitted by:	Jens SCHRÖDER-FÜRSTENBERG, GE
Related Documents:	Minutes of the 2nd NIPWG meeting (21–24 March 2016), Monaco http://www.iho.int/mtg_docs/com_wg/HSSC/HSSC7/LIST%20OF%20ACTIONS%20FROM%20HSSC7_20160725_export.pdf
Related Projects:	

Chair:	Jens SCHRÖDER-FÜRSTENBERG, BSH, GE
Vice-Chair:	Edward Hosken, UKHO, UK
Secretary (acting):	Tom LOEPER, NOAA, U.S.
Member States:	Argentina, Brazil, Denmark, Estonia, Finland, France, Germany, Japan, India, Italy, Republic of Korea, Netherlands, Norway, Poland, Russian Federation, South Africa, Spain, Sweden, UK, USA, (and IHB),
Expert Contributor Organisations:	CARIS, Interschalt, C-Map, KRISO, NOVACO, Snowflake, University of New Hampshire, TRANSAS, Anthropocene Institute

Meetings Held During Reporting Period
NIPWG2, 21–24 March 2016, Monaco

Next Planned Meeting
NIPWG3, 5–9 December 2016, Busan, Republic of Korea
Workshop on Visualisation of Nautical Information, 22 -26 May 2017, University of New Hampshire, USA
NIPWG4, September 2017, Italy (place and date tbd)

Work Programme according to the HSSC Work Plan 2016-2017 for NIPWG and associated HSSC action items

Data Modeling (NIPWG Work Plan 2016-2017; F3)
A comprehensive catalogue of attributable features which are able to classify the whole range of text based nautical information has been created.

This catalogue as a collection of features and attributes is now ready to be listed within the Geospatial Information (GI) Registry. Extensions and modifications of the data model will be considered by the WG if the Product Specifications development requires this.

The data harmonisation with the S-101 Data Classification and Encoding Guide (DCEG) is making good progress and is near completion.

The most effective way of the data model development and the storage and the insertion of the data model components into the registry have been discussed between both the S-100WG and NIPWG.

The IHO Geospatial Information (GI) Registry, GI Registers (NIPWG Work Plan 2016-2017; F5 & F7), (HSSC7/07) This work has been completed. The merge of the HYDRO and NPUB registers is a result of that work. The need of a joint domain which collects data model components which might be of interest for various stakeholders is, from the NIPWG perspective, no longer necessary.

The NIPWG contributed to the development of the revised IHO on-line GI Registry with associated GI Registers by conducting various tests. The test results have been considered by the S-100WG which is responsible for the registry maintainance. One consequence of the tests, the need of a common register for nautical chart related and sailing directions related themes, has been identified. It was decided to merge the current two registers, HYDRO and NPUB, into one HYDRO register.
The data model in this HYDRO register will host the full set of all possible attributes associated to a feature.The various product specifications may use either the full set or only parts of it to suit the requirement of the particular product specification.

Unfortunately, the available registry solution is neither providing the "sandbox" nor the bulk loading functions are functioning as required (see HSSC5-05.4A).

For this reason, NIPWG progress in populating elements to the redefined HYDRO register is limited because of the missing bulk loading function. However, and knowing that the incorporation of new elements is a step-by-step operation, the NIPWG is registering the S-122 data model components into the HYDRO register.

Action item HSSC7/07 has been completed.

Development of the Marine Protected Area (MPA) Product Specification (S-122) (NIPWG Work Plan 2016-2017; F.8.1.3.1)
Progress has been made with the drafting of different components of the MPA ProdSpec:
the ProdSpec core document is stable and aligns to the latest S-100 Edition. The portrayal section remains the missing element.

- the application schema has been revised according to the outcome of the harmonisation between the S-101 and S-122 data model.
- the Feature Catalogue is stable and will be updated if the application schema is finalised. KRISO (Republic of Korea) is assisting NIPWG in building the MPA Feature Catalogue (FC) with a special Feature Catalogue Builder (FCB) outside the IHO GI Registry.
- the Data Classification and Encoding Guide (DCEG) is under the WG review. The completion of the data part depends on the progress of the S-101 and S-122 data model harmonisation. Considering that the MPA Product Specification is the first in relation to nautical publications, the general part of the DCEG will be provided in a way that enables encoders to convert the publication information into the data model based information very easily.

The S-122 test data samples are stable and one test data sample is maintained according to the latest developments.

Development of the Radio Services Product Specification (S-123) (NIPWG Work Plan 2016-2017; F.8.1.1)
As a result of the test data sample review, shore based AIS transmission information will be added. An extension of the data model and the application scheme is under consideration.

Development of the Navigational Services Product Specification (S-125) (NIPWG Work Plan 2016-2017; F.8.1.2)
Discussions to provide a test data sample show that the purpose and the intended deliverables need to be specified. The team is determining the expectations and is investigating what can be realisticaly delivered.

Development of the Physical Environment Product Specification (S-126) (NIPWG Work Plan 2016-2017; F.8.1.4)
The test data sample experienced enhancement in content and is considered as ready for use.

Traffic Management Product Specification (S-127) (NIPWG Work Plan 2016-2017; F.8.1.3)
The test data sample is stable and the initial mapping of the content to the data model has been conducted.

Development of the NPUB Product Specifications other than those listed above
The production schedules for the data samples for Marine Service, Harbour Infrastructure and Social/Political are undetermined for the time being. No S-10x numbers have been assigned to them yet. The NIPWG will be assisted by the International Harbour Master Association to identify data model componenents suitable for harbour information provision.

Product Specification "Catalogue of Nautical Products" (S-128) (NIPWG Work Plan 2016-2017; F.8.1.5)
This product specification is under development by KHOA. The basic work was assigned to a Korean company. The meta data set will consider other IHO Specifications such as S-63. In addition and related to (NIPWG Work Plan 2016-2017; section G), HSSC7/35, the development work will be harmonised with the IALA and IMO e-nav activities to accommodate the future MSP development.

Visualisation of Nautical Information (HSSC7/19)
That action item and the best way of initiation were discussed during the last NIPWG meeting. NIPWG will initiate a workshop to discuss options of nautical information portrayal in combination with S-101 next generation ENC and to discuss the options for portrayal of nautical information onboard. Stakeholders, such as Industry and members of the NCWG, will be invited to this workshop. The outcome of this workshop will be forwarded to NCWG for further consideration. The workshop is planned at the University of New Hampshire in May 2017.

Maintenance of IHO Standards and Miscellaneous Publications (NIPWG Work Plan 2016-2017; D.1, E, I.1)
HSSC assigned the maintenance responsibility for the following IHO standards to NIPWG:

- S-12 (Standardization of List of Lights and Fog Signals),
- S-49 (Standardization of Mariners' Routeing Guide),
- M-3 (Resolutions of the IHO) IHO Programme2 Section 2.4.

No indication for the need of active maintainance have been received so far.

The NIPWG stands ready to contribute to the following IHO standards on request or if considered necessary by the designated Working Groups:

- S-100 (IHO Universal Hydrographic Data Model),
- S-32 (Hydrographic Dictionary),
- S-64 (IHO Test Data Sets for ECDIS) Similar to chart content as part of the ENC test data, the NIPWG plans to integrate NP3-type nautical publication content into the test data sets.

NPUB and IMO e-Nav activities relating to Martime Service Portfolios (MSP) (NIPWG Work Plan 2016-2017; section G), HSSC7/35 NIPWG to coordinate the contribution of the IHO to the development of guidelines for the harmonized display of navigation information and to the preparation of the output related to the development and implementation of maritime service portfolios (MSPs), notably in liaison with the WWNWS-SC.
Discussions are ongoing to suggest a merge of MSP 11 (nautical chart service), MSP 12 (nautical publications service) and the relevant components of MSP 15 (real-time hydrographic and environmental

information services) and MSP 5 (Maritime Safety Information (MSI) service) into one MSP named "Hydrographic Services".
The proposed joint MSP would consider the practice in data gathering and provision which are relevant for hydrography. Considering that the NIPWG members don't have sufficient expertise in all fields, it is intended to seek support from the affected HSSC WGs..
During the recent IMO Maritime Safety Committee meeting (MSC96), further steps in MSP development were discussed. Considering that there is a need of clarification on how to provide information and on how a MSP should be structured and which level of detail should be delivered, the IMO put an action item on their post-biennial agenda (2018-2019) to provide "Guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)".
Given that time line, the basic components of the MSP "Hydrographic Services" should be developed and ready to be drafted in the format and structure defined by the IMO in 2019/2020.
The NIPWG will contact the relevant HSSC WGs in that regard in 2017 planning to complete the work in 2019.

The NIPWG was involved in the IHO response on IMO Module F (Integrated Navigation Systems–Display of Information via Communication Equipment) development. Furthermore, the NIPWG is part of the IMO correspondence group on developing "Guideline for the harmonized display of navigation information received via communications equipment".
The responsibility of the development of these guidelines is assigned to IMO. The NIPWG will invite other HSSC WGs to contribute to specific topics if appropriate and if considered necessary.

Various prototype services are likely to be developed within e-navigation projects such as EfficienSea2. NIPWG will monitor such projects to maintain awareness of issues and potential significance to the MSP development.

Progress on HSSC Action Items not assigned to the Work plan

Follow up HSSC1/8. Develop Marine Environment Protection Programme (MEPP) based on S-100.

The status of the Marine Protected Area Product Specification (S-122) development has been described at the Work Programme according to the HSSC Work Plan 2016-2017 for NIPWG section.
A data model which will be used as a basis of the data quality section for all nautical product specifications has been developed. This data model will be discussed during the next NIPWG meeting in December 2016.
Thus, an estimated completion date for the S-122 cannot be determined for the time being. Considering the importance of the S-101 completion and considering the intended use of the S-101 as the underlaying ENC, and further considering the intended interoperability between two or more product specifications, the delivery date of the S-122 (MPA) product specification should not be expected earlier than the delivery date of the S-101 (ENC) product specification.

It is intended to integrate the Marine Protected Area Product Specification (S-122) into the Traffic Management Product Specification (S-127) in the future.

MPA sample test data for the U.S. Hawaiian areas are being used by other HSSC WGs for testing purposes and they are also basis for visualisation discussions. The current web based provision can be accessed at: https://mpa.protectedseas.net/north-america/hawaii

HSSC7/20 For S-122, and assuming that sufficient information is available, NIPWG, in liaison with NCWG and S-100WG, to make use of test beds opportunities (e-navigation projects as appropriate).
That action item is still in planning mode. Sufficient information, especial the underlaying ENC and the interoperability function, is not available for the time being.

HSSC7/36 S-100WG to prepare, in liaison with NIPWG, the IHB and the HSSC Chair, a submission on the contribution of the S-100 framework to the harmonized display of navigation information and the impact on existing performance standards for consideration by NCSR 2 (deadline: 25 Dec 2015).
This action item was completed in time. The paper was delivered to the NCSR2 meeting as IHO input.

HSSC7/40 NIPWG and NCWG to consider improvements to current IHO specifications or other actions which could facilitate the implementation of the provisions of the Polar Code related to charting issues (Part I-B, Additional Guidance to Chapter 9 (Safety of Navigation) refers).
This action item has been completed. An intensive review of the Polar Code has been conducted by NGA and by NOAA. A cross-check is in progress to identify possible gaps between the polar code statements and the information provided in the various NPUB test sample data. Text parts will be added to the test sample data if required as a result of the cross-check.

HSSC7/41 NIPWG and S-100WG to consider referring the issue of Unique Identifiers to the IMO-IHO Harmonization Group on Data Modelling and report to HSSC-8 (see Action HSSC7/42).
This action item has been completed. The IMO-IHO Harmonization Group on Data Modelling has not been set up yet. However, the IALA Unique Identifier approach by introduction Marine Resource Names will be adapted by the S-100WG and will be implemented into S-100 Edition 3.0.

Follow up HSSC4/26. Prepare a master plan for developing electronic nautical publications, with priority assigned to defining data models and product contents in order to coordinate the scheduling of deliverables with the implementation of S-101.
The sequence and the road map details of the development of the NPUB Product Specifications depend on specific contributions by the DQWG and by the NCWG.
The following road map gives general orientation for the different Product Specification components for Radio Services (S-123):

	Start	End	Duration in days	
(S-123) Radio Services	01.01.2013	31.12.2016	1440	
NP1 Data sample	01.01.2013	06.06.2013	155	stable
ProdSpec				
Application Schema	01.07.2013	14.02.2014	43	Draft version
Feature Catalogue	01.10.2013	Open		Dependent on FCB software availability
Portrayal spec		Open		to develop, dependent on NCWG contribution
Portrayal catalogue		Open		to develop, dependent on NCWG contribution
Data quality		Completed		Solution to be discussed at NIPWG3

DCEG	01.05.2014	Open		Pending on S-101 DCEG progress
Test Bed				not yet defined

The test sample data sets for the following Product Specifications are on a stable status:
(S-126) Physical Environment, and
(S-127) Traffic Management.

The development of the test sample data for (S-125) Navigational Services has been discussed by NIPWG2 and is ongoing. The next review of the test sample data is scheduled for NIPWG3 in December 2016.

The development of the S-128 "Catalogue of Nautical Products" has been awarded by KHOA to a Korean company and is ongoing. NIPWG will support the development on request.

The road map for further steps of the development after the completion of test data sets for the S–125, S-126, S-127 and S-128 Product Specifications cannot be estimated at this stage. Future progress will be largely influenced by the experiences to be gained drafting the MPA and Radio Services Product Specifications.

Any Other Items of Note

Harmonised presentation of cable protection information

Based on action item HSSC7/44, the NIPWG contributed to the draft MoU between the ICPC (International Cable Protection Committee) and the IHO. The proposed amendments have been recognised and consequently, after the signing of the MoU, the WG assigned the work to develop a text block for the protection of undersea cables to a sub-team lead by NGA. This text block is currently in the drafting phase and will be discussed at NIPWG3. It is intended to present this harmonised text block in nautical publications by all HOs which are providing nautical publications.

Development of a data model for areas with uncertain spatial extent

The provision of information for areas with uncertain spatial extent was a long term ongoing working item between the DQWG and NIPWG. As an outcome of the recent DQWG meeting, the NIPWG was invited to investigate ways to provide this information solely based on the employment of the S-100 data model. That work was done by a small project team and a solution was developed which could become a one-fits-all solution for the provision of fuzzy area information.

The solution proposed is based on the following criteria:

- possible to portray the data on the screen, as well as show pick reports, in ways that mariners can understand, without much training and without requiring significant attention during route monitoring;
- the model must be acceptable for cartographers and encoders to use, even in the absence of statistical or scientific basis for deciding the likelihood at any specific point;
- it should be consistent with current approaches to S-100 portrayal processing and lend itself to efficient portrayal processing.

Upon consent , the solution will become an element of the Data Quality section of each nautical publication product specification.

Product specification for regulatory information

In addition to the information which is provided by charts and nautical publications, mariners have to consider significant regulatory information such as

- MARPOL
- Polar Code
- Load Line

This information is normally issued by international or intergovernmental organisations such as IMO, BIMCO and others, and is usually copied in nautical publications for mariner's convenience.

The possible future provision of this information within the S-100 framework was discussed at NIPWG2. The WG is of the opinion that this type of information cannot be inserted into the current product specifications which are under development.

Therefore, the introduction of a new product specification and the assignment of the development process to one HSSC WG is requested.

Lack of resources

Although the NIPWG recognised an increase in meeting participation and a better representation of industry during the meetings, the lack of resources which was mentioned at the last HSSC report remains. Especially, the lack of technical knowledge becomes apparent as more technical details need to be added to a Product Specification draft. The current composition of the working group (mainly mariners) is not able to proceed with the technical development without external support.

The NIPWG is still proposing the establishment of Project Teams to undertake the completion of a product specification once the NIPWG has developed the product specifications to a certain level of maturity as the preferable solution.

The recent withdrawal of the C-Map involvement in IHO standardisation working groups and the consequent loss of two key industrial members are causing serious problems for the NIPWG. The WG has

real concerns that work cannot be continued with the expected progress without being contracted out. Generally, the product specification development will lose momentum if we don't get sufficient additional support by either Industry/HO members or third parties.
For the remaining technical issues of the S-122 (MPA) and S-123 (Radio Services) we cannot achieve progress without dedicated experts to deliver the technical work.
Two optional solutions are under consideration:

- the reassignment during the next meeting of the technical work to other industry or HO WG members who are experienced in data modelling and software engineering.
- seeking Member State or Industry financial support to fund contracts to deliver well defined deliverables (S-122 and/or S-123 product specification with all necessary components).

Both proposed solutions require thorough examination of the current WG engagement by both HO and Industry members.

e-Nav test bed is using NPUB features and attributes
The e-Nav test bed initiated by the Republic of Korea is using the MPA data model for their purposes.

Conclusions and Recommended Actions

- The NIPWG activities were focussed
  - on making progress with the NP3-type NPUB Product Specifications development,
  - on the coordination of the IHO contributions to the IMO e-nav strategy.
- The given schedules depend on the development progress of other HSSC WGs and Project Teams including, but not limited to NCWG and S100WG.
- The initiation of the visualisation workshop is seen as a prerequisite for the development of the S-122 portrayal section.

Action Required of HSSC
HSSC8 is invited to endorse:

1. the continued activity of NIPWG.
2. the need of a product specification for regulatory information
3. assuming the need will be endorsed, to assign the development of the product specification for regulatory information to a HSSC Working Group

HSSC8 is further invited to confirm:

1. the amended development schedule for
   a. the Marine Protected Area Product Specification (S-122).
   b. the Radio Service Product Specification (S-123).

HSSC8 is further invited to note this report and to endorse:

1. the continuance of the 2016-17 Work Plan.

ANNEX A to the NIPWG Report

Membership of NIPWG

IHO MS	**Name**	**email**
Argentina	Alfredo Fontán Chavez	shn_orgint@hidro.gov.ar
Brazil	Rogério Magalhães de Souza	souza@chm.mar.mil.br
Brazil	Ana Emília de Souza Silva	ana.silva@chm.mar.mil.br
Denmark	Pelle Aagaard	petar@gst.dk
Estonia	Tonis Siilanarusk	tonis@vta.ee
Finland	Stefan Engström	Stefan.Engstrom@liikennevirasto.fi
France	Alain Rouault	alain.rouault@shom.fr
Germany	Jens Schroeder-Fuerstenberg	jens.schroeder-fuerstenberg@bsh.de
Japan (JHOD)	Tomoki Hayakawa	ico@jodc.go.jp
India	Shyam Singh Chauhan	inho-navy@nic.in
Italy	Ludovico Sturla	ludovico_sturla@marina.difesa.it
Korea (Republic of)(KHOA)	Inyoung Park	piyocean@korea.kr
Netherlands	Wilfred den Toom	WF.d.Toom@mindef.nl
Norway (NCA)	Jon Leon Ervik	jon.leon.ervik@kystverket.no
Norway (NHS)	Olav Haugen	Olav.Haugen@statkart.no
Poland	Radoslaw Magierek	r.magierek@mw.mil.pl
Russian Federation	Igor Bonakov	unio_main@mil.ru
South Africa	Alfons Vancraeynest	hydrosan@iafrica.com
Spain	Alejandro Herrero Pita	ihmesp@fn.mde.es
Sweden	Malin Liljenborg	Malin.Liljenborg@sjofartsverket.se
UK	Edward Hosken	Edward.Hosken@UKHO.gov.uk
USA (NOAA)	Thomas Loeper	Thomas.Loeper@noaa.gov
USA (NGA)	Mike Kushla	Michael.S.Kushla@nga.mil
USA (NGA)	Jason Strom	Jason.D.Strom@nga.mil
USA (Coast Guard)	John Stone	John.M.Stone@uscg.mil
USA (US Army Corps of Engineers)	Brian Tetreault	Brian.J.Tetreault@usace.army.mil
IHB	Yves Guillam	adcs@iho.int
Technical Experts	**Name**	**email**
Anthropocene Institute	Virgil Zetterlind	virgil@anthinst.org
CARIS	Jorge Sánchez Hernández	jorge.sanchez@caris.nl
CARIS	Suresh Jeyaverasingam	suresh.jeyaverasingam@caris.com
	Eivind Mong	eivind@mail4mong.name
CIRM	Michael Bergmann	michael.Bergmann@bermann-marine.com
	Raphael Malyankar	rmm.email@gmail.com
IHMA	Ben van Scherpenzeel	BRJ.Scherpenzeel@portofrotterdam.com
Interschalt	Michael Neumann	michael.neumann@interschalt.de
KRISO	Sewoong OH	osw@kriso.re.kr
NOVACO	Yiorgos Palierakis	yiorgos.palierakis@novaco.co.uk
Snowflake	Alexis Brooker	alex.brooker@snowflakesoftware.com

TRANSAS	Konstantin Ivanaov	Konstantin.Ivanov@transas.com
UNH	Briana Sullivan	briana@ccom.unh.edu

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

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 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.
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~~2018	O	Chair/Sec	S-125	To improve the current definitions and attribute values at the FCD register
F.7	Populate the NPUBS do-main 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	Next NIPWG meet-ing	2012		O	Chair/Sec	S-123	Liaise with WWNWS-Sub committee

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	~~2016~~	O	Chair/Sec	S-126	
F.8.1.5	Catalogue of nautical products	H	Next NIPWG meeting	2016		O	Chair/Sec	S-128	

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 Contribute to test bed strategy.
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~~ Monitor and contribute to the development of IMO guidelines showing how navigation information received by communications equipment can be displayed in a harmonised way and what equipment	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	~~O~~P	Chair/Sec NIPWG	M-3	A review is ~~scheduled~~ required for the ~~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 and endorsed by HSSC.

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 and endorsed by HSSC.
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~~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 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	
J.2.3.6	For Digital Catalogue of Nautical ~~Publications~~ Products	H		2016	2018	P	Chair/Sec	S-128	

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	IRCC								

J.4.1	WWNWS							S-124	Monitor developments of S-124 correspondence group
J.5	Liaise with other inter-national 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 develop-ment
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
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	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 (GE) Email: jens.schroeder-fuerstenberg@bsh.de
Vice Chair: Edward Hosken (UK) Email: Edward.Hosken@UKHO.gov.uk
Secretary: Tom Loeper (US) Email: thomas.loeper@noaa.gov