NIPWG report and recommendations

Submitted by:	NIPWG
Related Documents:	Minutes of the various VTC meetings
Related Projects:	S-100 product specifications

Chair:	Eivind Mong, CANADIAN COAST GUARD, CA
Vice-Chair:	Stefan Engström, TRAFICOM, FI
Secretary (acting):	Laura Hall-King, UKHO, U.K.
Member States:	Argentina, Brazil, Canada, 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:	Anthropocene Institute, CARIS, CIRM, EEC, IHMA; IIC, KRISO, NV Chats Germany, NOVACO, NTOU, University of New Hampshire, Portolan Sciences,

Meetings Held During Reporting Period (Work Plan section K)
NIPWG VTC, held as multi-sessional virtual meetings in August and September 2021
NIPWG VTC held as working programme update in March 2022

Next Planned Meetings
NIPWG VTC, multi-sessional virtual meetings in June and December 2022
NIPWG9 in Niteroi, Brazil in September 2022

Work Programme according to the HSSC Work Plan 2020-2021 for NIPWG and associated HSSC action items

Current work is being conducted in accordance with the HSSC Work Plan. COVID has had an impact on the progress of the work.

Action Item HSSC13/35 is started with Canadian Coast Guard surveying navigators within its fleet for views on how NPUBs should work in an ECDIS. This work is ongoing and there are dependencies S-12x portrayal, on S-100 Edition 5.0.0 metadata and S-98. Work has therefore not progressed as far as anticipated and additional time is needed to complete the action item.

Action Item HSSC13/36 is completed and details provided in the S-131 section of the report.

Action Item HSSC13/37 is a permanent action item and therefore ongoing; reminders were sent to relevant working groups, feedback has been received from TWCWG regarding MS 15;

Action Item HSSC13/38 is a permanent action item and therefore ongoing; work of the EGDH is being monitored with help of working group participants.

Actions HSSC13/40 and HSSC13/41 are in progress with dependencies on the discussions with IALA on S-124, S-125 and S-201 interaction, as well as S-128 and S-100 Edition 5.0.0.

Product Specifications development progress

S-122 (Marine Protected Area) and S-123 (Radio Services) *(Work Plan section F)*
During the work period few new comments have been made to the S-122 Product Specification. NIPWG has been informed that OGC has initiated an MSDI project focused on Marine Protected Areas. As this project evolves, additional comments are expected. Moreover, the anticipated edition 5.0.0 of S-100 has kept any work on the product specification on hold.

Significantly more comments have been received for S-123 due to test data creation by Canada. A Task Group, led by Ms. Bridget Gagné of Canadian Coast Guard, has been formed to review the comments and propose actions for how to adjudicate these. Proposals are being drafted with S-100 Edition 5 in mind.

Both Product Specifications need revision in in light of S-100 Edition 5.0.0. Moreover, portrayal is needed to ready the product specifications for ECDIS. NIPWG is soliciting input for how portrayal may best be created. As noted by HSSC13, some of the work need to be contracted as NIPWG does not have the experience to make the improvements on their own. With S-100 Edition 5.0.0. nearing completion, only the portrayal decisions are outstanding before a proposal for funding will be submitted by NIPWG.

S-125 (Navigational Services) *(Work Plan section F, J)*
The S-125 development will be based on the S-201 product specifaction and will be done by IALA on behalf of the NIPWG. IALA has presented an early draft version of the product specfication and elaborated that S-125 will be a subset of S-201 focusing on the navigational function of Aids to Navigation (AtoN) and their status. S-125 is being developed as a digital list of AtoNs with near real time data. The products will include data about temporary change, proposed change, advanced notice of change and discrepancies.
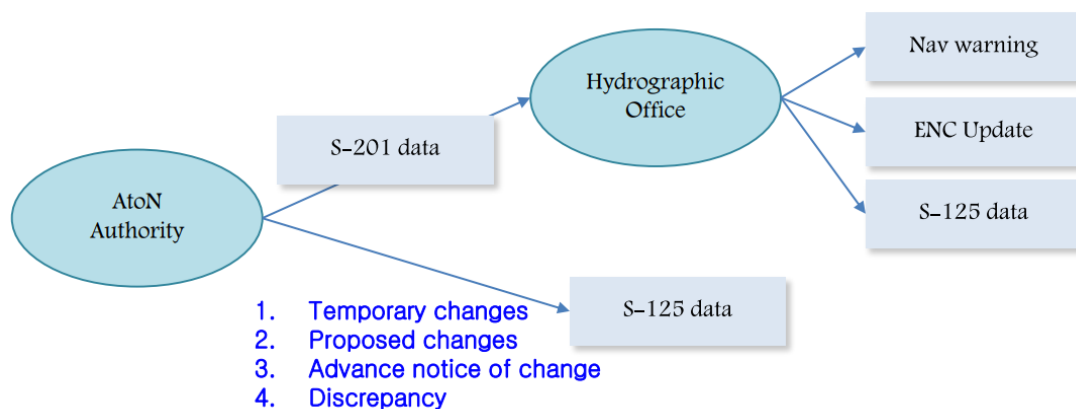

Figure 1 - Anticipated options for AtoN information flow from IALA ARM15 discussions

IALA is also developing a technical service description for S-125 services in the context of e-Navigation. A high level S-125 Marine Navigational Services Product Specification – Vision Outline is under development by IALA in response to NIPWG feedback to the original vision outline. As this work is ongoing and is an important component in describing how S-201, S-124 and S-125 will work together, work on action HSSC13/40 has not progressed as far as anticipated and NIPWG need additional time to complete the action.

IALA ARM Committee and NIPWG both discussed the name of S-125 since there have been some concerns raised about the current name, Marine Navigational Service, being somewhat ambigious to the intent of the product specification. Especially it has been pointed out when considering data services like those envisioned under IMO Maritime Services. The discussions concluded with NIPWG recommending

the chair to seek HSSC approval to amend the name of S-125 to "Marine Aids to Navigation (AtoN)". NIPWG feels this name better communicate the intention behind and content of S-125.

S-126 (Physical Environment) *(Work Plan section F)*
The S-126 product specification is progressing with low priority. The work has started on the data model side and portrayal side. Some hydrographic offices have expressed more interest this development and a task group is being formed to progress the work with more vigour.

S-127 (Traffic Management) *(Work Plan section F)*
Several comments have been received following tests by several organizations. Additionally, Canada has announced full test data creation is nearing completion and this will generate numerous comments. Germany has created the first data set for a sample port. Production software is starting to become available with increasing support in familiar production tools and development of new ones. Portrayal is still lacking and NIPWG is soliciting input for how portrayal may best be created. Edition 5.0.0 of S-100 will also necessitate an update of the S-127 product specification and NIPWG will make a plan for how to move this forward. It is likely that some funding will be required to move this work forward.

S-128 (Catalogue of Nautical Products) *(Work Plan section F)*
After several rounds of review. the work on S-128 has come to a place where it is ready for Edition 1.0.0. NIPWG has submitted a proposal to declare the latest S-128 Product Specification package as Edition 1.0.0. This will enable testing to a more structured phase and focusing on establishing the stakeholder responsibilities towards S-128 services, in light of its role as a machine readable catalogue of available products to assess 'up-to-dateness' and fitness for use of the data holding in a navigation system.

S-131 (Marine Harbour Infrastructure) *(Work Plan section F)*
The Marine Harbour Infrastructure product specification development is progressing, although somewhat delayed due to dependencies on S-100 Edition 5. The work of compiling the draft product specification has been contracted out and the expected delivery is in Q3 of this year.

NIPWG has submitted a project proposal to the IHO S-100 Lab in Singapore for a project to provide a database to help facilitate the exchange of data from harbours to hydrographic offices. The project will receive financially support from Canada, in-kind support from the National Taiwan Ocean University, with added project management and software development, and NIPWG member subject matter expert support. The project proposal is conditionally approved to move onto the next phase.

Maintaining IHO Standards under NIPWG responsibility (Work Plan section D, E,)

Maintain Publication S-12 "Standardization of List of Lights and Fog Signals"
No requests to amend S-12 were raised in 2021. The content provided in S-12 is considered as appropriate and fit for purpose.

Amendments to M-3
The NIPWG did not receive requests on M-3 amendments in 2021.

Any Other Items of Note

IMO related work (Work Plan section G)

NIPWG continued the monitoring of the development of the IMO e-Navigation strategy and monitor EGDH discussions. S-131 development is being harmonized with the activities of the EGDH. Moreover, NIPWG continue to work with International Harbour Masters Association and others on a Guide for Nautical Data which is intended to act as guidance for ports wishing to manage and exchange data in closer compliance with IHO standards. The guide has been developed in an effort to improve the availability of navigational data for creation of berth to berth route plans in compliance with IMO Resolution A.893(21).

Conclusions and Recommended Actions
The NIPWG continue to focus on making progress with the S-100 compliant NPUB Product Specifications development and the related the development of test data sets for S-100 compliant NPUB Product Specifications. The IHO Standards that NIPWG is responsible for maintaining are regularly assessed for their continued appropriateness. NIPWG manages the coordination of the IHO contributions to the IMO e-nav strategy and the assessment of proportionate S-100 based products management.

Action required of HSSC
HSSC13 is invited to note this report and to endorse:
1. the activity of NIPWG;
2. the continuance of the revised 202-23 Work Plan as annexed.
3. Approved the name change for S-125

Annex A
Members List see
https://iho.int/uploads/user/Services%20and%20Standards/NIPWG/MISC/NIPWG_Members.pdf

Annex B - NIPWG WORK PLAN 2022-23

Tasks

D	Maintain Publication S-12 "Standardization of List of Lights and Fog Signals" (IHO Task 2.8.1)
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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 2.3)
G	Develop high level specifications for a maritime services as defined by IMO in the context of e-navigation covering the provision of hydrographic services to mariners in accordance with the IMO e-navigation strategy implementation plan (IHO Task 2.5.2)
H	Develop a test and implementation plan for the development of the maritime services as defined by IMO (IHO Task 2.5.2)
I	Maintain IHO Resolutions in M-3 relating to Nautical Publications as required (IHO Task 2.1)
J	Liaise with other HSSC WGs and other IHO and international bodies (IHO Task 2.1.8)
K	Conduct the 2022 and 2023 meetings of the NIPWG and its sub-group(s) and project team(s) (IHO Task 2.1)

Work items

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P – Planned O – Ongoing C – Completed S – Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
D.1	Monitor and assess proposals for amending S- 12	M	Next meeting	2014	Permanent	O		S-12	In close liaison with IALA; see J.5.1

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P – Planned O – Ongoing C – Completed S – Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
F.1	Assess the progress and perspectives of developing S-100 product specifications for NP data and propose the way forward for consideration by HSSC	H		2015	Permanent	O			To be considered in the context of the IMO e-navigation strategy implementation. NIPWG to consider establishing one or more project team(s) in liaison with S-100WG as required (see J.3), in particular to continue the development of Product Specifications currently assigned to the NIPWG.
F.2	Investigate the interaction between S-100 based Nautical Publication products and ENC in ECDIS	H	Next meeting	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 Hydro domain of the FCD Register.
F.4	Review of objects and attributes Propose amendments to HYDRO domain of the GI Registry	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related. Incorporate in GI Registry if appropriate.

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P – Planned O – Ongoing C – Completed S – Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
F.8.1	Develop S-1xx Nautical Information Product Specification								
F.8.1.2	For Marine Navigational Services	L	Next meeting	2013		O	Chair/Sec	S-125	In progress. IALA developing draft, NIPWG, see J.5.1
F.8.1.4	For Marine Physical Environment	L	Next meeting	2013	2026	O	Chair/Sec	S-126	Task group has been formed.
F.8.1.5	Catalog of nautical products	H	Next meeting	2016	2024	O	Chair/Sec	S-128	In progress. Development continued by KHOA.
F.8.1.6	Marine Harbour Infrastructure	H	Next meeting	2020	2023	O	Chair/Sec	S-131	Contracted; delivery date Q3/2022 dependent on S-100 Ed 5 progress.
F.8.2	Draft Data Classification and Encoding Guides								Document for NPs similar to: Use of the Object Catalog.
F.8.2.1	For Marine Navigational Services	L		-		O	Chair/Sec	S-125	In close liaison with IALA, see J.5.1.
F.8.2.2	For Physical Environment	L	Next meeting	2022	2026	O	Chair/Sec	S-126	Task group has been formed.
F.8.2.3	For Digital Catalogue of Nautical Product	H	Next meeting	2016	2024	O	Chair/Sec	S-128	In progress.
F.8.2.4	For Marine Harbour Infrastructure	H	Next meeting	2020	2023	O	Chair/Sec	S-131	

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P – Planned O – Ongoing C – Completed S – Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
F.8.3	Monitor and Maintain NIPWG Product Specification	H	Next meeting	2019		O	Chair/Sec		S-122, S-123 and S-127 under 2 year revision cycle. S-123 Task group formed to review comments received and recommend next steps.
G.1	Monitor the requirements for, and provision of, nautical information in e-navigation test-beds Produce NP1 sample data sets	M				O	Mike Kushla		According to the tasks assigned by HSSC4. Collection of information to be modelled.
G.3	Rules and guidelines for displaying nautical information in ECDIS and in maritime services as defined by IMO								
G.3.1	Develop basic display principles for NP data intended for use in ECDIS (NP3)	M		2008		O	Chair/Sec		Close co-operation with NCWG and S-100WG required. Interoperability Spec to be considered.

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P – Planned O – Ongoing C – Completed S – Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
G.3.2	Monitor and contribute to the development of IMO guidelines showing how navigation information received by communications equipment can be displayed in a harmonized way and what equipment functionality is necessary.	M		2015		O			e-nav IMO Strategy Implementation Plan, Task T13 (HSSC6-07.1A refers) Interim guidelines released by IMO. Continue to monitor development.
I.1	Maintain and extend resolutions in M-3 relating to Nautical Publications.	M	Next meeting	2012	Permanent	O	Chair/Sec NIPWG	M-3	A review is required due for the harmonization of M-3 information and potential Prod Specs content.
J.3	Liaise with other HSSC WG	M		2004	Permanent	O	Chair/Sec NIPWG		
J.3.1	Liaise with the NCWG	M			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required and endorsed by HSSC.
J.3.2	Liaise with the ENCWG	L			Permanent	O	Chair/Sec NIPWG		
J.3.3	Liaise with the S-100WG	H			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required and endorsed by HSSC.
J.4	Liaise with IRCC								
J.4.1	Liaise with WWNWS Sub-Committee							S-124	Monitor developments of S-124 Project Team.

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P – Planned O – Ongoing C – Completed S – Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
J.5	Liaise with other international bodies which contribute to nautical information	H		2015	Permanent	O	Chair/Sec NIPWG		
J.5.1	Liaise with IALA	H		2013	Permanent	O	Chair/Sec NIPWG		IALA ARM and ENAV Committees.
J.5.2	Liaise with International Harbor Masters' Association (IHMA)	M		2015	Permanent	O	Chair/Sec NIPWG		
J.5.3	Liaise with International Cable Protection Committee (ICPC)	L		2016	Permanent	O	Chair/Sec NIPWG		

Meetings (Task K)

Date	Location	Activity
Sept 2022	Niteroi, Brazil	NIPWG9
Sept 2023	Monaco	NIPWG10
Note: Additional VTC meetings held approximately 3 times per year.		

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Top three work items:
- Initiate prototype implementation of existing S-1xx products in an S-100 based environment to explore governance architecture and service delivery mechanism
- Develop S-1xx nautical information Product Specifications
- Coordinate the IHO contributions to the definition and harmonisation of maritime services as defined by IMO within the remit of IHO