

IHO Standardization of Nautical Publications Working Group (SNPWG)



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FINAL 14th Standardization of Nautical Publications Working Group (SNPWG) Meeting 13 - 17 February 2012 - IHB Monaco

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

1. Opening and administrative arrangements

1.1 Opening remarks

David Acland opened SNPWG14 by welcoming members. He continued by greeting Brazilian representative Lt Cdr Mauricio dos Santos Silva, attending SNPWG for the first time, and welcoming back Cdr Alejandro Herrero Pita of Spain.

Tony and David discussed meeting logistics. Some rearrangements of Agenda were made to accommodate Alain who needed to attend a meeting in Paris on Tuesday 14 February.

David introduced the subject of succession planning and the election of new SNPWG Chairmen. Tony will run the election, including the nomination process, and the elections will take place on Thursday.

2. Approval of Agenda

There is a new item to add to the agenda (Item 22 on Thursday). This is what is required in the test data set for MPAs. With a few minor adjustments the agenda was approved. The paragraph numbers below do not refer to the agenda Item numbers as several items were taken out of order.

3. Minutes of SNPWG 13

The Final Minutes of SNPWG 13 (18 July 2011) were approved as circulated.

3.1 Corrections

No corrections were proposed for the Minutes of SNPWG 13.

3.2 Review of Action Items from SNPWG 13

Action Item 11/1 - SNPWG

Complete.

Action Item 13/1 - SNPWG

Complete.

Action Item 12/6 - SNPWG

Complete.

Action Item 13/2 – Jens Schroder-Furstenberg

Information, multi-lingual (INFOML) – a complex attribute, to be deleted.

Action Item 13/3 – Jens Schroder-Furstenberg

Complete.

Action Item 13/4– Tony and Eivind

(Draft MPA Product Specification) Still ongoing.

Action Item 13/5 – David and Eivind

Complete.

Action Item 13/6 – David

Complete

4. Report on HSSC3 and run up to 18th IHC

David reported the discussion about restructuring the HSSC Working Groups. David said that he had spoken against the proposal that TSMAD should subsume DIPWG because we and others would now start to need independent access to DIPWG. He had also represented the views of others in the SNPWG that Big Working Weeks were not particularly productive. The paper was not approved but there was general agreement that the active and key members of working groups should meet regularly to co-ordinate work.

The work of the SNPWG to date was accepted and the HSSC gave approval to our work in the future.

David reported that he was grateful for the input from members about proposals for work items for in the next 5 years. The following suggestions were made to IHB:

2.10.1 Explore the process for the preparation of nautical publications in a digital format to the fullest extent possible using Marine Protected Areas.

2.10.2 Define the process for the creation of digital nautical publication products.

2.10.3 Liaise with IEC on ECDIS performance standard (IEC 61174) with the intention of including standards for the display and use of nautical information in ECDIS.

2.10.4 Extend the nautical publications data model.

2.10.5 Develop a “rule language” to extend S-100 with better models of government regulations and related information. This will allow the key parts of Regulations to be applied to the present route in an ECDIS or to influence selection of a future route.

2.10.6 Produce, or assist in the production of further product specifications as directed or considered useful to improve safety of navigation, such as the Digital Mariners’ Routeing Guide initiated by EU BLAST project.

2.10.7 Give consideration to the use of multi-media, beyond words, diagrams and photographs, in digital nautical publications such as but not limited to audio, video and 3D models.

2.10.8 Maintain a close liaison with IALA in particular with e-Navigation project.

2.10.9 Contribute to the development of a test ECS to consume, display and use the full range of nautical information. For this item a budget of €30,000 was requested.

2.10.10 Consider how the NPUBS model could allow for “just-in-time” ingestion and integration of volatile external data such as ice conditions or water level from a web service.

2.10.11 Examine S-101 support for multi-language datasets (more than English plus a “national language”) and review if sufficient for data derived from nautical publications.

2.10.12 Participate in GML 4.0 development, for instance to facilitate data updating.

5. TSMAD 23 Report

Eivind Mong discussed topics at the Data Capture and Encoding Guide drafting meeting at Wollongong, Australia and at TSMAD23 in Wellington, New Zealand. Among the items discussed were:

- Identification of possible overlaps between SNPWG and I-ENC data models on working days
- Draft proposal for text attributes and dates
- New layout of documents
- DCEG will be developed as a standalone document
- ENC-1 will expand, diverging from INT-1, and will probably also refer to S-4 (paper chart specification)
- Requested SNPWG to populate the IHO N-Pubs register to facilitate data model harmonization

Action Item 14/1 – David Acland

Talk to TSMAD chair to hasten the creation of a “sandbox function” on the IHO registry.

- Data Quality work by DQWG was presented. It is a bottom-up approach focusing on what is needed and then develop it from there
- S-101 impact study, SHOM will lead
- Scale Independent/Scale dependent function approved for testing phase of S-101
- S-58 (ENC test) review started
- S-101 Portrayal part nearing completion

- Route exchange in GML format was shown as use cases for XML encoding to be added to S-100
- Data set loading strategy discussed
- Scale range for data use developed. Datasets are no longer a 2-D surface but more of a 3-D cube
- Tony Pharaoh also added that there was discussion about how to distribute Feature Catalog and Portrayal Catalog changes so the proper data is read into the proper version – discussion of business rules of how to distribute and load versions
- David had a question of data size of the current S-101 feature catalogue? – Maybe about 3 or 4 MB which is around the size of an ENC

6. BLAST Report (Agenda Item 7)

6.1 BLAST Progress

Jens Schröder-Fürstenberg discussed results of Bringing Land and Sea Together (BLAST). Most of the work was conducted by Denmark, Germany and Norway. Jeppesen was also involved in software engineering.

Many organizations were involved including mapping agencies, universities, etc.

There were 4 work packages

WP3

- Edge matching features across boundaries
- Survey deconfliction
- Reference to a further EU Project focusing on Crowd sourcing was provided

WP4

- Demonstration of a web-based maritime data collection system
- Digital Mariners' Routeing Guide
- Discussion of inconsistencies between boundaries
- Collecting data from different sources. Mariners may submit important information but it needs to be complete and done over a secure system
- Data submitted by Denmark, Germany and Norway is also submitted differently so there was work to harmonize how data is reported by different countries for many different products
- The International Harbormasters Association was also interested in the result from BLAST
- Limitations of 2-D and 3-D navigation were discussed

WP5

- Design and develop a regional maritime traffic monitoring system beneficial to mariners

WP6

- Coastal Protection schemes specifically for 0 to 20 year, 20 to 50 year and 50 to 100 year timeframes
- Flood inundation models were discussed

WP4 Phase 3

Modeling issues included;

- Modeling of Graphics
- Text
- Modeling of large tables
- Special value for unknowns
- Location designation in the absence of coordinates
- Relationships between pilot boarding areas and ports

Transfer set schema

- The XML schema for transfer is derived from GML 3.2.1 and attempts to conform to S-S100
- The current version of schema

Modeling the information

- Used Pubs and ENC's
- Statistics were provided on features used by BSH, NHS and KMS. Most common were sea areas and regulations
- BSH time spent to collect Mapping information (73 hrs), assigning features to ENC FOI and record
- Mapping to a current ENC FOID may cause problems when the ENC is updated.
- ID (18 hrs) and assigning geometry to new and existing features (11 hrs)
- This was for 1 subchapter of BSH Sailing Directions – approximately 100 hrs for this very small sample
- Tony Pharaoh said specific feature identifiers will be discussed with IALA at a meeting next week. Tony also talked about a UUID which is a world wide feature identification. Different communities would be able use the Unique ID for different purposes.
- Making the data model is simple but applicability of sea area for different purposes is difficult. Traditionally, Masters read documents like SDs and determine what is applicable for their vessel.
- Difficulty capturing regulations? The KMS adds all regulations verbatim in the text but an interpretation will need to be added for the model. This will be a problem for other HO's as well.
- KMS also had a resource availability problem since only one person was involved
- There will be difficulties creating geometry for items like slipways, locks, etc. A comparison was made between a Google photograph and a chart
- Another problem was unreliabilities between ENC's and NPUB's for features like ship reporting systems and sea areas. Some items are on the chart but not in the NPUB or there are conflicts between them

Lessons Learned

- Cleanup of mapped information is a big part of the effort even when participants used spreadsheets
- A better front-end tool needs to be developed rather than using XML directly
- GML use is possible for encoding but it has its own set of requirements. Again, there are no good tools available
- Not enough knowledge about data model and the possibilities within it
- Better knowledge would have resulted in inclusion of more objects and attributes
- Not enough resources (time and people)

BLAST 1 has come to an end and results must be delivered to the EU
BLAST 2 is just a proposal at this point.

6.2 BLAST Progress - Digital Mariners' Routeing Guide

Jens Schröder-Fürstenberg reported BLAST results on the Digital Mariners' Routeing Guide (DMRG). The area that was modeled was off the German Bight. Some of the specific modeling features and categories that were discussed include Natural Conditions (NATCON), Ship Reporting Area (SHPRPT), Sea Area (SEAARE), Marine Farms. Everything in the portrayal of DMRG in a free software tool from Snowflake is the same color and the specific area must be clicked to activate or open it. This DMRG was part of the 100+ hours devoted by Jens in the collection phase. Raphael Malyankar did much of the coding and he should get much of the credit for the accomplishment of this task. We don't know what tool Raphael used but Eivind thought it might be a stylesheet to go from XML to GML. Tony said that this was the first time he saw test data coded in GML. He said this will be very important for MPA test data coding. He also said there was a shareware program called ShapeChange that could be used but it hasn't been properly tested just yet. In ShapeChange, you enter a particular geometry (which is already done in many products like ENCs) and then you complete the rest of the form to transfer to the GML. Jens opened one of the test files which contained tags as well as GML. The schema file was located at www.jeppesen.com/s100ds. Excellent work by Jens and his fellow collaborators!

7. Feature Catalog for MPA (Agenda Item 8)

David Acland reported results of work completed by Tom Richardson of the UKHO. This work used the MPA application schema to build the feature catalogue into a database. This was then extracted into XML. A style sheet was then used to produce a basic human readable Feature Catalogue. Comments have been made on v0.2 of this document but they have not been implemented in the database. Tom Richardson has reported that it should be possible for developers of feature catalogues to edit the feature catalogues in the database but no timescale has been given.

8. MPA Data Capture and Encoding Guide (Agenda Item 9)

Jens Schröder-Fürstenberg reviewed work completed in cooperation with Raphael Malyankar of Jeppesen on MPA Data Capture and Encoding Guide. At the moment it is in MS Word using the S-57 format. Eivind recommended that it would be ideal if the DCEG was also pulled from the database or XML but did not have any immediate suggestions at this point. It would take many weeks or months to build stylesheets to pull XML into a commonly used program. DCEGs are needed by the person encoding data into the product database.

9. MPA Product Specification – IHO Geospatial Standard for Marine Protected Areas (Agenda Item 6)

Tony Pharaoh provided a bit of background for the MPA Product Specification and the work the group has done to date. This is the main work item for this meeting. It was taken in several sessions or part sessions throughout the week and all discussion points are summarised here:

- Application Schema – the model illustrates a simplified version of the MPA application schema. It includes a general description of elements used to construct the application schema, and the relationships between them.
- Feature Catalog – description of the feature types, information types, attributes, attribute values, associations and roles which may be used in an MPA.

- Reference Systems
- Geometric Representation
- Quality
- Maintenance – datasets are maintained as needed and must include mechanisms for MPA updating.
- Data Encoding – encoding will be done using the Open Geospatial Consortium (OGC), Geography Markup Language (GML) format. GML is an XML grammar designed to express geographical features. It serves as a modeling language for geographic systems as well as an open interchange format for geographic transactions.
- Data Product Delivery – GML as the primary format in which MPA data product are to be delivered.
- Exchange Set - will probably be defined by the OEMs. For now, we expect that they will be a separate, external file.
- Support Files - Textual information should be encoded in a structured format like XML or HTML. The SNPWG is not establishing a precedent for future publications. Graphic formats include PNG, SVG and TIFF.
- Support Files – Added a section on Dataset Naming Convention and Support File Naming Convention
- This draft version of the Product Specification was complete with two missing sections: Portrayal and Data Quality. When Tony Pharaoh has included the outstanding comments from this review SNPWG Members need to circulate it for comment around their own Hydrographic Office. We should have comments back from members no later than 2 or 3 months from now.

Action Item 14/10 – Tony Pharaoh

Complete MPA Product Specification for circulation to HOs.

Action Item 14/11 – All members

Circulate inside HOs and obtain comment.

10. MPA Portrayal (Agenda Item 14)

David reviewed the paper and proposed options that was sent to the DIPWG in the summer of 2011. Discussion focused on the boundary, boundary line and a transparent fill to make it easy for the user to visualize the MPA. Everyone agreed that as a minimum the MPA boundary needs to be depicted for the mariner. The group also discussed deconfliction with regards to overlapping MPAs and the added information available in the Pic Report. The paper sent to DIPWG made several suggestions to portray the MPAs including cross-hatching and shading. The thought is to keep the boundary line on all the time but have shading off in the default view to minimise clutter.

SNPWG will follow S-4 recommendations which say that if there is no restriction associated with the MPA, a dashed line should be used and if there is a restriction associated with the MPA, a “T”-line should be used. Tony recommended that if the attribute is not encoded, the line will be dashed. He also recommended that if there is an attribute, it will be a “T”-line. Whether dashed or T – line will depend on the attributes. In a discussion between Eivind and Tony it was agreed that multiplicity of category of restriction is: 0 to many. Eivind will update the model, Tony will update the product specification, and Jens will update the encoding guide.

Action Item 14/2 – Eivind Mong

Update data model

Action Item 14/3 – Tony Pharaoh

Update product specification

Action Item 14/4 - Jens Schröder-Fürstenberg

Update DCEG

In a discussion about color Jan Nyholm said that that there is currently too much magenta on the display. The group therefore felt that the best color would be green for the MPA boundary lines and any fill. The precise shade could be decided by DIPWG.

A centre screen label of "MPA" should be used to identify MPAs. It was recognised that there would be many overlaps between MPAs, and between MPAs and PSSAs.

David, Jens and Tony discussed what to do with the current paper. Should it be amended? Should it be withdrawn and a new paper submitted? A new paper needs to be written for DIPWG in the Spring of 2012 to report these decisions.

Action Item 14/5 – David Acland

Produce paper for DIPWG in May 2012 probably to be presented by Tony or Eivind.

11 JHOD Statement on the Great East Japan Earthquake (Agenda Item 10)

Yoshimi Deai gave a presentation about the Great East Japan Earthquake and Tsunami which hit in March of 2011. The presentation contained video clips from Coast Guard vessels and stations during the disaster. It also reported Search and Rescue efforts and subsequent survey and debris removal to get ports open again. This resulted in a very large stream of amendments to nautical publications initially reporting limitations in service; then further amendments reporting the institution of limited services; and finally resumption of regular services as they become available. There was also a section reporting the outcome of studies to identify the shift in the tectonic plates which caused the earthquake.

12 Data Quality Report (Agenda Item 11)

Data Quality Sub WG – Schema discussion. Eivind Mong gave a presentation about work completed with significant contributions from Raphael Malyankar, Jens Schröder-Fürstenberg, Mal Tennant, and Pelle Aagaard. Some of the items that were discussed include age and source of the data, the purpose and use of the data as well as the attribution of graphical information. A question was raised about the need for a very precise definition of quality. The thought being that since NPUBS are mostly textual information with either unknown or multiple overlapping provenances, it might be better to have a relatively open specification for quality.

The group proposed that we separate the questions of what the model allows from the question of what the producer can or should do. Other aspects that then need to be considered are the approach to NPUBS in the context of S-100 ECDIS, strategies and processes used including the management of the data. It might be better to list Best Practices as opposed to providing a precise specification.

Final recommendations by the group included a focus on how an ECDIS and end-users would use quality information. SNPWG needs to continue to liaise with DIPWG and DQWG and to make sure that NPUBS quality elements are included to the extent possible. However SNPWG should not get “hung up” on data quality if it did not appear to add value.

There was a discussion on the use of relative positions instead of absolute positions. The meeting heard that there was only a limited case for relative positions and work should focus on absolute positions.

SNPWG needs to arrange for liaison with DQWG and DIPWG as described in the NPUBS Data Quality Outline. Likely data quality elements for NPUBS are:

- Completeness of data (e.g. whether all subjects in a section are populated);
- Currency of data (e.g. potential for temporal degradation);
- Uncertainty of data;
- Source of data.

How to handle data quality is not yet clear but SNPWG must remain engaged.

Action Item 14/6 – Eivind Mong

Liaise with DQWG and DIPWG on Quality.

13 SNPWG Document Configuration Item Record (Agenda Item 13)

The basic structure was reviewed. The document should be maintained on the SNPWG Wiki. The Wiki automatically records time and date of any new document versions when they get uploaded. The Configuration Item Record will be updated for each meeting of the SNPWG. The Chairman stated that in-force versions of documents should be on a public facing website and therefore should be on the IHO SNPWG page. The meeting decided that new document versions should be added in the row below the previous versions.

Action Item 14/7 – David Acland

Place Configuration Item Record on SNPWG wiki.

14 Report from Nordic Nautical Publication WG (Agenda Item 12)

Jan Nyholm gave a presentation about work and progress made at the first meeting of the newly formed Nordic Nautical Publication WG (NNPWG) held in Rostock, Germany in December 2011. Member states included Iceland, Estonia, Denmark, Finland, Germany, Latvia, Norway, Poland and Sweden. The aim of the NNPWG is to work with the SNPWG and discuss standalone electronic publications and the traditional paper publications as well. Another goal of the NNPWG is to work together regionally due to the proximity to each other and to the Arctic. It had been agreed that most pubs will be released as paper documents because that is the only media currently available. Olav Haugen said the Baltic and the Arctic Regional Hydrographic Commissions are also invited to join the group. The Chairman also added that the current SNPWG TORs do not cover paper products and effort is almost exclusively concentrated on standards for vector products. Tony Pharoah added that if there is a deficiency in current standards for paper products in M3, HSSC needs to be made aware of the problem and that a paper should be presented at the next HSSC meeting.

15 NPUBS data model (Agenda Item 15)

SNPWG Wiki – Open items

Jens Schröder-Fürstenberg discussed the new procedures for creating an account on the SNPWG Wiki introduced since some vandalism possibly from Eastern Europe.

David demonstrated how to navigate through the Wiki and how to use the Discussion pages. Jens showed some new functionality that was recently added. The meeting then reviewed new proposed simple and complex attributes that will need attention in the near to mid-term. The work conducted by BLAST supported the case for waterway area (WATARE).

The WATARE was moved from the proposal section to the geographic feature section at the Wiki.

Action Item 14/8 – David Acland

Deconflict CATRXN and RXNCOD also consider multiplicity of the resulting attribute.

Another line of discussion focused on the category BRGINF or Bearing Information. We decided to use only 16 points of the compass (e.g. NNE or WSW) rather than 32 points of the compass or the greater precision implied by a bearing expressed in figures. The direction will continue to be expressed in the sense "From the NNE". The photographer's position is often unknown and normally cannot be derived accurately.

Action Item 14/9 – Jens Schröder-Fürstenberg

Develop metadata for PICREP.

The discussion continued with the question whether SNPWG needs to populate the Wiki with any other items from the BLAST Project. Jens responded by saying that everything from the BLAST work is already in the Wiki. We leave the situation as it is until or if SNPWG decides to adopt the BLAST Mariners' Routeing Guide. Jens said that we do not have enough feedback from mariners yet to add BLAST project results for the Mariners' Routeing Guide.

The next point of discussion was the disposition of various logical groups (e.g. Explanation and definition of Tide Levels, Luminous range diagram/table associated with Light, etc.) which had been placed in the "Reference" tab of the SNPWG Scope document. The contents of the tab was reviewed, some minor changes were made, but no substantive decision was made about how to proceed.

Further discussion will be needed at another meeting.

16 Election of new SNPWG Officers

David Acland will be stepping down as Chairman of the SNPWG after the 18th Hydrographic Conference in the end of April, 2012. Tony Pharaoh ran the election for the next Chair and Vice Chair of the SNPWG. Jens Schröder-Fürstenberg and Tom Loeper were nominated for the position. The result of the election for Chairman was that Jens was voted in as Chairman. Tom agreed to act as the Vice Chairman.

Post meeting Note:

Director IHB Robert Ward has been in touch with David Acland to say that as this procedure was not strictly in accordance with the SNPWG Terms of Reference the election at SNPWG14 was invalid. David Acland will therefore resign as Chairman as planned on 23 April at which time Jens will act in his capacity as Vice Chairman until a new election is held at the next meeting. This will regularise the situation so that the SNPWG will now proceed strictly in accordance with its Terms of Reference.

17 Report/Demonstration from NOAA on the Coast Pilot Production System. (Agenda Item 23)

Tom Loeper moderated a presentation given remotely about NOAA's Coast Pilot Production System. The remote presentation was given by Scott Sherman of the U.S. Coast Pilot Branch in Silver Spring, Maryland. The highlights of the demonstration included system navigation, basic architecture, image placement and manipulation, publication of paper and web-based documents, custom tag creation, and finally database searching. Tom demonstrated how new data was introduced to the system by an analyst; approved by a checker; and was then put live on the NOAA website almost immediately. The NOAA team also mentioned that a "pre-flight" check was available.

18 Use Cases (Agenda Item 16)

David Acland led the discussion on Use Cases and our Target Audience. The Target Audience is anyone involved with any tasks that are navigationally significant. The main characters are the Navigator who may also be the Route Planner, Duty Officer or Watch Officer, Ship Master or the Route Approver if other than the Master. Alain suggested that the Pilot is involved and David suggested that the Ship Operator or Ship Manager is also involved. Other characters may be the Owner, Charterer and Legislators/other Maritime Authorities, Coast Guard and Insurance Brokers.

In conclusion the target users we defined are: Voyage Planner, Route Planner, Route Approver and the Route Executor. We decided that the Pilot fulfills the roles of Route Planner, Route Approver and Route Executor at various, different times.

19 Produce Test Data set (Agenda Item 22)

David Acland led the conversation about what MPAs need to be modeled. Some standout proposals included: Papahānaumokuākea National Marine Monument, Ligurian Sea MPA, Mickelfirth MPA, etc. Other possible sites are an area off the coast of Brazil. Information may come from the International Union for Conservation of Nature and Natural Resources (IUCN) website. The following items will need to be covered;

- All cardinal quadrants: + and – latitudes and longitudes
- Populate all attributes at least once
- An area site
- A "Point" site
- A "Donut" site
- A dynamic area (possibly Stellwagen Banks MPA) or North Atlantic Right Whales protection area
- Ancillary files
- Catalog file

Consideration was also given to creation of a single test data set or multiple test data sets. The Exercise feeds back into product specification.

20 Other Products (Agenda Item 17)

Alain Rouault proposed that in considering this question we take these in order from deep sea to port. This first product would be a radio signals product focusing on a oceanic radio services. The direction of travel leads to coastal marine services and port information will be the final product developed. Eivind recommended that product development starts at a high level and works towards greater granularity. The next discussion point was to consider the service to the end user and the need for equivalence with paper products. We need to educate regulators that the digital products don't have to be identical to the earlier generation paper product.

21 Work Plan Update for HSSC4 (Agenda Item 19)

David Acland led the effort to update the Work plan for HSSC4.

22 Date and place of next meeting (Agenda Item 21)

SNPWG 15 will be held in Helsinki, Finland at the Finnish Transport Agency in the week of 12 to 16 November 2012.

Provisionally, SNPWG 16 will be held in Brazil in June 2013.

23 Meeting closure

The Chairman thanked Tony Pharaoh and the IHB in Monaco for all the arrangements for SNPWG14. Tony Pharaoh thanked David Acland for his Chairmanship since SNPWG8 at SHOM in 2008. David Acland said that he was grateful for those comments and was absolutely confident that the Group had acted wisely in choosing their new Chairman. He wished them all the very best success in the future.