2nd Digital Information Portrayal Working Group (DIPWG) Minutes.

3 to 7 March 2010 (Rostock, Germany)

Chairman: Colby Harmon (US NOAA)
Vice Chairman: Julia Powell (US NOAA)
Secretary: Richard Coombes (UKHO)

Annexes:

Annex A – List of Documents
Annex B – Agenda
Annex C – List of Participants
Annex D – List of Action Items.

1. Introduction and Welcome

Colby Harmon (NOAA & DIPWG Chairman) opened the meeting by thanking Mathias Jonas (Deputy Hydrographer BSH) for inviting us to Rostock and hosting the joint IHO TSMAD/DIPWG meeting. MJ responded by welcoming the delegates and saying what a pleasure it was to see such a large number of attendees remarking that Rostock must be very good venue and very central as there is even a delegate from NZ.

MJ said that electronic charting was borne out of the maritime domain, e.g. Harrison's chronometer, the sextant, GPS, etc. Standards have come and gone in the last two decades but ours still continue. We must embrace new technologies and adapt our standards and move forward. New carriage requirements coming into force in 2012 and S-101 we must make these fit future requirements. Governments and industry should collaborate fully so that we can have meaningful discussions and make sensible decisions.

MJ provided details of the logistics for the meeting including the coffee and lunch arrangements. MJ said that the BSH would be hosting a buffet on board one of their survey vessels on the Wednesday. The DENEB is moored a short walk from the hotel. MJ hoped that everything was set up OK.

2. Approval of Agenda

The TSMAD agenda (TSMAD20/DIPWG2 2A) was approved without amendment. The TSMAD chairman reminded the meeting that papers should be submitted in time before the meeting so that members were able read them and prepare responses if required. Papers should be submitted at least 6 weeks prior to the meeting.

3A Minutes of the 19th TSMAD meeting (See TSMAD20 Minutes)

3B Status of Actions for TSMAD (See TSMAD20 Minutes)

4A Minutes of the 1st DIPWG meeting

[TSMAD20/DIPWG2 – 4A]

The minutes of the DIPWG1 meeting in Ottawa were accepted there being no comments from the floor.

4B Status of Actions for DIPWG

[TSMAD20/DIPWG2 – 4B]

1/6	Amend CSMWG 18 minutes, item 8 for attributes wrongly identified as no capable of being displayed on ECDIS (See JW notes). PRDARE should have the attribute with CATPRA = 2, 3, 4, 7 & 10. SLOGRD should be symbolised when radar conspicuous.	Completed
1/7	Monitor ongoing FAA and light marine studies regarding use of additional colours and provide results when they are complete.	Activity from the FAA has fizzled out – Action closed

1/10	Consider the need for S-52 symbolisation of new pipeline through tunnel and offshore renewable energy installations objects created by CSPCWG (paper charts standardisation).	Completed To be discussed later in the week (see item 21.2)
1/11	Draft a paper to HSSC with EUWG Chairman regarding the future maintenance of S-52, Appendix 1. (Recommendations relating to the extension of this appendix to contain guidance on encoding to supplement the update delivery mechanism. Perhaps under a different S number).	Completed (see HSSC1-06.10B) RC to present current situation in the EUWG report (see item 6.2)
1/16	Review and comment on CSP to XML translation. Lookup table to XML translation with special attention to the utility and compatibility of the XML schema used by each.	Completed Compatibility of the XML scheme used to encode CSPs was reviewed, but new approach is being considered that may not rely on Envitia's original work. To be discussed later in the week (see item 8.1)
1/17	Review and comment on the S-100 and S-101 portrayal model.	Completed (see item 10C)
1/19	Make recommendations as to what portion of S-52 should be incorporated into S-101	Completed (see item 16.3)
1/30	Consider nominating a DIPWG member to the hydro register control body	Waiting for governance of the register before making any recommendations
1/33	Share the results of the NOAA Chart/ECDIS user survey outreach.	Completed JP to discuss later this week (see item 13A)
1/35	Refine and Clarify the governance for each component (Standards, Specifications & Registers) of S-100 & S-101 in white paper for HSSC.	Completed (see HSSC1-06.1G)
1/36	Modify depth area attribution in ECDIS Chart 1 ENC files to resolve isolated depth area problems.	Ongoing effort by 7Cs to correct
1/37	Jeppesen to review modified ECDIS Chart 1 and files to confirm they display correctly.	Jeppesen to review when 1/36 is completed
1/38	Establish protocol for the coordination among CSPCWG, TSMAD and DIPWG when feature, attributes, symbols and portrayal rules are created or modified.	Closed
1/39	Modify the TOR for DIPWG to also handle the management of the portrayal registers and portrayal sections of S-101. (Submit to HSSC-1 for approval).	HSSC approval gained and new TOR are on the IHO website - Closed
1/45	Action DIPWG for the future adding unknown as an enumeration value to prevent the question marks being displayed on the ECDIS. Current PL to be changed to differentiate between unknown and null. In S-52 we can amend the look up tables to make unknown allowable. Deferred amendment.	CH & MJ to work on this during this week to close this out
1/50	Include a question in the outreach questionnaire concerning the provision of warning/notification of a change in sounding (vertical) datum in an ECDIS.	JP asked if there was anyone who had time to take this forward as she had not made any progress on this action. NGA?
1/53	Create a deferred amendment for Wrecks	Still being developed
1/54	Draft a report on discussions and present it to CSPCWG for their next meeting in Monaco in December 2009.	Closed (see CSPCWG6-04.2A)
1/56	Prepare a paper that proposes possible alternative colours (other than orange) for Mariner Objects.	HP to present later (see item 14A)

1/57	US are to enhance CHART 1 to include the additional column containing additional references to ENC symbols.	CH to present later in the week.

4.1A - Possible alternative colours (other than orange) for Mariner Objects
[TSMAD20/DIPWG2-04.1A]

This paper follows an action (1/56) at DIPWG1 for Hannu Peiponen (Furuno Finland OY)

The paper identified that in a fully functional ECDIS a requirement exists to draw additional geo-referenced objects together with the charted detail. These are called as mariner objects. Currently mariner objects are mainly drawn on screen in orange (NINFO). This makes it difficult to distinguish different mariner objects from each other. The paper went on to say that for practical reasons the IHO needs to define additional suitable colours for mariner objects

In conclusion the paper identified four additional colours which could be made available as alternative colours for non-charted objects. The proposed colours make it easy discriminate between mariner objects and the original colours used for the cartography. Acceptance of this proposal would provide greater flexibility in the future.

CH commented that it would have been good to see some examples. HP said he would try to prepare something. CH suggested that the proposal be accepted and entered as a deferred amendment.

Decision: The proposal for additional mariner objects was accepted
Actions: HP to provide graphic depicting samples of the four Alternative Colours for Mariner Objects
CH to prepare a deferred amendment to S-52

5A HSSC Actions for TSMAD (See TSMAD20 Minutes)

5B HSSC Actions for DIPWG
[TSMAD20/DIPWG2 – 5B]

HSSC1 AGENDA ITEM	SUBJECT	ACTION No.	ACTION	STATUS
6.3	ToR/RoP for DIPWG	HSSC1/21	IHB to include in IHO Publication M-3 "Resolutions of the IHO", the revised DIPWG Terms of Reference (TR K2.26), as contained in Annex D to HSSC1-06.3A.	Done
6.3	Maintenance of the IHO Presentation Library	HSSC1/22	IHB/DIPWG Chair to release Colours & Symbols Maintenance Document No. 7.	Done*
6.3	Traditional symbols for ECDIS and Portrayal of nautical publications in ECDIS	HSSC1/23	IHB/DIPWG Chair to add to the DIPWG Work Plan the following Work Items "Investigate enhancing the appearance of existing traditional paper chart symbols used in ECDIS by modifying their size, shape and colour" (low priority) and "Develop symbology for portrayal of nautical publications in ECDIS" (medium priority)	Done

* IHB letter S3/8151/DIPWG of 12 November 2009 to ECDIS stakeholders

6.1A Report on CSPCWG Activities (See TSMAD20 Minutes)

6.2A Report on EUWG Activities (See TSMAD20 Minutes)

6.3A Report on DQWG Activities (See TSMAD20 Minutes)

7.1A IALA Feb 2009 Meeting
No report was provided (see also Agenda item 20)

7.2A ISO 19117 (See TSMAD20 Minutes)

7.3A IEC Standards (See TSMAD20 Minutes)

8.1A - S-100 Portrayal Model

CH opened this session by providing some background on the subject. Last year PLB presented his work on the Portrayal and Symbol Models and JP presented the results of a report produced by Envitia Ltd on the XML encoding of CSPs. PLB, HA and CA met last year in Fredericton, New Brunswick, Canada to discuss unifying the two methodologies.

The three also recommended not encoding the symbol graphics in XML as part of the symbol model as there are other data formats that are more appropriate for graphics. Despite this, CH noted that the some participants at the recent S-101 stakeholders meeting expressed a preference for encoding graphics in XML. He said he would like to hear what the OEMs present would prefer for encoding graphics.

CH gave a PowerPoint presentation on *Portrayal Concepts* as follows:

1. Portrayal Function Goals
- Enable plug and play on ECDIS
- Eliminate or minimize need for customized parsers
- Use single means to encode both Look-up Tables and Conditional Symbology Procedures
  - Eliminate special case CSPs altogether, if possible
- Output both machine readable and human readable portrayal rules from a single encoding

2. Portrayal Function Goals
- Encoded in XML
- Use of conditions, such as If, then, else if, else
- Use of looping
- Instantiation of former CSPs and other complex computations as function calls
- Direct use of "Portrayal Parameters" such as safetyContourValue

3. Opportunities to Simplify Portrayal in S-100
- Incorporate all Navigational Aid components into one object with additional attributes for lights, day boards, top marks, fog signals, radar reflectors, etc.
  - Eliminates the need to create or to look for master/slave relationships
- Enhance attribution, such as greater use of EXPSOU, "exposition of sounding"
  - Eliminate need for some contextual evaluations of attributes or topological relationships with other objects

4. Portrayal Priorities
- Finalize Design of Portrayal Model Structure
  - Encode look-up tables
  - Encode CSPs
- Finalize Design of Symbology Model Structure
  - Encode line, pattern and text symbol parts

- Encode point shape symbol parts
  - Shape, Size, Orientation

HA (CARIS) then gave a presentation based on the ISO/CD 19117 (03/12/2009) processes for the portrayal of symbols in an ECDIS. HA explained how the *Feature Portrayal Function* maps a geospatial feature to a symbol in two ways, conditionally and contextually. HA continued by saying that the *Portrayal Mechanism* makes it possible to portray the same dataset in different ways without altering the dataset itself. HA said that in S-52 the DAI formatted graphics files were originally designed to be updated but this was never fully implemented.

A question was raised asking if we wanted to continue with the process of maintaining symbols in an addendum (as is currently done in S-52), or have digital symbols (e.g. have a basic XML structure) to define/update symbols?

HP said that if the objective is *"Plug and Play,"* then everything should be machine readable. If manufacturers were to do any amendments to the symbols we would have human readable, not machine readable and therefore it is not *"Plug and Play"*
JP stated that we (the IHO) would do the *"Plug and Play".*
BG recommended that we look at SVG.
HA stated that there was a profile for SVG and asked do we need a digital symbol format to have *"Plug and Play"*?
CH answered that SVG may be a more viable approach.
HB stated no ECDIS is machine readable. Who supplies the machine readable symbols? He doubted the IHO could. XML is a good method of delivery, but we must be careful with SVG. We need more options for colours, SVG only has RGB. We need look up tables and colour tokens.
MJ agreed with HB up to a point. If Gert were here we would have an entertaining discussion. If the IHO takes control of this we lack the technical capability to support this. We need a body to provide global support for this and then pass to the manufacturers who can then improve their display.
BG said he did not have a problem with this as long as we do not have the delays we have had in the past getting new symbols to *"Plug and Play"* in the ECDIS. The IHO should provide the symbol and portrayal catalogue and the OEMs the portrayal model.
CH said that we can create the rules for machine readable symbols. We have had several requests for examples of symbology. We could move forward with human readable forms of the symbols in the first instance then move to machine readable ones in the future.
KI said that currently the engineer has to go onboard the vessel to update the symbol library. His understanding of *"Plug and Play"* was the IHO produce machine readable symbols, which in turn are delivered by the service providers.
HP said that frequent updates to the *Portrayal Catalogue* means that the version loaded on the ECDIS is compatible with the ENC data produced. The OEMs should not have to visit the vessel to update the customer library. ENCs and Portrayal should be delivered together.
HB mentioned that OEMs are responsible for their software so they should be able to check new updates as these may affect performance.
KI disagreed with HB and thinks the approach charts and portrayal would be beneficial to the manufacturer and go straight to the vessel. ENCs are not tested before they go to the ECDIS. Symbology procedures may cause problems but we hope we can overcome these.
CH stated that we are not going to resolve this here. If we only deliver a new library once a year this would be better than what we have now.
RC said that this could be tested by the OEM in the interim.
BG said he could not see past *"Plug and Play"*, the ECDIS should accept what is sent. The software should be future proofed so that OEM systems can import new symbols. He stressed that we must get away from the seven year cycle to bring ECDIS displays up to date.
TM said that if we don't go down this route what about other products such as AIO, etc.
RF enquired asking if *"Plug and Play"* provides a basic symbol and OEMs then customise these how will this affect type approval.
JP commented that OEMs wanted the *"Plug and Play"* option, but identified that we need to come up with some middle ground that allows for adequate testing.

HP asked how this would be delivered to the ECDIS. It would need to identify different ENCs delivered with different versions of the portrayal and feature catalogue. Compare what is available with what's on the system. Type Approval bodies must be satisfied that the ECDIS can handle this process adequately.
BG stated that he thought it had been agreed in Cape Town that we would create a standard presentation library which could be enhanced by manufacturers.
HA said that one option was to consider that the portrayal register could have a visual presentation.
BG warned we should be careful we don't go down a rabbit hole. We must remember that S-100 is not just for ENCs. There must be some commonality.
HA asked how we handle conditional procedures. It would be good to get rid of them (see Possible Portrayal Engine Implementation slide). XSLT processor seems to have all functionality to process CSPs. This is something that PLB and HA are exploring now, we do not have the resources to explore new formats.
CH stated that this will not be reflected in PLB's presentation as this has only recently been discussed.
HA said we should look and see if we can borrow things from other formats. XSLT is open source. If portrayal is done in this way then debugging would be easier. You can test against the standard. It could also be used in the *"Pick Reports"*.

HA concluded his presentation by showing a possible scenario for the Portrayal Function Catalogue using XSLT, which has the functionality to implement CSPs (sounds good as it does not involve additional attribution simply to drive symbology). The use of XSLT and other options will continue to be looked at for their applicability for portrayal.

8.1A Presentation by PLB on the S-100 Portrayal Model
TSMAD20/DIPWG2-08.1A (S-100 Portrayal Model) Presented by PLB
TSMAD20/DIPWG2-08.2A (S-100 Symbol Model) Not Presented for discussion
TSMAD20/DIPWG2-08.3A (Portrayal Package) For Information

A first attempt has been made to define an S-100 portrayal model keeping in mind the following four points:

1. Define the S-100 portrayal model as a candidate to handle the digital part of a portrayal specification (text document).
2. Define this portrayal model as also a candidate for the IHO portrayal register. The main objective is to provide a flexible means to define new portrayal catalogues either for new S-100 product specifications or for an existing product specification.
3. Define a portrayal model as a profile of the abstract standard ISO 19117.
4. The future S-52 specification (defined to portray S-101 datasets in an ECDIS context => IMO Requirements) relies on a portrayal catalogue issued from the S-100 portrayal model. We also have taken this opportunity to improve some portrayal aspects of the current presentation library, but with keeping in mind not to introduce regressions. For example, by mapping "diagram conditional procedure" to digital portrayal function.

The S-100 Portrayal Model in conformance with ISO 19117 will organize portrayal information in two sub models:
the S-100 Symbol Model.
the S-100 Portrayal ***Function*** Model.
The implementation of this model will be an XML schema application.

An S-100 portrayal catalogue will group digital portrayal information necessary to portray S-100 products taking a specific context into account (e.g. Navigation).

Discussions
HP said that this was what was discussed at the Stakeholders Workshop. The IHO need to provide a technical answer whereby data producers can include additional attributes in their data. This would remove the need for CSPs.

BG commented that we need to force the data producers to make a choice on features with unknown attributes. HOs should make the decisions and not leave it to the ECDIS. This does not remove all the CSPs but does reduce the number required.
HB agreed and went on to say that data should carry more information. He did clarify by saying this was a dream as it will not remove all the CSPs. The real complexity comes from the existing CSPs. These must be translated into machine readable information, e.g. by looping through the construct of a contour. XSLT will not solve the problem. Also we cannot be sure that the data producers will not make a mistake.
BG remarked that these instances could be trapped in the validation checks.
HB said S-58 was not available when S-52 was developed.
CH thanked PLB for his presentation saying he knew how much work had gone into it.
TM enquired how this work fed back into S-100/101.
RF said that we need to look into which CSPs need additional attribution and asked if we could have sight of these so that they can be assessed for S-101.
CH stated that we do not know exactly which ones these are at the moment.
EV commented that if the IHO cannot produce human and machine readable CSPs then this should be brought to the attention of HSSC and attempt to get funding.
BG agreed and said that perhaps we could find someone within our two groups to take this forward.
HB we need to update the S-100 model from ISO19117, the model must come first.
BG replied that the modelling of CSPs is independent of format and still need to be teased out.
EV again proposed we bring this to the attention of HSSC.

8.1B S-100 Symbol Model
TSMAD20/DIPWG2-08.1B
This paper was not presented for discussion and TSMAD20/DIPWG2-08.3A (The Portrayal Package) provided for information

9A Port ECDIS (See TSMAD20 Minutes)
[The Port ECDIS - a proposal for a new port related ENC standard.pdf]
[The Port ECDIS - a proposal for a new port related ENC standard_TSMA.pdf]

10A S-101 Draft 0.1 Standard (See TSMAD20 Minutes)

10B S-57 to S-101 Crosswalk (See TSMAD20 Minutes)

10C Outcomes on S-101 Stakeholders Meeting (See TSMAD20 Minutes)

11.1A S-101 Catalogue File and Discovery Metadata (See TSMAD20 Minutes)

11.2A S-101 Support File Formats (See TSMAD20 Minutes)

12A A 3-D Nautical GIS targeting Cognitive Off-loading and Decision Making (See TSMAD20 Minutes)

13A CATZOC, Simplified Symbols and Colour Palettes
[TSMAD20/DIPWG2-13A]

JP introduced this paper by saying that it was more an information paper for discussion. The paper was produced off the back of the outreach exercise which NOAA carries out every 12 – 18 months circulating a questionnaire to its customers. ECDIS display specific questions were considered for inclusion in the survey following the *Cosco Busan* incident where it was apparent that there was a lack of understanding in what the pilot was seeing on the ECDIS. Among the questions were ones relating to the *Colour Palettes, Simplified Symbols* and *CATZOCS*. The questionnaire goes out to variety of user groups totalling about 8000 users. NOAA gets has approximately a 30% rate.

As far as CATZOCs is concerned JP identified that the NOAA users mostly preferred the YEAR/CATZOC, where the YEAR equals the date of survey and CATZOC is the attribute value. However it was pointed out at the Stakeholders Workshop that users had no idea what the various CATZOC attributes meant. S-101 portrayal will have to rethink this as 80% of users preferred something more than the star symbols.

Turning to the *Simplified* v *Traditional* symbols debate, JP reported the following, 72% preferred traditional symbols, 18% preferred simplified symbols with 10% having no opinion on the subject. This showed a clear preference for traditional symbols. It was pointed out that of two masters at the Stakeholders Workshop both favoured the simplified symbols.

JP reported that the results of the questionnaire relating to the colour palettes were inconclusive.

JP finished her presentation by asking the following questions:
Should we retain the simplified symbols for S-101?
What benefit will S-101 gain from reducing the number of Colour Palettes?

The ensuing discussions changed direction around the various topics. For the purposes of the minutes these have been categorised.

CATZOC
MJ said that the US proposal for displaying CATZOC still does not tell the user anything. He asked how can we educate users and how can we incorporate this into the decision making process. Another method of implementation could be used. The *Pick Report* could be used to make it clearer as to what these symbols mean.
BG said that CATZOC needs to be split into two parts, i.e. where is safe and where it is unsafe. This is what the user gets from the *Source Data Diagram* on the paper chart. This information could be provided in the *Pick Report*. During route planning the planned tracks could be colour coded to indicate the quality of the survey data. Each leg could be colour coded for the least accurate data between each waypoint. This could be the way forward and be extremely useful should there be any change from the planned route.

SYMBOLS (Traditional v Simplified)
MJ mentioned that we have been having this debate over traditional v simplified for 10 years. MJ favours traditional charts symbols as these are familiar to the mariner. When vessels go paperless they will not have anything to compare the digital display with. Also do we have the resources to maintain two symbol sets? No.
AP mentioned that symbols are something that the user commits to memory so why have two symbol sets.
HB reminded the meeting that simplified symbols were developed because of the screen resolutions that were available at the time. Simplified symbols provided a better perception. The screen resolutions are 4X higher now and the reason for having them does not apply anymore. He asked why we have two ways of depicting the same symbol. This is a bit like using German and English. We should be looking forward and not looking back.
BG said that if we colour in the symbols then users wouldn't want to use simplified.
MJ commented that if he had read the paper correctly, this was provided to promote discussion. He went on to say that we should leave this as an open ended discussion and start making some decisions. He ended by saying we should stop the experiment.
JP stated that the user is not always right! The three options in Cape Town were as follows:

a. Remove simplified
b. Remove simplified and redefine traditional
c. Retain simplified as a voluntary option
d. Remove simplified, redefine traditional and allow simplified as a voluntary option

Whatever we do they have to be machine readable and someone has to digitise and vectorise them. We do not want to be making too much work for ourselves.
BG stated that he prefers "d", if OEMs should be able to retain simplified if their customers want them.
HB replied we have not looked at the complete story. What about the look up tables when additional symbols are produced? OEMs will create these in different ways. He went on to mention simplified line styles? This is not just about simplified symbols what about simplified line styles for decluttering?
BG said in this case we have a fifth option.
HP commented that he was in favour of a single set of traditional symbols. It would make it easier to train mariners. This should not be an area where manufacturers differentiate their products in the same way the pick report and a summary report of the ECDIS status should not be either.

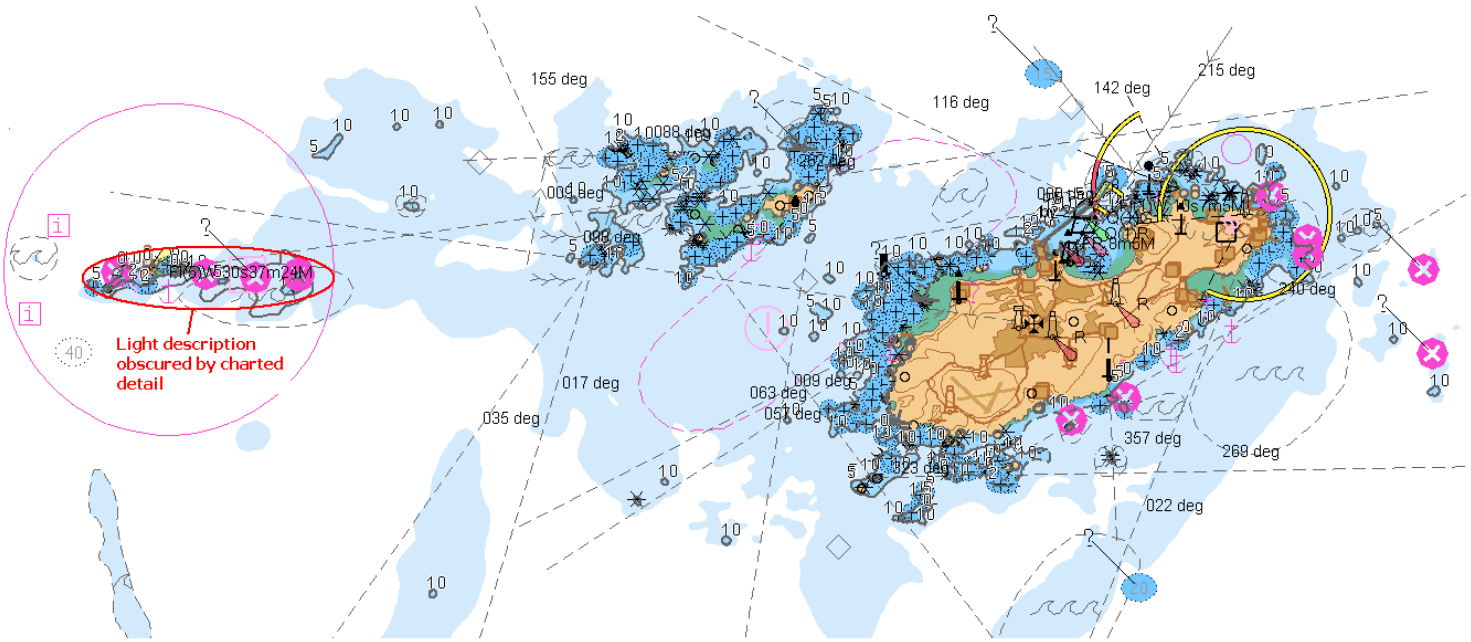
JP said this would make life simpler for ECDIS Chart 1. Colour in the symbols and have a single symbol set.
CH asked do we want one symbol set? If we can agree we can move forward and address other issues such as complex line styles.

Action: JW, MH, CH & JP to form a sub working group to recommend a single set of symbols, selected from the available simplified and traditional symbols.

PALETTES
KI said there was a well known problem with the night palette, e.g. depth contour not visible. Transas recommend using the "dusk" palette.
HP stated most users prefer to use the brightness control with the day palette. This gives the user more variation and more options.
HB said that the reason there were originally 5 options in the early days was because there were no brightness or contrast controls on the systems. There was very little difference between some of the palettes, which is why the number was reduced to three. There are some advantages to an inverse palette over the brightness control.
MJ stated that the colour palettes had been created by scientific research. What we get with the night palette is a desaturation of the image. We still need to retain these options as more GIS systems are developed. We should not limit our options.
HA said he would like to take issue with HB's earlier comment. In the early days the screen resolution was adequate, e.g. 1280x1400. Simplified symbols were introduced as an experiment for a more radical approach to navigational displays. If a mariner wanted more information he could always do a *Cursor Enquiry*. The alternative was that the user could always switch to the traditional display of symbols. On the subject of the colour palettes HA informed the meeting that a lot of research went into these. Using only the brightness button does not dim the display uniformly which can result in eye strain, etc. Any changes should be made based on scientific evidence; we should keep this in mind and not just go with first impressions.
TPo said there was a reason for keeping the palettes. No one looks out the window at night they look at the instruments.
MB said that what we are looking at here is cartography; we should be looking at situational awareness. Human factors come into play, not just cartography. How do we standardise changing conditions?
JP reflected that we are fine with what they are; it is more important that they are carefully defined and portrayed in S-100/101.
BG re-iterated the fact that we need a test bed to establish what the mariner wants.

360° Sector Lights (No paper and not on the agenda)
During the discussions on symbology the subject of major lights with an all round arc of visibility was brought up. It was noted that these features were not always immediately evident on the ECDIS display. It was highlighted that relatively insignificant sectored lights were more prominent in the display and gave the impression they were more important than they are. This subject came about during discussions the UKHO had with Condor Ferries. They were concerned that the major light on the Casquets (Channel Islands) did not stand out on the display (see screenshot below). This light has a nominal range of 24nM and is by far the most important light in this area. The UK experimented with some potential workarounds but these were not very satisfactory.

Text placement on a paper chart ensures the light description is positioned so that it is not obscured by other objects. This is not always the case on ENCs where the text is positioned at an arbitrary offset.



KI said that he has had strong claims from his customers for 360° sectors to be displayed on important light objects. He went on to say that he would like this to be entered as a deferred amendment in S-52. RC stated that we first need to establish what constitute a major light as it would add considerably to screen clutter if all lights were displayed with a 360° sector.
BG suggested RC do some further investigation and present a paper at the next DIPWG meeting.

Action: RC to investigate what constitutes a major light and prepare a paper on 360° lights for the next DIPWG meeting

14A Development of a Combined INT1 / ECDIS Chart 1
[TSMAD20/DIPWG2-14A]
[TSMAD20/DIPWG2-14B - INT1 to S-52 symbol Mapping (Excel file)]

CH reported on the progress being made by the U.S. (NOAA) to create a Paper Chart and ECDIS Chart 1 (P/ECDIS Chart 1), a reference that will show both paper and ECDIS (S-52) symbols side-by-side. This work was prompted by discussion in Cape Town (CSMWG18) where it was agreed that an S-52 equivalent to INT1 was required as a reference for mariners.

This work requires the mapping of some 1500 symbol relationships between INT1 and S-52 and reformatting the S-52 symbols into JPEG images. During this process there were some anomalies discovered in the Part 1 Addendum to S-52, e.g. non-dangerous wreck (depth unknown), dangerous wreck (depth known), etc. Some of the tables in Part 1 also referred to some obsolete symbol names. CH remarked that there was a need to clean up S-52 and issue these as deferred amendments.

CH outlined the design and layout of P/ECDIS Chart 1 which could also contain additional narratives on certain aspects of the S-52 display where it differs markedly from the paper chart. CH mentioned that following on from the discussions on *Traditional* and *Simplified* symbols, that the use of only one symbol would ultimately make the P/ECDIS presentation easier.

CH made the following recommendations to the meeting:

1. Include S-52 JPEGS in S-52 Presentation Library CD
2. Compile S-52 errors discovered in the creation of P/ECDIS Chart 1 into S-52 deferred amendment
3. Participation by DIPWG and TSMAD members

- Reviewing and making recommendations for improving P/ECDIS Chart 1 as successive portions of the document are completed.

JW had one general comment and that was the CSPCWG have to constantly remind themselves that INT1 is for the user. Therefore, we should not be presenting meaningless information to them.
CH endorsed this comment
HP had one observation, which was that all the JPEGS were the same size. In the final version they should be depicted in their relative sizes. Again CH endorsed this.
EM enquired why did the US pick JPEGS
CH said that the application he was using made it simple to use and it could be copied into a word document.
KI asked where NGA fitted into the P/ECDIS Chart 1.
CH explained that the NGA, which supports the U.S. Department of Defense have some symbols which are different. There are separate columns in the U.S. Chart No. 1 to show the paper chart symbols for both NOAA and NGA when they are different.
JP stated simplified symbols would have to be included for the time being to support legacy systems and new pre S-101 ECDIS.
CH asked what would be the best way of making this and subsequent versions available to the group?
LP said why not put in an area on the IHB website.
CH agreed and said we can keep this updated as new version become available.

The following actions for DIPWG were identified:

- ***Review and comment on the design of the prototype P/ECDIS Chart 1 format***
- ***Review and comment on the accuracy of the S-52 to INT1 symbol mapping***
- ***Make recommendations for any additional narrative sections in the P/ECDIS Chart 1***

Additional Actions:

- ***CH to identify any S-52 errors discovered during the development of the P/ECDIS Chart 1 and prepare fixes in a deferred amendment***
- ***CH and MH to investigate possibility of adding S-52 JPEG symbols to the S-52 CD-ROM or posting them directly on the IHO website***

14B INT1 to S-52 symbol Mapping (Excel file)
See 14A

15A Nautical Publication Symbology
[TSMAD20/DIPWG2-15A]

CH introduced this topic with a set of slides and by saying that in 2009 SNPWG discussed the potential need to portray nautical publication information in an ECDIS. SNPWG also presented an information paper to HSSC-1 wishing to add nautical information to the DIPWG TOR. CH commented that no action was taken at HSSC-1 to change the DIPWG TOR but added an item to the DIPWG work plan. That item was to develop symbology for the portrayal of nautical publications in ECDIS. CH mentioned that SNPWG had identified some constraints to displaying this additional information on ECDIS, e.g. adding to screen clutter with additional symbols or by obscuring large portions of the screen with text boxes. CH described the additional information that would be required by SNPWG and the format it would take. CH asked whether the design of symbols should be the sole remit of DIPWG and leave the rest to SNPWG. CH remarked that there were a lot of unanswered questions, will new symbols be required? What requirements will there be for these symbols? CH displayed some possible examples of symbols based on a perceived requirement. In conclusion CH stated the following:

1. DIPWG is eager to assist SNPWG in developing symbols
2. DIPWG expertise is in graphical display of information and not in large text displays
3. Many questions still need to be answered to move forward with nautical information symbols
4. Participation in DIPWG and TSMAD is an easy way for SNPWG to gain access to many OEMs and their ideas about ECDIS display of nautical publication information
5. DIPWG can make recommendations for the design of specific symbols once the features, attributes and conditions that they represent are more clearly defined by SNPWG.

The presentation concluded with a series of recommendations and actions as follows:

DIPWG Recommendations

- The best role for DIPWG might be to act as a sounding board for SNPWG's ideas as they continue to refine their requirements
- SNPWG should keep DIPWG informed of their progress and make every effort to participate in future DIPWG/TSMAD meetings so that DIPWG members and OEMs can better understand SNPWG's needs and offer practical advice.

DIPWG Actions:

1. ***Make recommendations as to how DIPWG and SNPWG might most effectively work together to develop symbology for nautical information***
2. ***Provide feedback on the possibility of adding "Nautical" to the DIPWG TOR***
3. ***Suggest any additional issues that need to be addressed to portray nautical information***
4. ***Provide ideas related to nautical information symbols***

HP started off the discussion by saying that SNPWG does not have the expertise. We will have to give them guidance, otherwise they will be lost as to what to do. In the first instance they should be advised on the limitations of HTML!
CH asked the meeting whether we had the time? HSSC has asked us to develop nautical symbols not assist SNPWG with other aspects.
HP We should not just use S-52 ideas but ideas from all over industry.
JW said we need to be careful on the use of the "document" symbol. When we down size them will they be still readable.
CH said that in spite of his earlier concerns we need to help SNPWG with the development of symbols without getting bogged down at the expense of our own work. CH went on to say that there is a response from SNPWG and asked JSF to provide more details.

JSF provided a brief overview of the requirements that SNPWG had come up with so far:

30 Feature Objects
10 Information Objects
130 Simple Attributes
25 Complex Attributes

The SNPWG Wiki for the Feature Concept Dictionary (FCD) can be accessed using the following link:
http://www.fuerstenberg-dhg.de/mediawiki/index.php/SNPWG

There are two types of information in Nautical Publications, Charted Features and Non Charted Features.

Charted features will add symbols that can be attached to ones that already exist. There is a requirement to highlight nautical information differently. A checkbox could be added that allows the user to switch between navigational and nautical information. An additional layer could be provided.

For non charted features there is a requirement to define some portrayal rules, e.g., display on mouse over or a strictly rules based method.

There is a requirement to define the new symbols bearing in mind screen clutter and clarity. Furthermore, it may be necessary to extend and add to existing symbols (for differentiation). When symbols have been defined it will be necessary to identify where each information object to be symbolised will be placed. Is it sufficient to add these to the Pick Report, .e.g., embedded in INFORM or linked to an external text file.

Thought must be given to the portrayal of information objects and how the associated complex attributes are portrayed.

Consideration has also been given to the use of a second display to one side of the navigational console using a 9x16 aspect ratio screen. SNPWG is also looking at other non vector formats such as *Gridded Binary (GRIB)* commonly used for weather maps. Other possibilities are *Network Common Data Form*

(netcdf) or KML which uses a tag-based structure with nested elements and attributes and is based on the XML standard. Google earth uses KML format and there may be other possibilities too.

CH replied that there is currently no action on DIPWG and we should stay tuned for more details to be provided by SNPWG. SNPWG should inform DIPWG when they know what they need.
JSF asked if we (SNPWG) put a layer over the ENC, how would the information be stored and how will this information affect any other layers?
CH replied that we would have to look into this and also how this impacts on performance.
MJ commented that anything defined by DIPWG is geo-referenced. Chart symbols or alternative symbology could come together in one product. Information could be accessed through the Pick Report. If there are separate symbol libraries they may not be aware of each other which could lead to problems.
MJ suggested that a common symbol library may be better.
JSF asked if there is no ENC underneath how do we get around this?
JM (Johannes Melles) stated that many of the attributes are additional to those used in ENCs, he would be in favour of a single symbol library.
BG commented that if you took your average sailing directions how many symbols are there that are included to support the text?
JM replied that he didn't know.
BG said that in the case of Pilot Boarding Points on ENCs the user knows there is additional information so he cross references the object with other documents onboard. The *Pick Report* could contain this additional information. External picture files could also be called from the Pick Report.
JM said that we need to streamline the whole process and that SNPWG and DIPWG must work closer in the future.
JSF replied that SNPWG has a much wider range of information to cover, not just Pilot Boarding Points. He agreed that there were also quite a lot of symbols common to both. However there are many new symbols that SNPWG want to display. He continued to say that SNPWG was looking for a strategic way forward, perhaps integrate with S-101, S-10x, etc.
BG said that from his perspective that if we keep adding to our work load where do we stop?
JSF said there was a proposal by SNPWG to HSSC to create a new S-10x.
BG said that this whole issue needs to be thrashed out at HSSC2.
JSF replied that if additional nautical information was included in S-101 then that would give you the "Wow" factor.
BG replied that he didn't think so as you could find your product specification used in different environments.
JSF replied saying the basic navigational chart is not just ENCs.
BG said that TSMAD were making the linkage easier for the end user. He re-iterated saying where do we stop - Weather? This is why we prefer overlays.
JP said that by having different product specifications means we can integrate different products, this gives us the "Wow" factor. She went on by saying that not all Hydrographic Offices have the capability or access to the appropriate data to support integrating the data.
JSF asked if we can make an entry in the minutes that a decision has to be made one way or the other.
MJ said that TSMAD recognises that this is a separate product and that all we need to do is harmonise the symbols between DIPWG and SNPWG. Then we can map between the two products.
KI recalled that it was mentioned in the Stakeholders Workshop that having more than one product, e.g. S-101 & S-10x, was the motivation to invest in test beds and further product specifications.

16.1A S-101 Scale Independent (SI) and Scale Dependent (SD) Data (See TSMAD20 Minutes)

16.1B US position against SI and SD data (See TSMAD20 Minutes)

16.2A A Proposal for Improving & Standardising the ECDIS/ECS Pick Report
[TSMAD20/DIPWG2-16.2A]

RC gave a presentation based on his Pick Report Paper. The paper identified that the *S-52 Presentation Library* is not very prescriptive as to how the Pick Report function should be implemented and limits its guidance to suggestions. RC stressed that the purpose of the paper was to investigate ways in which the Pick Report could be standardised for consistency and improved not just for current systems but also with an eye on the future and S-101.

BG noted that we should design and configure it better.
RF asked if themes could be part of this.
HA stated that this was a good first draft which we could build on when it comes implementing the portrayal.
BG said that we had been looking for something like this to standardise some of the S-101 things. What actions are planned to take this a step further? He also mentioned that he liked HA's idea and whatever we do we will have to specify it. Then build on it in S-101.
HP said that the IHO could write a specification for best practise. He said he had read the paper and it is OK. What we need now are clear specifications from the IHO so type approval houses can test.
MJ asked if the IHO can make this a guideline document before the test standard is revised in 2011.
RF enquired whether it would be useful to set up a sub working group.
HB said that if we do this then it should be prepared as a minimum standard we do not want to have to implement everything in the paper. What we have suffered from in the past are inconsistent or poor specifications we do not also want over specification.
JP proposed that the UKHO write a first draft of the Pick Report/Cursor Enquiry standard in consultation with NOAA and AHO.

Action: The UKHO (RC) with AHS (JW) & NOAA (JP) to draft a minimum standard for Cursor Enquiry and Pick Report presentation for consideration at the next joint TSMAD/DIPWG meeting.

16.3A Incorporation of Selected Sections of S-52 into S-101

[TSMAD20/DIPWG2-16.3A]

Action Item 19 from the May 2009, joint TSMAD18/DIPWG1 meeting in Ottawa was to, "Make recommendations as to what portion of S-52 should be incorporated into S-101." This action is related to, but separate from the development of the S-100 Portrayal Register. The Portrayal Register is essentially of a list of symbols and a set of rules that associate specific S-101 objects with a particular symbol. Section 9 of the S-101, *IHO Geospatial Standard for Hydrographic Data*, will hold all the other IHO specified information needed to define the portrayal of S-101 encoded ENC data.

Recommendations

1. S-52 and Part I of its Annex A (excluding the look-up tables and CSPs) become the basis of S-101, Section 9, "Portrayal."
2. TSMAD and DIPWG form an ad hoc correspondence sub-working group to systematically review each section of the S-52 and Part I of its Annex A (excluding the look-up tables and CSPs) and edit them into one unified set of portrayal guidance that will become Section 9 of S-101.
3. S-52, Annex A, Part II, "Mariners Navigations Objects" be implemented as a separate annex to S-101.
4. S-52, Annex B, "Procedure for Initial Calibration of Displays" and S-52, Annex C, "Procedure for Maintaining the Calibration of Displays," be merged into one document with two sections and implemented as a single separate annex to S-101.
5. S-52, Annex B, "Procedure for Initial Calibration of Displays" and S-52, Annex C, "Procedure for Maintaining the Calibration of Displays," be carefully reviewed by OEMs to determine if the procedures may generally be applied to technologies other than CRTs, such as LCD, plasma displays and evolving display types, such as OLED displays, which may come to be implemented in ECDIS during the lifetime of S-101.
6. Addendum to S-52, Annex A, Part I along with the look-up tables and CSPs within Part I be implemented as parts of the Portrayal Register

Actions

The DIPWG was invited to:

1. Agree to the recommended future dispositions of the various components of S-52 vis-à-vis S-101, the Portrayal Register and S-65.
2. Form an ad hoc correspondence sub-working group to systematically review each section of S-52 and Part I of its Annex A (excluding the look-up tables and CSPs) and to edit them into one unified set of portrayal guidance that will become Section 9 of S-101.
3. Request assistance from OEMs for the review of S-52 Annex B and Annex C to determine if the procedures may generally be applied to technologies other than CRTs.

Clarify the meaning of the note at the top of the Part II table of contents, which states, "(To be superseded by IEC standards 61174, 3rd edition, and 62288, 1st edition when they are published)," in light of both of these editions having been published.

Comments from the floor
EM said he could not understand why "calibration" is mentioned here as it is not part of portrayal.
HB stated that he was a little surprised that we are putting things into S-101 when nothing is defined in S-100. He went on to say that when S-100 is completed we will have a template to populate S-101. A set of rules need to be defined so that these can be used for other products.
JP confirmed that S-100 portrayal is behind the curve. What we do know is that S-52 has to go somewhere.
HP stated that the IHO should stop dealing with these as IMO (IEC62288) has set the performance standard for these. He went on to say that the IHO had a rule for calibration of monitors. However if the IHO has come to another conclusion, i.e. relax the rules then HP is all for it.
It was noted that if the colour calibration section was not brought forward as part of S-101, then the IMO would have to be informed.
BG asked what are the requirements for registering a symbol? Specify a Portrayal Model first! S-101 is a product specification based on S-100. This is what needs to be done, we simply need to decide who will do it.
JP added that this is where we are and there is still a lot of work to do. Maybe we do this by correspondence where we can lay out the framework.
EM asked JP if she specifies what needs to happen.
JP said we can get back to you on this.
CH replied that we should look at the sections in red (referring to the paper) and issue a statement of requirement.

Actions:
1. CH & JP to more clearly define the editing activities required for S-101/S-52 Incorporation.
2. TM to set up a correspondence sub-working group to help systematically review each section of S-52 and Part I of its Annex A (excluding the look-up tables and CSPs) and to edit them into one unified set of portrayal guidance that will become Section 9 of S-101.
3. OEMs to review S-52 Annex B and Annex C to determine if the procedures may generally be applied to technologies other than CRTs.
4. CH to clarify the meaning of the note at the top of the Part II table of contents, which states, "(To be superseded by IEC standards 61174, 3rd edition, and 62288, 1st edition when they are published)," in light of both of these editions having been published.

16.4A S-101Unknown Mandatory Attributes
(See TSMAD20 Minutes)

16.5A S-101 Consistency
(See TSMAD20 Minutes)

17A Bathymetric Product Specification
(See TSMAD20 Minutes)

18A Integration of Multiple Layers of S-100 compliant Auxiliary Navigational Information
(See TSMAD20 Minutes)

18B Proposed Specification for Auxiliary Information Layer Integration for use with ENC - S.10x (See TSMAD20 Minutes)

18C Proposed Bathymetric Surface Product Specification S-102
(See TSMAD20 Minutes)

19A Product Specification for Maritime Boundaries
(See TSMAD20 Minutes)

20.1A IALA Feb 2009 Meeting
No discussion on this agenda item.

20.2A Virtual Aids to Navigation from an ENC perspective
(See TSMAD20 Minutes)

21.1A Foul Ground / Foul Area Encoding & Symbology
There were no discussions on this agenda item as JW informed the meeting that the CSPCWG is still completing its work to define these.

21.2A Paper Chart Symbol Changes Considered by the CSPCWG
[TSMAD20/DIPWG2-21.2A]

This paper highlights some symbology changes that were approved or are under consideration by the CSPCWG

Recommendations
1. Pipeline, submarine/on land – No action is recommended.
2. Offshore renewable energy installations – Members should consider whether a generic renewable energy or wave farm S-101object and symbology is desired.
3. Marine farm/culture – Members should consider whether a separate shellfish bed S-101 symbol is desired.
4. Possible inclusion of INT1 symbols within an S-100 portrayal register – Members should consider the potential merits and disadvantages of including paper symbology in the portrayal register.
5. Small Craft Facilities – No action is recommended.
6. Floating Wind turbines – No action is recommended

Action Required of DIPWG
DIPWG members are invited to consider the information provided in this paper and report any need for designing additional symbology or objects/attributes for S-101

22A Corrections to ECDIS Chart 1
MJ reported to the meeting that ECDIS Chart 1 is a compilation of all existing symbols on screen. The dataset is positioned in a dessert in Africa somewhere and can be interrogated by cursor enquiry and viewed in the Pick Report. They are ordered in a similar way to Paper Chart 1. The ECDIS Chart 1, originally developed by SevenCs, has some encoding errors that were identified by our industry partners. MJ is now coordinating with SevenCs to have the errors corrected and this work is now ongoing.

Action: MJ Continue coordinating with SevenCs to have the errors corrected.

23A Assorted S-101 Issues (the Dirty Dozen) (See TSMAD20 Minutes)

23B S-101 Strategic Implementation Plan (See TSMAD20 Minutes)

24.1A Management of Encoding Bulletins (EBs) (See TSMAD20 Minutes)

24.2A S-58 (discussion on tests 1768, 1769, 1770 and 1796) (See TSMAD20 Minutes)

24.3A S-100 Generic Product Specification Template (See TSMAD20 Minutes)

Any Other Business (Affecting DIPWG)
CH - Colby went through the late issues raised by Canada:
- Buildings not symbolising when encoded on PONTON. Is a draw order issue.
- Display of aero lights. HA suggested it is a problem with the portrayal instruction.
- BCNLAT with 2 colours displaying grey – more information from Canada is required.

- Display priority for wrecks, obstructions and underwater rocks. Is an IMO issue. RF pointed out that in certain circumstances these become part of display base.

Date and Place of next meeting

Lynn Patterson invited TSMAD to hold its next meeting in Sidney, Vancouver Island, Canada between the 29th of November and the 3rd December 2010. TP informed the meeting the Yong HUH (Korea, KORI), had invited TSMAD to host the TSMAD22/DIPWG3 meeting in Incheon, Korea (April / May 2011).

Annex A

TSMAD20 / DIPWG2 – List of Documents

Document Number		Document Title
TSMAD20/DIPWG2	0	Logistics for Rostock Meeting
TSMAD20/DIPWG2	1A rev8	List of Documents
TSMAD20/DIPWG2	1B rev1	List of Participants
TSMAD20/DIPWG2	2A rev9	Joint Agenda for TSMAD20 and DIPWG2
TSMAD20/DIPWG2	3A	Minutes of TSMAD19, Sydney, 2009
TSMAD20/DIPWG2	3B	Status of Actions from TSMAD19
TSMAD20/**DIPWG2**	4A	Minutes of DIPWG1, Ottawa, 2009
TSMAD20/**DIPWG2**	4.1A	Possible alternative colours (other than orange) for Mariner Objects
TSMAD20/**DIPWG2**	4B	Status of Actions from DIPWG1
TSMAD20/DIPWG2	5A	HSSC Actions for TSMAD
TSMAD20/**DIPWG2**	5B	HSSC Actions for DIPWG
TSMAD20/DIPWG2	6.1A	Report on CSPCWG activities [Wootton]
TSMAD20/DIPWG2	6.2A	Report on EUWG activities[Deniel]
TSMAD20/DIPWG2	6.3A	Report on DQWG activities [Greenslade]
TSMAD20/DIPWG2	7.1A	IALA Feb 2009 Meeting
TSMAD20/DIPWG2	7.2A	ISO 19117 [Greenslade]
TSMAD20/DIPWG2	7.3A	IEC
TSMAD20/**DIPWG2**	8.1A	S-100 Portrayal Model (.ppt)
TSMAD20/**DIPWG2**	8.2A	S-100 Symbol Model (.ppt)
TSMAD20/**DIPWG2**	8.3A	Portrayal Package (zip)
TSMAD20/DIPWG2	9A	Port ECDIS
TSMAD20/DIPWG2	10A	S-101 Draft 0.1 Standard
TSMAD20/DIPWG2	10B	S-57 to S-101 Crosswalk
TSMAD20/DIPWG2	10C	Outcomes of S-101 Stakeholders Meeting
TSMAD20/DIPWG2	11.1A	S-101 Catalogue File and Discovery Metadata
TSMAD20/DIPWG2	11.2A	S-101 Support File Formats
TSMAD20/DIPWG2	11.2B	Formatting and Management of ENC Support Files
TSMAD20/DIPWG2	12A	A 3-D Nautical GIS targeting Cognitive Off-loading and Decision Making
TSMAD20/DIPWG2	12B	3-D Nautical Navigation Presentation Slides
TSMAD20/**DIPWG2**	13A	CATZOC, Simplified Symbols and Colour Palettes
TSMAD20/**DIPWG2**	14A	Paper Chart and ECDIS (P/ECDIS) Chart 1
TSMAD20/**DIPWG2**	14B	INT1 to S-52 symbol Mapping
TSMAD20/**DIPWG2**	15A	Nautical Publication Symbology
TSMAD20/DIPWG2	16.1A	S-101 Scale Independent and Scale Dependent Data
TSMAD20/DIPWG2	16.1B	US position against SI and SD data [Powell]
TSMAD20/**DIPWG2**	16.2A	A Proposal for Improving & Standardising the ECDIS/ECS Pick Report [Coombes]
TSMAD20/**DIPWG2**	16.3A	S-101/S-52 Incorporation [Harmon]
TSMAD20/DIPWG2	16.4A	S-101Unknown Attributes
TSMAD20/DIPWG2	16.5A	Improving ENC Consistency through S-101 [Powell]
TSMAD20/DIPWG2	17A	Bathymetric Product Specification
TSMAD20/DIPWG2	18A	Requirements for the Integration of S-100 compliant Auxiliary Navigational Information with S-101 ENC data
TSMAD20/DIPWG2	18B	Proposed Specification for Auxiliary Information Layer Integration for use with ENC - S.10x
TSMAD20/DIPWG2	18C	Proposed Bathymetric Surface Product Specification - S.102
TSMAD20/DIPWG2	19A	Product Specification for Maritime Boundaries
TSMAD20/DIPWG2	20.1A	IALA Feb 2009 Meeting
TSMAD20/DIPWG2	20.2A	Virtual Aids to Navigation from an ENC perspective

TSMAD20/**DIPWG2**	21.1A	Foul Ground / Foul Area Encoding & Symbology
TSMAD20/**DIPWG2**	21.2A	Paper Chart Symbol Changes Considered by the CSPCWG
TSMAD20/**DIPWG2**	22A	Corrections to ECDIS Chart 1
TSMAD20/DIPWG2	23A	Assorted S-101 Issues (the Dirty Dozen)
TSMAD20/DIPWG2	23B	S-101 Strategic Planning Discussion (.ppt)
TSMAD20/DIPWG2	24.1A	Encoding Bulletins
TSMAD20/DIPWG2	24.2A	S-58 (discussion on tests 1768, 1769, 1770 and 1796)
TSMAD20/DIPWG2	24.3A	S-100 Generic Product Specification Template
TSMAD20/DIPWG2	INF1	Draft S101 Data Classification and Encoding Guide (.zip)
TSMAD20/DIPWG2	INF2	Report from the 2nd Tidal and Water Level Working Group (TWLWG) (Stavanger, Norway, 27 - 29 April 2010)

Annex B

TSMAD 20 / DIPWG 2 – AGENDA

Document Number		Document Title
M O N D A Y		
TSMAD20/DIPWG2	0	Logistics for Rostock Meeting
1. Opening and Administrative Arrangements [Jonas / Greenslade / Harmon]		
TSMAD20/DIPWG2	1A	List of Documents
TSMAD20/DIPWG2	1B	List of Participants
2. Approval of Joint Agenda [Greenslade / Harmon]		
TSMAD20/DIPWG2	2A	Joint Agenda for TSMAD20 and DIPWG2
3. Matters Arising from TSMAD-19 (Sydney) [Greenslade]		
TSMAD20/DIPWG2	3A	Minutes of TSMAD19, Sydney, 2009
TSMAD20/DIPWG2	3B	Status of Actions from TSMAD19
4. Matters Arising from DIPWG-1 (Ottawa) [Harmon]		
TSMAD20/**DIPWG2**	4A	Minutes of DIPWG1, Ottawa, 2010
TSMAD20/**DIPWG2**	4.1A	Possible alternative colours (other than orange) for Mariner Objects
TSMAD20/**DIPWG2**	4B	Status of Actions from DIPWG1
5. Actions Arising from HSSC-1 (Singapore) [Greenslade / Harmon]		
TSMAD20/DIPWG2	5A	HSSC Actions for TSMAD (Verbal Report)
TSMAD20/**DIPWG2**	5B	HSSC Actions for DIPWG
6. Activities of Other Working Group [Greenslade]		
TSMAD20/DIPWG2	6.1A	Report on CSPCWG activities [Wootton] (additional discussion will also be covered by item 21.2A)
TSMAD20/DIPWG2	6.2A	Report on EUWG activities [Coombes]
TSMAD20/DIPWG2	6.3A	Report on DQWG activities [Greenslade] (Verbal Report)
7. Activities of Other Organizations [Greenslade]		
TSMAD20/DIPWG2	7.1A	IALA Feb 2009 Meeting (to be addressed by item 20.1A)
TSMAD20/DIPWG2	7.2A	ISO 19117 [Greenslade] (Verbal Report)
TSMAD20/DIPWG2	7.3A	IEC
T U E S D A Y		
8. Portrayal Register [Le Bihan / Astle]		
TSMAD20/**DIPWG2**	8.1A	S-100 Portrayal Model
TSMAD20/**DIPWG2**	8.2A	S-100 Symbol Model
TSMAD20/**DIPWG2**	8.3A	Portrayal Package (.zip)
9. Port ECDIS Presentation and Demonstration [Seefeldt]		
TSMAD20/DIPWG2	9A	Port ECDIS
10. S-101 Stakeholders Meeting (March 2010 – Taunton) [Powell]		
TSMAD20/DIPWG2	10A	S-101 Draft 0.1 Standard
TSMAD20/DIPWG2	10B	S-57 to S-101 Crosswalk
TSMAD20/DIPWG2	10C	Outcomes on S-101 Stakeholders Meeting
11. S-101 Development Topics – Session 1 [Greenslade / Powell]		
TSMAD20/DIPWG2	11.1A	S-101 Catalogue File and Discovery Metadata
TSMAD20/DIPWG2	11.2A	S-101 Support File Formats
TSMAD20/DIPWG2	11.2B	Formatting and Management of ENC Support Files
W E D N E S D A Y		
12. 3-D Nautical [Porathe]		
TSMAD20/DIPWG2	12A	A 3-D Nautical GIS targeting Cognitive Off-loading and Decision Making
TSMAD20/DIPWG2	12B	3-D Nautical Navigation Presentation Slides
13. U.S. User Survey Results [Powell]		

TSMAD20/**DIPWG2**	13A	CATZOC, Simplified Symbols and Colour Palettes
14. Paper Chart and ECDIS Chart 1 [Harmon]		
TSMAD20/**DIPWG2**	14A	Paper Chart and ECDIS (P/ECDIS) Chart 1
TSMAD20/**DIPWG2**	14B	INT1 to S-52 symbol Mapping
15. Nautical Information Portrayal [Harmon]		
TSMAD20/**DIPWG2**	15A	Nautical Publication Symbology
16. S-101 Development Topics – Session 2 [Greenslade / Powell]		
TSMAD20/DIPWG2	16.1A	S-101 Scale Independent and Scale Dependent Data
TSMAD20/DIPWG2	16.1B	US position against SI and SD data [Powell]
TSMAD20/**DIPWG2**	16.2A	A Proposal for Improving & Standardising the ECDIS/ECS Pick Report [Coombes]
TSMAD20/**DIPWG2**	16.3A	S-101/S-52 Incorporation [Harmon]
TSMAD20/DIPWG2	16.4A	S-101 Unknown Attributes [Powell]
TSMAD20/DIPWG2	16.5A	S-101 Consistency [Powell]
T H U R S D A Y		
17. S-102 Bathymetric Product Specification		
TSMAD20/DIPWG2	17A	Bathymetric Product Specification [Ladner]
18. S-102 Integration of Multiple Layers of S-100 compliant Auxiliary Navigational Information [Canada]		
TSMAD20/DIPWG2	18A	Requirements for the Integration of S-100 compliant Auxiliary Navigational Information with S-101 ENC data
TSMAD20/DIPWG2	18B	Proposed Specification for Auxiliary Information Layer Integration for use with ENC - S.10x
TSMAD20/DIPWG2	18C	Proposed Bathymetric Surface Product Specification - S.102
19. UN-DOALOS - Product Specification for Maritime Boundaries		
TSMAD20/DIPWG2	19A	Product Specification for Maritime Boundaries
20. Virtual Aids to Navigation [Greenslade]		
TSMAD20/DIPWG2	20.1A	IALA Feb 2009 Meeting
TSMAD20/DIPWG2	20.2A	Virtual Aids to Navigation from an ENC perspective [Richardson]
21. Paper Chart Symbology Impacts on ECDIS [Harmon]		
TSMAD20/**DIPWG2**	21.1A	Foul Ground / Foul Area Encoding & Symbology
TSMAD20/**DIPWG2**	21.2A	Paper Chart Symbol Changes Considered by the CSPCWG
22. Corrections to ECDIS Chart 1 [Jonas]		
TSMAD20/**DIPWG2**	22A	Corrections to ECDIS Chart 1
23. S-101 Development Topics – Session 3 [Powell]		
TSMAD20/DIPWG2	23A	Assorted S-101 Issues (the Dirty Dozen)
TSMAD20/DIPWG2	23B	S-101 Strategic Planning Discussion
F R I D A Y		
24. TSMAD Sub-WG Activities [Greenslade]		
TSMAD20/DIPWG2	24.1A	Encoding Bulletins (Wootton]
TSMAD20/DIPWG2	24.1A	EXPSOU=2 and Dredged Areas
TSMAD20/DIPWG2	24.1B	Management of Encoding Bulletins [Déniel]
TSMAD20/DIPWG2	24.2A	S-58 (discussion on tests 1768, 1769, 1770 and 1796)
TSMAD20/DIPWG2	24.3A	S-100 Generic Product Specification Template
25. Any Other Business		
26. Review of Meeting Actions [Greenslade / Harmon]		
27. Date and Venue of Next Meeting		
28. Close of Meeting		

Annex C

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Annex D

DIPWG 2 - LIST OF ACTION ITEMS FROM THE MEETING

Action No.	Action On	Agenda Item	Action Item	Status
1	HP	4.1A	Alternative Colours for Mariner Objects: Provide graphic depicting samples of Alternative Colours for Mariner Objects	
2	CH	4.1A	Alternative Colours for Mariner Objects: DIPWG has accepted HP's proposal, therefore CH will prepare it as a deferred amendment to S-52.	
3	JW, MH, CH and JP	13A	Simplified v Traditional Symbols Form a sub working group to recommend a single set of symbols, selected from the available simplified and traditional symbols.	
4	RC	13A	Sector Lights RC to investigate what constitutes a major light and prepare a paper on 360° lights for the next DIPWG meeting	
5	DIPWG	14A	Paper Chart and ECDIS Chart 1 (P/ECDIS Chart 1) Review and comment on the design of the prototype P/ECDIS Chart 1 format Review and comment on the accuracy of the S-52 to INT1 symbol mapping Make recommendations for any additional narrative sections in the P/ECDIS Chart 1	
6	CH	14A	Identify any S-52 errors discovered during the development of the P/ECDIS Chart 1 and prepared fixes in a deferred amendment	
7	CH, MH	14A	Investigate possibility of adding S-52 JPEG symbols to the S-52 CD-ROM or posting them directly on the IHO website.	
8	DIPWG	15A	Nautical Publication Symbology Make recommendations as to how DIPWG and SNPWG might most effectively work together to develop symbology for nautical information. Provide feedback on the possibility of adding "Nautical" to the DIPWG TOR. Suggest any additional issues that need to be addressed to portray nautical information. Provide ideas related to nautical information symbols.	
9	RC, JW, JP	16.2A	Cursor Enquiry and Pick Reports The UKHO with AHO & NOAA to draft a minimum standard for Cursor Enquiry and Pick Report presentation for consideration at the next joint TSMAD/DIPWG meeting.	
10	CH & JP	16.3A	Incorporation of Selected Sections of S-52 into S-101 More clearly define the editing activities required for S-101/S-52 Incorporation.	
11	TM	16.3A	Set up a correspondence group to help edit sections of S-52 for incorporation into S-101.	
12	OEMs	16.3A	Review S-52 Annex B and Annex C to determine if the procedures may generally be applied to technologies other than CRTs.	
13	CH	16.3A	Clarify the meaning of the note at the top of the Part II table of contents, which states, "(To be superseded by IEC standards 61174, 3rd edition, and 62288, 1st edition when they are published)," in light of both of these editions having been published.	

14	DIPWG	21.2A	Paper Chart Symbol Changes Considered by the CSPCWG Members are invited to consider the information provided in this paper and report any need for designing additional symbology or objects/attributes for S-101	
15	MJ	22A	Corrections to ECDIS Chart 1 Continue coordinating with SevenCs to have the errors corrected	
16	LP	AOB	To more clearly define the issues brought to DIPWG by Canada under AOB	
17	CH	AOB	To review and amend the presentation of AERO Lights in respect of the anomalies reported between CATLIV 5 and 6.	