3rd Digital Information Portrayal Working Group (DIPWG)
Draft Minutes
11 - 15 April 2011 (Seoul, Republic of Korea)

Chairman: Colby Harmon (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
Annex E – Notes from the Portrayal Breakout Session

Agenda

1. Opening and Administrative Arrangements
TSMAD22/DIPWG3 - 01A [List of Documents]
TSMAD22/DIPWG3 - 01B [List of Participants]

The TSMAD chairman (BG) opened the meeting commenting that it was a healthy turnout even though many of the delegates from the US were absent due to Congress failing to agree the annual budget in time. Most notably among those absentees was Colby Harmon, the DIPWG Chair. He added that he had been informed that Julia Powell (DIPWG Vice-Chair) was on her way and should arrive some time during the morning session. He continued by thanking our Korean hosts for providing such a good venue for the meeting. He then introduced Kelly who would act as facilitator and interpreter for the week.

Kelly welcomed everyone to Korea and announced that the Director General of KHOA would give a welcome address later that morning. Kelly then provided details of the logistical arrangements for the meeting including the coffee and lunch arrangements. Kelly informed the meeting that there would be two informal diners hosted by KHOA during the week, one tonight (Monday) and another Thursday evening.

A video produced by the Korea Hydrographic Oceanographic Administration (KHOA) was then shown to the meeting outlining its history, work and vision going forward.

After the video BG commented that it was very enjoyable with a lot of high tech innovations. BG then invited the meeting to go round the room so that everyone could introduce themselves.

During the morning session Mr Im Joo Bin, Director General of the Korean Hydrographic Oceanographic Administration (KHOA), addressed the meeting by welcoming all the delegates and thanking them for their contribution to the safety of navigation. He went on to emphasise how importance international standards were to KHOA in the production of all of their publications. He also added that Seoul is a great place for sampling a cultural understanding of Korea. He hoped we have a fruitful outcome to the meeting and leave Korea with warm memories. The TSMAD Chairman thanked Mr Im for his warm welcome.

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2. Approval of Joint Agenda

TSMAD22/DIPWG3 - 02A - Joint Agenda for TSMAD22 and DIPWG3

BG informed the meeting that it was a busy agenda which would take some getting through in the time available. CRJ asked that two papers prepared by Denmark be added to the agenda. It was agreed that these would be discussed towards the end of the week under AOB. BG asked the meeting if there was general acceptance of the agenda to which there were no comments from the floor.

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3. Matters Arising from TSMAD-21 (see TSMAD 22 Minutes)
TSMAD22/DIPWG3 - 03A - Minutes of the TSMAD-21 (Victoria) 2010 meeting

TSMAD22/DIPWG3 - 03B - Status of Actions from TSMAD21 (see documents 03C, 03D, 03E and 03F)
TSMAD22/DIPWG3 - 03C - Modifications to the ISO/IEC 8211Encoding of S-100
TSMAD22/DIPWG3 - 03D - Modification to the General Feature Model
TSMAD22/DIPWG3 - 03E - Modification to the Feature Catalogue Model
TSMAD22/DIPWG3 - 03F - Modified S-100 Feature Catalogue

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4. Matters Arising from DIPWG-2 (Rostock)
TSMAD20/DIPWG3 - 04A
Minutes of DIPWG2 (Rostock) 2010

BG in the absence of the DIPWG Chairman and Vice Chairman enquired whether there were any comments or issues with the minutes of the DIPWG2 meeting in Rostock. There being no comments from the floor the minutes were accepted.

TSMAD22/DIPWG3 - 04B
Status of Actions from DIPWG2

In JP's continued absence BG went through the actions from DIPWG 2

Action 1
HP informed the meeting that there was some discussion between TC80/IEC about opening IEC62288[1] with a view to updating to edition 2. HP is in favour of opening IEC62288 and encourages Member States (MS) to lobby TC80 to open it for maintenance. IHO should make a decision ahead of the next TC80/IEC meeting. IMO has transferred responsibility for IEC62288 from the IHO to IEC therefore if IHO want input then they will have to liaise with IEC. BG highlighted the fact that we are making a recommendation in S-52 and wondered why IEC were defining such things. IM replied that the reason is that IEC62288 states that a certain standard should be followed as directed by the IMO[2]. OW informed the meeting that mariner objects were still in the PL and as such IEC62288 was not in a position to include them. The only sensible solution would be to remove these from S-52 as the PL should only be responsible for charted symbols. HP said that that of the alternative colours proposed there were four available. This confuses inspectors which is why we need to open IEC62288. OW said that the PL has a footnote[3] stating when IEC622888 and 61174 are published the mariners objects should be removed from S-52.

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	Complete – see action 2
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.	Complete – Issued as a Deferred Amendment in MD8
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.	In Progress
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	Completed

[1] IEC 62288:2008(E) specifies the general requirements, methods of testing, and required test results, for the presentation of navigation-related information on shipborne navigational displays in support of IMO resolution MSC.191 (79).
[2] The IEC62288 standard also addresses the guidelines for the presentation of navigation-related symbols, terms and abbreviations in Safety of Navigation circular SN/Circ.243
[3] Footnote to Part II (Mariners' Navigation Objects) of the PL layout states *"To be superseded by IEC standards 61174, 3rd edition, and 62288, 1st edition, when they are published"*.

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	Ongoing
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	Ongoing
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.	Ongoing
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.	Ongoing
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.	Completed
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.	Ongoing
11	TM	16.3A	Set up a correspondence group to help edit sections of S-52 for incorporation into S-101.	Ongoing
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.	Ongoing
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	Ongoing
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	Closed. Issues may be presented at next DIPWG-4 if necessary.
17	CH	AOB	To review and amend the presentation of AERO Lights in respect of the anomalies reported between CATLIT 5 and 6.	Ongoing

5. Matters Arising from HSSC-2 (Rostock)

TSMAD22/DIPWG3 - 05A - HSSC Actions for TSMAD (see TSMAD 22 Minutes)

TSMAD22/DIPWG3 - 05B
HSSC Actions for DIPWG

Action HSSC2/9 - MH reported that the IHB is ready to finance continuing development of the S-100 Geospatial Information Portrayal Register using Presentation Library funds. However no proposal to undertake this work has been received yet.

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6. Activities of Other Working Group (see TSMAD 22 Minutes)

TSMAD22/DIPWG3 - 06.1A - Report on SNPWG Activities
TSMAD22/DIPWG3 - 06.2A - Report on CSPCWG Activities
TSMAD22/DIPWG3 - 06.3A - Report on DQWG Activities
TSMAD22/DIPWG3 - 06.4A - Report on TWLWG Activities

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7. Activities of Other Organizations (see TSMAD 22 Minutes)

TSMAD22/DIPWG3 - 07.1A - Report on IALA Activities
TSMAD22/DIPWG3 - 07.2A - Report on ISO/TC211 Activities

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8. Portrayal

TSMAD22/DIPWG3 - 08.1A
Mariner Objects Colours

JP asked if this agenda item could be deferred as there is no paper and does not have sufficient information relating to it.

TSMAD22/DIPWG3 - 08.2A
Simplified v Traditional Symbols

JP presented this agenda item in the absence of CH with the aid of a power point presentation. JP reported that at DIPWG 2 in Rostock the meeting expressed an interest in having only one set of charted symbols, either simplified or traditional paper chart symbols. JP informed the meeting that the paper provides a comparison of the simplified and paper chart symbols and a list of complex lines specified in S-52. It briefly discusses some items to consider as DIPWG evaluates whether to retain or remove simplified symbology in the future. JP also commented that the paper does not provide an argument for either the retention or removal of simplified symbols.

JP asked that an action be proposed for DIPWG3 to decide whether to implement changes in S-52 or to wait for S-101? Alternatively form a correspondence group to consider which simplified or paper chart symbols to keep and bring recommendations to DIPWG4. JP asked the meeting whether DIPWG wanted to do anything in S-52. To which HP stated that the OEMs do not want to do anything.

BG said that he had two questions, firstly why simplified symbols were produced; secondly why remove the simplified symbols as users have the choice to change. HA replied that in the first instance the screen resolution was not as good as the paper chart and symbols had to be larger in order that they could be identified. Secondly draw times for the simplified symbols was quicker. On another point HA stated it was not necessary to show the traditional symbol as mariners could use the pick report.

HP considered the computing power of PCs these days has removed the draw time issues but the screen resolution is still valid. HB remarked that we should make some assessment of these symbols, simplified ones look ugly. He commented that if he had the choice he would choose the better looking symbols, e.g. raster. He went on to say that perhaps this is the way we should go.

JP remarked that Mathias Jonas had suggested colouring the current traditional ENC symbols but the real purpose of this paper was to look at only supporting one set of symbols. BG recapped that in short it was not proposed to do anything in S-52 and that we can play around with these symbols on the S-101 test bed.

RF asked what feedback NOAA had from Mariners? JP replied that out of 8000 questionnaires sent out 2000 replied with trend being towards traditional. Moving on JP asked who would want to be part of this correspondence group. A show of hands indicated that TM, JW, OW HP & KI wished to join the group. JP volunteered CH to lead the group in his absence.

Action: CH to form a correspondence group to consider which simplified or paper chart symbols to keep and bring recommendations to DIPWG4.

TSMAD22/DIPWG3 - 08.3A
Sector Lights

The subject of major lights with all round arc of visibility was discussed at DIPWG2 in Rostock. 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 were. This paper seeks to define a major light and create rules for displaying them.

RC presented his paper on major lights with all round visibility. The main scope of the paper was to propose a nominal range for major lights without impacting unduly on the ECDIS display. The final proposal was to display 360 degree major light sectors on lights with a nominal range of 10nM or greater. However this was to the exclusion of lights with the following attributes:

Light Characteristic: "12" Morse
Category of Light: "5" Aero Light
Category of Light: "6" Air Obstruction Light

RC also identified other issues relating to the display of sectored which although outside of the scope of the paper identified methods of reducing screen clutter resulting from the display of sectored lights.

KI informed the meeting that they currently use 15nM but that 10nM was fine by him. HP said that this was all technically possible and should be drafted as a deferred amendment. He also identified that all data producers should implement SCAMIN on sectored lights.

BG remarked that the other issues identified in the paper were best left until S-101 where we could look at more sophisticated methods of encoding and displaying these.

Action: RC to write & issue a deferred amendment to create a 360 degree sector around a major light (10nM or greater). Amend the CSP (LIGHTS05) to create this symbol applying the relevant filtering outlined in the accompanying paper.

TSMAD22/DIPWG3 - 08.4A
Cursor Enquiry & Pick Reports

A paper outlining a proposal for improving & standardising the ECDIS/ECS Pick Report was presented at the joint TSMAD/DIPWG meeting held in Rostock in May 2010. As a result the UKHO with AHO & NOAA were tasked with drafting a minimum standard for Cursor Enquiry and Pick Report for presentation and consideration at the next joint TSMAD/DIPWG meeting in April 2011.

RC presented this paper with the aid of a PowerPoint presentation outlining the following:

- Fundamental rules to be applied when presenting cursor picked information
- Information processing using themes & prioritisation, including pick report configuration
- Presentation of information in a simplified and expanded view
- Minimising the amount of unnecessary textual descriptors

HP stated it should not be possible to cursor pick information that is not on the display. He also commented that a better way of prioritising information in the pick report would be to use the drawing priorities. KI said that the pick report must only display information on picked information not ECDIS info. The configuration panel does not make it easier for the user. JP asked if the pick report should only display what you see. KI replied yes but we need to retain the ENC information as this provides information relating up to date status of the displayed information. HP reaffirmed that you should only be able to pick what is on the display.

OW disagreed with this statement stating that he did not want to change the display setting to get all information. RF supported OW opinion. RC stated that whatever approach we take it must be consistent across all ECDIS. SO remarked that if the ECDIS was operating in the base display mode then the pick report could display a warning that not all features are listed. HA suggested that we do not have to choose between HP or OW opinions as we could provide the user with the option.

KI stated that this feature in the ECDIS requires improvement and that we should approve RCs specifications with some modifications, e.g. pick report priorities similar to those of drawing. HB said that we do not need another set of prioritisations to support but agrees with the HA option to show visible/invisible objects. HB went on to say that this can be done smartly also you can have a tree structure or tabs it does not matter. HP agreed that the "Show All" option was acceptable but the default be show only what is visible in the display.

OW asked if we mandate that this method is how we should all do it. JP informed the meeting that the pick report was considered an extension of the chart. TM said that there was such a variety of implementations that we should remove inappropriate information and standardise this as a function of the ECDIS. HP confirmed that he supports standardisation otherwise it is impossible to train mariners. He also commented that the illustrative examples are in Microsoft Windows and asked what about Linux? RC responded that the examples were only included to illustrate how the pick report might look. It was not intended to specify the presentation. OEMs still have the option to work within the parameters of the specific operating system. RF stated that it was not specified in the past and that maybe we need to be more prescriptive in certain instances. OW commented that we should not specify the interface.

BG enquired whether there should be an S-Mode for the pick report that way OEMs could implement their own unique "all singing" implementations. Mariners could move to this implementation when their confidence increases.

JP wrapped up the discussions by stating that these had been fruitful with several differences of opinion.. How far do we want to go and what are we mandated to do? Should we provide additional guidelines in a deferred amendment? What do we want to do for S-52? We should draft a deferred amendment removing and references to the interface, retaining the content taking account of the discussions here.

Action: UK to set up a correspondence group comprising of SevenCs, Transas and Furuno to draft a deferred amendment specifying the minimum specification for the cursor enquiry and pick report based on the accompanying paper and comments provided by stakeholders at DIPWG3 meeting.

TSMAD22/DIPWG3 - 08.5A - S-101 Themes (see TSMAD 22 Minutes)

TSMAD22/DIPWG3 - 08.5B
Display Categories

The objective of this paper was to underline some specificities/inconsistencies of «S52 display categories/ Viewing Groups» and if possible to clarify them. These points are:
• Display Categories and No Symbol Objects.
• Display Categories and Geometric type

Unfortunately PoI was not at the meeting to present this paper so JW suggested that the meeting go through the proposals and discuss. JW went on to add that he had some comments but agreed with most. JP explained that some portrayal rules can lead to "no symbol objects" as previously pointed out by KI.

HP wanted to know why it is allowed to encode something that does not have a symbol. JW explained the distinction between no symbol meta-objects and no-symbol geo objects is that it was considered that the geo objects related to particular geometric primitives were not required to be encoded (as discussed by CSMWG17), therefore the recommendation that they should not be encoded. No symbol meta-objects are required in the data but are not important enough to be displayed as a symbol in the ECDIS, but are available to be selected by the mariner as part of the Pick Report.

JP said we should add section 2.2 (Cursor-pick and No Symbol Meta-Objects) of the paper to the work of the "Pick Report" correspondence group. The meeting agreed.

Action: UK to take into account section 2.2 of the accompanying paper on "Display Categories" in the deferred amendment for the minimum specification for the cursor enquiry and pick report defined in the action at 8.4A above

TSMAD22/DIPWG3 - 08.5C
Display Priorities

This paper, submitted by PoI, highlighted the fact that point object classes could have a lower display priority than some area object classes, could lead to the situation where a point object is hidden by an area object (if it is filled with colour instructions). PoI had tested this fact on a limited set of ENCs. During the rendering operation

he generated a warning as soon as a point object is hidden by area object (associated to filling colour instructions).

The following instances were provided by way of examples.

1 CRANE (DP 4) / PONTON (DP 5) or (FLODOC DP 5)
Point Cranes could be hidden by Area Pontoon
Proposal: upgrade the display priority of point cranes to 5
"CRANES","","SY(CRANES01)","4","O","OTHER","32440" => "CRANES","","SY(CRANES01)","5,"O","OTHER","32440"
2 CTNARE (DP 4) / PONTON (DP 5) or FLODOC (DP 5)
Caution Area encoded as point could be hidden by Area Pontoon
Proposal: upgrade the display priority of point caution areas to 5
"CTNARE","","SY(CHINFO06)","4","O","STANDARD","26050" => "CTNARE","","SY(CHINFO06)","5","O","STANDARD","26050"
3 LNDMRK (DP 4) / PYLONS (DP 6)
A land mark could be hidden by a pylons, bridge structure when encoded as area
Proposal: upgrade the display priority of point land marks to 5
"CTNARE","","SY(CHINFO06)","4","O","STANDARD","26050" => "CTNARE","","SY(CHINFO06)","5","O","STANDARD","26050"
4 BUUARE (DP 3) / BUISGL (DP 4)
Building up area encoded as point could be hidden by building single encoded as area
5 WEDLKP (DP 3) / OBSTRN or TSEZNE (DP 4)
6 LNDELV (DP 4) / RUNWAY (DP 5)
7 WRECKS (DP 4) / HULKES (DP 5)
8 HRBFAC (DP 4) / PONTON (DP 5)
9 WATTUR (DP 3) / OBSTRN (DP 4)

PoI, in his conclusions, suggests a study to see if it is possible to define another strategy for the future S100/S52. The principle could be to specify that a point object must have a higher display priority than an area/line object except for special cases, e.g. PYLONS under a bridge in the real word.

The following table provides comments and suggested actions supplied by JW.

	Comments	**Suggested Action**
1	OK	Issue as a deferred amendment
2	OK	Issue as a deferred amendment
3	Will **LNDMRK** display if it is display priority 5 and **PYLONS** is display priority 6?	
4	This would be illogical encoding. Why would a **BUAARE** point ever be encoded inside a **BUAARE** area?	
5	OK	Issue as a deferred amendment
6	**LNDELV** point in **RUNWAY** area? I have never seen this, but OK if this exists.	
7	It is very doubtful that a **WRECKS** point will ever be encoded in a **HULKES** area (illogical encoding).	
8	OK	Issue as a deferred amendment
9	OK	Issue as a deferred amendment

JW stated that this proposal suggests increasing the display priority of the "hidden" objects to the same as the display priority of the object that covers them. He then asked whether this will ensure that the point object displays in all cases. JW also commented that it make sense in the real world to have the pylon hidden by the bridge area when looking in plan view. However from a navigational perspective the pylon must be visible to the mariner on the ECDIS. For this reason JW did not agree with the example used in PoI's conclusion although he thought the general proposal made sense. He went on to say that we would need to know some of the history behind the current settings before we go making changes.

Action: JW/JP to take the agreed assessment by AU (above) of the issues relating to the display priorities and issue as a deferred amendment for review at the next DIPWG meeting.

TSMAD22/DIPWG3 - 08.6A
Corrections to ECDIS Chart 1 & S-52, Annex A, Section 15

This paper presented by EM and describes corrections to the ECDIS Chart 1 made by Jeppesen and associated changes to S-52, Annex A, Section 15, which Jeppesen recommends be issued as a stand-alone documentation for ECDIS Chart 1. That way any changes to ECDIS Chart 1 will not impact on S-52

JP agreed with the Jeppesen proposal saying ECDIS Chart 1 is buried in the PL but went on to say that there may be interdependencies with 61174, 62288 or the Performance Standard. Maybe we can put this in an Annex. EM stated that the main reason for this proposal is because of the errors in the current ECDIS Chart 1.

HP commented that the "Mariners Navigation Symbols" are not regulated by the IHO anymore but by the IMO. JP enquired that if we remove chapter 15 plus mariner objects would we need a new S number document or can we just put it in S-64. HP remarked that if you remove it then you remove it from the ECDIS Performance Standard.TM stated that there was no merit in removing it based on the amount of work required. HP said that the fixes carried out by Jeppesen will be done but that mariner objects will be removed. JP remarked that the tide appeared to be turning to keep chapter 15 in S-52. She went on to commend the work of Jeppesen and asked that they remove the mariner objects.

KI said that he learned from previous meetings that the colours of mariner's objects are not specified. He went on to state that his preference is to keep mariners objects in chapter 15 and ECDIS Chart 1 as the OEMs need guidance on the colour and symbol. HP said that it is true what KI is saying but we need to make our own versions of these symbols. He continued to say that these should be removed as they are not regulated by the IHO.

JP in summing up stated that there is a clear motion to keep Chapter 15/ECDIS Chart 1 and remove the mariner's objects. OW made a short comment in support of HP and reiterated that navigational symbols be removed.

TSMAD22/DIPWG3 - 08.6B
Revised Chart 1
Zipped file supplied containing the revised ECDIS Chart 1. See discussions at 08.6A above.

TSMAD22/DIPWG3 - 08.6C
Improvement of Symbolization for RESARE and LNDMRK Feature Objects

EM presented this paper in which Jeppesen has made the recommendation to improve symbolisation for Restricted Area with Entry Restrictions and Landmark, Radio Tower.

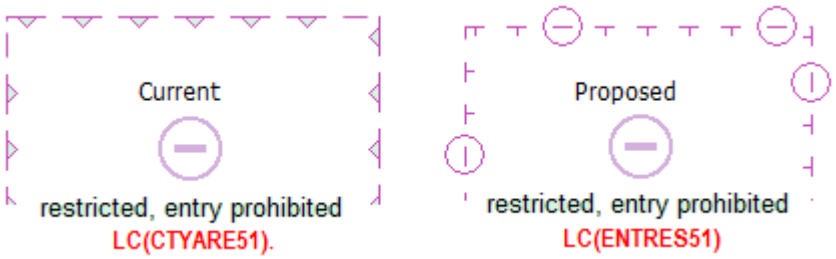
EM presented a paper with a recommendation to improve the symbolisation of the following:

1) Landmark, Radio Tower
2) Restricted Area with Entry Restrictions

1) EM said that if we first look at landmark objects and make better use of symbolisation that we have at our disposal. LNDMRK object with attributes FUNCTN ='31' (radio), CATLMK='17' (tower) do not currently display the arcs indicating a radio transmission signal. Using the "radio, television tower" or "Conspicuous radio, television tower" as indicated across under "new" would be a more appropriate symbolisation.

Action: Accept the proposed changes drafted by Jeppesen for the presentation of the Landmark feature object as described in the accompanying paper. JP to finalize deferred amendment.

2) EM said that the in the "Paper based description of symbols" and in clause 15 of PL there is more suitable line style for presenting Restricted Areas with Entry Restrictions. This is very similar to the INT 1 presentation.



JP asked the meeting if anyone was opposed to this change. KI enquired whether this linestyle was used for other objects if so is a new one required. EM replied it is OK we can use the linestyle described in the paper.

Action: Accept the deferred amendments as drafted by Jeppesen for the presentation of the Restricted Area with Entry Prohibited as described in the accompanying paper. JP to issue

3) EM presented a proposal to reduce presentation of unnecessary Isolated Danger Symbols for OBSTRN and UWTROC objects. He went on to state that there were two possible options when addressing this problem as follows:

Option 1 - To check the code of object and in case if it is NOT WRECKS to check the value of EXPSOU. If it is missing or unknown AND if the value of WATLEV = '3' then return to the calling procedure with the value of LEAST_DEPTH calculated in the loop for underlying group 1 objects.

Option 2 - To take into account the value of 'LEAST_DEPTH' calculated in the loop for group 1 object. In case if the calling object is NOT type of WRECKS AND if 'LEAST_DEPTH' is greater or equal to 30m then return to the calling procedure with the value of LEAST_DEPTH.

EM asked the meeting to consider the options presented. HP replied that isolated dangers were true under both options and encoders should encode a value of sounding. JP responded by saying that for historical reasons HOs do not always have a value of sounding to encode. RF was concerned about making changes to this as encoders are doing this (omitting VALSOU) to air on the side of safety. EM replied that these options related to obstructions in deep water. JP asked if it was Jeppesen's intention to reduce the number of isolated danger symbols in deep water to which EM replied yes. RF stated that this was in line with the paper chart using an estimated value of sounding. JP asked which of the two options was the safest. HP added that he thought which ever option displayed the most isolated dangers. EM stated that option 1 was the safest as it relied on HOs adding a VALSOU or additional attribution.

JP in summing up said that if there were no further comments we would go with option 1 and issue a deferred amendment.

Action: Jeppesen to write a deferred amendment based on Option 1 above.

TSMAD22/DIPWG3 - 08.6D
Contradictions in Presentation of Navigation (Mariners') objects between IHO Presentation Library and IEC 62288 [Jeppesen]

EM presented this paper in which Jeppesen had identified some discrepancies between symbol descriptions given in IHO Presentation library (Edition 3.4) and the description of them in IEC 62288. Generally it concerns the colours used for presentation of Navigation symbols (Mariners' Navigational Objects).

JP stated that this paper relates to the discrepancies between symbol descriptors in the PL and IEC62288. EM added that someone needs to engage IEC to see who does what and reach some agreement. JP reminded the meeting that IHO only has responsibility for charted features (not mariner objects). JP further commented that there was a reference in IEC62288 to the colour tokens in S-52.

HP said that it his understanding that Kim Fisher (Secretary TC80) is looking to open IEC62288 in October with the intention of drafting a second edition. This second edition will address the old legacy instructions in S-52, etc. JP asked whether in opening 62288 TC80 understands the issues with colour tokens. BG observed that here is another standard that references S-52. EM remarked that the safest option was to do nothing. EM added that we have two publications each referencing one another and proposed a closer relationship with TC80. JP agreed and stated DIPWG should be more proactive with TC80.

Action: TM to make a proposal to IMO for IHO to take back mariners objects and liaise with IEC when they reopen IEC62288

TSMAD22/DIPWG3 - 08.7A (No document supplied prior to the meeting)
P/ECDIS Chart 1

Despite his absence the DIPWG chairman (CH) did provide a PowerPoint presentation outlining the proposed US timescales for publication of US Chart 1 and possible actions for DIPWG as follows:

- New U.S. Chart No. 1, **Ed. 11**
  - Expected release in late 2011 or early 2012
  - Will show only paper chart symbology
  - Will be posted on NGA's and NOAA's websites
  - Format is more INT1-like
- New U.S. Chart No. 1, **Ed. 12**

  - Expected release 6-12 months after release of Ed 11
  - Will show both paper chart and ECDIS (S-52) symbology
  - Draft of P/ECDIS may be available prior to DIPWG4
- Future P/ECDIS Chart 1 efforts
  - Ed. 12 will likely be a model for other ECDIS training materials produced by many vendors and other parties
  - Any errors may propagate to other documents
- U.S. Chart No. 1, Ed. 12 Quality Assurance
  - Document will undergo a thorough review by NOAA and NGA
  - Nevertheless, best S-52 expertise resides in DIPWG, thus …
- DIPWG Actions
  - DIPWG members will be asked to review the draft of this first "mariner friendly" ECDIS Chart No.1 document for clarity and correctness

KI enquired whether ECDIS Chart 1 could be replaced with a PDF or HTML file then the S-57 version could then be removed and implemented as a help file. HP did not think ECDIS Chart 1 could be replaced because of IEC61174 and type approval. However HP did think it could be provided as an addition to the S-57 version. TR commented that we should review this before the next meeting. JP replied that the P/ECDIS was about half completed but is taking a while so could not promise anything.

TSMAD22/DIPWG3 - 08.8A
Proposal to Produce a New Version of S-52

TM presented a paper, supported by a presentation, proposing to restructure/update S-52 and issuing a new version of the PL. The paper is based on the recent ECDIS operation discussions at the IHO and how the standards should be developed to facilitate ECDIS harmonization.

RF commented that during the presentation it was identified that alarms were not being triggered in the band 1 & 2 ENCs. TM answered that OEMs had implemented thresholds where alarms are not being triggered. JW remarked that from his offices point of view what is the IHO doing about this? JW continued by saying that the normal answer is that it will be addressed in S-100/101. JW went on to say that this is not quick enough and therefore was in support of this as it addresses these issues now.

EM praised TM's work stating that this was all good stuff which needs to happen. EM went on to say that it still needs to be implemented and will take time as it would be a while before these changes are implemented in the ECDIS. TM replied that IMO are looking into the maintenance of ECDIS software in which case it should be possible to implement a new PL as well.

HP said that edition 6 of S-52 was a restructure implemented by Mathias Jonas. HP continued by saying the IHO could create a tutorial to provide guidelines. Get it into S-64 and introduce checks for the PL. HP went on to say that the current test data set has sufficient examples to plan a route and test alarms. TM said he agreed to a certain extent in so much as alarm testing should go straight into S-64 and continued by saying this is a good workaround but we still need a new edition.

RF supported TM by saying that we have been using workarounds for years and a new edition is a good idea however, it still needs to go to HSSC to be adopted as a work item. JP said that DIPWG had several stakeholders, OEMs, Member States, etc. We should address these issues in S100. TM asked how long before S-100 was a reality? BG said that S-100 was a totally new concept and would introduce a totally new way for OEMs to test portrayal. Based on models currently being built it will bear no relationship to S-52. Work on S-52 now would not necessarily move forward into S-100. BG also mentioned that the S-64 TDS was based on IEC61174 and unless there is a new edition nothing can be changed.

JP was curious as to who was going to resource this work. TM replied that the UKHO was willing to take this work on. HP commented that S-64 was a nominative document and therefore you can put as much as you want into it. You can provide the expected results and what type of alarms and the manufacturer will have read the tutorial to see how it works. RF mentioned that this method would only affect new builds. He went on to say that if he understood correctly a new edition of S-52 would go into legacy systems. HP replied that S-52 and S-64 are referenced by IMO and as such legacy systems would not get updated. Carriage requirements are only suggestions until they become national law.

HB stated that S-100 is still missing the portrayal model and that we are looking to re-write the old standard. TM said that the errors found in S-52 may only be the tip of the iceberg. All it will take is for a major marine incident and then where would we be. JP suggested that the UK submit a proposal to HSSC3. MH asked the chairman if it was necessary to submit a work item. JP responded by saying this is a significant task and not just a case of

maintenance. BG said whatever we do we must try and get the support of HSSC. RF commented that we are already introducing a number of deferred amendments. JP reiterated the question about what about resources.

EM replied that no one disagrees with TM but the question of which standard comes first S-52 or S-100 must be agreed and DIPWG is only a small group. TM replied that we are not looking to re-write S-52 but to tidy it up and include the things that are missing. JP commented that the missing elements are in the PL not the main body of the document. There is a lot of work with cross references etc. KI said that he agreed that the PL and S-52 needs amending or have a new edition. We will have to make our minds up as he has to report to his boss on the future of S-100 or S-52.

EM offered to help TM with this work if the meeting can agree where we are going with this. JP in bringing the discussion to a close put an action on the UK to submit a paper to HSSC3 and remarked that there was no reason why this work (NE of S-52) could not be started now.

Action: UK to submit this as a proposal to HSSC3 for consideration at the next meeting

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9. S-100 Portrayal

TSMAD22/DIPWG3 - 09.1A
Portrayal Register

This paper was presented by the TSMAD Chairman and reported on the development of the S-100 Portrayal Register. It described in brief a report on the progress made to develop a register for Portrayal Symbology in the S-100 GI Registry. BG explained that the data structure is based on the good work delivered by GEOMOD and latterly GEOMOD/CARIS. BG went on to say that the register broadly follows the look and feel of the other registers which have been created in the registry. BG informed the meeting that the data from the existing S-52 Presentation Library has been entered into a relational database.

BG said the paper contained a link[4] to the test register and invited the assembled TSMAD/DIPWG members to go to it and take a look.

In his presentation BG started by looking at the colour tokens used in S-52. He continued by re-iterating that these are managed in the same way as other registers. During a live demonstration BG looked at the colour palettes defined in terms of X/Y luminance and RGB coordinates with each colour being defined as a day/dusk/night colour. BG went on to demonstrate point symbols, complex line styles and shape symbols. BG explained that each symbol could be broken down into to a number of component parts, a method first proposed by Pol. BG went on to say that these could be stored once but could be accessible by many symbols, adding that this method provides the greatest amount of flexibility.

BG continued by demonstrating the various ways the symbols in the database can be exported and manipulated stating that new symbols can be registered in part or as a complete symbol. BG finished by asking the meeting if there was anything that was missing?

EV asked what the plan was for registering features and attributes open to other domains. BG replied by saying that Inland ENC, SNPWG, etc. can register and propose their own symbols for different products or take them from existing domains and use these. JP stated that the paper proposed two options for how to construct the catalogue and asked what the point was? BG said that these were really comments on his part and did not consider these to be an issue. BG went on say that S-100 will use CGM or True Type as the default format. OW commented that the procedure necessary to have an exchangeable version of the portrayal catalogue would need an additional step. OW went on to say that these would have to be converted into machine readable symbols before export. BG replied that someone will have to provide the drawing and the rest of the package before registering (CGM included). He carried on by saying this will have to be developed further as we do not have CGM or True Type and stating that these are the equivalent of the DAI files.

HA asked what was the benefit of referencing shapes as hunting for these references takes as much time as defining them. HB agreed but said that the more complex shapes only have to be captured once. BG added that modifying a shape still leaves the original version in the registry in case it is being used by another product. BG went on to remind the meeting that any product can access a domain and use a symbol.

[4] Link - http://registry.iho.int/s100_gi_registry_test/PortrayalRegisters/pr_home.php?register_type=6

JW asked whether paper charts symbols could be registered and how this would be handled in the Hydro Register. BG replied that there was no reason why the Hydro Domain could not be divided into two types, one an ENC domain and the other a Paper Chart domain.

BG then went on say that TSMAD had re-evaluated the Portrayal Rules and looked to adopt other concepts. BG then called on HB to present these.

HB's PRESENTATION

No supporting paper was submitted prior to the meeting as it was a work in progress but was supported by a presentation entitled "Portrayal in S-100". This proposed a different approach to portrayal in S-100 other than XSLT discussed previously. What had been missing from the previous presentation (9.1A) are the rules. That is how feature types are presented, the ECDIS lookup tables and the CSPs. S-100 only has one rule and that is that everything must be machine readable. HB said that what we need to define now is the structure, script language and how the symbols will be stored. He continued to say the general Portrayal Model still has to be done. HB provided some excellent examples when wrapping up his presentation

HB said in conclusion that the main advantages of this new approach is that the portrayal routines, particularly in respect to CSPs, can be built into the production software and included in the portrayal feature catalogue to be stored in the ECDIS. Additionally the output will be machine-readable (xml) which will form the basis of the Portrayal Catalogue which will be a deliverable with the product. HB then invited questions from the floor.

Comments and questions from the floor

HP said that his main concern was that it may not be possible to do all the CSPs if we go down this route. In respect of the safety contour the underlying area must be in the data and this information must be encoded by data producers. HP continued by saying that it was important that encoders understand this. BG replied that from a HO perspective we will encode the data and it should be a function of the production software. HP commented that one part you must study closely is how to display the safety contour; this must be a machine readable rule in the portrayal model. He went on to say that if just one rule is not machine readable then software upgrades will still be necessary.

WL asked who will set the rules the HOs? HB replied that they will be part of the S101 Product Specification defined by this working group. DA asked whether it was anticipated that an S-101 ECDIS will read in the Portrayal Catalogue. HB replied that that the ECDIS will need to convert the Portrayal Catalogue into the native format (SENC) of the system. DA asked if an OEM wanted to improve the presentation can they optimise the Portrayal Catalogue. HB said that he could see the benefits of this. BG commented that it was important that we have a method of delivering Portrayal Catalogue updates to the ECDIS. The catalogue will be in XML; how OEMs build their SENCs is down to them.

KI asked HB if this model is a programming script which will require compilation as well as a catalogue. HB replied that it is not necessary to recompile the ECDIS software. He went on to say that it is a script based program that is machine readable, so as long as the model does not change there is no impact on the ECDIS. BG said that we want to get it right this time and have some important decisions to make. BG said we would want to fully test this concept first to avoid OEMs wasting their time. BG went on to say that we want to deliver a fully machine readable catalogue that the OEMs can then manipulate.

HP told the meeting that S-52 was originally machine readable and that the IHO published a machine readable library and test data set. He went on to say that when upgrading ECDIS we will need many versions of the rules, including complex changes, so that the ECDIS can be tested under intended use. HP also said that OEMs must make their own interpretation for the drawing instructions from the machine readable catalogue. BG replied that we (IHO) are giving the OEMs an electronic version of S-52. It should not be necessary to unpick the systems every time the IHO changes or introduces anything. HP asked if the IHO were going to do the safety contour right from the beginning. He opined that he did not think the IHO could resolve the alarm issue. BG in replied that we are only at the start of the process and we take onboard everything that HP is saying. BG further commented that if we get a 99% reduction in the number of software upgrades required by the ECDIS then this is an improvement on the current conditions.

BG thanked HB and said that this should not have too much, if any, impact on HOs or other producers. BG informed the meeting that there would be a break out session of relevant experts to discuss further and tidy up some of the higher level principles. He also went on to say that we need to talk through HP's concerns with alarms and group 1 objects during this session.

TSMAD22/DIPWG3 - 09.2A
Portrayal Catalogue

This paper was to report on the development of the S-101 Portrayal Catalogue and the development of a Portrayal Catalogue Builder Application to support its development.

This paper was withdrawn and replaced by HB's paper and discussion (see above).

TSMAD22/DIPWG3 - 09.2B
Display Rules

This submission was withdrawn and replaced by HB's paper and discussion (see above).

TSMAD22/DIPWG3 - 09.3A
Portrayal Documentation

This document provides the starting point from which the portrayal portions of S-100 and S-101 will evolve. It is the consolidation of the parts of S-52 that will be edited, reformatted and brought forward for insertion into the appropriate sections of S-100 and S-101. For the most part the applicable portions of S-52 content will move to S-101, while mostly new content will need to be written for the portrayal sections of S-100. The S-100 portrayal sections will primarily describe the structure and use of the Portrayal register and Portrayal Catalogue, while the S-101 portrayal sections will describe the presentation of the symbology within ECDIS.

JP presented this paper in the absence of CH and said that the US had done a first cut of mapping S-52 into S-100 or an annex of S-100. JP went on to say that it was not their intention to put the contents of the catalogue in here. Section 9 relates to portrayal and the US would like to establish a correspondence group from within interested DIPWG/TSMAP members to review or compose, edit and finalised the portrayal sections of S-101. Also go through S-100 section by section using this Consolidated Portrayal Documentation as a starting point.

TM commented that DIPWG has got a lot on its plate stating that he thought one meeting a year was not enough to get through all this work. He remarked that the UKHO was willing to host a meeting if necessary. JP replied that due to US budgetary constraints a correspondence group or teleconferencing were the preferred methods. JP went on to ask for volunteers.

OW said that SevenCs would like to be part of the group. TM noted that a lot of the content will depend on the work of HB. Section 9 will need to cover this. JP replied that this was the part that was missing. EM, JW, TM and HA also volunteered to be part of the correspondence group.

Action: US to set up a correspondence group to prepare section 9 for S-101

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10. ENC/ECDIS Matters (see TSMAD 22 Minutes)

TSMAD22/DIPWG3 - 10.1A
Review of new version of the UOC [Wootton]

TSMAD22/DIPWG3 - 10.1B
Draft UOC Ed 3 [Wootton]

TSMAD22/DIPWG3 - 10.2A
ECDIS Test Data + Test Data Pack

TSMAD22/DIPWG3 - 10.3A
Overuse of Caution Areas

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11. S-101 Development (see TSMAD 22 Minutes)

TSMAD22/DIPWG3 - 11.1A
S-101 Project Update March 2011

TSMAD22/DIPWG3 - 11.2A
S-101 Open Source Translator

TSMAD22/DIPWG3 - 11.3A
S-101 Consolidated Comments Phase 1

TSMAD22/DIPWG3 - 11.3B
S-101 Phase 2 Product Specification

TSMAD22/DIPWG3 - 11.3C
S-101 Content Management Guide

TSMAD22/DIPWG3 - 11.4A
S-101 Document Structure

TSMAD22/DIPWG3 - 11.5A
S-101 Scale Independent and Scale Dependent Analysis

TSMAD22/DIPWG3 - 11.6A
S-101 Display Scale

TSMAD22/DIPWG3 - 11.7A
S-101 Data Quality

TSMAD22/DIPWG3 - 11.8A
S-101 Exchange Set

TSMAD22/DIPWG3 - 11.9A
S-101 Support Files

TSMAD22/DIPWG3 - 11.11A
S-101 Text Placement

TSMAD22/DIPWG3 - 11.12A
S-101 Encoding Guide

TSMAD22/DIPWG3 - 11.13A
Update Information in S-101

TSMAD22/DIPWG3 - 11.14A
Tidal Information in S-101

HB Report on the Breakout Group Session
(Notes from this session are included at Annex E)

HB highlighted the main topics of conversation revolved around the overall model of portrayal and how to portray a dataset. The group came to the conclusion that the simplest method for portrayal would be to loop through the dataset, identify the feature, identify the rule and call it. It will also be necessary to identify the FOID containing the safety contour. The portrayal robot, as it has been termed, will need a set of rules at the beginning of the process and a generic set at the end.

The portrayal rules must be specifically defined for S-100 and not S-101, things like DATSTA, etc should be omitted because it is product independent. It was identified that there were four main tasks requiring rules as follows:

1. Pre-processing rules
2. Feature rules
3. Portrayal Catalogue rules
4. Sub-routines, rules called by other rules and not called by the portrayal robot (former CSPs)

The result of this is a set/list of symbols instructions at draw time. This will have to be re-run whenever the scale changes.

HB then talked briefly about view groups, of which there are two types as follows:
1. Base groups (mutually exclusive)
2. Additional groups (not mutually exclusive)

HB explained that these Viewing groups will replace the current “display priorities”. This information will have to be supplied with the Portrayal Catalogue, and will allow for different groups other than base to be switched on and off by the user.

To summarise on the Portrayal Catalogue it will contain the following:

1. Colours
2. Symbols (Point, Line & Area)
3. Rules
4. Viewing Groups
5. Environmental Variable (User)

The format for the Portrayal Catalogue will be XML with links to files of the symbols in CGM. It is better to have off the shelf software, CGM was proposed as it is extendable using colour tokens from the existing PL. CGM is already used in the GeoSym Standard in the production of DNCs produced by NGA. It should be easy enough to provide links to files of the symbols in CGM.

HB said that this was more or less it and invited questions from the floor.

KI was not so sure as he thought that it had been agreed to form a correspondence group to create a template for the Portrayal Catalogue. BG said we discussed a DIPWG sub working group may be possible. He went on to add that we should try and find 5-10 people in plenary to thrash out the finer points. Issues have been resolved and now we must put some flesh on it so that when we reconvene next year it will be close to being finalised. Some of this work can be carried out by correspondence. BG finished by thanking HB.

It was HP wish for the following to be entered into the minutes. The following is a transcript of the e-mail sent the DIPWG Chairman.

I have below in nutshell what I said about portrayal. Please include this in the minutes of DIPWG meeting.

If the target of the S-101 process is get rid of the "frozen standard" / "ECDIS software upgrade" problems then all aspects of current S-52 shall be made available in machine readable format. These include:

a) lookup tables
b) conditional symbology procedures
c) generation of safety contour as bold line for drawing purposes
d) generation of safety contour for alarm purposes
e) generation of other alarm condition

New method for conditional symbology procedures require that all attributes required for drawing are available from the feature object, for example underlying depth area. Safety contour for drawing and alarm purposes are different. The drawing version is created from edges of the skin of the earth objects. Safety contour for alarm purposes is an area object and it shall include also obstructions, aids to navigations etc. items required by the rules. If c, d or e is not provided as machine readable method, then it is still impossible to change features of ECDIS currently specified by the S-52 just by loading new lookup style.

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12. Any Other Business

12.1 INFORMATION Paper 1 – How to project ENC for use in Polar Regions. (See TSMAD 22 Minutes)

12.2 INFORMATION Paper 2. Discussion paper on the use of symbolisation of ENC in ECDIS (See TSMAD 22 Minutes)

Action: BG to enter into correspondence with the Swedish and Danish Hydrographic Offices to gather more information relating to the incident between two vessels navigating the TSS roundabout in southern waters of Sound.

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13. Review of Meeting Actions

JP reviewed the list of actions which are attached at Annex D and were agreed by the meeting.

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14. Date and Venue of Next Meeting

DIPWG 4 will be held between the 7th and 11th May 2012 at the IHB in Monaco and in conjunction with TSMAD 24.

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15. Close of Meeting

In closing the meeting BG thanked JLD (TSMAD Vice Chair) for his contribution over the years and wished him Bon Voyage. BG also thanked our hosts for the marvellous facilities and their generous hospitality.

ANNEX A

Joint TSMAD 22 & DIPWG 3 Meeting
Seoul, South Korea, 11-15 April 2011
List of Documents

Document No		Document Title
TSMAD22/DIPWG3	01A rev7	Joint List of Documents
TSMAD22/DIPWG3	01B	Joint List of Participants
TSMAD22/DIPWG3	02A rev7	Joint Agenda
TSMAD22/DIPWG3	03A	Minutes of the 21st TSMAD Meeting
TSMAD22/DIPWG3	03B	Status of Actions from TSMAD21 (See documents 03C, 03D, 03E, 03F)
TSMAD22/DIPWG3	03C	Modifications to the ISO/IEC 8211Encoding of S-100
TSMAD22/DIPWG3	03D	Modification of the General Feature Model
TSMAD22/DIPWG3	03E	Modification of the Feature Catalogue Model
TSMAD22/DIPWG3	03F	Modified S-100 Feature Catalogue (ZIP File)
TSMAD22/**DIPWG3**	04A	Minutes of the 2nd DIPWG Meeting
TSMAD22/**DIPWG3**	04B	Status of Actions from DIPWG2
TSMAD22/DIPWG3	05A	HSSC Actions for TSMAD
TSMAD22/**DIPWG3**	05B	HSSC Actions for DIPWG
TSMAD22/DIPWG3	06.1A	Report on SNPCWG activities
TSMAD22/DIPWG3	06.2A rev1	Report on CSPCWG activities
TSMAD22/DIPWG3	06.3A	Report on DQWG activities
TSMAD22/DIPWG3	06.4A	Report on TWLWGWG activities
TSMAD22/DIPWG3		IALA
TSMAD22/DIPWG3		ISO
TSMAD22/DIPWG3		IEC
TSMAD22/**DIPWG3**	08.1A	Mariner Objects Colours
TSMAD22/**DIPWG3**	08.2A	Simplified vs Traditional Symbols [Harmon]
TSMAD22/**DIPWG3**	08.3A rev1	Sector Lights [Coombes]
TSMAD22/**DIPWG3**	08.4A rev1	Cursor Enquiry & Pick Reports [Coombes]
TSMAD22/DIPWG3	08.5A	S-101 Use Case Themes [Powell]
TSMAD22/**DIPWG3**	08.5B	Display Categories [Le Bihan]
TSMAD22/**DIPWG3**	08.5C	Display Priorities [Le Bihan]
TSMAD22/**DIPWG3**	08.6A	Corrections to ECDIS Chart 1 & S-52, Annex A, Section 15 [Jeppesen]
TSMAD22/**DIPWG3**	08.6B	Revised ECDIS Chart 1 (ZIP) [Jeppesen]
TSMAD22/**DIPWG3**	08.6C	Improvement of Symbolization for RESARE and LNDMRK Feature Objects[Jeppesen]
TSMAD22/**DIPWG3**	08.6D	Contradictions in Presentation of Navigation (Mariners') objects between IHO Presentation Library and IEC 62288 [Jeppesen]
TSMAD22/**DIPWG3**	08.7A	P/ECDIS Chart 1 [Harmon]
TSMAD22/**DIPWG3**	08.8A	Proposal to Produce a New Version of S-52
TSMAD22/**DIPWG3**	09.1A	Portrayal Register [Greenslade]
TSMAD22/**DIPWG3**	09.2A	Portrayal Catalogue [Richardson]
TSMAD22/**DIPWG3**	09.2B	Display Rules (xls file) (Richardson]
TSMAD22/**DIPWG3**	09.3A	Portrayal Documentation (ZIP) [Harmon]
TSMAD22/DIPWG3	10.1A	Use of the Object Catalogue Review Report
TSMAD22/DIPWG3	10.1B	Draft Use of the Object Catalogue (Edition 3)
TSMAD22/DIPWG3	10.2A	ECDIS Test Data
TSMAD22/DIPWG3	10.2B	Test Data Pack Ver 1.1 (ZIP file)
TSMAD22/DIPWG3	10.3A	Overuse of Caution Areas
TSMAD22/DIPWG3	11.1A	S-101 Project Update March 2011
TSMAD22/DIPWG3	11.2A	S-101 Open Source Translator
TSMAD22/DIPWG3	11.3A	S-101 Consolidated Comments Phase 1
TSMAD22/DIPWG3	11.3B	S-101 Phase 2 Product Specification
TSMAD22/DIPWG3	11.3C	S-101 Content Management Guide
TSMAD22/DIPWG3	11.4A	S-101 Document Structure
TSMAD22/DIPWG3	11.5A	S-101 Scale Independent and Scale Dependent Analysis
TSMAD22/DIPWG3	11.6A	S-101 Display Scale
TSMAD22/DIPWG3	11.7A	S-101 Data Quality

TSMAD22/DIPWG3	11.8A	S-101 Exchange Set
TSMAD22/DIPWG3	11.9A	S-101 Support Files
TSMAD22/**DIPWG3**	11.11A	S-101 Text Placement
TSMAD22/DIPWG3	11.12A	S-101 Encoding Guide
TSMAD22/DIPWG3	11.13A	Update Information in S-101
TSMAD22/DIPWG3	11.14A	Tidal Information in S-101
TSMAD22/DIPWG3	12.1A	S-102 Proposed Product Specification
TSMAD22/DIPWG3	12.1B	S-102 List of Modifications
Additional relevant documents for consideration		
TSMAD22/**DIPWG3**	INF1	Use of symbolization of ENC in ECDIS, compared with paper charts
TSMAD22/**DIPWG3**	INF2	Use of ENC and ECDIS in the Arctic area

ANNEX B

Joint TSMAD 22 & DIPWG 3 Meeting
Seoul, South Korea, 11-15 April 2011
Agenda

Document Number		Document Title
1. Opening and Administrative Arrangements		
TSMAD22/DIPWG3	01A	List of Documents
TSMAD22/DIPWG3	01B	List of Participants
2. Approval of Joint Agenda [Greenslade / Harmon]		
TSMAD22/DIPWG3	02A	Joint Agenda for TSMAD22 and DIPWG3
3. Matters Arising from TSMAD-21 (Victoria) [Greenslade]		
TSMAD22/DIPWG3	03A	Minutes of the TSMAD-21 (Victoria) 2010 meeting
TSMAD22/DIPWG3	03B	Status of Actions from TSMAD21 (see documents 03C, 03D, 03E & 03F)
TSMAD22/DIPWG3	03C	Modifications to the ISO/IEC 8211Encoding of S-100
TSMAD22/DIPWG3	03D	Modification to the General Feature Model
TSMAD22/DIPWG3	03E	Modification to the Feature Catalogue Model
TSMAD22/DIPWG3	03F	Modified S-100 Feature Catalogue
4. Matters Arising from DIPWG-2 (Rostock) [Harmon]		
TSMAD20/**DIPWG3**	04A	Minutes of DIPWG2 (Rostock) 2010
TSMAD22/**DIPWG3**	04B	Status of Actions from DIPWG2
5. Matters Arising from HSSC-2 (Rostock) [Greenslade / Harmon]		
TSMAD22/DIPWG3	05A	HSSC Actions for TSMAD
TSMAD22/**DIPWG3**	05B	HSSC Actions for DIPWG
6. Activities of Other Working Group [Greenslade]		
TSMAD22/DIPWG3	06.1A	Report on SNPWG Activities
TSMAD22/DIPWG3	06.2A	Report on CSPCWG Activities
TSMAD22/DIPWG3	06.3A	Report on DQWG Activities
TSMAD22/DIPWG3	06.4A	Report on TWLWG Activities
7. Activities of Other Organizations [Greenslade]		
8. Portrayal [Harmon]		
TSMAD22/**DIPWG3**	08.1A	Mariner Objects Colours
TSMAD22/**DIPWG3**	08.2A	Simplified v Traditional Symbols [Harmon]
TSMAD22/**DIPWG3**	08.3A	Sector Lights [Coombes]
TSMAD22/**DIPWG3**	08.4A	Cursor Enquiry & Pick Reports [Coombes]
TSMAD22/DIPWG3	08.5A	S-101 Themes [Powell]
TSMAD22/**DIPWG3**	08.5B	Display Categories [Le Bihan]
TSMAD22/**DIPWG3**	08.5C	Display Priorities [Le Bihan]
TSMAD22/**DIPWG3**	08.6A	Corrections to ECDIS Chart 1 & S-52, Annex A, Section 15 [Jeppesen]
TSMAD22/**DIPWG3**	08.6B	Revised Chart 1 [Jeppesen]
TSMAD22/**DIPWG3**	08.6C	Improvement of Symbolization for RESARE and LNDMRK Feature Objects [Jeppesen]
TSMAD22/**DIPWG3**	08.6D	Contradictions in Presentation of Navigation (Mariners') objects between IHO Presentation Library and IEC 62288 [Jeppesen]
TSMAD22/**DIPWG3**	08.7A	P/ECDIS Chart 1 [Harmon]
TSMAD22/**DIPWG3**	08.8A	Proposal to Produce a New Version of S-52
9. S-100 Portrayal		
TSMAD22/DIPWG3	09.1A	Portrayal Register [Greenslade]
TSMAD22/DIPWG3	09.2A	Portrayal Catalogue [Richardson]
TSMAD22/DIPWG3	09.2B	Display Rules [Richardson]
TSMAD22/**DIPWG3**	09.3A	Portrayal Documentation [Harmon]
10. ENC/ECDIS Matters		
TSMAD22/DIPWG3	10.1A	Review of new version of the UOC [Wootton]
TSMAD22/DIPWG3	10.1B	Draft UOC Ed 3 [Wootton]
TSMAD22/DIPWG3	10.2A	ECDIS Test Data + Test Data Pack
TSMAD22/DIPWG3	10.3A	Overuse of Caution Areas

11. S-101 Development		
TSMAD22/DIPWG3	11.1A	S-101 Project Update March 2011
TSMAD22/DIPWG3	11.2A	S-101 Open Source Translator
TSMAD22/DIPWG3	11.3A	S-101 Consolidated Comments Phase 1
TSMAD22/DIPWG3	11.3B	S-101 Phase 2 Product Specification
TSMAD22/DIPWG3	11.3C	S-101 Content Management Guide
TSMAD22/DIPWG3	11.4A	S-101 Document Structure
TSMAD22/DIPWG3	11.5A	S-101 Scale Independent and Scale Dependent Analysis
TSMAD22/DIPWG3	11.6A	S-101 Display Scale
TSMAD22/DIPWG3	11.7A	S-101 Data Quality
TSMAD22/DIPWG3	11.8A	S-101 Exchange Set
TSMAD22/DIPWG3	11.9A	S-101 Support Files
TSMAD22/DIPWG3	11.11A	S-101 Text Placement
TSMAD22/DIPWG3	11.12A	S-101 Encoding Guide
TSMAD22/DIPWG3	11.13A	Update Information in S-101
TSMAD22/DIPWG3	11.14A	Tidal Information in S-101
12. Any Other Business		
TSMAD22/**DIPWG3**	INF1	Use of symbolization of ENC in ECDIS, compared with paper charts
TSMAD22/**DIPWG3**	INF2	Use of ENC and ECDIS in the Arctic area
13. Review of Meeting Actions		
14. Date and Venue of Next Meeting		
15. Close of Meeting		

ANNEX C

Joint TSMAD 22 & DIPWG 3 Meeting
Seoul, South Korea, 11-15 April 2011
List of Participants

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ANNEX D

DIPWG 3 - LIST OF ACTION ITEMS FROM THE MEETING

Action No.	Action On	Agenda Item	Action Item	Status
1	JP/CH	8.1A	To publish the deferred amendment on Mariners Object Colours	On going
	CH	8.2A	Set a correspondence group to consider which simplified or paper chart symbols to keep and bring recommendations to DIPWG4.	
2	RC	8.3A	Write & Issue a deferred amendment to create a 360 degree sector around a major light (10nM or greater). Amend the CSP (LIGHTS05) to create this symbol applying the relevant filtering outlined in the accompanying paper.	OW/RC/JP complete
3	UK	8.4A	Set up a correspondence group comprising of SevenCs, Transas, and Furuno to draft a deferred amendment specifying the minimum specification for the cursor enquiry and pick report based on the accompanying paper and comments provided by stakeholders at DIPWG3 meeting.	
4	UK	8.5B	Take into account section 2.2 of the accompanying paper on “Display Categories” in the deferred amendment for the minimum specification for the cursor enquiry and pick report defined in the above	
5	JW/JP	8.5C	Take the agreed assessment by AU of the issues relating to the display priorities and issue as a deferred amendment for review at the next DIPWG meeting.	
6	JP	8.6C	Issue a deferred amendments for the following: 1) Presentation of the Landmark feature object pending a question from SHOM 2) Restricted Area Entry Prohibited 3) Option 1 to check the code of object and in case if it is **NOT** WRECKS to check the value of EXPSOU. If it is missing or unknown AND if the value of WATLEV = ‘3’ then return to the calling procedure with the value of LEAST_DEPTH calculated in the loop for underlying group 1 objects	
7	TM	8.6D	Contradictions in Presentation of Navigation (Mariners’) objects between IHO Presentation Library and IEC 62288. UK to make a proposal to IMO for IHO to take back mariners objects. Liaise with IEC when they reopen IEC62288	
8	TM	8.8A	Proposal to Produce a New Version of S-52. UK to submit this as a proposal to HSSC3 for consideration at the next meeting.	
9	US/UK	9.2A	Set up a DIPWG focus group to finish up the S-100 portrayal model and to finalize the portrayal catalogue format. (Furuno, SevenCs, Jeppesen, Transas)	
10	CH	9.3A	Set up a correspondence group to prepare section 9 for S-101	
11	BG	AOB	TSMAD/DIPWG to enter into correspondence with the Swedish and Danish Hydrographic Offices to gather more information relating to the incident between two vessels navigating the TSS roundabout in southern waters of Sound.	
12	HB	No Paper	Finalise the outcome of the break out group documenting the agreed way forward	

ANNEX E

Breakout group discussions on S-100 Portrayal Register with special attention to the safety contour, group one objects and alarming

Present

Hugh Astle	Konstantin Ivanov	Tom Richardson
Holger Bothien	Ed Kuwalek	Olaf Wentzel
Richard Coombes (Secretary)	Tom Mellor	
David D'Aquino	Hannu Peiponen	

HB opened the session by saying we needed a high level S-100 rule model invoked by some software using an algorithm. We should think how it should work with a general S-52 approach, e.g. lookup tables or a single rule (CSPs). GeoSym is the portrayal model for DNC used by NGA and we could take every rule that matches.

HP asked what about the machine readable drawing instructions inside the robot (ECDIS). When making alarms and indications it is different, it is not automatic and therefore need more information. The robot inside the ECDIS cannot select alarms. HB replied that SevenCs have a alarm catalogue which are linked to features. It is not hard coded and therefore flexible in respect to changes. The CSPs must be encoded somehow. HP stated that here we need an international standard. Alarms and chart features should be updated automatically and be machine readable. We need a converter for changing the international standard to SENC.

HB responded that we should finish the first task before we address your (HP) concerns. This model is not complete yet. HP replied that S-100 should have additional attributes so that the CSPs can be removed commenting that if he took all the attributes from a DEPARE he should be able to use HBs script language. HB said that the script language will be used and then converted to XML which is easier to read in as you don't need a parser.

EK asked what do they do with it? HB replied that the portrayal catalogue has the features, rules, etc. to do this. HB said that software that invokes the rules must be standardised otherwise the OEMs will not be able to implement this. There should be rules for each feature type and geometry type (for the robot to use) and these must be defined. HP stated that there was no need to over complicate things more than the existing S-52. All we need to do is have access to the data files and the robot to draw the feature. HB said that the data model we have now is more advanced I think we should be looking at a more generic model. There should be a lookup table of rules for each feature and geometry type. HP stated that S-57 has only three geometry types but S-100 has any number. HB replied that S-100 only had four, curves, line, line sets and areas. HP said that the feature was topmost with the geometry underneath.

HB replied that it can be done inside or outside of the rules or can it be hard coded in the software. It is difficult to describe how it is maintained. HA remarked that scale defines which geometry is used. TR stated that if new geometries are added then the rules will change. HB said that we cannot attribute values inside the model because of other products using S-100. We could however have sub rules. OW asked why you would take the logic away from the rule by putting some of the logic into hard code.

HP said that as he said previously he preferred S-52. He commented that HB had previously said that S-100 the geo type could change depending on the scale, e.g. Point or surface. HA said that features could have one geometry and the geometry could be different depending on the scale. HP remarked that if you want to leave the door open on this for new geometries then you cannot hard code it in the robot. HA said he had a problem with having rules for all features to take account of CSPs. Most symbols can be displayed from a lookup table. Get feature, get relationship, get geometry, etc. HP said that when an edge was shared by many features then the line with the highest priority is drawn with the others being suppressed. The software needs to know what features share it. This does not work with complex linestyles only simple ones.

HB said that the rules are part of the symbol instructions, with each symbol having a priority, then a decision is made as to which one is drawn. He continued saying there is nothing in my model that prevents this. HP asked what about optimisation? What you are doing in the SENC, and what you are drawing, is there a time penalty. HB replied that we could put more rules into the robot or make the robot simpler and have more rules in the data although the latter is more complex. HA commented that you can do both. If a feature only has two points then it is only one geometry. HB said that the first two rules could be based on Date Dependency and scale but should only be called if these are allowable for a feature. OW mentioned that you would not do this for skin of the earth features. HB replied that top level rules only apply to each feature type and that these would then have sub rules. HA said that it makes it easier to add the geometry types to the feature. This would reduce the

number of software changes and therefore less disruptive. HB added that he thought that this will be quite stable for vector geometry.

HA asked what about whether to draw the feature or not in the case of SCAMIN/SCAMAX, Date Dependency, etc. KI stated that the ECDIS must have different rules as well as the PL. HB this will be done by the drawing robot. The rule should dictate the drawing instruction and then decide whether to draw it. It is up to the OEM whether this is done in the SENC or during drawing. If the mariner changes the setting then the rule has to be run again. The rule for symbol instruction will be designed to take account of display category, viewing group, scale, etc. and is just a filtering mechanism, not forgetting radar drawing priorities. KI stated that it is the software that must have the functionality to manage this. HA replied that in the drawing instructions we are building in some procedures, e.g. is the feature turned on/off, scale, time, etc. HB stated that only at draw time are the rules invoked. The drawing instructions are already known at this time. If the context (settings) is changed the rules are invoked again. HP added that in the final drawing list there should be no further rules invoked. It is up to the OEM to do the optimisation. Avoid doing the optimisation in the standard and leave it to the OEM.

KI asked what was the current status of the CSPs? HA gave a brief update on their status based on the work of PoI and NOAA (Envitia) he said that there was a proposal to use XSLT[5]. The issue HB had was that XSLT has to be converted to XML which can be done as they are very similar. KI asked if this was a pre-processing step. HA said that if you could supply this to the OEM in XSLT then the OEMs could process this through a parser. KI asked if XSLT was similar to script language described by HB. HA replied that XSLT was a template matching language designed for converting, for example, XML to other formats. It is a portrayal format in its own right. OW asked how you get geometry information. HA replied that you can define your own extended functions. We only have to define the additional operators, let's not reinvent the wheel. HP said that this only complicates things and does not fit with optimisation. HA replied that you would not want to run XSLT at draw time. HP said that you do not process the script language but re-cook into the ECDIS. HA replied that whatever you do you create a drawing list and display.

HB said that as far as type approval is concerned you just do a dump of the drawing instructions as a text file. He added that everything being discussed here will go into S-100. OW added that there was a large library of CGM[6] symbols which can be downloaded from NGA. KI asked if there was a software tool to edit them. OW replied that everything is possible as these can be in ASCII encoding of CGM as well as binary. HB said that with CGM we have a catalogue of tools why don't we go down this route. HA agreed that this makes sense.

HB stated that true type symbols make better symbols. This is a property we could use to improve the display. HA added that we have made symbols using true type for other products. HP asked if we know the exact centre (pivot) point of true type symbols. HA replied that you have to design the symbol and then offset it and then use the font and colour. He went on to suggest that we could talk to NGA/DIPWG and see what they have to say about us using it. He added that Colby Harmon was very much involved with GeoSym and that WECDIS manufacturers were already using it. HB stated that we only want to use the CGM format profile. TR asked if this is the way we are going. HA stated that CGM has both linestyles and complex linestyles.

HB asked what the structure of the Portrayal Catalogue was. Are the colour transparencies inside the colour? HA replied that it should be part of the colour, and then asked if the transparency should be part of the drawing instruction? HB asked if this was possible in CGM. OW replied yes.

HB asked if there was anything else we have to think about. KI asked what about updating the Portrayal Catalogue. HP said that this should always be a new edition. HB said that we could have an update to an existing feature without issuing a new edition. KI stated that the Product Specification must have the same assignation as the Portrayal version. HB replied that the Product Specification will have an identifier inside the feature catalogue and will be used in the header of the portrayal catalogue. KI asked whether it will be human readable. HP replied that it is in XML then it is human readable. He added that the ECDIS must have somewhere to display it and which ENCs are compatible. HA stated that the ECDIS must be able to store multiple catalogues depending on the stored products. BG asked whether this would mean a separate SENC for each product. The OEMs replied yes.

Session Ended

[5] XSLT (EXtensible Stylesheet Language Transformation)
[6] CGM (Computer Graphics Metafile)