IHO CSMWG 18
SANHO, Cape Town, South Africa
7th – 9th May 2008

MINUTES of MEETING

(Including the combined TSMAD/CSMWG meeting issues)

Note: Some changes to these minutes were agreed at DIPWG1 in May 2009. Deleted text is shown in ~~strikethrough~~ and new text in red colour.

1. Open and welcome

The meeting was opened by Mathias Jonas (MJ) who was appointed Chairman of the joint meeting at the previous meeting in Stavanger, Norway. The chairman welcomed everyone to the 18th meeting of the CSMWG and the 3rd joint meeting of TSMAD/CSMWG. The chairman went on to thank our hosts, the SANHO, for providing such an ideal venue in which to hold the meeting. There were 28 members (see Annex A) present representing 16 Member States, 12 industry representatives and the IHB. Members of both WGs were then asked to introduce themselves.

Apologies were received from the following:

Colby Harmon (NOAA, USA)
Lee Alexander (UNH, USA)
Bernhard Nöggerath (SAM, Germany)
Hans Engberg (Sjofartsverkert, Sweden)

2. Approval of the Agenda

Document CSMWG18-02A_Agenda_Rev.6 [Draft Agenda] refers

Note this draft agenda covers both the 3rd combined CSMWG/TSMAD meeting held between 7th and 8th May, and the CSMWG18 meeting which commenced between 8th and 9th May. All participants were strongly encouraged to attend both meetings in order to support a holistic approach to data and display aspects in future S-100 based products. The combined meeting agenda was listed first. The agendas of both meetings were agreed.

3. Actions outstanding from the previous joint meeting

The following numbering refers to the agenda items for the 2nd combined CSMWG/TSMAD and outlined in CSMWG17-Minutes.

Agenda item 3.3

This action was for TSMAD and CSMWG collate information on E3.1.1 matters requiring consideration by IEC for CHRIS19 in November 2007 (Action 18/17).

It was reported that this had been completed by direct communication between MJ and Dave Blevins, acting secretary for IEC61174 revision and that CHRIS19 had been informed accordingly.

HP reported that he had spoken to Kim Fisher at the recent CIRM meeting in Dublin and that there seemed to be some confusion over the timescales for the introduction of S-64 and IEC61174.
MH outlined where TSMAD were in respect of S-64 which is due to be published at the end of May 08.

Agenda item 3.4 (CSMWG16-06.3A)
This action related to the continuation of coding of linear depth areas (CHRIS17 Item 5.2), (CHRIS18 Item 6.2, page 14).

It was reported that the coding of linear depth areas by HOs would continue until January 1st 2009 which happens to coincide with the "set in force" of the new presentation library (PL3.4) containing a revised procedure to display the safety contour. This procedure does not need linear depth areas to be encoded.

MJ reported that this subject would be raised again at CHRIS20.
BG reported that HOs should continue the linear depth area coding until the encoding bulletin is published.

Action: JW will produce an EB encouraging HOs to remove linear depth areas from their ENCs when new editions are produced after 1st January 2009. OEMs should take a note of this timescale for consideration of older legacy systems. IHO to ensure that this check is removed from S-58

Agenda item 3.5 (CSMWG17-03.5A)
This action related to encoding 'unknown' objects, it was proposed that an ENC EB (CSMWG16 actions 4 and 5) be produced.

MJ informed the meeting that the IHB had issued a CL 121/2007 to Member States (MS) instructing those using these objects to issue a Notice to Mariners (NtoM) to bring these objects to the attention of users.

Agenda item 3.6 (TSMAD14-08D)
This action related to the proposed ENC Encoding Bulletin for Port Entry Lights PELs (CSMWG16 Action 33).

JW reported that this work was in progress. It was also reported that the acronym PEL was already in use for another purpose and that he was looking at renaming these features. One possibility suggested was High Accuracy Oscillating Sectored Light.

Agenda item 3.7 (CSMWG17-03.7A)
Object classes not symbolised in current S-52 PresLib (CSMWG16 Action 47).
Point BRIDGE not symbolised
Object classes in current PL
This action was raised to highlight that this action had not been forgotten. The matter of point object presentation was addressed in a wider scope under Agenda Item 5.3 "Suggested fixes for `no symbol objects'"

Agenda item 3.11 (CSMWG17-03.11A)
Revised SCAMIN paper by IC-ENC

It was reported that the Baltic Sea ENC Harmonisation Working Group (BSEHWG) were carrying out a study into SCAMIN.
MJ reported that CHRIS19 adopted the IC-ENC paper as a guideline (Annex to S-65) but did not accept it as a governing standard.
MJ stated that objects contained in the base display are allowed to be attributed with SCAMIN even though some HOs do not apply this rule. The reason is that application of SCAMIN is a cartographic decision if and when (in terms of selected display scale) an object should appear whereas the base display category of IMO only prevents the suppression of objects on display by user interrogation.
MJ also suggested that it would be a good idea to work through all object classes to determine which objects should be excluded from using the SCAMIN attribute.
HB stated that the process could be simplified if all objects were subject to SCAMIN except the "Skin of the Earth" ones which do not overlap and therefore do not cause clutter. This interpretation had

been approved by the group as a principal statement regarding the application of SCAMIN which should be adopted as a statement for future SCAMIN application papers. The discussion then arose around the general possibility to abstain from or to complement SCAMIN attribution by implementing similar rules into the ECDIS application as recently raised by France at several occasions (mainly because the rule is automatable). Common opinion has been to see this solution as unrealistic as long as there is no unified SCAMIN interpretation even on the data coding side. The consequences of upgrading and type-approval of ECDIS kernels was also seen as an issue in this respect.

It was mentioned that it would consequently be difficult to develop unambiguous rules for implementation into the ECDIS kernel that would be acceptable to everyone.

HB stated that in S-57 it may not be possible to resolve this on the software side of things but that S-101 portrayal should address SCAMIN and come up with a realistic solution on the application side.

Action: Closed

Agenda item 3.12

Portrayal issues raised by TSMAD members:

Radar range display scale standardisation, Portrayal of narrow sectors on directional lights (CSMWG17-03.12A), Strip light portrayal issues with PL 3.3 – SANHO (CSMWG17-03.12B) and Strip light portrayal issues with PL 3.3 – UKHO response (CSMWG17-03.12C).

MJ stated that this action would be addressed during the CSMWG meeting later in the week.

Action 3.14

Cell loading policy, it was proposed to have a workshop in Monaco.

MJ This did not happen but recommends that we postpone but not forget the idea.
HB suggested that this was not necessary as it could be done as sub working group or by correspondence.
MJ informed the groups that there was a new CD containing edition 3.4 of the Presentation Library. This is available free to all MS and active members of the CSMWG. It contains some improved Conditional Symbology Procedures (CSPs) and additions included as part of 3.1.1 of S-57. It was noted that one small error had already been identified after finalisation of edition 3.4 and encouraged members to report any others.

4. Any other Business

Bathymetry – Areas of Minimal Depiction

(See TEWG10_7_Data_Issues – PowerPoint Presentation)

JW considered that there has been a misinterpretation of the Use of the Object Catalogue. This had resulted in ENC producers cutting holes in small scale ENCs and inserting data from a larger scale.
KI thought the cell loading strategies had something to do with the way these areas were depicted.
RF said that this problem could be minimised with the correct use of SCAMIN.
BG/RF recommended the use of a low value of CATZOC rather that encode these holes as unsurveyed.
It was suggested that it may be difficult to generalise ENC information from the smaller scale ENC into such holes as this may fail to trigger an update.

Action: BG/JW to come up with some wording which clarifies a better method of coding area such as these. This should include pictorial examples so ENC producers can see the results of encoding in this way.

5. Proposal from Konstantin Ivanov (Transas)

KI submitted a proposal to both TSMAD and CSMWG about using bathymetric data model in the S-101 product specification. The objective is to discuss the proposal and if agreed, develop new objects entries into the object catalogue (TSMAD) and new presentation algorithm (CSMWG). This is not a paper chart approach but a digital one and the proposal is incorporate the methodology in S-101. (Digital bathymetry model.pdf refers)

BG can see this working in areas where there is good quality (high density/multibeam) survey data but what about in areas where the survey data is less dense?
HB asked if depth contours would be created on the fly. Any mathematical algorithms used with this method would not be checked prior to use by the mariner.
RF mentioned the need to address intertidal areas especially where there is a large tidal range.
HA was of the opinion that you cannot just throw survey data at this.

It was stated that a high resolution multibeam survey takes up a lot of space and take hours to process. There is a need to come up with a sensible way of scaling it.

HB said that the triangle would be quite small so why calculate the safety contour. Why not just connect the triangles with similar depth areas. Why not use a TIN model as this would reduce the amount of data without reducing the quality. It also makes for easier compression of the data. HB went on to say that S-100 has section on gridded data and other models such as TIN.

BG enquired whether there would be two colours one for safe the other for unsafe.
KI replied that if a 3-D model was used then more colours may be necessary.
BG commented that this proposal was a good compromise between existing models and high resolution depth contours, e.g. 10, 11, 12, 13, 14 m, etc. He went on to add that this be better displayed as a separate layer.
PB wanted to know about the updating of bathymetry using information rendered in this way.
HB stated that this was a geometric problem that warranted further discussion.
HP would like to see this as a uniform skin of the earth area with no overlapping data.
JM? Replied that this is trying to represent an accurate view of the seabed whereas DEPAREs are generalised, these are two completely different things.
HB added that tidal variances can be applied to this model but cannot be to current DEPAREs.
HP said that data producers should be able provide models (presumably based on the availability of high density bathymetry).
MJ stated that this is an ideal candidate for the registry and an associated portrayal. However the data producers take responsibility for this and may not like it.
HP added that this should not be made mandatory so it is up to the data producer.
MJ asked the group if this was the way ahead (are we agreed?).
HB stated that the portrayal rules are different for this type of geometry which needs to be registered, so there is much work to be done.
BG stated that it was always intended to provide real time bathymetry where the data was available and users were already asking for it.
EK offered to demonstrate a similar model during coffee. This model is publicly available and some software houses have taken it a stage further.
MJ summing up said that this has always been a dilemma within the IHO community as they do not have the expertise to develop these proposals without the cooperation of industry.

Action: BG to talk to the UKHO bathymetry section to see if it would be possible to obtain high resolution survey data.

6. Agenda Item CSMWG18-05.5B - S-101 Portrayal relations to S-100 Portrayal

Julia Powell (NOAA) presented a paper which discussed the following:

- The Progress of ISO 19117 – the base standard for S-100 Portrayal
- What is S-100 portrayal?
- What is S-101 portrayal?

- Where does S-52 presentation library fit and what needs modification?
- The way forward

JP stated that ISO19117 is the base standard used for S-100 but that it was currently undergoing a revision and as such is unstable.

HA said that this standard should not remove CSPs as these undertake a lot of tests.
MJ asked if it will be possible that all symbols should be made machine readable.
PLeB stated that there is currently no satisfactory solution to define CSPs in ISO19117.
OW asked if CSPs could be simplified as S-52 adds a lot of complexity.
HA remarked that in order to remove the requirement of CSPs an extensive/comprehensive list of rules was needed. Most CSPs are set by the mariner therefore to address this issue a simpler approach would be required. One way would be to use additional attributes when encoding certain features.

7. Presentation by Pol Le Bihan (Geomod) on the current status of the work he was undertaking on Portrayal [**CSMWG18-05.5C]**

PLeB gave a presentation on the work he had been doing since CSMWG17 in May 2007. This work had concentrated on the Portrayal Rule and Symbol Packages. He re-iterated what JP said earlier about two new versions of ISO19117 being published since CSMWG17.

Since CSMWG17 efforts had been put into the "Symbol Package" for the S-100 Symbol Model. The main objective is to offer a consistent structure for the future hydrographic symbol registry in order to maintain consistent symbolisation. Then required symbols, referenced in the portrayal rule catalogue, can be extracted in a standard format.

PLeB provided documentation that explained the symbol model and relation ships between symbol components (colours, line styles, point symbols, etc) with an example of a XML schema created in accordance with the S-100 Symbol model. He has generated a S-52 Symbol Library on a GIS so that these can be exported as graphics in a different format and in accordance with the S-100 Symbol model. He has also exported this S-52 library in an XML file in accordance with XML application schema; and created an HTML interface to go through the content of the XML File.

KI suggested that between the HO's and the OEM's, they can examine the CSPs and make them machine readable in some way.

HB enquired whether one could add another luminescence to the list.
HP stated that RGB is not allowed in S-57. However it is allowed in S-100 but will not be used in S-101
BG remarked that this could always be added to the register/registries later.
MJ said that this proposal can be looked at again in the future.

PLeB stated that the model presented here is still a proposal.

KI asked about the CSPs and lookup tables.
PLeB replied that ISO19117 has no way of representing CSPs at present and went on to say that there is no solution for creating CSPs in digital form.
KI replied that the WG need to go through the list of CSP and see which ones are absolutely necessary.
HP stated that CSPs could be removed if data producers include additional attributes so that the ECDIS can automatically apply rules.
BG remarked that maybe the WG could have a look at some CSPs to get a flavour of what is needed.
OW enquired why it was necessary to have machine readable code. Why not use text to explain what is going on?

MJ explained that PLeB carried out this work on a paid basis and asked if the WG wanted to endorse the work carried out so far and ask him to continue?
HP stated that his work was acceptable.
KI stated that the WG should clearly state that our final goal was to produce a fully machine readable symbol library. Lets the WG decide what cannot be achieved so that we work is still needed.

BG thought that the presentation given by PlB and the work he was doing was excellent but was worried about its alignment to ISO19117. He was keen that either PLeB or one of the other OEMs attends the next ISO meeting in Copenhagen. He went on to explain what it was that DGWIG was trying to achieve. For example overcome and reduce the amount of conflict in presentation that currently exists in different products, e.g. AML, DNC, S-52, etc. They are trying, through ISO; we need to know what we, as a WG, want to be included which allows us to achieve our aims.

MJ proposed that the IHB pay for PLeB to attend the forthcoming meeting in Copenhagen.
OW proposed that he or Holger could attend subject to Gert's approval.

MJ confirmed his belief that PLeB should carry on with this work with the portrayal rule package. A review should be carried out of the lookup tables and CSPs and that perhaps one of our industry partners could investigate a possible solution in XML. We can then see how far this takes us.

HP remarked that he did not think this was possible as it relies on ISO relaxing its rules. He believes we should stay with CSPs. He further stated that Furuno had already carried out a study of this and had produced a report.
RF asked if this report could be made available to the WG so the extent of the problems can be established.

At this point BG gave a brief presentation on Portrayal Extensions.

MJ asked if the WG could propose this model to next CHRIS in November 2008.
AP said that DGWIG could propose this.
BG stated that we have a co-operative agreement with DGWIG.
MJ remarked that if ISO 19117 is the model then the WG needs to identify how far apart from it we are.
BG replied that we need to influence the outcome of ISO19117 revision underway.

Thursday 8th May 2008 (Joint TSMAD/CSMWG, continued)

MJ gave a brief recap synopsis of the topics covered the previous day. MJ continued to say that he endorsed PLeB's work and was of the opinion that it was in line with S-100 and the FDD modelling. Although its construction was not fully compliant with ISO19117 the WG should take a strategic step to influence ISO. To this end one representative from the WG should attend the ISO meeting in Copenhagen at the end of May (possibly HB or OW).

MJ noted that PLeB had modelled the portrayal rules last year and had mapped 80% of the CSPs. Pol will provide details of those CSPs that are not yet covered.
HP volunteered to make some tests to see if the remaining CSPs can be encoded in XML.

If it is found that some CSPs are impossible to encode the WG will look into what additional attributes will be needed and provide guidance to data producers. HP will get the report produced by Furuno translated into English for circulation to the WG.

MJ stated that there is a practical need to maintain the register either physically or electronically and bind it together with the DGWIG people.
BG replied that the WG needs to ensure that the work PLeB has already done is aligned with ISO19117. The underlying model must be aligned as close as possible and this will only be achieved if the WG can influence ISO.

8. CSMWG18-05.3B - S-57 object classes not symbolized on ECDIS
[TSMAD15-6.1_ObjClasses.pdf] [CSMWG18-05.3A & 05.3B]

MJ introduced this paper which was first submitted by Australia at CSMWG16. Australia's concern was that not all features encoded from the ENC PS were portrayed on ECDIS and it was their view that they should. If all features were portrayed then this would give the mariner the opportunity of selecting the feature in the pick report.

As a result of discussions at CSMWG16, Transas conducted investigations on S-57 object classes (and related primitives) that were not displayed in ECDIS, which was tabled at CSMWG17 (paper CSMWG17-03.7A). This paper was briefly discussed but no action taken by the meeting, which resulted in Australia compiling a paper for TSMAD15 (TSMAD15-6.1A).

JW stated that there was a further feature that needed to be added to the list in CSMWG18-05.3B and that was sloping ground [SLOGRD]. This had been requested by South Africa.

MJ then proceeded to work through the document a feature at a time.

Checkpoint [CHKPNT] (primitive: point) **Decision:** symbolize
MJ stated that we would have to invent a symbol and amend the lookup table entry. This will take the form of a deferred amendment.

Current [CURENT] (primitive: point, no value for ORIENT) **Decision:** symbolize
JW stated that the South-East Australia Current changes direction over time which means a single value for ORIENT is meaningless. Australia does not encode attribute value in this instance.

Dam [DAMCON] (primitive: point) **Decision:** don't symbolize
MLeG did not see the point of encoding something you never see.
JW agreed that these were not navigationally significant especially DAMCON point.
OW remarked that ENCs are not only used for navigation but these features may be of interest to others.
BG said the line feature is OK but not the point.
MLeG suggested that an EB should be issued giving the list of all these objects that can be encoded but will not be displayed on the ECDIS.

Action: JW to produce an Encoding Bulletin (EB)

Gridiron [GRIDRN] (primitive: point) **Decision:** don't symbolize
JW explained that this is a wood or metal structure that sits on a mud bank where vessels can rest without sinking into the mud.
MJ asked if we wanted to symbolise this as a point object.
It was commonly agreed not display this as a point feature.

Action: JW to produce an Encoding Bulletin (EB)

Pipeline (Submarine/on land) **[PIPSOL]** (primitive: point) **Decision:** don't symbolize.
WG decision was not to symbolise.

Production Area [PRDARE] (primitive: point) (CATPRA ~~1; 5; 6; 8; 9~~ 2, 3, 4, 7 & 10)
Decision: symbolize
The WG agreed with the TSMAD proposal to symbolise.

The following features, **ROADWY, RAPIDS, RUNWAY, SMCFAC, TUNNEL** and **VEGATN**, received no objections to Mike Eaton's suggestions whether to symbolise or not.

Waterfall [WATFAL] (primitive: point): **Decision:** don't symbolize
There was some discussion on their usefulness navigationally however SO said there were two conspicuous waterfalls on SA paper charts.
MJ replied that if mariners were navigating using ECDIS they would not be using these to fix on. He recommended that we to remain with the proposal not to symbolise.

Sloping Ground [SLOGRD] (primitive: ~~line~~ area) **Decision:** don't symbolize
JW remarked that these should be encoded as an area.
SO suggested that a tint would be useful similar to that demonstrated on the SevenCs SeeMyDENC freeware.
JM stated that sloping ground could, under certain circumstances, be radar conspicuous and even navigating on ENC could still be useful.
HA stated that if radar conspicuous is defined then it will not be symbolised. He suggested that this could be changed in the lookup tables.
MJ added that it is agreed that we will develop an entry in the look up tables to symbolise sloping ground if it is attributed as radar conspicuous.

Meta Objects: Decision: don't symbolize.
It was agreed that Meta objects should not be symbolised so it was decided to develop some look up entries and include as a deferred amendment.

Action: MJ to produce Deferred Amendments for those objects which will become subject to symbolisation, OW will provide LUT-entries, JW to create an Encoding Bulletins giving the list of not displayed objects

9. CSMWG18-05.2A - Display of SMCFAC area object in ECDIS

Sidney Osborne introduced this paper submitted by the SANHO which identified an issue with SMCFAC. When captured as an area it can obscure other significant point and area features that fall within it when displayed on an ECDIS. The SANHO submitted the following recommendations:

1. The working group conduct a full investigation
2. The next version of S-52 changes the display layer of SMCFAC area features

HP recommended that data producers create holes where the buildings are.
RF stated some encoders use ADMARE instead of SMCFAC.
HA confirmed that the objects described in the proposal all share priority = 4. He suggested that we could make SMCFAC priority = 3 then the buildings would be visible.
OW proposed to use transparency as this requires less testing, i.e. transparent fill for SMCFAC.
It was agreed to adopt OW suggestion.

Action: MJ to produce Deferred Amendment for transparent fill for SMCFAC

SO went on to raise the issue of navigational lights with the attribute, strip light. It had been confirmed previously that the light descriptions cannot be displayed on an ECDIS when attributed in this way.

It was decided between JW and RC that these should be encoded as an ordinary light and not use the attribute strip light. A reference to strip light should be included in INFORM. Clarification using INFORM is necessary in case there are any nearby buildings also exhibiting strip lights. An EB is to be produced giving data producers clarification and guidance on encoding these features.

Action: JW to produce an encoding bulletin

10. Julia Powell (NOAA) presented a paper on Thematic Layering

JP introduced the WG to the concept of adding more than two groups into S-101 and dividing them based on themes, e.g. NAVAIDS, maritime administrative areas, etc. S-52 already pre-defines viewing groups based on IMO 232(82) and these are then further sub-divided. It is intended that these would now be predefined in a product specification. It was stated that a feature can belong to multiple groups across multiple layers.

BG stated the function is built into S-100 and is submitted here for comment and possible inclusion in S-101. He asked if there would be any benefit in using this function for portrayal in S-101.

OW said that S-52 gives the manufacturers the possibility to define groups in their s/w within the "base", "standard" and "all" displays as suggested by JP/BG.
BG stated that there is more sophistication in the new ISO8211.
OW thought it a good idea as edition 3 of AML has put six products back into one specification. He asked if these groups would be defined in the product specification.
PB stated that it would be sensible in the case of AML to classify and categorise things into one product specification from which six different user groups can derive products.
HA stated that Group 1 objects do not need to be defined as systems could accept the fact with the use of a rule.
MJ suggested that this mechanism could be useful for groups like winter buoyage.
OW said it would offer better filter functionality.
BG stated that this would help the scale-less layer.
HA suggested that the various viewing groups be based on user groups, e.g. Navy, SOLAS, Ferries, etc.
BG said that would give focus to who is going to use this.
RF mentioned that defining these groups is going to be difficult without input from the user.
DG suggested we base these layers on the size and class of vessels.
HP stated that he took the opposite view as the current viewing gives the mariner control over what he sees. The viewing groups are machine readable but associated attributes are not.
HA stated that it was their intention to make it machine readable. S-101 is putting buoys into the base display with the attribute SCAMIN.
KI said that what was needed was for encoders to attribute objects by significance/importance.
HP said that fishermen are more interested in the seabed.
EK stated that we need to identify user cases to define thematic groups.

11. CSMWG18-05.6A – Results of the S-101 Workshop affecting CSMWG

Mathias Jonas presented his report which highlighted the following CSMWG topics raised by stakeholders.

1. Display of Tidal Information
2. The use of the colour orange
3. Simplified symbols
4. Development of the Standard Display
5. The pick report
6. User interface symbology
7. Revision of S-52
8. S-100 ECDIS: "Plug and play" type upgrading in the ECDIS equipment of elements like "feature catalogues", "symbol libraries", etc.

MJ felt there was a really good dialogue between the IHB and Industry.

11.1 Display of Tidal Information

The possibility of having dynamic tides was brought up by stakeholders at the workshop. OW was asked (by MJ) to put a paper together for presentation at this meeting. (See CSMWG18-05.6B below)

Tidal adjustment of depth information
[Paper by Olaf Wentzel, SevenCs, CSMWG18-05.6B refers]

OW gave a practical demonstration of the use of real time tidal information and its corresponding affect on a cells bathymetry. The demo was based on a Netherlands cell which had 1m contour intervals. It showed how the depth values are corrected according to the tidal height and how the safe water area changes in the display. The intertidal area moved in and out of view with the ebb and flow of the tide and the CSPs were offset according to the tidal level and the current safe/unsafe water areas.

It was stressed that the display changes but the underlying data remains unaltered. The safety contour also remains unchanged although it could be made to change in real time.

BG suggested that this could be made predictive so that it could be used for route/voyage planning by setting the date/time.
MJ chalked a few rules on the blackboard as follow:

- Dense bathymetry <= 1 metre
- No recalculation of depth contours
- Unchanged safety contour value and unchanged safety contour presentation
- Timescale/Tidal Model Indicator (who has delivered the data/are of validity)
- Timescale/Tide Value Indicator (account for time zone, point in time of presented tide values)
- Tide values applied for display only including vertical reference.

MJ went on to say that S-52 would have to be changed because at present the ECDIS is not allowed to display water depths other than those coded into the ENC based on minimum water level. A proposal will have to be presented to CHRIS.

PB stated that we should guard against the use of decimetre contouring as this is pushing the boundaries of safety. Especially in respect of the accuracy of surveys used to collate the bathymetry. For example surveys are rarely carried out in perfectly calm conditions (sea swell).

KI had no doubts that this model would be useful.
MJ proposed that we provide this demonstration online to HOs for comment.
HP stated that this model is good for S-101 but is too simple at this stage. We need to define more specifications.
BG said that this capability is customer driven.
RC mentioned that mariners are already using TotalTide to enter ports where there is an insufficient depth of water on the ENC.

Action: It was agreed that this technical solution would be submitted as a proposal to CHRIS.

11.2 The Colour Orange

Stakeholders had commented that there was too much use of orange in the ECDIS display.

OW mentioned that the borders between "Official" and "Unofficial" data could be added to the list identified by stakeholders.
HP stated that it was mostly "Mariner Objects", e.g. range bearing lines. It was his opinion that there should be a move away from this colour.
JP commented that this issue will be reviewed in S-101.
MJ asked what the alternatives were. Orange was used to display information that has nothing to do with the cell content.

HP said that some kind of green/brown could be used.

Action: HP will prepare a paper/proposal reporting on the possibility of using alternative colours.

11.3 Simplified Symbols

Stakeholders stated that the concept of simplified symbols for buoys and beacons has very little acceptance. ECDIS display should concentrate on symbols as aids to navigation and shaped in the traditional manner but coloured.

CSMWG18-05.6A suggests the following options:

Option a) delete simplified symbols
Option b) delete simplified symbols and redefine traditional symbols as coloured
Option c) declare simplified symbols as a voluntary option

OW supported option a (delete simplified symbols) the removal of simplified symbols and added that this would make the PL simpler. HP agreed.
MB said that if we agree with the above comment then b is the preferred option, i.e. delete the simplified symbols and colour the traditional ones.
MJ said that this proposal will be added to the CSMWG work plan with an action to redesign a set of symbols for size, shape and colour.
SO stated that the SA Navy do not like or use the simplified symbols as they have no documentation to reference them to see what they are.
HP replied by saying that simplified symbols display better with a lower intensity backlight as the contrast is better.

It was proposed that option (b) was preferred. As a major change of a core element of PL, this action requires review of the existent traditional symbol set and should take effect together with future portrayal of S-101 based ENCs.

11.4 Development of the Standard Display [Doc. CSMWG18-11.1A]

MJ remarked that item 3 "Know your Symbology" was the only viable suggestion within the scope of this WG. This being *"The IHO should standardize terminology for chart related terms and functions. Suggest a glossary with all standardized terminology, including abbreviations".* As an example MJ stated that the isolated danger symbol is not familiar to the mariner or under what conditions it is displayed. Therefore there is a requirement for the WG to prepare a set of symbols for S-52 users.

JP said that NOAA/NGA was preparing a new Chart 1.
SR continued to say that they were going to include an additional column specifically for ENC symbols.
MJ said he could provide an extract from the ECDIS book which explains the symbols which are less familiar with an explanation of when they will be displayed.
MH enquired who would be doing this additional work?
MJ said that he would contribute to this work.

Action: MJ will supply JP (NOAA) with a digital version of INT 1 via FTP.

MJ stated that as soon as NGA can deliver a Chart 1 issue supplemented with ECDIS symbology, BSH will publish a new version of INT 1, to include ECDIS symbols as well. However it is estimated that this may take up to two years.

11.5 The Pick Report

Stakeholders commented on issues such as the lack of standardisation of the pick report, easier accessing of notes, etc.

MJ jokingly said that this was Gert's last playground where manufacturers can differentiate their products from their competitors.
JP said that we need to define a minimum standard which at least removes the use of such things as acronyms, object/attribute codes, etc.
HP stated that S-52 has several references as to how to render the pick report. IMO did not give any guidelines and as such there is nothing laid down in type approval.
KI remarked that this has nothing to do with CSMWG. S-52 already provides guidance on the minimum requirement.
SO suggested the pick report could be linked to the symbol catalogue.
MJ said that INT 1 should be upgraded first then we could look at how the pick report should be displayed. We should review existing methods of displaying the pick report and provide guidelines to CHRIS.

Action: RC to provide examples of pick reports displayed by different ECDIS

11.6 User Interface Symbology

Stakeholders had commented that they were more interested in what was being displayed (data) rather than how. Although they thought that it would be a good idea if there was a standard default palette defined by the IHO, this would still leave manufacturers freedom to implement additional ones.

MJ stated that the mandatory use of colour tokens was revoked in 1998 by CSMWG.
HP mentioned that some standards set rules that allow OEMs to use as many colours as they want.
MJ enquired about liability?
KI stated that mariners should be consulted over what colours palettes they prefer.
MJ stated that all previous attempts to come up with an answer to this had resulted in two different opinions (black background/white background).
HP felt that the IHO needs to give clarification on day, day/dusk and night palettes, when they should be used and under what conditions.
HA asked if there was anything that mandates when the palettes are used?
MJ then asked the question: what can we do? Delete one of the palettes, rename them, allow alternatives or make new ones.
EM mentioned that he had some colleagues in the aeronautical world carrying out a similar study.
KI stated that the whole thing was based on background colours 5 & 6.

Action: EM will follow up with a colleague who is carrying out similar research in the Aeronautical world.

11.7 Revision of S-52

This was not a reference to the S-52 main document but more at Appendix 2, Annex A, Presentation Library. MJ stated that this was produced in the mid nineties and was based on the technology available at the time. There was now more scope to make improvements to it. PLeB should continue his work. We will also carry out a review of traditional symbols and their associated colours. Find someone to work on the CSPs to make them smarter or even redundant.

KI said that some work is needed in parallel to this to investigate night colours.
MJ asked if there was a need to create a new day/night palette?
KI replied that only a day/dusk is required and that this needs some academic investigation.
MJ stated that further work was needed, on a fee paying basis, to redefine the symbols. MJ continued to say that this is something that OW might consider as he has worked on colour symbols in the past. This work should be limited to all objects currently in the simplified symbol library. Further work was also required on CSPs, also on a fee paying basis and that EK might be able to help.

HP re-iterated that Furuno had already done a study into this and that the main message so far was that TSMAD should come up with some more attributes.
MJ stated that we should review this document first.
OW said that we need to look at the new "operators" first to see what affect these have.
MJ said that we need to pay someone to investigate this.
KI suggested the WG make a list of things that need to be looked at.

- Symbology
- Colours
- Symbology procedures
- Removal of CSPs
- Review of the Furuno Study
- Review of the Jeppesen study

KI will approach his company to see if he can carry this forward.
MJ stated that we need to define the scope and timescale.

Action: JP/MJ to coordinate the requirements necessary for a revision of the PL in preparation of S-101 portrayal and provide a paper on the subject.

OW asked if we were moving forward with the re-introduction of rotated text and light flares.
MJ said that there will be a work paper for the next CSMWG meeting reviewing these attributes with the consideration of re-introducing them back into the PL.

11.8 S-100 "Plug and Play"

It was agreed by stakeholders that the feature catalogue should be machine readable and defined in S-100 in the most suitable format. There should also be a rigid version control with the feature catalogue directly linked to the product specification.

It was also agreed that the "Portrayal Library" should contain machine readable files although there were some reservations about the drawing performance of the ECDIS. Some OEMs saw the presentation as a big differentiator in a competitive market they also felt that "Plug and Play" should be implemented by them. Rigid version control was again recommended.

The WG agreed that XML should be used for both the Feature Catalogue and Portrayal Library.

12 CSMWG18-04.3A - S-64 ENC TDS Instruction Manual

Ed Kuwalek (IIC Technologies) gave an overview of the ENC TDS Instruction Manual, its content and structure. He mentioned there was still some work to be done before it is complete. The outstanding sections are as follows:

- Acknowledgements
- Change Control History
- Acronyms and Terms
- Introduction

EK mentioned that it would be good idea to do a sanity check of the TDS using a type approved ECDIS running 3.3 of the PL.

HP mentioned that he had talked to David Blevins who is coordinating edition 3 of IEC61174. He was concerned that IEC61174 should reference S-64 and not the other way around. It is a bit like opening a book only to find that you have to open another one.

IEC say that S-64 TDS Instruction Manual will never sit within IEC61174.

PLeB had identified that there were some visualisation errors in one of the S-64 TDS plots.

Action: HP to provide an update to the ENC TDS Plots to reflect some visualisation errors.

Friday 9th May 2008 (Final Morning)

13 Strategic Issues – IHO (Reorganisation of CHRIS)

Document: CHRIS18-04.1A_Report_on_HSSC_to_SPWG refers

This was the CHRIS Chairman's Report to SPWG which describes a proposed organisational model for the Hydrographic Standards and Services Committee (HSSC). It provides an implementation plan and draft Terms of Reference for the HSSC and its coordinating Sub-committees.

The WG discussions were directed, for the most part, at the proposed new structure of CHRIS with the main bone of contention being where S-52 sits. The proposed model puts S-52 into the Coordinating Sub-committee on Symbology & Data Presentation Standards (SDPS) together with the specifications and standards for analogue products.

It was strongly felt that S-52 should be completely separate from the paper chart world.

MJ defined a new model which linked TSMAD with CSMWG on the blackboard (see ANNEX C) and proposed that we should commit to joint meetings and joint agendas and asked if there was agreement on this.
AP stated this would cause the least line of resistance and the least disruption to the proposed new structure.

There followed a light hearted competition to see who could come up with the most appropriate ACRONYM for the new Working Groups.
HA proposed the retention of TSMAD as this term was well known to both the hydrographic world and industry and was almost a trademark.

MJ proposed finally to rename CSMWG to Digital Information Portrayal Working Group – DIPWG. The meeting endorsed this proposal to forward to CHRIS20 carrying the enhanced scope of the working group for the creation of the whole portrayal of the digital chart information by this revised name.

MJ finally proposed an action that the WG rejects the idea of a merger with paper and commit to the structure proposed above and depicted in ANNEX C. That is we continue to hold joint meetings.

14 Presentation by Konstantin Ivanov (Transas) on Contour Labelling

KI demonstrated that if depth contours are constructed from a sequence of smaller and larger segments, the placement of contour labels showing the depth value of this contour may results in gaps and clusters of these labels along the complete contour but not in an equal spacing harmonic placement if the generic rules of DPCNT03 are applied too strictly. KI proposed a CSP enhancement of DPCNT03 and a fixed value for the maximum space between contour labels in sequence.

OW argued that this is not subject to the CSP but to the software engineering of the presentation software of the individual manufacturer.
MJ agreed and argued that it would be difficult to define a fixed value for the spacing for each display scale.

Action: CSMWG (MJ) to provide a Chart Presentation Bulletin (CPB) relating to KI's proposal regarding Contour Labelling which requires equal spacing in a generic way. (See Annex D of this document)

15 Colour Palettes

CSMWG18-06.2.2A_Reproduction_of_colour_palettes_on_LCD_displays.doc
CSMWG18-06.2.2B_CRT_versus_LCD.pdf
CSMWG18-06.2.2C_night_colours_on_LCD_displays.doc

HP considers the calibration of LCD monitors is OK and it is recognised that our procedures are adequate and consequentially no action is required.
The meeting agreed.

16 Changes to Standards

Changes to IMO/IHO standards are reflected in edition 3 of IEC61174 which is waiting on the S-64 test Data Sets (both encrypted and unencrypted). These revised standards come into force in January 2009.

The test standard for navigation symbology is IEC62288 of which a subset is hosted in the PL. Extracts of symbols have been taken from the PL plus some additions and supplied to IEC.

HP stressed that these were only the navigation symbols and no colour definition has been made within the IEC62288

Action: MJ to provide a S-52 Chart Presentation Bulletin (CPB) relating to IEC62288.

17 Nomination of new CSMWG Chairperson

MJ had made it clear at the CSMWG17 that he would be stepping down as chairman after this meeting in Cape Town.

Michel Huet (IHB) stated that the IHB had received one nomination for the newly vacated position. The nominee being Mr Colby Harmon from NOAA and if there are no objections from attendees he is proposed as the next chairman of the CSMWG.

MJ stated that he will continue as an active member of CSMWG, at least until after the next meeting, to provide a handover to Mr Harmon and to provide a degree of continuity to the working group.

18 Next Meeting (Venue/Date)

It is proposed, tentatively, to hold the next meeting at around the same time next year at the CHS in Ottawa. This meeting is to run consecutively with TSMAD.

19 Close

At this point MH thanked MJ for chairing this meeting so well again and for all the hard work and commitment shown over the last seven years (2001 – 2008). MH went on to present MJ with a plaque from the IHB in recognition the enormous contribution he has made to Colours and Symbols. This was followed by spontaneous applause from the floor.

MJ thanked the assembled members for their help during his tenure and wished everyone well for the future. MJ further thanked SO and the SANHO for their hospitality in hosting this meeting and making it so memorable.

Annex A
(To CSMWG18 Minutes)

IHO CSMWG-18
Cape Town, South Africa, 7-9 May 2008
[Including a combined TSMAD-CSMWG meeting on 7 May]

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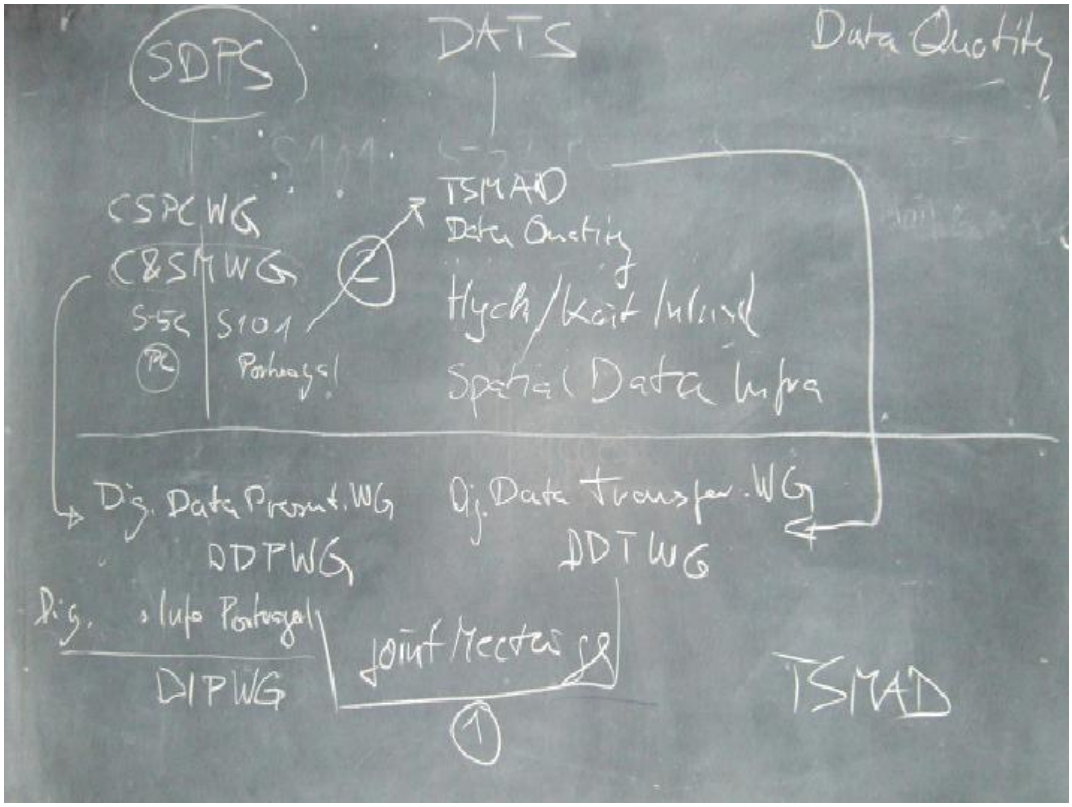
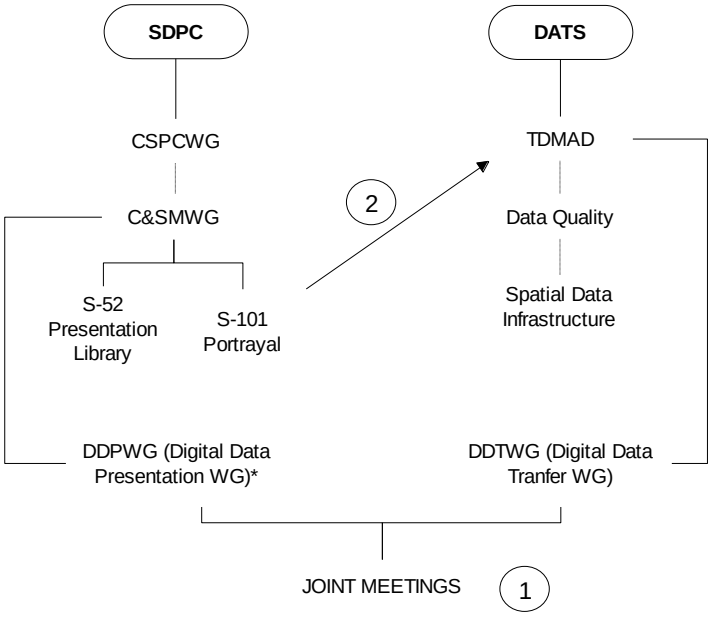
Annex B
(To CSMWG18 Minutes)

Action items resulting from the discussions made at the meeting:

Action No.	Item No.	Description	Who	By when	Actions made	Date completed
1		Craft some wording which clarifies a better method of encoding areas of minimal depiction to include pictorial examples. [Create an EB]	BG/JW	End July 2008		
2		Talk to the UKHO Bathymetric section and try to obtain some high density surveys for trial KI's digital bathymetry proposal.	BG	End July 2008		
3	18-05.3B	To produce Encoding Bulletins (EB) for DAMCON, GRIDRN, etc.	JW	End July 2008		
4		Provide an EB for Strip Lights when encoded by HOs as a navigational aid.	JW	End July 2008		
5	18-05.1A	SLOGRD/SMCFAC and point symbols – The look up table entries will be developed to include this feature and issued as a deferred amendment.	OW/MJ	End Sept 2008		
6	18-05.6B	Presentation by OW for the Tidal adjustment of depth information – It was agreed to present this as a proposal at CHRIS20.	MJ/OW	Nov 2008		
7	18.05.6A	HP will prepare a paper that proposes possible alternative colours (other than orange) for Mariner Objects.	HP	End Sept 2008		
8	S-52 Symbols	MJ to supply JP with a digital version of INT 1 with text explanations to PL mechanisms, e.g. CSPs via FTP	MJ	May 2008		May 2008
9		US to enhance CHART 1 to include the additional column containing additional references to ENC symbols.	NGA & NOAA	To report at the next CSMWG		
10	Pick Report	RC to collate and provide examples of various ECS/ECDIS pick reports to MJ/JP/EM (copy to OW)	RC	June 2008		
11	Pick Report	MJ/JP to present a joint proposal at CHRIS20 with recommendations on the minimum display requirements of Pick Reports.	MJ/JP	By Nov 2008		
12	Colour Palettes	Colour Palettes - EM will follow up with a colleague who is carrying out similar research in the Aeronautical world.	EM	By next CSMWG		
13	S-52 Revision	JP to coordinate the requirements necessary for a revision of the PL in preparation of S-101 portrayal and provide a paper on the subject.	JP/MJ	September 2008		
14		Provide a translation of the report Furuno have conducted on how CSPs can be removed from the PL in XML.	HP	End of June 2008		

Action No.	Item No.	Description	Who	By when	Actions made	Date completed
15	18-04.3A	HP to provide an update of the ENC TDS Plots to reflect some visualisation errors.	HP	End of May 2008	Ongoing discussion in May and June between Pol and HP	
16		CSMWG to provide a Chart Presentation Bulletin (CPB) relating to KI's proposal regarding Contour Labelling.	MJ	End of June 2008	Proposal see Annex D of this document	
17		Amend entries 5 & 6 of the CPBs to reflect recent changes.	AP	End of July 2008		
18		Review the test instruction manual for S-64 and provide feedback to EK/JP	All	End of May 2008		
19		Provide a CPB relating to IEC62288	MJ	End Sept 2008		
20		Provide previous documentation relating to rotated text.	OW	By next CSMWG		
21		Prepare the minutes of the 18th CSMWG	RC/MJ	End June 2008		
22		Provide a report on the meeting to CHRIS20 to include a proposal that PLeB and SevenCs continue their work on portrayal modelling in support of the IHO.	MJ/JP	End Sept 2008		





* Another suggestion was DIPWG
(Digital Information Portrayal WG)

Organisational Diagram proposed by C&SMWG
(Two options)

Draft wording for chart presentation bulletin regarding equal placement of depth contour labels (Action Item 16):

Depth contour lines are often coded in segments of equal status with varying run lengths. Short contour segments are sometimes not optimal for the presentation of contour labels if the generic rules of DPCNT03 are too strictly applied. Therefore, the interpretation of DEPCNT03 rules to display depth contour labels should be interpreted in a way, that it results in an equal spaced placement of the labels with a distance which is independent from the fraction of the contour into segments and fits well to the selected display scale.