DCEG Sub-Group Meeting 05-06 October 2022

Meeting Notes

- Point out at start that lower GitHub issues to be discussed are related to issues with ECDIS portrayal as derived as actions from the Portrayal Sub-Group. Later issues are related to issues identified in the Changes spreadsheet.

Github Issues	Issue # 47	**Flare Angle** DCEG Clause: 2.4.5.1, 30.2 Points to Note: - Suggestion (from SE) is to allow manual cartographic encoding (for example along a transit or leading line). - Current draft 1.1.0.20220929 only reflects the option to encode manually for cartographic purposes. - Corresponding changes to that shown in the GitHub made at clause 30.2. - Rename to flareBearing? If so bearing towards or away from (Note Christian comments). - Possible alternative: Additional optional feature attribute that overrides all? Discussion/Decision: - General approval of the proposed change from flareAngle to flareBearing. - After some discussion, general consensus was that the bearing to be encoded should be the bearing "away" from the light (i.e. the bearing as populated for any associated navigation line (towards the light) +/- 180. - There was no discussion on the possible alternatives provided (additional optional feature attribute; and Christian's RCDIS portrayal rule. **Action:** **- Amend DCEG to reflect change of name for flareAngle to flareBearing (IHO Sec). [Complete].** **- Supersession proposal to be submitted to Concept Register (IHO Sec). [Complete]** **- Close issue and open new issue to capture possible modelling/portrayal alternatives (IHO Sec).**
	Issue # 40	**Encoding of Dates** DCEG Clause: 2.4.8, 2.4.8.1, 27.76, 27.77, 27.79 Points to Note: - Observation from NIWC that in S-100 Edition 5.0.0 encoded date ranges are inclusive. - Solves the problem for dateEnd but, for "last day in February", not for dateStart. - Note that this guidance was based on guidance in S-57 UOC. Does this mean that UOC is incorrect? - Note Christian approval. Discussion/Decision: - After some clarification regarding the difference between the way that the dateEnd and dateStart attributes will work in regard to the specification in S-100 Edition 5.0.0, the proposed at DCEG clauses 2.4.8 and 2.4.8.1 were approved without amendment. - The proposed changes at DCEG clauses 27.76, 27.77 and 27.79 were approved without amendment. - Given that the guidance at clause 2.4.8 is derived from the S-57 UOC, it was agreed that the changes to the guidance as included in the DCEG should be reported to the ENCWG for consideration. **Action:** **- Report change to clause 2.4.8 to ENCWG for their consideration (UOC) (IHO Sec).** **- Reflect decision and close issue (IHO Sec).**
	Issue # 26	**Masking** DCEG Clause: 2.5.10 Points to Note: - Not necessarily for Edition 1.1.0, but note that more appropriate examples and Figures would be appreciated. Discussion/Decision: - While not a critical requirement for S-101 Edition 1.1.0, it was reported that improved guidance on masking for S-101, including more appropriate scenarios, examples and Figures, need to be developed for masking in S-101. Issue #26 has been opened with the intent that contributors can provide such examples. It was agreed that the Sub-Group Lead will discuss possible options for re-structuring DCEG clause 2.5.10 with DK (Richard) and any other interested parties during the upcoming S-101PT9 meeting. - The S-101 Portrayal Sub-Group Lead reported that such guidance should provide an indication as to masking that may be an "automated" process and not something that is required to be done by the encoder in

		all circumstances. While the initial discussion suggested that this automation could be provided by the ECDIS, it was strongly suggested that this automation should be automated within the ENC production software and not in the ECDIS, with the ability for the encoder to override if required. - The question was raised as to where such guidance for automated masking in the ENC production system should go, given that the DCEG is intended for ENC compilers and not production system developers. - It was noted that several of the Figures and Table 2.10 in clause 2.5.10 were not referenced in the text of the clause. It was agreed that this should be addressed for Edition 1.1.0. - The requirement for the retention of the paragraph related to the masking of edges of "linear" surface features was questioned. This will be monitored as S-101 development continues and the paragraph will be removed if no longer necessary. **Action:** **- Keep Issue open for contributors to include suggestions for improvement to DCEG clause 2.5.10 (All). [Ongoing]** **- Initial discussions on improvements to clause 2.5.10 to take place in conjunction with S-101PT9 (IHO Sec, DK).** **- Amendments to be made to clause 2.5.10 to ensure that all Figures and Tables are referenced in the text (IHO Sec). [Complete]**
	Issue # 24	**Quality of Bathymetric Data and Spatial Accuracy - resolution of modelling alternatives** DCEG Clause: 3.7, 24.5 Points to Note: - Note separate document for meeting (no change as yet made to DCEG). - There remain 2 methods for encoding spatial quality meta information in S-101: - Using zoneOfConfidence complex attribute on QualityOfBathymetricData; and - Using spatialAccuracy complex attribute on SpatialQuality and mandatory SpatialAssociation association to QualityOfBathymetricData. - A preferred method needs to be decided on before Edition 2.0.0. Do we retain the 2 methods for 1.1.0? Discussion: - While the general opinion of the meeting was that the better of the 2 encoding options is the retention of the encoding of the horizontal and vertical uncertainties on the QualityOfBathymetricData feature, it was agreed that, due to lack of test data and testing opportunities, both options should be retained for S-101 Edition 1.1.0 so as to allow testing of both options to take place. - Concerns were raised that there could be portrayal issues with the option of binding the horizontal and vertical uncertainties to the SpatialQuality information type (refer to Issue #25). Decision/Action: **- Keep Issue open for contributors to include additional comments/observations and as a mechanism for posting/discussing testing results (All). [Ongoing]** **- Bring the requirement for the testing of both options for the encoding of QualityOfBathymetricData to the attention of the Test Dataset Sub-Group for development of appropriate test data (IHO Sec).**
	Issue # 41	**Update Information - detailed description** DCEG Clause: 3.11 Points to Note: - Proposal is to add the information complex attribute to UpdateInformation to enable encoding of additional information relevant to an ENC Update(s) (consistent with changes made for geo features in Edition 1.2.0). - Additionally, new guidance has been included to require an instance of UpdateInformation related to a change to an information type to be associated with the geo features to which the information type is referenced. - Note Christian approval of the changes, with suggestion that the "should" is changed to "must" in the new bullet. Also suggestion that examples/use cases are included. Discussion/Decision: - The proposal to add the information complex attribute to the UpdateInformation meta feature was approved for S-101 Edition 1.1.0. - The proposal to include guidance that updates related only to an information type should require the UpdateInformation to be associated only to the geo feature that the information type is associated with was approved for S-101 Edition 1.1.0.

		- Concerns were raised as to how the modelling is intended to work in regard to optimizing portrayal and indications in ECDIS. It was agreed that in moving forward it should be assumed that the implementation of the UpdateInformation feature in S-101 would replace the current S-57/S-52 system implementation (it was noted that the IMO ECDIS Performance Standards only state that the indication of changes applied in an ENC Update are to be made visible (highlighted) to the mariner on request – how this is done is not specified). - The suggestion was made that a mechanism could be provided for the data producer to indicate those updates that are minor in nature and do not impact on safety of navigation (and therefore are not highlighted on request). There was concern that this could be erroneously applied. **Action:** **- Keep Issue open for contributors to include additional comments/observations and as a mechanism for posting/discussing further development of UpdateInformation (All). [Ongoing]** **- Report to the S-101PT that the intention for further development of the UpdateInformation meta feature is that it is to replace the current S-57/S-52 system implementation for highlighting ENC Updates (IHO Sec).**
	Issue # 21	**Value of Local Magnetic Anomaly** DCEG Clause: 4.2, 27.118, 27.119 Points to Note: - Note separate document for meeting (no change as yet made to DCEG). **Show new version.** - Proposal is to replace the complex attribute valueOfLocalMagneticAnomaly, sub-attributes magneticAnomalyVaueMaximum and magneticAnomalyVaueMinimum, with new sub-attributes magneticAnomalyVaue and referenceDirection. The accompanying new encoding guidance covers all options for representing local magnetic anomalies on charts as defined in S-4. - Note that amendments have been applied to the posted (GitHub) document to account for Alvaro's comment. - If accepted, question is the code values for referenceDirection. Discussion/Decision: - There were no objections raised as to the proposed remodelling. Sub-Group member feedback in general was that the revised modelling would solve the portrayal issue reported by the Portrayal Sub-Group. - There was some discussion on the referenceDirection sub-attribute name, with the suggestion that the already registered enumerate type attribute cardinalDirection is used instead. Noting that the term "Reference Direction is an IHO Hydrographic Dictionary term and as such registered in the Concept Register, it was agreed to stay with referenceDirection. However it was agreed that the allowable enumerate code values (east and west) should be aligned with the values registered for cardinalDirection (5 and 13 respectively). **Action:** **- Amend DCEG to reflect change of modelling for the complex attribute valueOfLocalMagneticAnomaly as proposed (IHO Sec). [Complete].** **- Corresponding proposals to be submitted to Concept Register (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 22	**Non-display of encoding combinations in ECDIS** DCEG Clause: 5.8, 5.14.1, 5.9, 5.12, 6.4 Points to Note: - Proposal is that ENC encoding combinations that do not display in ECDIS should be removed from S-101 as they provide no information to the mariner. - It is also suggested that these encodings are brought to the attention of the NCWG for advice and/or possible amendments to S-4. - Important to note that removing from S-101 does not mean that this encoding cannot be retained in source databases. - Note Alvaro comment in the GitHub suggesting that portrayal is related to visualProminence as well as radarConspicuous. [Alvaro to comment?] - All following comments in the GitHub related only to portrayal so irrelevant for DCEG. Discussion/Decision: - It was proposed that there are two options for proceeding with this issue: Remove the non-portrayal encoding combinations from the DCEG now; or request NCWG advice and if feedback is that the information should be displayed in the ECDIS then provide this feedback to the Portrayal Sub-Group.

		- NCWG Chair pointed out that even in INT1 there were entries that had no accompanying chart symbol – these entries were added as "placeholders" for future consideration or national symbol adoption. **Action:** **- Issue to be brought to the attention of the NCWG. paper to be submitted to the NCWG8 meeting (November 2022) (IHO Sec).** **- No change at this time to the DCEG. [Ongoing]** **- GitHub issue to remain open for further input (All). [Ongoing]**
	Issue # 34	**Cranes - requirement for curve geometry** DCEG Clause: 8.12 Points to Note: - Proposal is to remove curve as an allowable geometric primitive for the Crane feature. - Note already existing guidance for the encoding of the track for a sheerleg or travelling crane. - Unless use case is provided, recommend removal of curve. - Note Christian comment (approval of proposal?) with reference to S-131. Discussion/Decision: - There was some discussion as to the track along which a sheerleg or travelling crane runs, with agreement that the current method of encoding a Railway feature to define the track is sufficient. It was suggested that the relationship between the crane and the track could be further strengthened by defining a feature/feature association between them. - The question was raised as to whether curve primitive is allowable for cranes in S-131. Jonathan greed to investigate and report back to the Sub-Group lead. **Action:** **- Remove curve as an allowable geometric primitive for the Crane feature for DCEG Edition 1.1.0. [Complete]** **- Investigate whether curve primitive is allowable for cranes in S-131 and report to Sub-Group lead (Jonathan).** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 39	**Minimum Berth Depth** DCEG Clause: 8.13, 27.124 (new) Points to Note: - Noting that a new concept minimumBerthDepth has been included in the IHO GI Registry for S-131, proposal is to adopt this to replace depthRangeMinimumValue for the Berth feature in S-101. - Suggest that this change better supports data consistency and interoperability. Discussion/Decision: - The meeting agreed that the proposed change supports data consistency and interoperability. **Action:** **- Amend DCEG to amend attribute depthRangeMinimumValue to minimumBerthDepth for Edition 1.1.0 (IHO Sec). [Complete].** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 38	**Skin of the Earth features** DCEG Clause: 2.5.9, 8.18, 8.20 Points to Note: - Proposal is to remove DockArea and LockBasin as Skin of the Earth features from S-101. - Principal argument is that the characteristics of these features cannot be encoded if they are navigable at the maximum display scale of the ENC. - Regarding Klas comment in the GitHub – consider guidance included in S-4 for smaller scale charts is sufficient. - Note Christian support but also suggestion on including River and Lake features as Skin of the Earth. Discussion/Decision: - There was unanimous support for the removal of DockArea and LockBasin as Skin of the Earth features for S-101. - It was particularly noted that this change would make data conversion from S-57 to S-101 much simpler.

		- Further discussion related to the possible inclusion of the River and Lake features as Skin of the Earth features. A concern on this (post-meeting) was that Skin of the Earth features cannot have the attribute scaleMinimum applied, which may add to screen clutter as the mariner zooms out in the ECDIS. **Action:** **- Amend DCEG to remove DockArea and LockBasin as Skin of the Earth features for Edition 1.1.0 (IHO Sec). [Complete].** **- Report decision to the S-101PT for corresponding changes to the S-101 Main document.** **- Summarise discussion in the GitHub and close issue. Open new issue to discuss the possibility of including Lake and River features as Skin of the Earth (IHO Sec).**
	Issue # 43	**Obstructions and Foul Areas – introduction** DCEG Clause: 13.6.1 Points to Note: - Issue is that the first sentence in the guidance is becoming very convoluted and difficult to maintain. - Suggested change included on the GitHub. - Note Christian response ad alternate suggested wording. This wording looks good. Suggest that the wording be similar to "… which cannot be encoded using any other S-101 specific feature, it must ….". Discussion/Decision: - Noting the alternate wording suggested by Christian in the GitHub, it was agreed to amend the introductory sentence to align with this alternate wording, standardized to conform with similar statements in the DCEG. **Action:** **- Amend DCEG clause 13.6.1 introductory paragraph to conform to the alternate wording suggestion as included in the GitHub (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue.**
	Issue # 32	**Submarine Volcano – geometry** DCEG Clause: 13.6.1 Points to Note: - Proposal is that submarine volcano's should only be able to be encoded as type point or curve (as recommended by Portrayal Sub-Group). - Note Christian comment – should this be further restricted to point geometry only? Discussion/Decision: - Some concern was raised about removing surface as an allowable geometric primitive for encoding submarine volcanoes, however after explaining the additional guidance encoding of CautionArea to cover the area that may be influenced by submarine volcano activity, it was agreed that surface geometry can be removed. - Additional discussion about any use case for retaining curve as an allowable geometric primitive. As no use case could be provided it was also agreed to remove curve as an allowable geometric primitive when encoding submarine volcanoes. **Action:** **- Amend DCEG clause 13.6.1 Remarks 12th bullet to allow submarine volcanoes to only be encoded as Obstruction features of type point (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue.**
	Issue # 30	**Foul Ground - depth encoding** DCEG Clause: 2.5.9, 13.7, 13.7.1 Points to Note: - Note separate document for meeting (track-changes in DCEG). - Issue as reported by Portrayal Sub-Group is that the inclusion of depth-related attributes implies that the depth information may be significant to navigation; and the system should take into account this depth information in regard to alarms/indications (noting that this is not the case for S-57/S-52). - Suggestion is to remove the depth-related attributes qualityOfVerticalMeasurement, techniqueOfVerticalMeasurement, valueOfSounding and verticalUncertainty from the feature FoulGround. Encoding guidance also revised to reflect this change. - Note that it is also proposed to add the attribute verticalLength to provide an indication as to the distance above the seabed that the foul ground extends (if known).

		Discussion/Decision: - There was significant discussion regarding the distinction between obstruction (foul area) and foul ground. Although it was conceded that the definitions of these terms provided a clear distinction in regard to a foul area being safe to navigate over, there was concern that removing the depth attributes from the FoulGround feature could result in encoding that may be unsafe. - There was discussion on the determination of what constitutes foul ground in regard to depth of water, vessel draft etc, and the possibility that a "foul ground" feature may in fact become an obstruction as over time the area may be transited by deeper draught vessels. Although it was pointed out that this is a decision for the Producing Authority and not an issue for the data model, the concern still remained that changing the model to remove the depth attributes from FoulGround may result in unsafe data. It was suggested that if the depth related attributes were to be removed from FoulGround, the encoding guidance must make it clear that if there is any doubt for the encoding as to whether a feature is an obstruction or foul ground, the feature must be encoded as an obstruction. - The GitHub comment pointing out that in S-52 OBSTRN features with CATOBS = 8, 9 or 10 or WATLEV = 7 are treated in the same way as foul ground was noted, with this possibly being a subject for future discussion (possibility of a categorofFoulGround attribute?). - It was asked as to what would happen in the S-57 to S-101 conversion process if an OBSTRN having CATOBS = 7 was encoded with a value for VALSOU. It was considered that in such cases the feature should convert to an Obstruction feature so as to preserve the encoded depth information. - There was no consensus reached at the meeting. It was therefore decided that this issue would be submitted to the S-101PT9 meeting (November 2022) for further discussion, and possibly a small group break-away session to resolve. **Action:** **- Amend wording of the first sentence of clause 13.7.1 to reverse the order so as to emphasise unsafe for seabed operations but safe to navigate over (IHO Sec). [Complete]** **- Review the revised encoding guidance and add emphasis that if there is any doubt as to whether a feature constitutes foul ground or obstruction, the preference is to encode an obstruction (IHO Sec). [Complete]** **- Prepare a submission for S-101PT9 outlining the discussions by the Sub-Group for consideration and resolution (IHO Sec).** **- GitHub issue to remain open for further input (All). [Ongoing]**
	Issue # 29	**Foul Ground – geometry** DCEG Clause: 2.2, 2.5.9, 13.7 Points to Note: - Proposal is to remove curve as an allowable geometry for the feature FoulGround. - Note that curve (line) is prohibited for foul ground in S-57 (UOC 6.2.2). - Are there any use cases for allowing curve? Discussion/Decision: - No significant discussion on this issue. On investigation, it was confirmed that the guidance in the S-57 UOC was that foul ground (OBSTRN, CATOBS = 7) should only be encoded as point or area, although as a "should" this is a strong recommendation but not mandatory. **Action:** **- Remove curve as an allowable geometric primitive for the FoulGround feature for DCEG Edition 1.1.0. [Complete]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 31	**Discoloured Water - requirement for surface primitive** DCEG Clause: 2.2, 2.5.9, 13.8 Points to Note: - Proposal is to remove surface as an allowable geometry for the feature DiscolouredWater. Note that change has not yet been applied in DCEG. - Thanks to PRIMAR for their investigations, noting the small number of incidences of encoding of discoloured water in S-57 ENCs. Unfortunately the figures do not indicate how many of the 61 total incidences are encoded as area features.

		- Note the historical perspective for the encoding of discoloured water – is this still required with modern survey and investigative techniques? [May be a larger question as to the continuing requirement for this feature in S-101.] - Note that the current allowable primitives are based only on the allowable primitives for the S-57 CTNARE object. Are there any use cases for allowing surface? Discussion/Decision: - The use case was defined where an area of water identified on satellite imagery may, if there is no other information available, be interpreted as discoloured water. If the area is substantial, the area primitive will be required. - The decision of the meeting was that no further action is required. **Action:** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 44	**Offshore Production Area - Water Level Effect** DCEG Clause: 14.6 Points to Note: - Note that change has not yet been applied in DCEG. - Noting in particular that wind turbines may be fixed or floating, should attribute waterLevelEffect be added to feature OffshoreProductionArea? - May be useful for smaller scale ENCs where the individual devices are not encoded, but where the devices are encoded guidance should state that this should be populated on the individual features. Discussion/Decision: - Question was raised as to whether there is any intended impact of this change on symbology of offshore production areas. It is expected that there would be no impact (information only available by ECDIS Pick Report), although the NCWG Chair reported that there is different symbology for fixed or floating offshore production areas in S-4/INT1. - There were some reservations in regard to the merit of applying this change, however it was agreed that this amendment should be made for Edition 1.1.0. **Action:** **- Amend DCEG clause 14.6 to add attribute waterLevelEffect as an allowable attribute for the feature OffshoreProductionArea (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue (IHO Sec).** **- NOTE: Allowable values need to be confirmed.**
	Issue # 37	**No geometry features** DCEG Clause: 2.2, 2.5.9, 5.5, 6.5, 8.21, 15.6, 15.8, 15.11, 15.15, 15.24, 15.27 Points to Note: - Issue raised by Portrayal Sub-Group as there is currently no way to associate the "no-geometry" features to the geometry of the features making up the whole – this is an issue for positioning of text such as the name of the feature. - Proposal is to assign surface geometry to the "no-geometry" features to resolve this problem. For RangeSystem the curve primitive may also be needed. - Example revised feature entry drafted for TwoWayRoute (track-changes in draft and as a separate document). - Note that, if this proposal is accepted, the feature Bridge is included (not included in the Portrayal Sub-Group issues). - Are other options worth looking into, such as change to S-100 or, if possible, including the required attribute(s) on the association itself? May require a proposal to the S-101PT? Discussion/Decision: - There was concern that applying the change to include geometry for these features in S-101 would essentially be a "work-around". It was considered that the better option would be to see if a solution to this issue could be applied at the S-100 level. - For Edition 1.1.0, it is required to have some method for displaying the name of a "no-geometry" feature for testing purposes. With S-100 Edition 5.0.0 currently with the IHO MS to vote on adoption, it is too late to make any changes to S-100 that would benefit S-101 Edition 1.1.0.

		- It was decided to include geometry for the "no-geometry" features for S-101 Edition 1.1.0 as an interim solution. However this issue needs to be brought to the attention of the S-100WG for possible enhancement of S-100 (Part 7?) so as to allow the required display functionality using "no-geometry" features. - It was pointed out that if geometry is going to be assigned to these features, the scaleMinimum attribute will also need to be assigned. **Action:** **- Assign (in general surface) geometry to all "no geometry" features for S-101 Edition 1.1.0 as an interim solution. Include the scaleMinimum attribute as an allowable attribute for these features (IHO Sec). [Complete]** **- Paper to be prepared for the S-100WG7 meeting (December 2022) outlining the issue and recommending investigations are carried out to find a solution for the next edition of S-100.** **- Issue to remain open pending further discussion within the S-100WG.**
	Issue # 45	**Traffic Separation Zone/Traffic Separation Line** DCEG Clause: 2.2, 2.5.9, 15.19, 15.20, 25 (Various) Points to Note: - Proposal is to combine these features into a single feature TrafficSeparationZoneOrLine. - Attributes are identical for both features. - Note current IHO Dictionary term is "Traffic Separation Zone (or Line)" and the definition for the current S-101 features is a derivative of this definition. Propose amend IHO Dictionary (Registry) term to remove the brackets and implement in S-101. - Note Klas agreement and alignment with the 1972 Collision Regulations. Discussion/Decision: - The proposal was supported, particularly as it will align the S-101 feature with the IHO Hydrographic Dictionary tern and definition; and align with the 1972 Collision Regulations. - It was questioned whether there may be differences in any restrictions between a line and a zone. Given that the restriction attribute is not applicable to these features, it was determined that this is not an issue for S-101. **Action:** **- Amend DCEG clause 15.9 to rename TrafficSeparationZone to SeparationZoneOrLine; delete current clause 15.20 (TrafficSeparationLine); and apply other changes as required throughout (IHO Sec). [Complete]** **- Supersession proposal to be submitted to the Concept Register (IHO GI Registry) to amend item "Separation Zone (or Line)" to "Separation Zone or Line" (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 28	**Reported Anchorages** DCEG Clause: 16.3.1 Points to Note: - Portrayal Sub-Group has developed a new symbol for reported anchorage, however it is only intended for use as a point feature. - Proposal is to amend guidance in the DCEG to mandate that reported anchorages must only be encoded using the point primitive. - Note support from Tom and Klas without comment. Discussion/Decision: - It was questioned whether there is any difference between a recommended anchorage and a reported anchorage. It was agreed that there was sufficient distinction described in the Remarks at clause 16.3.1 to support the retention of reported anchorages. - The proposal was supported by the Sub-Group. **Action:** **- Amend DCEG clause 16.3.1 to include a new Remarks bullet specifying that reported anchorages are to be encoded using point primitive only (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 33	**Dumping Ground - encoding guidance** DCEG Clause: 16.6.1, 16.6.2

		Points to Note: - The Portrayal Sub-Group have requested that the DCEG guidance for encoding spoil grounds and the underlying depth information should be reviewed so as to provide the best portrayal and performance (A and I) in ECDIS. - Suggested revisions included at clauses 16.6.1 and 16.6.2. - Note move of former 16.6.1 Remarks bullet to 16.6.2 as it is specific to spoil grounds. - Note that the guidance needs to be flexible enough so as to account for all circumstances in regard to frequency of surveying, availability of new source surveys and capability of the Producing Authority. Discussion/Decision: - The Portrayal Sub-Group Lead described the issue with the portrayal and performance (alarms and indications) of encoded dumping grounds in ECDIS. - It was agreed that the guidance needs to be flexible enough so as to account for all circumstances in regard to frequency of surveying, availability of new source surveys and capability of the Producing Authority. - The proposed wording for clauses 16.6.1 and 16.6.2 was approved without amendment for Edition 1.1.0. **Action:** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 36	**Information Area – geometry** DCEG Clause: 16.11, 16.11.1 Points to Note: - Issue is inconsistency between the allowable geometric primitive curve for InformationArea and the Remarks 3rd bullet at clause 16.11.1. - Is there a use case for curve primitive? - Noting the comparison with encoding CTNARE for S-57 ENC, suggest that both the curve primitive is removed as an allowable geometric primitive for InformationArrea and the Remarks 3rd bullet is removed. Discussion/Decision: - There were no use cases put forward for the retention of curve as an allowable geometric primitive for the feature InformationArea. It was therefore approved to remove curve as an allowable geometric primitive. - Given the lack of any use case, it was further agreed to remove the encoding guidance related to the encoding of a "very narrow are" to define a "linear" InformationArea. If a use case for linear InformationArea is put forward in the future, the preference will be to re-introduce curve as an allowable geometric primitive. **Action:** **- Amend DCEG clause 16.11 to remove curve as an allowable geometric primitive for the feature InformationArea. Remove Remarks 3rd bullet from clause 16.11.1 (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 46	**Speed Restricted Areas** DCEG Clause: 17.8, 27.148 Points to Note: - Enquiry from a training centre from 2017. - Question is how detailed should information be in the navigational ENC? If there is greater detail required, should this be included in another Product Specification? - Note Raphael comment on duplication of areas if there are other restrictions. - Suggest that current modelling is OK – no change required. Discussion/Decision: - Given the arguments presented against introducing speed restricted areas as a new feature in S-101, including area duplication and additional requirements being incorporated in other S-100 based Product Specification(s), it was agreed that no action should be taken on this issue. **Action:** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 48	**Topmark Colours** DCEG Clause: Sections 18 and 20. Points to Note: - Suggestion is that the capability to define multiple colours for topmarks should be included in the DCEG.

		- Note IHO Sec opinion – consider that where there is navigational significance in multiple colours on topmarks, then these in fact constitute daymarks and should be encoded as such. - If colour is to be multiple, does this then mean that we need to add colourPattern? Discussion/Decision: - There was agreement with the suggestion that topmarks having multiple colours that are intended to be used for navigation should be encoded as a Daymark feature and not using the complex attribute topmark. - It was agreed that guidance should be included in the DCEG that if a "topmark" that has multiple colours is required to be encoded, this should be done using the Daymark feature. **Action:** **- Amend DCEG as required to include guidance for encoding "topmarks" that are required to be encoded with multiple colours (IHO Sec). [Complete] [Post-meeting: New guidance included at clauses 18.1, 18.3.1.1, 20.13.1 and 29.34.]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 20	**Buoy Emergency Wreck Marking** DCEG Clause: 2.2, 2.4.3, 2.5.9, 18.1, 18.3, 18.3.1.1, 20.5.1, 20.6 Points to Note: - Advice has been received officially from IALA that the feature BuoyNewDangerMarking should be changed (back) to BuoyEmergencyWreckMarking. - Changes made throughout the DCEG to reflect this renaming. - Recommend Sub-Group members check the resultant changes and report any issues. Discussion/Decision: - It was reported that changes had been made throughout the DCEG to reflect the change of name of the BuoyNewDangerMarking feature to BuoyEmergencyWreckMarking. Sub-Group members were requested to report any required changes that have been missed to IHO Sec at the earliest opportunity. **Action:** **- Sub-Group members to report any changes resulting on the change of name of BuoyNewDangerMarking feature to BuoyEmergencyWreckMarking to IHO Sec at earliest opportunity (All). [Ongoing]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 7	**Text Placement cartographic feature** DCEG Clause: 23.1 Points to Note: - Stress that this feature is one of the most important features in terms of testing so as to get this right. - Only change since Edition 1.0.2 is the removal of the attribute textJustification. Consider that this is sufficient for 1.1.0 for testing purposes. - Note suggestions from Hugh and Alvaro for name changes to attributes: textOffsetMm -> textOffsetDistance and orientationValue -> textOffsetBearing. - Regarding Alvaro last point: Perhaps there is an argument here, given that TextPlacement is a discrete feature with allowable attribute scaleMinimum, to include guidance to the effect that TextPlacement may be encoded where it is considered that the name should be displayed at larger display scales. Not sure however how this would work with the displayName attribute on the geo features – will need to be discussed and tested. Discussion/Decision:: - It was reported that the only change made to the TextPlacement cartographic feature from DCEG Edition 1.0.2 was the removal of the textJustification attribute. It was also reported that now that S-100 Edition 5.0.0 was on the verge of being approved for adoption by the MS, the implementation and testing of the remodelling of this feature could now commence in S-100 testbeds. As a result of this testing it is expected that the encoding guidance, and possibly the modelling, may be refined for DCEG Edition 1.2.0. - The renaming of attributes from textOffsetMm -> textOffsetDistance and orientationValue -> textOffsetBearing was generally supported, however it was agreed that a full proposal (including revised definition(s)) was required and would be considered for Edition 1.2.0. - It was agreed that the guidance would be significantly enhanced by the inclusion of Figures providing examples of the application of TextPlacement (for Edition 1.2.0). **Action:**

		- Results of monitoring of the implementation of the revised modelling for TextPlacement to be reported in the GitHub Issue # 7 (All). [Ongoing] **- Full proposal to be developed to rename (and possibly re-define) attributes textOffsetMm -> textOffsetDistance and orientationValue -> textOffsetBearing (IHO Sec, AU, T-Caris). [For Edition 1.2.0]** **- Figures demonstrating the implementation of TextPlacement to be provided for inclusion in the DCEG (All). [For Edition 1.2.0]**
	Issue # 42	**Overhead Pipeline Pylon** DCEG Clause: 6.11, 27.48 Points to Note: - Action from 2nd DCEG Sub-Group remote meeting. - New value for categoryOfPipeline of 6 (overhead pipeline pylon) for feature PylonBridgeSupport. - Recommend approve. Discussion/Decision: - General agreement with the proposal for the new enumerate and accompanying guidance. - Agreed that the Item Name should be "Pipeline Pylon". **Action:** **- Proposal for new concept/enumerate "Pipeline Pylon" to be submitted to the IHO GI Registry (IHO Sec). [Complete]** **- Amend amended DCEG throughout to replace "Overhead Pipeline Pylon" with "Pipeline Pylon" (IHO Sec). [Complete]** **- Summarise discussion in the GitHub and close issue (IHO Sec).**
	Issue # 49	**Category of Runway** DCEG Clause: 6.4 Points to Note: - Attribute categoryOfRunway only has 2 values – aeroplane runway and helicopter landing pad. - Given that "runway" and "heli pad" are discrete terms in the Hydrographic Dictionary, suggest that these are split into discrete features. - The term "runway" as a point primitive does not really make sense. This proposal will resolve this issue. - Note Tom recommendation that this is done for 1.2.0. Discussion/Decision:: - The proposal to split the feature Runway into two discrete features (for example Runway (curve/surface) and Heli Pad (point)) was generally supported, however it was agreed that a full proposal was required and would be considered for Edition 1.2.0 as recommended by the S-101PT Chair. - There was some discussion on the distinction between a heli pad and a heliport, however it was agreed that there was a significant enough distinction to move forward with the proposal.. **Action:** **- Full proposal to be developed to remodel the feature Runway and introduce new feature Heli Pad (IHO Sec). [For Edition 1.2.0]** **- Issue to remain open pending proposal development. [Ongoing]**
	Issue # 50	**Distributed Remains of a Wreck** DCEG Clause: 13.5, 13.7, 27.69 Points to Note: - By definition, the distributed remains of a wreck are considered safe to navigate over, which may be considered to be more suited to the feature FoulGround. - Thinking further on this, the same situation exists in regard to obstructions in general (Obstruction) and wrecks and underwater rocks which are their own features but also considered to be obstructions. Suggest therefore that the current modelling is OK and any changes will likely complicate things further. Discussion/Decision: - While it was conceded by the Sub-Group that there is merit in considering the distributed remains of a wreck as foul ground, it was agreed that there is nothing wrong with the current modelling as a category of wreck (noting that there is no implication in the definition of a wreck that it is always to be considered to be an obstruction to navigation).

		- It was agreed that there may be some overlap between this issue and discussions related to Issue #30 (possibility of a "category of foul ground" attribute). - It was agreed that the current modelling is to be retained for Edition 1.1.0, however this issue may need further discussion pending the outcome of discussions regarding Issue # 30. **Action:** **- Issue to remain open for further discussion, possibly in relation to Issue #30. [Ongoing]**
	Issue # 23	**Encoding Synthetic AIS Aids to Navigation** DCEG Clause: 21.3, 27.166 (new) Points to Note: - Requirement identified by IALA (confirmed in the GitHub). - Modelling allows the text "S-AIS" to be generated and displayed in the ECDIS. This mechanism is currently not available. - Recommend approve changes. Discussion/Decision: - Proposal rejected. It was agreed that the proposed modelling of synthetic AIS aids to navigation will not work as an attribute of the PhysicalAISAidToNavigation feature, as this is intended to be an equipment feature for the physical aid that may be impacted by ENC update action (temporary removal or relocation) that will also impact the PhysicalAISAidToNavigation feature. This defeats the purpose of the synthetic nature of the AIS, which is intended to remain static independent of the physical aid. - NCWG Chair reported that in S-4 only "Real" and "Virtual" AIS Aids to Navigation are defined; there is no mention of "Synthetic" (on original advice from IALA as was the case for S-57/S-101). If there is a requirement to provide an indication of synthetic AIS aids to navigation on charts, this needs to be reported to the NCWG. - It was agreed that alternative modelling will need to be developed for Edition 1.0.2. **Action:** **- DCEG changes to be rolled back to Edition 1.0.2 state (IHO Sec). [Complete]** **- Discussion between IALA and S-101PT regarding the inclusion of an indication of synthetic AIS aids to navigation in S-101 ENC to be reported to the NCWG (IHO Sec).** **- Full proposal to be developed for the encoding of synthetic AIS aids to navigation (IHO Sec). [For Edition 1.2.0]**
	Issue # 27	**Vessel Speed Limit** DCEG Clause: 17.8, 27.187, 29.42 Points to Note: - Suggestion is that the complex attribute vesselSpeedLimit could have a sub-attribute to define the units of measure. Is currently standardized as Knots. - Also, it has been suggested that the speed limit within an area could be displayed in the ECDIS marginalia. If this is the case the attribute vesselClass would be required to be more standardized, perhaps as an enumerate type attribute? - Note that there is an enumerate type attribute categoryOfVessel already registered in the GI Registry (note however Klas comment). - Note Raphael suggestion to leave as is – more complex information can be provided via another Product Specification. Discussion/Decision: **- [Not covered (insufficient time)]** **Action:** **- Issue to remain open for further discussion. No change for Edition 1.1.0. [Ongoing]**
	Issue # 25	**Quality of bathymetric Data (and other meta features) - possible adjustments in modelling** DCEG Clause: Section 3? Points to Note: - Suggest that, as the suggestions raised in this issue involve more than just the DCEG (Main document, S-100, …) suggest that this be handled by the Sub-Group as information only and tabled at the upcoming S-101PT9 meeting. Discussion/Decision:

		- **[Not covered (insufficient time)]** **Action:** - **Issue to be discussed at S-101PT9 meeting (November 2022) (IHO Sec, NIWC).**
Proposal to re-define the term "Berth" (Jonathan – refer to Paper submitted to the meeting): DCEG Clause: 8.13 Discussion/Action: - Proposal is to redefine the term "Berth" in the IHO GI Registry and IHO Hydrographic Dictionary (and consequently in S-101) so as to harmonize with common usage by IMO, other organizations, and industry groups. - The proposal was generally supported, however the Sub-Group agreed to "endorse" the proposal rather than "approve", as approval is at the discretion of the Register Domain Control Body. - It was suggested that, due to the change in definition, the modelling for berths and berth-type features in general in S-101 may need a future review. **Action:** **- Clarification proposal to be submitted to the Concept Register proposing to amend the definition of the term "Berth" in accordance with the recommendation in the Paper (Raphael). [Complete]** **- Register Manager to acknowledge the endorsement of the proposal by the DCEG Sub-Group when processing the Registry proposal and submitting to the Register Domain Control Body (IHO Sec). [Complete]** **- Amend DCEG clause 8.13 to reflect the revised definition [NOTE: This amendment is made in anticipation of approval of the revised definition by the Register Domain Control Body and implementation in the Data Dictionary Register] (IHO Sec). [Complete]**		
Other DCEG Changes	Clause 27.151	**Sector line length – UOM** Discussion/Decision: - Proposal made by NO that the Units of Measure specified for the attribute sectorLineLength, currently metres, should be amended to be consistent with the nominal viewing range for the light. Feedback from implementation indicates that the current inconsistency is confusing for compilers. - The meeting agreed to amend the Units of Measure for attribute sectorLineLength to nautical miles, noting that the resolution for the attribute valueOfNominalRange is 0.1M. [Post-meeting: Further feedback from NO indicates that a resolution of 0.1M for sectorLineLength is too coarse. It was recommended that the resolution should be set to 0.01M.] **Action:** **- Amend DCEG clause 27.151 to amend the Units for attribute sectorLineLength from metres to nautical miles; and the Resolution to 0.01 M (IHO Sec). [Complete]**
	Clause 2.4.5.1	**Sector Extension (correction)** Discussion/Discussion: **- [Not covered (insufficient time)]** **Action:** **- Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
	Clause 3.1	**Horizontal uncertainty (editorial)** Discussion/Discussion: **- [Not covered (insufficient time)]** **Action:** **- Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
	Clause 3.7.1	**Quality of Bathymetric Data (correction)** **- [Not covered (insufficient time)]** **Action:** **- Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
	Clause 6.8	**Conveyor/product (correction)**

	- **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 11.3.1	**Soundings – Multiplication Factor (correction)** (based on change to S-101 Main document) - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 20.7	**Buoy Installation/product (correction)** - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 20.16	**Retroreflector/colour (correction)** - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 24.5.1	**Spatial Quality (correction)** - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 25.13	**Range System Aggregation (correction)** - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 25.15	**Structure/Equipment composition (correction)** - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 28.8	**Maximum display scale (correction)** - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**
Clause 30.4	**Sector extension (correction)** Discussion/Discussion: - **[Not covered (insufficient time)]** **Action:** - **Sub-Group members to review change and report any issues to the S-101PT9 meeting (November 2022) (All).**