

Paper for Consideration by S-101PT5
Changes Introduced in S-101 Edition 1.1.0 DCEG

Submitted by:	IHO Secretariat
Executive Summary:	This paper summarizes the major changes that have been made the S-101 DCEG since the publication of Edition 1.0.0.
Related Documents:	S-101PT5-04.1B – <i>DCEG Draft Edition 1.1.0</i> S-101PT5-04.1C – <i>DCEG Draft Edition 1.1.0 Change Control Log</i>
Related Projects:	IHO GI Registry Development and Content

Introduction / Background

1. Since the publication of S-101 Edition 1.0.0 in December 2018, its Annex A, Data Classification and Encoding Guide has been subject to progressive change. These changes have been initiated as a result of the following activities:

- Actions resultant from S-101PT meeting Actions and off-line discussions;
- Changes to S-57 (UOC) and S-58 resulting from ENCWG activities that required translation to S-101;
- Continued development of the IHO Geospatial Information (GI) Registry, including standardization of Registry content; and
- Amendments (mainly editorial) resulting from feedback from S-101PT members and S-101 implementers.

2. This Paper provides a summary of the main changes that have been made in the preparation of the current draft S-101 Edition 1.1.0 DCEG. The changes summarized are reflected in the draft DCEG Edition 1.1.0 submitted as Paper [S-101PT5-04.1.2A](#). This Paper does not provide a complete exhaustive list of all the amendments that have been made in the draft S-101 Edition 1.1.0 DCEG. Editorial changes including formatting; changed cover page; changed clause numbering; and specific changes to definitions of terms are not included. A complete list of changes is available in the S-101 DCEG Change Control Log which has been submitted as paper [S-101PT5-04.1.2B](#).

Discussion

3. The changes listed in the sub-paragraphs below have been listed as much as possible in DCEG clause number order as in the draft S-101 DCEG Edition 1.1.0 (taking into account associated changes that may be required throughout the document). Where a complete clause has been removed from DCEG Edition 1.0.0, reference is made to the clause number as in DCEG Edition 1.0.0.

- 3.1. Various locations throughout: The VDAT sub-field was incorrectly referenced to be a sub-field of the “Coordinate Reference System Header” (CRSH) field. This has been amended to “Coordinate Reference System Record Identifier” (CSID) field throughout, in accordance with feedback supplied by NIWC.
- 3.2. Various locations throughout: In accordance with discussions within the S-100WG, ENCWG and a pending associated IHO Resolution on the use of gender-neutral terminology in IHO Publications, a complete check has been done on the DCEG and all instances of the term “Master/Slave” have been replaced with “Structure/Equipment”. [NOTE: Figure 18.2 still contains these terms as it cannot be edited; this Figure will need to be replaced.]
- 3.3. Various locations throughout: The greatest change that has occurred in draft Edition 1.1.0 of the DCEG is amendments to definitions and in some cases names) of terms (features, attributes, complex attributes, enumerates) throughout the document. This has been done in in parallel with the project (S-100WG) to standardize the contents of the IHO Geospatial Information (GI) Registry. As this project has progressed, a consistency check has been conducted between the items as registered in the GI Registry and the corresponding items in the S-101 DCEG. Items have been amended as required; in some cases in the Registry rather than in S-101, however the majority of changes have occurred in S-101. There is now complete consistency between the GI Registry and the S-101DCEG. NOTE: Changes to names of items include amendments to remove bracketed acronyms and alternate terms (such acronyms and terms are included as Aliases to the registered item in the GI Registry).

- 3.4. Various locations throughout: Changes in encoding guidance have been implemented in accordance with changes that have been applied in S-57 UOC Edition 4.2.0 (April 2020) – ENCWG Action.
- 3.5. Clause 3.8: Allowable list of enumerate values for the attribute **vertical datum** for the feature **Sounding Datum** has been amended to the logical list of values, as agreed at ENCWG4 (values are consistent with the Table that has been included in the S-57 UOC – action from ENCWG4).
- 3.6. Clauses 6.6 and 6.7: the attribute **scale minimum** has been added to the features **Span Fixed** and **Span Opening**. This change has been applied to correct what is considered to be an oversight; and to be consistent with the attribution for the feature **Bridge**; also noting that these features are not Skin of the Earth features.
- 3.7. Clause 12.3: A new feature **Seagrass** has been added (Action S-101PT4/4). In conjunction to this change, the value for the attribute **category of weed/kelp** (clause 27.69) value 3 (seagrass) has been removed as an allowable value.
- 3.8. Clause 16.27: A new feature **Marine Pollution Regulation Area** has been added. This feature has been added to formalize the encoding of MARPOL areas, as introduced as a work-around (encoding as **ADMARE**) in S-57 UOC Edition 4.2.0).
- 3.9. Clause 27.1: In accordance with discussions held at the IHO GI Registry Workshop (held in conjunction with S-100WG4), enumeration type attributes having only two allowable values essentially equating to an “is/is not” categorization of the attribute should be remodelled as Boolean type attributes. Therefore, the enumeration type attribute **category of recommended track** (having values “based on fixed marks” and “not based on fixed marks”) has been replaced with a Boolean type attribute **based on fixed marks**.
- 3.10. Clause 27.40: A new value 21 (submarine volcano) has been added to the enumeration type attribute **category of obstruction**. This value has been added to formalize the encoding of active submarine volcanoes, as introduced as a work-around (encoding as INFORM on **OBSTRN**) in S-57 UOC Edition 4.2.0).
- 3.11. Clause 27.59: During the GI Registry consistency review, it was identified that there are separate, discrete definitions for the terms “wharf” and “quay”, however for the attribute **category of shoreline construction** there is a single value 6 (wharf(quay) – consistent with S-57). The GI Registry has been amended to include these terms as discrete items. Similarly, the values for **category of shoreline construction** have been amended to have value 6 = wharf and a new added value 22 = quay.
- 3.12. Clause 27.108: In accordance with discussions held at the IHO GI Registry Workshop (held in conjunction with S-100WG4), enumeration type attributes having only two allowable values essentially equating to an “is/is not” categorization of the attribute should be remodelled as Boolean type attributes. Therefore, the enumeration type attribute **category of traffic separation scheme** (having values “IMO-adopted” and “not IMO-adopted”) has been replaced with a Boolean type attribute **IMO adopted**.
- 3.13. Clause 27.188: The attribute **visually conspicuous** has a value 1, also named “visually conspicuous”. Within the IHO GI Registry structure (Beta Registry), a concept cannot be registered in the Data Dictionary Register as both an attribute type and an enumerate value type, therefore this modelling cannot be included in the S-101 Feature Catalogue. Considering that the enumerate value 1 (visually conspicuous) is more consistent with the other allowable values (“not visually conspicuous” and “prominent”), it was considered a better option to rename the attribute to **visual prominence**.

4. The changes listed above constitute the significant (substantive) changes to the S-101 DCEG since the publication of Edition 1.0.0. It is anticipated that significant discussion will be required on the full list of changes, as indicated in the draft redline DCEG Edition 1.1.0 ([S-101PT5-04.1.2A](#)) and the associated Change Control Log ([S-101PT5-04.1.2B](#)).

Conclusions

5. There has been a significant amount of work done on the draft Edition 1.1.0 S-101 DCEG. The changes made, however, have not yet been reviewed by the S-101PT. It is considered that the time required to review the changes will be significant, such that it would not be feasible to discuss the changes during a full S-101PT meeting (particularly a meeting conducted as a VTC).

Recommendations

6. It is recommended that the S-101 DCEG Sub-WG review the changes made in S-101 DCEG draft Edition 1.1.0 as a dedicated review process, in particular the changes summarised in paragraphs 3.1 – 3.13 above. The

review process should include Sub-WG VTC meetings as required. Confirmation of members of the S-101 DCEG Sub-WG should be established from the full S-101PT.

Action Requested of the S-101PT

7. The S-101PT is invited to:
 - 1) **Note** the changes from S-101 DCEG Edition 1.0.0 as summarized in this Paper and the associated Change Control Log.
 - 2) **Endorse** the review of S-101 DCEG Draft Edition 1.1.0 by the S-101 DCEG Sub-WG.
 - 3) **Confirm** the members of the S-101 DCEG Sub-WG.