Paper for Consideration by S-101 Project Team

Miscellaneous S-101 Proposals

Submitted by:	Australia
Executive Summary:	This paper combines outstanding proposals from the DCEG issues document that has been maintained by Australia.
Related Documents:	N/A
Related Projects:	S-100 Register; S-101 Feature and Portrayal Catalogues and S-101 Data Classification and Encoding Guide

Proposal Type

Type of Change Requested	Mark All that Apply
S-101 DCEG Change	
New/Amended Feature	X
New/Amended Complex Attribute	
New/Amended Simple Attribute	X
New/Amended Information Type	
New/Amended Association/Aggregation/Composition	
New/Amended Enumerate Value	X

Buoy Special Purpose (Baseline DCEG clause 19.5)

At TSMAD21 the working group agreed to remove the following enumerates from the attribute **category of special purpose mark**. This action is not reflected in the 2014 DCEG Baseline. This proposal requests that the following enumerates be removed for the feature **Buoy Special Purpose**:

> **category of special purpose mark** = *16* (leading mark)
> **category of special purpose mark** = *41* (clearing mark)
> **category of special purpose mark** = *44* (refuge mark)

Coastguard Station (Baseline DCEG clause 21.3)

S-4 indicates a navigational requirement for identifying Maritime Rescue and Coordination Centres (MRCC) on charts. It is proposed to add a new Boolean type attribute **is MRCC** to the **Coastguard Station** feature. In addition amend the 3rd Remarks bullet at clause 21.3.1 from:

- Maritime Rescue and Coordination Centres (MRCC) are part of a constantly manned communications watch system. If it is required to encode a MRCC, it should be done using **Coastguard Station**, with an associated instance of the information type **Supplementary Information** (see clause X.X), complex attribute **information** (sub-attribute **text**) = *Maritime Rescue and Coordination Centre*. The name of the station may be populated using the complex attribute **feature name** (sub-attribute **name**), e.g. *MRCC Swansea*.

to:

- Maritime Rescue and Coordination Centres (MRCC) are part of a constantly manned communications watch system. If it is required to encode a MRCC, it should be done using **Coastguard Station**, with the Boolean attribute **is MRCC** = *True*. The name of the station may be populated using the complex attribute **feature name** (sub-attribute **name**), e.g. *MRCC Swansea*.

Coastline (Baseline DCEG clause 5.3)

DCEG clause 2.6 – Description of table format for S-101 meta and geo features – describes the list of distinctions as the "List of features in the Product Specification distinct from the Feature.". For the Coastline feature, the distinctions are currently listed as Canal Bank; Lake Shore; River Bank; Shoreline Construction; Slope Topline; and Sloping Ground. However, the features Canal Bank; Lake Shore; and River Bank are not included in the S-101 ENC Product Specification.

It is therefore proposed that Canal Bank; Lake Shore; and River Bank are removed as distinctions from the Coastline feature.

Dam (Baseline DCEG clause 8.11)

At TSMAD21 it was requested to remove the following allowable enumerate from Nature of Construction. The meeting indicated that it would await further feedback from TSAMD. As there has been no feedback it is proposed that the following be removed:

Nature of construction = *4* (hard surfaced)

Depth Contour (Baseline DCEG clause 11.6.1)

Guidance for the encoding of depth contours suggests that **quality of horizontal measurement** = *4* (approximate) should be used for the spatial types associated with "approximate contours". Discussions with cartographers and surveyors within the AHS has determined that a better value to use is **quality of horizontal measurement** = 3 (inadequately surveyed), as the accuracy of the contours are based on the adequacy of the surveys used to derive the contours. Additionally, it can be argued that all depth contours are "approximate" as they are an interpolation of survey data.

It is proposed that the final paragraph of clause 11.6.1 be amended to:

Spatial types associated with ~~approximate~~ contours derived from inadequate survey information should be encoded using the attribute **quality of horizontal measurement** = *3* (inadequately surveyed).

Dumping Ground (Baseline DCEG clause 16.6)

S-4 provides a mechanism for indicating the date (year) when dumping activity ceased. It is proposed to add a new truncated date type attribute **date disused** to the **Dumping Ground** feature. If supported, it is further proposed to amend the 3rd Remarks bullet at clause 16.6.1 from:

- Disused dumping grounds for harmful materials are considered dangerous for an indefinite period and must therefore be encoded on the largest maximum display scale ENC datasets, with attribute **status** = *4* (not in use). The date when the area ceased to be used may be populated using an associated instance of the information type **Supplementary Information** (see clause X.X), complex attribute **information**, if known.

to:

- Disused dumping grounds for harmful materials are considered dangerous for an indefinite period and must therefore be encoded on the largest maximum display scale ENC datasets, with attribute **status** = *4* (not in use). The date when the area ceased to be used may be populated using **Date Disused**, if known.

Date Disused: <u>IHO Definition:</u> The date that an entity ceases to be used. (Adapted from S-4).

<u>Indication:</u> The **date disused** should be encoded using 4 digits for the calendar year (YYYY), 2 digits for the month (MM) (e.g. April = 04) and 2 digits for the day (DD). When no specific month and/or day is required/known, indication of the month and/or day is omitted, and replaced with dashes (-). When no specific year is required (i.e. the event or date range ends at the same time each year) the following two cases may be considered:

   - same day each year: ----MMDD

   - same month each year: ----MM--

This conforms to ISO 8601:2004.

<u>Format:</u> YYYYMMDD   (full date, **mandatory**)
    YYYYMM--   (no specific day required – **mandatory**)
    YYYY----   (no specific month required – **mandatory**)
    ----MMDD   (same day each year, **mandatory**)
    ----MM--   (same month each year, **mandatory**)

<u>Example:</u>

<u>Remarks:</u>
- No remarks

Fairway (Baseline DCEG clause 15.7)

A fairway may have been surveyed to the level that the minimum depth within the fairway has been determined. It is therefore proposed to add the value for the attribute **quality of vertical measurement** of *6* (least depth known) to the allowable values for the feature **Fairway**.

Fishery Zone (Baseline DCEG clause 16.16)

This feature is intended to reflect the authority (coastal nation) that has jurisdiction or responsibility for regulating fishing, therefore status is not an appropriate attribute for this feature as the feature does not speak to specific fishing regulations within the fishery zone which is should be indicated using the feature **Restricted Area**.

It is proposed to remove the attribute **status** as an allowable attribute for the feature **Fishery Zone**.

Floating Dock (Baseline DCEG clause 8.16)

Since Floating Dock has been removed from Group 1, the S-101 Project Team needs to confirm which Group 1 features should be allowable under a **Floating Dock** feature. In addition, the point primitive was added to **Floating Dock**; the S-101 Project Team needs to confirm that this is still valid, noting that there will need to be portrayal developed for this feature.

Currently the DCEG specifies the following allowable Group 1 features to be encoded under a **Floating Dock**: **Depth Area**, **Dredged Area** or **Unsurveyed Area**.

Question for S-101PT: Are these the features that should be under a **Floating Dock** or should **Dredged Area** be removed.

Recommendation: Point primitive be confirmed as an allowable primitive for **Floating Dock**.

Fog Signal (Baseline DCEG clause 19.18)

New methods have been introduced in fog signal technology to enable mariners to initiate the manual activation of fog signals – such as by radio frequency or by calling into a facility. In order to accommodate this it is proposed to add the following to the feature **Fog Signal**:

Add the **communication channel** attribute

Add the following enumerates to the attribute **signal generation**:

Signal Generation: <u>IHO Definition:</u> Definition. (Authority for definition).

5) **Radio activated**

    <u>IHO Definition:</u> Activated by radio signal

6) **Call activated**

    <u>IHO Definition:</u> Activated by making a call to a manned station

<u>Remarks:</u>
- No Remarks

In addition additional guidance will have to be developed on encoding radio activated and call activated sound signals. Some text is proposed as follows:

If the fog signal is radio activated, the attribute **signal generation** must be populated with value *5* (radio activated) and the attribute **communication channel** must be populated with the relevant VHF communication channel number.

If the fog signal is activated by calling into a manned station, the attribute **signal generation** must be populated with value *6* (call activated) and the attribute **communication channel** must be populated with the relevant VHF communication channel number for the manned station.

<u>Free Port Area</u> (Baseline DCEG clause 16.18)

All Free Port Areas are technically public and permanent. If that particular status was to change and it was no longer a Free Port Area then the feature should be removed from the ENC.

It is proposed to remove the attribute **status** as an allowable attribute for the feature **Free Port Area**.

<u>Incineration Area</u> (Baseline DCEG clause 16.20)

The burning of chemical waste at sea has been prohibited since 1996 under amendments made to the 1972 IMO Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (S-4 – B-449.3).

It is proposed to remove the feature **Incineration Area** from S-101. Further discussion should determine whether this feature should be retired from the IHO GI Registry FCD.

<u>Lights (unwatched)</u> (Baseline DCEG clause 18.1.4.1 – Note that there is an editorial correction required to the Baseline DCEG as "Unwatched lights" should be a clause heading (18.1.4.2))

S-4 – B-473.1 specifies that, due to the reliability of unwatched (unmanned) lights, it is no longer required to indicate that a light is unwatched on charts.

It is proposed to remove this clause from the DCEG and as a consequence remove the enumerate value *17* (unwatched) from the allowable list of values for the attribute **status** on all light features.

Navigation Line (Baseline DCEG clause 15.4)

Many navigation lines have an actual measured distance – which is represented by the distance of the line. However, there is no way of indicating to the mariner what that distance is on an encoded **Navigation Line** feature. Currently, hydrographic offices need to indicate the measured distance using the **information** attribute in the information type **Supplementary Information**.

It is proposed to create a new real type attribute **measured distance** for the **Navigation Line** feature. If supported, it is further proposed that the first paragraph of clause 15.4.2 be amended as follows:

If the track to be followed is on a leading line or a bearing, it must be encoded in the way described in the Table and Figure above (cases 1 or 4). If the track is not on a leading line or bearing, it must be encoded only as a **Navigation Line** feature with the attribute **category of navigation line** being set to an empty (null) value. In either case, if it is required to encode the measured distance, it must be done using the attribute **measured distance**.

Measured distance: IHO Definition: An accurately defined distance along a course at sea.

Unit: Defined as an attribute in the ENC dataset metadata: metre (m)

Resolution: 0·1M

Format: xx.x

Example: **1445** for a measured distance of 1445 metres

Remarks:
- No Remarks

Further consideration may also be given to the addition of a new enumerate value for the attribute **category of navigation line** of *4* (measured distance line):

Category of navigation line: IHO Definition: Definition required.

1) **Clearing line**

   IHO Definition: A straight line that marks the boundary between a safe and a dangerous area or that passes clear of a navigational danger. (Adapted from IHO Dictionary, S-32).

2) **Transit line**

   IHO Definition: A line passing through one or more fixed marks. (S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.55, November 2000).

3) **Leading line bearing a recommended track**

   IHO Definition: A line passing through one or more clearly defined features, along the path of which a vessel can approach safely up to a certain distance off. (Adapted from IHO Dictionary, S-32).

4) **Measured distance line**

   IHO Definition: A course at sea, whose ends are indicated by ranges ashore, and whose length has been accurately measured for determining the speed of vessels. (IHO Dictionary – S-32).

Remarks:
- No remarks.

Offshore Platform (Baseline DCEG clause 14.1)

Previous discussions at TSMAD suggested that an offshore wind turbine could be modelled as a new enumerate value for the attribute **category of offshore platform**. Associated discussions regarding the allowable values for the attribute **condition** on the feature **Offshore Platform** concluded that the value *4* (wingless) should be retained. However, subsequent TSMAD discussions resulted in the addition of a

new feature **Offshore Wind Turbine** to encode individual wind turbines at sea. It is therefore proposed that the following enumerates be removed for the feature **Offshore Platform**:

condition = *4* (wingless)

<u>Offshore Production Area</u> (Baseline DCEG clause 14.7)

An INT1 reference for the feature **Offshore Production Area** is L4 (limit of development area); and the corresponding S-4 reference is B-445.7 (Development Areas). There is no guidance in the DCEG as to how to encode a "development area", which is the development (construction) of an offshore production area.

It is proposed to add a new Remarks bullet at clause 14.7.1:

- If it is required to encode an offshore development area, it should be done using an **Offshore Production Area** feature, with attributes **category of offshore platform** and **product** populated with the appropriate value; and **condition** = *1* (under construction). A note describing the activities taking place within the area may be included using an associated instance of the information type **Supplementary Information** (see clause X.X), complex attribute **information**. At the conclusion of the development of the area, the attribute **condition** and any related note can then be removed from the feature.

If approved, it is further proposed that the ENCWG be tasked with including a similar Remarks bullet in S-57 Appendix B.1, Annex A (Use of the Object Catalogue for ENC) – clause 11.7.4.

<u>Range System</u> (Baseline DCEG clause 15.6)

A range system may be defined using the named aggregation feature **Range System** to collect the discrete components making up the system. Within the range system, a maximum authorised draught may be regulated.

It is proposed to add the attribute **maximum permitted draught** to the named aggregation feature **Range System**.

<u>Sloping Ground</u> (Baseline DCEG clause 5.14)

An INT1 reference for the feature **Sloping Ground** is F1 (Dyke, Levee, Berm). It is considered that this reference is more appropriate for the feature **Dyke**, and has been listed as such in the Baseline DCEG.

It is proposed to remove the INT1 reference F1 from the references for **Sloping Ground**.

<u>Slope Topline</u> (Baseline DCEG clause 5.15)

The attribute **category of slope** for the feature **Slope Topline** currently contains the complete list of enumerate values as contained in S-57. Given that the definition of the feature is "The upper marking of a slope, e.g. the ridge line or the separation line between two different gradients." it is considered that some values are not logical for this feature.

It is proposed to remove the following enumerate values from the list applicable for **category of slope** on **Slope Topline**:
category of slope = *3* (dune)
category of slope = *4* (hill)
category of slope = *7* (scree)

<u>**Traffic Separation Scheme**</u> (Baseline DCEG clause 15.23)

A complete Traffic Separation Scheme (TSS) system may be defined using the named aggregation feature **Traffic Separation Scheme** to collect the discrete components making up the TSS. Within the TSS, a maximum authorised draught may be regulated.

It is proposed to add the attribute **maximum permitted draught** to the named aggregation feature **Traffic Separation Scheme**.

<u>**Two-Way Route**</u> (Baseline DCEG clause 15.10)

A complete two-way route system may be defined using the named aggregation feature **Two-Way Route** to collect the discrete **Two-Way Route Part** features. Within the two-way route, a maximum authorised draught may be regulated.

It is proposed to add the attribute **maximum permitted draught** to the named aggregation feature **Two-Way Route**.

<u>**Depth range maximum value**</u> (Baseline DCEG clause 26.76)

For the attribute **depth range maximum value**, it is stated that if the area dries the value of **depth range maximum value** is negative or 0. This implies that no depth area can be encoded having a negative (drying) value for **depth range minimum value** and a "positive" value for **depth range maximum value**, which is in fact a "drying" area (however having only part of the area that covers and uncovers). In some encoding scenarios (for instance in foul areas), this may be restrictive.

The S-101 Project Team is requested to confirm that this restriction of the allowable value that can be populated for **depth range maximum value** for a drying area should be retained for S-101.

<u>**Fuction**</u> (Baseline DCEG clause 26.91)

The attribute **function** currently includes the enumerate value *43* (passenger terminal building). The indication that a building has the function of a passenger terminal can also be done by encoding a **Harbour Facility** feature having attribute **category of harbour facility** = *8* (passenger terminal). Given that for ENC it is questionable as to whether there is a requirement to indicate any other type of passenger terminal other than a shipping passenger terminal, and noting also the enumerate values for **function** of *8* (railway station) and *42* (bus station), it is considered that the encoding of a "passenger terminal" should be rationalised such that there is only one way to encode these for ENC.

It is proposed to remove the enumerate value *43* (passenger terminal) as an allowable value for the attribute **function** from the S-101 DCEG.

Justification and Impacts

The above proposals have been part of the outstanding issues document that Australia has been keeping since the inception of the DCEG. These proposals tighten up the consistency of encoding for S-101 and in some cases improve the modelling of the data.

Action Required of S-101 Project Team

The S-101 Project Team is invited to:

      a.   discuss the above proposals

      b.   agree to their inclusion in the DCEG and proposal to the IHO FCD (if applicable) and to amend the S-101 Feature Catalogue