

DCEG Associations

Submitted by the UK with input from AU to the 3rd S-101 DCEG sub group meeting.

The DCEG sub group has made good progress on the S-101 data model especially with new features, attributes and enumerations.

However as yet little progress has been made on associations for S-101. This paper presents the progress to date and considers areas which remain to be addressed.

The following general use cases should guide the inclusion of relationships in the S-101 data model.

- Where features are closely related and rules on their encoding exist. For example where two features support the visual identification of a navigation line.
- Where the user may wish to navigate between features in the pick report. For example to find the light fixed to a buoy or beacon.

Items currently reflected in the tracking spreadsheet;

Bridges

A proposal has been accepted which includes associations for bridge structures. This reflects the way that bridges are modelled in S-101 with spans separate from the bridge feature.

Feature	Role	Association	Role	Feature
Bridge	Structure	Consists Of	Component	Span

No action required.

Mooring Facility

Proposal submitted however suggest that there is no clear use case and this proposal should be withdrawn.

Propose withdrawing this proposal.

Routeing Measures (UOC 10.2.3)

Proposal for this not yet defined, however the aggregation of features which make up routeing measures TSS, Deep water routes etc. The benefit of such a relationship is that information can be applied to an entire routeing measure and logical structuring of the pick report will be supported.

Propose that a proposal is developed for a routeing measure named aggregation.

Archipelagic Sea Lane (10.5)

Listed in the tracking spreadsheet however no detailed proposal exists. Suggest that it may be useful to link archipelagic sea lane axis and the lane feature however more discussion is needed.

Propose that the DCEG sub group consider the need for this relationship.

Update information

A proposal has been accepted for the update information feature and the following association is used to associate these features to features which have been updated. This proposal has been included in the DCEG however further guidance needs to be developed.

Feature	Role	Association	Role	Feature
<i>Updated feature</i>	Existing feature	Updated information	Updated by	Update Information

No action required.

The following relationships are currently catered for in the UOC but not covered above;

Range systems (UOC 10.1.2)

Navigation lines, recommended tracks and other features are currently aggregated. This seems useful both to enable validation and so that the user can highlight the whole range system.

Therefore an aggregation feature type should be considered for Range system this could be associated using the 'marked by' association proposed below in order to cater for transits which mark dangers etc

Propose that the DCEG sub group consider a named aggregation for range systems.

Navigational Aids and their equipment objects (UOC 12.1.2 and 10.1.2)

S-101 does not have the concept of Master Slave relationships. Therefore a named association is required to relate navigational aids and their equipment objects. This will support validation that attributes are consistent and enable logical structuring of the pick report.

Feature	Role	Association	Role	Feature
<i>Navigation aid</i>	Structure	Consists of	Equipment	<i>Equipment feature</i>

Another named association could be considered for navigational aids or range systems marking dangers. However the justification for such an association needs to be considered. This association does not fit the rationale as well as others.

Feature	Role	Association	Role	Feature
<i>Danger</i>	danger	Marked by	mark	<i>Navigational aid</i>

Propose creating a named association for navigational aid equipment and consider the need for an association for dangers marked by navigational aids.

Measured distances (UOC 10.1.3)

The components of a measured distance are aggregated in S-57. Creation of a named aggregation would support validation and user navigation of the pick report.

Propose the creation of a named aggregation for measured distance.

Synchronised lights (UOC 12.8.7)

The UOC contains guidance on the association of synchronised lights. This would not support validation however there may be user benefit in being able to identify which lights are synchronised.

Propose that the group discuss and possibly investigate with users/IALA on this. Suggest that a named aggregation would be appropriate.

Fairways (UOC 10.4)

The UOC gives guidance on creating aggregation for fairways grouping the fairway object and navigational aids. Such an aggregation would not assist validation and it is unclear if this would be of any benefit to the user.

Propose that sub group consider fairways but suggest that no relationship needs to be created.

Radar beacons (UOC 2.10)

Radar beacons may form a range system as with other navigational aids. The range system aggregation proposed above could cover radar beacons.

Propose that radar beacons are covered under the range system proposal above.

Vessel Traffic Services

The DCEG contains new guidance on creating an aggregation between a **Vessel Traffic Service Area** feature (new feature proposed for S-101) and related **Radio Calling-in Point** features. Such an aggregation may not support validation and it is unclear if this would be of any benefit to the user.

Propose that sub group consider VTS areas but suggest that no relationship needs to be created.

Airfields (UOC 4.8.12)

The UOC gives guidance on creating association for AIRARE and its component features (RUNWAY, BUISGL, ...). Such an association may not assist validation and it is unclear if this would be of any benefit to the user.

Propose that sub group consider airfields but suggest that no relationship needs to be created.

Anchorage (UOC 9.2.6)

The UOC gives guidance on creating association for the component features of an anchorage (ACHARE, ACHBRT, MORFAC, ...). Such an association may not assist validation and it is unclear if this would be of any benefit to the user.

Propose that sub group consider anchorages but suggest that no relationship needs to be created.