Comment Furuno 20230215

* In paragraph 1-4.5.3.4 of S-100, it is defined that S100\_NumericRange has attributes called lower and upper. This has also been the case in previous editions of the S-100 specification. In S-101 FC 1.1.0, however, the attributes lowerBound and upperBound are used instead. They might be better and clearer names, but in any case in conflict with the S-100 specifications

*The first bullet references a known issue in the schema; it should be using S100\_NumericRange from S100CSL.xsd but is not.*

*S100Base.xsd: […]A screenshot of a computer

Description automatically generated with medium confidence*

*The FC must conform to the schema. IMO both the schema and FC should be updated.*

* Table 5-A-5 of S-100 defines that the isAbstract attribute of S100\_FC\_NamedType (and with it subclasses of NamedType) is mandatory. However, in S-101 FC 1.1.0 there is an S100\_FC\_InformationAssociation where this attribute is missing. For now, we use in our prototype the default value “true” in this case because there are no NamedType derivatives in FC that are explicitly defined other than isAbstract="false".

*Regarding bullet 2, note that the 5.0 FC schema specifies that the default value of isAbstract is "false", so if it is missing implementations should use the default "false" according to XML rules.*

* S-100 ed. 5.0.0 has a difference compared to previous versions (including the final draft version of 5.0.0) that S100\_FC\_InformationBinding (see Table 5-A-17) and S100\_FC\_FeatureBinding (see Table 5-A-18) had previously exactly one informationType/featureType, but now there can be several, and S-101 FC 1.1.0 also uses this in many places. However, the LUA functions do not seem to support this, but the object creation functions defined in paragraph 13-8.1.1 of S-100 are still such that there can only be one information/feature type code per binding:

*The issue noted in bullet three was corrected by S-100WG7-04.10:* [*S100WG7-4.10\_2022\_EN\_Part 13 update to align with FC model.pdf (iho.int)*](https://iho.int/uploads/user/Services%20and%20Standards/S-100WG/S-100WG7/S100WG7-4.10_2022_EN_Part%2013%20update%20to%20align%20with%20FC%20model.pdf) *(approved at WG7).*

Comment NIWC 20230215

In updating the PC, I see that most of the unit of measure information is still missing from the FC. What version is targeted for inclusion of UOM information?

*It is intended to target the complete population of Units of Measure in FC 1.2.0.*

Comments i4 Insight 20230215

*See comments document containing various comments many of which relate to associations.*

Comments NIWC 20230202

This type of development would be better performed on GitHub for maximum transparency and inclusion:

* Develop FC in GitHub repo, similar to PC.
  + FC is still created using FCB.
  + Each update is pushed to the repo and is available for review, rather than emailed.
* Create issues as needed, such as for each of these email discussion items.
  + Label issues for resolution / inclusion within a specific FC version
  + Issue discussion is available in one place on a per-issue basis, rather than split across multiple email threads.
  + See portrayal sub-wg for examples.
* Develops a historical record of releases, discussions, and decisions associated with each release.
  + Provides a resource new members can use to get up to speed without needing so many experts with working knowledge of the historical record.

Regarding the draft FC:

* *versionDate* doesn’t match the filename.
  + Not relevant at the moment, but *versionDate* should describe the “Effective date of this Feature Catalogue” rather than the date of creation.
* Update *scope* to remove developmental notes: “Ocean, Coastal, Ports and Harbors. Excludes Inland waters. Supports QualityOfBathymetricData and 2015 updates to FC model.”
* Remove *classification*. It’s optional, and unused by IHO.
* Aliases are still present. I thought these were to be removed?
  + I prefer that they remain; they make it easier to search the catalogue against S-52/S-57 requirements.
* Expanding on Hugh’s feedback on the updated associations (the feature bindings)
  + Recommend focusing on the “one of many” relationships and expressing those correctly.
  + For instance, Bridge has a StructureEquipment binding to multiple features using the “supports” role with a multiplicity of 0..\*:

Text

Description automatically generated

The correct multiplicity is 1..\* as specified in the DCEG via the collective multiplicity (there must be at least one of these):

Text, application

Description automatically generated with medium confidence

Whether the DCEG multiplicities are correct is a different question, but the FC should always agree with the DCEG.

* + Additional bindings to single feature types may be used to provide additional restrictions.
    - For instance, Bridge has a StructureEquipment binding to Daymark with role “supports” and multiplicity of 0..1. So, there may be at most 1 Daymark associated with a Bridge, even though the collective multiplicity shown above allows any number.

Text

Description automatically generated

* + - Another example: A feature might be bound to multiple other features with a collective multiplicity of 2..\*, and also have a binding to a single feature X with multiplicity of 1..1
      * “There must be 2 or more associations to these other feature types, and one of them must be to feature X”.

> **Hugh Role Type – I would be interested in NIWC’s view here as I would like to understand if this is needed to support the Portrayal Catalogue. David can you comment?**

No, the change isn’t needed to support the PC. Each version of the PC is written to a specific version of the FC, so if the roles are changed in a future FC the PC will be updated to match.

Comments Teledyne CARIS 20230202

I see that there has also been work on updating the associations as requested by David.  I have some feedback on that.

Take for example the associations on a Berth but not limited to just Berths, the same cases are on other features.

Graphical user interface, text, application

Description automatically generated

**Additional Information, ProvidesInformation :**   I read this as there can not be any more than one ProvidesInformation association from a Berth to one of the listed information objects. In order to allow having links to both a Contact Details and a Service Hours the multiplicity would have to be at least 0..2 or 0..\*.  Also if we want to link to more than one of a type such as having multiple Service Hours.   If there is a desire to limit to only one Contact Details but multiple of the others then a separate association binding would be needed for each case.  Such as a binding 0..1 with just Contact Details and another binding 0..\* for Service Hours, Nautical Information and Non Standard Working Day

**Text Association, Positions:**

multipIicity – (Discussion): Maybe not applicable to Berths but it looks like all Text Placements are 0..1.  We only have two options for textType (Name, LightCharacteristics) so maybe only Lights might have more than one Text Placement.  If we included a scale Maximum attribute on Text Placement then there could be different placements at different scales.

roleType – In an associations sub group we had a discussion about structuring the feature catalogue such that it would be possible to tell which feature is the collector or aggregator and which is just a member.  When translating from a UML diagram to the FC the binding is describing the other end of the association connector.  In this case it seems that the roletype to Text Placement should be ‘association’ and the roletype from Text Placement to other features should be ‘composition’.  The attached paper from Raphael Mon 2/8/2021 describes this suggestion.

**Updated Information, multiplicity** – (Discussion) I see in DCEG 3.11.1 that “date Information features included in the previous Update dataset should be considered for deletion. Where a new Update impacts a feature that has previously been updated, any existing instance of Update Information associated to the feature must be deleted as part of the new Update;”  Which seems to indicate that only one Update Information can be associated to a given feature at a time. What if the nature of the updates are different such as one describing new features from a survey and another listing features that are part of a new/updated aggregation.

**Light All Around association with a structure**

19.2.1 Says that a Light All Around must be an equipment feature of a structure feature so perhaps the StructureEquipment binding to supportedBy role should be mandatory ie 1..1.  Other equipment features could also be improved in this way.

*S-101PT Chair response*

*Thanks Both for your inputs.*

*At this stage I am obviously keen that we get a final 1.1.0 Feature Catalogue to support testing published ASAP so I will try and filter these comments to those that affect 1.1.0 from those that could be considered future improvements.*

*Raphael 1 – Agree but consider remodelling in 1.2.0 or later. Note for DCEG 1.2.0. JW*

*Raphael 2 – Again I think this is response to Hugh’s point and is a future improvement. No Further Action*

***Hugh Association Multiplicity  - I agree that this is a constraint that it would be good to address for 1.1.0 to support testing, although creation of separate associations could be considered as a future improvement my proposal would be to make the Additional Information association 0,\* in all cases for 1.1.0.***

***I would appreciate anyone’s views on this. I think we need to review the way the DCEG describes this information in 1.2.0 and beyond but we need to strike a balance in having something for testing but accepting it wont be perfect.***

*Hugh Text Placement – For 1.1.0 I think we ACCEPT this limitation but review for 1.2.0 and later. Note for DCEG 1.2.0. JW*

***Hugh Role Type – I would be interested in NIWC’s view here as I would like to understand if this is needed to support the Portrayal Catalogue. David can you comment?***

*Hugh Update Information  - Good point but a future improvement and there is wider work on update information within the Portrayal SG. Note for DCEG 1.2.0. JW*

*Hugh Light All Around – I consider this a future improvement. Note for DCEG 1.2.0. JW*

*If no negative comments or further issues are identified, I will ask KHOA to proceed and prepare a final FC for publication.*