

# S-100WG6-4.26

## Part 5 Association Bindings

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Hugh Astle

# Features associations to one of many choices

- FogSignal
  - 'SupportedBy' one of many possible Structure types
  - Use one binding in FC with a list of Features

Role	Multiplicity	Association	Associated Object Candidates
supportedBy	1,1	StructureEquipment	BeaconCardinal, BeaconIsolatedDanger, BeaconLateral, BeaconSafeWater, BeaconSpecialPurposeGeneral, Bridge, Building, BuoyCardinal, BuoyEmergencyWreckMarking, BuoyInstallation, BuoyIsolatedDanger, BuoyLateral, BuoySafeWater, BuoySpecialPurposeGeneral, Conveyor, Crane, FishingFacility, FloatingDock, FortifiedStructure, Hulk, Landmark, LightFloat, LightVessel, MooringWarpingFacility, OffshorePlatform, Pile, PipelineOverhead, Pontoon, PylonBridgeSupport, ShorelineConstruction, SiloTank, SpanFixed, SpanOpening, WindTurbine

# Mandatory and Optional associations

- Bridge
  - At least one Span from a choice of Span Fixed or Span Opening
  - At least 2 supports
  - Implemented using 2 bindings in the FC

Role	Multiplicity	Association	Associated Object Candidates
consistsOf	1,*	BridgeAggregation	SpanFixed, SpanOpening
consistsOf	2,*	BridgeAggregation	PylonBridgeSupport

# FC FeatureBinding Change

Table 5-A-18 — S100\_FC\_FeatureBinding

Role Name	Name	Description	Mult	Type	Remarks
Class	S100_FC_FeatureBinding	Class describing the relationship from one feature type to another feature type by means of a feature association	-	-	
Attribute	multiplicity	Multiplicity defining how many instances of the target feature type can be linked to one instance of the source feature type	1	S100_Multiplicity	
Attribute	roleType	The nature of the association end	1	S100_FC_RoleType	
Role	featureType	The target feature type	1	S100_FC_FeatureType	
Role	role	The role used for the binding. It must be part of the association used for the binding and defines the end of the association	1	S100_FC_Role	
Role	association	The association used for the binding	1	S100_FC_FeatureAssociation	

- Allow the binding to have 1 or many target featureTypes to pick from.
- FC XSD Schema modification
  - `<xs:element name="featureType" type="S100FC:Reference" maxOccurs="unbounded" minOccurs="1"/>`

# FC InformationBinding Change

Table 5-A-17 — S100\_FC\_InformationBinding

Role Name	Name	Description	Mult	Type	Remarks
Class	S100_FC_InformationBinding	Class describing the use of an information type by a named type	-	-	
Attribute	multiplicity	Multiplicity defining how many instances of the target information type can be linked to one instance of the named type	1	S100_Multiplicity	
Attribute	roleType	The nature of the association end	1	S100_FC_RoleType	
Role	role	The role used for the binding. It must be part of the association used for the binding and defines the end of the association	0..1	S100_FC_Role	
Role	association	The association used for the binding; defining also the role	1	S100_FC_InformationAssociation	
Role	informationType	The target information type	1	S100_FC_InformationType	

- Allow the binding to have 1 or many target information types to pick from.
- FC XSD Schema modification
  - `<xs:element name="informationType" type="S100FC:Reference" maxOccurs="unbounded" minOccurs="1"/>`

# FC UML Model Change

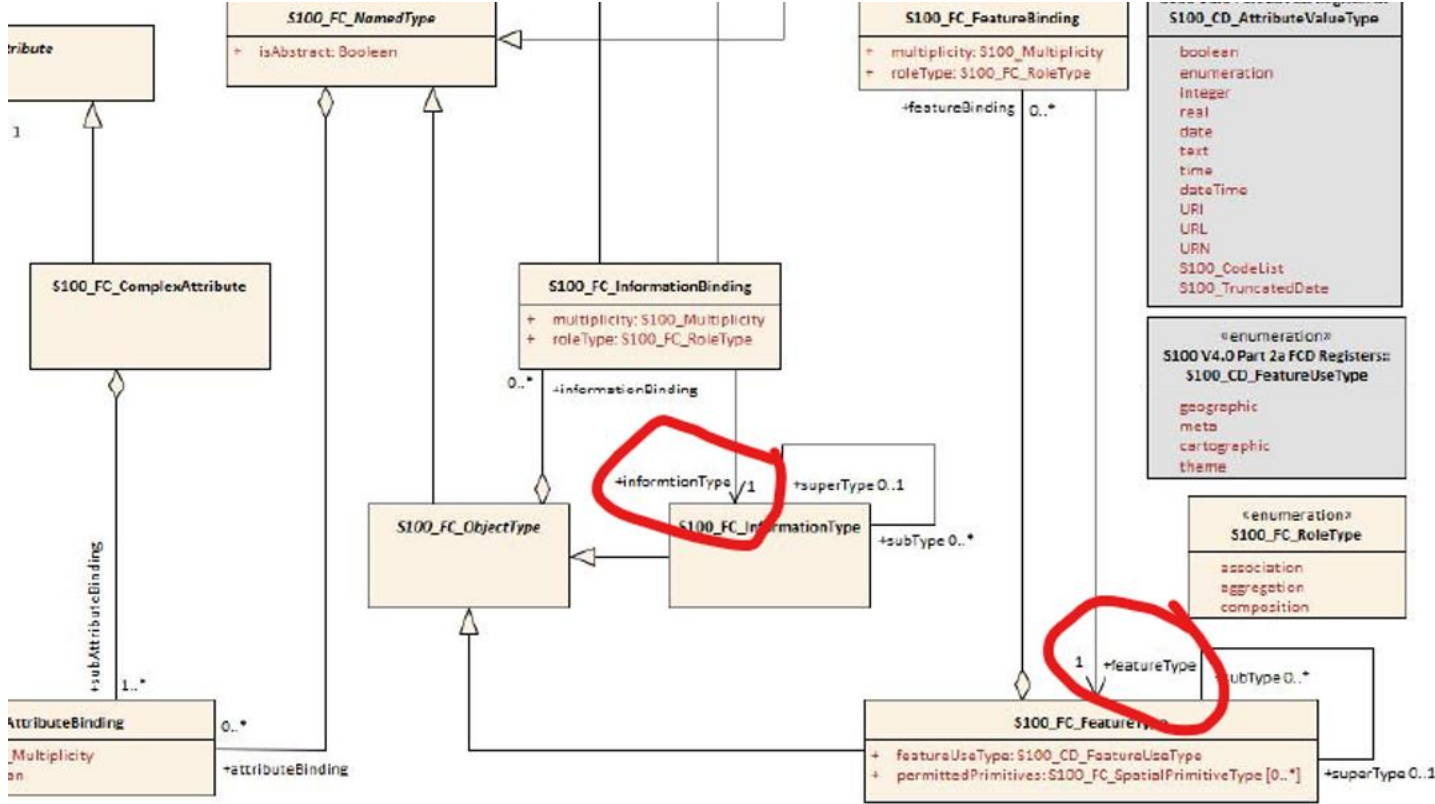


Figure 5-A-1. Feature Catalogue — UML Model

# In Conclusion

- Proposed change does not invalidate existing FCs or data
- Simplify FC creation by reducing number of bindings to maintain
- Simple change will improve quality and consistency without needing additional validations by constraining mandatory associations
- Easier to convert FC into DCEG tables and schema definitions