S-131 Marine Harbour Infrastructure

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INTRODUCTION

- Comments on Version 0.2 of the model were due 28 February.
- Comments were received from:
  - Spanish Navy HO
  - UKHO
  - NHS
  - CHS
  - BSH
  - NTOU
  - UNH
- Approximately 110 comments:
  - Updates to definitions
  - Proposed extensions – additional classes, attributes, and enumeration values
  - Adjustments – binding attributes to additional classes, merging enumerations, revisions to enumerated values, some deletions, changes to multiplicities
  - Corrections – missing supply services, stereotypes for some attributes
- "Combined comments" document contains all comments and actions on comments.

- No significant changes to the model received from the original modeling team.

- Some adjustments were made to the model based on comments received:
  - Remove *historicalAspects* – S-131 contains information about port infrastructure and operations, underlying ENC would encode restricted areas and wrecks.
  - Merge *categoryOfPortSection*/*categoryOfWaterway*
  - Remove obsolete and duplicative terms - de-ratting vs. ship sanitation control, MARPOL II A/B/C/D (replaced by MARPOL II X/Y/Z/OS)
  - Waste facilities – use MARPOL categories as described in MEPC.1/Circ.834/Rev.1
  - New attributes describing *product*, *cargo*, bollard strength, more ways of identifying locations (*GLNExtension*, *manifoldNumber*, *rampNumber*).
  - Modify binding of complex attributes *textContent*/*information* to remove duplication.

- Discussion issues – see discussion items slides later in this slide set.

- No significant changes to the model even when I disagreed with the original.

- Names and definitions were harmonized with items already defined in the GI registry, whenever a closely similar item was found.

- Most of the extensions proposed by commenters are postponed for a future edition.

DISCUSSION ITEMS

Issue	Brief Description	Recommendation
Binding of complex attribute availablePortServices	should it be bound to sub-areas of the port as well as the port area as a whole?	Add to Terminal, postpone consideration for other features to S-131 Ed. 1.x
Wrapper complex attributes	• Use wrapper attributes around *textContent*, or • define an enumeration of the topics, or • use the *headline* sub-attribute of *textContent*	Proceed as modeled, and revisit issue in S-101 Ed. 1.x
Elaboration of berthing assistance	Add detailed tug assistance (type, operating area, bollard pull, speed)	define new single listed value "tug" Remove listed values for specific tug types from the berthingAssistance enumeration
Mooring methods enumeration	Are the listed mooring methods defined well enough?	See detail slide
Different understandings of the feature Berth	Berth is normally a water feature (with depth attributes) but S-131 adds land-side information (elevation).	TBD
Transportation services enumeration	Are all the transportation methods listed necessary?	Delete "bicycle", "sea". Replace "bus" with *busStation*
S-101 features	Add some S-101 features to S-131?	Features should be encoded in an underlying ENC. Postpone consideration of additional features & functions from S-101 to S-131 Ed. 1.x.
Bindings and guidance for information/textContent	Duplicated bindings	Remove textContent from the abstract class InformationType. Add textContent to AbstractRxN and Entrance.

- Try to resolve significant open issues now.

- NIPWG members are requested to review the comments and actions in the "Combined Comments" document.
  - Respond to items marked "TBD" in the last column, especially if you made the comment (anyone can respond).
  - Notify me of any errors or omissions, or if there are questions about actions, so we can resolve discrepancies by correspondence or web meeting. [ASAP, and no later than April 7.]

- Submission of new items to the IHO GI Registry
  - Registry processing takes time – any issues w.r.t. definitions or names should be resolved ASAP.
  - Feature catalogue builder requires that items be accepted in the GI registry.
  - The IHO GI Registry has rules about similarity and form of terms and definitions.

- <u>NIPWG is requested to endorse my capacity to make minor changes to item names, definitions, remarks, etc., to facilitate acceptance.</u>
  - Only revisions that significantly change the semantics of S-131 will be referred back to NIPWG.

- No further extensions to the model.

- Preparation of Product Specification components – main Product Specifiction, DCEG.

- Schema, sample dataset and portrayal catalog.

- NIPWG review and approval of all components when complete, late Q2 2022.

- Request HSSC consent to handle HSSC approval of Edition 1.0 by correspondence, since HSSC meets in May 2022 and next HSSC meeting will be ~ May 2023.
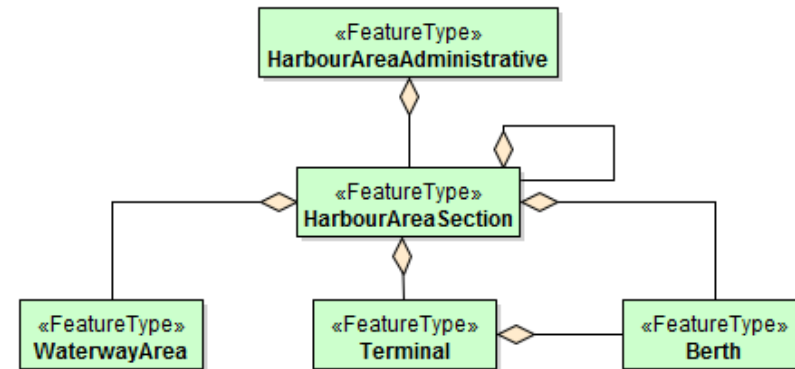
Discussion items

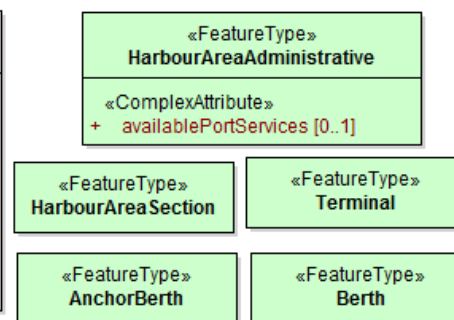Significant issues/changes to the model resulting from comments

Details on following slides

- Bind *availablePortServices* to additional features:
  - Berth, AnchorBerth, HarbourAreaSection, Terminal

- Pros
  - More precise indications of where in the harbour services are available.

- Cons
  - Duplication of information
  - More effort
  - Information to that fine detail and precision must be available
  - What is the meaning of including or omitting service at different levels?

- Options
  - Proceed with current binding
  - Add to all 4 proposed features
  - Compromise – add binding to Terminal.

- Revisit modeling in Ed. 1.x
  - Reconsider bindings?
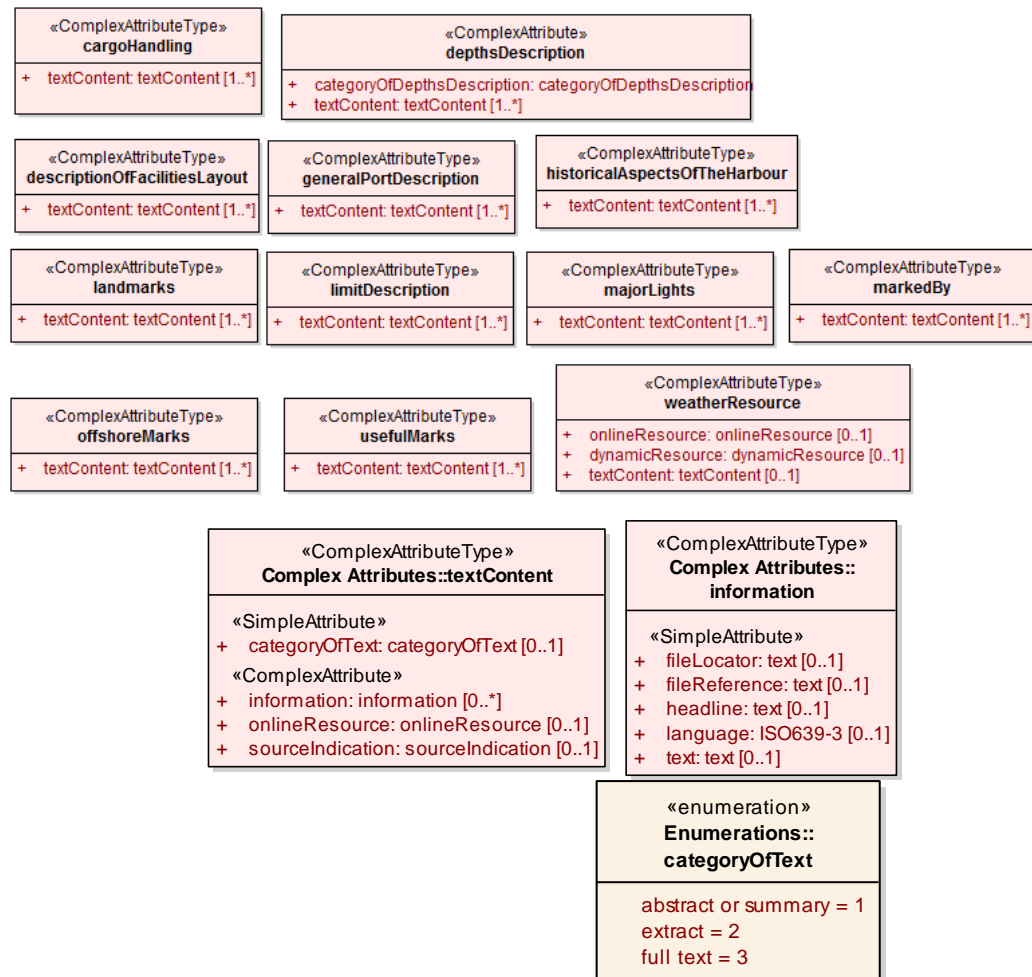 - One or more information types instead?

- All but two are just wrappers around *textContent*

- Alternative to wrapper – use textContent directly
  - enhanced with a new enumeration attribute, or
  - use the *headline* sub-attribute with constrained values

- Pros
  - "we thought this [categoryOfText/textContent type structure] wasn't prescriptive enough as certain types of text are important and should be a "named" component in the model itself (e.g. descriptions of depths)"

- Cons
  - Tendency towards encoding information as unrestricted text
  - Proliferated support files that contain verbatim extracts from text documents of potentially any length

- Proceed as modeled, and re-visit in 1.x?

«ComplexAttributeType»
cargoHandling

+ textContent: textContent [1..*]

«ComplexAttribute»
depthsDescription

+ categoryOfDepthsDescription: categoryOfDepthsDescription
+ textContent: textContent [1..*]

«ComplexAttributeType»
descriptionOfFacilitiesLayout

+ textContent: textContent [1..*]

«ComplexAttributeType»
generalPortDescription

+ textContent: textContent [1..*]

«ComplexAttributeType»
historicalAspectsOfTheHarbour

+ textContent: textContent [1..*]

«ComplexAttributeType»
landmarks

+ textContent: textContent [1..*]

«ComplexAttributeType»
limitDescription

+ textContent: textContent [1..*]

«ComplexAttributeType»
majorLights

+ textContent: textContent [1..*]

«ComplexAttributeType»
markedBy

+ textContent: textContent [1..*]

«ComplexAttributeType»
offshoreMarks

+ textContent: textContent [1..*]

«ComplexAttributeType»
usefulMarks

+ textContent: textContent [1..*]

«ComplexAttributeType»
weatherResource

+ onlineResource: onlineResource [0..1]
+ dynamicResource: dynamicResource [0..1]
+ textContent: textContent [0..1]

«ComplexAttributeType»
Complex Attributes::textContent

«SimpleAttribute»
+ categoryOfText: categoryOfText [0..1]
«ComplexAttribute»
+ information: information [0..*]
+ onlineResource: onlineResource [0..1]
+ sourceIndication: sourceIndication [0..1]

«ComplexAttributeType»
Complex Attributes:: information

«SimpleAttribute»
+ fileLocator: text [0..1]
+ fileReference: text [0..1]
+ headline: text [0..1]
+ language: ISO639-3 [0..1]
+ text: text [0..1]

«enumeration»
Enumerations:: categoryOfText

abstract or summary = 1
extract = 2
full text = 3

BERTHING ASSISTANCE

- Liability?
  - Who will check the data provided by the port, esp. tugs and tug types?
- Too much detail in the model
  - availability of *manoeuvringAssistance* as a Boolean attribute is sufficient
- Need elaboration of information about tugs
  - Tug types – ASD, Tractor, Rotor, Carrousel
  - Operating area – deep sea, harbor, salvage
  - Bollard pull
- Recommendations
  - Remove listed values for specific tug types from the *berthingAssistance* enumeration,
  - If desired, define new single listed value "tug" (A small, powerful boat used to push or pull barges or to help maneuver larger vessels) - but all large ports will have tugs, so is this adding anything?
  - Add a text attribute *tugInformation* to *availablePortServices* (defn: Textual description of the types and capacities of available tugs) and use it to describe tug assistance in brief.
  - Re-model tug information in Edition 1.x as an information type.
- Other – "tower" as a form of berthing assistance was not defined.

«enumeration»
berthingAssistance

Berthing information
Icebreaker
Linesman
Mooring Boat
Mule
Tractor
Tower
Tug - deep sea
Tug - Harbour
Tug - salvage

«ComplexAttributeType»
availablePortServices

+ firefightingService [0..*]
+ medicalService [0..*]
+ repairService [0..*]
+ technicalPortService [0..*]
+ shipSanitationControl [0..*]
+ transportationService [0..*]
+ berthingAssistance [0..*]
+ securitySafetyEmergencyService [0..*]
+ wasteDisposalService [0..*]
+ supplyService [0..*]
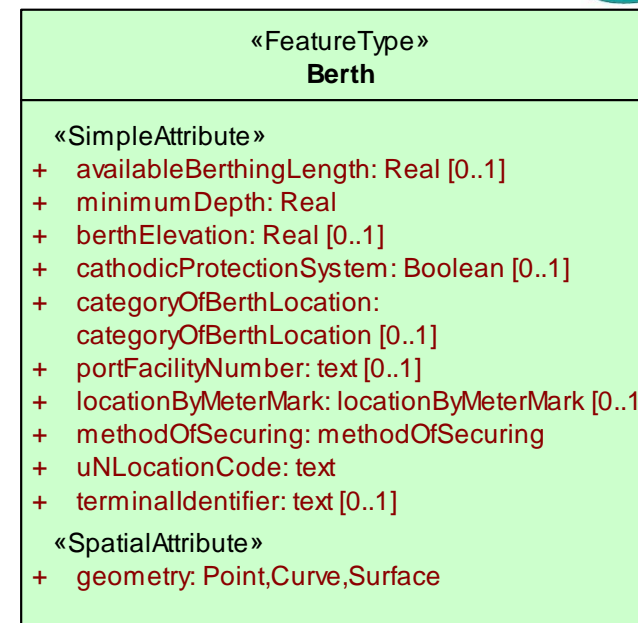
International Hydrographic Organization

1921-2021

Bows to seaward : Vessel is secured perpendicular to the wharf with bow to seaward. Do we need Port side and Starboard side only mooring?	[RM: Original 0.1 model had "bow to seaward" & "stern to wall" - which appear to be the same thing. Can original modelling team clarify? Are "port-side" & "starboard-side" also needed? If so - definitions?]	TBD, pending definitions
GI Registry defines: singlePointMooring: A mooring structure used by tankers to load and unload in port approaches or in offshore oil and gas fields. The size of the structure can vary between a large mooring buoy and a manned floating structure. singleBuoyMooring: A large mooring buoy used by tankers to load and unload in port approaches or in offshore oil and gas fields. Other types of moorings in the registry: catenaryAnchorLegMooring, mooringTower, tautWireMooring, singleAnchorLegMooring, mooringCable, tieUpWall, dolphin, deviationDolphin:, mooringBuoy	Use registry definitions of SPM and SBM. Consider whether other types of moorings (see categoryOfMooringWarpingFacility, categoryOfInstallationBuoy) should be added to methodOfSecuring.	Will use registry definitions of SBM & SPM in Ed. 1.0. Postpone consideration of other mooring structures to Ed. 1.x.

«enumeration»
New/Updated/S131Specific:: methodOfSecuring

Bows to seaward
Stern to wall (...to seaward?)
Mediterranean mooring
Baltic mooring
Running mooring
Standing mooring
Single point mooring
Conventional mooring
Ship to ship mooring
Spider buoy mooring

Mooring structure vs.
mooring method

International
Hydrographic
Organization

- "Berth" has depth attribute(s) *minimumDepth* and is therefore a water feature

- Berth also has attribute(s) typical of land-side features: *elevation*

- Does the geometry of Berth in S-131 cover only water, only land, or both?

«FeatureType»
Berth

«SimpleAttribute»
+   availableBerthingLength: Real [0..1]
+   minimumDepth: Real
+   berthElevation: Real [0..1]
+   cathodicProtectionSystem: Boolean [0..1]
+   categoryOfBerthLocation:
     categoryOfBerthLocation [0..1]
+   portFacilityNumber: text [0..1]
+   locationByMeterMark: locationByMeterMark [0..1]
+   methodOfSecuring: methodOfSecuring
+   uNLocationCode: text
+   terminalIdentifier: text [0..1]
«SpatialAttribute»
+   geometry: Point,Curve,Surface

[S-101] DCEG Remarks:
➤   The berth encodes the named place where a vessel can be moored adjacent to a shoreline construction. The shoreline construction itself should be encoded using the feature **Shoreline Construction**
➤   ...

«enumeration»
transportationService

Airport
Bicycle
Boatman
Bus
Ferry
Highway
Launch
Railway
Road
Sea
Tunnel

Is it relevant to include bicycle in this list?	[RM: Received model had it. Original modelling team should explain why it is needed.]	TBD. Deletion recommended
Bus A bus is a large motor vehicle which carries passengers from one place to another. Buses often drive along particular routes English Collins dictionary	[RM: Received model had it. Original modelling team should explain why it is needed.]	TBD. Delete or replace with busStation, which is already defined in the registry.
Sea : Public Transportation by sea. Isn't it a little obvious there is transportation by sea. We are describing a port.	[RM: Received model had it. Original modelling team should explain why it is needed. The concept "sea" is defined in the registry as follows: (1) The great body of salt water in general, as opposed to land; ocean. (2) One of the smaller divisions of the oceans. (3) The state of the surface of the ocean with regard to wave or swell, as a calm sea. See Cross Sea, Head Sea, Beam Sea, Following Sea, Quartering Sea, Sugar Loaf Sea.]	TBD. Deletion or refinement recommended.

Geo features for ports and Areas that might be part of port and harbour layout

Crane	Conveyor	Cargo shed
Gate	Custom zone	Cold storage
Mooring trots	Free port area	Grain elevator
Dyke	Pilotage district	Mooring trots
Causeway	Cargo transhipment area	
Dam	Degaussing ranges	
Pontoon	Anchoring restricted	
Locks	Restricted areas	
Hulks	Wrecks	
Piles	Warehouse	

Building functions in S-101 that we might be missing in infrastructure?

harbour-masters office	Boat house
water-police station	Customs office
pilot lookout	Hospital
transit shed/warehouse	Police station
power station	Pilot office
Cooling	Headquarters for district control
Airship mooring	factory
Ore crusher	administrative
Pumping station	Sea rescue control
Pumping station	

Recommendation: Features should be encoded in an underlying ENC. Postpone consideration of additional features & functions from S-101 to S-131 Ed. 1.x.

- Bindings of *textContent* and *information* are redundant.
  - Authority, ServiceHours, Applicability, NonstandardWorkingDay, ContactDetails

- Remove *textContent* from the abstract class *InformationType*.

- Add *textContent* to *AbstractRxN* and *Entrance*.