

# 1st Meeting of S-130PT Schema Sub-Group

# **Meeting Slides**

**Approval of Agenda** 

4 – 5 July 2022 / Monaco (Hybrid)



Day1.

(UTC+2)₽

1400 - 1430

1430 - 1540

1540 - 1600₽

1600 - 16204

1620 - 17004

18:00 - 20:00¢

1700₽

#### MEETING AGENDA

Title₽

Interna 1. Opening and Administrative Arrangements Hydrog 0830 - 0900₽ Registration. Organi 0900 - 09054 Opening / Welcome@ Leader*₽* 2. Approval of Agenda 0905 - 09104 Agenda. Leader₽ 3. PS Description and Reference Application Schema 0910 - 09404 Review S-100 Part 1,3, 5, and S-97 Leader*₽* Review Application Schema of S-1XX PSsa. S-121 Maritime Limits and Boundaries 0940 - 10304 Leader₽ b. S-122 Marine Protected Areas c. Other S-1XX Product Specifications 1030 - 1050₽ Coffee Break₽ 1050 - 1230 Review Application Schema of S-1XX PSs (Cont.) ø 1230 - 1400 Lunch₽ 4. Requirements for sketching S-130 Application Schema

Review the Initial Description of S-130 PS

Discussion of Proposed Requirements (Cont.)

Simple and Complex attribute types

Relationships between the classes-

Constraints applicable to the classes, attributes and

Feature and Information types

relationships.

Team Work Dinner (Non-host) @

Discussion of Proposed Requirements

Coffee Break₽

End of Day 1₽

	5. S-130	Application Schema							
	0830 - 0900₽	Registration ₽	4	₽					
	0900 - 1030¢	Draft Application Schema     Draft Application Schema based on discussion     Review the Draft S-130 Application Schema     Discuss a way forward	₽ Leader All All	₽					
	1030 - 1050₽	1030 - 1050. Coffee Break.							
	1050 - 1230₽	Draft Application Schema (Cont.)₀	All₽	₽					
	1230 - 1400₽	1230 - 1400∉ Lunch∉							
	6. Gl Registry <i>₊</i>								
ı	1400 - 1430	Identifying newly introduced Feature data₽	Leader₽	₽					
4	1430 - 1450₽	Process to be registered proposed new feature data in the GI registry (who and when)							
	1450 - 15004	All₽	₽						
	ė.	₽	₽J	₽					
	7. Relationship between Application Schema and others⊷								
		S-130 Feature Catalogue		₽					
		S-130 Portrayal Catalogue	- PT chair∉	₽					
1	1500 - 1530∉	S-130 GML Schema		₽					
•	1500 - 1550	S-130 DCEG (Data Classification and Encoding Guide)		47					
		Metadata part <i>₄</i>		€7					
		Any considerations for S-100 Ed. 5.0.0		₽					
	1530 - 1550₽	Coffee Break ₽	t)	₽					
	8. Any C	other Business <i>₀</i>							
•	1550 - 16004	Next Meeting₊	Leader₽						
•	Close₽								

Title₽

Lead₽

Remarks.

Day2.

(UTC+2)₽

Lead<sub>₽</sub>

PT Chair

All₽

All₽

Leader₽

PT Chair₽ ₽

All₽

Remarks



## 1st Meeting of S-130PT Schema Sub-Group

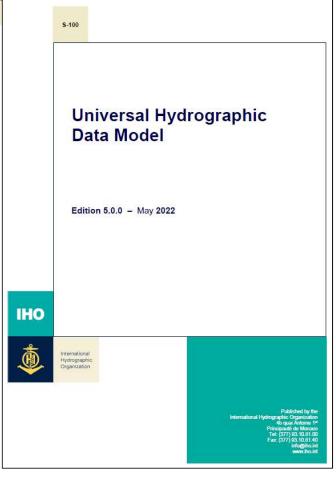
# **Meeting Slides**

**PS Description and Reference Application Schema** 

4 – 5 July 2022 / Monaco (Hybrid)



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- Part 1 Conceptual Schema Language
- Part 2 Management of IHO Geospatial Information Registers
- Part 2a Concept and Data Dictionary Registers, Part 2b Portrayal Register
- Part 3 General Feature Model and Rules for Application Schema
- Part 4 Metadata
- Part 5 Feature Catalogue
- Part 6 Coordinate Reference Systems
- Part 7 Spatial Schema
- Part 8 Imagery and Gridded Data
- Part 9 Portrayal, Part 9a Portrayal (Lua)
- Part 10 Encoding Formats
- Part 10a ISO/IEC 8211 Encoding Schema, Part 10b GML Encoding
- Part 10c HDF5 Data Model and File Format
- Part 11 Product Specifications, Part 12 Maintenance
- Part 13 Scripting
- Part 14 Online Communication Exchange
- Part 15 Encryption and Data Protection,
- Part 16 Interoperability Catalogue Model
- Part 16a Harmonized Portrayal of S-100 Products
- Part 17 Discovery Metadata for Information Exchange Catalogues
- Part 18 Language Packs

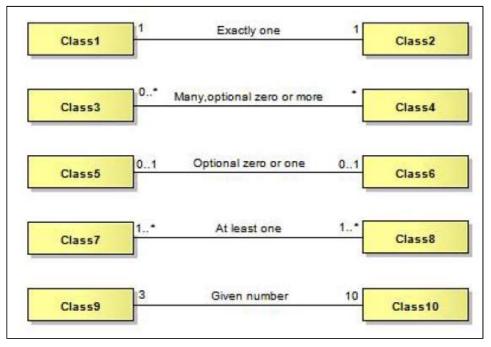


- Part 1 Conceptual Schema Language
  - Conceptual Schema language and basic data types for use within the IHO community
  - Combination of the Unified Modelling Language (UML) static structure diagram, and a set of basic data type definitions as the Conceptual Schema language for specification of geographic information
  - Guidelines on how UML should be used to create standardized geographic information and service models that are a basis for achieving the goal of interoperability
  - Classes, Attributes, Basic data types, Predefined derived types, Enumerated types, Codelist types, Relationships and associations, Stereotypes, Optional, conditional and mandatory – attributes and associations, Naming and name spaces, Documentation of models in S-100



- Part 1 Conceptual Schema Language
  - Class is a description of a set of objects that share the same attributes, operations, methods, relationships, behaviour and constraints
  - Data types : Primitive types, Complex types
  - Relationships and associations

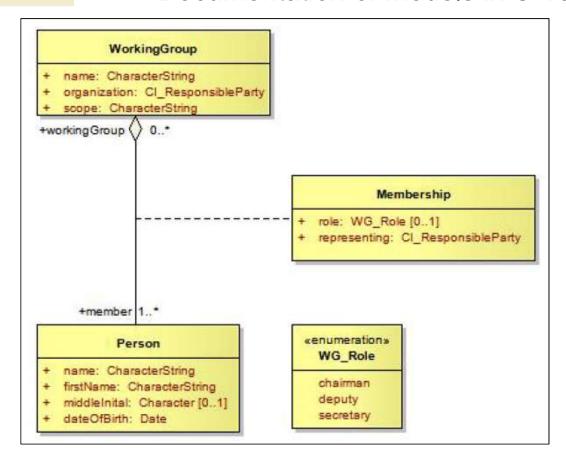
-	Association
	A semantic connection between two instances
$\longrightarrow$	Generalization
	A relationship between an element and the subelements that may be substituted for it
	Dependency
	The use of one element by another
>	Refinement
্বী	A shift in levels of abstraction
$\rightarrow \Diamond$	Aggregation
100	A part-of relationship
$- \blacklozenge$	Composition
	Strong Aggregation, children are deleted if parent is deleted





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- Part 1 Conceptual Schema Language
  - Documentation of models in S-100



Role Name	Name	Description	Multiplicity	Data Type	Remarks
Class	WorkingGroup	A group of experts doing some useful work	85	0.500	
Attribute	name	The name of the working group	1	CharacterString	
Attribute	organization	The organization responsible for the working group	1	CI_ResponsibleParty	
Attribute	scope	The reason why so many people travel around the world	1	CharacterString	
Association	member	A person that is designated to contribute to the group	1*	Person	
Role Name	Name	Description	Multiplicity	Data Type	Remarks
Class	Person	A human being		=:	
Attribute	name	The name of the person	1	CharacterString	
Attribute	firstName	The first name of the person	1	CharacterString	
Attribute	middleInitial	The middle initial of the person	01	Character	
Attribute	dateOfBirth	The date when the person was born	1	Date	
Association	workingGroup	A working group the person contributes to	0*	WorkingGroup	
Role Name	Name	Description	Multiplicity	Data Type	Remarks
Class	Membership	A class describing the membership of a person in a working group	-	а	
Attribute	role	The role that the person has in the working group	01	WG_Role	Ordinary member have no role
Attribute	representing	The organization which is represented by the person in the working group	1	CI_ResponsibleParty	0
Role Name	Name		Description		Remarks
Enumeration	WG_Role	The roles people can ha	The roles people can have in a working group		
Literal	chairman	The gov'nor	The gov'nor		
Literal	deputy	His best friend	His best friend		

Poor man (or woman) has to have his (or her) fingers always

Literal

secretary

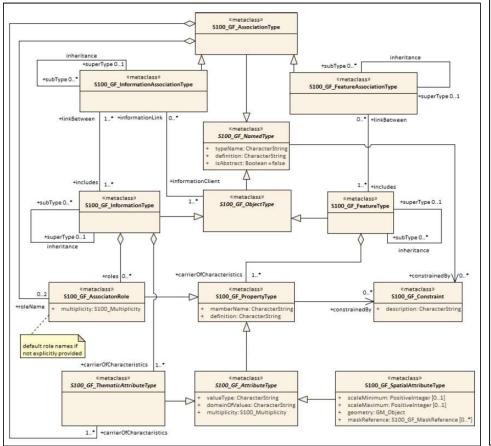


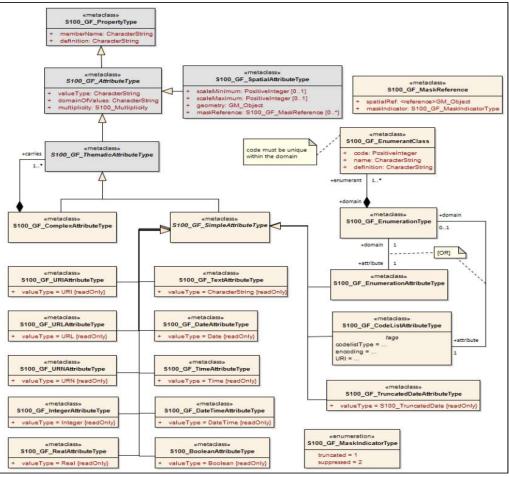
- Part 3 General Feature Model and Rules for Application Schema
  - General Feature Model (GFM) which is a conceptual model of features, their characteristics and associations
  - Rules for developing an Application Schema which is a basic part of any S-100 based Product Specification
  - GFM provides a conceptual model for these objects
  - Definitions for object types are held in a Feature Catalogue
  - GFM also acts as a conceptual model for the Feature Catalogue
  - Principles for defining features and information types



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General Feature Model



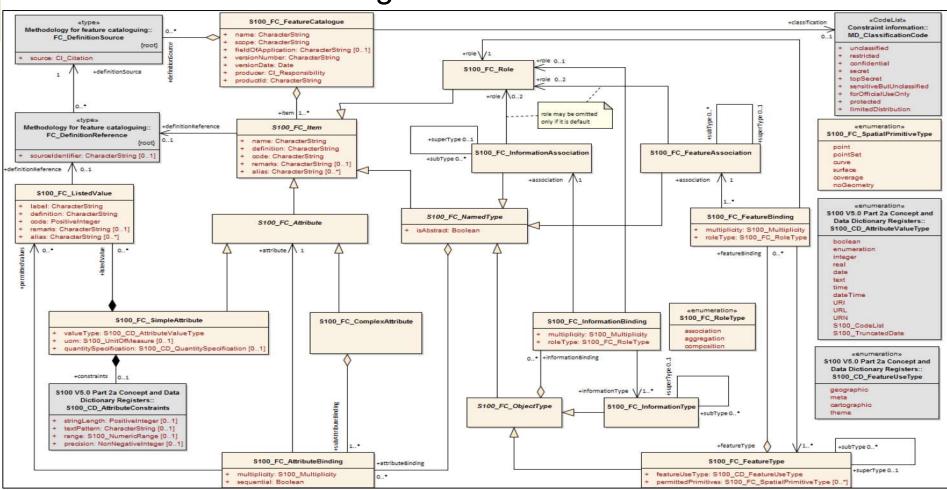




- Part 5 Feature Catalogue
  - Standard framework for organizing and reporting the classification of real world phenomena in a set of geographic data
  - defines the methodology for classification of the feature types and specifies how they are organized in a Feature Catalogue and presented to the users of a set of geographic data
  - Feature Catalogue shall be defined for each Product Specification
  - Basic level of classification in the Feature Catalogue is the feature type
  - Feature Catalogue shall be available in electronic form (for example XML) for any set of geographic data that contains features



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### Part 11 – Product Specifications

11-1	Scope
11-2	References
11-2.1	Normative
11-2.2	Informative
11-3	General structure and content of a data product specification
11-4	Overview
11-5	Specification scopes
11-6	Data product identification
11-7	Data content and structure
11-7.1	Feature-based data
11-7.2	Coverage-based and imagery data
11-7.3	Coordinate Reference Systems
11-7.4	Object identifiers
11-8	Data Quality
11-9	Data Classification and Encoding Guide
11-10	Data Maintenance
11-11	Portrayal
11-12	Data Product format (encoding)
11-12.1	Descriptions of GML data formats
11-13	Data product delivery
11-14	Additional information
11-15	Metadata
11-16	Digital Signatures
	11-A Creating an S-100 product specification (informative)
<b>Appendix</b>	11-B Example Product Specification (informative)
	11-C Guidance on Codelists (informative)
<b>Appendix</b>	11-D Product Specification Template (informative)
<b>Appendix</b>	11-E Guidance on Unique Identifiers (informative)

#### 11-7.4 Object identifiers

The specification of persistent global identifiers for feature and information objects is strongly recommended. Identifiers need not be defined where the physical realities dictate otherwise or it is known that a reference to the object will not be needed, even from an as-yet-unknown external dataset conforming to another product specification. For example, identifiers need not be defined for cartographic objects.

Identifiers of instances should utilize the Maritime Resource Name (MRN) concept and namespace. The MRN namespace is administered by International Association of Lighthouse Authorities (IALA) through the website <a href="http://mrnregistry.org">http://mrnregistry.org</a>, which also contains references to the full set of rules that apply to the MRN concept. The topmost namespace urn:mrn remains fixed, with subsequent name spaces separated by colons, and available through the application process explained on the website. Any organization wishing to issue MRN conformant identifiers should apply for a name space from IALA, or from an organization that already has a namespace registered.

It is not required to encode all feature instances with the whole MRN string, provided the whole string can be recreated, for example by utilizing metadata. Significant data volume savings can be obtained by utilizing such mechanisms. Furthermore, technical issues such as restrictions in GML encoding with the use of ":", may be surmounted by this approach.

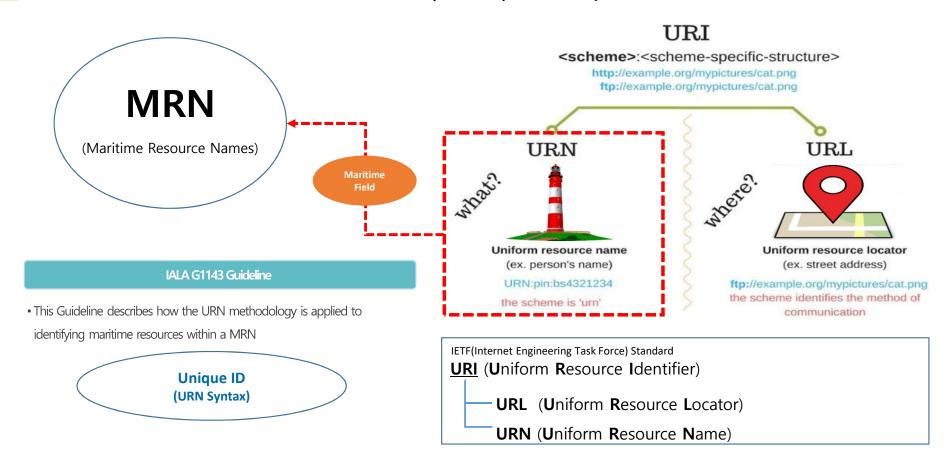
If there are technical reasons why the MRN concept cannot be utilized, other means for persistent global identifiers should be established. One way to implement persistent global identifiers is by defining a namespace and a persistent unique local identifier for individual feature or information types. The persistent global identifier can be constructed by combining the namespace with the local identifier. Local identifiers must be unique within the namespace for the lifetime of the feature or information object.



- Part 11 Product Specifications
  - Appendix 11-E. Guidance on Unique Identifiers
  - Important to preserve original identifiers in data products to assist in identifying data objects which describe the same real-world entity between different datasets
  - Persistent unique Identifiers would reduce the workload and likely issues with translation tables which have to be developed and maintained if various stakeholders use different Identifiers for the same feature
  - Recommended that the Maritime Resource Name (MRN) concept



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- Part 11 Product Specifications
  - Maritime Resource Name (MRN) concept





- Part 11 Product Specifications
  - Maritime Resource Name (MRN) concept
  - [G1143] UNIQUE IDENTIFIERS FOR MARITIME RESOURCES
  - Syntax



\* Source: IHO Guidelines for Creating S-100 Product Specifications

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1) Initiation

Identify the need for a new data product; define its scope; and decide the boundaries between the new product and existing data Product Specifications. Obtain sample source material. Describe typical application use cases

2) Data Model / Application Schema Define the classes and attributes that describe the domain and which are relevant to the data product. Define the relationships between the classes and specify applicable constraints. Prepare one or more UML diagrams describing the Domain Model

3) Registration of feature elements

Propose amendments to existing classes and attributes and propose new classes and attributes for addition to the Concept and Data Dictionary Registers in the IHO GI Registry using the Registry interface.

4) Develop the Feature Catalogue

Prepare the XML Feature Catalogue from the feature and information classes, attributes and relationships as approved in the IHO GI Registry, utilizing the Feature Catalogue Builder.

5) Transfer modes and packaging

Determine whether data products are to be delivered as data files contained in transfer (exchange) sets, by web services (and if so, identify or outline a service protocol), e-mail, etc.



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Survey the metadata elements listed in S-100 for their appropriateness to the data product and its allowed packaging and delivery methods. Define appropriate values and restrictions for the metadata elements listed in S-100

7) Define the data format

Select an appropriate data format. S-100 provides for 3 standard delivery formats (ISO 8211, GML, and HDF5). Prepare format-specific artefacts if necessary

8) Data
Classification
and Encoding
Guide (DCEG)

A DCEG should contain enough overview and general material about basic concepts such as data types, features, information types, associations, etc, to give its intended audience a basic grounding in the concepts they will need to apply

9) Portrayal symbols and rules

Determine the symbols to be used for portrayal and the rules for generating displays from the data product.

10) Registration of portrayal elements

Propose any new portrayal components (for example symbols, colour tokens, line styles, area fills, etc) to the Portrayal Register in the IHO GI Registry using the Registry interface



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11) Portrayal Catalogues

Prepare a Portrayal Catalogue (or Catalogues) for the features and information types which are intended to be displayed in the intended application domain(s) and usage scenario(s)

12) Define the Spatial reference system

Identify the recommended coordinate reference system and vertical datum(s)

13) Data product packaging and maintenance

Define the content and structure of delivery packages, updating of data, and any auxiliary content delivered either with or as an adjunct to data

14) Validation checks and quality measures

Define tests for the spatial, structural, and conceptual integrity of datasets. Define formatspecific implementations of validation checks

15) Determine interoperability

Determine which if any product groups in Interoperability Catalogues are supplemented or enhanced by the data product; and how the IHO Interoperability Catalogue will be affected by the new product



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16) Prepare sample data

for test-beds. Create sample datasets and exchange sets conforming to the data format, packaging, and Feature Catalogue defined in the Product Specification

17) Testing and feedback

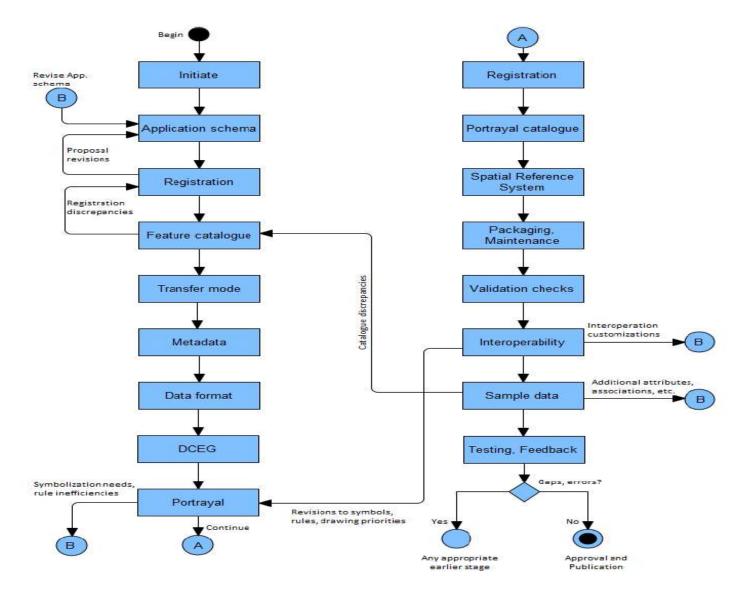
Carry out tests of data production and use of the sample data in selected applications to validate the correctness, completeness, consistency, and utility of the Product Specification, including related artefacts such as the Feature Catalogue and XML schemas

Final Step

Production of S-130 dataset



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### Steps in model development of S-97

- Step 1 Determine whether the data product is coverage or vector data
- Step 2 Identify the concepts in the application domain
- Step 3 Search for existing concepts using key words (classes, attributes and relationships) in the IHO GI Registry which can be reused
- Step 4 Develop new concepts only for those that do not yet exist in the IHO GI Registry
- Step 5 Define the classes and attributes that describe the domain and are relevant to the data product



- Steps in model development of S-97
  - Step 6 Define the relationships between the classes
  - Step 7 Specify any constraints applicable to the classes, attributes, and relationships
  - Step 8 Prepare one or more UML class diagrams describing the domain model
  - Step 9 Prepare supporting text explaining the overall structure of the Application Schema



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## • International Hydrographic Organization (IHO) (S-101 to S-199)

- S-101 Electronic Navigational Chart (ENC)
- S-102 Bathymetric Surface
- S-103 Sub-surface Navigation
- S-104 Water Level Information for Surface Navigation
- S-111 Surface Currents
- S-112 Open (See Decision HSSC9/38)
- S-121 Maritime Limits and Boundaries
- S-122 Marine Protected Areas
- S-123 Marine Radio Services
- S-124 Navigational Warnings
- S-125 Marine Navigational Services
- S-126 Marine Physical Environment
- S-127 Marine Traffic Management
- S-128 Catalogue of Nautical Products
- S-129 Under Keel Clearance Management (UKCM)
- S-130 Polygonal Demarcations of Global Sea Areas
- S-131 Marine Harbour Infrastructure
- S-164 IHO Test Data Sets for S-100 ECDIS

#### **S-121 Maritime Limits and Boundaries**

Version 1.0.0, Version date 2019-10-29, S-100 Ed 4.0.0

#### **S-122 Marine Protected Areas**

Version 1.0.0, Version date 2019-01-25, S-100 Ed 3.0.0

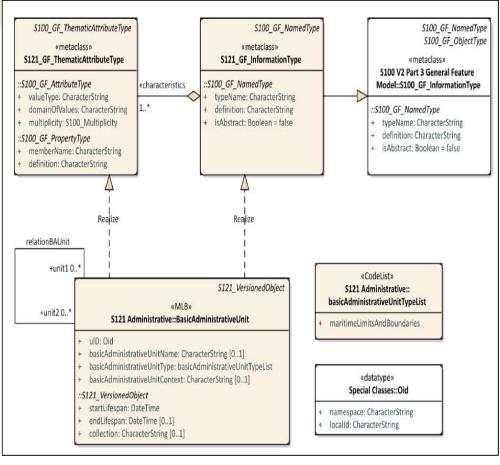


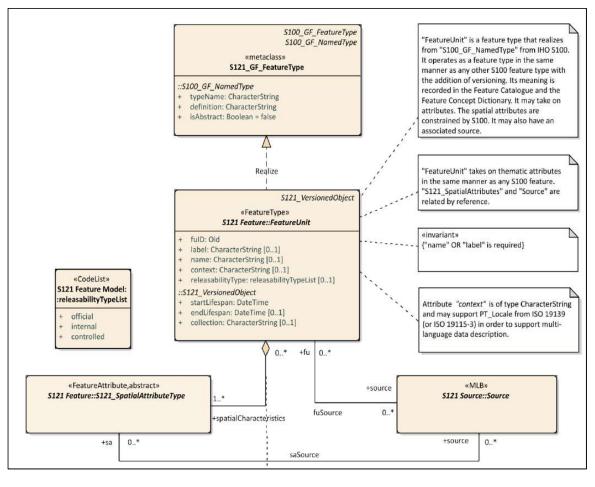
- S-121 Maritime Limits and Boundaries
  - product specification for Maritime Limits and Boundaries for the administration of the maritime domain
  - description of maritime zones, as defined by the UN Convention on the Law of the Sea (UNCLOS)
  - for the administration of Maritime Limits and Boundaries in support of the deposit by States Parties of the geographical coordinates of points identifying their baselines and outer limits of maritime zones in accordance with UNCLOS



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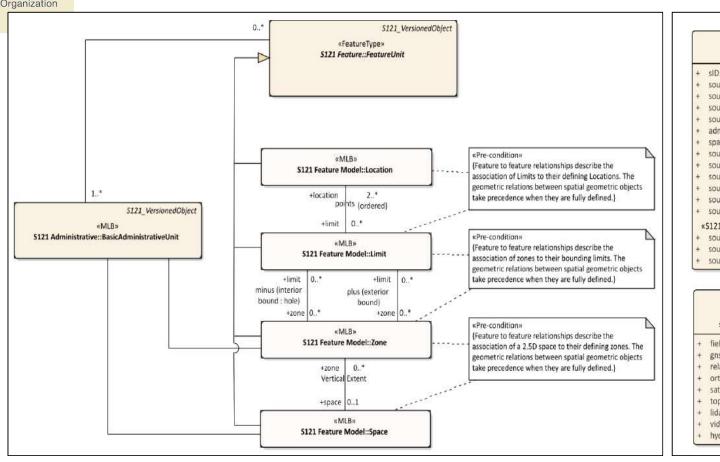
# S-121 MLB – Application schema

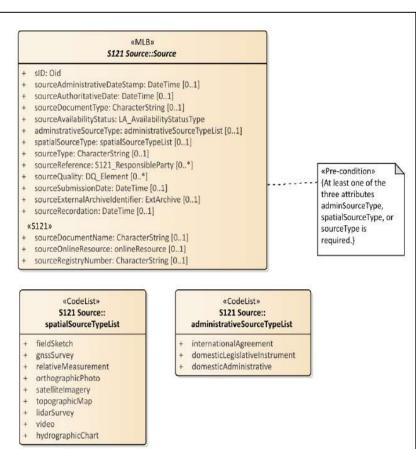






International Hydrographic Organization S-121 MLB – Application schema







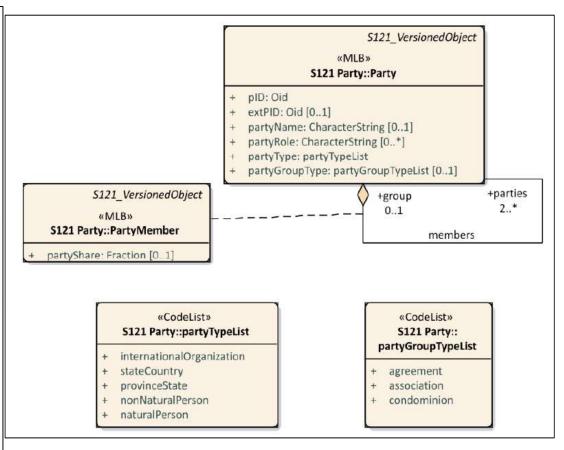
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## S-121 MLB – Application schema

«CodeList»

CI\_OnLineFunctionCode

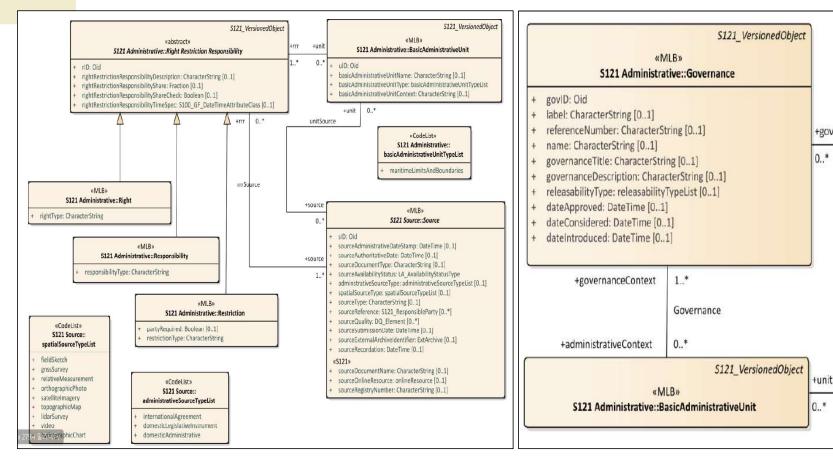
#### «DataType» 5121 Source::Source S121 Administrative::responsibleParty + sID: Oid responsiblePartvIndividualName: CharacterString [0..1] sourceAdministrativeDateStamp: DateTime [0..1] responsiblePartyOrganizationName: CharacterString [0..1] sourceAuthoritativeDate: DateTime [0..1] responsiblePartyPositionName: CharacterString [0..1] + sourceDocumentType: CharacterString [0..1] responsiblePartyContactInformation: contact [0..1] sourceAvailabilityStatus: LA AvailabilityStatusType responsiblePartyRole; CI RoleCode [0..1] adminstrativeSourceType: administrativeSourceTypeList [0..1] spatialSourceType: spatialSourceTypeList [0..1] sourceType: CharacterString [0..1] sourceReference: \$121 ResponsibleParty [0..\*] «DataType» sourceQuality: DQ\_Element [0..\*] S121 Source::contact sourceSubmissionDate: DateTime [0..1] sourceExternalArchiveIdentifier: ExtArchive [0..1] responsiblePartyContactPhone: CharacterString [0..1] sourceRecordation: DateTime [0..1] responsiblePartyContactAddress: address [0..1] responsiblePartyContactOnlineResource: onlineResource [0..1] + sourceDocumentName: CharacterString [0..1] sourceOnlineResource: onlineResource [0..1] sourceRegistryNumber: CharacterString [0..1] «DataType» S121 Source::onlineResource «DataType» 5121 Source::address onlineResourceLinkageURL: CharacterString onlineResourceProtocol: CharacterString [0..1] addressDeliveryPoint: CharacterString [0..1] onlineResourceApplicationProfile: CharacterString [0..1] addressCity: CharacterString [0..1] onlineResourceName: CharacterString [0..1] addressAdministrativeArea: CharacterString [0..1] onlineResourceDescription: CharacterString [0..1] adressPostalCode: CharacterString [0..1] onlineResourceFunction: Cl OnLineFunctionCode [0..1] addressCountry: CharacterString [0..1] electronicMailAdress: CharacterString [0..1] ClockTime «CodeList» «blueprint,featureType» «CodeList» S121 Source:: S121 Source:: External::ExtArchive Date spatialSourceTypeList administrativeSourceTypeList «type» acceptance: DateTime [0..1] Date and Time::DateTime data: LocalisedCharacterString fieldSketch internationalAgreement gnssSurvey domesticLegislativeInstrument extraction: DateTime [0..1] relativeMeasurement domesticAdministrative recordation: DateTime [0..1] orthographicPhoto sID: Oid satellitelmagery submission: DateTime [0..1] topographicMap «CodeList» lidarSurvey «CodeList» Citation and responsible Citation and responsible video party information:: hydrographicChart party information:: CI RoleCode

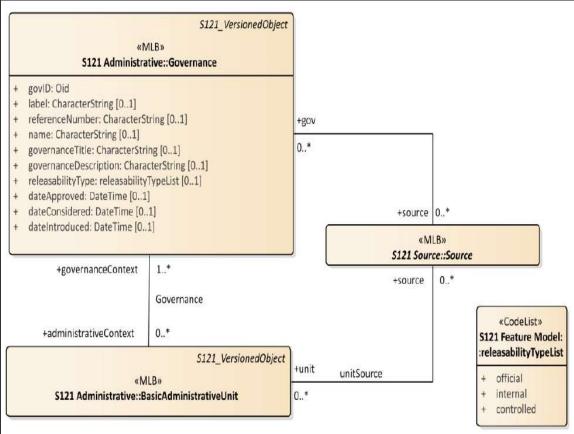




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S-121 MLB – Application schema

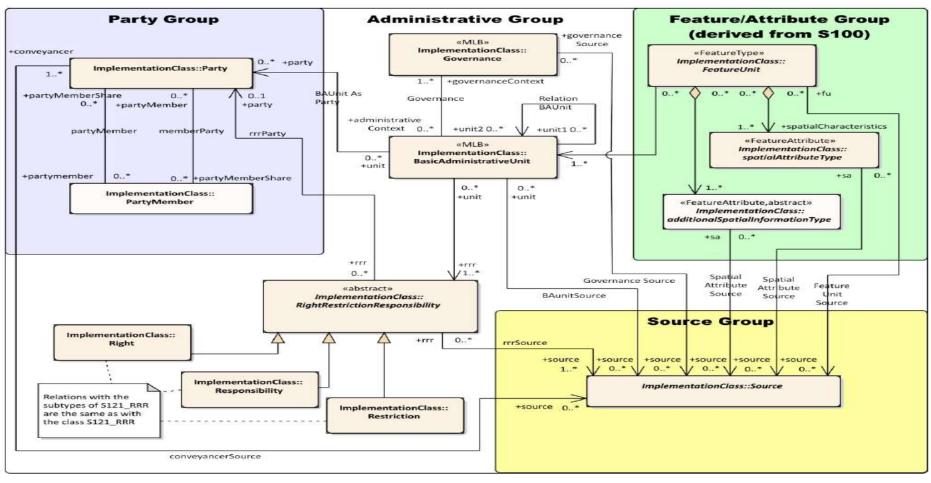






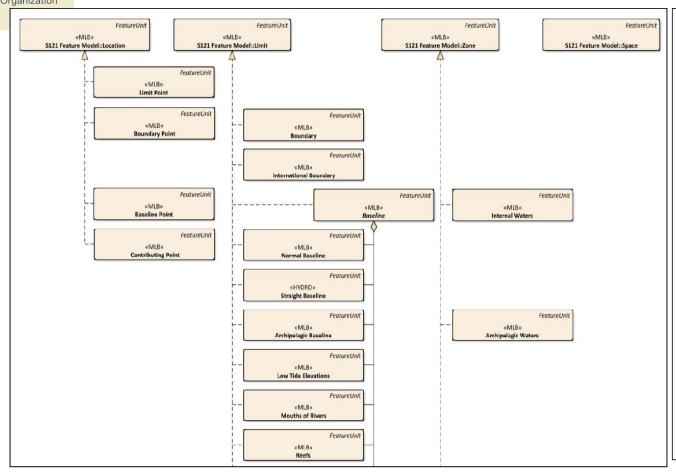
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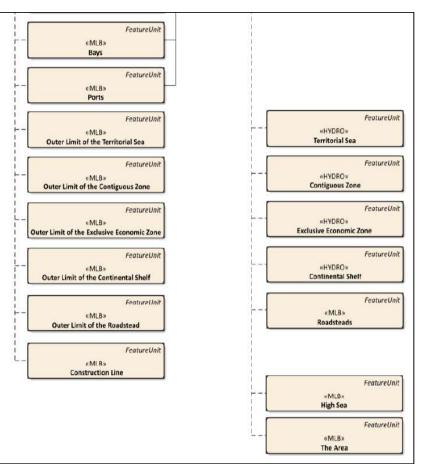
• S-121 MLB – Application schema





International Hydrographic Organization S-121 MLB – Application schema



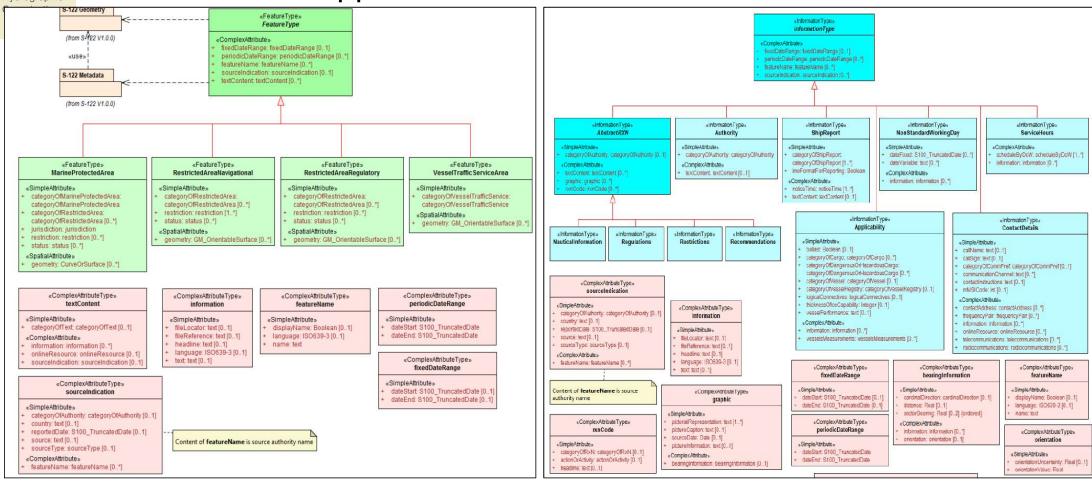




- S-122 Marine Protected Area
  - vector product specification that is primarily intended for encoding the extent and nature of Marine Protected Areas, for navigational purposes
  - Marine Protected Area (MPA) is a protected area whose boundaries include an area of the ocean
  - areas of the intertidal or sub-tidal terrain, together with their overlying water and associated flora, fauna, historical and cultural features
  - which have been reserved by law or other effective means to protect part or all of, the enclosed environment
  - MPAs may be established to protect fish species, rare habitat area, or entire ecosystems



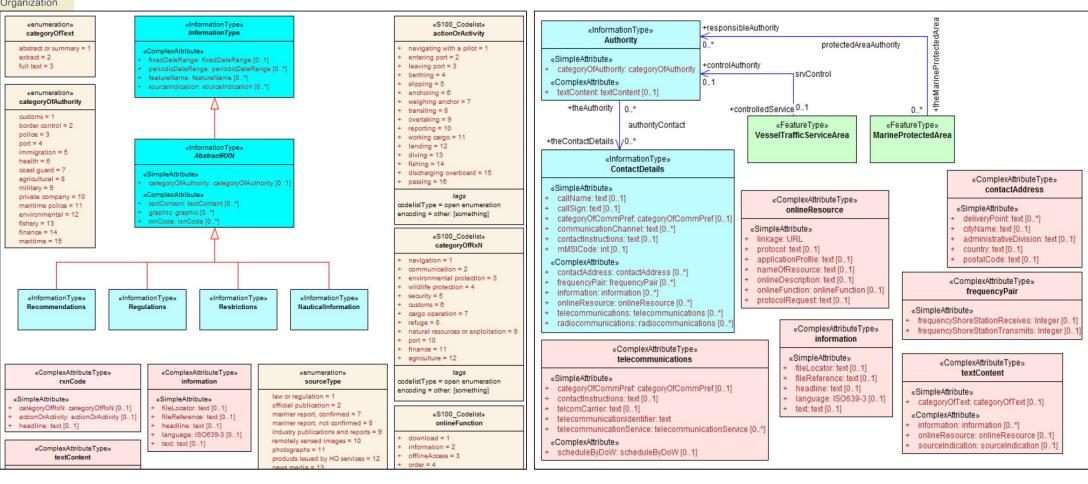
International Hydrographic • S-122 MPA – Application schema





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# • S-122 MPA – Application schema





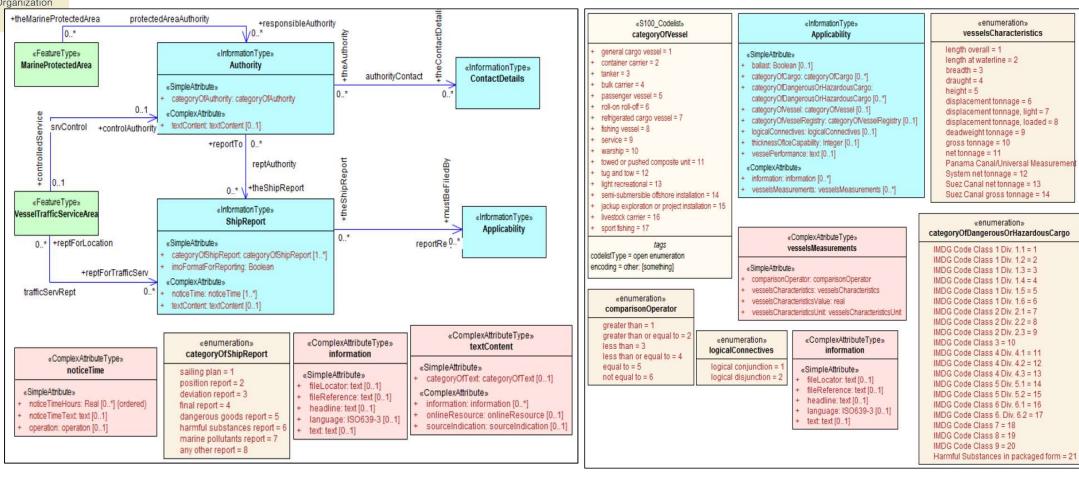
#### S-122 MPA – Application schema International Hydrographic Organization «InformationType» «InformationType» «ComplexAttributeType» «S100 Codelist» «ComplexAttributeType» «S100\_Codelist» ContactDetails categoryOfSchedule Authority scheduleByDoW contactAddress telecommunication Service «SimpleAttribute» voice = 1 + normal operation = 1 «SimpleAttribute» + callName: text [0..1] «SimpleAttribute» «SimpleAttribute» facsimile = 2 deliveryPoint: text [0..\*] closure = 2 + callSign: text [0..1] sms = 3 categoryOfAuthority: categoryOfAuthority categoryOfSchedule: categoryOfSchedule [0..1] cityName: text [0..1] + categoryOfCommPref: categoryOfCommPref [0..1] unmanned operation = 3 data = 4 administrativeDivision; text [0..1] + communicationChannel: text IO..\*1 «ComplexAttribute» «ComplexAttribute» streamedData = 5 country: text [0...1] + contactinstructions: text [0..1] textContent: textContent [0..1] tmintervalsByDoW: tmintervalsByDoW [1..\*] telex = 6 postalCode: text [0..1] + mMSICode: int [0..1] codelistType = open enumeration telegraph = 7 «ComplexAttribute» theAuthority\_srvHrs 0..\* encoding = other: [something] email = 8 contactAddress: contactAddress [0..\*] «ComplexAttributeType» «ComplexAttributeType» frequencyPair: frequencyPair [0..\*] radiocommunications authorityHours codelistType = open enumeration tmIntervalsByDoW + information: information [0..\*] «enumerati... encoding = other: [something] «enumeration» + onlineResource; onlineResource [0..\*] «SimpleAttribute» timeReference +theServiceHours \ /0..\* + telecommunications: telecommunications [0..\*] dayOfWeek categoryOfCommPref: categoryOfCommPref [0..1] «SimpleAttribute» + radiocommunications: radiocommunications [0... communicationChannel: text [0..\*] localTime = dayOfWeek: dayOfWeek [0..7] {ordered} «S100\_Codelist» «InformationType» monday = 1 contactinstructions: text [0..1] UTC = 2 onlineFunction dayOfWeeklsRange: boolean [0..1] tuesday = 2 ServiceHours «ComplexAttributeType» «ComplexAttribute» timeReference: timeReference download = 1 frequencyPair: frequencyPair [0..\*] wednesday = 3 «ComplexAttributeType» frequencyPair information = 2 timeOfDayStart: Time [0..\*] {ordered} tmintervalsBvDoW: tmintervalsBvDoW [0, \*] thursday = 4 information «ComplexAttribute» offlineAccess = 3 «SimpleAttribute» timeOfDayEnd: Time [0..\*] (ordered) friday = 5 scheduleByDoW: scheduleByDoW [1..\*] order = 4 frequencyShoreStationReceives: Integer [0..1] «ComplexAttributeType» «SimpleAttribute» saturday = 6 search = 5 information: information [0..\*] frequencyShoreStationTransmits: Integer [0..1 onlineResource fileLocator, text [0...1] completeMetadata = 6 sunday = 7 browseGraphic = 7 theServiceHours nsdy 0...\* fileReference: text [0..1] «SimpleAttribute» (Overlapping intervals bound to the same «ComplexAttributeType» upload = 8 + headline: text [0..1] linkage: URL telecommunications emailService = 9 exceptionalWorkday object are not permitted protocol: text [0..1] + language: ISO639-3 [0..1] browsing = 10 applicationProfile: text [0..1] text: text [0..1] fileAccess = 11 +partialWorkingDay\ /0..\* nameOfResource: text [0..1] categoryOfCommPref; categoryOfCommPref [0..1] onlineDescription: text [0..1] {count(dayOfWeek) + count(timeOfDayStart) + count (timeOfDayEnd) > 0 contactinstructions: text [0..1] onlineFunction: onlineFunction [0..1] «InformationType» codelistType = open enumeration telcomCarrier: text [0..1] «ComplexAttributeType» protocolRequest: text [0..1] encoding = other: [something] NonStandardWorkingDay telecommunicationIdentifier; text count(timeOfDayStart) = count(timeOfDayEnd) fixedDateRange telecommunicationService: telecommunicationService [0..\* «ComplexAttribute» «SimpleAttribute» «enumeration» count(dayOfWeek) > 1 => count(dayOfWeekRanges) = 1} «SimpleAttribute» + scheduleByDoW: scheduleByDoW [0..1] categoryOfCommPref dateFixed: \$100 TruncatedDate [0..\*] dateStart S100 TruncatedDate [0..1] dateVariable: text [0..\*] preferred calling = 1 dateEnd: S100\_TruncatedDate [0..1] alternate calling = 2 «ComplexAttribute» preferred working = 3

information: information [0..\*]

alternate working = 4



International Hydrographic Organization S-122 MPA – Application schema





### 1st Meeting of S-130PT Schema Sub-Group

# **Meeting Slides**

Requirements for sketching S-130 Application Schema

4 – 5 July 2022 / Monaco (Hybrid)



#### REVIEW THE INITIAL DESCRIPTION OF S-130 PS

International Hydrographic

#### Github – S-130 Initiate

#### Abstract

This document describes a product specification for the polygonal demarcation of global sea areas (PDGSA). It is a vector product specification that is primarily intended for encoding the extent of global sea areas using a system of unique numerical identifiers only. In this way, an authoritative dataset for limits of oceans and seas can be developed for use in contemporary geographic information and navigation systems. Its use is therefore not limited to navigational purposes only, but should also allow easy geospatial analysis by a broader audience. This product specification complies with the IHO S-100 Universal Hydrographic Data Model.

Comment (Lingzhi WU): Based on the S-130 ToRs and Proposal items 1.9.1-1.9.3 of A-2.

\*Comment (Sewoong): I would like to suggest for S-130 not to include the navigational purpose. If the S-130 has the navigational purpose, there will be more considerations like interoperability than if it were not, and it may be difficult to complete the S-130 development on a planned schedule.

\*Comment (Sewoong): Need to include descriptive texts introduced by Pro 1.9 at A2.

...

Description: A brief summary of the Product Specification summarizing: 1. the intended use, 2. the primary and secondary user, 3. the expected functionality



#### **DISCUSSION OF PROPOSED REQUIREMENTS**

International Hydrographic Organization Any requirements for drafting the S-130 application schema



#### DEFINE DATA TYPES, RELATIONSHIPS AND CONTRAINTS

International Hydrographic Organization

- Define Feature type
  - Polygonal Demarcations of Global Sea Areas
- Define Information type
  - Contact details
- Define Attribute type
  - Numerical identifiers
  - Spatial attributes
- Constraints
- Multiplicities



## **Meeting Slides**

S-130 Application Schema



#### **DRAFT APPLICATION SCHEMA**

International Hydrographic Organization

- Draft Application Schema based on discussion
- Review the Draft S-130 Application Schema
- Discuss a way forward



## **Meeting Slides**

S-100 GI Registry



#### S-100 GI REGISTRY

International Hydrographic Organization

- Identifying newly introduced Feature data
- Process to register proposed new feature data in the GI registry (who and when)
- Any issues for the Registry Activities



## **Meeting Slides**

Relationship between Application Schema and others



# IHO

## RELATIONSHIP BETWEEN APPLICATION SCHEMA AND OTHERS

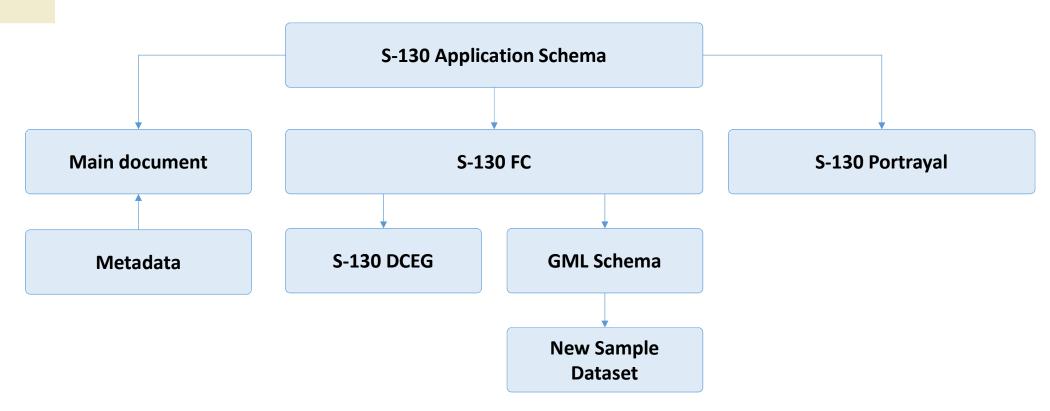
Hydrographic Organization

- S-130 Feature Catalogue
- S-130 Portrayal Catalogue
- S-130 GML Schema
- S-130 DCEG (Data Classification and Encoding Guide)
- Metadata part
- Any considerations for S-100 Ed. 5.0.0



## RELATIONSHIP BETWEEN APPLICATION SCHEMA AND OTHERS

International Hydrographic Organization Process to develop S-130 packages





## **Meeting Slides**

**Any other Business** 



## **IHO ANY OTHER BUSINESS**

International Hydrographic Organization

Next meeting