

# International Hydrographic Organization



## S-100 Geospatial Information Registry Brief





# IHO Geospatial Information (GI) Registry

## □ Registry

- *A registry is the information system on which registers are maintained.*

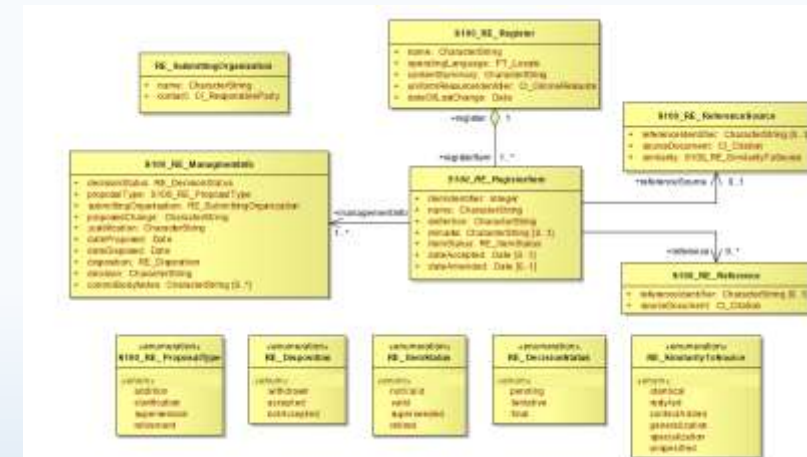
➤ **Registry** = collection of **registers**



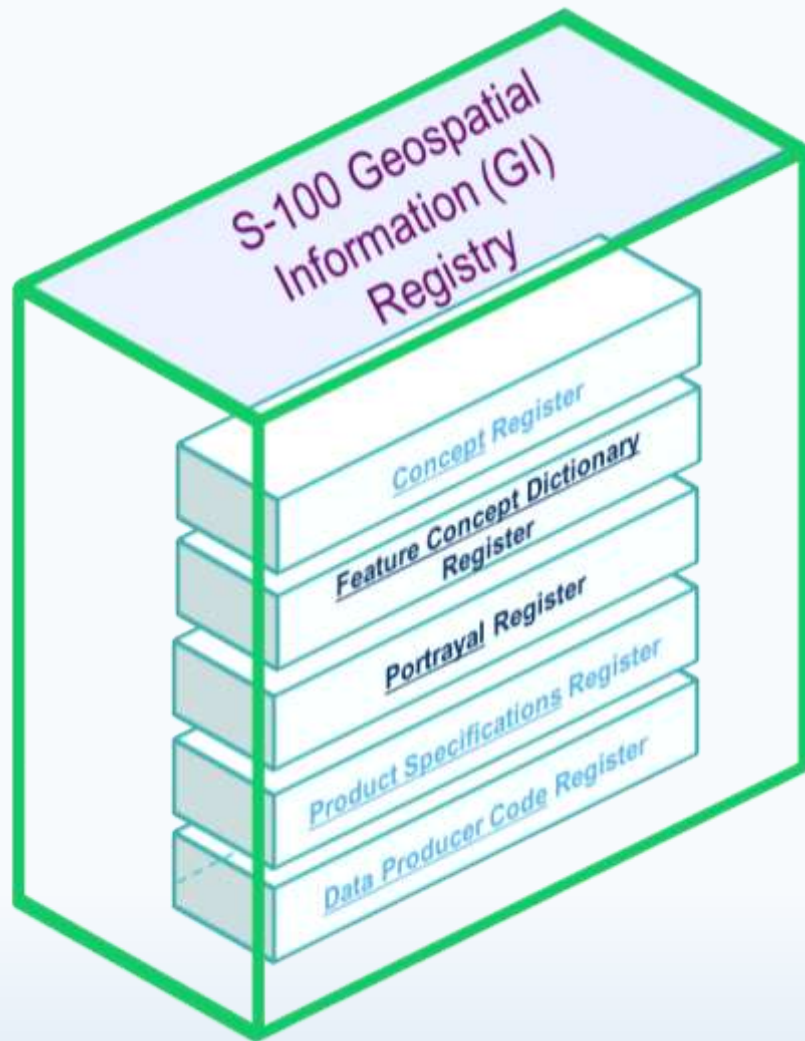
## □ Registers

- *A register is simply a managed list. It is easier to maintain than a fixed document, because new items can be added as needed to the register, and existing items in the register can be clarified, superseded or retired.*

➤ **Register** = collection of **tables**



# IHO GI Registry - Registers



## Feature Concept Dictionary (FCD) Register

- Register containing definitions on how to digitally describe and encode any piece of information

- a buoy
- a sounding
- a ship position
- a radio service
- ....

Features				Management Details	
Item Type :	Complex Attribute			Proposal Type :	addition
Proposal Type :	Unspecified			Submitting Organisation :	unspecified
Domain :	[M] Hydro			Proposed Change :	From 5.00.07
AlphaCode :	Unspecified			Justification :	From 5.00.07
Complex Attribute Name :	Feature Name			Proposed :	2014-02-17
Alias :	Unspecified			Accepted :	2014-02-17
CancelCode :	Not applicable			Amended :	-
				Successor :	-
				Predecessor :	-

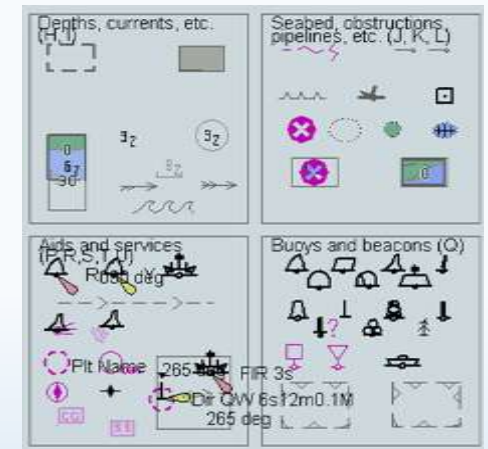
Item	Attributes	Location	Uppercase	Confidential
0	[M] Display Name	0	1	False
1	[M] Language	0	1	False
2	[M] Name	0	1	False

**Definition :** The complex attribute provides the name of an entry, defines the national language of the name, and provides the option to display the name at various system display settings.

## Portrayal Register

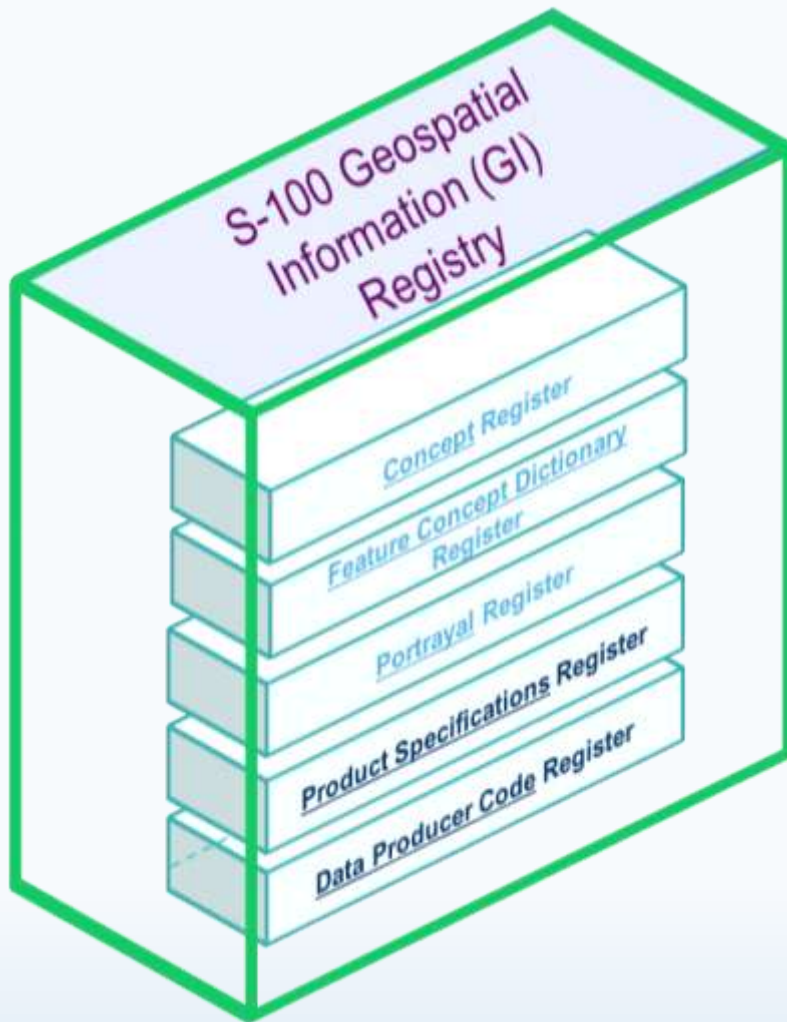
- Register containing the elements of portrayal schemes such as

- point and pattern symbols
- complex line styles
- colour tokens





# IHO GI Registry - Registers



## Product Specifications Register

- **Repository for published versions of S-100 product specifications or data exchange standards**
  - **ENC product specification**
  - **real-time tidal height exchange standard**
  - **sea ice product specification**
  - **ship reporting exchange standard**
  - **VTMS route definition product specification**
  - **IALA, WMO, IEC, .....**
  - **AML**

S-101 ENC  
S-102 Bathymetry Surface  
S-112 Dynamic Water Level  
S-121 Maritime Boundaries  
.....  
S-201 AtoN Information  
S-210 Inter-VTS Exchange  
.....  
S-401 Inland ENC  
S-411 Ice Information  
S-412 Weather Overlay  
.....

## Data Producer Code Register

- **Register containing the list of codes identifying the official producers of a particular data product**

**S-62**



# Register Domains

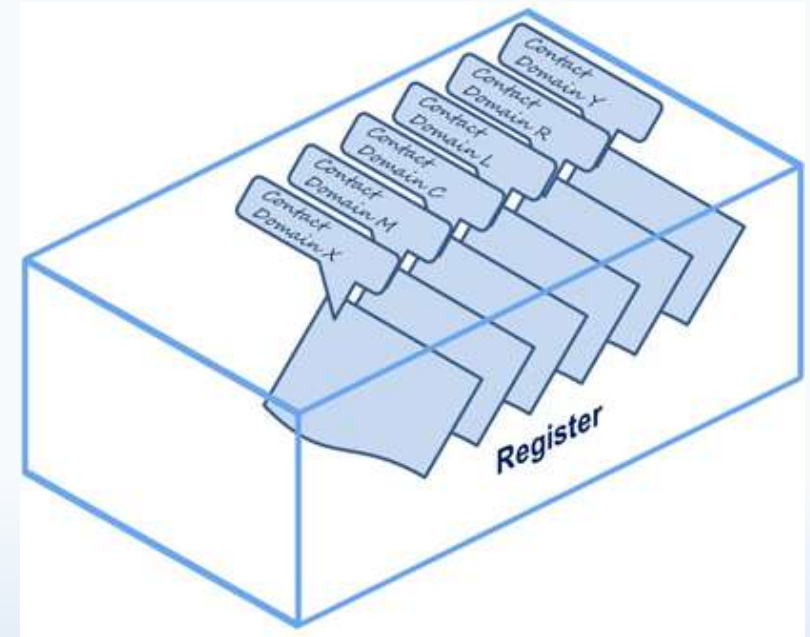
- **Domains**

*Within the Feature Concept and the Metadata Registers each entry is assigned to a recognized Domain. The purpose of designating domains and a related Domain Control Body is to ensure that the key stakeholders (as represented by the domains) are consulted in any subsequent proposals to add or amend items contained in a Register.*

**Domains of the Feature Concept Dictionary Register:**

- IHO Hydrographic – (IHO Working Groups (S-100WG, NIPWG, S-101PT, TWCWG, WWNWS Sub-WG, ....))
- Inland ENC's – (IEHG)
- Sea Ice – (WMO)
- Weather – (WMO)
- IALA AtoNs – (IALA)
- IALA VTS – (IALA)
- IALA AIS – (IALA)
- Under Keel Clearance Management – (UKCM Project Team)
- IEC – (IEC)
- UML – (??)

Note: Additional domains can be added to the Register as required



# Register Domains

- Establishment of Domains
  - Any recognized organization or the Register Manager may propose a new Domain if there is a need or new requirement.
    - Application for a new Domain is submitted to the IHO Hydrographic Services and Standards Committee (HSSC).
  - IHO has an application form on-line for the establishment of roles within a Domain, with the mandatory fields for the information required for prospective members.
    - Each Domain should assign at least one representative to act as Submitting Organization and Domain Control Body representatives.
  - The Register Manager reviews all and endorses the proposals, and consults with the Executive Control Body as required.

HOME

MEMBERSHIP

REGISTRATION

MEMORIAL

## Member

Your Email applied with an asterisk(\*) are mandatory and need to filled in.

\*Name:

\*Surname (FIO):

\*Surname (Patronymic):

\*TEL:   Please enter at least 3 character with a combination of numeric and lower case

\*E-mail:  (Enter a combination of 6 to 36 numbers and lower case)

\*No similar Password:

\*Repeat Password:

\*Surname:

\*Organization:

\*Address (line 1):

Address (line 2):

\*City:

\*Zip/Postal Code:

\*Country:

\*Street:

\*Back:



# Roles and Responsibilities

S-99 describes the expectations for the following Roles:

- Registry Owner – IHO owns the IHO GI Registry
- Registry Manager – IHO Secretariat appointed manager responsible for the day-to-day operation of the Registry
- Register Owner – IHO owns all of the registers
- Register Manager – responsible for the administration of a register
- Register Control Body
  - Domain Control Body (DCB) – assess and endorse proposals
  - Executive Control Body (ECB) – oversees the DCB operations and adjudicates disputes.
- Representatives of Submitting Organizations – nominated spokesperson for their submitting Organization.

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



Operational Procedures for the Organization  
and Management of the  
S-100 Geospatial Information Registry

Edition 1.1.0 – November 2012

IHO Publication S-99

Published by the  
International Hydrographic Bureau  
MONACO





# Administration of the Registers

- The FCD and Portrayal Registers can have the following proposal submission types:
  - Addition of new registered items
  - Clarification of registered items
  - Supersession of registered items
  - Retirement of registered items

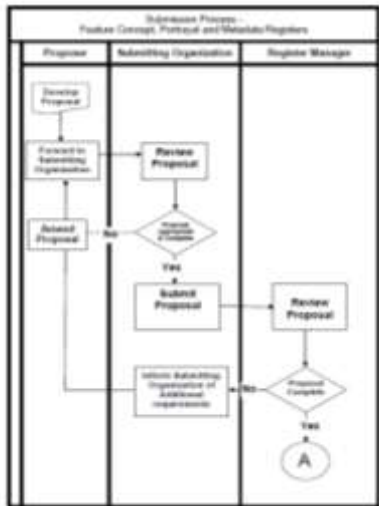


Figure 3 – Processing of Proposals

**Proposal : FCD**

Item Type :

Proposal Type :

Domain :

**IHO Geospatial Information Registry**

HOME INTRODUCTION IHO REGISTERS PROPOSAL

FCD Portrayal

**Proposal : FCD**

Select Category

Item Type :

Proposal Type :

Domain :

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IHOA Acknowledgements



# Product Specification Register

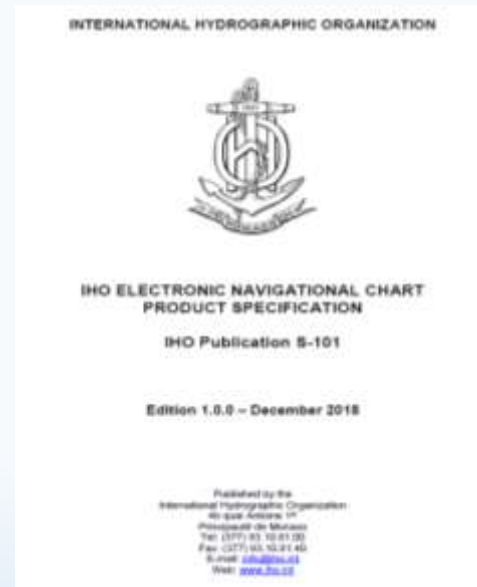
- A list of IHO Published and adopted specifications:

- S-101\* - ENC Product Specification: Edition 1.0.0 – December 2018
- S-102 - Bathymetric Surface Product Specification: Edition 1.0.0 - April 2012
- S-111\* - Surface Currents Product Specification: Edition 1.0.0 – December 2018
- S-122 - Marine Protected Areas Product Specification: Edition 1.0.0 – January 2019
- S-123 - Marine Radio Services Product Specification: Edition 1.0.0 – January 2019

\* Edition 1.0.0 published for implementation and testing purposes only.

- IHO Product Spec's under development:

- S-97 - Guidance for Product Specification Developers
- S-98 - Interoperability Specification for ECDIS
- S-104 - Tidal Information for Surface Navigation
- S-121 - Maritime Limits and Boundaries
- S-124 - Navigational Warnings
- S-125 - Navigational Services
- S-126 - Physical Environment
- S-127 - Traffic Management
- S-128 - Catalogues of Nautical Products
- S-129 - Under Keel Clearance Management

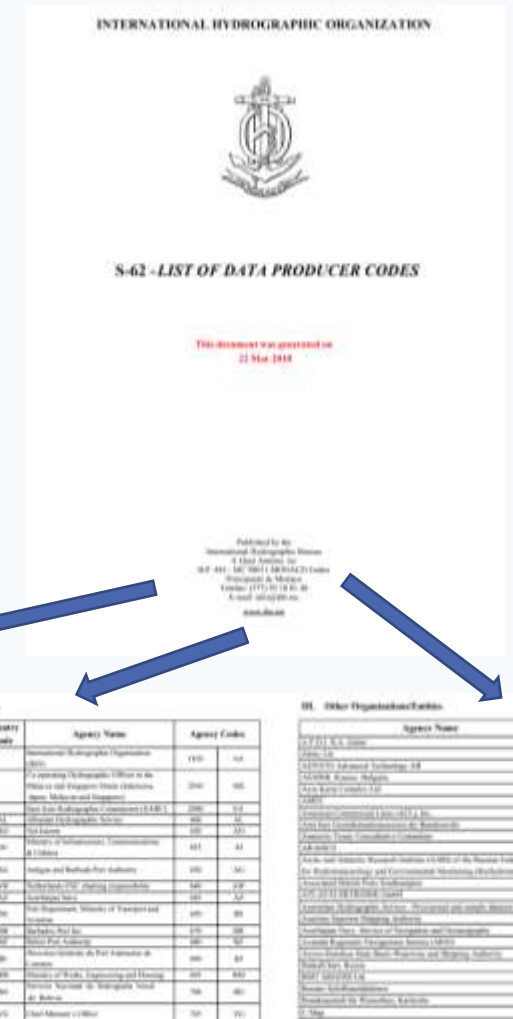


# Data Producer Code Register

The Registry web interface has two distinct lists for data Producer Codes:

- Government Authorities –allocated to Governments, authorised Hydrographic Offices or relevant government institutions.
- Others – all other accredited organizations and entities.

Conforms to IHO Publication S-62.



# Not just for the IHO ....

- Non-IHO Product Specifications

- IALA S-201 - Aids to Navigation Information
- IALA S-210 - Inter-VTS Exchange Format
- IALA S-230 - Application Specific Messages
- IALA S-240 - DGNSS Station Almanac
- IALA S-245 - eLoran ASF Data
- IALA S-246 - eLoran Station Almanac
- IEHG S-401 - Inland ENC
- IEHG S-402 - Bathymetric Inland ENC
- WMO JCOMM S-401 - Ice Information
- WMO JCOMM S-402 - Weather Overlay



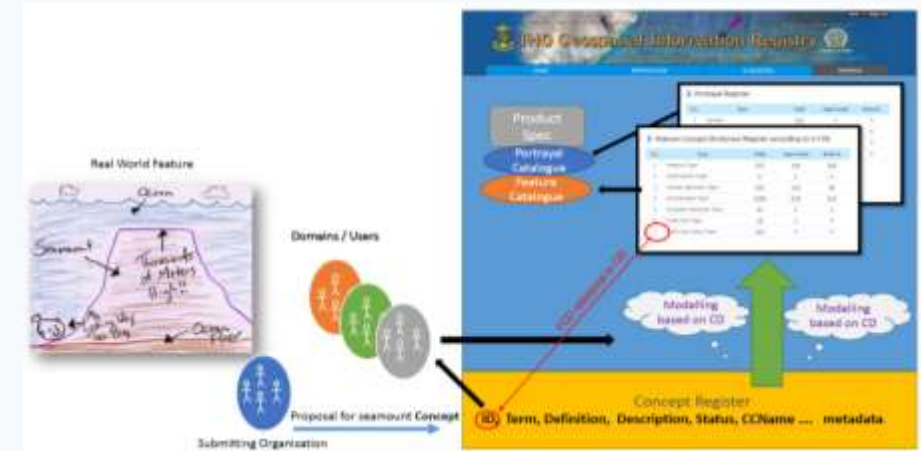
- GI Registry: IALA, IEC, IEHG & WMO JCOMM currently involved in maintaining domains in the FCD Register





# S-100 Howto

- Identify the requirement
  - What information does one want to exchange in a digital, standardised way ?
    - “*enter once – use many*” applications

[illegible]

- Are the definitions that one needs already in the S-100 Registry?
  - Yes => Go ahead
    - develop own Product Specification / Exchange Standard



# S-100 Howto

- No? (Definitions not in the registry):
  - Find or become a submitting organization to:
    - revise an existing entry
    - propose something new
  - Then develop own Product Specification / Exchange Standard

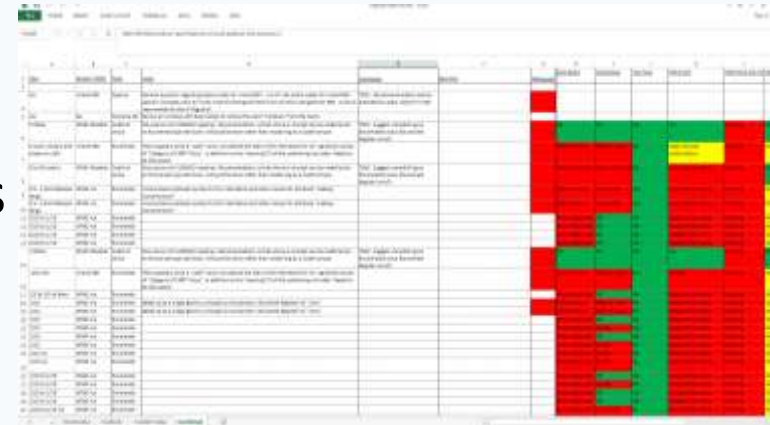
A screenshot of the IHO/HSSC Member registration form. The form is titled 'Member' and includes a sub-header 'Submitting Organization'. It contains various input fields for organization details, including 'Organization Name', 'Address Line 1', 'Address Line 2', 'City', 'Country', 'Postal Code', 'Phone', and 'Email'. There are also checkboxes for 'I am a member of the IHO' and 'I am a member of the HSSC'. A 'Submit' button is at the bottom right.

- IHO/HSSC will not create or control definitions or standards outside its scope
  - But it can help and advise if asked ...

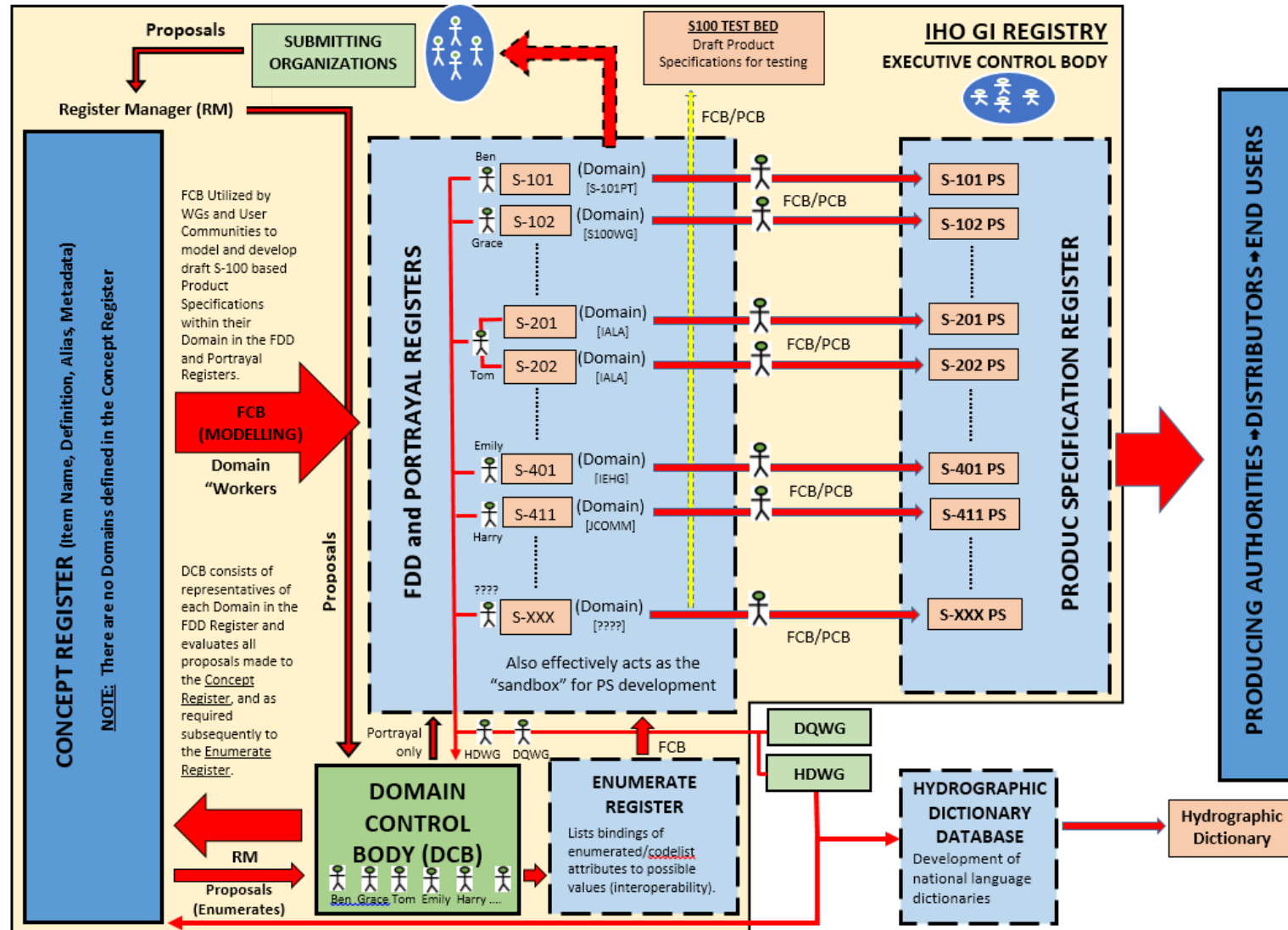


# Ongoing Development

- Implement a “true” Concept Register
  - Subsequent possible restructure of the FCD Register
  - Introduction of “Enumerate” and “Codelist” Registers
- Review current content of the FCD Register
  - Likely impact on PS in development and published
- Draft Guidelines and Conventions document for Register content and Registry users
  - Proposers, Control Bodies, PS developers
- Connection and establish relationship with Hydrographic Dictionary database
- Review of S-99



# Ongoing Development





# S-100 References



- S-100 - Universal Hydrographic Data Model

Edition 4.0.0 – December 2018

- S-99 - Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry

Edition 1.1.0 - November 2012

- S-100 on-line GI Registry:  
<http://registry.iho.int/>
- S-100 Web Site:  
<http://s100.iho.int/S100/>



# Questions?

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For more information: <https://www.iho.int>  
IHO Secretariat Contact: [jeff.wootton@iho.int](mailto:jeff.wootton@iho.int)

