

# International Hydrographic Organization



## S-100 Geospatial Information Registry Brief



# Activities of the IHO GI Registry

- Statistics:

- Total number of items = 6886**

- Features (Geo/Meta) = 969**

- Information = 22**

- Simple Attributes = 1020**

- Enumerates = 4478**

- Complex Attributes = 191**

- Codelists = 21**

- Codelist Values = 185**

- Portrayal Items = 664**

Feature Concept Dictionary Register according to S-100

No.	Type	Valid	Superseded	Retired
1	Feature Type	334	308	288
2	Information Type	20	1	0
3	Simple Attribute Type	580	279	158
4	Enumerated Type	3396	751	325
5	Complex Attribute Type	85	66	40
6	Code List Type	9	1	11
7	Code List Value Type	84	2	99

Portrayal Register

No.	Type	Valid	Superseded	Retired
1	Symbol	582	0	0
2	Line Style	55	0	0
3	Area Fill	26	0	0
4	Font	4	0	0

FCD Register

- FCD Register:

- Valid items = **4557**

- Superseded items = **1408**

- Retired items = **921**

- Principle activity – align Register content with Data Models for S-100 based Product Specifications



# Activities of the IHO GI Registry

- “Beta” Registry:
  - Portrayal, Producer Code and Product Specification Registers now “live”
  - All links on IHO web site to published IHO S-100 based PSs now point to the Product Specification Register



S-100	IHO International Hydrographic Data Model (December 2016)	Download
S-100 web site / site web S-100		
IHO S-100 based Product Specifications / Les spécifications de produit de l'IHO à base S-100		
• S-101	ENC Product Specification, Edition 1.0.0 (December 2018 - English)	Download
• S-102	Bathymetric Surface Product Specification, Edition 1.0.0 (April 2012 - English)	Download
• S-111	Surface Currents Product Specification, Edition 1.0.0 (December 2018 - English)	Download
• S-122	Marine Protected Areas, Edition 1.0.0 (January 2019 - English)	Download
• S-123	Marine Radio Services, Edition 1.0.0 (January 2019 - English)	Download
A complete list of all S-100 based product specifications, including Product Specifications in development and published, is maintained here.		
Please note: S-101 and S-111 Edition 1.0.0 Product Specifications are released for implementation and testing purposes only.		
Remarque: Les spécifications de produit S-101 et S-111 Edition 1.0.0 sont publiées à des fins de test et de mise en œuvre.		

## S-101 Electronic Navigational Chart (ENC)

**Scope:** The S-101 ENC Product Specification (PS) specifies the content, structure, data encoding and metadata required for compiling S-101 ENC data. The Specification also includes the portrayal requirements for use within an ECDIS. The S-101 PS will supersede the S-07 ENC PS.

**S-101 Edition 1.0.0 (December 2018) (English)**

S-101 Edition 1.0.0 has been released for experimentation and testing purposes. The S-101 Edition 1.0.0 Feature and Portrayal Catalogues included are currently being refined and are expected to be completed in February 2019.

**Additional Resources:** S-101 Impact Study (2013)

Type	Description/Link	Editor/Date	Content
✓	S-07 to S-101 Converter	Version 1.0.0.0 Dec 2018	In development
📄	S-07 Removal and Renamed Items	December 2018	
📄	S-101 New Added Headings	April 2019	

**Responsible body:** IHO/WG4/S-100WG4 (S-101 Project Team of the S-100 Working Group)



# GI Registry Workshop - Aims

- Understanding current structure of the IHO GI Registry
- Understanding current structure of the “new” IHO GI Registry
- Discuss possible improvements to the “new” Registry structure
- Understanding the GI Registry Interface
- Advance development of “conventions and guidelines” for the IHO GI Registry
  - Rationalization of Registry content
  - Discuss (and agree?) on possible new data modelling concepts for the Registry (for example utilization of concept specializations (URNs, Namespaces))
- Introduction to Registry associated tools
  - Feature Catalogue Builder
  - Portrayal Catalogue Builder



# GI Registry Workshop - Discussions

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- Domains: How many is too many?
  - Need to define what a “Domain” is
- Roles:
  - RM assessment process – authentication of applicants
- Domain Control Body – importance
  - Membership – having the “right people” – high level guidance in the Conventions and Guidelines
- Structure:
  - “Codelist Register” – rework of this concept required – develop for submission at TSM Sept 2019



# GI Registry Workshop - Discussions

- Structure:
  - Discussion on rationale behind the introduction of the Concept Register and relationship to the DD Register
    - Register once – use many times



# GI Registry Workshop - Discussions

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- Content:
  - Initially a rigid structure for content – to be further evaluated as rationalization of data content takes place for migration to the “Beta” Registry Concept Register.
  - Can superseded items continued to be used when a New Edition of a Product Specification is developed?
  - Portrayal Register: Conflicts in ECDIS – evaluation process for new proposed symbols – needs a knowledge of interoperable products (ECDIS, back of bridge, ....)
    - For ECDIS – what products are intended to be used??
  - DD Register: Assignment of different Types to the same concept within a single Product Specification?



# GI Registry Workshop - Discussions

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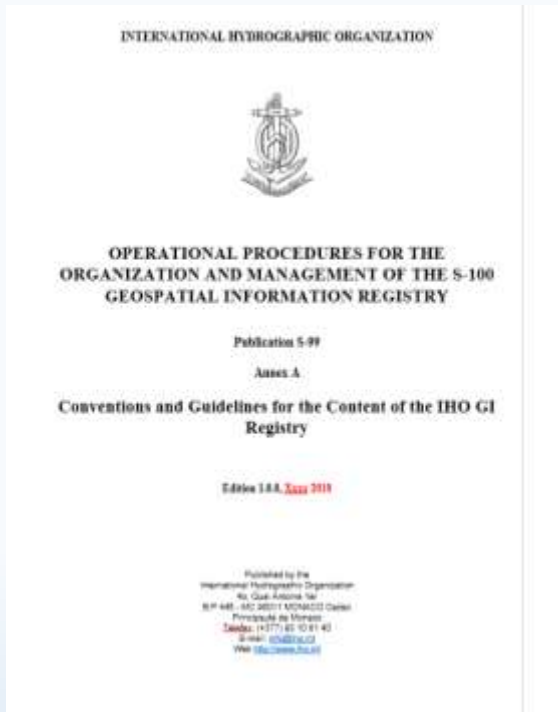
- Content:
  - Item metadata:
    - Alpha Code: Retain for historical purposes, however should not be able to be populated for proposals
    - Use Type: Not required at the Concept Register level but required at the DD Register level
    - INT1 and S-4 references: Only relevant for a relatively small number of items. Retain? Implement at DD Register (Domain) level only?
    - Change “Distinguishing Features” to “Distinctions”
  - Mechanism to query the status of registered items used in Product Specifications
    - Tool to check the validity of a Feature/Portrayal Catalogue against the contents of the Registry





# GI Registry Workshop - Discussions

- S-99 Annex A:
  - Critical requirement for rationalization of current FCD Register content




# GI Registry Workshop - Discussions

- S-99 Annex A:
  - Agreement of the Workshop of fundamental conventions
    - Language (English)
    - Syntax (allowable characters, upper case, name structure, ....)
    - camelCase convention for Concept Register
    - Consistency between item name and camelCase
    - Naming for “coded” list values
    - Use of Definition Source
    - Content of Remarks

concept should be able to be used in a Product Specification using the registered Item Name, without a requirement to propose an alternate “secondary” name (or alias – see clause X.X).

- The name must be concise. Every effort must be taken to avoid being too descriptive when selecting an item name. This supports the intended generic nature of the name as described in the above bullet.
- Where a concept can be considered to be a “sub-classification” of a particular “theme”, the term identifying the “theme” should be the first part of the Item Name. For instance, “buoys” and “beacons” have been used as “themes” in the Concept Register, resulting in all registered items that are part of these “themes” beginning with the word “Buoy” (for example Buoy Cardinal) or “Beacon” (for example Beacon Isolated Danger).
- Similar to the above, descriptive terms (for instance “direction of”, “size of”) should not be used at the start of an item name.
- Only alphanumeric characters (A-Z; a-z; 0-9) and the special characters and “ ” are allowable for Concept Register item names. All other characters are prohibited. [What about accented letters? Lexical level??]
- All names must have each word included in the name commencing with an upper case character A-Z. [What about prepositions – “of” etc? Is there an ISO convention for this?]
- Unless generally internationally accepted as such (for instance, if a non-English term is the internationally recognized term used, or the term is an internationally recognized name in a national language), a non-English term cannot be used as the Item Name for a concept.
- In relation to the above point, however, the units of measure for the “physical characteristic” must not be included in the item name. This is to allow application across Domains where different units of measurement may be used. The units of measurement should either be included as part of the metadata for the dataset or encoded in the Feature Catalogue (that is, specified at the Product Specification level) or modelled as an attribute bound to an application of the concept in the modelling (that is at the Feature Data Dictionary level).
- “Category of” and “Value of”: Need to define the conventions for naming these concepts in the Concept Register – either Category of /Value of or Category/ Value.
- Note inconsistencies in the FCD where in some cases the number is used and in others the spelling of the number is used. Requires a convention.
- Use of acronyms in names? There should not be a combination of both acronym and full term in an Item Name. The best known term should be used as the Item name with the alternative listed as an Alias. For instance: Item Name = LANBY; Alias = Large Automatic Navigational Buoy.



# GI Registry Workshop - Discussions

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- Documentation:

- Review S-100 Part 2 (including Parts 2a and 2b)
  - S-99 (S-100WG2 Action 25)
  - S-99 Annex A
- } GIRegPT



# GIRegPT - Members

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Jeff Wootton (IHO Sec – Lead)

Al Armstrong (NGA and S-101PT)

Yong Baek (KHOA and Registry Development Team)

Hillary Fort (NOAA and WMO (Weather))

Denise LaDue (USACE and IEHG)

Raphael Malyankar (Portolan Sciences)

Eivind Mong (Canadian Coast Guard, NIPWG, ....)

Briana Sullivan (UNH and NIPWG)



# Action Requested of S-100WG

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- Note this Report
- Endorse the approval of the fundamental Registry content conventions so as to allow for the commencement of FCD Register content rationalization.



# Questions?

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