IALA

IALA GUIDELINE

G1087

PROCEDURES FOR THE MANAGEMENT OF THE IALA DOMAIN UNDER THE IHO GI REGISTRY

Edition 3.0

June 2017

DOCUMENT HISTORY

Date	Details	Approval
7 December 2012	1st issue	Council session 54
13 December 2013	As a result of suggested changes from the workshop on producing an IALA S-100 Product Specification, June 2013	Council session 56
16 June 2017	Changes in Chapters 1, 4 and 6 to reflect developments in terminology and approach. Amended procedures for submission of product specifications. Remove duplication with Guideline 1106 Whole document	Council session 64

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1   INTRODUCTION

IALA has established a Domain and Registry in accordance with IHO Standards S-99 and S-100 to provide a repository for product specifications relating to IALA's work, for example on Aids to Navigation and VTS. The purpose of these specifications is to provide data exchange standards ensuring interoperability of systems that users of information onboard ships and ashore experience.

This document describes the roles, responsibilities and procedures for IALA as a Submitting Organisation under the International Hydrographic Organisation (IHO) Registry, based on IHO Standards S-100 and S-99, for managing and operating the associated IALA domain.

This Guideline explains the concepts of registries and domains, the responsibility of IHO as manager of the IHO Registry and the role of IALA as a domain owner and manager.

The IALA roles and responsibilities as a submitting organisation are set out together with the process for managing submissions.

Developers wishing to write an IALA S-200 series Product Specification (PS) must refer to IALA Guideline 1106 on Producing an IALA S-200 Series Product Specification [4].

2   BACKGROUND

The IHO S-100 Universal Hydrographic Data Model was published as an international standard in 2010. One objective of S-100 is providing an ISO-conformant registry, managed by the IHO, containing registers such as feature concept dictionaries and product feature catalogues that are flexible and capable of managed expansion. A further objective is to provide separate registers for different user communities. The operational procedures for the organisation and management of the IHO Registry are set out in IHO Publication S-99.

There is a Memorandum of Understanding between the IHO and IALA which was signed in 2001 and covers work on the IHO Registry, which is governed by S-99. Within the IHO Registry, external Submitting Organisations may use 'Supplementary Registers'. The S-99 and S-100 standards are maintained and developed by IHO. There are two aspects to IALA participation. The first is to participate as a Submitting Organisation. The second is as a domain owner.

At its 52nd session, the IALA Council approved registration of IALA at IHO as a Domain Owner for Aids to Navigation (AtoN), vessel Traffic Services (VTS) and for other data areas under IALA remit, and as a Submitting Organisation, in accordance with the IHO / IALA Memorandum of Understanding (MoU).

Because of IALA's breadth of expertise in AtoN, the IALA domain within the IHO Registry is a logical extensions of the Registry beyond hydrographical applications. The IHO continues to handle operation of the Registry; the responsibility for the management of the IALA domain rests with IALA. Other Submitting Organisations will be able to propose amendments to existing Registry entries.

IALA will serve as a Submitting Organisation to support its requirements for product specifications.

A 'product' is in most cases understood as a technical or operational data service provided to the mariners and to the maritime community at large.

In some cases, the product may be associated with a piece of equipment, a system or its software.

In others such as in Maritime Service Portfolio's, there is an integrated set of 'products' construed as services in a given sea area, waterway, or port, as appropriate.

3 SCOPE

The scope of this Guideline is to advise IALA about the interaction between IALA and IHO and its Registry. The governing documentation for this interaction is the IHO S-100 standard and the associated procedures in part 2 of S-100 and S-99. The IALA operational procedures addressed in this Guideline are similar to the Registry procedures outlined in IHO standards. IALA has developed these procedures solely to manage the IALA S-200 domain and its role as a Submitting Organisation within the context of the Association. Should there be any conflict between this Guideline and IHO standard S-100 or S-99, IALA should defer to the IHO documentation.

It is important to note the difference between the Registry, (as a whole), the different Registers, the IALA domain, the domains to which IALA contributes and the individual entries.

4 THE IALA DOMAIN

Within the Feature Concept Dictionary Register, the Portrayal Register and the Metadata Register, each entry is assigned to a recognised domain. The purpose of designating domains and a related Domain Control Body is to ensure that the key stakeholders within the IALA community (as represented by the domains) are consulted in any subsequent proposals to adjust items contained in a Register.
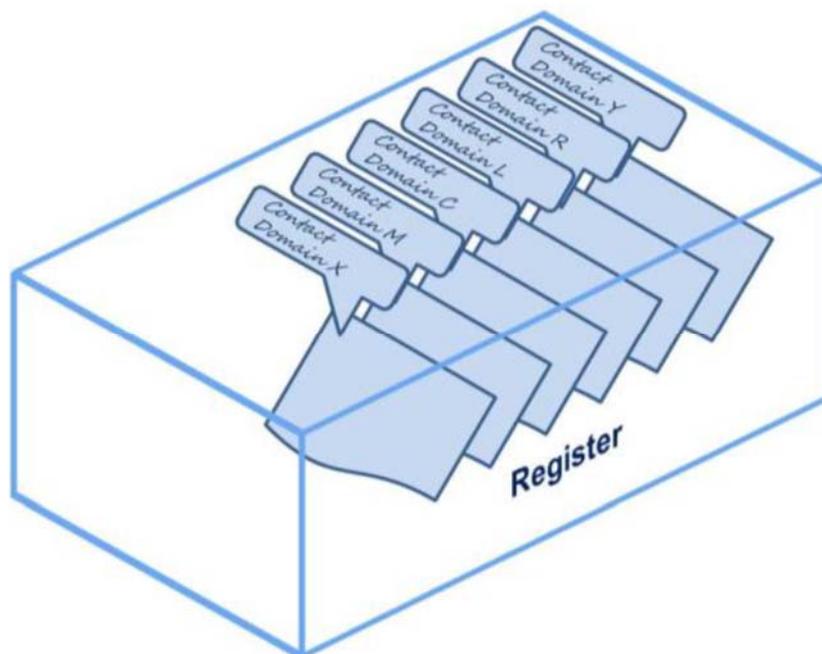
Figure 1   Domain with Registers

The list of Registers is given in the following sections.

4.1 PRODUCT SPECIFICATION REGISTER

The Product Specification Register contains a list of product specifications developed and maintained by a recognised organisation in this case IALA. This register is based on the principle of *organisational* responsibility, i.e. a domain is assigned to a specific recognised organisation. In the case of IALA, the scope of IALA is so large that it is advisable to subdivide one organisational domain into several fields that reflect the IALA's different areas of competence. For example, amongst others, there will be an IALA AtoN field and an IALA VTS field.

An important part of most product specifications is a *feature catalogue*, which is normally produced as a result of modelling the product. It uses item types, such as feature classes and attributes, from the Feature Concept Dictionary Register, and documents the binding between them. In addition, constraints, units of measurement and format description of attributes, can be specified.

The numbering scheme for the IALA Registry, S-200-299, has been agreed with IHO, which is the body to which IALA product Specifications are submitted for final approval, as shown in Figure 3.

4.2   PORTRAYAL REGISTER

Portrayal relates to how the data is presented to the user of the product.

The portrayal of data is independent of the data but closely related to the data. There may be many different portrayals for the same data.

The Portrayal Register contains both symbols for portraying features and general rules that invoke the symbols under certain conditions. More specific rules can also be given in a product specification.

The construction of the Portrayal Register follows the same principles as the other Registers but should be harmonised to other on board systems especially ECDIS and to VTS portrayal ashore

4.3   FEATURE CONCEPT DICTIONARY REGISTER

The Feature Concept Dictionary Register hosts all feature concept dictionaries, within the appropriate domains of the Feature Concept Dictionary Register. (See Figure 1).

A *feature concept dictionary* specifies independent sets of definitions of features, attributes, enumerated values and information types that may be used to describe relevant maritime information. A feature concept dictionary may be used to develop a feature catalogue. Unlike a feature catalogue, a feature concept dictionary does not make associations or bind attributes to features.

4.4   METADATA REGISTER

Metadata is structured information that describes, explains, locates or otherwise makes it easier to retrieve, use or manage an information resource. Metadata is often called data about data or information about information.

The Metadata Register contains the metadata elements from the ISO19115 standard. It will also contain additional metadata elements required for an IALA product specification.

4.5   PRODUCER CODE REGISTER

This topic is currently beyond the scope of IALA's activities but this decision may be reconsidered in the future.

5   IALA AS DOMAIN OWNER

Recognising that the IALA domain comprises several functional fields (e.g. VTS, AtoN, e-Nav Comms, Shore technical Infrastructure) in the Feature Concept Dictionary, Portrayal, Metadata and Product Specification Registers, the IALA domain will be as indicated below (subject to periodic updating).

Table 1   The IALA Domain

Product Specification Register	IALA AtoN field (S-201 to S-209)
	IALA VTS field (S-210 to S-229)
	IALA e-Nav Comms field (S-230-239)
	IALA Shore technical Infrastructure field (S-240-249)
Portrayal Register	AtoN field
	VTS field
	e-Nav Comms field
	Shore technical Infrastructure field
Feature Concept Dictionary Register	AtoN field
	VTS field
	e-Nav Comms field
	Shore technical Infrastructure field
Metadata Register	AtoN field
	VTS field
	e-Nav Comms field
	Shore technical Infrastructure field

6   MANAGEMENT OF THE IALA DOMAIN

6.1   THE IHO REGISTRY – IALA AND DOMAIN MANAGEMENT RELATIONSHIP

The purpose of this section is to provide information regarding the interaction between the IALA Domain, the International Hydrographic Organisation (IHO), and the Registry. It will also describe the roles, responsibilities and procedures for IALA as a Submitting Organisation to the IHO Registry, as described by the governing documentation of IHO Standards S-100 and S-99. The overall context of IALA's involvement in the IHO Registry is considered, in particular the move towards a Common Maritime Data Structure (CMDS) and the proposed IMO/IHO Harmonization Group on Data Modelling (HGDM).

IALA has developed these procedures solely to manage the IALA domain and its role as a Submitting Organisation within the context of the Association. Should there be any conflict between this Guideline and IHO standard S-100 or S-99, IALA should defer to the IHO documentation.

6.1.1 MANAGEMENT OF THE IALA DOMAIN

The overall management responsibility of IALA for its domain in the IHO Registry is distributed over three types of managerial roles (see Figure 2):

1   IALA Domain Management, which resides within the IALA-Secretariat

2   IALA Field Managers, who are experts in their subject within the IALA membership

3   IALA Product Specification Developer, who maybe co-opted/appointed to the work from appropriate companies or organizations

As a Domain Owner, IALA will require interaction within the IHO's Domain Control Body and the adherence to the timelines of the IHO's Registry management processes. This activity affects the work of the IALA Domain Management and could lead to the involvement of IALA Field Managers and IALA Product Specification developers.

It is unlikely that the IALA committee structure will be too involved with the development process other than approval of the specific product specification concept and outcome of the work in the appropriate committee.

6.1.1.1   IALA Domain Management

The IALA Domain Management resides within the IALA Secretariat and it coordinates the activities of each of the IALA Field Managers and acts as the single point of contact with the IHO.

The structure is shown in Figure 2. The Domain Management will be overseen at a technical level by the IALA ENAV Committee or any other appropriate committee that may exist in the future

6.1.1.2   IALA Field Manager

In the context of IHO Registry, IALA currently recognises the following Product Fields: VTS, AtoN Information, DGPS and VDES as e-navigation development progresses, other fields will be identified.

Each Field contains at least one IALA product and one IALA Product Specification. The IALA Field Manager harmonises the different products / Product Specifications within that Field. The IALA Field Manager also considers the usage of entries by others in his Field.

6.1.1.3   IALA Product Specification Developer

A developer is appointed to manage each IALA Product Specification. An IALA Product Specification Developer coordinates the development of an IALA Product Specification, co-ordinates the usage of existing entries in the IHO Registry that are used by that IALA Product Specification and coordinates the creation of new entries required by that IALA Product Specification. An IALA Product Specification Developer is able to draw on any Register in the IHO Registry.

In addition, a Task Group may be set up, with the approval of an IALA Committee, to carry out the development work. This Task Group may consist of invited experts from within and outside the IALA Committee structure. It will not necessarily meet during IALA Committee sessions and may not meet physically, if it is possible to carry out the work by e-mail and/or teleconference.

A list of field managers is published on the IALA Website under S-200 development status.

6.1.1.4   IALA Organisational Chart
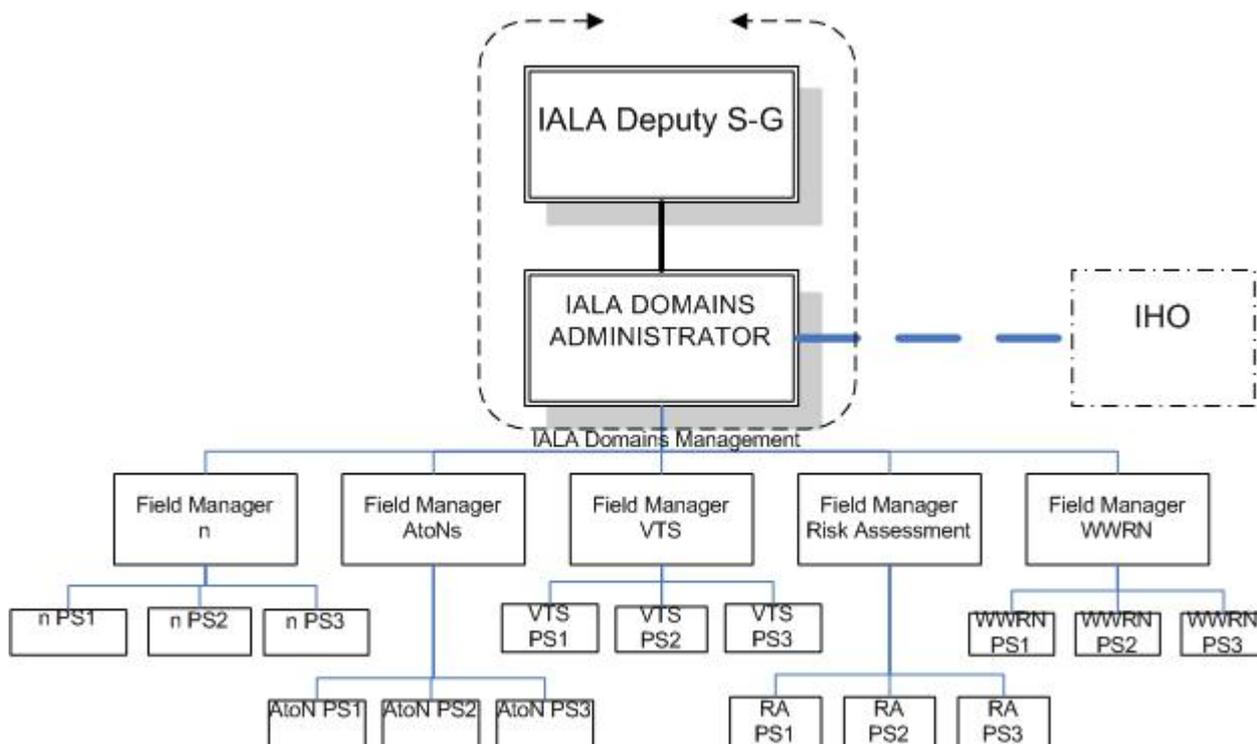

Figure 2   IALA Domain organisation (indicative)

6.2   PROCEDURE FOR REGISTERING PRODUCT SPECIFICATIONS UNDER DEVELOPMENT

To prevent several organisations working on similar product specifications it is necessary that those launching projects are known to the community. Organisations can check if the development of a product specification is already started and contact the organisation regarding the details. Then they can decide if this product specification will become a joint effort or co-development, which will save time and costs.

Appendix 3 of IALA Guideline 1106 *On Producing an IALA S-100 Product Specification* [4] contains a template which will have to be filled in by the Product Specification Developer and sent to the IALA Field Manager. The IALA Field Manager will send the information to the IALA Domain Administrator. The Domain Administrator will publish this information within the IALA Domain.

6.3   PROCEDURE FOR GETTING 'DRAFT STATUS' FOR A PRODUCT SPECIFICATION

If a product specification is at the stage that it is nearly complete, the Product Specification Developer can submit the Product Specification to the IALA Field Manager who will manage the review process (the review process could be managed similarly to within IEC). After a first positive review by the Field Manager supported by the ENAV committee the Field Manager will send this to the IALA Domain Administrator and request that the status from 'launching project' is changed to 'draft status' indicating to the community that the product specification is nearing completion and can be reviewed.

6.4   PROCEDURES FOR SUBMITTING A PRODUCT SPECIFICATION

Representatives of recognised organisations may submit proposals for addition of a new Product Specification in the Product Specification Register or for the Clarification, Supersession, or Retirement of existing Product Specifications in the Register.

Product specifications with a 'draft status', which are reviewed and in a 'final state', are to be submitted to the IALA Domain Administrator. After a final approval from the Field Manager, the IALA Domain Administrator will submit the request to IHO using the Registry web interface. The process for submitting proposals for the registration of Product Specifications is illustrated in Figure 3.
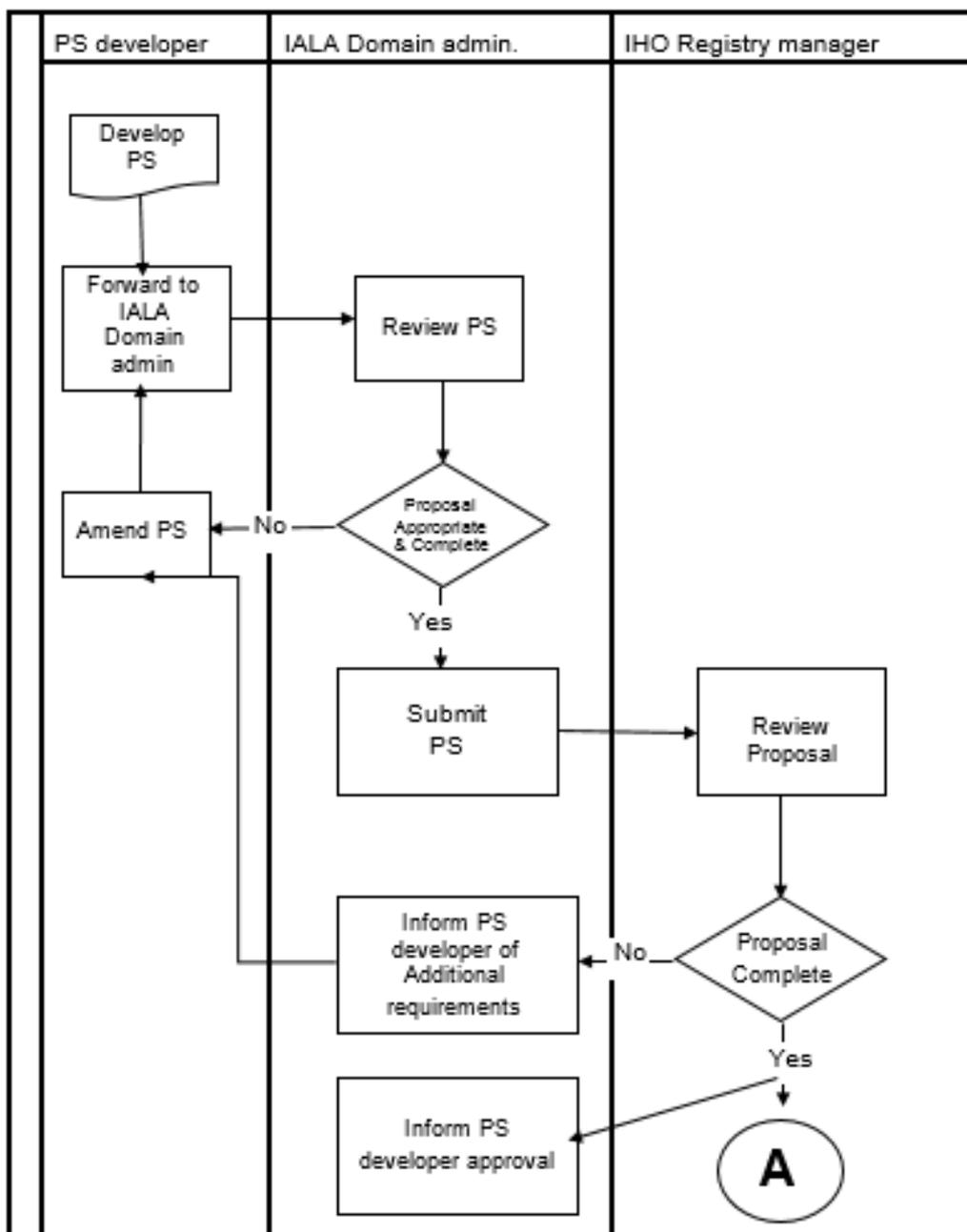

Figure 3   Process for submitting proposals for the registration of Product Specifications

6.4.1 SUBMISSION OF PROPOSALS

The organisation making a submission shall ensure that all proposals:

- are complete;

- a copy of the final version of the new Product Specification is made available to the IALA Domain Administrator.

6.4.2 IALA DOMAIN ADMINISTRATOR

The IALA Domain Administrator will:

- receive product specifications from product specification developers;

- determine if the proposed item does or does not fall within the scope of the Register;

- if a registered item (or similar) to the proposed item already exists advice the developer to liaise with the relevant field manager;

- review product specifications for completeness;

- return product specifications to the field managers if incomplete; or

- update the item management record, with the status set to 'pending'.

The IALA Domain Administrator shall ensure the following IHO acceptance criteria have been satisfied:

- S-100 is used as the underlying standard (organisations are encouraged to populate Feature Catalogues, either using existing entities registered in the GI Registry or proposing new ones where appropriate);

- identification numbers shall be selected from the numbering series agreed with IHO (S-201-299);

- the content description is in plain language.

After submission the Domain Administrator shall:

- serve as the point of contact and negotiate with IHO regarding any changes required to a proposal;

- inform the Product Specification Developer of the results of each proposal.

If the proposal is accepted by the IHO Registry Manager, the IALA Domain Administrator informs the Product Developer and the Field Manager about the acceptance. If a proposal is not accepted by the IHO Registry Manager, the Domain Administrator shall:

- inform the Product Specification Developer of the 30-working day deadline for appealing the decision of the IHO Registry Manager;

- make the results of the approval process available to the Product Specification Developer.

6.4.3 APPEALS

A Product Specification Developer may appeal to the IALA Deputy Secretary-General if it disagrees with the decision of the Domain Administrator to reject a proposal for the inclusion of a Product Specification in the Register. An appeal shall contain at a minimum a description of the situation, a justification for the appeal, and a statement of the impact if the appeal is not successful.

The Submitting Organisation shall submit its appeal to the Domain Administrator.

The Domain Administrator shall:

- forward the appeal to IALA Deputy Secretary-General as appropriate;

- inform the appellant of the decision.

6.4.4   WITHDRAWAL OF PROPOSALS

Product Specification developers may decide to withdraw a proposal at any time during the approval process.

The Domain Administrator shall then:

• change the proposal management disposition to 'withdrawn' and the value for Date Disposed to the current date;

• keep track of the proposal and report the withdrawal in the next periodic report.

6.5   PROCEDURES FOR FEATURE CONCEPT, PORTRAYAL AND METADATA REGISTERS

In the development process of a Product Specification it can be necessary to register new features or amend existing features. Also, the registration of items in the Metadata Register and Portrayal Register can be relevant. In the following chapters a procedure to do so is described, this procedure is derived from IHO Publication S-99.

6.5.1   INTRODUCTION

Submitting Organisations may submit proposals for new items, or for clarification, supersession, or retirement of registered items. Proposals are to be submitted by using appendix 2 of the *Guideline on Producing an IALA S-100 Product Specification*. After approval, the IALA Domain Administrator will submit the proposal using the mechanisms provided in the Registry web interface.

6.5.2   ADDITION OF REGISTERED ITEMS

Addition is the insertion into a Register of an item that describes a concept not adequately described by an item already in the Register.

6.5.3   CLARIFICATION OF REGISTERED ITEMS

Clarification corrects errors in spelling, punctuation, grammar or improvements to content or wording. A clarification shall not cause any substantive semantic change to a registered item. The three characteristics that can be clarified are definition, other references and remarks.

6.5.4   SUPERSESSION OF REGISTERED ITEMS

Supersession of an item means any proposal that would result in a substantive semantic change to an existing item. Supersession shall be accomplished by including one or more new items in the appropriate Register with new identifiers and a more recent date. The original item shall remain in the Register but shall include the date at which it was superseded, and a reference to the items that superseded it.

6.5.5   RETIREMENT OF REGISTERED ITEMS

Retirement shall be effected by leaving an item in the Register, but by marking it as '*retired*', and including the date of retirement.

6.5.6   DEVELOPMENT OF PROPOSALS

The IALA Domain Administrator shall manage the development of proposals for entries or amendments to the Feature Concept, Portrayal and Metadata Registers from within their respective Working Groups, communities or organisations.

**Submission Process -
Feature Concept, Portrayal and Metadata Registers**

Proposer	IALA Domain administrator	IHO Register Manager

Develop Proposal

Forward to Submitting Organisation

Review Proposal

Proposal Appropriate & Complete

No → Amend Proposal

Yes

Submit Proposal

Review Proposal

Proposal Complete

No → Inform Submitting Organisation of Additional requirements
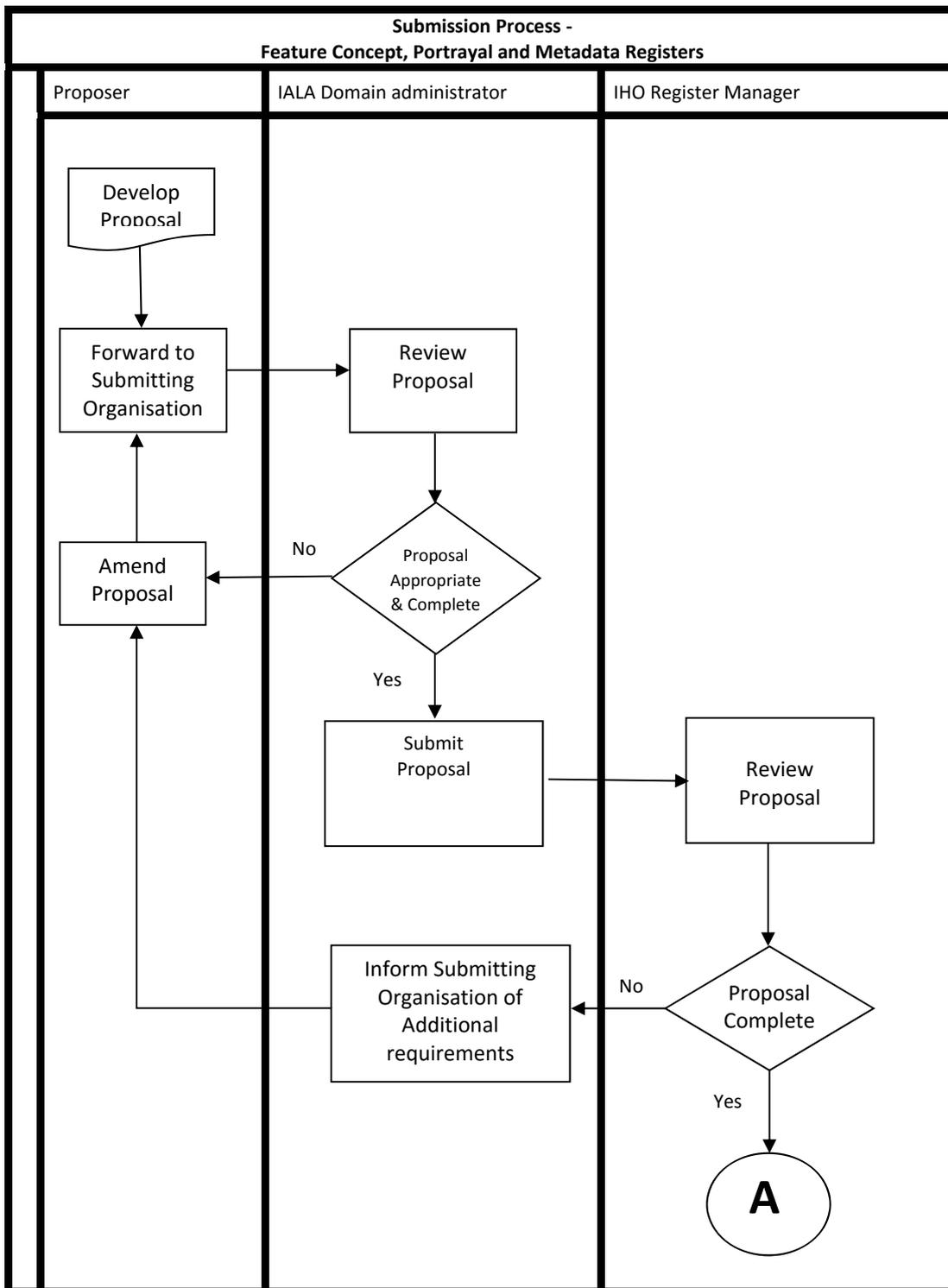
Yes

A

Figure 4   Processing of Proposals

7 GLOSSARY / DEFINITIONS / ACRONYMS

Definitions and acronyms shall be in accordance with IHO S-100 and S-99 where appropriate. IALA-specific definitions and acronyms are shown below.

7.1 GLOSSARY / DEFINITIONS

Field: A specific area within the IALA Domain.

7.2 ACRONYMS

AtoN	Aid(s) to Navigation
CMDS	Common Maritime Data Structure
DGPS	Differential Global Positioning System
ENC	Electronic Nautical Chart
GI	Geographic Information
HDM	Harmonised Data Model
HGDM	Harmonization Group on Data Modelling (IMO/IHO)
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities – AISM
IEC	International Electrotechnical Commission
IHO	International Hydrographic Organization (IMO/IHO)
IMO	International Maritime Organization
ISO	International Standards Organization
MoU	Memorandum of Understanding
NAV	Sub-Committee on Safety of Navigation (IMO)
PS	Product Specification
TSMAD	Transfer Standard Maintenance and Applications Development Working Group (IHO)
S-G	Secretary-General
SN Circ.	Safety of Navigation Circular (IMO)
S-99	Operational procedures for the organisation and management of the S-100 Geospatial Information Registry, January 2011 (IHO)
S-100	Geospatial Information Registry (IHO)
VDES	VHF Data Exchange System
VTS	Vessel Traffic Services
WWRN	World-Wide Radio Navigation

8 REFERENCES

[1] IHO S-99 Operational procedures for the organisation and management of the S-100 Geospatial Information Registry, Ed 1.1.0 November 2012.

[2] IHO S-100 Universal Hydrographic Data Model, January 2010.

[3] ISO 19115 Geographic Information – Metadata, 2003.

[4] IALA Guideline 1106 on Producing an IALA S-200 Series Product Specification.