S-100 – Registry/Register Component

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Contents

Introduction

The IHO Feature Data Dictionary Registry has been developed to conform to ISO 19135 and ISO 19126. The intention is that the use of a registry to store features, attributes and enumerates will significantly increase flexibility and facilitate the inclusion of new items which can be made available for use in relatively short timescales.

This component specifies procedures to be followed for maintaining registers of items of hydrographic related information. Any organization may apply to establish registers of items of hydrographic related information in the IHO Feature Data Dictionary Registry.

1 Scope

This component specifies procedures to be followed in establishing, maintaining, and publishing registers of unique, unambiguous and permanent identifiers and meanings that are assigned to items of geographic, hydrographic and metadata information. In order to accomplish this purpose, the standard specifies elements of information that are necessary to provide identification and meaning to the registered items and to manage the registration of these items.

2 Conformance

To conform to this International Standard, a register of items of hydrographic information shall satisfy all of the conditions specified in the abstract test suite for general conformance (Annex A).

3 Normative references

ISO/TS 19103:2005, Geographic Information – Conceptual schema language

ISO 19110:2005, Geographic Information – Methodology for feature cataloguing

ISO 19115:2003, Geographic Information - Metadata

ISO 19126 CD:2004-01, Geographic Information – Profiles for feature data dictionary registers and feature catalogue registers

ISO 19135:2005, Geographic Information – Procedures for registration of items of geographic information

4 Terms, definitions and abbreviations

4.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply

4.1.1
addition
insertion into the **register** of an item

4.1.2

clarification
non-substantive change to a **register** item

NOTE A non-substantive change does not change the semantics or technical meaning of the item. Clarification does not result in a change to the registration status of the register item.

4.1.3

control body
group of technical experts that makes decisions regarding the content of a **register**

4.1.4

geographic information
information concerning phenomena implicitly or explicitly associated with a location relative to the Earth
[ISO 19101]

4.1.5

identifier
linguistically independent sequence of characters capable of uniquely and permanently identifying that with which it is associated
[adapted from ISO/IEC 11179-3]

4.1.6

item class
set of items with common properties

NOTE Class is used in this context to refer to a set of instances, not the concept abstracted from that set of instances.

4.1.7

modification
a substantive semantic change to a **register** item

4.1.8

register
set of files containing identifiers assigned to items with descriptions of the associated items
[adapted from Annex E of the ISO/IEC JTC1 Procedures]

4.1.9

register manager
organization to which management of a **register** has been delegated by the **register owner**

NOTE In the case of an IHO register, the register manager performs the functions of the registration authority specified in the IHO Directives.

4.1.10

register owner
organization that establishes a **register**

4.1.11

registration
assignment of a permanent, unique, and unambiguous **identifier** to an item
[adapted from Annex E of the ISO/IEC JTC1 Procedures]

4.1.12

registry
information system on which a **register** is maintained
[adapted from ISO/IEC 11179-3]

4.1.13

retirement
declaration that a **register** item is no longer suitable for use in the production of new data

NOTE The status of the retired item changes from 'valid' to 'retired'. A retired item is kept in the register to support the interpretation of data produced before its retirement.

4.1.14

source reference
reference to the source of an item that has been adopted from a source external to the **register**

4.1.15

submitting organization
organization authorised by a **register owner** to propose changes to the content of a **register**

4.1.16

supersession
replacement of a **register** item by one or more new items

NOTE The status of the replaced item changes from 'valid' to 'superseded.' A superseded item is kept in the register to support the interpretation of data produced before its suppersession.

4.1.17

technical standard
standard containing the definitions of **item classes** requiring **registration**
[adapted from Annex E of the ISO/IEC JTC1 Procedures]

4.2 Abbreviations

IHO International Hydrographic Organization

IHB International Hydrographic Bureau

4.3 Notation

The conceptual schemas specified in this International Standard are described using the Unified Modeling Language (UML) [ISO/IEC 19501], following the guidance of ISO/TS 19103. UML notation is described in Annex G.

By convention within ISO/TC211, names of UML classes, with the exception of basic data type classes, include a unique two-letter prefix that identifies the standard and the UML package in which the class is defined. Several model elements used in this International Standard are defined in packages specified in other International Standards; these are listed in Table 1.

Table 1 — Externally defined UML packages

Prefix	Package
CI	Citation [ISO 19115]
FC	Feature catalogue [ISO 19110]
MD	Metadata [ISO 19115]
RE	Register [ISO 19135]
FR	Feature information register
HD	IHO feature information registry

In accordance with the guidance of ISO/TS 19103 all data element names are presented as character strings which combine multiple lower-case words as needed to form precise and understandable names without using any intervening characters (such as “_”, “-”, or space). For attributes and operation names, association roles, and parameters, capitalization is applied to the first letter of each word after the first word. For package, type-specification, and association names, capitalization is also applied to the first letter of the first word. Unless otherwise stated all data elements are mandatory.

5 General concepts

5.1 Register

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 current items in the register can be modified or retired. The register item would have a "date stamp" that would indicate the date at which it was added to the register. For an item that is indicated as retired in the register, the item would remain in the register with an indication of the date at which it was retired. For an item that is modified in the register the original instance of the item would be rendered as superseded with a "date stamp" and a new changed item entered in the register with a new item identifier. There would be a forward reference from the superseded item to the modified item that replaced it. This means that a product specification, defined at a given date, would reference an item in the register in a stable manner.

5.2 Feature Data Dictionary

A feature data dictionary specifies independent sets of features and attributes that may be used to describe geographic, hydrographic and metadata information. A feature data dictionary may be used to develop a feature catalogue in conformance with ISO 19110. Unlike a feature catalogue, a feature data dictionary does not bind attributes to features.

An IHO feature data dictionary establishes the universe of all features and attributes (including attribute listed enumerants) that may be used in a hydrographic related context. A feature data dictionary may be established as a register or a set of registers.

Registers of feature information may serve as sources of reference for similar registers established by other geographic information communities as part of a system of cross-referencing.

5.3 Feature Catalogue

A Feature Catalogue is a document that describes the content of a data product. It uses feature classes, attributes and enumerated attribute values from one or more Feature Data Dictionaries and binds them together. In addition, constraints, units of measurement and format description of attributes can be specified. Feature Catalogues will be described in detail in Part XXX of S-100.

6 Information Model

6.1 Introduction

Classes representing feature types, feature associations, feature attributes, and attribute listed values are illustrated in Figure 1 and Figure 2, plus those additional classes and associations that are used to specify related information. The intent of the information model is for guidance to a developer for a product specification and provides an indication of how the features may be used. A comprehensive register schema can be found in ISO 19135 clause 8.

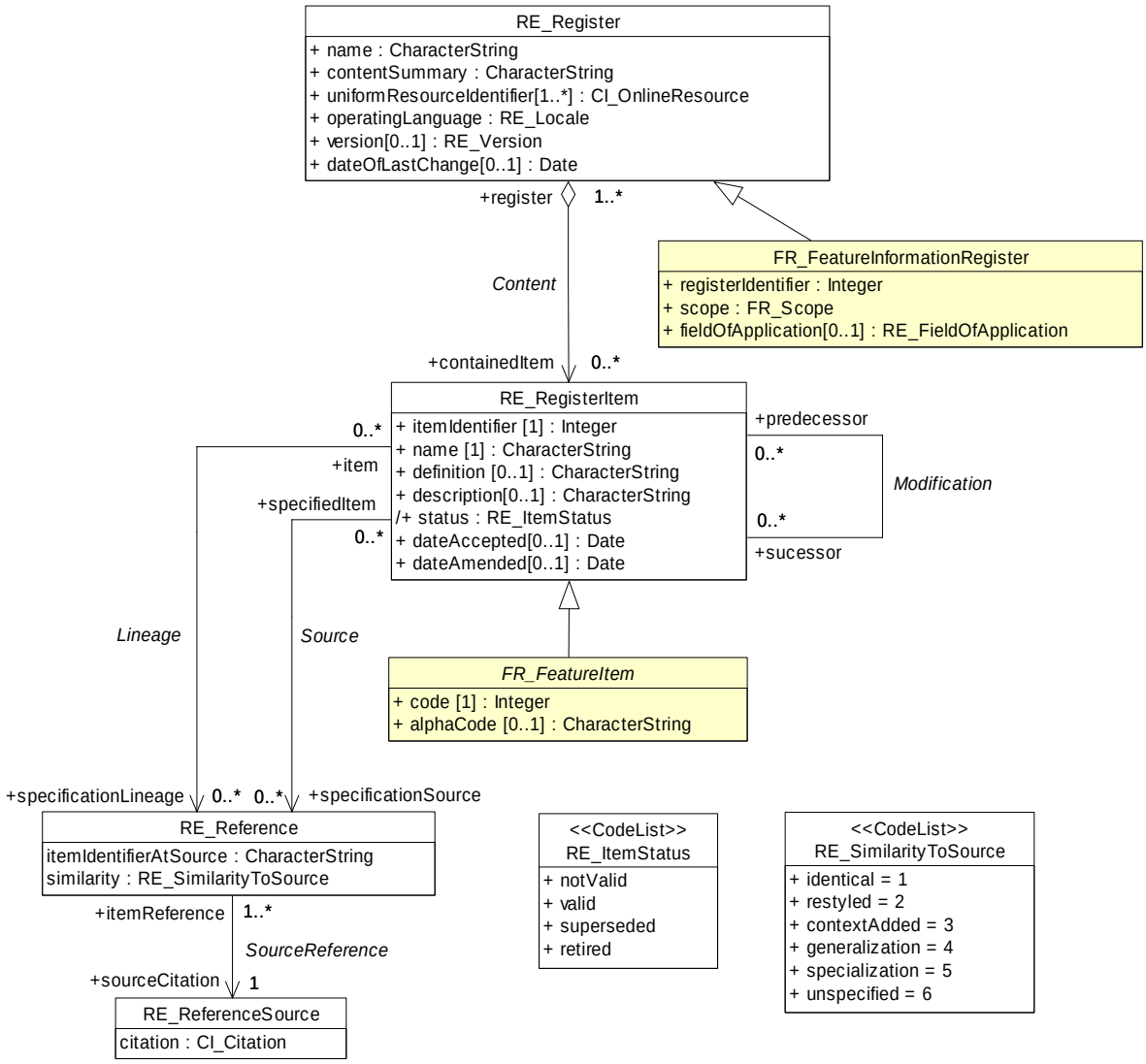


Figure 1 – Feature Data Dictionary Schema – Part 1

6.2 RE_Register (ISO 19135 Clause 8.2)

6.2.1 Introduction

The class RE_Register specifies information about the register itself.

6.2.2 name

The attribute *name* shall be represented as a CharacterString containing a compact and human-readable designator that is used to uniquely denote that register within the set of registers maintained by the register owner. In the case of a hierarchical register, the *name* of a subregister shall uniquely identify that subregister within the scope of all registers established by the owner of the principal register.

EXAMPLE "ISO/TC 211 Register of Feature Data Dictionaries and Feature Catalogues" might be the name of the principal register of a hierarchical register. "DGIWG FACC Data Dictionary" and "IHO S-57 Object Dictionary" might be the names of subregisters within the hierarchy.

6.2.3 contentSummary

The attribute *contentSummary* shall be represented as a CharacterString containing a general statement of the purpose for which items in the register are made available to potential users. It should also specify any limits to the scope of the register and identify the types of applications for which the items are intended.
NOTE The scope of a register could be limited by theme, by region, by language, or in terms of other criteria.

EXAMPLE The scope of a terminology register could be limited to Spanish terms used to describe landforms in Latin America.

6.2.4 uniformResourceIdentifier

The attribute *uniformResourceIdentifier* shall take as its value a set of instances of CI_OnLineResource [ISO 19115, B.3.2.5, Row 396], each containing information about online resources associated with the register.

The set shall contain at least one instance of CI_OnLineResource for which the attribute *OnLineResource.function* has the value 'information' (002) [ISO 19115, B.5.3, Row 3] and the corresponding value of the attribute *OnLineResource.linkage* specifies a resource providing access to the complete content of the register.

EXAMPLES "http://www.digest.org/Navigate2.htm" and "http://www.epa.gov/opppmsd1/PPISdata/index.html" are sample values of *OnLineResource.linkage*.

6.2.5 operatingLanguage

The attribute *operatingLanguage* shall be represented as an instance of class RE_Locale [ISO 19135, 8.16] that is used to specify language, country information and character encoding for the proper interpretation of the content of character strings in the register.

The values of all character strings in the register shall be in accordance with the value of *operatingLanguage*, unless otherwise stated.

6.2.6 version

The conditional attribute *version* shall be represented as an instance of class RE_Version [ISO 19135, 8.17] that specifies a unique state in the life of the register. A value shall be provided for this attribute if a value of *dateOfLastChange* (6.2.7) is not supplied.

6.2.7 dateOfLastChange

The conditional attribute *dateOfLastChange* shall be represented as an instance of the class <<Date>> [ISO/TS 19103, 6.5.2.7] and specify the (full precision) date of the most recent change to the status [ISO 19135, 8.8.4] of an item in the register was made. A value shall be provided for this attribute if a value of *version* (6.2.6) is not supplied.

6.2.8 Content

The aggregation association *Content* connects the RE_Register to the set of RE_RegisterItem, (6.3) held in the register. The association shall be navigable from *register* to *containedItem*, but need not be navigable in the reverse direction.

6.3 FR_FeatureinformationRegister (ISO 19126 Clause 6.2.2)

6.3.1 Introduction

The class FR_FeatureInformationRegister shall be derived from class RE_Register [ISO 19135, 8.2], realize class FC_FeatureCatalogue [ISO 19110, Table B.1], and specify information about the feature information register.

6.3.2 registeridentifier

The attribute *registerIdentifier* shall be represented as a positive integer (i.e., greater than zero) that is used to uniquely denote the feature information register within the scope of the registry within which that register resides. It is intended for information processing. Once a value has been assigned, it shall not be reused.

NOTE The *registerIdentifier* allows information processing activities to distinguish individual registers that together comprise a compound registry .

6.3.3 scope

The attribute *scope* shall be represented as a set of elements and describe subject domains of the items in the feature information register. The value of *scope* may be used as the basis for creating metadata for submission to search engines.

EXAMPLE { { FR_Scope.name = “Hydrography”,
FR_Scope.description = “Features that are or are related to artefacts involving bodies of water.” },
{ FR_Scope.name = “Ports and Harbours”,
FR_Scope.description = “Features that are related to marine ports and harbours, including their associated anchorage, docking and related cultural facilities.” } }

NOTE ISO 19110 specifies that in a feature catalogue there shall be at least one statement its *scope*.

6.3.4 fieldOfApplication

The optional attribute *fieldOfApplication* shall be represented as a set of RE_FieldOfApplication elements [ISO 19135, 8.18] and describe the kinds of use of items in the feature information register. The value of *fieldOfApplication* may be used as the basis for creating metadata for submission to search engines.

EXAMPLE { RE_FieldOfApplication.name = “Marine Navigation”
RE_FieldOfApplication.description = “Pertaining to the science or art of conducting ships or vessels from one place to another at sea.” } }

6.4 RE_RegisterItem (ISO 19135 Clause 8.8)

6.4.1 Introduction

The class RE_RegisterItem specifies elements of information to be recorded for each item held in a register.

6.4.2 itemIdentifier

The attribute *itemIdentifier* shall be represented as a positive integer (i.e., greater than zero) that is used to uniquely denote that item within the register and is intended for information processing. Values shall be assigned sequentially in the order in which items are proposed for entry into the register. Once a value has been assigned, it shall not be reused.

NOTE When a register contains items from different item classes, each item will be uniquely identifiable by the item identifier alone.

6.4.3 name

The attribute *name* shall be represented as a CharacterString containing a compact and human-readable designator that is used to denote a register concept and is expressed in the operating language of the register. Each *name* shall:

a) denote an item concept in the scope of an item class;

b) be a succinct expression of the item concept it denotes.

EXAMPLE “Buoy shape.”

The *name* shall be unique within a register according to the following rules:

a) Multiple items of the same item class may use the same value for *name* but only one such item may have a status of 'valid.'

b) Items in different item classes may use the same value for *name*.

The *name* may be used to support searches for items of interest to a human user of the register.

6.4.4 definition

The attribute *definition* shall be represented as a CharacterString containing the definition of the concept embodied by that item and expressed in the operating language of the register. The *definition* shall be a precise statement of the nature, properties, scope, or essential qualities of the concept as realized by the item.

EXAMPLE “The shape of a buoy.”

If a definition is taken from an external source, RE_Reference (6.4) shall be used to provide information about that source together with the unique identifier of the item in the external source where available.

6.4.5 description

The optional attribute *description* shall be represented as a CharacterString containing a description of the concept embodied by that item and expressed in the operating language of the register. The *description* shall be a statement of the nature, properties, scope, or non-essential qualities of the concept that are realized by the item but are not specified by the *definition* element.

EXAMPLE “Buoy shape is generally based on the portion visible above the water line.”

6.4.6 status

The derived attribute *status* shall be represented as an instance of RE_ItemStatus (0) that identifies the registration status of the RE_RegisterItem.

6.4.7 dateAccepted

The conditional attribute *dateAccepted* shall specify the date on which a proposal to add the item to the register was accepted. The condition is identified by the constraint {status <> #notValid implies dateAccepted -> notEmpty}.

6.4.8 dateAmended

The conditional attribute *dateAmended* shall specify the date on which a proposal to supersede or retire the item was accepted. The condition is identified by the constraint {status = #superseded or status = #retired implies dateAmended -> notEmpty}.

6.4.9 Content

The aggregation association *Content* shall connect the RE_RegisterItem to the RE_Register (6.2) in which it is contained.

6.4.10 Source

The conditional association *Source* shall connect the RE_RegisterItem to an instance of RE_Reference (6.4) that identifies the source of the register item. This association shall be present if the item has been taken from an external source. The association shall be navigable from *specifiedItem* to *specificationSource*, but need not be navigable in the opposite direction. The constraint {RE_RegisterItem.itemSource.similarity<=3} limits the changes to an item specification derived from a *specificationSource* to changes in style or addition of context.

6.4.11 Lineage

The optional association *Lineage* shall connect the RE_RegisterItem to a set of zero or more instances of RE_Reference (6.4) that provide information about the development of the item specification. The association shall be navigable from *item* to *specificationLineage*, but need not be navigable in the opposite direction.

6.4.12 Modification

The conditional association *Modification* shall connect the RE_RegisterItem to a one or more other instances of RE_RegisterItem that preceded or superseded it. The existence of more than one successor for a registered item implies a subdivision of the concept represented by that registered item. Any *successor* shall represent the same concept as its *predecessor* or a sub-concept of that concept.

EXAMPLE The feature type “buoy” held in one feature catalogue register might be replaced by several feature types representing subtypes of “buoy” in another register. Conversely, several types of "road" in one register might be replaced by a single supertype "transportation route" in another feature register.

6.4.13 Addition

The association *Addition* shall connect an instance of RE_RegisterItem to one or more instances of RE_AdditionInformation (6.6) that contain information about the process of adding this RE_RegisterItem to the register. The association shall be navigable from *item* to *additionInformation*, but need not be navigable in the opposite direction.

6.4.14 Clarification

The conditional association *Clarification* shall connect an instance of RE_RegisterItem to zero or more instances of RE_ClarificationInformation (6.7) that contain information about the process of clarifying this RE_RegisterItem. This association shall be present if there have been any proposals to clarify the item. The association shall be navigable from *item* to *clarificationInformation*, but need not be navigable in the opposite direction.

6.4.15 Amendment

The conditional association *Amendment* shall connect the RE_RegisterItem to zero or more instances of RE_AmendmentInformation (6.8) that contain information about the process of amending this RE_RegisterItem. This association shall be present if there have been any proposals to amend the item. The association shall be navigable from *item* to *amendmentInformation*, but need not be navigable in the opposite direction.

6.5 RE_Reference (ISO 19135 Clause 8.10)

6.5.1 Introduction

The class RE_Reference specifies information about the source and/or lineage of a specific RE_RegisterItem (6.3) derived from an external document or register.

6.5.2 itemIdentifierAtSource

The attribute *itemIdentifierAtSource* shall be represented as a CharacterString that provides the value of the item identifier in the source document or register from which the specification of the RE_RegisterItem (6.3) is derived.

6.5.3 similarity

The attribute *similarity* shall use a value from the <<CodeList>> RE_SimilarityToSource (6.8) that specifies the type of change that has been made to the item specification relative to the item specification in the external source.

6.5.4 Source

The association *Source* shall connect an RE_Reference to the RE_RegisterItem (6.3) for which it provides source information. The changes to an item specification derived from a *specificationSource* are limited as specified in 6.4.10.

6.5.5 Lineage

The optional association *Lineage* shall connect a set of zero or more RE_Reference to the RE_RegisterItem (6.3) for which it provides information about the derivation of the item specification.

6.5.6 SourceReference

The association *SourceReference* shall connect an RE_Reference to the RE_ReferenceSource (6.5) that specifies the external source from which the item specification was taken.

6.6 RE_ReferenceSource (ISO 10135 Clause 8.7)

6.6.1 Introduction

The class RE_ReferenceSource specifies information about the source of RE_RegisterItem specifications taken from an external document or register.

6.6.2 citation

The attribute *citation* shall use an instance of CI_Citation [ISO 19115, B.3.2.1, Row 359] to describe a document or register used as an external source of items.

6.6.3 SourceReference

The association *SourceReference* shall connect to an RE_ReferenceSource from the instances of RE_Reference (6.4) that are associated with the specific items derived from items in the document or register described by this RE_ReferenceSource.

6.7 RE_ItemStatus (ISO 10135 Clause 8.19)

RE_ItemStatus (Figure 1) is an <<Enumeration>> that specifies the status of a register item (0). The domain of RE_ItemStatus is specified in Table 2.

Table 2 — Values of RE_ItemStatus

Value	Meaning
notValid	The item has been entered into the register, but the control body has not accepted the proposal to add it.
valid	The item has been accepted, is recommended for use, and has not been superseded or retired.
superseded	The item has been superseded by another item and is no longer recommended for use.
retired	A decision has been made that the item is no longer recommended for use. It has not been superseded by another item.

6.8 RE_SimilarityToSource (ISO 10135 Clause 8.23)

RE_SimilarityToSource (Figure 1) is a <<CodeList>> that identifies the type of change that has been made to an item specification relative to an item specification in an external source (6.4.3). The domain of RE_SimilarityToSource is specified in Table 3.

Table 3 — Values of RE_SimilarityToSource

Code	Value	Meaning
1	identical	No change has been made to the specification.
2	restyled	The style of the specification has been changed to match the style and structure of other specifications in the register that has imported the specification.
3	contextAdded	The specification includes information about its context that is not explicit in the specification in the external source.
4	generalization	The specification of the register item has been generalized to have a broader meaning than the item specified in the external source.
5	specialization	The specification of the register item has been specialized to have a narrower meaning than the item specified in the external source.
6	unspecified	The nature of the differences between the register item and the similar item in the external source is unspecified. .

6.9 RE_ProposalManagementInformation (ISO 19135 Clause 8.9)

6.9.1 Introduction

The class RE_ProposalManagementInformation (Figure 2) specifies elements of management information to be recorded for each proposal to add or modify a register item.

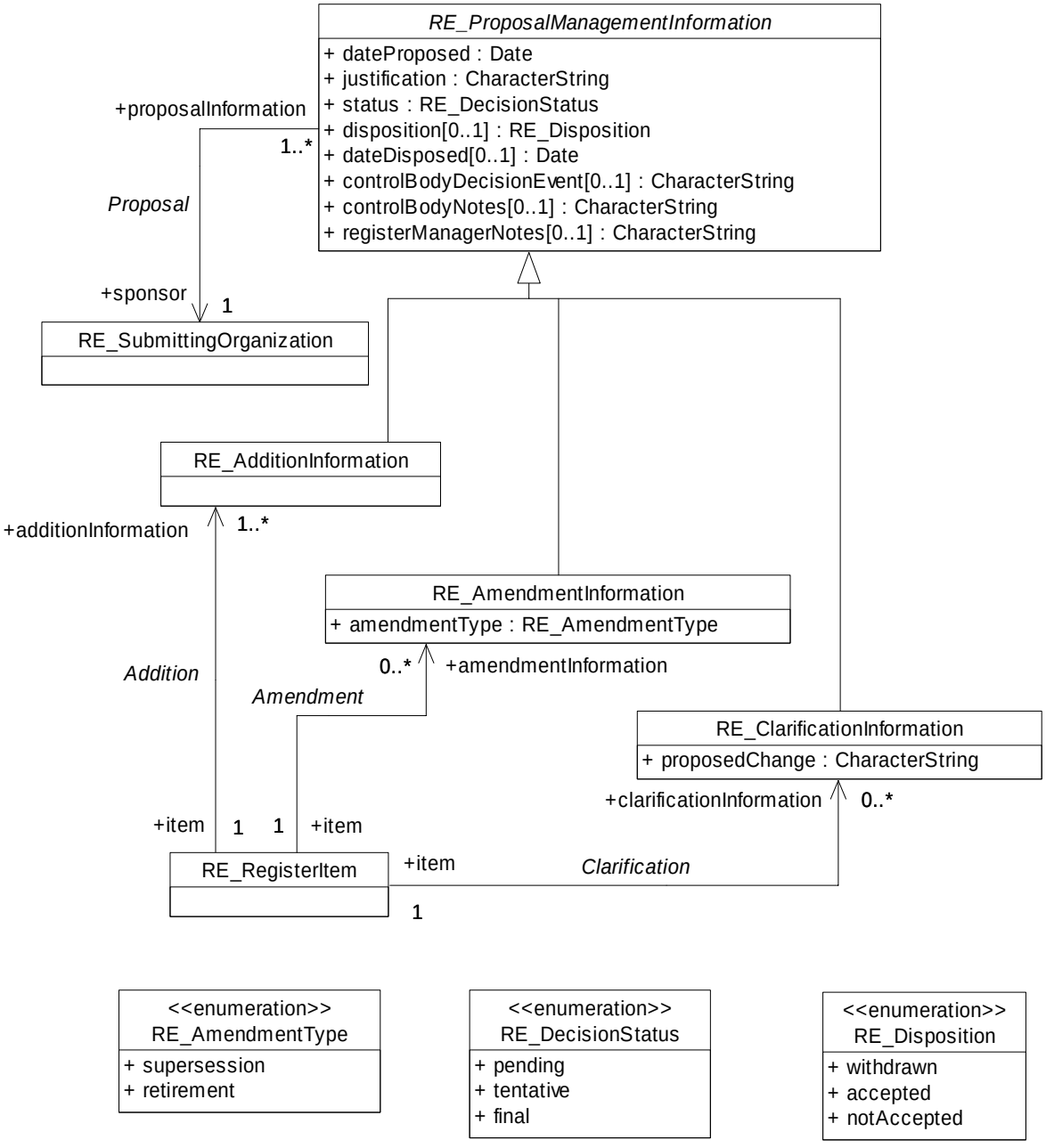


Figure 2- RE_ProposalManagemnetInformation

6.9.2 dateProposed

The attribute *dateProposed* shall be represented as an instance of the class <<Date>> [ISO/TS 19103, 6.5.2.7] and specify the (full precision) date on which the item was entered into the register.

Example: 2002-11-27.

6.9.3 justification

The attribute *justification* shall be represented as a CharacterString that explains why the proposed change should be implemented.

6.9.4 status

The attribute *status* shall be represented as an instance of RE_DecisionStatus that identifies the standing of the proposed change within the approval process.

6.9.5 disposition

The conditional attribute *disposition* shall be represented as an instance of RE_Disposition that identifies the disposition of the proposal. The condition is specified by the constraint {status <> #pending implies disposition -> notEmpty}, which means that a value shall be provided if the value of *status* is 'tentative' or 'final'.

6.9.6 dateDisposed

The conditional attribute *dateDisposed* shall be represented as an instance of the class <<Date>> [ISO/TS 19103, 6.5.2.7] and specify the (full precision) date on which the disposition of the proposal was determined. The condition is specified by the constraint {status <> #pending implies dateDisposed -> notEmpty}, which means that a date shall be provided if the value of *status* is 'tentative' or 'final'. The date shall be revised when the value of *status* is changed from 'tentative' to 'final'.

6.9.7 controlBodyDecisionEvent

The optional attribute *controlBodyDecisionEvent* shall be represented as a CharacterString that identifies a meeting or other event associated with the control body's decision concerning the proposed change.

6.9.8 controlBodyNotes

The optional attribute *controlBodyNotes* shall be represented as a CharacterString containing notes relevant to the control body's decision concerning the proposal. Individual entries within the notes should be dated.

6.9.9 registerManagerNotes

The optional attribute *registerManagerNotes* shall be represented as a CharacterString containing notes relevant to the register manager's handling of the proposal. Individual entries within the notes should be dated.

6.9.10 Proposal

The association *Proposal* shall connect an instance of RE_ProposalManagementInformation to the RE_SubmittingOrganization (**Error! Reference source not found.**) that proposed that the associated *item* be added or modified. This association shall be navigable from *proposalInformation* to *sponsor*, but need not be navigable in the opposite direction.

6.10 RE_SubmittingOrganization (ISO 19135 Clause 8.5)

6.10.1 Introduction

The class RE_SubmittingOrganization specifies information about a submitting organization.

6.10.2 name

The attribute *name* shall be represented as a CharacterString containing a compact and human-readable designator that is used to denote the submitting organization.

EXAMPLES "UKHO", "NOAA", and "IALA".

NOTE This International Standard does not require that a register manager *name* be unique, since an organization will, in general, have had a name before undertaking the management of a register.

6.10.3 contact

The attribute *contact* shall identify, by name or by position, respectively, a person who serves as a point of contact for information about the sponsoring organization and the proposals that it has submitted.

6.10.4 Sponsorship

The association *Sponsorship* connects an RE_SubmittingOrganization to an RE_Register (**Error! Reference source not found.**) for which it has proposed changes.

6.10.5 Proposal

The association *Proposal* connects an RE_SubmittingOrganization to the instances of RE_ProposalManagementInformation (6.9) associated with the proposals that it has submitted.

6.11 RE_AdditionInformation (ISO 19135 Clause 8.10)

6.11.1 Introduction

The subclass RE_AdditionInformation contains management information about a proposal to add an item to a register.

6.11.2 Addition

The association *Addition* shall connect an instance of RE_AdditionInformation to the instance of RE_RegisterItem that was proposed to be added. A multiplicity of *additionInformation* greater than 1 implies that one or more proposals to add the item to the register have been either withdrawn or not accepted.

6.12 RE_ClarificationInformation (ISO 19135 Clause 8.11)

6.12.1 Introduction

The subclass RE_ClarificationInformation contains management information about a proposal to clarify an item in a register.

6.12.2 proposedChange

The attribute *proposedChange* shall be represented as a CharacterString containing a description of the clarification that shall identify the elements of the register item that are changed and the prior and subsequent values of each.

EXAMPLE The definition of this item was changed to correct a typographical error. The misspelled word "phenomnon" was changed to "phenomenon."

6.12.3 Clarification

The association *Clarification* shall connect an instance of RE_ClarificationInformation to the instance of RE_RegisterItem whose clarification it describes. The association shall be navigable from *item* to *clarificationInformation*, but need not be navigable in the opposite direction.

6.13 RE_AmendmentInformation (ISO 19135 Clause 8.12)

6.13.1 Introduction

The subclass RE_AmendmentInformation contains management information about a proposal to amend an item in a register.

6.13.2 amendmentType

The attribute *amendmentType* shall be represented as an instance of RE_AmendmentType that identifies the type of amendment proposed.

6.13.3 Amendment

The association *Amendment* shall connect an instance of RE_AmendmentInformation to the instance of RE_RegisterItem for which an amendment was proposed. The association shall be navigable from *item* to *amendmentInformation*, but need not be navigable in the opposite direction. A multiplicity of *amendmentInformation* greater than 1 implies that one or more proposals to supersede or retire the item have been withdrawn or not accepted.

6.14 RE_DecisionStatus (ISO 19135 Clause 8.20)

RE_DecisionStatus (Figure 2) is an <<Enumeration>> that specifies the status of a decision regarding a proposal to add or modify a register item. The domain of RE_DecisionStatus is specified in Table 4.

Table 4 — Values of RE_DecisionStatus

Value	Meaning
pending	No decision has been made.
tentative	A decision has been made, but it is still subject to appeal.
final	A decision has been made and the time limit for appeal has run out or an appeal has been resolved.

6.15 RE_Disposition (ISO 19135 Clause 8.21)

RE_Disposition (Figure 2) is an <<Enumeration>> that provides values for describing the disposition of a proposal to add or modify a register item. The domain of RE_Disposition is specified in Table 5.

Table 5 — Values of RE_Disposition

Value	Meaning
withdrawn	The submitting organization has withdrawn the proposal.
accepted	The control body decided to accept the proposal.
notAccepted	The control body decided not to accept the proposal.

6.16 RE_AmendmentType (ISO 19135 Clause 8.22)

RE_AmendmentType (Figure 2) is an <<Enumeration>> that provides values for describing the kind of change requested by a proposal to amend a register item. The domain of RE_AmendmentType is specified in Table 6.

Table 6 — Values of RE_AmendmentType

Value	Meaning
supersession	The proposal requests that an item be superseded.
retirement	The proposal requests that an item be retired.

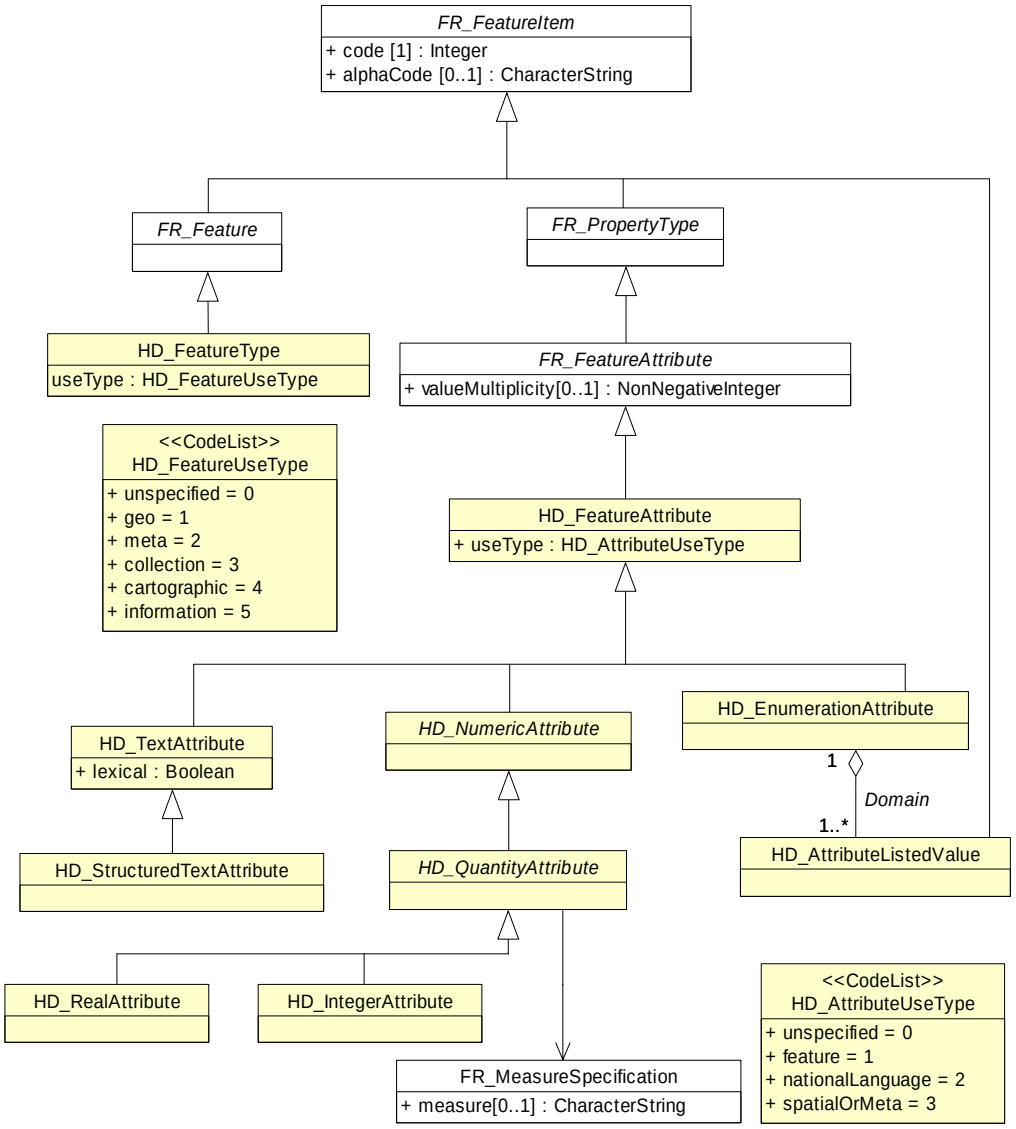


Figure 2 – Feature Data Dictionary Schema – Part 2

6.17 FR_FeatureItem (ISO 19126 Clause 6.2.4)

6.17.1 Introduction

The abstract class FR_FeatureItem shall be derived from class RE_RegisterItem [ISO 19135, 10.8] and specifies information about a feature information item in a feature information register.

6.17.2 code

The optional attribute *code* shall be represented as a positive integer (i.e., greater than zero) that is used to denote a feature information register item in data interchange outside of the scope of the register. Each *code* shall uniquely denote an item with *status* 'valid' [ISO 19135, 8.19] in the scope of a subclass of FR_FeatureItemClass. Additional items may share the same *code* but have other *status* values such as 'superseded' (6.9)

EXAMPLE 75

A *code* is an information process efficient denotation whereas a *name* [ISO 19135, 8.8.3] is a human-accessible denotation. There is a one-to-one relationship between the values of the *name* and *code* attributes of a register item. Therefore, an *FR_FeatureItem.name* and an *FR_FeatureItem.code* may be used interchangeably to denote the same register item in data interchange.

NOTE An *itemIdentifier* [ISO 19135, 8.8.2] is used to uniquely denote a register item ***within*** a register and is distinguished from a *code* that is used in data interchange ***outside*** of the scope of that register.

6.17.3 alphaCode

The optional attribute *alphaCode* shall be represented as a character string containing a compact and not necessarily human-readable designator that is used to denote a feature information register item in data interchange outside of the scope of the register. Each *alphaCode* shall have a length of six characters. Each *alphaCode* shall uniquely denote an item with *status* 'valid' [ISO 19135, 8.19] in the scope of a subclass of FR_FeatureItemClass. Additional items may share the same *code* but have other *status* values such as 'superseded' (6.9).

EXAMPLE "LIGH

TS"

An *alphaCode* is an information process efficient denotation whereas a *name* [ISO 19135, 8.8.3] is a human-accessible denotation. There is a one-to-one relationship between the values of the *name* and *alphaCode* attributes of a register item. Therefore, a FR_FeatureItem*.name* and a FR_FeatureItem*.alphaCode* may be used interchangeably to denote the same register item in data interchange.

6.17.4 Derived classes

The classes FR_Feature, FR_PropertyType, HD_AttributeListedValue are subclasses of FR_FeatureItem and specify information about items in a feature information register.

6.18 FR_Feature (ISO 19126 Clause 6.2.5)

6.18.1 Introduction

The abstract class FR_Feature shall be derived from class FR_FeatureItem (6.9), realize class FC_FeatureType [ISO 19110, Table B.2], and specify information about a feature (feature type or feature association) in a feature information register.

6.19 HD_FeatureType (ISO 19126 Annex C.4.3)

6.19.1 Introduction

The class HD_FeatureType (Figure 3) shall be derived from FR_FeatureType [ISO 19126, 6.2.7] and be used for the same purposes.

6.19.2 useType

The attribute *useType* shall be represented as a <<CodeList>> HD_FeatureUseType [ISO 19126, C.4.7] that specifies the intended use of the feature type.

6.19.3 Distinction

The optional association *Distinction* shall connect the HD_FeatureType to zero or more other HD_FeatureType. This association identifies those feature types that are in some manner similar to, but explicitly different from, the feature type.

6.20 FR_PropertyType (ISO 19126 Clause 6.2.8)

6.20.1 Introduction

The abstract class FR_PropertyType shall be derived from class FR_FeatureItem (6.11), realize class FC_PropertyType [ISO 19110, Table B.4], and specify the types of properties of features in a feature information register.

6.21 FR_FeatureAttribute (ISO 19126 Clause 6.2.9)

6.21.1 Introduction

The abstract class FR_FeatureAttribute (4) shall be derived from class FR_PropertyType (6.14), realize class FC_FeatureAttribute [ISO 19110, Tables B.8 and B.4], and specify information about a feature attribute in a feature information register.

6.21.2 valueMultiplicity

The optional attribute *valueMultiplicity* shall be represented as a NonNegativeInteger [ISO 19126, 6.2.46] that specifies the number of discrete domain values that may be assigned to the feature attribute. If the *valueMultiplicity* is not specified, then only a single domain value is allowed.

EXAMPLE 2

NOTE This is similar to the concept of LIST attributes in IHO S-57 [15].

If the *valueMultiplicity* is specified as zero, then an unlimited number of discrete domain values are allowed.

6.22 HD_FeatureAttribute (ISO 19126 Annex C.4.4)

6.22.1 Introduction

The abstract class HD_FeatureAttribute shall be derived from FR_FeatureAttribute (6.15) and be used for the same purposes.

6.22.2 useType

The attribute *useType* shall be represented as a <<CodeList>> HD_AttributeUseType (6.26) that specifies the intended use of the feature attribute.

6.23 HD_TextAttribute

6.23.1 Introduction

The class HD_TextAttribute shall be derived from class FR_FeatureAttribute (6.15) and specify information about a text attribute type in a feature information register.

The domain of values of a text attribute is a character string.

6.23.2 Lexical

The optional attribute *lexical* shall be represented as a Boolean that specifies the range of character values that may be used in character string values of the text attribute type. If *lexical* is not specified, then the range of character values shall ***not*** be lexical.

NOTE Lexical character values encompass any character, including accents, diacritical marks, special characters, and any other ISO standardized alphabet. Non-lexical character values are limited to characters from the ASCII code (or, equivalently, ISO 646 International Reference Version alphabet).

EXAMPLE TRUE

6.24 HD_StructuredTextAttribute

6.24.1 Introduction

The class HD_StructuredTextAttribute shall be derived from class HD_TextAttribute (6.17) and specify information about a structured text attribute type in a feature information register.

The domain of values of a structured text attribute is a character string whose format and/or values adhere to a structure specified by an associated scheme.

6.25 FR_NumericAttribute (ISO 19126 Clause 6.2.13)

6.25.1 Introduction

The abstract class FR_NumericAttribute shall be derived from class FR_FeatureAttribute (6.15) and specify information about a numeric attribute type in a feature information register. The domain of values of a numeric attribute is a number or a number interval.

NOTE In certain encodings the range of numeric attribute values may be limited to allow for realization restrictions. The derived subclasses of FR_NumericAttribute provide mechanisms for specifying limited range and resolution of numeric attribute values of specific types.

6.26 FR_QuantityAttribute (ISO 19126 Clause 6.2.15)

6.26.1 Introduction

The abstract class FR_QuantityAttribute shall be derived from abstract class FR_NumericAttribute (6.19) and specify information about a quantity attribute type in a feature information register. A quantity attribute represents a physical quantity and therefore specifies a measurement basis.

6.27 HD_RealAttribute

6.27.1 Introduction

The class HD_RealAttribute shall be derived from abstract class FR_QuantityAttribute (6.20) and specify information about a real attribute type in a feature information register.

The domain of values of a real attribute is a floating point number.

6.28 HD_IntegerAttribute

6.28.1 Introduction

The class HD_IntegerAttribute shall be derived from abstract class FR_QuantityAttribute (6.20) and specify information about an integer attribute type in a feature information register.

The domain of values of an integer attribute is an integer or an integer interval.

6.29 FR_MeasureSpecification

6.29.1 Introduction

The class FR_MeasureSpecification shall specify the measure of the value of the associated quantity attribute in a feature information register.

6.29.2 measure

The conditional attribute *measure* shall be represented as a character string specifying both a unit of measure and a unit multiple. The following shall be specified: the *specifiedQuantityCategory*.

EXAMPLES "Metre", "Celsius".

6.30 HD_EnumationAttribute

6.30.1 Introduction

The class HD_EnumerationAttribute shall be derived from class FR_FeatureAttribute (6.15) and specify information about the enumeration attribute type. The domain of values of an enumeration attribute is one of a finite, but extensible, set of mutually exclusive values.

6.31 HD_AttributeListedValue

6.31.1 Introduction

The class HD_AttributeListedValue shall be derived from class FR_FeatureItem (6.15), realize class FC_ListedValue [ISO 19110, Table B.11], and specify information about an attribute listed value in a feature information register.

6.32 HD_AttributeUseType (ISO 19126, Annex C.4.8)

HD_AttributeUseType is a <<CodeList>> [ISO/TR 19103, 6.5.4.3] that identifies the intended use of a feature attribute. The domain of HD_AttributeUseType is specified in Table 7.

Table 7 — Values of HD_AttributeUseType

Code	Name	Description
0	unspecified	Intended use of this feature attribute is not specified.
1	feature	Carries the descriptive characteristics of a feature.
2	nationalLanguage	Intended to hold text in a national language.
3	spatialOrMeta	Carries information (for example: accuracy) characterizing information (for example: location) about a feature.

6.33 HD_FeatureUseType (ISO 19126, Annex C.4.7)

HD_FeatureUseType is a <<CodeList>> [ISO/TR 19103, 6.5.4.3] that identifies the intended use of a feature type. The domain of HD_FeatureUseType is specified in Table .

Table 8 — Values of HD_FeatureUseType

Code	Name	Description
0	unspecified	Intended use of this feature type is not specified.
1	geo	Carries the descriptive characteristics of a real world entity.
2	meta	Contains information about other objects.
3	collection	Describes the relationship between other objects.
4	cartographic	Contains information about the cartographic representation (including text) of real world entities.
5	information	

7 Structure of the registry

7.1 Introduction

Registers provide a basis for the flexible management of feature information collections. A single authority may need to establish a suite of coordinated registers that share a common structure, coding scheme, and/or community of interest. This International Standard specifies a compound registry mechanism to support such requirements.

7.2 Compound registry

An authority may need to establish a suite of coordinated registers that share a common structure but benefit from separation into individual registers within a compound registry.

EXAMPLE 1 A single community of interest may include geographic information requirements informed by several scientific disciplines. Each discipline may be best handled by a separate set of domain experts and/or domain authorities. For each, a separate control body, register manager, or register owner may be desirable. While the individuals and organizations responsible for the management of the registers may differ, the resulting geographic information collection is intended to be used “as a whole” even though its management is partitioned; this goal is facilitated by a common register structure. Proposals for new information items may be sent to the registry “as a whole” and then directed to the register manager responsible for the appropriate scientific discipline.

EXAMPLE 2 Several communities of interest may establish their own geographic information registers. They may require the ability to interchange geographic information according to a common encoding method. It is desirable that a single name space for assignment of names (or codes) be established across the communities of interest. A common policy is developed so that names (or codes) are assigned by register managers (or control bodies) for each register in a coordinated manner. Possible policies include pre-allocation of portions of the name space and dynamic assignment (and deconfliction) as proposals are received and acted on. Shared register structure facilitates the establishment of common data product and information content specifications among the disparate communities of interest.

This International Standard specifies a compound registry mechanism to support such requirements.

A compound registry:

a) shall contain multiple registers that share the same item classes,

b) the registers shall share a “common characteristic”, and

c) the register owners shall have agreed to coordinated management of the “common characteristic”.

Figure 3 illustrates the overall structure of the IHO Feature Data Dictionary Registry which contains one or more Registers. The individual Registers must be established and managed by organizations who have a requirement for a hydro-related register and are prepared to comply with the processes detailed in this section. An example of one such register is shown in Annex A.

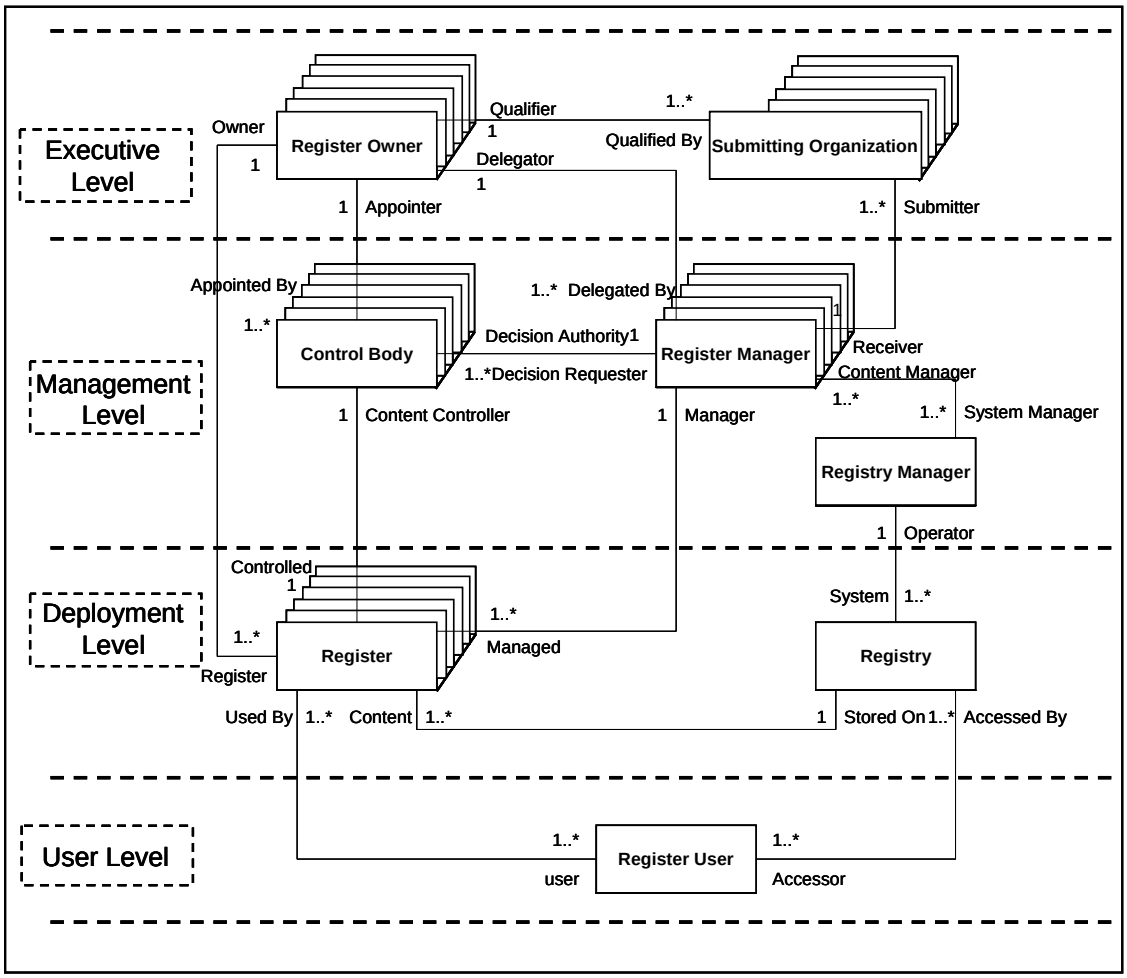


Figure 3 – Organizational relationships

8 Roles and responsibilities in the management of registers

8.1 Registry Owner

The Registry Owner is the organization that is responsible for the registry. It has the authority to host the registers and establish the policy for access. The Feature Data Dictionary Registry is owned by the IHO.

8.2 Registry Manager

The Registry Manager is responsible for the day-to-day operation of the Registry. This includes:

- providing Registry access for Register Managers, Control Bodies, and Register Users
- insuring that information about items in the Registers is readily available to users in regard to those items that are valid, superseded, or retired
- accepting proposals and forwarding them to all Register Managers

The appointment of the Feature Data Dictionary Registry Manager is the responsibility of the IHB on behalf of IHO.

8.3 Register Owner

The Register Owner is an organization that:

- Establishes one or more registers
- Has primary responsibility for the management, dissemination, and intellectual content of those registers
- May appoint another organization to serve as the register manager.

8.4 Register Manager

The Register Manager is responsible for the administration of a register. This includes:

- Coordinating with other Register Managers, Submitting Organizations, related Control Body, and Register Owner
- Maintaining items within the register.
- Maintain and publish a List of Submitting Organizations
- Distributing an information package containing a description of the register and how to submit proposals
- Providing periodic reports to the Register Owner and/or the Control Body. Each report shall describe the proposals received and the decisions taken since the last report. The interval between those reports must not extend 12 months.

8.5 Register User

A Register User is any person or organization interested in accessing or influencing the content of a register.

8.6 Control Body

A Control Body is a group of technical experts appointed by a Register Owner to decide on the acceptability of proposals for changes to the content of a register.

8.7 Submitting Organizations

8.7.1 Eligible submitting organizations

A submitting organization is an organization that is qualified under criteria determined by the register owner to propose changes to the content of a register. The register manager shall determine whether a submitting organization is qualified in accordance with the criteria established by the register owner. A potential submitting organization may apple the determination to the register owner. A list of eligible submitting organizations for each registry may be found in Annex XXX.

A Submitting Organization manages the submission of proposals for registration from within the respective communities or organizations. Proposed changes to the Register must meet the submission procedures established by the Register Owner. (See Annex B for an example)

8.8 Proposers

Any stakeholders (e.g., government, industry, academia, and user groups) who submit a proposal to a submitting organization.

9 Management of Registers

9.1 Establishment of Registers

Any recognized organization (e.g., an International Non-governmental Organization (INGO) or a National Non-governmental Organization (NGO) can establish a hydrographic-related register. To do so, the following information shall be provided to the Registry Owner (IHO):

- short description of the org (name, purpose, etc.)
- Official point of Contact
- Register Manager and List of Submitting Organizations, Control Body
- Implementation of procedures for proposal approval and appeal process

9.2 Processing of Proposals

9.2.1 Introduction

Submitting organizations may submit requests for addition, clarification, modification, retirement and supersession of registered items.

9.2.2 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.

9.2.3 Clarification of registered items

Clarifications correct errors in spelling, punctuation, or grammar. A clarification shall not cause any substantive semantic change to a registered item. Otherwise it shall be treated as a modification. The control body shall handle editorial clarifications at their discretion. Approved clarifications shall be promulgated by the register manager, and shall be recorded in a note attached to a registered item as additional information. (need to make clear that the note is not publicly available)

9.2.4 Modification and Supersession of registered items

Modification of an item is one that would result in a substantive semantic change. Modification shall be effected by including a new item in the register with a new identifier 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 item that superseded it.

9.2.5 Retirement of registered items

Retirement shall be effected by leaving the item in the register, marking it retired, and including the date of retirement.

9.2.6 Submission of proposals

9.2.6.1 The process for submitting proposals for registration of items of geographic information is illustrated in Figure 2.

9.2.6.2 Submitting organizations shall

a) receive proposals for the registration of items of geographic information from Proposers within their respective communities or organizations;

b) ensure that all proposals are logical and complete and are consistent with other features, attributes and enumerants;

c) forward to the appropriate register manager those proposals that have the support of the submitting organization; and

d) explain proposals to the register manager, if necessary.

e) justify their proposals in an acceptable manner.

9.2.6.3 The Register manager shall

a) receive proposals from submitting organizations;

b) review proposals for completeness; and

c) return proposals to the submitting organization if incomplete.

d) coordinate proposals with other Register Managers within two calendar weeks from the date received.

9.2.6.4 The Register Manager shall use the following criteria to determine if the proposal is complete and reject the proposal if:

a) the submitter is not a qualified submitting organization

b) the proposed item does not belong to an item class assigned to this register manager

c) the proposed item does not fall within the scope of the Register

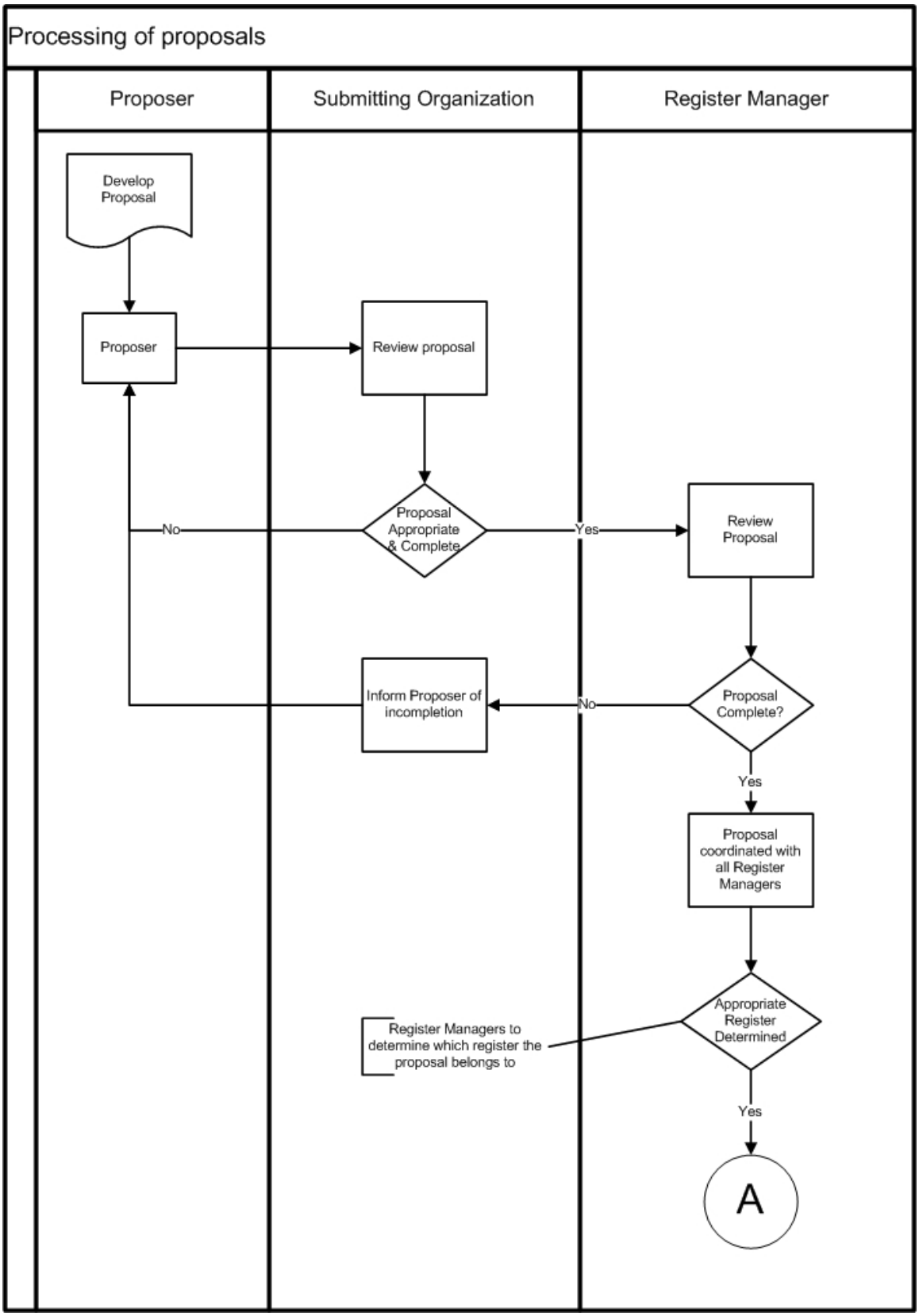


Figure 2 – Processing of proposals

9.2.7 Approval process

9.2.7.1 The process for determining the acceptability of proposals is illustrated in Figure 3. It shall be completed within a time period specified by the register owner.

9.2.7.2 The register manager shall:

if the proposal is for clarification or retirement of a register item, forward the proposal to the control body;

if the proposal is for registration of a new item or modification and/or supersession of an existing register item:

insert the new or superseding item into the register

assign an *itemIdentifier* to the new or superseding item

set the *status* of the item to ‘notValid'; and

forward the proposal to the control body.

9.2.7.3 The control body shall:

decide to accept the proposal without change, to accept the proposal subject to changes negotiated with the submitting organization, or not to accept the proposal. Criteria for not accepting a proposal include:

the specification of the item is incomplete or incomprehensible;

an identical or very similar item already exists in the register or in another register of this registry.

the proposed item does not belong to an item class included in this register;

the proposed item does not fall within the scope of this Register; or

the justification for the proposal is inadequate.

inform the register manager of the decision, and the rationale for the decision, within a time limit specified by the register owner.

9.2.7.4 The register manager shall:

serve as point of contact if there is a need for negotiations between the submitting organization and the control body regarding changes to the proposal that are specified by the control body as a condition of acceptance; and

inform the submitting organization of the results of processing a proposal.

If the decision of the control body is positive, the register manager shall:

complete the proposal management record with *status* set to ‘final’, *disposition* set to ‘accepted', and *dateDisposed* to the current date;

make approved changes to the content of the register item;

if the proposal was an addition, assign a number code from the pre-allocated block for their Register to the new item; and

set the Register item *status* to ‘valid', 'superseded', or 'retired', as appropriate.

If the decision of the control body is negative:

update the proposal management record by setting *status* to ‘tentative', *disposition* to ‘notAccepted', and *dateDisposed* to the current date;

inform the submitting organization of the deadline for appealing the decision of the control body.

Disseminate the results of the approval process.

9.2.7.5 Submitting organizations shall:

negotiate with the control body through the Register Manager, with regard to changes to their proposal that are specified by the control body as a condition of acceptance; and

make known within their respective countries or organizations the decisions taken on proposals by the control body as transmitted to them by the register manager.

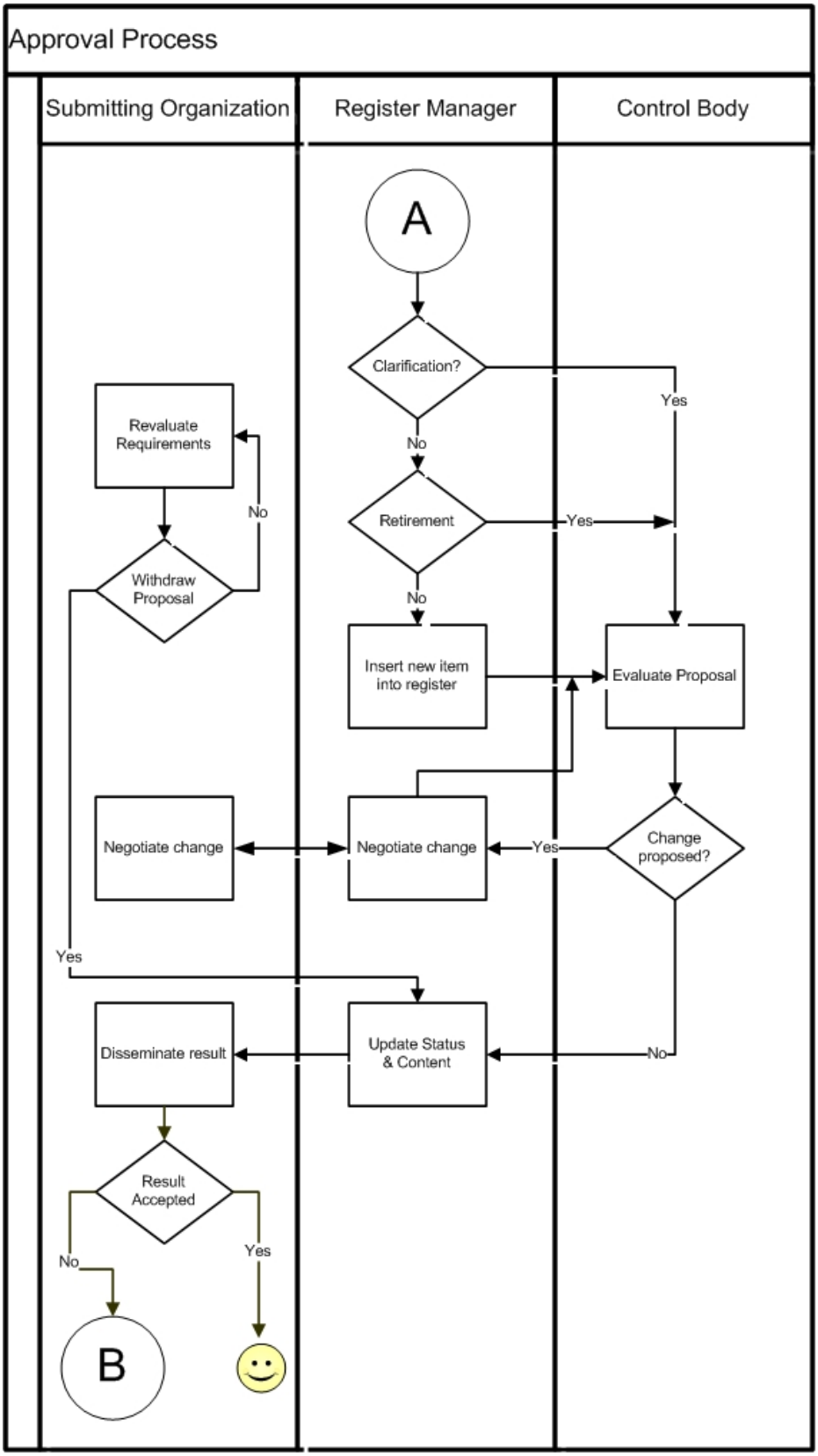


Figure 3 – Approval Process

9.2.8 Withdrawal

Submitting organizations may decide to withdraw a proposal at any time during the approval process.

The Register Manager shall:
change the proposal management *status* from ‘pending’ to ‘final'; and

change the proposal management *disposition* to ‘withdrawn’ and the value for *dateDisposed* to the current date.

9.2.9 Appeals

9.2.9.1 A submitting organization may appeal to the register owner if it disagrees with the decision of a control body to reject a proposal for addition, clarification, modification, retirement, or supersession of an item in a 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 appeal process is illustrated in Figure 4.

9.2.9.2 The submitting organization shall:

a) determine if the decision regarding a proposal for registration is acceptable; and

b) if not, submit an appeal to the register manager.

If there is no appeal by the deadline for submitting an appeal, the register manager shall change the *status* of the proposal management record to ‘final' and change the *dateDisposed* to the current date.

9.2.9.3 The register manager shall:

a) forward the appeal to the register owner.

9.2.9.4 The register owner shall:

a) process the appeal in conformance with its established procedures ; and

b) decide whether to accept or reject the appeal.

c) return the result to the register manager

9.2.9.5 The register manager shall:

a) update the proposal management record fields *disposition* and *dateDisposed*;

b) update the register item *status*; and

c) provide the results of the decision to the control body and to the submitting organization.

9.2.9.6 The submitting organization shall:

a) make the results of the appeal known within their country or organization.

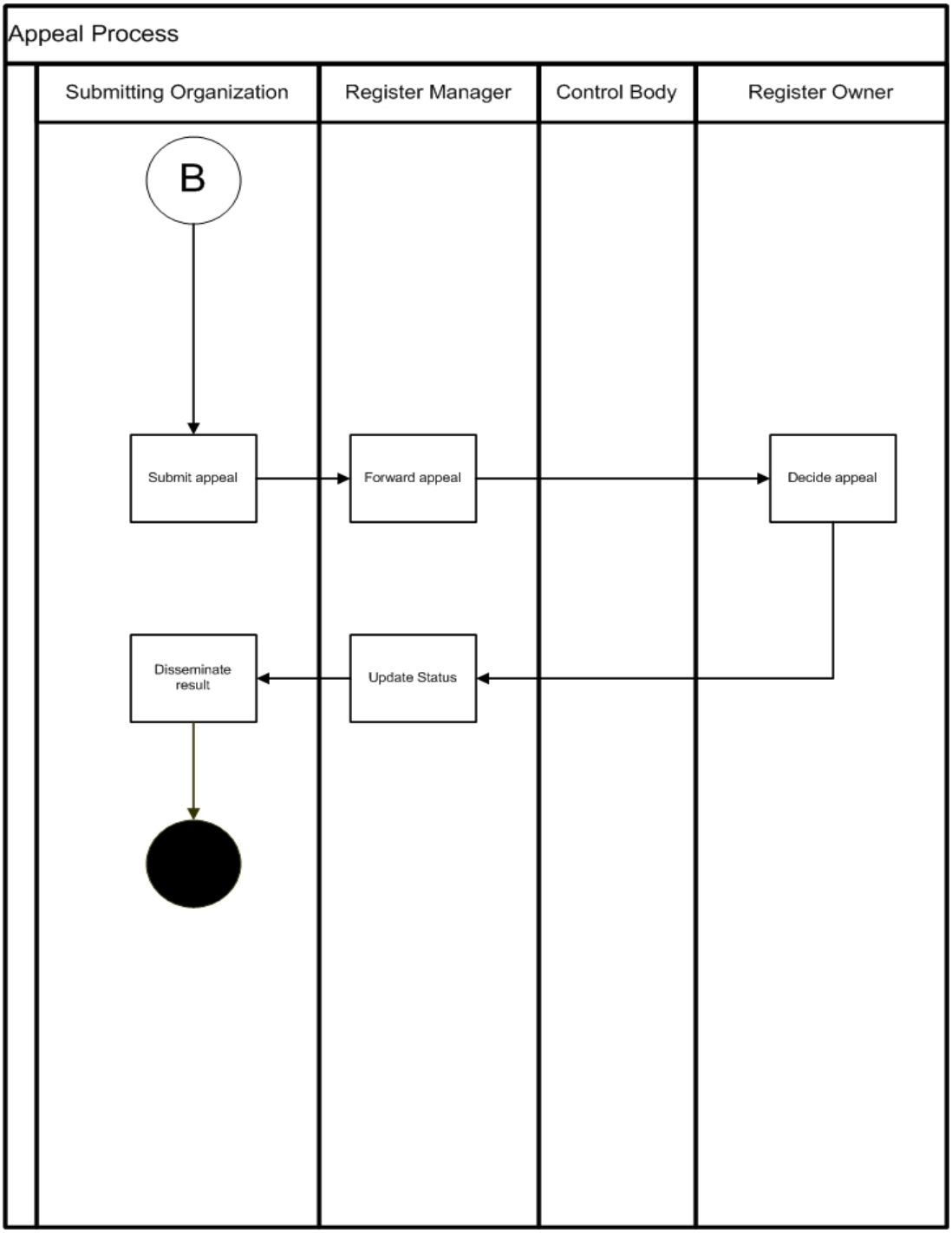


Figure 4 – Appeal process

9.3 List of submitting organizations

The register manager shall maintain and publish a register-specific list of all qualified submitting organizations (8.7) that may submit proposals for changes to the content of each register that it manages. Each list shall include the name and contact information for each submitting organization.

9.4 Publication

The registry manager shall ensure that information about valid, superseded, or retired items in the register is readily available to users. The method for providing this information may depend upon the requirements of the user community.

9.5 Integrity

The register manager shall ensure that, for each register it manages:

a) all aspects of the registration process are handled in accordance with good business practice

b) the content of the register is accurate

c) only authorized persons can make changes to the register

d) the register is secured against loss

Annex A (normative)

Abstract test suite

A.1 General conformance

A.1.1 Register owner responsibilities

a) Test Purpose: Verify that the register owner has identified a register manager and a control body for the register, specified criteria that determine which organizations may act as submitting organizations, and established a procedure to process appeals of decisions made by the control body.

b) Test Method: Request information about the register from the register owner and/or register manager. Verify that required information is included.

c) Reference: 8.3

d) Test Type: Basic

A.1.2 Register manager responsibilities

a) Test Purpose: Verify that the register manager distributes an information package containing a description of the register and how to submit proposals and that the register manager provides reports to the register owner at intervals specified by the register owner.

b) Test Method: Request a copy of the information package and review for completeness. Request copies of register manager reports from the register owner.

c) Reference: 8.4

d) Test Type: Basic

A.1.3 Submission by approved submitting organizations

a) Test Purpose: Verify that all submitting organizations satisfy the criteria established by the register owner, and that register items have been submitted by approved submitting organizations.

b) Test Method: Obtain a copy of the criteria for submitting organizations determined by the register owner and inspect the list of submitting organizations to verify that all satisfy these criteria. Check the submitting organization associated with each of a sample of register items to verify that each is listed as a submitting organization.

c) Reference: 8.7

d) Test Type: Basic

A.1.4 Management procedures

a) Test Purpose: Verify that the register is managed according to the rules specified in this standard.

b) Test Method: Check the procedures described in the information package distributed by the register manager.

c) Reference: Clause **Error! Reference source not found.**

d) Test Type: Capability

A.1.5 Register content

a) Test Purpose: Verify that the items in the register contain the minimum specified content.

b) Test Method: Inspect each of a sample of entries in the register to ensure that they include all elements of information required by this standard and the technical standard that specifies the corresponding item class.

c) Reference: Clause **Error! Reference source not found.**

d) Test Type: Capability

A.1.6 Publication of register contents

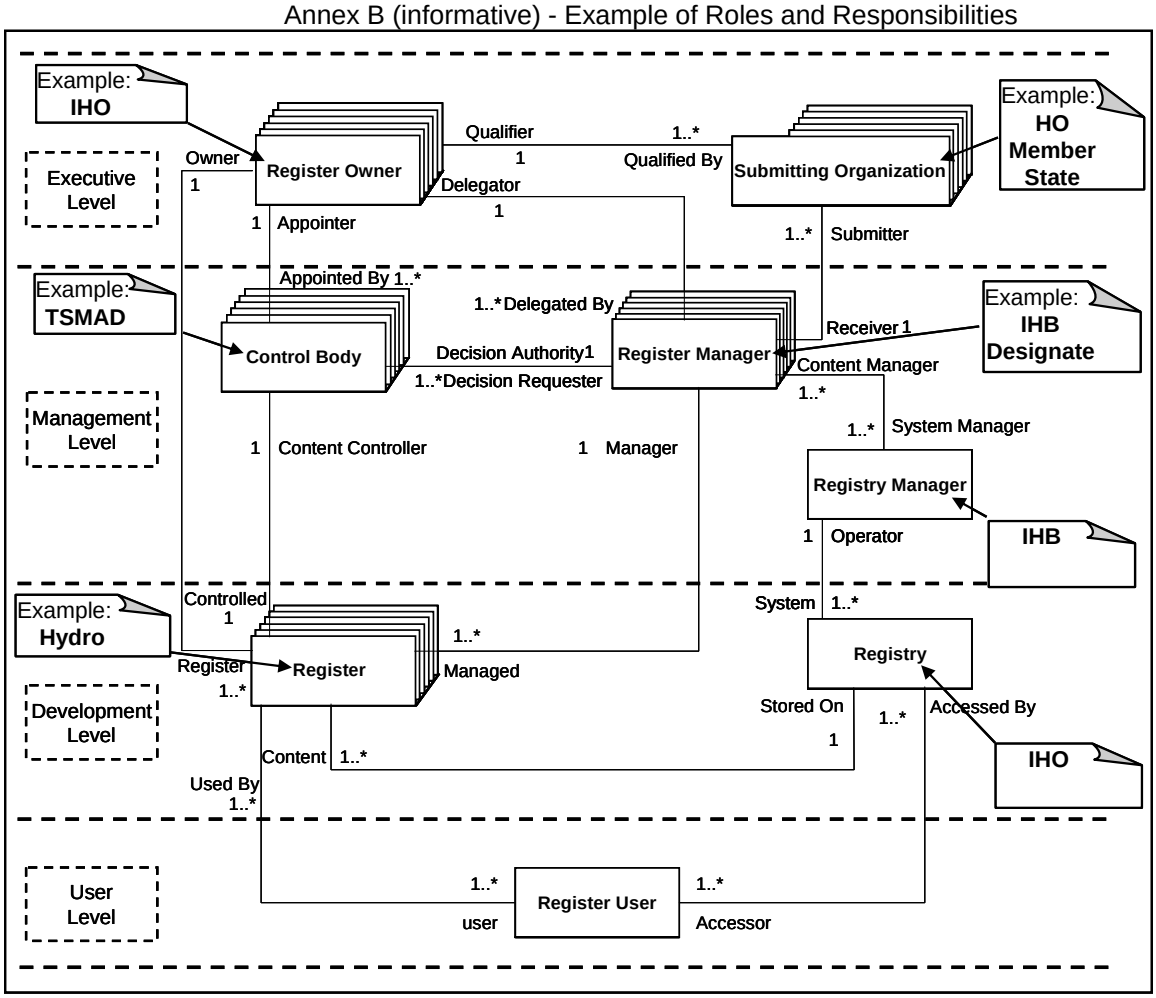
a) Test Purpose: Verify that the contents of the register are publicly available.

b) Test Method: Check the information packet distributed by the register manager. Visit the web site or electronically processable form and inspect the information made available.

c) Reference: **Error! Reference source not found.**

d) Test Type: Capability

Annex B (informative) - Example of Roles and Responsibilities



The Hydro Register within the IHO registry acts as the adoptive authority for navigationally significant information. Essentially it is a warehouse of collected information of items from various authoritative bodies such as IMO, IALA, and National Regulatory bodies. This warehouse is a one-stop shop for various users to find collected items of navigational and hydrographic significant information in one place.

Annex C – Process to Submitting Proposals [for now…]

Process for submitting proposals to the Hydro register within the IHO Registry

- Only a Member States Hydrographic Office may act as the Submitting Official for submitting proposals to the Hydro register.
    - The proposal shall contain the following:
        - The contact information from the Submitting Official;
        - The proper information as mandated by the proposal form [need to put the different information needed];
        - Justification for the proposal
        - Implications for other existing features, attributes or enumerants
- On the proposal interface there will be a statement informing proposers that they can contact an official HO for submitting a proposal, the website will have an initial list of HO contacts that can sponsor the proposal.
- Each Submitting Organization will have an official log-on to the register.
- Once a proposal has been submitted to the hydro register, the proposal is automatically sent to the other Register Managers. These managers have two calendar weeks in which to determine in which Register the proposal shall be entered.
- If the Register Managers agree that the proposal belongs to the hydro Register then the hydro Register Manager shall take responsibility for its subsequent processing. An email will then be sent to the Control Body to start discussion on the register-associated forum.
- A moderator of the discussion shall be assigned.
- The Control Body will then have a 30 day discussion period. Comments shall be facilitated via the register-associated forum.
- After 30 days, if a consensus has been reached, the proposal will be accordingly processed.
    - If accepted then the Register Manager shall revise the Register accordingly.
    - If rejected then the Register Manager shall notify the Submitting Organization and revise the Register accordingly.
- If consensus is not reached after 30 days, the moderator may extend the discussion period for another 30 days or until the next TSMAD meeting.
- If consensus has not been reached after 60 days of the above discussions then the Register Manager shall inform the Submitting Organization that the proposal shall be adjudicated at the next TSMAD meeting.

Register Owner: IHO CHRIS
Register Manager: IHB nominee
Control Body: IHO TSMAD members (as a specialized sub-group)
Submitting Organizations: IHO Member States Hydrographic Office

Note: Procedure for submitting if you are an Hydrographic Office

Feature Proposal Form

* Entry Required

Proposed Register: S-57

***Alpha Code:** — Suggested abbreviated name.(max 6 characters).

***Feature Name:** — Full descriptive name of the feature.

***UseType:** Unspecified

***Definition:**

Source: — The source of the definition.

Description: — Further remarks or notes.

M4: — References to the paragraph number in the Chart Specifications of the IHO - publication M-4.

Int1: — References to the number of the paper chart feature in the International Chart Series INT 1 - Symbols, Abbreviations.

Distinction: — Related features.

Relevant Attributes: — Attributes which are the recommended minimum required for this feature.

***Proposer:** — Name of the submitting organization.

***Proposal Type:** Addition

Purpose: — The purpose for which this entry is required.

***Justification:** — Justification for the proposal.

Proposed Change:

Date Proposed: 2005-04-28

Insert record Clear

Attribute Proposal Form

* Entry Required

Proposed Register:	S-57	
***Alpha Code:**		Suggested abbreviated name (maximum 6 characters).
***Attribute Name:**		Full descriptive name of the feature.
***Definition:**		
Source:		The source of the definition.
Description:		Further remarks or notes.
***Use Type:**	Unspecified	
Cardinality:		
Value Multiplicity:		
***Attribute Value Type:**	Boolean	
Non Negative Integer Representation:	unrestricted	Required if value type must have a positive range.
Integer Representation:	unrestricted	Required if value type must have a negative or positive range.
Real Representation:	unrestricted	Required if value type must bea real.
Length:		For value type text specifies the string length. If not specified, length is unconstrained.
Lexical:	False	
Unit of Measure:	Degree	
Increment:		
Maximum Value:		
Minimum Value:		
Format:		
Example:		
***Proposer:**		Name of the submitting organization.
***Proposal Type:**	Addition	
Purpose:		The purpose for which this entry is required.
***Justification:**		Justification for the proposal.
Date Proposed:	2005-04-28	

Submit Clear

Enumeration Proposal Form

* Entry Required

Register Identifier:	S-57
*Attribute:	$CHARS
*Name:	
*Definition:	
Source:	
Description:	
*Proposer:	
*Proposal Type:	
Purpose:	
*Justification:	
Proposed Change:	
Date Proposed:	2005-04-28

Insert record Clear