S-100 – Part 2

Management of Registers

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2-1 Scope

This Part of S-100 specifies procedures to be followed in maintaining and publishing Registers of unique, unambiguous and permanent identifiers that are assigned to items of geographic, hydrographic and metadata information. In order to accomplish this purpose, this Part describes the roles and responsibilities for the management of a Registry and its Registers. Specific administrative details of the IHO Geospatial Information (GI) Registry and its Registers is documented in IHO Publication S-99.

2-2 Conformance

This profile conforms to level 2 of ISO 19106:2004. The following is a brief description of the specializations and generalizations where the profile differs from ISO 19135:2005.

1) S100_RE_Register constrains the use of the attribute alternativeLanguages.
2) S100_RE_RegisterItem constrains the use of the attributes fieldOfApplication and alternativeExpression.
3) S100_RE_RegisterItem renames the attribute description to remarks.
4) S100_RE_ManagementInfo is a new class which amalgamates the classes RE_DecisionStatus, S100_RE_ProposalType, S100_RE_SubmittingOrganization, RE_ItemStatus and RE_Disposition.
5) S100_RE_ProposalType is a new class which amalgamates the ISO 19135 classes RE_AdditionInformation, RE_ClarificationInformation, RE_AmendmentInformation and RE_AmendmentType.

2-3 Normative references

ISO 19126:2009, *Geographic Information – Feature concept dictionaries and registers*

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

ISO 8601:2004, *Data elements and interchange formats - Information interchange – Representation of dates and times*

IHO S-99, *Operational Procedures for the Organization and Management of the IHO Geospatial Information Registry*

2-4 General concepts

2-4.1 Registry

A Registry is the information system on which a Register or series of Registers is maintained.

2-4.1.1 Registry Owner

A Registry Owner has the authority to host the Registers and establish the policy for access. The Registry Owner decides whether a proposed Register shall be hosted on the Registry.

2-4.1.2 Registry Manager

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

1) providing Registry access for Register Managers, Control Bodies, and Register Users;
2) ensuring that information about items in the Registers is readily available to users in relation to those items that have the status of valid, invalid, clarified, superseded, retired or processing;
3) accepting proposals and forwarding them to all Register Managers; and
4) managing the resolution of persistent URI identifiers to appropriate resources, but only if resolution services are provided on a Registry server.

2-4.2 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 existing items in the Register can be clarified, superseded or retired. Each Register item has one or more dates associated with it that indicate when changes in its status occurred. This means that a Product Specification, defined at a given date, may reference an item in the Register at a specific point in time.

2-5 Roles and responsibilities in the management of Registers

2-5.1 Register Owner

The Register Owner is an organization that:

1) establishes one or more Registers within a Registry;
2) has primary responsibility for the management, dissemination, and intellectual content of those Registers;
3) may appoint another organization to serve as the Register Manager; and
4) shall establish a procedure to process proposals and appeals made by Submitting Organizations.

2-5.2 Register Manager

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

1) coordinating with other Register Managers, Submitting Organizations, the related Control Body, Register Owner and the Registry Manager;
2) maintaining items within the Register;
3) maintain and publish a List of Submitting Organizations;
4) distributing an information package containing a description of the Register and how to submit proposals; and

5) 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 exceed 12 months.

A Register Manager may manage multiple Registers.

2-5.3 Register User

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

2-5.4 Domain Control Body

The Domain Control Body (DCB) for a Register 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. The group must comprise experts in the related field that makes up the contents of the Register. As such, the DCB consists of at least one representative from each of the Domains contributing to the content of the Register.

2-5.5 Executive Control Body

The Executive Control Body (ECB) must consist of a representative of each of the Domains within the Register. The ECB will monitor and advise the Register Manager(s) and act as arbiters for any decisions or disputes in the Register process. In the event that a resolution cannot be achieved, the ECB may request a decision from the IHO Hydrographic Services and Standards Committee (HSSC).

2-5.6 Submitting Organizations

2-5.6.1 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 must determine whether a Submitting Organization is qualified in accordance with the criteria established by the Register Owner. An approved Submitting Organization shall have at least one representative appointed to submit proposals to the Register on its behalf (multiple representatives of a Submitting Organization may be appointed in consultation with the Register Manager).

2-5.7 Processing of Proposals

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

2-5.7.1 Addition of registered items

Addition is the insertion into a Register of a new item that describes a concept not adequately described by a valid or processing item already in the Register.

2-5.7.2 Clarification of registered items

Clarifications correct 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 may be clarified are definition, other references, and remarks.

2-5.7.3 Supersession of registered items

Supersession of an item means any proposal that would result in a substantive semantic change to an existing valid item, such as a change to the name of an item or its camelCase

identifier; or a change in the portrayal of an item in the Portrayal Register. Supersession shall be accomplished by including one or more new items in the Register with new identifiers and a more recent date. The original item shall remain in the Register but must include the date at which it was superseded, and a reference to the items that superseded it.

2-5.7.4 Retirement of registered items

Retirement shall be affected by leaving the item in the Register; marking it retired; and including the date of retirement.

2-6 The Register Manager shall

1) Receive proposals from Submitting Organization representatives;
2) Review proposals for completeness;
3) Return proposals to the Submitting Organization representative if incomplete;
4) Check within the Register for similar proposals; and if similar, the Register Manager shall contact the Submitting Organization representative;
5) Coordinate proposals with other Register Managers within two calendar weeks from the date received;
6) Generate a proposal management record, with the status set to ‘transferred’; and
7) Initiate the approval process.

2-6.1 Proposal legitimacy

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

1) The submitter is not a qualified Submitting Organization representative;
2) The proposed item does not belong to an item class assigned to this Register Manager;
3) The proposed item does not fall within the scope of the Register; or
4) The proposed item has already been proposed.

2-7 Proposal process

Figure 2-1 – Proposal process – Concept Register

Figure 2-2 – Proposal process – Data Dictionary Register

2-7.1 Approval process

The process for determining the acceptability of proposals is illustrated in Figures 2-1 and 2-2 above. It must be completed within a time period specified by the Register Owner, in accordance with S-99.

The Register Manager shall ensure the following:

1) If the proposal is for clarification or retirement of a Register item, set the *itemStatus* of the item to ‘processing'; and forward the proposal to the Register Domain Control Body; or

2) If the proposal is for registration of a new item or supersession of an existing Register item:
    a) Assign an *itemIdentifier* to the new or superseding item;
    b) Set the *itemStatus* of the item to ‘processing', and
    c) forward the proposal to the Register Domain Control Body.

The Register Domain Control Body shall:

1) 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:
    a) The specification of the item is incomplete or incomprehensible;
    b) An identical or very similar item already exists in the Register or in another Register of the Registry;
    c) The proposed item does not belong to an item class included in the Register;
    d) The proposed item does not fall within the scope of this Register; or
    e) The justification for the proposal is inadequate.

2) Inform the Register Manager of the decision, and the rationale for the decision, within a time limit specified by the Register Owner, in accordance with S-99.

The Register Manager shall:

1) Serve as the point of contact if there is a need for negotiations between the Submitting Organization and the Register Domain Control Body regarding changes to the proposal that are specified by the Domain Control Body as a condition of acceptance; and

2) Inform the Submitting Organization representative of the results of processing the proposal.

If the decision of the Register Domain Control Body is positive, the Register Manager shall, in accordance with policies for the Register:

1) Complete the proposal management record with *proposalStatus* set to ‘accepted'; and *dateAmended* to the date of the Domain Control Body’s decision;

2) Make approved changes to the content of the Register item; and

3) Set the Register item *itemStatus* to ‘valid'. For supersession or retirement proposals, the replaced or retired item has *itemStatus* set to 'superseded' or 'retired', as appropriate.

If the decision of the Register Domain Control Body is negative, the Register Manager shall:

1) Update the proposal management record by setting *proposalStatus* to ‘rejected'; and *dateAmended* to the date of the Domain Control Body’s decision; and

2) Inform the Submitting Organization of the deadline for appealing the decision of the Domain Control Body.

Submitting Organization representatives shall:

1) Negotiate with the Register Domain Control Body through the Register Manager, with regard to changes to their proposal that are specified by the Domain Control Body as a condition of acceptance; and

2) Make known within their respective Submitting Organization communities or organizations the decisions taken on proposals by the Domain Control Body as transmitted to them by the Register Manager.

The Register Manager shall:

1) Disseminate the results of the approval process to the public.

2-7.1.1 Withdrawal of proposals

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

The Register Manager shall:

1) Change the proposal management record *proposalStatus* from ‘not yet determined’ to ‘withdrawn'.

2-7.1.2 Appeals

A Submitting Organization representative may appeal to the Register Executive Control Body if it disagrees with the decision of a Register Domain Control Body to reject a proposal for addition, clarification, supersession or retirement of an item 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 appeal process is included in the overall proposal process as shown in Figures 2-1 and 2-2 above.

The Submitting Organization shall:

1) Determine if the decision regarding a proposal for registration is acceptable; and
2) If not, submit an appeal to the Register Manager.

The Register Manager shall:

1) Forward the appeal to the Register Executive Control Body.

The Register Executive Control Body shall:

1) Process the appeal in conformance with its established procedures;
2) Decide whether to accept or reject the appeal; and
3) Return the result to the Register Manager.

The Register Manager shall:

1) Update the proposal management record fields *proposalStatus* and *dateAmended*;
2) Update the Register item *itemStatus*; and
3) Provide the results of the decision to the Register Domain Control Body and to the Submitting Organization representative.

The Submitting Organization representative shall:

1) Make the results of the appeal known within their Submitting Organization community or organization.

2-7.2 List of Submitting Organizations

The Register Manager shall maintain and publish a Register-specific list of all qualified Submitting Organizations that may submit proposals for changes to the content of each Register that it manages. Each list shall include the name and contact information of the representative(s) for each Submitting Organization. The Registry shall contain an application to become a Submitting Organization. The Register Owner will be responsible for accepting or rejecting the application.

2-7.3 Publication

The Registry Manager shall ensure that information about valid, clarified, 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 members of the user community.

2-7.4 Integrity

The Register Manager shall ensure that, for each Register being managed:

1) All aspects of the registration process are handled in accordance with good business practice;
2) The content of the Register is accurate; and
3) Only authorised persons can make changes to the Register content.

The Registry Manager shall ensure the security and integrity of the Registry using IT best practices.

2-8 Register Schema

2-8.1 Introduction

The schema specified in this clause describes the structure of an IHO Geospatial Information Register.

Information about the Register and items in the Register shall be:

1) Accessible through an on-line interface to the Register;
2) Included in any copy of the Register; and
3) Included in any information package about the Register.

Figure 2-3 – The Register schema

2-8.2 S100_RE_Register

The class S100_RE_Register specifies information about the Register itself.

Role Name	Name	Description	Mult	Data Type	Remarks
Class	S100_RE_Register		-	-	
Attribute	name	The name of the Register	1	CharacterString	Unique within the Registry
Attribute	operatingLanguage	The language used in this Register	1	RE_Locale	
Attribute	contentSummary	Summary of the content	1	CharacterString	
Attribute	uniformResourceIdentifier	The link to the interface of the Register in the Internet	1	CI_OnlineResource	
Attribute	dateOfLastChange	The date when the last change was made to this Register	1	Date	
Association	registerItem	The items of the Register	1..*	S100_RE_RegisterItem	

2-8.3 S100_RE_RegisterItem

The class S100_RE_RegisterItem carries the characteristics that are common to all types of registered items. Domain specific extensions may be added in the appropriate part of S-100; for example, Part 2b – Data Dictionary Register.

Role Name	Name	Description	Mult	Data Type	Remarks
Class	S100_RE _RegisterItem		-	-	Class is abstract
Attribute	itemIdentifier	Each item has its own unique identifier in a Register	1	Integer	
Attribute	name	Succinct expression of the item concept it denotes	1	CharacterString	
Attribute	definition	Shall be a precise statement of the nature, properties, scope, or essential qualities of the concept as realized by the item	0..1	CharacterString	Mandatory for the Concept, Data Dictionary, Portrayal and Metadata Registers
Attribute	remarks	Supplementary information	0..1	CharacterString	

Role Name	Name	Description	Mult	Data Type	Remarks
Attribute	itemStatus	The state in which a registered item exists	1	RE_ItemStatus	
Attribute	dateAccepted	The date a registered item became valid	0..1	Date	
Attribute	dateAmended	The date a registered item is clarified, superseded or retired	0..1	Date	
Attribute	alias	Equivalent name(s) used for the item	0..1	CharacterString	
Attribute	camelCase	Identifier of the item using camelCase notation	1	CharacterString	
Attribute	definitionSource	The source of the definition	0..1	CharacterString	
Attribute	justification	Primary reason for the proposal including how it is proposed to be used	0..1	CharacterString	Inherited from S-100_RE_ManagementInfo
Attribute	proposedChange	The text of the proposed change	0..1	CharacterString	Inherited from S-100_RE_ManagementInfo
Attribute	reference	An identifier of the place in the definitionSource from which the definition is derived	0..1	CharacterString	
Attribute	similarityToSource	The type of change that has been made to a definition relative to the definition as it exists in the definition source	0..1	CharacterString	
Association	register	The Register that contains the item	1	S100_RE_Register	
Association	referenceSource	The source information the item definition was taken from.	0..1	S100_RE_ReferenceSource	
Association	reference	Reference to other relevant standards or documents	0..*	S100_RE_Reference	For example INT1 or M4
Association	managmentInfo	Sets of information describing the management of the item in the Register	1..*	S100_RE_ManagmentInfo	

2-8.4 RE_ItemStatus

The enumeration RE_ItemStatus identifies the registration status of a Register item.

Role Name	Name	Description	Remarks
Enumeration	RE_ItemStaus		
Literal	processing	The item has been entered into the Register, but the Domain Control Body has not accepted the proposal to add it	
Literal	valid	The item has been accepted, is recommended for use, and has not been superseded or retired	
Literal	superseded	The item has been superseded by one or more items and is no longer recommended for use	
Literal	retired	A decision has been made that the item is no longer recommended for use. It has not been superseded by another item	
Literal	clarified	The item has been clarified and is no longer recommended for use	

2-8.5 S100_RE_ReferenceSource

The class S100_RE_ReferenceSource specifies information about the source of a Register item taken from an external document or Register.

Role Name	Name	Description	Mult	Data Type	Remarks
Class	S100_RE_ReferenceSource		-	-	
Attribute	referenceIdentifier	An identifier of the place in the source document that is referenced	0..1	CharacterString	
Attribute	sourceDocument	The source document	1	CI_Citation	
Attribute	similarity	Indicates how the definition is related to the source document	1	S100_RE_SimilarityToSource	

2-8.6 S100_RE_SimilarityToSource

The enumeration S100_RE_SimilarityToSource identifies the type of change that has been made to an item specification relative to an item specification in an external source.

Role Name	Name	Description	Remarks
Enumeration	S100_RE_SimilarityToSource		
Literal	identical	No change has been made to the definition	
Literal	restyled	The style of the definition has been changed to match the style and structure of other definitions in the Register that has imported the definition	
Literal	contextAdded	The definition includes information about its context that is not explicit in the specification in the external source	
Literal	generalization	The definition of the register item has been generalized to have a broader meaning than the item specified in the external source	
Literal	specialization	The definition of the Register item has been specialized to have a narrower meaning than the item specified in the external source	
Literal	unspecified	The nature of the differences between the Register item and the similar item in the external source is unspecified	

2-8.7 S100_RE_Reference

The class S100_RE_Reference specifies information about the source and/or lineage of a specific Register item derived from an external document or Register.

Role Name	Name	Description	Mult	Data Type	Remarks
Class	S100_RE_Reference		-	-	
Attribute	referenceIdentifier	An identifier of the place in the source document that is referenced	0..1	CharacterString	
Attribute	sourceDocument	The source document	1	CI_Citation	

2-8.8 S100_ RE _ManagementInfo

The class S100_RE_ManagementInfo specifies the management record of a Register item.

Role Name	Name	Description	Mult	Data Type	Remarks
Class	S100_RE_ManagmentInfo		-	-	
Attribute	proposalType	The type of the proposal	1	S100_RE_ProposalType	
Attribute	submittingOrganisation	The proposal's sponsor	1	CharacterString	
Attribute	proposedChange	The text of the proposed change	1	CharacterString	
Attribute	justification	Primary reason for the proposal including how it is proposed to be used	1	CharacterString	
Attribute	dateAccepted	Date the proposal was accepted	0..1	Date	
Attribute	dateProposed	Date the proposal was made	1	Date	
Attribute	dateAmended	Date the proposal was adjudicated	1	Date	
Attribute	proposalStatus	Provides values for describing the disposition of a proposal to add or modify a Register item	1	RE_ProposalStatus	
Attribute	controlBodyNotes	Supplementary management information	0..*	CharacterString	

2-8.9 S100_ RE _ProposalType

The enumeration S100_RE_ProposalType species the type of proposal for a Register item.

Role Name	Name	Description	Remarks
Enumeration	S100_RE_ProposalType		
Literal	addition	The item is to be added to the Register	
Literal	clarification	A non-substantive change to an item in the Register	
Literal	supersession	The item has been superseded by another item and is no longer recommended for use.	
Literal	retirement	A decision has been made that the item is no longer recommended for use. It has not been superseded by another item	

2-8.10 RE _ProposalStatus

The enumeration RE_ProposalStatus specifies the disposition of a proposal to add or change a Register item.

Role Name	Name	Description	Remarks
Enumeration	RE_ProposalStatus		
Literal	notYetDetermined	The submitting Organization has submitted the proposal	
Literal	transferred	The Register Manager has requested the Domain Control Body to review the proposal	
Literal	retransferred	The Register Manager has requested the Submitting Organization to supplement the proposal	
Literal	accepted	The Control Body has accepted the proposal	
Literal	rejected	The Control Body has not accepted the proposal	
Literal	withdrawn	The Submitting Organization has withdrawn the proposal	
Literal	negotiation	The Domain Control Body has requested the Submitting Organization to supplement the proposal	
Literal	appeal	The Submitting Organization has initiated an appeal	

Role Name	Name	Description	Remarks
Literal	appealTransferred	The Register Manager has transferred the appeal to the Executive Control Body	
Literal	appealAccepted	The Executive Control Body has accepted the appeal	
Literal	appealRejected	The Executive Control Body has not accepted the appeal	