**S-100 – Part 2b**

Portrayal RegisterContents

[2a-1 Scope 1](#_Toc424285189)

[2a-1.1 Conformance 1](#_Toc424285190)

[2a-2 Normative references 1](#_Toc424285191)

[2a-3 General concepts 2](#_Toc424285192)

[2a-3.1 Register 2](#_Toc424285193)

[2a-3.2 Feature concept dictionary 2](#_Toc424285194)

[2a-3.3 Feature catalogue 2](#_Toc424285195)

[2a-4 IHO Feature Concept Dictionary 2](#_Toc424285196)

[2a-4.1 Types of registered items 2](#_Toc424285197)

[2a-4.2 Data model of a Feature Concept Dictionary 3](#_Toc424285198)

[2a-4.2.1 UML Model 3](#_Toc424285199)

[2a-4.2.2 S100\_RE\_Register 4](#_Toc424285200)

[2a-4.2.3 S100\_CD\_RegisterItem 4](#_Toc424285201)

[2a-4.2.4 RE\_ItemStatus 4](#_Toc424285202)

[2a-4.2.5 S100\_CD\_FeatureConcept 5](#_Toc424285203)

[2a-4.2.6 S100\_CD\_FeatureUseType 5](#_Toc424285204)

[2a-4.2.7 S100\_CD\_AttributeConcept 5](#_Toc424285205)

[2a-4.2.8 S100\_CD\_SimpleAttributeConcept 6](#_Toc424285206)

[2a-4.2.9 S100\_CD\_QuantitySpecification 6](#_Toc424285207)

[2a-4.2.10 S100\_CD\_AttributeValueType 8](#_Toc424285208)

[2a-4.2.11 S100\_CD\_AttributeConstraints 9](#_Toc424285209)

[2a-4.2.12 S100\_CD\_ComplexAttributeConcept 9](#_Toc424285210)

[2a-4.2.13 S100\_CD\_AttributeUsage 10](#_Toc424285211)

[2a-4.2.14 S100\_CD\_EnumeratedValueConcept 10](#_Toc424285212)

[2a-4.2.15 S100\_CD\_InformationConcept 11](#_Toc424285213)

[2a-4.2.16 S100\_CD\_AlphaCode 11](#_Toc424285214)

[2a-4.2.17 S100\_RE\_ReferenceSource 12](#_Toc424285215)

[2a-4.2.18 S100\_RE\_Reference 12](#_Toc424285216)

[2a-4.2.19 S100\_RE\_ManagementInfo 12](#_Toc424285217)

Appendix 2a-A [Example of a complex attribute](#_Toc424285217) 14

# Scope

The IHO registry will contain a number of registers, one of which will be for portrayal. A portrayal register specifies the portrayal of data. The portrayal of data is independent of the data but closely related to the data. That is the attributes within the data set drive the portrayal process, but there may be many different portrayals for the same data. The use of a register to store aspects of portrayal will significantly improve the IHO’s ability to manage and extend multiple products based on S-100 which can be made available for use in a relatively short timescale. This register will support wider use of registered items by making them publicly available and increase their visibility to potential users. This Part describes the content of the portrayal register.

## Conformance

This profile conforms to conformance class 2 of ISO 19106:2004. The following is a brief description of the specializations and generalizations where the profile differs from ISO 19126:2008.

1. A new class, S100\_CD\_InformationConcept is introduced.
2. New classes, S100\_CD\_FeatureBinding, S100\_CD\_InformationBinding and S100\_FC\_AttributeBinding are introduced.
3. A new class, S100\_CD\_AttributeConstraints is introduced.
4. The class FC\_FeatureAttribute is specialized to be the abstract class S100\_CD\_Attribute.
5. New classes, S100\_CD\_SimpleAttributeConcept and S100\_CD\_ComplexAttributeConcept are introduced.
6. A new class, S100\_CD\_InformationRole is introduced.
7. The classes CD\_InheritanceRelation, CD\_FeatureOperation CD\_Binding, CD\_Constraint and CD\_BoundFeatureAttribute are not used.

# Normative references

The following referenced documents are required for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including amendments) applies.

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

ISO/DIS 19126:2008, Geographic Information – Feature concept dictionaries and registers

ISO 19117:2012. Geographic Information – Portrayal

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

RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax*. T. Berners-Lee, R. Fielding, L. Masinter. Internet Standard 66, IETF. URL: <http://www.ietf.org/rfc/rfc3986.txt> or <http://www.rfc-editor.org/info/std66>

RFC 2141, *URN Syntax*. R. Moats. IETF RFC 2141, May 1997. URL: <http://www.rfc-editor.org/info/rfc2141>

# General concepts

## Register

As described in Part 2, 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 that specific point in time.

## Portrayal Register

A portrayal register specifies independent sets of definitions of point symbols, pattern symbols, complex line styles, and colour symbols. In addition, the portrayal register may be subdivided into different domains. The portrayal register may be used to develop the portrayal catalogue. Unlike the portrayal catalogue, a portrayal register does not define the portrayal rules or bind the portrayal to a feature.

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

## Portrayal catalogue

The Portrayal Catalogue contains portrayal functions that map the features to symbology it also contains symbol definitions, colour definitions, portrayal parameters and portrayal management concepts such as viewing groups. Portrayal Catalogues are described in detail in S-100 Part 9.

# IHO Portrayal Register

## Types of registered items

The following are types of items that may be registered.

1. Color Token
2. Color Profile
3. Symbol
4. Line Style
5. Area Fill
6. Font
7. Viewing Group
8. Viewing Group Layer
9. Display Mode
10. Display Plane
11. Context Parameter
12. Symbol Schema
13. Line Style Schema
14. Area Fill Schema
15. Pixmap Schema
16. Color Profile Schema
17. Cascading Style Sheet
18. Display priority

## Data model of a Portrayal Register

### 

### UML Model

The following figure shows the information model of the hydrographic portrayal register:

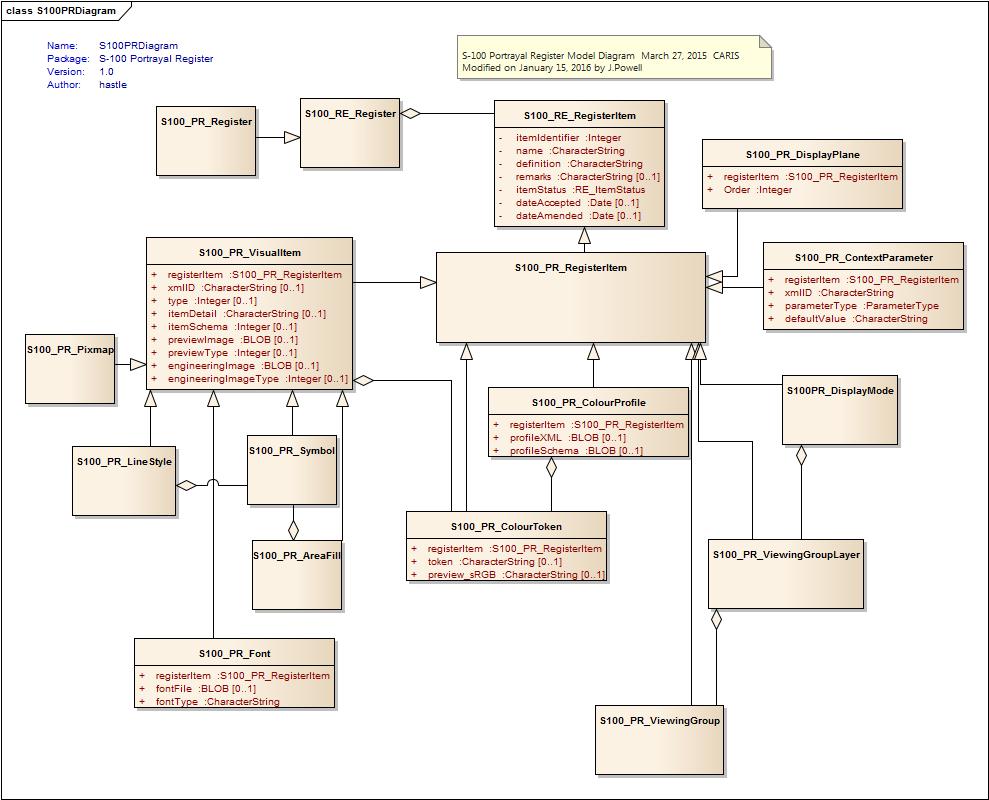


Figure 2b-1 – Portrayal Register

### 

### S100\_PR\_Register

This class S100\_PR\_Register is derived from S100\_RE\_Register. It is extended with an ‘owner’ and ‘domain’. The intention is that each domain or organization may have a dedicated register.

### S100\_PR\_RegisterItem

The class S100\_PR\_RegisterItem is a specialization of the class S100\_RE\_RegisterItem and carries the characteristics that are common to all types of registered items listed in clause 2a-4.1

### RE\_ItemStatus

The class RE\_ItemStatus identifies the registration status of the S100\_PR\_RegisterItem. Further details can be found in S-100 Part 2.

### S100\_PR\_ColorToken

This class is derived from S100\_PR\_RegisterItem. The definition of a color token as a register item of type ‘colorToken’ and carries the token string and a preview RGB value in Hex encoding. Specific color CIE values etc are stored in a color profile structure.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Role Name | Name | Description | Mult | Data Type | Remarks |
| Class | S100\_PR\_ColorToken | Definition of a color token | - | - |  |
| Attribute | registerItem |  | 1 | S100\_PR\_RegisterItem |  |
| Attribute | token |  | 0..1 | CharacterString |  |
| Attribute | Preview\_sRGB |  | 0..1 | CharacterString |  |

### S100\_PR\_ColorProfile

. This class is derived from S100\_PR\_RegisterItem.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Role Name | Name | Description | Mult | Data Type | Remarks |
| Class | S100\_PR\_ColorProfile | The specific content for a colour profile as a register item of type ‘colorProfile’ | - | - |  |
| Attribute | registerItem |  | 1 | S100\_PR\_RegisterItem |  |
| Attribute | profileXML | XML file for the color profile | 0..1 |  |  |
| Attribute | profileSchema | Schema for the XML file of the color profile | 0..1 |  |  |

### S100\_PR\_VisualItem

The specific content for a register item of type ‘symbol’, ‘lineStyle’, ‘areaFill’ or ‘pixmap’ defined in PR\_VisualType. The visual items each have an XML identifier string and XML document defining the item details as well as a preview image and an engineering Image with dimensions.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Role Name | Name | Description | Mult | Data Type | Remarks |
| Class | S100\_CD\_FeatureConcept | A feature type in a feature concept dictionary | - | - |  |
| Attribute | registerItem |  | 1 | S100\_PR\_RegisterItem |  |
| Attribute | xmlID |  | 0..1 |  |  |
| Attribute | type |  | 0..1 | Integer | symbol, lineStyle, areaFill, or pixmap |
| Attribute | itemDetail |  | 0..1 | CharacterString |  |
| Attribute | itemSchema |  | 0..1 | Integer |  |
| Attribute | previewImage |  | 0..1 | Blob |  |
| Attribute | previewType |  | 0..1 | Integer |  |
| Attribute | engineeringImage |  | 0..1 | Blob |  |
| Attribute | engineeringImageType |  | 0..1 | Integer |  |

### S100\_PR\_Font

This is a specialization of S100\_PR\_VisualItem.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Role Name | Name | Description | Mult | Data Type | Remarks |
| Class | S100\_PR\_Font | The specific content for a font file definition as a register item of type ‘font’. | - | - |  |
| Attribute | registerItem |  | 1 | S100\_PR\_RegisterItem |  |
| Attribute | fontFile |  | 0..1 | Blob |  |
| Association role | fontType |  | 0..1 | CharacterString |  |

### 

### S100\_PR\_DisplayPlane

S100\_PR\_DisplayPlane is a specialization of S100\_PR\_RegisterItem.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Role Name | Name | Description | Mult | Data Type | Remarks |
| Class | S100\_PR\_DisplayPlane | The specific content for a display plane definition as a register item of type ‘displayPlane’. | - | - |  |
| Attribute | registerItem |  | 1 | S100\_PR\_RegisterItem |  |
| Attribute | Order |  | 1 | Integer |  |

### S100\_PR\_ContextParameter

S100\_PR\_ContextParameter is a specialization of S100\_PR\_RegisterItem.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Role Name | Name | Description | Mult. | Data Type | Remarks |
| Class | S100\_PR\_ContextParameter | The specific content for a context parameter as a register item of type ‘contextParameter’. | - | - |  |
| Attribute | registerItem |  | 1 | S100\_PR\_RegisterItem |  |
| Attribute | xmlID |  | 1 | CharacterString |  |
| Attribute | parameterType |  | 1 | ParamterType |  |
| Attribute | defaultValue |  | 1 | CharacterString |  |