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OGC[®] Catalogue Services Specification 2.0.2 Feature Type Catalogue Extension Package for ebRIM (ISO/TS 15000-3) Profile of CSW 2.0

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i. Preface

This document describes a Feature Type Catalogue extension package for the OGC® ebRIM (ISO/TS 15000-3) Profile of CSW 2.0 [OGC 05-025r3]. It defines the way an ISO 19110 [ISO 19110:2005] Feature Type Catalogue is included within a Registry, and provides an information model and stored queries for such an inclusion.

Suggested additions, changes, and comments on this draft report are welcome and encouraged. Such suggestions may be submitted by email message or by making suggested changes in an edited copy of this document.

The changes made in this document version, relative to the previous version, are tracked by Microsoft Word, and can be viewed if desired. If you choose to submit suggested changes by editing this document, please first accept all the current changes, and then make your suggested changes with change tracking on.

ii. Document terms and definitions

This document uses the specification terms defined in Subclause 5.3 of [OGC 05-008], which is based on the ISO/IEC Directives, Part 2. Rules for the structure and drafting of International Standards. In particular, the word “shall” (not “must”) is the verb form used to indicate a requirement to be strictly followed to conform to this specification.

iii. Submitting organizations

The following organizations submitted this document to the Open Geospatial Consortium Inc.

- University of Nottingham.
- EDINA, University of Edinburgh.
- Science and Technology Facilities Council (STFC).

iv. Document contributor contact points

All questions regarding this document should be directed to the editor or the contributor:

| Name | Organization |
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| Kristin Stock (Editor) | Social Change Online, UK and University of Nottingham. |
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v. Revision history

| Date | Release | Editor | Primary clauses modified | Description |
|------------|---------|---------------|--------------------------|---|
| 18/12/2007 | 0.1 | Kristin Stock | All | Creation of document and content. Addition of example registry content provided by Andrew Woolf (Annex C). |
| | | | | |
| | | | | |

vi. Changes to the OGC Abstract Specification

The OpenGIS[®] Abstract Specification does not require changes to accommodate the technical contents of this document.

vii. Future work

As a result of the work on this extension package, the following recommendations are made:

- a) It is recommended that the following changes to the FTC model in [ISO 19110:2005] be considered (see Clause 7 for more detail):
 - 1) provision for a simplified option for the expression of feature associations and
 - 2) the removal of the requirement for associations and operations to be strict members of feature types (it is understood that this change is being discussed).
- b) It is recommended that [OGC 05-025r3] be modified to allow the Slots used by an object to be constrained. The current model allows an instance of an object to be created with any slot, containing any slot name and any data type (see Clause 8 for more detail).
- c) It is recommended that an AssociationTypes ClassificationScheme be created to be used across a range of spatial domains to represent the types of associations that may

be used (and could be included within a registry compliant with this extension package). Such a classification scheme may take advantage of existing research developing ontologies of spatial relationships (for example [2], [3]).

Foreword

This document has been created under the auspices of the European Union funded Marine Overlays on Topography for Annex II Valuation and Exploitation (Motiive) project. The component of the project that involved the work described in this document involved Social Change Online UK, HR Wallingford, EDINA, the Science and Technology Facilities Council and the University of Nottingham.

This work does not replace or cancel any other documents, but extends [OGC 05-025r3] with the addition of a Feature Type Catalogue (FTC) compliant with [ISO 19110:2005].

The FTC included in this extension package implements all components of the [ISO 19110:2005], up to and including test module A28, but may also be conformed to partially as with [ISO 19110:2005].

This document includes 3 annexes; Annexes A and B are normative, and Annex C is informative.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The Open Geospatial Consortium Inc. shall not be held responsible for identifying any or all such patent rights.

Recipients of this document are requested to submit, with their comments, notification of any relevant patent claims or other intellectual property rights of which they may be aware that might be infringed by any implementation of the standard set forth in this document, and to provide supporting documentation.

Introduction

This document specifies an extension package to [OGC 05-025r3]. [OGC 05-025r3] includes a basic package, but also allows for the creation of extension packages that build on the basic package and provide additional functionality for a particular purpose.

The purpose of the extension package described in this document is to provide a specification for the inclusion of a semantically-rich Feature Type Catalogue in an ebRIM CSW registry [OGC 05-025r3]. The semantically-rich Feature Type Catalogue (FTC) uses the model described in ISO 19110 (Geographic information – methodology for feature cataloguing) [ISO 19110:2005]. This model includes a range of information about feature types, including attributes, operations, relationships with other feature types, constraints and inheritance mechanisms. This specification includes an information model for such an FTC, describes a mapping to the ebRIM model and explains how such an FTC can be stored using the ebRIM objects, and specifies a number of stored queries that can be used to access the content of the FTC. This extension package includes all components of the [ISO 19110:2005], up to and including test module A28, and provides sufficient information to allow the reader to create a Feature Type Catalogue that is compliant with [ebRIM], [OGC 05-025r3] and [ISO 19110:2005].

The FTC is intended to provide a representation that will allow inheritance, the representation of operations and links between operations and attributes. This conceptual representation of the feature type catalogue is considered separate from the other components of the registry that implement the FTC operations (that is, web services) and feature types (that is, data sources).

This extension package was created under the auspices of the Marine Overlays on Topography for Annex II Valuation and Exploitation (Motiive) project to allow feature types from the marine domain to be represented and navigated. However, the specification is generic and applies to feature types from all geospatial domains.

OGC® Feature Type Catalogue Extension Package

for ebRIM (ISO/TS 15000-3) Profile of CSW 2.0

1 Scope

This OGC® document specifies the Feature Type Catalogue extension package for the ebRIM (ISO/TS 15000-3) Profile of CSW 2.0 [OGC 05-025r3], based on ISO 19110 Geographic information – methodology for feature cataloguing [ISO 19110:2005], in order to allow the creation of catalogues containing semantically-rich Feature Type Catalogues.

This OGC® document is applicable to feature types from all geospatial domains.

This OGC® document specifies the content and access mechanisms for a Feature Type Catalogue that includes attributes, operations, relationships between feature types and constraints. It supports inheritance, links between feature type operations and web services and links between operations and the attributes that they use, affect or are affected by. It fully implements [ISO 19110:2005] up to and including test module A28.

2 Compliance

Compliance with this specification shall be checked using all the relevant tests specified in Annex A (normative). This document described a Feature Type Catalogue that is based on [ISO 19110:2005], and that standard specifies a number of different conformance classes to allow the creation of different levels of catalogue. Although this specification is designed to describe implementation of a full catalogue, it can also be used to implement a less complete catalogue according to the conformance classes described in [ISO 19110:2005]. Annex A contains test cases and test modules for each of the conformance classes to reflect [ISO 19110:2005]. Table 1 identifies the inclusions in each conformance class in [ISO 19110:2005] and this extension package.

Table 1 — Conformance Classes

| Attributes | Associations | Operations | Properties associated with multiple features | Inheritance relationships included | [ISO 19110:2005] test module | FTC extension package test module |
|------------|--------------|------------|--|------------------------------------|------------------------------|-----------------------------------|
| X | - | - | - | - | A.17 | A.15 |
| X | X | - | - | - | A.18 | A.16 |
| X | X | X | - | - | A.19 | A.17 |
| X | - | - | X | - | A.20 | A.18 |
| X | X | - | - | - | A.21 | A.19 |

| Attributes | Associations | Operations | Properties associated with multiple features | Inheritance relationships included | [ISO 19110:2005] test module | FTC extension package test module |
|------------|--------------|------------|--|------------------------------------|------------------------------|-----------------------------------|
| X | X | X | X | - | A.22 | A.20 |
| X | - | - | - | X | A.23 | A.21 |
| X | X | - | - | X | A.24 | A.22 |
| X | X | X | - | X | A.25 | A.23 |
| X | - | - | X | X | A.26 | A.24 |
| X | X | - | X | X | A.27 | A.25 |
| X | X | X | X | X | A.28 | A.26 |

3 Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this document. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the normative document referred to applies.

[ebRIM] *OASIS ebXML Registry Information Model Version 3.0*

[ISO 19105:2000] *Geographic information — Conformance and Testing*

[ISO 19109:2002] *Geographic information — Rules for application schema*

[ISO 19110:2005] *Geographic information — Methodology for feature cataloguing*

[OGC 04-021r3] *OGC[®] Catalogue Services Specification 2.0.2*

[OGC 05-008] *OGC[®] Web Services Common Specification*

[OGC 05-025r3] *OGC[®] ebRIM (ISO/TS 15000-3) Profile of CSW 2.0*

4 Terms and definitions

For the purposes of this specification, the definitions specified in Clause 4 of the OWS Common Implementation Specification [OGC 05-008] shall apply. In addition, the following terms and definitions apply.

4.1

feature

abstraction of real world phenomena with common properties [ISO 19110:2005]

4.2

feature association

relationship that links instances of one feature type with instances of the same or a different feature type [ISO 19110:2005]

4.3**feature attribute**

characteristic of a feature [ISO 19110:2005]

4.4**feature operation**

operation that every instance of a feature type may perform [ISO 19110:2005]

4.5**feature type catalogue**

catalogue containing definition and descriptions of the feature types, feature attributes and feature associations occurring in one or more sets of geographic data, together with any feature operations that may be applied ([ISO 19110:2005], but referred to there as a feature catalogue)

4.6**web service**

distinct part of the functionality that is provided by an entity through interfaces [ISO 19110:2005]

5 Conventions**5.1 Abbreviated terms**

| | |
|-------|--|
| CSW | Catalogue Service for the Web |
| ebRIM | ebXML Registry Information Model |
| FTC | Feature Type Catalogue |
| ISO | International Standardisation Organisation |
| OGC | Open Geospatial Consortium |
| UML | Unified Modeling Language |

5.2 UML notation

Most diagrams that appear in this specification are presented using the Unified Modeling Language (UML) static structure diagram. The UML notations used in this standard are described in the diagram below.

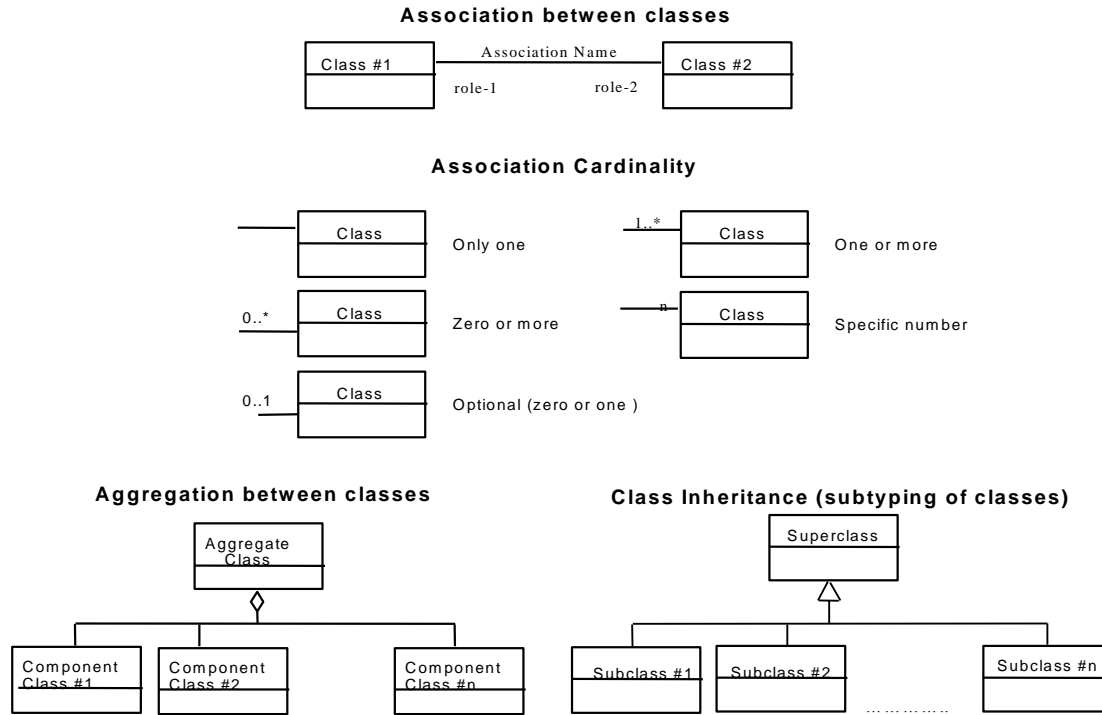


Figure 1 — UML notation

In this standard, the following stereotypes of UML classes are used:

- a) <<Interface>> A definition of a set of operations that is supported by objects having this interface. An Interface class cannot contain any attributes.
- b) <<DataType>> A descriptor of a set of values that lack identity (independent existence and the possibility of side effects). A DataType is a class with no operations whose primary purpose is to hold the information.
- c) <<CodeList>> A flexible enumeration that uses string values for expressing a list of potential values.
- d) <<Inherited>> A data element (attribute or slot) that is inherited from some other standard. This includes:
 - 1) Attributes that are included in ISO 19110 [ISO 19110:2005] and are modeled in the information model for this extension package using an attribute from one of the ancestor ebRIM [ebRIM] classes.
 - 2) Slots that are inherited from the [OGC 05-025r3] Basic Package.

Inherited data elements are prefixed with the appropriate namespace. Data types are not shown for these data elements since the data type is inherited.

- e) <<Slot> An attribute that is included in [ISO 19110:2005] and is modeled in the information model for this extension package by creating an instance of the Slot class from ebRIM. The attribute names shown in the UML diagram for attributes with a Slot stereotype are those that would be used in Slot.name. Data types shown in the UML diagram for attributes with the Slot stereotype are those that would be used in Slot.slotType.
- f) <<AssociationType = 'x'>> An association, depicted as a UML Association or Aggregation that maps to an ebRIM Association class and populates the AssociationType attribute in the instance of that class with association type x.
- g) <<Classification>> An attribute that is implemented as an instance of a rim::Classification class, containing a value from the classification scheme specified in the data type.

5.3 Namespace prefix conventions

Table 2 lists the namespaces used in this document and the specifications in which they are defined. The prefixes are **not** normative and are merely chosen for convenience; they may appear in examples without being formally declared, and have no semantic significance. The namespaces to which the prefixes correspond are normative however.

Table 2 — Namespace mapping

| Prefix | Namespace URI | Specification |
|--------|---|---|
| rim | urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0 | OASIS ebRIM 3.0 [ebRIM] |
| wrs | http://www.opengis.net/cat/wrs | CSW ebRIM profile [OGC 04-021r3] |
| csw | http://www.opengis.net/cat/csw | CSW part of OGC Catalogue Services 2.0.2 [OGC 05-025r3] |

6 Feature Type Catalogue Extension Package Overview

The Feature Type Catalogue (FTC) extension package specifies a number of specialized components in the [ebRIM] information model, and was created using the method described in [1]. Figure 2 provides a very simple conceptual model of the main components of the FTC.

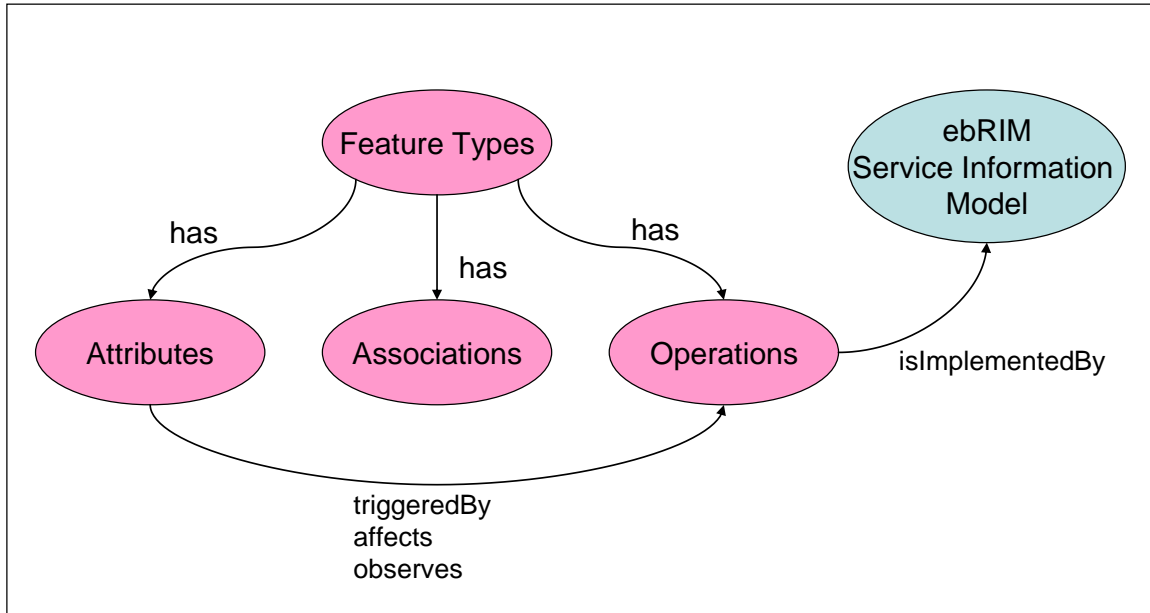


Figure 2 — Feature type catalogue overview

The FTC extension package information model includes these components as specializations of the ebRIM ExtrinsicObject class, and also includes a range of associations.

The package defines mappings from [ISO 19110:2005] into the ebRIM model, and illustrates how the FTC information model can be used to represent FTC content in a registry that complies with [OGC 05-025r3].

The extension package also includes a number of defined queries that allow content of the FTC to be queried using the [OGC 05-025r3] interface.

Each of these parts of the extension package is described in more detail in subsequent clauses.

7 Feature Type Catalogue Information Model

Figure 3 is a UML diagram of the FTC from [ISO 19110:2005] as an extension of the [ebRIM] information model.

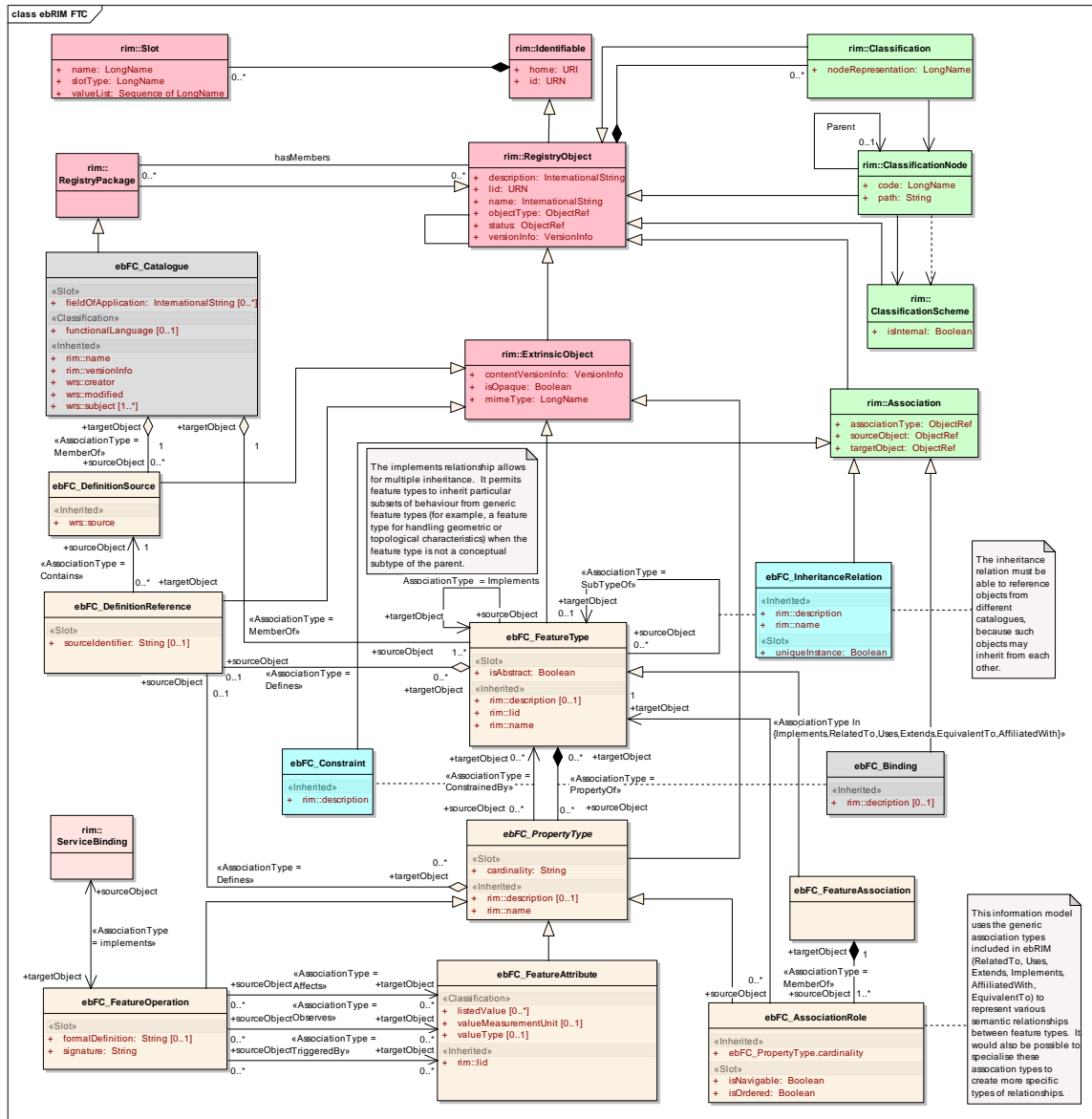


Figure 3 — Feature type catalogue information model

Those components that are added to the information model by this extension package all have names of the form ebFC_*. The methodology taken to perform this mapping conformed to [1]. In summary:

- Classes from [ISO 19110:2005] were modeled as specializations of the most appropriate ebRIM class. New classes were specializations of rim::ExtrinsicObject, rim::Association and/or rim::RegistryPackage, sometimes through other intermediate classes.
- Attributes from [ISO 19110:2005] were mapped to existing ebRIM attributes where possible. These are indicated with the <<Inherited>> stereotype in Figure 3.

- Attributes from [ISO 19110:2005] that had an enumerated set of possible values were mapped to a Classification Scheme. These are indicated with the <<Classification>> stereotype in Figure 3.
- Where mapping to an ebRIM attribute was not possible, attributes from [ISO 19110:2005] were mapped to slots (instances of the ebRIM Slot class). These are indicated with the <<Slot>> stereotype in Figure 3.

The [ebRIM] classes shown in Figure 3 (depicted with the rim:: namespace and shown in green and pink) show their attributes, but attributes that are listed in the [ebRIM] specification but that represent relationships with other classes (references) are not explicitly listed.

Relationships between the classes that are created as part of the extension package are modeled in Figure 3 using the [ebRIM] Association class, unless they are specialization relationships and are then handled by the structure of the model itself. In Figure 3, these instances of the Association class are shown as UML Associations (lines) with a stereotype indicating the AssociationType value to be used in the [ebRIM] Association class and source and target objects labeled appropriately. In cases where there are additional attributes attached to the association, these are modeled as specializations of the UML Association Class (for example, ebFC_Binding adopts the ebRIM Association class with AssociationType = PropertyType, and adds an extra description attribute).

The mapping adopts data types from [ebRIM], since that specification includes a defined set of data types, while [ISO 19110:2005] does not explicitly list valid data types. [ISO 19110:2005] data types have been mapped to the closest equivalent [ebRIM] data type.

Table 3 provides a mapping from each component of [ISO 19110:2005] into an [ebRIM] object.

Table 3 — Mapping from ISO 19110 to ebRIM

| ISO 19110 Class | Representation in this Extension Package | ISO 19110 Attribute | Representation in this Extension Package |
|-----------------|---|-----------------------|--|
| FC_Catalogue | Instance of rim::RegistryPackage with rim::ObjectType = 'RegistryPackage' | name | rim::RegistryObject.name |
| | | scope | wrs::subject from Basic Package |
| | | fieldOfApplication | Slot |
| | | versionNumber | rim::RegistryObject.versionInfo |
| | | versionDate | wrs::modified from Basic Package |
| | | functionalLanguage | Slot |
| | | producer | wrs::creator from Basic Package |
| | | Role featureType | The rim::Association between ebFC_FeatureType and ebFC_Catalogue with AssociationType = 'MemberOf'. |
| | | Role definitionSource | The rim::Association between ebFC_DefinitionSource and ebFC_Catalogue with AssociationType = 'MemberOf'. |

| | | | |
|--------------------------|--|-------------------------------|---|
| FC_FeatureType | Specialisation of rim::ExtrinsicObject, with new ObjectType = 'ebFC_FeatureType' | aliases | ebFC_AssociationRole with rim::Association connecting ebFC_AssociationRole to alias ebFC_FeatureType and AssociationType = 'EquivalentTo' |
| | | code | rim::RegistryObject.lid |
| | | definition | rim::RegistryObject.description |
| | | typeName | rim::RegistryObject.name |
| | | isAbstract | Slot |
| | | Role inheritsFrom/inherits To | The Association class ebFC_InheritanceRelation between ebFC_FeatureType and ebFC_FeatureType with AssociationType = 'SubTypeOf'. |
| | | Role featureCatalogue | The rim::Association between ebFC_FeatureType and ebFC_Catalogue with AssociationType = 'MemberOf'. |
| | | Role carrierOfCharacteristics | The Association class ebFC_Binding between ebFC_PropertyType and ebFC_FeatureType with AssociationType = 'PropertyOf'. |
| | | Role constrainedBy | The Association class ebFC_Constraint between ebFC_PropertyType and ebFC_FeatureType with AssociationType = 'ConstrainedBy'. |
| Role definitionReference | The rim::Association between ebFC_FeatureType and ebFC_DefinitionReference with AssociationType = 'Defines'. | | |
| FC_InheritanceRelation | Instance of Association, with AssociationType = 'SubTypeOf' | name | rim::RegistryObject.name |
| | | description | rim::RegistryObject.description |
| | | uniqueInstance | Slot |
| | | Role subType/SuperType | The Association class ebFC_InheritanceRelation between ebFC_FeatureType and ebFC_FeatureType with AssociationType = 'SubTypeOf'. |
| FC_PropertyType | Specialisation of rim::ExtrinsicObject, with new ObjectType = 'ebFC_PropertyType' (note that PropertyType in ISO19110 is an abstract type and is included to allow convenient grouping of associations and attributes) | definition | rim::RegistryObject.description |
| | | memberName | rim::RegistryObject.name |
| | | cardinality | Slot |
| | | Role featureType | The Association class ebFC_Binding between ebFC_PropertyType and ebFC_FeatureType with AssociationType = 'PropertyOf'. |
| | | Role constrainedBy | The Association class ebFC_Constraint between ebFC_PropertyType and ebFC_FeatureType with AssociationType = 'ConstrainedBy'. |

| | | | |
|---------------------|---|--------------------------|--|
| | | Role definitionReference | The rim::Association between ebFC_PropertyType and ebFC_DefinitionReference with AssociationType = 'Defines'. |
| FC_Binding | Instance of rim::Association, with AssociationType = 'PropertyOf' | description | rim::RegistryObject.description |
| FC_FeatureOperation | Specialisation of ebFC_PropertyType, with new ObjectType = 'ebFC_FeatureOperation', | formalDefinition | Slot |
| | | signature | Slot |
| | | Role triggeredByValuesOf | The rim::Association between ebFC_FeatureOperation and ebFC_FeatureAttribute with AssociationType = 'TriggeredBy'. |
| | | Role observesValuesOf | The rim::Association between ebFC_FeatureOperation and ebFC_FeatureAttribute with AssociationType = 'Observes'. |
| | | Role affectsValuesOf | The rim::Association between ebFC_FeatureOperation and ebFC_FeatureAttribute with AssociationType = 'Affects'. |
| FC_Constraint | Instance of rim::Association, with AssociationType = 'ConstrainedBy' | description | rim::RegistryObject.description |
| FC_FeatureAttribute | Specialisation of ebFC_PropertyType, with new ObjectType = 'ebFC_FeatureAttribute', | code | rim::RegistryObject.lid |
| | | valueMeasurementUnit | rim::Classification using Classification Scheme UnitOfMeasure. |
| | | listedValue | rim::Classification using any classification scheme that lists the full range of values. This attribute may only specify some of those values. |
| | | valueType | rim::Classification using Classification Scheme TypeName. |
| FC_AssociationRole | Specialisation of ebFC_PropertyType, with new ObjectType = 'ebFC_AssociationRole', | cardinality | Inherited from ebFC_PropertyType |
| | | type | rim::Association.AssociationType between ebFC_AssociationRole and ebFC_FeatureType.. ISO 19110 provides a limited set of types of association, but this extension package allows any of the existing ebRIM AssociationTypes to be used, or new AssociationTypes created. |
| | | isOrdered | Slot |
| | | isNavigable | Slot |
| | | Role relation | The rim::Association between ebFC_AssociationRole and ebFC_FeatureAssociation with AssociationType = 'MemberOf'. |

| | | | |
|--------------------------|---|-----------------------|--|
| | | Role valueType | The rim::Association between ebFC_AssociationRole and ebFC_FeatureType with AssociationType in 'RelatedTo', 'Uses', 'Extends', 'EquivalentTo', 'AffiliatedWith'. |
| FC_FeatureAssociation | Specialisation of ebFC_FeatureType, with new ObjectType = 'ebFC_AssociationRole', | Role role | The rim::Association between ebFC_AssociationRole and ebFC_FeatureAssociation with AssociationType = 'MemberOf'. |
| FC_DefinitionSource | Specialisation of rim::ExtrinsicObject, with new ObjectType = 'DefinitionSource' | source | wrs::source from Basic Package |
| FC_DefinitionReference | Specialisation of rim::ExtrinsicObject, with new ObjectType = 'DefinitionReference' | sourceIdentifier | Slot |
| | | Role definitionSource | The rim::Association between ebFC_DefinitionReference and ebFC_DefinitionSource with AssociationType = 'Contains'. |
| FC_ListedValue | rim::Classification | | |
| FC_BoundFeatureAttribute | Three specializations of rim::Association between ebFC_FeatureOperation and ebFC_FeatureAttribute, one for each relationship type (triggeredBy, affects, observes). | | |

This table and Figure 3 show only the attributes that were specified in [ISO 19110:2005] for each class. However, inheritance that is built into the specialization relationship dictates that the child classes inherit all of the attributes from their parents, not just those listed. Those attributes inherited but not shown in Figure 3 would not be populated unless mandatory.

The [ISO 19110:2005] model for associations between feature types was modeled faithfully in the FTC extension package, but it was found to be complicated and difficult to understand and implement in a real world situation. Therefore, consideration of a simplified version is recommended for practical implementation purposes.

The [ISO 19110:2005] model for associations requires that those associations are properties of a feature type and not independent entities. This can be problematic in some practical implementation situations because it may be desirable to have a set of feature types defined in one catalogue by one information community, another set of feature types implemented in another catalogue by another information community, and finally, a set of associations between the two feature types from different catalogues represented in a third catalogue and governed by a third information community. The associations between feature types that are of interest may be specific to an information community. The same argument applies to operations, in that some operations relate to many feature types and thus may not be correctly viewed as members of the properties of that feature type. It is therefore recommended that the issue of operation and association membership of a feature type be further explored.

8 Creation of the Information Model in the Registry

Table 4 describes how each of the elements of the information model is implemented in an [ebRIM] registry. Annex B also contains the [OGC 05-025r3] Publication interface Transaction Insert operation that may be used to create the information model in a registry. This is applied to a registry after the basic [ebRIM] model had been created and the [OGC 05-025r3] has been installed to make the relevant operations available.

Table 4 — Creation of the Registry

| Extension Package Element | Method for Creation in ebRIM Registry |
|--|---|
| New classes (excluding association classes and conceptual classes) | New classes are defined as sub-classes (sometimes to more than one level of specialisation) of rim::ExtrinsicObject. These are added by extending the canonical ObjectType ClassificationScheme and adding new nodes to represent the new classes. Inheritance is accommodated by defining sub-classes as children of other classes within the extension package where appropriate (for example, ebFC_FeatureAttribute is a child of ebFC_PropertyType, which is a child of rim::ExtrinsicObject. Once the new classes have been included in the ObjectType ClassificationScheme, new instances of them can be created. |
| Conceptual classes (excluding conceptual association classes) | Conceptual classes are implemented as instances of the class that they conceptually specialize, using existing ebRIM mechanisms for inheritance of attributes and creation of new slots. |
| Conceptual association classes | New association classes are implemented as instances of rim::Association. These association classes are used in Figure 3 to depict associations from [ISO 19110:2005] that have additional attributes over and above those normally included in an Association. However, it is not necessary to create specializations of Association because all attributes are either inherited from rim::Association or its parents, or are implemented as Slots and thus also inherited. Therefore no explicit action is required to allow association classes to be included. |
| Inherited attributes | No explicit action is required to allow attributes that are inherited from a parent to be included in a child. |
| Attributes that are classifications | New classification schemes and their nodes are defined for the attribute values, after which new object instances can be created that reference the classification nodes. |
| Inherited slots | The Basic Package (wrs) adds a number of Slots to the ebRIM Slots ClassificationScheme. No further action is required to use these, as new object instances may reference them using the appropriate wrs namespace. |
| New slots | New slots are created as additional nodes in the ebRIM Slots ClassificationScheme. |
| New association types | New association types are added to the ebRIM canonical AssociationType ClassificationScheme. They can then be referenced by instances of the rim::Association class throughout the model. |

Figure 3 contains 4 classes that are shown in a grey shade. These classes are not explicitly implemented in the FTC. They are conceptual classes and are mapped from particular concepts in the [ISO 19110:2005], but when implemented in XML, they do not appear as explicit classes. This is because the main mechanism for creating new objects in ebRIM involves creating specializations of ExtrinsicObject, and the classes shaded in grey are specializations of other [ebRIM] classes. Such an approach is permitted by the

use of the Slot mechanism to model additional attributes. In a registry implementation, all classes in the FTC information model are created as instances of some [ebRIM] class, usually with an ObjectType that matches the class name (beginning with ebFC_). The grey shaded classes are exceptions to this in that they adopt the ObjectType of the class that they specialize. This is reflected in the new nodes that are created in the [ebRIM] ObjectType ClassificationScheme. The XML documents in the Annexes provide examples of this.

A deficiency that was discovered in the process of creating this extension package was the inability to constrain slots for a particular class. The [ebRIM] and [OGC 05-025r3] models as they exist do not provide any mechanism for assigning a particular slot to a particular class. Any slot may be added to any class in the information model. The Slots classification scheme merely provides a set of slots that may be used. It is recommended that [OGC 05-025r3] be extended to allow constraints to be created on the slots available to a class.

This extension package has taken advantage of existing Association Types where possible, and thus these have remained fairly generic. There is scope to create a more detailed hierarchy of Association Types that accommodate the types of relationships that may be of interest in a spatial domain. It is recommended that such a hierarchical classification be created to be used across a range of spatial domains. For example, the [ebRIM] RelatedTo AssociationType covers a range of different types of association, and may be further classified into a range of more specific types of relationships.

9 Stored Queries

In addition to the information model and the mechanism to create the FTC model in an [OGC 05-025r3] registry, the extension package defined in this document includes a number of stored queries. These are inserted into the registry as AdHoc Queries, and allow a user to retrieve the contents of the FTC. Table 5 summarizes these queries, and Annex B includes the XML definitions that may be inserted into the registry to allow retrieval (for example, using the [OGC 05-025r3] GetRecords operation).

Table 5 — Stored Queries

| QueryName | Parameters | Returns |
|------------------------------------|----------------------|---|
| getFeatureTypes | Feature Type id | FeatureType records with specified id. |
| getFeatureTypeAttributes | Feature Type id | FeatureAttribute records for the feature type with the specified id. |
| getFeatureTypeOperations | Feature Type id | FeatureOperation records for the feature type with the specified id. |
| getFeatureOperationServiceBindings | Feature Operation id | Service Binding records that are linked to the feature operation with the specified id and their related Association record. |
| getFeatureOperationAttributes | Feature Operation id | FeatureAttribute records that are linked to the feature operation with the specified id and their related Association record. |

| QueryName | Parameters | Returns |
|-----------------------------|-------------------|---|
| getFeatureTypeAssociations | Feature Type id | FeatureAssociation records for the feature type with the specified id. |
| getInheritingFeatureTypes | Feature Type id | FeatureType records that inherit from (are children of) the feature type with the specified id. |
| getInheritedFeatureTypes | Feature Type id | FeatureType records that pass characteristics to (are parents of) the feature type with the specified id. |
| getImplementingFeatureTypes | Feature Type id | FeatureType records that implement (behave like) the feature type with the specified id. |
| getImplementedFeatureTypes | Feature Type id | FeatureType records that are implemented by (get behaviour from) the feature type with the specified id. |

Annex A

(normative)

Abstract test suite

A.1 Introduction

This normative Annex presents the abstract test suite for evaluating conformance to this specification. Clauses A.2 to A.14 contain test cases that are based on each of the components and contents of the Feature Type Catalogue. Clauses A.15 to A.26 contain test modules that can be used to test a useful subset of functionality that a catalogue may provide, as described in [ISO 19110:2005]. These test cases and test modules are adapted from [ISO 19110:2005].

A.2 Test case for existence and form of a feature type catalogue package

Information for the test case is as follows:

- a) test purpose: to verify the existence and form of a feature type catalogue package that is used to contain a collection of feature types that relate to a particular domain;
- b) test method: check whether a `rim::RegistryPackage` object exists that contains the mandatory attributes (from the conceptual `ebFC_Catalogue` class) and to which all `ebFC_DefinitionSource` and `ebFC_FeatureType` objects in the package are linked through a 'MemberOf' Association;
- c) reference: Clause 7, Figure 3 and Clause 7, Table 3;
- d) test type: basic.

A.3 Test case for general requirements

Information for the test case is as follows:

- a) test purpose: to verify that general requirements are met;
- b) test method: check the following:
 - 1) whether all instances of `ebFC_FeatureType`, `ebFC_FeatureAttribute`, `ebFC_FeatureAssociation`, `ebFC_AssociationRole` and `ebFC_FeatureOperation` are identified by a name that is unique within the FTC package;

- 2) whether all attributes shown in Figure 3 with the Classification stereotype reference ClassificationNodes from a Scheme in the same or some other RegistryPackage;
 - 3) whether all instances of ebFC_FeatureType, ebFC_FeatureAttribute, ebFC_FeatureAssociation, ebFC_AssociationRole and ebFC_FeatureOperation either have a populated value for rim::description, or reference a definition from another source through ebFC_DefinitionSource;
 - 4) whether all instances of ebFC_FeatureType, ebFC_FeatureAttribute, ebFC_FeatureAssociation, ebFC_AssociationRole and ebFC_FeatureOperation that have a populated value for rim::lid use a unique value for that attribute;
- c) reference: Clause 7, Figure 3 and Clause 7, Table 3;
- d) test type: capability.

A.4 Test case for the ebFC_Catalogue class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_Catalogue class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.5 Test case for the ebFC_FeatureType class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_FeatureType class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
 - 5) run the getFeatureTypes stored query to ensure that correct results are returned;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.6 Test case for the ebFC_InheritanceRelation conceptual association class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the rim::Association class that implement the ebFC_InheritanceAttribute conceptual association class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);

- 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
 - 5) run the getInheritedFeatureTypes and getInheritingFeatureTypes stored queries to ensure that correct results are returned
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.7 Test case for the ebFC_FeatureOperation class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_FeatureOperation class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
 - 5) run the getFeatureTypeOperations, getFeatureOperationServiceBindings and getFeatureOperationAttributes stored queries to ensure that correct results are returned;
- c) reference: Clause 7, Figure 3;

d) test type: capability.

A.8 Test case for the ebFC_Binding conceptual association class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the rim::Association class that implement the ebFC_Binding conceptual association class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.9 Test case for the ebFC_Constraint conceptual association class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the rim::Association class that implement the ebFC_Constraint conceptual association class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);

- 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.10 Test case for the ebFC_FeatureAttribute class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_FeatureAttribute class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
 - 5) run the getFeatureTypeAttributes stored query to ensure that correct results are returned;
- c) reference: Clause 7, Figure 3;

d) test type: capability.

A.11 Test case for the ebFC_AssociationRole class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_AssociationRole class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
 - 5) run the getFeatureTypeAssociations; getImplementingFeatureTypes and getImplementedFeatureTypes stored queries to ensure that correct results are returned;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.12 Test case for the ebFC_FeatureAssociation class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_FeatureAssociation class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);

- 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.13 Test case for the ebFC_DefinitionSource class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_DefinitionSource class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.14 Test case for the ebFC_DefinitionReference class

Information for the test case is as follows:

- a) test purpose: to verify that the required information is included and the required structure is used in instances of the ebFC_DefinitionReference class;
- b) test method: check the following:
 - 1) test each instance of the object to ensure that it contains only those slots and attributes shown in Figure 3 (ebRIM itself does not constrain this);
 - 2) test every instance attribute shown in Figure 3 and verify that the correct semantics, obligation/condition, cardinality and type are satisfied (ebRIM itself does not constrain this);
 - 3) test every instance attribute shown in Figure 3 with a Classification stereotype to ensure that it references a Classification Node in an appropriate Classification Scheme (ebRIM itself does not constrain this);
 - 4) test every association between the instance of the object and other related objects to ensure that the correct sourceObject, targetObject, associationType, and attributes are included, that the correct cardinalities are satisfied for the association and that the correct semantics, obligation/condition, cardinality and type are satisfied for the attributes;
- c) reference: Clause 7, Figure 3;
- d) test type: capability.

A.15-A.26 Test Modules

Table A.1 describes the Test Modules. More background information is available in ISO 19110. All test modules reference Clause 7, Figure 3, and all test modules are of test type capability.

Table A.1 — Test modules

| Module | Title | Purpose | Test cases to perform within the module. |
|--------|---|--|---|
| A.15 | Test module for a catalogue with single-use feature attributes. | Verify that the feature catalogue supports core representation functionality; comprised of feature types and feature attributes that are unique to a feature type. | A.2, A.3, A.4, A.5, A.9, A.10, A.13, A.14 |

| Module | Title | Purpose | Test cases to perform within the module. |
|---------------|--|---|---|
| A.16 | Test module for a catalogue with single-use feature attributes and association roles. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes and association roles that are unique to a feature type. | A.15 + A.11, A.12 |
| A.17 | Test module for a catalogue with single-use feature attributes and association roles and operations. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes, association roles and feature operations that are unique to a feature type. | A.16 + A.7 |
| A.18 | Test module for a catalogue with multi-use feature attributes. | Verify that the feature catalogue supports core representation functionality; comprised of feature types and feature attributes that may be members of multiple feature types. | A.15 + A.8 |
| A.19 | Test module for a catalogue with multi-use feature attributes and association roles. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes and association roles that may be members of multiple feature types. | A.16 + A.8 |
| A.20 | Test module for a catalogue with single-use feature attributes and association roles and operations. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes, association roles and feature operations that that may be members of multiple feature types. | A.17 + A.8 |
| A.21 | Test module for a catalogue with single-use feature attributes and inheritance. | Verify that the feature catalogue supports core representation functionality; comprised of feature types and feature attributes that are unique to a feature type, plus inheritance. | A.15 + A.6 |
| A.22 | Test module for a catalogue with single-use feature attributes and association roles and inheritance. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes and association roles that are unique to a feature type, plus inheritance. | A.16 + A.6 |
| A.23 | Test module for a catalogue with single-use feature attributes and association roles and operations and inheritance. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes, association roles and feature operations that are unique to a feature type, plus inheritance. | A.17 + A.6 |
| A.24 | Test module for a catalogue with multi-use feature attributes and inheritance. | Verify that the feature catalogue supports core representation functionality; comprised of feature types and feature attributes that may be members of multiple feature types, plus inheritance. | A.18 + A.6 |
| A.25 | Test module for a catalogue with multi-use feature attributes and association roles and inheritance. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes and association roles that may be members of multiple feature types, plus inheritance. | A.19 + A.6 |

| Module | Title | Purpose | Test cases to perform within the module. |
|---------------|--|--|---|
| A.26 | Test module for a catalogue with single-use feature attributes and association roles and operations and inheritance. | Verify that the feature catalogue supports core representation functionality; comprised of feature types, feature attributes, association roles and feature operations that that may be members of multiple feature types, plus inheritance. | A.20 + A.6 |

Annex B (normative)

XML Transaction to Create the Feature Type Catalogue

In addition to this document, this specification includes a [OGC 05-025r3] Transaction Insert operation to create the relevant components in an ebRIM registry that has the [OGC 05-025r3] interface installed.

B.1 Transaction Insert

```

<?xml version="1.0" encoding="ISO-8859-1"?>
<Transaction xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  xmlns="http://www.opengis.net/cat/csw"
  xmlns:ogc="http://www.opengis.net/ogc"
  service="CSW"
  version="2.0.1"
  verboseResponse="true">
  <Insert>
    <rim:RegistryPackage
      urn:motiiive:csw-ebrim"
      version="1.0"
      urn:oasis:names:tc:ebxml-regrep:ObjectType:Identifiable:RegistryObject:RegistryPackage">
    <rim:Name>
      <rim:LocalizedString xml:lang="en"
        value="Feature Type Catalogue Extension Package" />
    </rim:Name>
    <rim:RegistryObjectList>
      <!-- ===== -->
      <!-- Classification Nodes to describe the new object types needed -->
      <!-- for the FTC. These extend the existing object types. -->
      <!-- ===== -->
    <rim:ClassificationNode
      id="ebFC_FeatureType"
      urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType"
      parent="urn:oasis:names:tc:ebxml-regrep:ObjectType:Identifiable:RegistryObject:ExtrinsicObject">
    <rim:Name>
      <rim:LocalizedString xml:lang="en" value="ebFC_FeatureType" />
    </rim:Name>
    </rim:ClassificationNode>
    <rim:ClassificationNode
      id="ebFC_PropertyType"
      urn:motiiive:csw-ebrim:ObjectType:ebFC_PropertyType"
      parent="urn:oasis:names:tc:ebxml-regrep:ObjectType:Identifiable:RegistryObject:ExtrinsicObject">
      <rim:Name>
        <rim:LocalizedString xml:lang="en" value="ebFC_PropertyType" />
      </rim:Name>
    </rim:ClassificationNode>
    <rim:ClassificationNode
      id="ebFC_FeatureAttribute"
      urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute"
      parent="urn:motiiive:csw-ebrim:ObjectType:ebFC_PropertyType">
    <rim:Name>
      <rim:LocalizedString xml:lang="en" value="ebFC_FeatureAttribute"/>
    </rim:Name>
    </rim:ClassificationNode>
    <rim:ClassificationNode
      id="ebFC_FeatureOperation"
      urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureOperation"
      parent="urn:motiiive:csw-ebrim:ObjectType:ebFC_PropertyType">
    <rim:Name>

```

```

    <rim:LocalizedString xml:lang="en"
      value="ebFC_FeatureOperation" />
  </rim:Name>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="ebFC_AssociationRole"
  id="urn:motiv:cs-w-ebri:m:ObjectType:ebFC_AssociationRole"
  parent="urn:motiv:cs-w-ebri:m:ObjectType:ebFC_PropertyType">
  <rim:Name>
    <rim:LocalizedString xml:lang="en"
      value="ebFC_AssociationRole" />
  </rim:Name>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="ebFC_FeatureAssociation"
  id="urn:motiv:cs-w-ebri:m:ObjectType:ebFC_FeatureAssociation"
  parent="urn:oasis:names:tc:ebxml-regrep:ObjectType:Identifiable:RegistryObject:ExtrinsicObject">
  <rim:Name>
    <rim:LocalizedString xml:lang="en"
      value="ebFC_FeatureAssociation" />
  </rim:Name>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="ebFC_DefinitionSource"
  id="urn:motiv:cs-w-ebri:m:ObjectType:ebFC_DefinitionSource"
  parent="urn:oasis:names:tc:ebxml-regrep:ObjectType:Identifiable:RegistryObject:ExtrinsicObject">
  <rim:Name>
    <rim:LocalizedString xml:lang="en"
      value="ebFC_DefinitionSource" />
  </rim:Name>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="ebFC_DefinitionReference"
  id="urn:motiv:cs-w-ebri:m:ObjectType:ebFC_DefinitionReference"
  parent="urn:oasis:names:tc:ebxml-regrep:ObjectType:Identifiable:RegistryObject:ExtrinsicObject">
  <rim:Name>
    <rim:LocalizedString xml:lang="en"
      value="ebFC_DefinitionReference" />
  </rim:Name>
</rim:ClassificationNode>
<!-- ===== -->
<!-- Add in here classification nodes to provide the controlled vocabulary for the -->
<!-- functionalLanguage slot in RegistryPackage. -->
<!-- ===== -->
<!-- ===== -->
<!-- Add in here classification nodes to provide the controlled vocabulary for the -->
<!-- valueMeasurementUnit slot in ebFC_FeatureAttribute. -->
<!-- ===== -->
<!-- ===== -->
<!-- Add in here classification nodes to provide the controlled vocabulary for the -->
<!-- listedValue slot in ebFC_FeatureAttribute. -->
<!-- ===== -->
<!-- ===== -->
<!-- Add in here classification nodes to provide the controlled vocabulary for the -->
<!-- valueType slot in ebFC_FeatureAttribute. -->
<!-- ===== -->
<rim:ClassificationScheme
  ="urn:motiv:cs-w-ebri:m:scheme:xml:value-type"
  objectType="urn:oasis:names:tc:ebxml-regrep:ObjectType:Identifiable:RegistryObject:ClassificationScheme"
  ="false"
  ="uniqueCode">
  <rim:ClassificationNode
    ="gml:StringOrRef"
    ="urn:motiv:ftc:GML:StringOrRef">
  </rim:ClassificationNode>
  <!-- add others in here -->
</rim:ClassificationScheme>
<!-- ===== -->
<!-- Classification Nodes to describe the new association types needed. -->
<!-- for the FTC. These extend the existing association types. -->
<!-- ===== -->

```

```

<rim:ClassificationNode
  = "SubTypeOf"
  id="urn:motive:csw-ebri:m:AssociationType:SubTypeOf"
  parent="urn:oasis:names:tc:ebxml-regrep:AssociationType">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="SubTypeOf"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="Is a specialisation of the parent feature type, and inherits characteristics (including attributes, associations and
operations) from a parent feature type. Each feature type may be the subtype of only one parent feature type."/>
  </rim:Description>
</rim:ClassificationNode>
<!-- The Implements AssociationType that is part of ebRIM is used to represent the multiple inheritance that is used in the
Feature Type Catalogue to handle inheritance of characteristics related to behaviour (for example, versioning), usually from abstract
Feature Types.-->
<!-- Various other existing ebRIM AssociationTypes may also be used, including Uses, Extends, AffiliatedWith, RelatedTo,
EquivalentTo to represent various semantic relationships between feature types. -->
<rim:ClassificationNode
  = "Defines"
  id="urn:motive:csw-ebri:m:AssociationType:Defines"
  parent="urn:oasis:names:tc:ebxml-regrep:AssociationType">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="Defines"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="Provides a meaning or supporting document for the object."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  = "ConstrainedBy"
  id="urn:motive:csw-ebri:m:AssociationType:ConstrainedBy"
  parent="urn:oasis:names:tc:ebxml-regrep:AssociationType">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="ConstrainedBy"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="Applies constraints to an object."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  = "PropertyOf"
  id="urn:motive:csw-ebri:m:AssociationType:PropertyOf"
  parent="urn:oasis:names:tc:ebxml-regrep:AssociationType">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="PropertyOf"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="Indicates that an operation, attribute or association is a property of a feature type."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  = "Affects"
  id="urn:motive:csw-ebri:m:AssociationType:Affects"
  parent="urn:oasis:names:tc:ebxml-regrep:AssociationType">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="Affects"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="Indicates an operation that affects an attribute for a feature type."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  = "Observes"
  id="urn:motive:csw-ebri:m:AssociationType:Observes"
  parent="urn:oasis:names:tc:ebxml-regrep:AssociationType:Uses">
  <rim:Name>

```

```

    <rim:LocalizedString xml:lang="en" value="Observes"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="Indicates an operation that observes the value of an attribute for a feature type."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="TriggeredBy"
  id="urn:motive:csw-ebri:m:AssociationType:TriggeredBy"
  parent="urn:oasis:names:tc:ebxml-regrep:AssociationType">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="TriggeredBy"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="Indicates an operation that is triggered by an attribute for a feature type."/>
  </rim:Description>
</rim:ClassificationNode>
<!-- ===== -->
<!-- Classification Nodes to describe the new slots needed for the FTC. -->
<!-- However, this seems to be of limited usefulness given that you can't -->
    <!-- specify the data type or parent class that the slot may exist within. -->
  <!-- ===== -->
<rim:ClassificationNode
  ="fieldOfApplication"
  id="urn:motive:csw-ebri:m:Slots:fieldOfApplication"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="fieldOfApplication"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="The kinds of use to which the feature catalogue (i.e. the RegistryPackage) may be put."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="isAbstract"
  id="urn:motive:csw-ebri:m:Slot:isAbstract"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="isAbstract"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="A flag indicating whether a Feature Type is abstract or not, attached to the ebFC_FeatureType class."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="uniqueInstance"
  id="urn:motive:csw-ebri:m:Slot:uniqueInstance"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="uniqueInstance"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"
      value="A flag indicating whether an instance of the supertype may be an instance of more than one subtype or not,
attached to the ebFC_InheritanceRelation class."/>
  </rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="formalDefinition"
  id="urn:motive:csw-ebri:m:Slot:formalDefinition"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="formalDefinition"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString xml:lang="en"

```

`value`="Formal description of the behaviour of the member, expressed in the symbol set defined in ebFC_Catalogue.functionalLanguage. Involves operational parameters and interactions with other members of the feature type, attached to ebFC_FeatureOperation."/>

```
</rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="formalDefinition"
  id="urn:motive:csw-ebri:m:Slot:signature"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="signature"/>
  </rim:Name>
  <rim:Description>
```

`value`="Name and parameters for this operation. It may contain optional returned parameters. The signature is normally derived from the formal definition. The signature of the operation must be unique. This is the equivalent of the UML signature, attached to ebFC_FeatureOperation."/>

```
</rim:Description>
</rim:ClassificationNode>
  <rim:ClassificationNode code="cardinality"
  id="urn:motive:csw-ebri:m:Slot:cardinality"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="cardinality"/>
  </rim:Name>
  <rim:Description>
```

`value`="Cardinality of the member in the feature class. If this is an attribute or operation, the default cardinality is 1. If this is an association role, the default cardinality is 0..*. For operations, this is the number of return values possible. this is an elaboration of the GFM to allow for complete specifications for various programming and data definition languages, attached to ebFC_PropertyType."/>

```
</rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="isOrdered"
  ="urn:motive:csw-ebri:m:Slot:isOrdered"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="isOrdered"/>
  </rim:Name>
  <rim:Description>
```

`value`="Indicates if the instances of the association role within the containing feature instance are ordered or not, with FALSE='not ordered' and TRUE='ordered'. If TRUE, ebFC_PropertyType.rim::description shall contain an explanation of the meaning of the order, attached to ebFC_AssociationRole."/>

```
</rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode
  ="isNavigable"
  id="urn:motive:csw-ebri:m:Slot:isNavigable"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="isNavigable"/>
  </rim:Name>
  <rim:Description>
```

`value`="A flag indicating whether the association can be navigated from the source feature to the target feature, attached to ebFC_AssociationRole."/>

```
</rim:Description>
</rim:ClassificationNode>
<rim:ClassificationNode code="sourceIdentifier"
  id="urn:motive:csw-ebri:m:Slot:sourceIdentifier"
  parent="urn:x-ogc:specification:csw-ebri:m:ClassificationScheme:Slots">
  <rim:Name>
    <rim:LocalizedString xml:lang="en" value="sourceIdentifier"/>
  </rim:Name>
  <rim:Description>
```

`value`="Additional information to help locate the definition in the source document. The format of this information is specific to the structure of the source document , attached to ebFC_DefinitionReference."/>

```
</rim:Description>
```

```

</rim:ClassificationNode>
  <!-- ===== -->
<!-- Extension package dependency on BasicPackage. -->
  <!-- ===== -->
<rim:Association
  id="urn:uuid:xxxxxx"
  associationType="urn:oasis:names:tc:ebxml-regrep:AssociationType:Uses"
  sourceObject="urn:motive:csw-ebrim"
  targetObject="urn:x-ogc:specification:csw-ebrim:package:Basic"/>
  <!-- ===== -->
<!-- Stored queries for common search patterns on the FTC. -->
  <!-- ===== -->
<!-- ===== -->
<!-- getFeatureTypes -->
<!-- ===== -->
<rim:AdhocQuery
  id="urn:motive:csw-ebrim:Query:getFeatureTypes">
  <rim:Name>
    <rim:LocalizedString charset="URF-8" xml:lang="en"
      value="getFeatureTypes"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="URF-8" xml:lang="en"
      value="Takes as a parameter the id of a feature type. Returns: Feature type records that have that id. This is version
dependent - id refers to a specific version of a feature type. This returns only the feature type. Other queries are used to return
associated attributes, operations, etc."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>
  <rim:QueryExpression
    queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
    xmlns:csw="http://www.opengis.net/cat/csw">
    <csw:GetRecords>
      <csw:Query typeName="ExtrinsicObject">
        <csw:ElementName>/ExtrinsicObject</csw:ElementName>
        <csw:Constraint version="1.1.0">
          <ogc:Filter>
            <ogc:And>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ExtrinsicObject/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ExtrinsicObject/@id</ogc:PropertyName>
                <ogc:Literal>${searchid}</ogc:Literal>
              </ogc:PropertyIsEqualTo>
            </ogc:And>
          </ogc:Filter>
        </csw:Constraint>
      </csw:Query>
    </csw:GetRecords>
  </rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getFeatureTypeAttributes -->
<!-- ===== -->
<rim:AdhocQuery
  xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  id="urn:motive:csw-ebrim:Query:getFeatureTypeAttributes">
  <rim:Name>
    <rim:LocalizedString charset="URF-8" xml:lang="en"
      value="getFeatureTypeAttributes"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="URF-8" xml:lang="en"
      value="Takes as a parameter the id of a feature type. Returns: Feature Attribute records for feature types that have that id.
This is version dependent - id refers to a specific version of a feature type."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>

```

```

</rim:Slot>
<rim:QueryExpression
  queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
  xmlns:csw="http://www.opengis.net/cat/csw"
  xmlns:ogc="http://www.opengis.net/ogc">
  <csw:GetRecords>
    <csw:Query typeName="ExtrinsicObject=ft ExtrinsicObject=fa Association">
      <csw:ElementName>/fa</csw:ElementName>
      <csw:Constraint version="1.1.0">
        <ogc:Filter>
          <ogc:And>
            <ogc:And>
              <!-- This gets Feature Types with the specified id. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ft/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ft/@id</ogc:PropertyName>
                <ogc:Literal>${searchid}</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <!-- This gets all Feature Attributes. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/fa/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motive:csw-ebrim:ObjectType:ebFC_FeatureAttribute</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <!-- This gets PropertyOf Associations between the specified feature type and attributes. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/Association/@AssociationType</ogc:PropertyName>
                <ogc:Literal>urn:motive:csw-ebrim:AssociationType:PropertyOf</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
                <ogc:PropertyName>/ft/@id</ogc:PropertyName>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
                <ogc:PropertyName>/fa/@id</ogc:PropertyName>
              </ogc:PropertyIsEqualTo>
            </ogc:And>
          </ogc:Filter>
        </csw:Constraint>
      </csw:Query>
    </csw:GetRecords>
  </rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getFeatureTypeOperations -->
<!-- ===== -->
<rim:AdhocQuery
  xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  id="urn:motive:csw-ebrim:Query:getFeatureTypeOperations">
  <!-- may also need other slots to allow search on package and name, but keeping it simpler for now -->
  <rim:Name>
    <rim:LocalizedString charset="URF-8" xml:lang="en"
      value="getFeatureTypeOperations"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="URF-8" xml:lang="en"
      value="Takes as a parameter the id of a feature type. Returns: Feature Operation records for feature types that have that
      id. This is version dependent - id refers to a specific version of a feature type."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>
  <rim:QueryExpression
    queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
    xmlns:csw="http://www.opengis.net/cat/csw"
    xmlns:ogc="http://www.opengis.net/ogc">
    <csw:GetRecords>
      <csw:Query typeName="ExtrinsicObject=ft ExtrinsicObject=fo Association">
        <csw:ElementName>/fo</csw:ElementName>

```



```

<csw:Constraint version="1.1.0">
  <ogc:Filter>
    <ogc:And>
      <!-- This gets Feature Types with the specified id. -->
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/ft/@objectType</ogc:PropertyName>
        <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/ft/@id</ogc:PropertyName>
        <ogc:Literal>${searchid}</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <!-- This gets all Feature Operations. -->
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/fo/@objectType</ogc:PropertyName>
        <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureOperation</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <!-- This gets PropertyOf Associations between the specified feature type and operations. -->
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@AssociationType</ogc:PropertyName>
        <ogc:Literal>urn:motiiive:csw-ebrim:AssociationType:PropertyOf</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
        <ogc:Literal>/ft/@id</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
        <ogc:Literal>/fo/@id</ogc:Literal>
      </ogc:PropertyIsEqualTo>
    </ogc:And>
  </ogc:Filter>
</csw:Constraint>
</csw:Query>
</csw:GetRecords>
</rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getFeatureOperationServiceBindings -->
<!-- ===== -->
<rim:AdhocQuery
  xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  id="urn:motiiive:csw-ebrim:Query:getFeatureOperationServiceBindings">
  <rim:Name>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="getFeatureOperationServiceBindings"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="Takes as a parameter the id of a feature operation. Returns: Service Bindng records for that operation."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>
  <rim:QueryExpression
    queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
    xmlns:csw="http://www.opengis.net/cat/csw"
    xmlns:ogc="http://www.opengis.net/ogc">
    <csw:GetRecords>
      <csw:Query typeName="ExtrinsicObject ServiceBinding Association">
        <csw:ElementName>/ServiceBinding</csw:ElementName>
        <csw:Constraint version="1.1.0">
          <ogc:Filter>
            <ogc:And>
              <!-- This gets all Feature Operations. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ExtrinsicObject/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureOperation</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ExtrinsicObject/@id</ogc:PropertyName>

```

```

        <ogc:Literal>${searchid}</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <!-- This gets all Service Bindings. -->
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/ServiceBinding/@objectType</ogc:PropertyName>
        <ogc:Literal>urn:oasis:names:tc:ebxml-
regrep:ObjectType:Identifiable:RegistryObject:ServiceBinding</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <!-- This gets PropertyOf Associations between the specified feature type and operations. -->
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@AssociationType</ogc:PropertyName>
        <ogc:Literal>urn:oasis:names:tc:ebxml-regrep:AssociationType.Implements</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
        <ogc:Literal>/ExtrinsicObject/@id</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
        <ogc:Literal>/ServiceBinding/@id</ogc:Literal>
      </ogc:PropertyIsEqualTo>
    </ogc:And>
  </ogc:Filter>
</csw:Constraint>
</csw:Query>
</csw:GetRecords>
</rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getFeatureOperationAttributes -->
<!-- ===== -->
<rim:AdhocQuery
  xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  id="urn:motive:csw-ebrim:Query:getFeatureOperationAttributes">
  <!-- may also need other slots to allow search on package and name, but keeping it simpler for now -->
  <rim:Name>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="getFeatureOperationAttributes"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="Takes as a parameter the id of a feature operation. Returns: Feature Operation records, their linked Feature
Attribute records and the type of link between the operations and the attributes."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>
  <rim:QueryExpression queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
  xmlns:csw="http://www.opengis.net/cat/csw" xmlns:ogc="http://www.opengis.net/ogc">
    <csw:GetRecords>
      <csw:Query typeName="ExtrinsicObject=fo ExtrinsicObject=fa Association">
        <csw:ElementName>/fo</csw:ElementName>
        <csw:ElementName>/fa</csw:ElementName>
        <csw:ElementName>/Association</csw:ElementName>
        <csw:Constraint version="1.1.0">
          <ogc:Filter>
            <ogc:And>
              <!-- This gets all Feature Operations. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/fo/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motive:csw-ebrim:ObjectType:ebFC_FeatureOperation</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/fo/@id</ogc:PropertyName>
                <ogc:Literal>${searchid}</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <!-- This gets all Feature Attributes. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/fa/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motive:csw-ebrim:ObjectType:ebFC_FeatureAttribute</ogc:Literal>
              </ogc:PropertyIsEqualTo>
            </ogc:And>
          </ogc:Filter>
        </csw:Constraint>
      </csw:Query>
    </csw:GetRecords>
  </rim:QueryExpression>
</rim:AdhocQuery>

```

```

    <!-- These clauses say that we are looking for associations of types Affects, Observes and TriggeredBy -->
    <ogc:Or>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@associationType</ogc:PropertyName>
          <ogc:Literal>Affects</ogc:Literal>
        </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@associationType</ogc:PropertyName>
          <ogc:Literal>Observes</ogc:Literal>
        </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@associationType</ogc:PropertyName>
          <ogc:Literal>TriggeredBy</ogc:Literal>
        </ogc:PropertyIsEqualTo>
    </ogc:Or>
    <!-- This gets only associations with the correct source and target objects . -->
    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
        <ogc:Literal>/fo/@id</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
          <ogc:Literal>/fa/@id</ogc:Literal>
        </ogc:PropertyIsEqualTo>
      </ogc:And>
    </ogc:Filter>
  </csw:Constraint>
</csw:Query>
</csw:GetRecords>
</rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getFeatureTypeAssociations -->
<!-- ===== -->
<rim:AdhocQuery
  xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  id="urn:motiv:cs:eb:rim:Query:getFeatureTypeAssociations"
  <!-- may also need other slots to allow search on package and name, but keeping it simpler for now -->
  <rim:Name>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="getFeatureTypeAssociations"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="Takes as a parameter the id of a feature type. Returns: FeatureAssociationRole and FeatureAssociation records
for feature types that have that id. This returns only feature associations of types RelatedTo, Uses, Extends, AffiliatedWith or
EquivalentTo. Associations between Feature Types that are of type Implements are returned by getImplementedFeatureTypes and
getImplementingFeatureTypes. Associations between Feature Types that are of type SubTypeOf (inheritance) are returned by
getInheritedFeatureTypes and getInheritingFeatureTypes."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>
  <rim:QueryExpression queryLanguage="urn:x-ogc:specification:cs:eb:rim:QueryLanguage:CSWQuery"
  xmlns:cs="http://www.opengis.net/cat/csw" xmlns:ogc="http://www.opengis.net/ogc">
    <csw:GetRecords>
      <csw:Query typeNames="ExtrinsicObject=ft1 ExtrinsicObject=ft2 ExtrinsicObject=far ExtrinsicObject=fa
Association=aprop Association=afa Association=arel">
        <csw:ElementName>/far</csw:ElementName>
        <csw:ElementName>/fa</csw:ElementName>
        <csw:Constraint version="1.1.0">
          <ogc:Filter>
            <ogc:And>
              <!-- This gets Feature Types with the specified id. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ft1/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motiv:cs:eb:rim:ObjectType:ebFC_FeatureType</ogc:Literal>
              </ogc:PropertyIsEqualTo>
            </ogc:And>
          </ogc:Filter>
        </csw:Query>
      </csw:GetRecords>
    </rim:QueryExpression>
  </rim:AdhocQuery>

```

```

    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/ft1/@id</ogc:PropertyName>
      <ogc:Literal>urn:motiv:ftc:GML:AbstractFeature.20071017</ogc:Literal>
    </ogc:PropertyIsEqualTo>
  <!-- This gets all Feature Association Roles. -->
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/far/@objectType</ogc:PropertyName>
    <ogc:Literal>urn:motiv:csw-ebrim:ObjectType:ebFC_AssociationRole</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <!-- This gets the feature association roles that are linked to the specified feature type with
a PropertyOf association -->
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/aprop/@AssociationType</ogc:PropertyName>
    <ogc:Literal>urn:motiv:csw-ebrim:AssociationType:PropertyOf</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/aprop/@targetObject</ogc:PropertyName>
    <ogc:Literal>/ft/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/aprop/@sourceObject</ogc:PropertyName>
    <ogc:Literal>/far/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <!-- This gets the Feature Types at the other end of feature association role -->
  <!-- It does not restrict the association type, because the set of possible association
types is expandable and this is the -->
  <!-- only link between association role and feature type -->
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/ft2/@objectType</ogc:PropertyName>
    <ogc:Literal>urn:motiv:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/arel/@sourceObject</ogc:PropertyName>
    <ogc:Literal>/far/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/arel/@targetObject</ogc:PropertyName>
    <ogc:Literal>/ft2/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <!-- This gets all Feature Associations. -->
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/fa/@objectType</ogc:PropertyName>
    <ogc:Literal>urn:motiv:csw-ebrim:ObjectType:ebFC_FeatureAssociation</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <!-- This gets feature associations that have a MemberOf Association with association roles linked to the specified
ft. -->
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/afa/@AssociationType</ogc:PropertyName>
    <ogc:Literal>urn:motiv:csw-ebrim:AssociationType:MemberOf</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/afa/@targetObject</ogc:PropertyName>
    <ogc:Literal>/far/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/afa/@sourceObject</ogc:PropertyName>
    <ogc:Literal>/fa/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  </ogc:And>
</ogc:Filter>
</csw:Constraint>
</csw:Query>
</csw:GetRecords>
</rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getInheritingFeatureTypes -->
<!-- ===== -->
<rim:AdhocQuery
  xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  id="urn:motiv:csw-ebrim:Query:getInheritingFeatureTypes">

```

```

<rim:Name>
  <rim:LocalizedString charset="UTF-8" xml:lang="en"
    value="getInheritingFeatureTypes"/>
</rim:Name>
<rim:Description>
  <rim:LocalizedString charset="UTF-8" xml:lang="en"
    value="Takes as a parameter the id of a feature type. Returns: Feature Types that are associated with the specified feature
type via InheritanceRelation (gets children)."/>
</rim:Description>
<rim:Slot name="searchid" slotType="URN">
  <rim:ValueList/>
</rim:Slot>
<!-- may also need other slots to allow search on package and name, but keeping it simpler for now -->
<rim:QueryExpression queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
xmlns:csw="http://www.opengis.net/cat/csw" xmlns:ogc="http://www.opengis.net/ogc">
  <csw:GetRecords>
    <csw:Query typeName="ExtrinsicObject=ft1 ExtrinsicObject=ft2 Association">
      <csw:ElementName>/ft2</csw:ElementName>
      <csw:Constraint version="1.1.0">
        <ogc:Filter>
          <ogc:And>
            <!-- This gets the specified Feature Type. -->
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/ft1/@objectType</ogc:PropertyName>
              <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/ft1/@id</ogc:PropertyName>
              <ogc:Literal>${searchid}</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <!-- This gets all other Feature Types. -->
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/ft2/@objectType</ogc:PropertyName>
              <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <!-- This gets only associations with the correct source and target objects . -->
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/Association/@associationType</ogc:PropertyName>
              <ogc:Literal>SubTypeOf</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
              <ogc:Literal>/ft2/@id</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
              <ogc:Literal>/ft1/@id</ogc:Literal>
            </ogc:PropertyIsEqualTo>
          </ogc:And>
        </ogc:Filter>
      </csw:Constraint>
    </csw:Query>
  </csw:GetRecords>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getInheritedFeatureTypes -->
<!-- ===== -->
<rim:AdhocQuery
xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
id="urn:motiiive:csw-ebrim:Query:getInheritedFeatureTypes">
  <rim:Name>
    <rim:LocalizedString charset="UTF-8" xml:lang="en" value="getInheritedFeatureTypes"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="UTF-8" xml:lang="en" value="Takes as a parameter the id of a feature type. Returns:
Feature Types that are associated with the specified feature type via InheritanceRelation (gets parents)."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>

```

```

<!-- may also need other slots to allow search on package and name, but keeping it simpler for now -->
<rim:QueryExpression queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
xmlns:csw="http://www.opengis.net/cat/csw" xmlns:ogc="http://www.opengis.net/ogc">
  <csw:GetRecords>
    <csw:Query typeNames="ExtrinsicObject=ft1 ExtrinsicObject=ft2 Association">
      <csw:ElementName>/ft2</csw:ElementName>
      <csw:Constraint version="1.1.0">
        <ogc:Filter>
          <ogc:And>
            <!-- This gets the specified Feature Type. -->
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/ft1/@objectType</ogc:PropertyName>
              <ogc:Literal>urn:motive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/ft1/@id</ogc:PropertyName>
              <ogc:Literal>${searchid}</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <!-- This gets all other Feature Types. -->
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>/ft2/@objectType</ogc:PropertyName>
              <ogc:Literal>urn:motive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <!-- This gets only associations with the correct source and target objects . -->
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/Association/@associationType</ogc:PropertyName>
                <ogc:Literal>SubTypeOf</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
                <ogc:Literal>/ft1/@id</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
                <ogc:Literal>/ft2/@id</ogc:Literal>
              </ogc:PropertyIsEqualTo>
            </ogc:And>
          </ogc:Filter>
        </csw:Constraint>
      </csw:Query>
    </csw:GetRecords>
  </rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getImplementingFeatureTypes -->
<!-- ===== -->
<rim:AdhocQuery
xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
id="urn:motive:csw-ebrim:Query:getImplementingFeatureTypes">
  <!-- may also need other slots to allow search on package and name, but keeping it simpler for now -->
  <rim:Name>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
value="getImplementingFeatureTypes"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
value="Takes as a parameter the id of a feature type. Returns: Feature Types that are associated with the specified feature
type via an Implements association (reverse direction)."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>
  <rim:QueryExpression queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
xmlns:csw="http://www.opengis.net/cat/csw" xmlns:ogc="http://www.opengis.net/ogc">
    <csw:GetRecords>
      <csw:Query typeNames="ExtrinsicObject=ft1 ExtrinsicObject=ft2 Association">
        <csw:ElementName>/ft2</csw:ElementName>
        <csw:Constraint version="1.1.0">
          <ogc:Filter>
            <ogc:And>
              <!-- This gets the specified Feature Type. -->

```

```

    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/ft1/@objectType</ogc:PropertyName>
      <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
    </ogc:PropertyIsEqualTo>
    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/ft1/@id</ogc:PropertyName>
      <ogc:Literal>${searchid}</ogc:Literal>
    </ogc:PropertyIsEqualTo>
    <!-- This gets all other Feature Types. -->
    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/ft2/@objectType</ogc:PropertyName>
      <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
    </ogc:PropertyIsEqualTo>
    <!-- This gets only associations with the correct source and target objects . -->
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>/Association/@associationType</ogc:PropertyName>
        <ogc:Literal>Implements</ogc:Literal>
      </ogc:PropertyIsEqualTo>
    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
      <ogc:Literal>/ft2/@id</ogc:Literal>
    </ogc:PropertyIsEqualTo>
    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
      <ogc:Literal>/ft1/@id</ogc:Literal>
    </ogc:PropertyIsEqualTo>
  </ogc:And>
</ogc:Filter>
</csw:Constraint>
</csw:Query>
</csw:GetRecords>
</rim:QueryExpression>
</rim:AdhocQuery>
<!-- ===== -->
<!-- getImplementedFeatureTypes -->
<!-- ===== -->
<rim:AdhocQuery
  xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
  id="urn:motiiive:csw-ebrim:Query:getImplementedFeatureTypes">
  <!-- may also need other slots to allow search on package and name, but keeping it simpler for now -->
  <rim:Name>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="getImplementedFeatureTypes"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString charset="UTF-8" xml:lang="en"
      value="Takes as a parameter the id of a feature type. Returns: Feature Types that are associated with the specified feature
type via an Implements association."/>
  </rim:Description>
  <rim:Slot name="searchid" slotType="URN">
    <rim:ValueList/>
  </rim:Slot>
  <rim:QueryExpression queryLanguage="urn:x-ogc:specification:csw-ebrim:QueryLanguage:CSWQuery"
  xmlns:csw="http://www.opengis.net/cat/csw" xmlns:ogc="http://www.opengis.net/ogc">
    <csw:GetRecords>
      <csw:Query typeNames="ExtrinsicObject=ft1 ExtrinsicObject=ft2 Association">
        <csw:ElementName>/ft2</csw:ElementName>
        <csw:Constraint version="1.1.0">
          <ogc:Filter>
            <ogc:And>
              <!-- This gets the specified Feature Type. -->
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ft1/@objectType</ogc:PropertyName>
                <ogc:Literal>urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <ogc:PropertyIsEqualTo>
                <ogc:PropertyName>/ft1/@id</ogc:PropertyName>
                <ogc:Literal>${searchid}</ogc:Literal>
              </ogc:PropertyIsEqualTo>
              <!-- This gets all other Feature Types. -->
              <ogc:PropertyIsEqualTo>

```

```

    <ogc:PropertyName>/ft2/@objectType</ogc:PropertyName>
    <ogc:Literal>urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <!-- This gets only associations with the correct source and target objects . -->
    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>/Association/@associationType</ogc:PropertyName>
      <ogc:Literal>Implements</ogc:Literal>
    </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/Association/@sourceObject</ogc:PropertyName>
    <ogc:Literal>/ft1/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  <ogc:PropertyIsEqualTo>
    <ogc:PropertyName>/Association/@targetObject</ogc:PropertyName>
    <ogc:Literal>/ft2/@id</ogc:Literal>
  </ogc:PropertyIsEqualTo>
  </ogc:And>
</ogc:Filter>
</csw:Constraint>
</csw:Query>
</csw:GetRecords>
</rim:QueryExpression>
</rim:AdhocQuery>
</rim:RegistryObjectList>
</rim:RegistryPackage>
</Insert>
</Transaction>

```


Annex C (informative)

Example Feature Type Catalogue Content

C.1 Introduction

This annex provides example XML documents that illustrate how content may be inserted into an FTC that complies with this specification, once the Insert statement contained in Annex B.1 has been used to describe the FTC.

This example inserts several packages into the registry. It illustrates how content should be packaged up and how different packages can reference each other.

C.2 The GML Package

```
<?xml version="1.0" encoding="utf-8"?>
<Transaction xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns="http://www.opengis.net/cat/csw" service="CSW"
version="2.0.1" verboseResponse="true" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Insert>
    <!-- ===== -->
    <!-- GML Package -->
    <!-- ===== -->
    <rim:RegistryPackage lid="urn:motiive:ftc:GML" id="urn:motiive:ftc:GML.20071017"
objectType="urn:oasis:names:tc:ebxml-reg:ObjectType:RegistryObject:RegistryPackage">
      <rim:Name>
        <rim:LocalizedString value="GML Package"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="This RegistryPackage corresponds to the GML package."/>
      </rim:Description>
      <rim:RegistryObjectList>
        <!-- ===== -->
        <!-- GML FeatureType: AbstractFeature -->
        <!-- NB: Lumping together AbstractGML and AbstractFeature attributes -->
        <!-- (ISO 19110 includes only Feature Types, not other object types) -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiive:ftc:GML.AbstractFeature.20071017"
lid="urn:motiive:ftc:GML.AbstractFeature" objectType="urn:motiive:csw-ebrim:ObjectType:ebFC_FeatureType">
          <rim:Slot name="isAbstract">
            <rim:ValueList>
              <rim:Value>true</rim:Value>
            </rim:ValueList>
          </rim:Slot>
          <rim:Name>
            <rim:LocalizedString value="AbstractFeature"/>
          </rim:Name>
          <rim:Description>
            <rim:LocalizedString value="A feature is an abstraction of a real-world phenomenon [ISO
19101].
GML, the basic feature model is given by the AbstractFeature. The GML AbstractFeature may be thought of as "anything that is a
GML feature" and may be used to define variables or templates in which the value of a GML property is "any feature". This occurs in
particular in a GML feature collection where the feature member properties contain one or multiple copies of gml:AbstractFeature
respectively."/>
          </rim:Description>
        </rim:ExtrinsicObject>
        <!-- ===== -->
        <!-- AbstractFeature.id -->

```

```

<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:GML.id.20071017" lid="urn:motiiive:ftc:GML.id"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>xs:ID</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="id"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="The attribute gml:id supports provision of a handle for the XML
element representing a GML Object. Its use is mandatory for all GML objects."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:GML.id.AbstractFeature.20071017"
lid="urn:motiiive:ftc:GML.id.AbstractFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:GML.id.20071017" targetObject="urn:motiiive:ftc:GML:AbstractFeature.20071017"/>
<!-- ===== -->
<!-- AbstractFeature.description -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:GML.description.20071017"
lid="urn:motiiive:ftc:GML.description" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>gml:StringOrRef</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="description"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="The value of this property is a text description of the object."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:GML.description.AbstractFeature.20071017"
lid="urn:motiiive:ftc:GML.description.AbstractFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:GML.description.20071017" targetObject="urn:motiiive:ftc:GML:AbstractFeature.20071017"/>
<!-- ===== -->
<!-- AbstractFeature.descriptionReference -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:GML.descriptionReference.20071017"
lid="urn:motiiive:ftc:GML.descriptionReference" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>gml:Reference</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="descriptionReference"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="The value of this property is a remote text description of the
object. The xlink:href attribute of the gml:descriptionReference property references the external description."/>
  </rim:Description>

```

```

    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:GML.descriptionReference.AbstractFeature.20071017"
lid="urn:motiiive:ftc:GML.descriptionReference.AbstractFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:GML.descriptionReference.20071017"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
    <!-- ===== -->
    <!-- AbstractFeature.identifier -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:GML.identifier.20071017" lid="urn:motiiive:ftc:GML.identifier"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>gml:CodeWithAuthorityType</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>0..1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="identifier"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="Often, a special identifier is assigned to an object by the authority
that maintains the feature with the intention that it is used in references to the object. For such cases, the codeSpace shall be provided.
That identifier is usually unique either globally or within an application domain. gml:identifier is a pre-defined property for such
identifiers."/>
      </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:GML.identifier.AbstractFeature.20071017"
lid="urn:motiiive:ftc:GML.identifier.AbstractFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:GML.identifier.20071017" targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
    <!-- ===== -->
    <!-- AbstractFeature.name -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:GML.name.20071017" lid="urn:motiiive:ftc:GML.name"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>gml:CodeType</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>0..*</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="name"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="An object may have several names, typically assigned by different
authorities. gml:name uses the gml:CodeType content model. The authority for a name is indicated by the value of its (optional)
codeSpace attribute. The name may or may not be unique, as determined by the rules of the organization responsible for the
codeSpace. In common usage there will be one name per authority, so a processing application may select the name from the
codeSpace that it prefers."/>
      </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:GML.name.AbstractFeature.20071017"
lid="urn:motiiive:ftc:GML.name.AbstractFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:GML.name.20071017" targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
    <!-- ===== -->
    <!-- AbstractFeature.boundedBy -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:GML.boundedBy.20071017"
lid="urn:motiiive:ftc:GML.boundedBy" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>gml:BoundingShapeType</rim:Value>
        </rim:ValueList>
    
```

```

    </rim:Slot>
    <rim:Slot name="cardinality">
      <rim:ValueList>
        <rim:Value>0..1</rim:Value>
      </rim:ValueList>
    </rim:Slot>
    <rim:Name>
      <rim:LocalizedString value="boundedBy"/>
    </rim:Name>
    <rim:Description>
      <rim:LocalizedString value="This property describes the minimum bounding box or rectangle
that encloses the entire feature. For envelopes that include a temporal extent, gml:EnvelopeWithTimePeriod is provided."/>
    </rim:Description>
  </rim:ExtrinsicObject>
  <rim:Association id="urn:motiiive:ftc:GML.boundedBy.AbstractFeature.20071017"
lid="urn:motiiive:ftc:GML.boundedBy.AbstractFeature" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:GML.boundedBy.20071017" targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
    </rim:RegistryObjectList>
  </rim:RegistryPackage>
</Insert>
</Transaction>

```

C.3 The Observations and Measurements Package

```

<?xml version="1.0" encoding="utf-8"?>
<!-- edited with XMLSPY v5 rel. 3 U (http://www.xmlspy.com) by Andrew Woolf (CCLRC) -->
<Transaction xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns="http://www.opengis.net/cat/csw" service="CSW"
version="2.0.1" verboseResponse="true" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Insert>
    <!-- ===== -->
    <!-- O&M/SF Package -->
    <!-- ===== -->
    <rim:RegistryPackage lid="urn:motiive:ftc:OM" id="urn:motiive:ftc:OM.20071017"
objectType="urn:oasis:names:tc:ebxml-reg:ObjectType:RegistryObject:RegistryPackage">
      <rim:Name>
        <rim:LocalizedString value="OM Package"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="This package implements Sampling Features (OGC 07-002r3)."/>
        <rim:LocalizedString value="Sampling Features are typically associated with making observations
producing estimates of property values that are in some way representative of a domain feature. They embody a sampling strategy that
is suitable for the observation procedure and the observed property. Hence, sampling features are artefacts of the observation process
rather than the inherent domain semantics. Similar sampling strategies are used across a wide range of application domains so a
common sampling features schema may be described."/>
        <rim:LocalizedString value="Instances of sampling features may act as the proximate feature-of-interest for
observations [O &M-1], particularly early in the value-adding chain."/>
        <rim:LocalizedString value="For further details of O&M and Sampling Features, see OGC documents
07-022r1 and 07-002r3"/>
      </rim:Description>
      <rim:RegistryObjectList>
        <!-- ===== -->
        <!-- OM FeatureType: SamplingFeature -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiive:ftc:OM.SamplingFeature.20071017"
lid="urn:motiive:ftc:OM.SamplingFeature" objectType="urn:motiive:csw-ebrim:ObjectType:ebFC_FeatureType">
          <rim:Name>
            <rim:LocalizedString value="SamplingFeature"/>
          </rim:Name>
          <rim:Description>
            <rim:LocalizedString value="A SamplingFeature is a feature used primarily for taking
observations. Examples: a sounding typically samples a water- or atmospheric-column; a well samples an aquifer; a tissue specimen
samples a part of an organism"/>
            <rim:LocalizedString value="A SamplingFeature is distinguished from typical domain feature
types in that it has a set of [0..*] navigable associations with Observations, given the rolname relatedObservation.SamplingFeature
has an implicit set of properties corresponding to the observedProperty values of the related observations. properties may not be direct
members of the sampledFeature, since the proximate observed property may require additional processing to obtain the value of the
ultimate domain-feature property."/>
            <rim:LocalizedString value="Sampling features are frequently related to each other, as parts of
networks, through sub-sampling, etc. This is supported by the relatedSamplingFeature association with a generic
SamplingFeatureRelation association class, which carries a source, target and role. common requirement for sampling features is an
indication of the SurveyProcedure that provides the surveyDetails related to determination of its location and shape."/>
          </rim:Description>
          <rim:ExtrinsicObject>
            <rim:Association id="urn:motiive:ftc:OM.SamplingFeature.GML.AbstractFeature.20071022"
lid="urn:motiive:ftc:OM.SamplingFeature.GML.AbstractFeature" associationType="urn:motiive:csw-
ebrim:AssociationType.SubTypeOf" sourceObject="urn:motiive:ftc:OM.SamplingFeature.20071017"
targetObject="urn:motiive:ftc:GML.AbstractFeature.20071017"/>
            <!-- ===== -->
            <!-- 'Intention' association, SamplingFeature.sampledFeature -->
            <!-- ===== -->
            <rim:ExtrinsicObject id="urn:motiive:ftc:OM.Intention.20071022" lid="urn:motiive:ftc:OM.Intention"
objectType="urn:motiive:csw-ebrim:ObjectType:ebFC_FeatureAssociation">
              <rim:Name>
                <rim:LocalizedString value="Intention"/>
              </rim:Name>
              <rim:Description>
                <rim:LocalizedString value="A sampling feature must be associated with one or more other
features through an association role sampledFeature. This association records the intention of the sample design. The target of this
association will often be a domain feature.
: a sounding typically samples a water- or atmospheric-column; a well samples an aquifer; a tissue specimen samples a part of an
organism."/>
              </rim:Description>
            </rim:ExtrinsicObject>
          </rim:ExtrinsicObjectList>
        </rim:RegistryObjectList>
      </rim:RegistryPackage>
    </Insert>
  </Transaction>

```

```

    </rim:Description>
  </rim:ExtrinsicObject>
  <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.SamplingFeature.sampledFeature.20071022"
lid="urn:motiiive:ftc:OM.SamplingFeature.sampledFeature" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_AssociationRole">
  <rim:Slot name="isNavigable">
    <rim:ValueList>
      <rim:Value>TRUE</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1..*</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="sampledFeature"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="A SamplingFeature must be associated with one or more other
features through an association role sampledFeature. association records the intention of the sample design. target of this association
will often be a domain feature."/>
  </rim:Description>
  </rim:ExtrinsicObject>
  <rim:Association id="urn:motiiive:ftc:OM.sampledFeature.SamplingFeature.20071022"
lid="urn:motiiive:ftc:OM.sampledFeature.SamplingFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.SamplingFeature.sampledFeature.20071022"
targetObject="urn:motiiive:ftc:OM.SamplingFeature.20071017"/>
  <rim:Association id="urn:motiiive:ftc:OM.sampledFeature.AbstractFeature.20071022"
lid="urn:motiiive:ftc:OM.sampledFeature.AbstractFeature" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:OM.SamplingFeature.sampledFeature.20071022"
targetObject="urn:motiiive:ftc:GML:AbstractFeature.20071017"/>
  <rim:Association id="urn:motiiive:ftc:OM.sampledFeature.Intention.20071022"
lid="urn:motiiive:ftc:OM.sampledFeature.Intention" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:OM.SamplingFeature.sampledFeature.20071022"
targetObject="urn:motiiive:ftc:OM.Intention.20071022"/>
  <!-- ===== -->
  <!-- Unnamed association (SamplingFeature->Observation), SamplingFeature.relatedObservation -->
  <!-- ===== -->
  <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.SamplingFeature_Observation.20071022"
lid="urn:motiiive:ftc:OM.SamplingFeature_Observation" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAssociation">
  <rim:Description>
    <rim:LocalizedString value="The SamplingFeature class is defined primarily by a set of [0..*]
relatedObservation associations."/>
  </rim:Description>
  </rim:ExtrinsicObject>
  <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.SamplingFeature.relatedObservation.20071022"
lid="urn:motiiive:ftc:OM.SamplingFeature.relatedObservation" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_AssociationRole">
  <rim:Slot name="isNavigable">
    <rim:ValueList>
      <rim:Value>TRUE</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..*</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="relatedObservation"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="A SamplingFeature is distinguished from typical domain feature
types in that it has a set of [0..*] navigable associations with Observations, given the rolename relatedObservation. complements the
association role "featureOfInterest" which is constrained to point back from the Observation to the Sampling-Feature. usual
requirement of an Observation feature-of-interest is that its type has a property matching the observed-property on the Observation.
the case of Sampling-features, the topology of the model and navigability of the relatedObservation role means that this requirement is
satisfied automatically: property of the sampling-feature is implied by the observedProperty of a related observation. effectively
provides an unlimited set of "soft-typed" properties on a Sampling Feature."/>
  </rim:Description>

```

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        </rim:Description>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:OM.relatedObservation.SamplingFeature.20071022"
lid="urn:motiiive:ftc:OM.relatedObservation.SamplingFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:OM.SamplingFeature.relatedObservation.20071022"
targetObject="urn:motiiive:ftc:OM.SamplingFeature.20071017"/>
        <rim:Association id="urn:motiiive:ftc:OM.relatedObservation.Observation.20071022"
lid="urn:motiiive:ftc:OM.relatedObservation.Observation" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:OM.SamplingFeature.relatedObservation.20071022"
targetObject="urn:motiiive:ftc:GML.Observation.20071017"/>
        <rim:Association id="urn:motiiive:ftc:OM.relatedObservation.SamplingFeature_Observation.20071022"
regrep:AssociationType:AffiliatedWith:MemberOf"
sourceObject="urn:motiiive:ftc:OM.SamplingFeature.relatedObservation.20071022"
targetObject="urn:motiiive:ftc:OM.SamplingFeature_Observation.20071022"/>
        <!-- ===== -->
        <!-- SamplingFeature.relatedSamplingFeature -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.relatedSamplingFeature.20071017"
lid="urn:motiiive:ftc:OM.relatedSamplingFeature" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>sa:SamplingFeatureRelation</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>0..*</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="description"/>
        </rim:Name>
        <rim:Description>
        <rim:LocalizedString value="Sampling features are frequently related to each other, as parts of
complexes, networks, through sub-sampling, etc.
This is supported by the relatedSamplingFeature association with a SamplingFeatureRelation association class, which
carries a source, target and role."/>
        </rim:Description>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:OM.relatedSamplingFeature.SamplingFeature.20071017"
lid="urn:motiiive:ftc:OM.relatedSamplingFeature.SamplingFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:OM.relatedSamplingFeature.20071017"
targetObject="urn:motiiive:ftc:OM.SamplingFeature.20071017"/>
        <!-- ===== -->
        <!-- Unnamed association (SamplingFeature->SurveyProcedure), SamplingFeature.surveyDetails -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.SamplingFeature_SurveyProcedure.20071022"
lid="urn:motiiive:ftc:OM.SamplingFeature_SurveyProcedure" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAssociation">
        <rim:Description>
        <rim:LocalizedString value="A common requirement for sampling features is an indication of
the SurveyProcedure that provides the surveyDetails related to determination of its location and shape."/>
        </rim:Description>
        </rim:ExtrinsicObject>
        <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.SamplingFeature.surveyDetails.20071022"
lid="urn:motiiive:ftc:OM.SamplingFeature.surveyDetails" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
        <rim:Slot name="isNavigable">
        <rim:ValueList>
        <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="surveyDetails">
        <rim:ValueList>
        <rim:Value>0..1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="surveyDetails"/>
        </rim:Name>
        <rim:Description>

```

```

        <rim:LocalizedString value="A common requirement for sampling features is an indication of
the SurveyProcedure that provides the surveyDetails related to determination of its location and shape."/>
    </rim:Description>
</rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:OM.surveyDetails.SamplingFeature.20071022"
lid="urn:motiiive:ftc:OM.surveyDetails.SamplingFeature" associationType="urn:motiiive:csw-ebriim:AssociationType.PropertyOf"
sourceObject="urn:motiiive:ftc:OM.SamplingFeature.surveyDetails.20071022"
targetObject="urn:motiiive:ftc:OM.SamplingFeature.20071017"/>
    <rim:Association id="urn:motiiive:ftc:OM.surveyDetails.SurveyProcedure.20071022"
lid="urn:motiiive:ftc:OM.surveyDetails.SurveyProcedure" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType.RelatedTo" sourceObject="urn:motiiive:ftc:OM.SamplingFeature.surveyDetails.20071022"
targetObject="urn:motiiive:ftc:GML.SurveyProcedure.20071017"/>
    <rim:Association id="urn:motiiive:ftc:OM.surveyDetails.SamplingFeature_SurveyProcedure.20071022"
lid="urn:motiiive:ftc:OM.surveyDetails.SamplingFeature_SurveyProcedure" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType.AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:OM.SamplingFeature.surveyDetails.20071022"
targetObject="urn:motiiive:ftc:OM.SamplingFeature_SurveyProcedure.20071022"/>
    <!-- ===== -->
    <!-- OM FeatureType: Observation -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Observation.20071017" lid="urn:motiiive:ftc:OM.Observation"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
    <rim:Name>
        <rim:LocalizedString value="Observation"/>
    </rim:Name>
    <rim:Description>
        <rim:LocalizedString value="An observation is an act through which a number, term or other
symbol is assigned to a phenomenon [FOW1998]. An observation is associated with a discrete time. The phenomenon is a property of
an identifiable object, which is the feature of interest of the observation. The observation uses a procedure, which is often an
instrument or sensor [NRC1995] but may be a process chain, human observer, an algorithm, a computation or simulator. The key idea
is that the observation result is an estimate of the value of some property of the feature of interest, and the other observation properties
provide context or metadata to support evaluation, interpretation and use of the result."/>
        <rim:LocalizedString value="In conventional measurement theory [e.g. KRALST, SAR1995,
VIM] the term "measurement" is used for the concept. However, Fowler's distinction between measurement and category-
observation [FOW1998] has been adopted in more recent work [NIE2001, YOD] so the term "observation" is used here for the
general concept. "Measurement" may be reserved for cases where the result is a numeric quantity."/>
        <rim:LocalizedString value="The relationship between the properties of an observation and
those of its feature of interest is key to the semantics of the model.: Observation model takes a user-centric viewpoint, emphasizing the
semantics of the feature-of-interest and its properties. This contrasts with Sensor oriented models, which take a process- and thus
provider-centric viewpoint."/>
        <rim:LocalizedString value="A coverage may appear as a consequence of observations, either as
the result of a single observation or by compiling results from a suite of observations with a consistent observed property."/>
    </rim:Description>
</rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:OM.Observation.GML.AbstractFeature.20071022"
lid="urn:motiiive:ftc:OM.Observation.GML.AbstractFeature" associationType="urn:motiiive:csw-ebriim:AssociationType.SubTypeOf"
sourceObject="urn:motiiive:ftc:OM.Observation.20071017" targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
    <!-- ===== -->
    <!-- Observation.metadata -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.metadata.20071017" lid="urn:motiiive:ftc:OM.metadata"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
    <rim:Slot name="valueType">
        <rim:ValueList>
            <rim:Value>om:AnyOrReferenceType</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
        <rim:ValueList>
            <rim:Value>0..1</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Name>
        <rim:LocalizedString value="metadata"/>
    </rim:Name>
    <rim:Description>
        <rim:LocalizedString value="Replace with reference to ISO Metadata entity when GML version
3.2.X has been formally adopted."/>
    </rim:Description>
</rim:ExtrinsicObject>

```



```

        <rim:Association id="urn:motive:ftc:OM.metadata.Observation.20071017"
lid="urn:motive:ftc:OM.metadata.Observation" associationType="urn:motive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motive:ftc:OM.metadata.20071017" targetObject="urn:motive:ftc:OM.Observation.20071017"/>
        <!-- ===== -->
        <!-- Observation.samplingTime -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motive:ftc:OM.samplingTime.20071017"
lid="urn:motive:ftc:OM.samplingTime" objectType="urn:motive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>swe:TimeObjectPropertyType</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="samplingTime"/>
        </rim:Name>
        <rim:Description>
        <rim:LocalizedString value="The samplingTime is the time that the result applies to the feature-
of-interest.

```

This is the time usually required for geospatial analysis of the result."/>

```

        </rim:Description>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motive:ftc:OM.samplingTime.Observation.20071017"
lid="urn:motive:ftc:OM.samplingTime.Observation" associationType="urn:motive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motive:ftc:OM.samplingTime.20071017" targetObject="urn:motive:ftc:OM.Observation.20071017"/>
        <!-- ===== -->
        <!-- Observation.resultTime -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motive:ftc:OM.resultTime.20071017" lid="urn:motive:ftc:OM.resultTime"
objectType="urn:motive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>swe:TimeObjectPropertyType</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>0..1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="resultTime"/>
        </rim:Name>
        <rim:Description>
        <rim:LocalizedString value="The resultTime is the time when the procedure associated with the
observation act was applied.

```

For some observations this is identical to samplingTime, in which case the resultTime may be omitted.

Example: Where a measurement is made on a specimen in a laboratory, the samplingTime should record the time the specimen was retrieved from its host, while the resultTime should record the time the laboratory procedure was applied.

Example: Where sensor observation results are post-processed, the resultTime is the post-processing time, while the samplingTime preserves the time of initial interaction with the world.

Example: Simulations are often used to estimate the values for phenomena in the future or past. The samplingTime is the real-world time that the result applies to, while the resultTime is the time that the simulation process was executed."/>

```

        </rim:Description>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motive:ftc:OM.resultTime.Observation.20071017"
lid="urn:motive:ftc:OM.resultTime.Observation" associationType="urn:motive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motive:ftc:OM.resultTime.20071017" targetObject="urn:motive:ftc:OM.Observation.20071017"/>
        <!-- ===== -->
        <!-- Unnamed association (Observation<=>Process), Observation.procedure and
Process.generatedObservation -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motive:ftc:OM.Observation_Process.20071022"
lid="urn:motive:ftc:OM.Observation_Process" objectType="urn:motive:csw-ebrim:ObjectType:ebFC_FeatureAssociation">
        <rim:Description>

```

```

        <rim:LocalizedString value="The procedure that is the target of this association will often not be
observation-instance specific, but rather a description of a generic procedure, instrument, etc. However, if it is necessary to record
instance-specific details, parameters, inputs, etc, then a specific procedure-instance or procedure-event may be used. Alternatively,
event-specific parameters (e.g. calibrations) may be recorded in the eventParameter property on the Observation instance."/>
    </rim:Description>
</rim:ExtrinsicObject>
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Observation.procedure.20071022"
lid="urn:motiiive:ftc:OM.Observation.procedure" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_AssociationRole">
    <rim:Slot name="isNavigable">
        <rim:ValueList>
            <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
        <rim:ValueList>
            <rim:Value>1</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Name>
        <rim:LocalizedString value="procedure"/>
    </rim:Name>
    <rim:Description>
        <rim:LocalizedString value="The procedure is the description of a process used to generate the
result. must be suitable for the observed property.
: this level we do not distinguish between sensor-observations, estimations made by an observer,
or algorithms, simulations, computations and complex processing chains."/>
    </rim:Description>
</rim:ExtrinsicObject>
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Process.generatedObservation.20071022"
lid="urn:motiiive:ftc:OM.Process.generatedObservation" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_AssociationRole">
    <rim:Slot name="isNavigable">
        <rim:ValueList>
            <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
        <rim:ValueList>
            <rim:Value>0..*</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Name>
        <rim:LocalizedString value="generatedObservation"/>
    </rim:Name>
    <rim:Description>
        <rim:LocalizedString value="Many Observations may be generated by a procedure, except if the
Process is instance-specific, where the time of application is bound into the description of the Process."/>
    </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:OM.procedure.Observation.20071022"
lid="urn:motiiive:ftc:OM.procedure.Observation" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.Observation.procedure.20071022" targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<rim:Association id="urn:motiiive:ftc:OM.procedure.Process.20071022"
lid="urn:motiiive:ftc:OM.procedure.Process" associationType="urn:oasis:names:tc:ebxml-regrep:AssociationType:RelatedTo"
sourceObject="urn:motiiive:ftc:OM.Observation.procedure.20071022" targetObject="urn:motiiive:ftc:OM.Process.20071017"/>
<rim:Association id="urn:motiiive:ftc:OM.procedure.Observation_Process.20071022"
lid="urn:motiiive:ftc:OM.procedure.Observation_Process" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:OM.Observation.procedure.20071022"
targetObject="urn:motiiive:ftc:OM.Observation_Process.20071022"/>
<rim:Association id="urn:motiiive:ftc:OM.generatedObservation.Process.20071022"
lid="urn:motiiive:ftc:OM.generatedObservation.Process" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.Process.generatedObservation.20071022" targetObject="urn:motiiive:ftc:OM.Process.20071017"/>
<rim:Association id="urn:motiiive:ftc:OM.generatedObservation.Observation.20071022"
lid="urn:motiiive:ftc:OM.generatedObservation.Observation" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:OM.Process.generatedObservation.20071022"
targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<rim:Association id="urn:motiiive:ftc:OM.generatedObservation.Observation_Process.20071022"
lid="urn:motiiive:ftc:OM.generatedObservation.Observation_Process" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:OM.Process.generatedObservation.20071022"
targetObject="urn:motiiive:ftc:OM.Observation_Process.20071022"/>
<!-- ===== -->
<!-- Observation.resultQuality -->

```

```

<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.resultQuality.20071017"
lid="urn:motiiive:ftc:OM.resultQuality" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>om:AnyOrReferenceType</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="resultQuality"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="Instance-specific quality assessment or measure.
Allow multiple quality measures if required.

Replace with reference to ISO Metadata entity when GML version 3.2.X has been formally adopted."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:OM.resultQuality.Observation.20071017"
lid="urn:motiiive:ftc:OM.resultQuality.Observation" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.resultQuality.20071017" targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<!-- ===== -->
<!-- Observation.observedProperty -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.observedProperty.20071017"
lid="urn:motiiive:ftc:OM.observedProperty" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>swe:PhenomenonPropertyType</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="observedProperty"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="Property-type or phenomenon for which the observation result
provides an estimate of its value.
for example 'wavelength', 'grass-species', 'power', 'intensity in the waveband x-y', etc.
It must be a property associated with the type of the feature of interest.
This feature-property that provides the (semantic) type of the observation.
The description of the phenomenon may be quite specific and constrained.

The description of the property-type may be presented using various alternative encodings.
If shown inline, the swe:Phenomenon schema is required.
If provided using another encoding (e.g. OWL or SWEET) then the description must be in a remote repository and
xlink reference used."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:OM.observedProperty.Observation.20071017"
lid="urn:motiiive:ftc:OM.observedProperty.Observation" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.observedProperty.20071017" targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<!-- ===== -->
<!-- Unnamed association (Observation<=>AbstractFeature), Observation.featureOfInterest and
AbstractFeature.propertyValueProvider -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Observation_AbstractFeature.20071022"
lid="urn:motiiive:ftc:OM.Observation_AbstractFeature" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAssociation">
  <rim:Description>
    <rim:LocalizedString value="The feature-of-interest is the identifiable object that carries the
property whose value is being observed."/>
  </rim:Description>

```

```

    </rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Observation.featureOfInterest.20071022"
lid="urn:motiiive:ftc:OM.Observation.featureOfInterest" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
    <rim:Slot name="isNavigable">
    <rim:ValueList>
    <rim:Value>TRUE</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
    <rim:ValueList>
    <rim:Value>1</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Name>
    <rim:LocalizedString value="featureOfInterest"/>
    </rim:Name>
    <rim:Description>
    <rim:LocalizedString value="The featureOfInterest is a feature of any type (ISO 19109, ISO
19101), which is a representation of the observation target, being the real-world object regarding which the observation is made, such
as a specimen, station, tract, mountain, pixel, etc.
    spatial properties (location) of this feature of interest are typically of most interest for spatial
analysis of the observation result."/>
    </rim:Description>
    </rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.AbstractFeature.propertyValueProvider.20071022"
lid="urn:motiiive:ftc:OM.AbstractFeature.propertyValueProvider" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_AssociationRole">
    <rim:Slot name="isNavigable">
    <rim:ValueList>
    <rim:Value>FALSE</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
    <rim:ValueList>
    <rim:Value>0..*</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Name>
    <rim:LocalizedString value="propertyValueProvider"/>
    </rim:Name>
    <rim:Description>
    <rim:LocalizedString value="Pointer to an observation that provides an estimate of a property
value"/>
    </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:OM.featureOfInterest.Observation.20071022"
lid="urn:motiiive:ftc:OM.featureOfInterest.Observation" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.Observation.featureOfInterest.20071022"
targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
    <rim:Association id="urn:motiiive:ftc:OM.featureOfInterest.AbstractFeature.20071022"
lid="urn:motiiive:ftc:OM.featureOfInterest.AbstractFeature" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:OM.Observation.featureOfInterest.20071022"
targetObject="urn:motiiive:ftc:GML:AbstractFeature.20071017"/>
    <rim:Association id="urn:motiiive:ftc:OM.featureOfInterest.Observation_AbstractFeature.20071022"
lid="urn:motiiive:ftc:OM.featureOfInterest.Observation_AbstractFeature" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:OM.Observation.featureOfInterest.20071022"
targetObject="urn:motiiive:ftc:OM.Observation_AbstractFeature.20071022"/>
    <rim:Association id="urn:motiiive:ftc:OM.propertyValueProvider.AbstractFeature.20071022"
lid="urn:motiiive:ftc:OM.propertyValueProvider.AbstractFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:OM.AbstractFeature.propertyValueProvider.20071022"
targetObject="urn:motiiive:ftc:GML:AbstractFeature.20071017"/>
    <rim:Association id="urn:motiiive:ftc:OM.propertyValueProvider.Observation.20071022"
lid="urn:motiiive:ftc:OM.propertyValueProvider.Observation" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:OM.AbstractFeature.propertyValueProvider.20071022"
targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
    <rim:Association id="urn:motiiive:ftc:OM.propertyValueProvider.Observation_AbstractFeature.20071022"
lid="urn:motiiive:ftc:OM.generatedObservation.Observation_AbstractFeature" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf"
sourceObject="urn:motiiive:ftc:OM.AbstractFeature.propertyValueProvider.20071022"
targetObject="urn:motiiive:ftc:OM.Observation_AbstractFeature.20071022"/>
    <!-- ===== -->

```

```

<!-- Observation.parameter -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.parameter.20071017" lid="urn:motiiive:ftc:OM.parameter"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>swe:SimpleDataPropertyType</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..*</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="parameter"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="An Observation parameter is a general event-specific parameter.

```

This will typically be used to record environmental parameters, or event-specific sampling parameters that are not tightly bound to either the feature-of-interest or the procedure.

NOTE: Parameters that are tightly bound to the procedure should be recorded as part of the procedure description. For example, the SensorML model associates parameters with specific process elements or stages.

NOTE: The semantics of the parameter must be provided as part of its value.

In some applications it is convenient to use a generic or standard procedure, or feature-of-interest, rather than define an event-specific process or feature.

In this context, event-specific parameters are bound to the Observation act."/>

```

</rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:OM.parameter.Observation.20071017"
lid="urn:motiiive:ftc:OM.parameter.Observation" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.parameter.20071017" targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<!-- ===== -->
<!-- Observation.result -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.result.20071017" lid="urn:motiiive:ftc:OM.result"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>xs:Any</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="result"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="The result contains the value generated by the procedure.

```

```

The type of the observation result must be consistent with the observed property, and the scale or scope for the value
must be consistent with the quantity or category type.
Application profiles may choose to constrain the type of the result."/>
</rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:OM.result.Observation.20071017"
lid="urn:motiiive:ftc:OM.result.Observation" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.result.20071017" targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<!-- ===== -->
<!-- OM FeatureType: Process -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Process.20071017" lid="urn:motiiive:ftc:OM.Process"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
  <rim:Name>
    <rim:LocalizedString value="Process"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="SensorML Process feature type"/>

```

```

The type of the observation result must be consistent with the observed property, and the scale or scope for the value
must be consistent with the quantity or category type.
Application profiles may choose to constrain the type of the result."/>
</rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:OM.result.Observation.20071017"
lid="urn:motiiive:ftc:OM.result.Observation" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.result.20071017" targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<!-- ===== -->
<!-- OM FeatureType: Process -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Process.20071017" lid="urn:motiiive:ftc:OM.Process"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
  <rim:Name>
    <rim:LocalizedString value="Process"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="SensorML Process feature type"/>

```

The type of the observation result must be consistent with the observed property, and the scale or scope for the value must be consistent with the quantity or category type.

Application profiles may choose to constrain the type of the result."/>

```

</rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:OM.result.Observation.20071017"
lid="urn:motiiive:ftc:OM.result.Observation" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.result.20071017" targetObject="urn:motiiive:ftc:OM.Observation.20071017"/>
<!-- ===== -->
<!-- OM FeatureType: Process -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:OM.Process.20071017" lid="urn:motiiive:ftc:OM.Process"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
  <rim:Name>
    <rim:LocalizedString value="Process"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="SensorML Process feature type"/>

```

```

        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:OM.Process.GML.AbstractFeature.20071018"
lid="urn:motiiive:ftc:OM.Process.GML.AbstractFeature" associationType="urn:motiiive:csw-ebrim:AssociationType.SubTypeOf"
sourceObject="urn:motiiive:ftc:OM.Process.20071017" targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
      <!-- ===== -->
      <!-- OM FeatureType: SurveyProcedure -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.SurveyProcedure" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType">
        <rim:Name>
          <rim:LocalizedString value="SurveyProcedure"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="Specialized procedure related to surveying positions and
locations."/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:OM.SurveyProcedure.GML.AbstractFeature.20071018"
lid="urn:motiiive:ftc:OM.SurveyProcedure.GML.AbstractFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType.SubTypeOf" sourceObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
      <!-- ===== -->
      <!-- SurveyProcedure.operator -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.operator.20071017" lid="urn:motiiive:ftc:OM.operator"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>sa:AnyOrReferenceType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>0..1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="operator"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="tbd"/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:OM.operator.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.operator.SurveyProcedure" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.operator.20071017" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
      <!-- ===== -->
      <!-- SurveyProcedure.elevationDatum -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.elevationDatum.20071017"
lid="urn:motiiive:ftc:OM.elevationDatum" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gml:ReferenceType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>0..1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="elevationDatum"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="tbd"/>
        </rim:Description>
      </rim:ExtrinsicObject>

```

```

    <rim:Association id="urn:motiiive:ftc:OM.elevationDatum.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.elevationDatum.SurveyProcedure" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.elevationDatum.20071017" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
    <!-- ===== -->
    <!-- SurveyProcedure.elevationMethod -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.elevationMethod.20071022"
lid="urn:motiiive:ftc:OM.elevationMethod" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
    <rim:Slot name="valueType">
    <rim:ValueList>
    <rim:Value>om:ProcessPropertyType</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
    <rim:ValueList>
    <rim:Value>0..1</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Name>
    <rim:LocalizedString value="elevationMethod"/>
    </rim:Name>
    <rim:Description>
    <rim:LocalizedString value="tbd"/>
    </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:OM.elevationMethod.SurveyProcedure.20071022"
lid="urn:motiiive:ftc:OM.elevationMethod.SurveyProcedure" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.elevationMethod.20071022" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
    <!-- ===== -->
    <!-- SurveyProcedure.elevationAccuracy -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.elevationAccuracy.20071017"
lid="urn:motiiive:ftc:OM.elevationAccuracy" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
    <rim:Slot name="valueType">
    <rim:ValueList>
    <rim:Value>gml:MeasureType</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
    <rim:ValueList>
    <rim:Value>0..1</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Name>
    <rim:LocalizedString value="elevationAccuracy"/>
    </rim:Name>
    <rim:Description>
    <rim:LocalizedString value="tbd"/>
    </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:OM.elevationAccuracy.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.elevationAccuracy.SurveyProcedure" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:OM.elevationAccuracy.20071017"
targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
    <!-- ===== -->
    <!-- SurveyProcedure.geodeticDatum -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.geodeticDatum.20071017"
lid="urn:motiiive:ftc:OM.geodeticDatum" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
    <rim:Slot name="valueType">
    <rim:ValueList>
    <rim:Value>gml:ReferenceType</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
    <rim:ValueList>
    <rim:Value>0..1</rim:Value>
    </rim:ValueList>
    </rim:Slot>
    <rim:Name>
    <rim:LocalizedString value="geodeticDatum"/>

```

```

        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="tbd"/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:OM.geodeticDatum.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.geodeticDatum.SurveyProcedure" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.geodeticDatum.20071017" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
      <!-- ===== -->
      <!-- SurveyProcedure.positionMethod -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.positionMethod.20071022"
lid="urn:motiiive:ftc:OM.positionMethod" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>om:ProcessPropertyType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="positionMethod"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="tbd"/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:OM.positionMethod.SurveyProcedure.20071022"
lid="urn:motiiive:ftc:OM.positionMethod.SurveyProcedure" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.positionMethod.20071022" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
      <!-- ===== -->
      <!-- SurveyProcedure.positionAccuracy -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.positionAccuracy.20071017"
lid="urn:motiiive:ftc:OM.positionAccuracy" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gml:MeasureType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>0..1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="positionAccuracy"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="tbd"/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:OM.positionAccuracy.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.positionAccuracy.SurveyProcedure" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.positionAccuracy.20071017" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
      <!-- ===== -->
      <!-- SurveyProcedure.projection -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.projection.20071017" lid="urn:motiiive:ftc:OM.projection"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gml:ReferenceType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>0..1</rim:Value>
          </rim:ValueList>

```



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        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="projection"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="tbd"/>
      </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:OM.projection.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.projection.SurveyProcedure" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.projection.20071017" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
    <!-- ===== -->
    <!-- SurveyProcedure.surveyTime -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:OM.surveyTime.20071017" lid="urn:motiiive:ftc:OM.surveyTime"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>gml:TimePrimitivePropertyType</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>0..1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="surveyTime"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="tbd"/>
      </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:OM.surveyTime.SurveyProcedure.20071017"
lid="urn:motiiive:ftc:OM.surveyTime.SurveyProcedure" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:OM.surveyTime.20071017" targetObject="urn:motiiive:ftc:OM.SurveyProcedure.20071017"/>
    </rim:RegistryObjectList>
  </rim:RegistryPackage>
</Insert>
</Transaction>

```

C.4 The RISE Package

```

<?xml version="1.0" encoding="UTF-8"?>
<Transaction xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns="http://www.opengis.net/cat/csw" service="CSW"
version="2.0.1" verboseResponse="true" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Insert>
    <!-- ===== -->
    <!-- RISE -->
    <!-- ===== -->
    <rim:RegistryPackage lid="urn:motiive:ftc:OM" id="urn:motiive:ftc:OM.20071017"
objectType="urn:oasis:names:tc:ebxml-reg:ObjectType:RegistryObject:RegistryPackage">
      <rim:Name>
        <rim:LocalizedString value="RISE Package"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="Ths package implements the RISE Application Schema"/>
      </rim:Description>
      <rim:RegistryObjectList>
        <!-- ===== -->
        <!-- RISE FeatureType: LandCover -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiive:ftc:RISE.LandCover.20071112"
lid="urn:motiive:ftc:RISE.LandCover" objectType="urn:motiive:csw-ebriim:ObjectType:ebFC_FeatureType">
          <rim:Name>
            <rim:LocalizedString value="LandCover"/>
          </rim:Name>
          <rim:Description>
            <rim:LocalizedString value="Land cover is a feature type describing different classes defined
for the purpose of Nutrient leakage modelling."/>
          </rim:Description>
          </rim:ExtrinsicObject>
          <rim:Association id="urn:motiive:ftc:RISE.LandCover.GML.AbstractFeature.20071022"
lid="urn:motiive:ftc:RISE.LandCover.GML.AbstractFeature" associationType="urn:motiive:csw-ebriim:AssociationType:SubTypeOf"
sourceObject="urn:motiive:ftc:RISE.LandCover.20071112" targetObject="urn:motiive:ftc:GML.AbstractFeature.20071017"/>
            <!-- ===== -->
            <!-- LandCover.landCoverType -->
            <!-- ===== -->
            <rim:ExtrinsicObject id="urn:motiive:ftc:RISE.landCoverType.20071112"
lid="urn:motiive:ftc:RISE.landCoverType" objectType="urn:motiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
              <rim:Slot name="valueType">
                <rim:ValueList>
                  <rim:Value>RISE:LandcoverTypeType</rim:Value>
                </rim:ValueList>
              </rim:Slot>
              <rim:Slot name="cardinality">
                <rim:ValueList>
                  <rim:Value>1</rim:Value>
                </rim:ValueList>
              </rim:Slot>
              <rim:Name>
                <rim:LocalizedString value="landCoverType"/>
              </rim:Name>
            </rim:ExtrinsicObject>
            <rim:Association id="urn:motiive:ftc:RISE.landCoverType.LandCover.20071112"
lid="urn:motiive:ftc:RISE.landCoverType.LandCover" associationType="urn:motiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiive:ftc:RISE.landCoverType.20071112" targetObject="urn:motiive:ftc:RISE.LandCover.20071112"/>
              <!-- ===== -->
              <!-- LandCover.shape -->
              <!-- ===== -->
              <rim:ExtrinsicObject id="urn:motiive:ftc:RISE.shape_1.20071112" lid="urn:motiive:ftc:RISE.shape_1"
objectType="urn:motiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
                <rim:Slot name="valueType">
                  <rim:ValueList>
                    <rim:Value>gml:SurfacePropertyType</rim:Value>
                  </rim:ValueList>
                </rim:Slot>
                <rim:Slot name="cardinality">
                  <rim:ValueList>
                    <rim:Value>1</rim:Value>

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        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="shape"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.shape.LandCover.20071112"
lid="urn:motiiive:ftc:RISE.shape.LandCover" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_1.20071112" targetObject="urn:motiiive:ftc:RISE.LandCover.20071112"/>
    <!-- ===== -->
    <!-- RISE FeatureType: WaterBody -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.WaterBody" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
      <rim:Slot name="isAbstract">
        <rim:ValueList>
          <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="WaterBody"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="Lakes &gt;= 0.5 km², rivers with catchment areas &gt;= 10 km²,
coastal areas and transitional waters."/>
      </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.WaterBody.GML.AbstractFeature.20071022"
lid="urn:motiiive:ftc:RISE.WaterBody.GML.AbstractFeature" associationType="urn:motiiive:csw-
ebriim:AssociationType.SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.WaterBody.20071112"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
    <!-- ===== -->
    <!-- WaterBody.eu_waterbodyCode -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.eu_waterbodyCode.20071112"
lid="urn:motiiive:ftc:RISE.eu_waterbodyCode" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>string</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="eu_waterbodyCode"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.eu_waterbodyCode.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.eu_waterbodyCode.WaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.eu_waterbodyCode.20071112" targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
    <!-- ===== -->
    <!-- WaterBody.insertedBy -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.insertedBy.20071112" lid="urn:motiiive:ftc:RISE.insertedBy"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>string</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="insertedBy"/>
      </rim:Name>

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        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.insertedBy.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.insertedBy.WaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.insertedBy.20071112" targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
        <!-- ===== -->
        <!-- WaterBody.insertedWhen -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.insertedWhen.20071112"
lid="urn:motiiive:ftc:RISE.insertedWhen" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>date</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="insertedWhen"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.insertedWhen.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.insertedWhen.WaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.insertedWhen.20071112" targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
        <!-- ===== -->
        <!-- WaterBody.name -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.name_1.20071112" lid="urn:motiiive:ftc:RISE.name_1"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>gmd:PT_FreeText_PropertyType</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="name"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.name.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.name.WaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.name_1.20071112" targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
        <!-- ===== -->
        <!-- WaterBody.riverBasinCode -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.riverBasinCode_1.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinCode_1" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>string</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="riverBasinCode"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.riverBasinCode.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinCode.WaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.riverBasinCode_1.20071112" targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
        <!-- ===== -->

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<!-- WaterBody.statusYear -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.statusYear.20071112" lid="urn:motiiive:ftc:RISE.statusYear"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>integer</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="statusYear"/>
  </rim:Name>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:RISE.statusYear.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.statusYear.WaterBody" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.statusYear.20071112" targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
<!-- ===== -->
<!-- WaterBody.waterbodyCode -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.waterbodyCode.20071112"
lid="urn:motiiive:ftc:RISE.waterbodyCode" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>string</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="waterbodyCode"/>
  </rim:Name>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:RISE.waterbodyCode.WaterBody.20071112"
lid="urn:motiiive:ftc:RISE.waterbodyCode.WaterBody" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.waterbodyCode.20071112" targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
<!-- ===== -->
<!-- RISE FeatureType: SurfaceWaterBody -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.SurfaceWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.SurfaceWaterBody" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType">
  <rim:Slot name="isAbstract">
    <rim:ValueList>
      <rim:Value>TRUE</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="SurfaceWaterBody"/>
  </rim:Name>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:RISE.SurfaceWaterBody.RISE.WaterBody.20071022"
lid="urn:motiiive:ftc:RISE.SurfaceWaterBody.RISE.WaterBody" associationType="urn:motiiive:csw-ebrim:AssociationType:SubTypeOf"
sourceObject="urn:motiiive:ftc:RISE.SurfaceWaterBody.20071112"
targetObject="urn:motiiive:ftc:RISE.WaterBody.20071112"/>
<!-- ===== -->
<!-- RISE FeatureType: FreshWaterBody -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.FreshWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.FreshWaterBody" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType">
  <rim:Slot name="isAbstract">
    <rim:ValueList>
      <rim:Value>TRUE</rim:Value>
    </rim:ValueList>
  </rim:Slot>

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        <rim:Name>
          <rim:LocalizedString value="FreshWaterBody"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.FreshWaterBody.RISE.SurfaceWaterBody.20071022"
lid="urn:motiiive:ftc:RISE.FreshWaterBody.RISE.SurfaceWaterBody" associationType="urn:motiiive:csw-
ebriim:AssociationType.SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.FreshWaterBody.20071112"
targetObject="urn:motiiive:ftc:RISE.SurfaceWaterBody.20071112"/>
      <!-- ===== -->
      <!-- RISE FeatureType: LakeWaterBody -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.LakeWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.LakeWaterBody" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
        <rim:Name>
          <rim:LocalizedString value="LakeWaterBody"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.LakeWaterBody.RISE.FreshWaterBody.20071022"
lid="urn:motiiive:ftc:RISE.LakeWaterBody.RISE.FreshWaterBody" associationType="urn:motiiive:csw-
ebriim:AssociationType.SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.LakeWaterBody.20071112"
targetObject="urn:motiiive:ftc:RISE.FreshWaterBody.20071112"/>
      <!-- ===== -->
      <!-- LakeWaterBody.shape -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.shape_5.20071112" lid="urn:motiiive:ftc:RISE.shape_5"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gml:CompositeSurface</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="shape"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.shape.LakeWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.shape.LakeWaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_5.20071112" targetObject="urn:motiiive:ftc:RISE.LakeWaterBody.20071112"/>
      <!-- ===== -->
      <!-- RISE FeatureType: RiverWaterBody -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.RiverWaterBody" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
        <rim:Name>
          <rim:LocalizedString value="RiverWaterBody"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.RiverWaterBody.RISE.FreshWaterBody.20071022"
lid="urn:motiiive:ftc:RISE.RiverWaterBody.RISE.FreshWaterBody" associationType="urn:motiiive:csw-
ebriim:AssociationType.SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.RiverWaterBody.20071112"
targetObject="urn:motiiive:ftc:RISE.FreshWaterBody.20071112"/>
      <!-- ===== -->
      <!-- RiverWaterBody.shape -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.shape_6.20071112" lid="urn:motiiive:ftc:RISE.shape_6"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gml:CompositeCurve</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>

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        <rim:Name>
          <rim:LocalizedString value="shape"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.shape.RiverWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.shape.RiverWaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_6.20071112" targetObject="urn:motiiive:ftc:RISE.RiverWaterBody.20071112"/>
      <!-- ===== -->
      <!-- RISE FeatureType: SalineWaterBody -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.SalineWaterBody" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
        <rim:Name>
          <rim:LocalizedString value="SalineWaterBody"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.SalineWaterBody.RISE.SurfaceWaterBody.20071022"
lid="urn:motiiive:ftc:RISE.SalineWaterBody.RISE.SurfaceWaterBody" associationType="urn:motiiive:csw-
ebriim:AssociationType:SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.SalineWaterBody.20071112"
targetObject="urn:motiiive:ftc:RISE.SurfaceWaterBody.20071112"/>
      <!-- ===== -->
      <!-- SalineWaterBody.shape -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.shape_7.20071112" lid="urn:motiiive:ftc:RISE.shape_7"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gml:CompositeSurface</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="shape"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.shape.SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.shape.SalineWaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_7.20071112" targetObject="urn:motiiive:ftc:RISE.SalineWaterBody.20071112"/>
      <!-- ===== -->
      <!-- SalineWaterBody.type -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.type.20071112" lid="urn:motiiive:ftc:RISE.type"
objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
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            <rim:Value>RISE:SalineWaterBodyTypeType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="type"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.type.SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.type.SalineWaterBody" associationType="urn:motiiive:csw-ebriim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.type.20071112" targetObject="urn:motiiive:ftc:RISE.SalineWaterBody.20071112"/>
      <!-- ===== -->
      <!-- RISE FeatureType: RiverBasinDistrict -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasinDistrict" objectType="urn:motiiive:csw-ebriim:ObjectType:ebFC_FeatureType">
        <rim:Name>
          <rim:LocalizedString value="RiverBasinDistrict"/>

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        </rim:Name>
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        <rim:Association id="urn:motiiive:ftc:RISE.RiverBasinDistrict.GML.AbstractFeature.20071022"
lid="urn:motiiive:ftc:RISE.RiverBasinDistrict.GML.AbstractFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType.SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
        <!-- ===== -->
        <!-- RiverBasinDistrict.competentAuth -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.competentAuth.20071112"
lid="urn:motiiive:ftc:RISE.competentAuth" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>string</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="competentAuth"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.competentAuth.RiverBasinDistrict.20071112"
lid="urn:motiiive:ftc:RISE.competentAuth.RiverBasinDistrict" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:RISE.competentAuth.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
        <!-- ===== -->
        <!-- RiverBasinDistrict.eu_riverBasinDistrictCode -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.eu_riverBasinDistrictCode.20071112"
lid="urn:motiiive:ftc:RISE.eu_riverBasinDistrictCode" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>string</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="eu_riverBasinDistrictCode"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.eu_riverBasinDistrictCode.RiverBasinDistrict.20071112"
lid="urn:motiiive:ftc:RISE.eu_riverBasinDistrictCode.RiverBasinDistrict" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:RISE.eu_riverBasinDistrictCode.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
        <!-- ===== -->
        <!-- RiverBasinDistrict.name -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.name_2.20071112" lid="urn:motiiive:ftc:RISE.name_2"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>gmd:PT_FreeText_PropertyType</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="name"/>
        </rim:Name>
        </rim:ExtrinsicObject>

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        <rim:Association id="urn:motiiive:ftc:RISE.name.RiverBasinDistrict.20071112"
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sourceObject="urn:motiiive:ftc:RISE.name_2.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
<!-- ===== -->
<!-- RiverBasinDistrict.riverBasinDistrictCode -->
<!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.riverBasinDistrictCode.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinDistrictCode" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>string</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="riverBasinDistrictCode"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.riverBasinDistrictCode.RiverBasinDistrict.20071112"
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ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:RISE.riverBasinDistrictCode.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
<!-- ===== -->
<!-- RiverBasinDistrict.shape -->
<!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.shape_2.20071112" lid="urn:motiiive:ftc:RISE.shape_2"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>gml:SurfacePropertyType</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="shape"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.shape.RiverBasinDistrict.20071112"
lid="urn:motiiive:ftc:RISE.shape.RiverBasinDistrict" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_2.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
<!-- ===== -->
<!-- RISE FeatureType: RiverBasin -->
<!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasin" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType">
        <rim:Name>
        <rim:LocalizedString value="RiverBasin"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.RiverBasin.GML.AbstractFeature.20071022"
lid="urn:motiiive:ftc:RISE.RiverBasin.GML.AbstractFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
<!-- ===== -->
<!-- RiverBasin.eu_riverBasinCode -->
<!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.eu_riverBasinCode.20071112"
lid="urn:motiiive:ftc:RISE.eu_riverBasinCode" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
        <rim:ValueList>
        <rim:Value>string</rim:Value>
        </rim:ValueList>
        </rim:Slot>

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    <rim:Slot name="cardinality">
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        <rim:Value>1</rim:Value>
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    </rim:Slot>
    <rim:Name>
      <rim:LocalizedString value="eu_riverBasinCode"/>
    </rim:Name>
  </rim:ExtrinsicObject>
  <rim:Association id="urn:motiiive:ftc:RISE.eu_riverBasinCode.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.eu_riverBasinCode.RiverBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.eu_riverBasinCode.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
  <!-- ===== -->
  <!-- RiverBasin.name -->
  <!-- ===== -->
  <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.name_3.20071112" lid="urn:motiiive:ftc:RISE.name_3"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
    <rim:Slot name="valueType">
      <rim:ValueList>
        <rim:Value>gmd:PT_FreeText_PropertyType</rim:Value>
      </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
      <rim:ValueList>
        <rim:Value>1</rim:Value>
      </rim:ValueList>
    </rim:Slot>
    <rim:Name>
      <rim:LocalizedString value="name"/>
    </rim:Name>
  </rim:ExtrinsicObject>
  <rim:Association id="urn:motiiive:ftc:RISE.name.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.name.RiverBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.name_3.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
  <!-- ===== -->
  <!-- RiverBasin.riverBasinCode -->
  <!-- ===== -->
  <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.riverBasinCode_2.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinCode_2" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
    <rim:Slot name="valueType">
      <rim:ValueList>
        <rim:Value>string</rim:Value>
      </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
      <rim:ValueList>
        <rim:Value>1</rim:Value>
      </rim:ValueList>
    </rim:Slot>
    <rim:Name>
      <rim:LocalizedString value="riverBasinCode"/>
    </rim:Name>
  </rim:ExtrinsicObject>
  <rim:Association id="urn:motiiive:ftc:RISE.riverBasinCode.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinCode.RiverBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.riverBasinCode_2.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
  <!-- ===== -->
  <!-- RiverBasin.riverBasinDistrictCode -->
  <!-- ===== -->
  <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.riverBasinDistrictCode.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinDistrictCode" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
    <rim:Slot name="valueType">
      <rim:ValueList>
        <rim:Value>string</rim:Value>
      </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
      <rim:ValueList>
        <rim:Value>1</rim:Value>
      </rim:ValueList>
    </rim:Slot>

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        <rim:Name>
          <rim:LocalizedString value="riverBasinDistrictCode"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.riverBasinDistrictCode.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinDistrictCode.RiverBasin" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:RISE.riverBasinDistrictCode.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
      <!-- ===== -->
      <!-- RiverBasin.shape -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.shape_3.20071112" lid="urn:motiiive:ftc:RISE.shape_3"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gml:SurfacePropertyType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="shape"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.shape.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.shape.RiverBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_3.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
      <!-- ===== -->
      <!-- RISE FeatureType: RiverSubBasin -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.RiverSubBasin" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType">
        <rim:Name>
          <rim:LocalizedString value="RiverSubBasin"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.RiverSubBasin.GML.AbstractFeature.20071022"
lid="urn:motiiive:ftc:RISE.RiverSubBasin.GML.AbstractFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
      <!-- ===== -->
      <!-- RiverSubBasin.name -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.name_4.20071112" lid="urn:motiiive:ftc:RISE.name_4"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>gmd:PT_FreeText_PropertyType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="name"/>
        </rim:Name>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:RISE.name.RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.name.RiverSubBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.name_4.20071112" targetObject="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"/>
      <!-- ===== -->
      <!-- RiverSubBasin.riverBasinID -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.riverBasinID.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinID" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">

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        <rim:ValueList>
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        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
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          <rim:Value>1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="riverBasinID"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.riverBasinID.RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.riverBasinID.RiverSubBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.riverBasinID.20071112" targetObject="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"/>
    <!-- ===== -->
    <!-- RiverSubBasin.shape -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.shape_4.20071112" lid="urn:motiiive:ftc:RISE.shape_4"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>gml:SurfacePropertyType</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="shape"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.shape.RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.shape.RiverSubBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_4.20071112" targetObject="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"/>
    <!-- ===== -->
    <!-- RiverSubBasin.subBasinID -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.subBasinID.20071112"
lid="urn:motiiive:ftc:RISE.subBasinID" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
      <rim:Slot name="valueType">
        <rim:ValueList>
          <rim:Value>string</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="subBasinID"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.subBasinID.RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.subBasinID.RiverSubBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.subBasinID.20071112" targetObject="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"/>
    <!-- ===== -->
    <!-- RISE FeatureType: RiverSegment -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.RiverSegment" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType">
      <rim:Name>
        <rim:LocalizedString value="RiverSegment"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.RiverSegment.GML.AbstractFeature.20071022"
lid="urn:motiiive:ftc:RISE.RiverSegment.GML.AbstractFeature" associationType="urn:motiiive:csw-

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ebrim:AssociationType.SubTypeOf" sourceObject="urn:motiiive:ftc:RISE.RiverSegment.20071112"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
<!-- ===== -->
<!-- RiverSegment.flowDirection -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.flowDirection.20071112"
lid="urn:motiiive:ftc:RISE.flowDirection" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>RISE:FlowDirectionType</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="flowDirection"/>
  </rim:Name>
</rim:ExtrinsicObject>
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lid="urn:motiiive:ftc:RISE.flowDirection.RiverSegment" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.flowDirection.20071112" targetObject="urn:motiiive:ftc:RISE.RiverSegment.20071112"/>
<!-- ===== -->
<!-- RiverSegment.riverSegmentCode -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.riverSegmentCode.20071112"
lid="urn:motiiive:ftc:RISE.riverSegmentCode" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>string</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
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  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="riverSegmentCode"/>
  </rim:Name>
</rim:ExtrinsicObject>
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lid="urn:motiiive:ftc:RISE.riverSegmentCode.RiverSegment" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.riverSegmentCode.20071112" targetObject="urn:motiiive:ftc:RISE.RiverSegment.20071112"/>
<!-- ===== -->
<!-- RiverSegment.riverWaterBodyCode -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.riverWaterBodyCode.20071112"
lid="urn:motiiive:ftc:RISE.riverWaterBodyCode" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
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    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="riverWaterBodyCode"/>
  </rim:Name>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:RISE.riverWaterBodyCode.RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.riverWaterBodyCode.RiverSegment" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:RISE.riverWaterBodyCode.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverSegment.20071112"/>
<!-- ===== -->
<!-- RiverSegment.shape -->

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```

<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.shape_8.20071112" lid="urn:motiiive:ftc:RISE.shape_8"
objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>gml:CompositeCurve</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="shape"/>
  </rim:Name>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:RISE.shape.RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.shape.RiverSegment" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.shape_8.20071112" targetObject="urn:motiiive:ftc:RISE.RiverSegment.20071112"/>
<!-- ===== -->
<!-- Association RiverBasinDistrict-SalineWaterBody -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasinDistrict_SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasinDistrict_SalineWaterBody" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAssociation">
  <rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasinDistrict.contains.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasinDistrict.contains" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
      <rim:Slot name="isNavigable">
        <rim:ValueList>
          <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1..*</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="contains"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.SalineWaterBody.belongsTo.20071112"
lid="urn:motiiive:ftc:RISE.SalineWaterBody.belongsTo" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
      <rim:Slot name="isNavigable">
        <rim:ValueList>
          <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="belongsTo"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.contains.RiverBasinDistrict.20071112"
lid="urn:motiiive:ftc:RISE.contains.RiverBasinDistrict" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.contains.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
    <rim:Association id="urn:motiiive:ftc:RISE.contains.SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.contains.SalineWaterBody" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.contains.20071112"
targetObject="urn:motiiive:ftc:RISE.SalineWaterBody.20071112"/>
    <rim:Association id="urn:motiiive:ftc:RISE.contains.RiverBasinDistrict_SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.contains.RiverBasinDistrict_SalineWaterBody" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.contains.20071112"
targetObject="urn:motiiive:ftc:RiverBasinDistrict_SalineWaterBody.20071112"/>
  </rim:ExtrinsicObject>
</rim:Association>

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```

        <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.SalineWaterBody" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.SalineWaterBody.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.SalineWaterBody.20071112"/>
        <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_1.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_1" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.SalineWaterBody.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
        <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_SalineWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_SalineWaterBody" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.SalineWaterBody.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RiverBasinDistrict_SalineWaterBody.20071112"/>
<!-- ===== -->
<!-- Association RiverBasinDistrict-RiverBasin -->
<!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasinDistrict_RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasinDistrict_RiverBasin" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAssociation">
        </rim:ExtrinsicObject>
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasinDistrict.isCollectionOf.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasinDistrict.isCollectionOf" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_AssociationRole">
        <rim:Slot name="isNavigable">
        <rim:ValueList>
        <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1..*</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="isCollectionOf"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasin.belongsTo.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasin.belongsTo" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
        <rim:Slot name="isNavigable">
        <rim:ValueList>
        <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
        <rim:ValueList>
        <rim:Value>1</rim:Value>
        </rim:ValueList>
        </rim:Slot>
        <rim:Name>
        <rim:LocalizedString value="belongsTo"/>
        </rim:Name>
        </rim:ExtrinsicObject>
        <rim:Association id="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasinDistrict.20071112"
lid="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasinDistrict" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.isCollectionOf.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
        <rim:Association id="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasin" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.isCollectionOf.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
        <rim:Association id="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasinDistrict_RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasinDistrict_RiverBasin" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf"
sourceObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.isCollectionOf.20071112"
targetObject="urn:motiiive:ftc:RiverBasinDistrict_RiverBasin.20071112"/>
        <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_2.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_2" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverBasin.belongsTo.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
        <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_2.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_2" associationType="urn:oasis:names:tc:ebxml-

```

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regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.RiverBasin.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasinDistrict.20071112"/>
  <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasinDistrict_RiverBasin" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.RiverBasin.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RiverBasinDistrict_RiverBasin.20071112"/>
  <!-- ===== -->
  <!-- Association RiverBasin-RiverSubBasin -->
  <!-- ===== -->
  <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasin_RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasin_RiverSubBasin" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAssociation">
  <rim:ExtrinsicObject>
  <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasin.isCollectionOf.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasin.isCollectionOf" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
  <rim:Slot name="isNavigable">
  <rim:ValueList>
  <rim:Value>TRUE</rim:Value>
  </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
  <rim:ValueList>
  <rim:Value>0..*</rim:Value>
  </rim:ValueList>
  </rim:Slot>
  <rim:Name>
  <rim:LocalizedString value="isCollectionOf"/>
  </rim:Name>
  </rim:ExtrinsicObject>
  <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverSubBasin.belongsTo.20071112"
lid="urn:motiiive:ftc:RISE.RiverSubBasin.belongsTo" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
  <rim:Slot name="isNavigable">
  <rim:ValueList>
  <rim:Value>TRUE</rim:Value>
  </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
  <rim:ValueList>
  <rim:Value>1</rim:Value>
  </rim:ValueList>
  </rim:Slot>
  <rim:Name>
  <rim:LocalizedString value="belongsTo"/>
  </rim:Name>
  </rim:ExtrinsicObject>
  <rim:Association id="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasin.20071112"
lid="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverBasin.isCollectionOf.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
  <rim:Association id="urn:motiiive:ftc:RISE.isCollectionOf.RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.isCollectionOf.RiverSubBasin" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.RiverBasin.isCollectionOf.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"/>
  <rim:Association id="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasin_RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.isCollectionOf.RiverBasin_RiverSubBasin" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.RiverBasin.isCollectionOf.20071112"
targetObject="urn:motiiive:ftc:RiverBasin_RiverSubBasin.20071112"/>
  <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverSubBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverSubBasin.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverSubBasin.20071112"/>
  <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_1.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_1" associationType="urn:oasis:names:tc:ebxml-regrep:AssociationType:RelatedTo"
sourceObject="urn:motiiive:ftc:RISE.RiverSubBasin.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
  <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_RiverSubBasin.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_RiverSubBasin" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.RiverSubBasin.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RiverBasin_RiverSubBasin.20071112"/>
  <!-- ===== -->
  <!-- Association RiverBasin-FreshWaterBody -->
  <!-- ===== -->

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        <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasin_FreshWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasin_FreshWaterBody" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAssociation">
    </rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverBasin.contains.20071112"
lid="urn:motiiive:ftc:RISE.RiverBasin.contains" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
    <rim:Slot name="isNavigable">
        <rim:ValueList>
            <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
        <rim:ValueList>
            <rim:Value>1..*</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Name>
        <rim:LocalizedString value="contains"/>
    </rim:Name>
    </rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.FreshWaterBody.belongsTo.20071112"
lid="urn:motiiive:ftc:RISE.FreshWaterBody.belongsTo" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
    <rim:Slot name="isNavigable">
        <rim:ValueList>
            <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="cardinality">
        <rim:ValueList>
            <rim:Value>1</rim:Value>
        </rim:ValueList>
    </rim:Slot>
    <rim:Name>
        <rim:LocalizedString value="belongsTo"/>
    </rim:Name>
    </rim:ExtrinsicObject>
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lid="urn:motiiive:ftc:RISE.contains.RiverBasin" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverBasin.contains.20071112" targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
    <rim:Association id="urn:motiiive:ftc:RISE.contains.FreshWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.contains.FreshWaterBody" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.RiverBasin.contains.20071112"
targetObject="urn:motiiive:ftc:RISE.FreshWaterBody.20071112"/>
    <rim:Association id="urn:motiiive:ftc:RISE.contains.RiverBasin_FreshWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.contains.RiverBasin_FreshWaterBody" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.RiverBasin.contains.20071112"
targetObject="urn:motiiive:ftc:RiverBasin_FreshWaterBody.20071112"/>
    <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.FreshWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.FreshWaterBody" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.FreshWaterBody.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.FreshWaterBody.20071112"/>
    <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_3.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_3" associationType="urn:oasis:names:tc:ebxml-regrep:AssociationType:RelatedTo"
sourceObject="urn:motiiive:ftc:RISE.FreshWaterBody.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverBasin.20071112"/>
    <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_FreshWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverBasin_FreshWaterBody" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.FreshWaterBody.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RiverBasin_FreshWaterBody.20071112"/>
    <!-- ===== -->
    <!-- Association RiverWaterBody-RiverSegment -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverWaterBody_RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.RiverWaterBody_RiverSegment" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAssociation">
    </rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverWaterBody.hasSegment.20071112"
lid="urn:motiiive:ftc:RISE.RiverWaterBody.hasSegment" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
    <rim:Slot name="isNavigable">
        <rim:ValueList>
            <rim:Value>TRUE</rim:Value>

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        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1..*</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="hasSegment"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:ExtrinsicObject id="urn:motiiive:ftc:RISE.RiverSegment.belongsTo.20071112"
lid="urn:motiiive:ftc:RISE.RiverSegment.belongsTo" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
      <rim:Slot name="isNavigable">
        <rim:ValueList>
          <rim:Value>TRUE</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="cardinality">
        <rim:ValueList>
          <rim:Value>1</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Name>
        <rim:LocalizedString value="belongsTo"/>
      </rim:Name>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:RISE.hasSegment.RiverWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.hasSegment.RiverWaterBody" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverWaterBody.hasSegment.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverWaterBody.20071112"/>
      <rim:Association id="urn:motiiive:ftc:RISE.hasSegment.RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.hasSegment.RiverSegment" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.RiverWaterBody.hasSegment.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverSegment.20071112"/>
      <rim:Association id="urn:motiiive:ftc:RISE.hasSegment.RiverWaterBody_RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.hasSegment.RiverWaterBody_RiverSegment" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.RiverWaterBody.hasSegment.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverWaterBody_RiverSegment.20071112"/>
      <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverSegment" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:RISE.RiverSegment.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverSegment.20071112"/>
      <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverWaterBody.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverWaterBody" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:RISE.RiverSegment.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverWaterBody.20071112"/>
      <rim:Association id="urn:motiiive:ftc:RISE.belongsTo.RiverWaterBody_RiverSegment.20071112"
lid="urn:motiiive:ftc:RISE.belongsTo.RiverWaterBody_RiverSegment" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:RISE.RiverSegment.belongsTo.20071112"
targetObject="urn:motiiive:ftc:RISE.RiverWaterBody_RiverSegment.20071112"/>
    </rim:RegistryObjectList>
  </rim:RegistryPackage>
</Insert>
</Transaction>

```

C.5 The CSML Package

```

<?xml version="1.0" encoding="utf-8"?>
<Transaction xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns="http://www.opengis.net/cat/csw" service="CSW"
version="2.0.1" verboseResponse="true" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Insert>
    <!-- ===== -->
    <!-- CSML Package -->
    <!-- ===== -->
    <rim:RegistryPackage lid="urn:motiive:ftc:CSML" id="urn:motiive:ftc:CSML.20071218"
objectType="urn:oasis:names:tc:ebxml-reg:ObjectType:RegistryObject:RegistryPackage">
      <rim:Name>
        <rim:LocalizedString value="CSML Package"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="The Climate Science Modelling Language (CSML) provides a standards-based
semantic model and encoding for representing a range of conceptual information classes of relevance to climate science."/>
        <rim:LocalizedString value="Physical processes occur in the natural world across a wide spectrum of spatial
and temporal scales, and considerable science informs the design of experimental sampling strategies. It should be no surprise,
conversely, that the geometry and topology of observation sets are a fundamental determinant of the scientific uses to which they may
be put. Moreover, the properties of the instruments used to generate data themselves place constraints on their interpretation (e.g. as
regards accuracy, precision, calibration, required post-processing, etc.)."/>
        <rim:LocalizedString value="These two factors – the scientific utility of a sampling regime, and the
limitations of an observing process – lead to a natural, scientifically important, classification of data types along these axes. Quite
often the two are highly correlated (certain instruments generate certain samplings), and so scientific communities of practice adopt
more abstract conceptual information classes that nevertheless reflect artefacts of sampling or instrument-type. This is particularly
evident in the climate sciences, where broad information classes based on measurement-set geometry and topology have almost
universal acceptance. Thus, CSML feature types are classified primarily around geometric and topologic structure, and not the
semantics of the observable or measurand."/>
        <rim:LocalizedString value="CSML provides 13 feature types, is compliant to the OGC Observations and
Measurements model, and incorporates behavioural aspects through the 'processing affordance' pattern."/>
        <rim:LocalizedString value="Further details of CSML are available at: http://ndg.nerc.ac.uk/csml"/>
      </rim:Description>
      <rim:RegistryObjectList>
        <!-- ===== -->
        <!-- CSML FeatureType: PointSeriesFeature -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiive:ftc:CSML.PointSeriesFeature.20071018"
lid="urn:motiive:ftc:CSML.PointSeriesFeature" objectType="urn:motiive:csw-ebxml:ObjectType:ebFC_FeatureType">
          <rim:Name>
            <rim:LocalizedString value="PointSeriesFeature"/>
          </rim:Name>
          <rim:Description>
            <rim:LocalizedString value="Time-series of single datum measurements at a fixed location in
space."/>
          </rim:Description>
          </rim:ExtrinsicObject>
          <rim:Association id="urn:motiive:ftc:CSML.PointSeriesFeature.OM.SamplingFeature.20071218"
lid="urn:motiive:ftc:CSML.PointSeriesFeature.OM.SamplingFeature" associationType="urn:motiive:csw-
ebxml:AssociationType.SubTypeOf" sourceObject="urn:motiive:ftc:CSML.PointSeriesFeature.20071018"
targetObject="urn:motiive:ftc:OM.SamplingFeature.20071017"/>
            <!-- ===== -->
            <!-- PointSeriesFeature.location -->
            <!-- ===== -->
            <rim:ExtrinsicObject id="urn:motiive:ftc:CSML.PointSeriesFeature.location.20071018"
lid="urn:motiive:ftc:CSML.PointSeriesFeature.location" objectType="urn:motiive:csw-ebxml:ObjectType:ebFC_FeatureAttribute">
              <rim:Slot name="valueType">
                <rim:ValueList>
                  <rim:Value>gml:DirectPositionType</rim:Value>
                </rim:ValueList>
              </rim:Slot>
              <rim:Slot name="cardinality">
                <rim:ValueList>
                  <rim:Value>0..1</rim:Value>
                </rim:ValueList>
              </rim:Slot>
              <rim:Name>
                <rim:LocalizedString value="location"/>
              </rim:Name>

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        <rim:Description>
          <rim:LocalizedString value="The spatial location at which the time-series was measured"/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:CSML.location.PointSeriesFeature.20071018"
lid="urn:motiiive:ftc:CSML.location.PointSeriesFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:CSML.PointSeriesFeature.location.20071018"
targetObject="urn:motiiive:ftc:CSML.PointSeriesFeature.20071018"/>
      <!-- ===== -->
      <!-- PointSeriesFeature.value unnamed association PointSeriesFeature-> PointSeriesCoverage -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesFeature_PointSeriesCoverage.20071218"
lid="urn:motiiive:ftc:CSML.PointSeriesFeature_PointSeriesCoverage" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAssociation">
      </rim:ExtrinsicObject>
      <rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesFeature.value.20071218"
lid="urn:motiiive:ftc:CSML.PointSeriesFeature.value" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_AssociationRole">
        <rim:Slot name="isNavigable">
          <rim:ValueList>
            <rim:Value>TRUE</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="value"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="The time-series value measurements as a coverage."/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:CSML.value.PointSeriesFeature.20071218"
lid="urn:motiiive:ftc:CSML.value.PointSeriesFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:CSML.PointSeriesFeature.value.20071218"
targetObject="urn:motiiive:ftc:CSML.PointSeriesFeature.20071018"/>
      <rim:Association id="urn:motiiive:ftc:CSML.value.PointSeriesCoverage.20071218"
lid="urn:motiiive:ftc:CSML.value.PointSeriesCoverage" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:RelatedTo" sourceObject="urn:motiiive:ftc:CSML.PointSeriesFeature.value.20071218"
targetObject="urn:motiiive:ftc:CSML.PointSeriesCoverage.20071018"/>
      <rim:Association id="urn:motiiive:ftc:CSML.value.PointSeriesFeature_PointSeriesCoverage.20071218"
lid="urn:motiiive:ftc:CSML.value.PointSeriesFeature_PointSeriesCoverage" associationType="urn:oasis:names:tc:ebxml-
regrep:AssociationType:AffiliatedWith:MemberOf" sourceObject="urn:motiiive:ftc:CSML.PointSeriesFeature.value.20071218"
targetObject="urn:motiiive:ftc:CSML.PointSeriesFeature_PointSeriesCoverage.20071218"/>
      <!-- ===== -->
      <!-- PointSeriesFeature.parameter -->
      <!-- ===== -->
      <rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesFeature.parameter.20071018"
lid="urn:motiiive:ftc:CSML.PointSeriesFeature.parameter" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
          <rim:ValueList>
            <rim:Value>swe:PhenomenonPropertyType</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
          <rim:ValueList>
            <rim:Value>1</rim:Value>
          </rim:ValueList>
        </rim:Slot>
        <rim:Name>
          <rim:LocalizedString value="parameter"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="A CSML Feature Type represents some observed or simulated
physical parameter (modelled through the O&M Phenomenon class taxonomy)."/>
        </rim:Description>
      </rim:ExtrinsicObject>
      <rim:Association id="urn:motiiive:ftc:CSML.parameter.PointSeriesFeature.20071018"
lid="urn:motiiive:ftc:CSML.parameter.PointSeriesFeature" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"

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sourceObject="urn:motiiive:ftc:CSML.PointSeriesFeature.parameter.20071018"
targetObject="urn:motiiive:ftc:CSML.PointSeriesFeature.20071018"/>
<!-- ===== -->
<!-- PointSeriesFeature.calculateDifference() -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesFeature.calculateDifference.20071018"
lid="urn:motiiive:ftc:CSML.PointSeriesFeature.calculateDifference" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureOperation">
  <rim:Slot name="formalDefinition">
    <rim:ValueList>
      <rim:Value>PointSeriesFeature.calculateDifference(PointSeriesFeature):
PointSeriesFeature</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="calculateDifference"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="An operation to caclulate the difference between the owning
timeseries instance and another timeseries."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:CSML.calculateDifference.PointSeriesFeature.20071018"
lid="urn:motiiive:ftc:CSML.calculateDifference.PointSeriesFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:CSML.PointSeriesFeature.calculateDifference.20071018"
targetObject="urn:motiiive:ftc:CSML.PointSeriesFeature.20071018"/>
<!-- ===== -->
<!-- PointSeriesFeature.displayAsTimeSeries() -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesFeature.displayAsTimeSeries.20071018"
lid="urn:motiiive:ftc:CSML.PointSeriesFeature.displayAsTimeSeries" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureOperation">
  <rim:Slot name="formalDefinition">
    <rim:ValueList>
      <rim:Value>PointSeriesFeature.displayAsTimeSeries(): void</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="displayAsTimeSeries"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="An operation to disply the timeseries as a graph."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:CSML.displayAsTimeSeries.PointSeriesFeature.20071018"
lid="urn:motiiive:ftc:CSML.displayAsTimeSeries.PointSeriesFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:CSML.PointSeriesFeature.displayAsTimeSeries.20071018"
targetObject="urn:motiiive:ftc:CSML.PointSeriesFeature.20071018"/>
<!-- ===== -->
<!-- CSML FeatureType: PointSeriesCoverage -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesCoverage.20071018"
lid="urn:motiiive:ftc:CSML.PointSeriesCoverage" objectType="urn:motiiive:csw-ebrim:ObjectType:ebFC_FeatureType">
  <rim:Name>
    <rim:LocalizedString value="PointSeriesCoverage"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="A discrete coverage over a timeseries domain - which is a
TM_Complex consisting of a sequence of TM_Instants."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association id="urn:motiiive:ftc:CSML.PointSeriesCoverage.GML.AbstractFeature.20071018"
lid="urn:motiiive:ftc:CSML.PointSeriesCoverage.GML.AbstractFeature" associationType="urn:motiiive:csw-
ebrim:AssociationType:SubTypeOf" sourceObject="urn:motiiive:ftc:CSML.PointSeriesCoverage.20071018"
targetObject="urn:motiiive:ftc:GML.AbstractFeature.20071017"/>
<!-- ===== -->
<!-- PointSeriesCoverage.pointSeriesDomain -->
<!-- ===== -->
<rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesCoverage.pointSeriesDomain.20071018"
lid="urn:motiiive:ftc:CSML.PointSeriesCoverage.pointSeriesDomain" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAttribute">

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        <rim:Slot name="valueType">
            <rim:ValueList>
                <rim:Value>csml:PointSeriesCoverageDomainType</rim:Value>
            </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
            <rim:ValueList>
                <rim:Value>1</rim:Value>
            </rim:ValueList>
        </rim:Slot>
        <rim:Name>
            <rim:LocalizedString value="pointSeriesDomain"/>
        </rim:Name>
        <rim:Description>
            <rim:LocalizedString value="A temporal coverage domain consisting of a sequence of time
instants."/>
        </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:CSML.pointSeriesDomain.PointSeriesCoverage.20071018"
lid="urn:motiiive:ftc:CSML.pointSeriesDomain.PointSeriesCoverage" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf" sourceObject="urn:motiiive:ftc:CSML.PointSeriesCoverage.pointSeriesDomain.20071018"
targetObject="urn:motiiive:ftc:CSML.PointSeriesCoverage.20071018"/>
    <!-- ===== -->
    <!-- PointSeriesCoverage.rangeSet -->
    <!-- ===== -->
    <rim:ExtrinsicObject id="urn:motiiive:ftc:CSML.PointSeriesCoverage.rangeSet.20071018"
lid="urn:motiiive:ftc:CSML.PointSeriesCoverage.rangeSet" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAttribute">
        <rim:Slot name="valueType">
            <rim:ValueList>
                <rim:Value>gml:RangeSetType</rim:Value>
            </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="cardinality">
            <rim:ValueList>
                <rim:Value>1</rim:Value>
            </rim:ValueList>
        </rim:Slot>
        <rim:Name>
            <rim:LocalizedString value="rangeSet"/>
        </rim:Name>
        <rim:Description>
            <rim:LocalizedString value="The coverage range - a timeseries of measure values."/>
        </rim:Description>
    </rim:ExtrinsicObject>
    <rim:Association id="urn:motiiive:ftc:CSML.rangeSet.PointSeriesCoverage.20071018"
lid="urn:motiiive:ftc:CSML.rangeSet.PointSeriesCoverage" associationType="urn:motiiive:csw-ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:CSML.PointSeriesCoverage.rangeSet.20071018"
targetObject="urn:motiiive:ftc:CSML.PointSeriesCoverage.20071018"/>
        </rim:RegistryObjectList>
    </rim:RegistryPackage>
</Insert>
</Transaction>

```

C.6 The Motiive Package

```

<?xml version="1.0" encoding="utf-8"?>
<Transaction xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns="http://www.opengis.net/cat/csw" service="CSW"
version="2.0.1" verboseResponse="true" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Insert>
    <!-- ===== -->
    <!-- MOTIIVE Package -->
    <!-- ===== -->
    <rim:RegistryPackage lid="urn:motiive:ftc:MDM" id="urn:motiive:ftc:MDM.20071218"
objectType="urn:oasis:names:tc:ebxml-reg:ObjectType:RegistryObject:RegistryPackage">
      <rim:Name>
        <rim:LocalizedString value="MOTIIVE Package"/>
      </rim:Name>
      <rim:Description>
        <rim:LocalizedString value="This Registry package contains the MOTIIVE Marine Data Model
definitions."/>
      </rim:Description>
      <rim:RegistryObjectList>
        <!-- ===== -->
        <!-- MOTIIVE FeatureType: TidalWaterLevelTimeSeries -->
        <!-- ===== -->
        <rim:ExtrinsicObject id="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.20071018"
lid="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries" objectType="urn:motiive:csw-ebrim:ObjectType:ebFC_FeatureType">
          <rim:Name>
            <rim:LocalizedString value="TidalWaterLevelTimeSeries"/>
          </rim:Name>
          <rim:Description>
            <rim:LocalizedString value="A time-series of tidal water level measurements."/>
          </rim:Description>
          </rim:ExtrinsicObject>
          <rim:Association
id="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.CSML.PointSeriesFeature.20071218"
lid="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.CSML.PointSeriesFeature" associationType="urn:motiive:csw-
ebrim:AssociationType.SubTypeOf" sourceObject="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.20071018"
targetObject="urn:motiive:ftc:CSML.PointSeriesFeature.20071018"/>
            <!-- ===== -->
            <!-- TidalWaterLevelTimeSeries.managingAuthority -->
            <!-- ===== -->
            <rim:ExtrinsicObject id="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.managingAuthority.20071018"
lid="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.managingAuthority" objectType="urn:motiive:csw-
ebrim:ObjectType:ebFC_FeatureAttribute">
              <rim:Slot name="valueType">
                <rim:ValueList>
                  <rim:Value>xs:string</rim:Value>
                </rim:ValueList>
              </rim:Slot>
              <rim:Slot name="cardinality">
                <rim:ValueList>
                  <rim:Value>0..1</rim:Value>
                </rim:ValueList>
              </rim:Slot>
              <rim:Name>
                <rim:LocalizedString value="location"/>
              </rim:Name>
              <rim:Description>
                <rim:LocalizedString value="The managing authority for the tidal measurements."/>
              </rim:Description>
            </rim:ExtrinsicObject>
            <rim:Association id="urn:motiive:ftc:MDM.managingAuthority.TidalWaterLevelTimeSeries.20071018"
lid="urn:motiive:ftc:MDM.managingAuthority.TidalWaterLevelTimeSeries" associationType="urn:motiive:csw-
ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.managingAuthority.20071018"
targetObject="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.20071018"/>
              <!-- ===== -->
              <!-- TidalWaterLevelTimeSeries.monitoringStationName -->
              <!-- ===== -->
            </rim:ExtrinsicObject>
          </rim:Association>
        </rim:ExtrinsicObjectList>
      </rim:RegistryObjectList>
    </rim:RegistryPackage>
  </Insert>
</Transaction>

```

```

lid="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.monitoringStationName" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>xs:string</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="monitoringStationName"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="The name of the tidal monitoring station."/>
  </rim:Description>
</rim:ExtrinsicObject>
<rim:Association
id="urn:motiiive:ftc:MDM.monitoringStationName.TidalWaterLevelTimeSeries.20071018"
lid="urn:motiiive:ftc:MDM.monitoringStationName.TidalWaterLevelTimeSeries" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.monitoringStationName.20071018"
targetObject="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.20071018"/>
  <!-- ===== -->
  <!-- TidalWaterLevelTimeSeries.samplingRegimeType -->
  <!-- ===== -->
  <rim:ExtrinsicObject
id="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.samplingRegimeType.20071018"
lid="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.samplingRegimeType" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>mdm:NRSamplingTypeCodeType</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..1</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Name>
    <rim:LocalizedString value="samplingRegimeType"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString value="The sampling regime used at this tidal monitoring station
(telemetered, visited, etc)."/>
  </rim:Description>
</rim:ExtrinsicObject>
  <rim:Association id="urn:motiiive:ftc:MDM.samplingRegimeType.TidalWaterLevelTimeSeries.20071018"
lid="urn:motiiive:ftc:MDM.samplingRegimeType.TidalWaterLevelTimeSeries" associationType="urn:motiiive:csw-
ebrim:AssociationType:PropertyOf"
sourceObject="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.samplingRegimeType.20071018"
targetObject="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.20071018"/>
  <!-- ===== -->
  <!-- TidalWaterLevelTimeSeries.waterBodyType -->
  <!-- ===== -->
  <rim:ExtrinsicObject id="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.waterBodyType.20071018"
lid="urn:motiiive:ftc:MDM.TidalWaterLevelTimeSeries.waterBodyType" objectType="urn:motiiive:csw-
ebrim:ObjectType:ebFC_FeatureAttribute">
  <rim:Slot name="valueType">
    <rim:ValueList>
      <rim:Value>xs:string</rim:Value>
    </rim:ValueList>
  </rim:Slot>
  <rim:Slot name="cardinality">
    <rim:ValueList>
      <rim:Value>0..1</rim:Value>
    </rim:ValueList>
  </rim:Slot>

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        <rim:Name>
          <rim:LocalizedString value="waterBodyType"/>
        </rim:Name>
        <rim:Description>
          <rim:LocalizedString value="The type of water body being monitored (e.g. tidal estuary, river,
harbour, etc)."/>
        </rim:Description>
        <rim:ExtrinsicObject>
          <rim:Association id="urn:motiive:ftc:MDM.waterBodyType.TidalWaterLevelTimeSeries.20071018"
lid="urn:motiive:ftc:MDM.waterBodyType.TidalWaterLevelTimeSeries" associationType="urn:motiive:csw-
ebri:m:AssociationType:PropertyOf" sourceObject="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.waterBodyType.20071018"
targetObject="urn:motiive:ftc:MDM.TidalWaterLevelTimeSeries.20071018"/>
        </rim:RegistryObjectList>
      </rim:RegistryPackage>
    </Insert>
  </Transaction>

```

Bibliography

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- [2] Cohn, A.G., Bennett, B., Gooday, J.M. and Gotts, N. (2007). RCC: A Calculus for Region based Qualitative Spatial Reasoning. *Geoinformatica* 1, pp. 275-316.
- [3] Egenhofer, M. and Herring, J. (1991). *Categorizing Binary Topological Relationships between Regions, Lines and Points in Geographic Databases*. Technical Report, Department of Surveying Engineering, University of Maine, Orono, Maine.