

Base and Inspire Conformance Classes of the “OGC Cataloguing of ISO Metadata (CIM) using the ebRIM profile of CS-W”

Uwe Voges (con terra GmbH)

Kommentar [uv1]: To be defined as Annex of “OGC Cataloguing of ISO Metadata (CIM) using the ebRIM profile of CS-W” ?

F.1. Introduction

A full support of all objects (ExtrinsicObjects, Associations, Slots etc.) in queries and resultsets and a full support of all filter capabilities is often not possible for implementations, especially when the implementation acts as proxy/facade in front of a legacy system.

Therefore this Annex describes conformance levels (classes) of the CIM which reduces the complexity of the requests that an OGC 07-038 catalogue is expected to handle. For this purpose it mainly restricts the Core ISO Metadata extension package of ebRIM.

For the integration into the Inspire SDI (which is using another Catalogue Specification) it is sufficient to support only a subset of the objects and filter capabilities. All of those capabilities can be mapped to equivalent objects and filter capabilities used within the Inspire Catalogue Specification. This CIM subset of objects and filter capabilities is defined within the Inspire Conformance Class. The integration into the Inspire SDI can technically be realized by software adaptors which map between Inspire requests/responses and CIM/Inspire requests/responses.

Additionally the Inspire Conformance Level may also be interesting for other communities as it should increase interoperability between implementations.

For a very easy integration into specific communities it may also be interesting to provide a very simple search interface which allows simple iterations through the registry content and which supports the harvesting of the items in the repository. This easiest Conformance Level is defined within the Minimal Conformance Class.

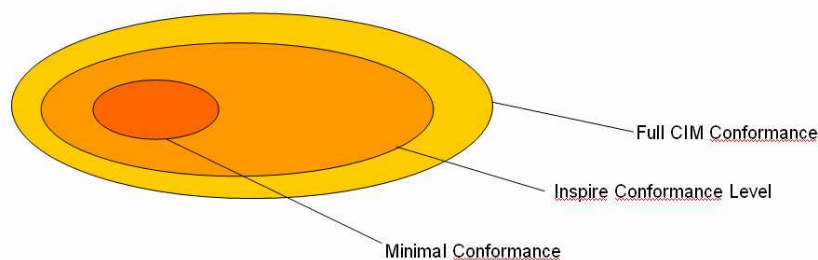


Figure 1: Base- and Inspire Conformance Levels in relation to CIM conformance

Conformance with these conformance levels shall be checked using all the relevant tests specified by the Abstract Test Suite (ATS) in **section.... (normative)**.

A main existing problem in the moment is that it is not possible to describe in a standardized manner within an OGC CSW ebRIM Capabilities document neither which conformance levels are supported nor which ExtrinsicObjects, Associations etc. are supported. So, there is a need for the introduction of a sublevel / conformance level attribute within the OGC CSW ebRIM Capabilities document.

In the following the conformance levels are defined by a description of the supported information model. These information model include descriptions of the supported objects, associations and slots of the CIM, which can used within request and response messages.

F.2. Minimal Conformance Class

F.2.1. Introduction

As a starting point for a catalogue implementation and for an easy integration into other communities (not using this catalogue standard) the Minimal Conformance Class provides a very simple search interface which allows simple iterations through the registry content and which allows harvesting of their items by other catalogues. This level does not define a CSW ebRIM CIM conformant class.

F.2.2. Information Model

The following list and figure XXX shows the supported¹ <<ExtrinsicObject>> objectTypes² and <<Association>> associationTypes of the Minimal Conformance Class:

- <<ExtrinsicObject>> “MetadataInformation”
- <<ExtrinsicObject>> “DataMetadata”
- <<Association>> “ResourceMetadataInformation”

Only the DataMetadata ExtrinsicObject is linked to a RepositoryItem.

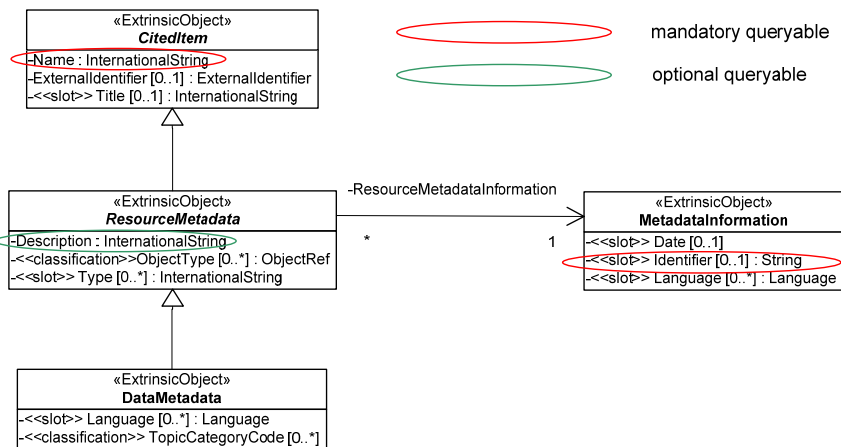


Figure 2: Information Model of the Base Conformance Class

¹ This means that these types are considered within the queries and/or within the result sets.

² including slots

F.2.3. Operations

F.2.3.1. GetCapabilities

The GetCapabilities operation has to be implemented as described in [OGC07-110].

F.2.3.2. GetRecords

F.2.3.2.1. Request

Query TypeName

The typeName identifier is fixed: wrs:ExtrinsicObject. In the case of a CSW 2.0.2 base request, csw:Record must be used. Aliases for ExtrinsicObjects are not supported. All queryables in a query address the same CIM dataset (the DataMetadata <<ExtrinsicObject>> plus the MetadataInformation <<ExtrinsicObject>>, which is linked by the ResourceMetadataInformation <<Association>>). Therefore there is no need to add an association expression to the query.

Search Attributes and Comparison Operators

The iteration with an empty query through the whole resultset is the standard use case for this Conformance Class. The relation between supported queryables and typeNames are defined in table xxx.

Only the following comparison-operators are supported for the search attributes:

- PropertyIsEqualTo
- PropertyIsLike

No logical operators are supported.

Table F.1 – Mandatory Queryables of Minimal Conformance Class

TypeName/OutputSchema	Queryable	Data type
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject/@id	String
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject/@Name	String
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject/@Description	String
csw:Record/csw	Title	String
csw:Record/csw	Identifier	String
csw:Record/csw	AnyText	String

ElementSetName

Only the predefined elementSets “brief”, “summary”, “full” and the typeNames “wrs:ExtrinsicObject” and “csw:Record” are supported.

Examples

The following example shows a request with outputSchema ebRIM. Further requests can be found in the Abstract Test Suite (ATS).

```
<csw:GetRecords maxRecords="10" outputFormat="application/xml"
outputSchema="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" resultType="results" service="CSW"
startPosition="1" version="2.0.2" xmlns:csw="http://www.opengis.net/cat/csw/2.0.2"
xmlns:ogc="http://www.opengis.net/ogc" xmlns:wrs="http://www.opengis.net/cat/wrs/1.0">
  <csw:Query typeNames="wrs:ExtrinsicObject">
    <csw:ElementSetName typeNames="wrs:ExtrinsicObject">summary</csw:ElementSetName>
    <csw:Constraint version="1.1.0">
      <ogc:Filter>
        <ogc:PropertyIsLike escapeChar="\ " singleChar="?" wildcard="*">
          <ogc:PropertyName>/wrs:ExtrinsicObject/@Description</ogc:PropertyName>
          <ogc:Literal>*</ogc:Literal>
        </ogc:PropertyIsLike>
      </ogc:Filter>
    </csw:Constraint>
  </csw:Query>
</csw:GetRecords>
```

The following example shows a request with outputSchema csw:Record.

```
<csw:GetRecords maxRecords="10" outputFormat="application/xml"
outputSchema="http://www.opengis.net/cat/csw/2.0.2" resultType="results" service="CSW" startPosition="1"
version="2.0.2" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
xmlns:csw="http://www.opengis.net/cat/csw/2.0.2" xmlns:ogc="http://www.opengis.net/ogc"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:wrs="http://www.opengis.net/cat/wrs/1.0">
  <csw:Query typeNames="wrs:ExtrinsicObject">
    <csw:ElementSetName typeNames="csw:Record">summary</csw:ElementSetName>
    <csw:Constraint version="1.1.0">
      <ogc:Filter>
        <ogc:PropertyIsLike escapeChar="\ " singleChar="?" wildcard="*">
          <ogc:PropertyName>title</ogc:PropertyName>
          <ogc:Literal>*ASC*</ogc:Literal>
        </ogc:PropertyIsLike>
      </ogc:Filter>
    </csw:Constraint>
  </csw:Query>
</csw:GetRecords>
```

F.2.3.2.2. Response

Response 1 (typeName = wrs:ExtrinsicObject, outputSchema = ebRIM, ElementSetName = brief):

```
<csw:GetRecordsResponse xmlns:csw="http://www.opengis.net/cat/csw/2.0.2"
xmlns:wrs="http://www.opengis.net/cat/wrs/1.0">
  <csw:SearchStatus status="complete"/>
  <csw:SearchResults numberOfRecordsMatched="3" numberOfRecordsReturned="3" nextRecord="0">
```

```

    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:ASCxxx1A:MI"
lid="urn:HMA:EUM:M02:ASCxxx1A:MI" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:MetadataInformation" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:ASCxxx1A:DM"
lid="urn:HMA:EUM:M02:ASCxxx1A:DM" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:DataMetadata" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
    <rim:Association id="urn:HMA:EUM:M02:ASCxxx1A"
lid="urn:HMA:EUM:M02:ASCxxx1A" associationType="urn:x-ogc:specification:csw-ebrim-
cim:AssociationType:ResourceMetadataInformation" sourceObject="urn:HMA:EUM:M02:ASCxxx1A:MI"
targetObject="urn:HMA:EUM:M02:ASCxxx1A:DM" xmlns:rim="urn:oasis:names:tc:ebxml-
regrep:xsd:rim:3.0"/>
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:AVHxxx1B:MI"
lid="urn:HMA:EUM:M02:AVHxxx1B:MI" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:MetadataInformation" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:AVHxxx1B:DM"
lid="urn:HMA:EUM:M02:AVHxxx1B:DM" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:DataMetadata" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
    <rim:Association id="urn:HMA:EUM:M02:AVHxxx1B"
lid="urn:HMA:EUM:M02:AVHxxx1B" associationType="urn:x-ogc:specification:csw-ebrim-
cim:AssociationType:ResourceMetadataInformation" sourceObject="urn:HMA:EUM:M02:AVHxxx1B:MI"
targetObject="urn:HMA:EUM:M02:AVHxxx1B:DM" xmlns:rim="urn:oasis:names:tc:ebxml-
regrep:xsd:rim:3.0"/>
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:MHSxxx1B:MI"
lid="urn:HMA:EUM:M02:MHSxxx1B:MI" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:MetadataInformation" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:MHSxxx1B:DM"
lid="urn:HMA:EUM:M02:MHSxxx1B:DM" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:DataMetadata" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
    <rim:Association id="urn:HMA:EUM:M02:MHSxxx1B"
lid="urn:HMA:EUM:M02:MHSxxx1B" associationType="urn:x-ogc:specification:csw-ebrim-
cim:AssociationType:ResourceMetadataInformation" sourceObject="urn:HMA:EUM:M02:MHSxxx1B:MI"
targetObject="urn:HMA:EUM:M02:MHSxxx1B:DM" xmlns:rim="urn:oasis:names:tc:ebxml-
regrep:xsd:rim:3.0"/>
  </csw:SearchResults>
</csw:GetRecordsResponse>

```

Response 2 (typeName = wrs:ExtrinsicObject, outputSchema = ebRIM, ElementSetName = summary):

```

<csw:GetRecordsResponse xmlns:csw="http://www.opengis.net/cat/csw/2.0.2
xmlns:wrs="http://www.opengis.net/cat/wrs/1.0">
  <csw:SearchStatus status="complete"/>
  <csw:SearchResults numberOfRecordsMatched="3" numberOfRecordsReturned="3" nextRecord="0">
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:ASCxxx1A:MI"
lid="urn:HMA:EUM:M02:ASCxxx1A:MI" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:MetadataInformation" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
      <rim:Slot name="language">
        <rim:ValueList>
          <rim:Value>en</rim:Value>
        </rim:ValueList>
      </rim:Slot>
      <rim:Slot name="identifier">
        <rim:ValueList>
          <rim:Value>urn:HMA:EUM:M02:ASCxxx1A</rim:Value>
        </rim:ValueList>
      </rim:Slot>
    </wrs:ExtrinsicObject>
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:ASCxxx1A:DM"
lid="urn:HMA:EUM:M02:ASCxxx1A:DM" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:DataMetadata" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
      <rim:Slot name="language">
        <rim:ValueList>
          <rim:Value>en</rim:Value>
        </rim:ValueList>

```

```
</rim:Slot>
<rim:Name>
  <rim:LocalizedString lang="en" value="METOP-A (EPS) - ASCA - ASCxxx1A"/>
</rim:Name>
<rim:Description>
  <rim:LocalizedString lang="en" value="This is the description for product type:
M02.ASCxxx1A"/>
</rim:Description>
<rim:ExternalIdentifier id="urn:HMA:EUM:M02:ASCxxx1A:EI"
lid="urn:HMA:EUM:M02:ASCxxx1A:EI" objectType="urn:oasis:names:tc:ebxml-
regrep:ObjectType:RegistryObject:ExternalIdentifier" status="urn:oasis:names:tc:ebxml-regrep:StatusType:Submitted"
registryObject="urn:HMA:EUM:M02:ASCxxx1A" value="urn:HMA:EUM:M02:ASCxxx1A">
  <rim:Name/>
  <rim:Description/>
  <rim:VersionInfo versionName="1.1"/>
</rim:ExternalIdentifier>
</wrs:ExtrinsicObject>
<rim:Association id="urn:HMA:EUM:M02:ASCxxx1A" lid="urn:HMA:EUM:M02:ASCxxx1A"
associationType="urn:x-ogc:specification:csw-ebrim-cim:AssociationType:ResourceMetadataInformation"
sourceObject="urn:HMA:EUM:M02:ASCxxx1A:MI" targetObject="urn:HMA:EUM:M02:ASCxxx1A:DM"
xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
  <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:AVHxxx1B:MI"
lid="urn:HMA:EUM:M02:AVHxxx1B:MI" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:MetadataInformation" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
    <rim:Slot name="language">
      <rim:ValueList>
        <rim:Value>en</rim:Value>
      </rim:ValueList>
    </rim:Slot>
    <rim:Slot name="identifier">
      <rim:ValueList>
        <rim:Value>urn:HMA:EUM:M02:AVHxxx1B</rim:Value>
      </rim:ValueList>
    </rim:Slot>
  </wrs:ExtrinsicObject>
  <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:AVHxxx1B:DM"
lid="urn:HMA:EUM:M02:AVHxxx1B:DM" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:DataMetadata" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
    <rim:Slot name="language">
      <rim:ValueList>
        <rim:Value>en</rim:Value>
      </rim:ValueList>
    </rim:Slot>
  </wrs:ExtrinsicObject>
  <rim:Name>
    <rim:LocalizedString lang="en" value="METOP-A (EPS) - AVHR - AVHxxx1B"/>
  </rim:Name>
  <rim:Description>
    <rim:LocalizedString lang="en" value="This is the description for product type:
M02.AVHxxx1B"/>
  </rim:Description>
  <rim:ExternalIdentifier id="urn:HMA:EUM:M02:AVHxxx1B:EI"
lid="urn:HMA:EUM:M02:AVHxxx1B:EI" objectType="urn:oasis:names:tc:ebxml-
regrep:ObjectType:RegistryObject:ExternalIdentifier" status="urn:oasis:names:tc:ebxml-regrep:StatusType:Submitted"
registryObject="urn:HMA:EUM:M02:AVHxxx1B" value="urn:HMA:EUM:M02:AVHxxx1B">
    <rim:Name/>
    <rim:Description/>
    <rim:VersionInfo versionName="1.1"/>
  </rim:ExternalIdentifier>
</wrs:ExtrinsicObject>
<rim:Association id="urn:HMA:EUM:M02:AVHxxx1B" lid="urn:HMA:EUM:M02:AVHxxx1B"
associationType="urn:x-ogc:specification:csw-ebrim-cim:AssociationType:ResourceMetadataInformation"
sourceObject="urn:HMA:EUM:M02:AVHxxx1B:MI" targetObject="urn:HMA:EUM:M02:AVHxxx1B:DM"
xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
  <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:MHSxxx1B:MI"
lid="urn:HMA:EUM:M02:MHSxxx1B:MI" objectType="urn:x-ogc:specification:csw-ebrim-
cim:ObjectType:MetadataInformation" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
    <rim:Slot name="language">
      <rim:ValueList>
        <rim:Value>en</rim:Value>
      </rim:ValueList>
    </rim:Slot>
  </wrs:ExtrinsicObject>
```

```

        </rim:ValueList>
        </rim:Slot>
        <rim:Slot name="identifier">
            <rim:ValueList>
                <rim:Value>urn:HMA:EUM:M02:MHSxxx1B</rim:Value>
            </rim:ValueList>
        </rim:Slot>
    </wrs:ExtrinsicObject>
    <wrs:ExtrinsicObject id="urn:HMA:EUM:M02:MHSxxx1B:DM"
lid="urn:HMA:EUM:M02:MHSxxx1B:DM" objectType="urn:x-ogc:specification:csw-ebri-
cim:ObjectType:DataMetadata" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
        <rim:Slot name="language">
            <rim:ValueList>
                <rim:Value>en</rim:Value>
            </rim:ValueList>
        </rim:Slot>
        <rim:Name>
            <rim:LocalizedString lang="en" value="METOP-A (EPS) - MHSx - MHSxxx1B"/>
        </rim:Name>
        <rim:Description>
            <rim:LocalizedString lang="en" value="For this UMARF product type no description
is available."/>
        </rim:Description>
        <rim:ExternalIdentifier id="urn:HMA:EUM:M02:MHSxxx1B:EI"
lid="urn:HMA:EUM:M02:MHSxxx1B:EI" objectType="urn:oasis:names:tc:ebxml-
regrep:ObjectType:RegistryObject:ExternalIdentifier" status="urn:oasis:names:tc:ebxml-regrep:StatusType:Submitted"
registryObject="urn:HMA:EUM:M02:MHSxxx1B" value="urn:HMA:EUM:M02:MHSxxx1B">
            <rim:Name/>
            <rim:Description/>
            <rim:VersionInfo versionName="1.1"/>
        </rim:ExternalIdentifier>
    </wrs:ExtrinsicObject>
    <rim:Association id="urn:HMA:EUM:M02:MHSxxx1B" lid="urn:HMA:EUM:M02:MHSxxx1B"
associationType="urn:x-ogc:specification:csw-ebri-cim:AssociationType:ResourceMetadataInformation"
sourceObject="urn:HMA:EUM:M02:MHSxxx1B:MI" targetObject="urn:HMA:EUM:M02:MHSxxx1B:DM"
xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"/>
    </csw:SearchResults>
</csw:GetRecordsResponse>

```

Response 3 (typeName = wrs:ExtrinsicObject, outputSchema = ebRIM, ElementSetName = full):

The same as Response 2.

Response 4 (typeName = csw:Record, outputSchema = csw, ElementSetName = brief):

```

<csw:GetRecordsResponse xmlns:csw="http://www.opengis.net/cat/csw/2.0.2">
    <csw:SearchStatus status="complete"/>
    <csw:SearchResults numberOfRecordsMatched="1" numberOfRecordsReturned="1" nextRecord="0">
        <csw:Record>
            <dc:identifier
xmlns:dc="http://purl.org/dc/elements/1.1/">urn:HMA:EUM:M02:ASCxxx1A</dc:identifier>
            <dc:title xmlns:dc="http://purl.org/dc/elements/1.1/">METOP-A (EPS) - ASCA -
ASCxxx1A</dc:title>
            <dc:type xmlns:dc="http://purl.org/dc/elements/1.1/">datasetcollection</dc:type>
            <dc:subject xmlns:dc="http://purl.org/dc/elements/1.1/">M02</dc:subject>
            <dc:subject xmlns:dc="http://purl.org/dc/elements/1.1/">ASCxxx1A</dc:subject>
            <dc:subject xmlns:dc="http://purl.org/dc/elements/1.1/">ASCA</dc:subject>
            <dc:subject
xmlns:dc="http://purl.org/dc/elements/1.1/">climatologyMeteorologyAtmosphere</dc:subject>
            <dc:subject xmlns:dc="http://purl.org/dc/elements/1.1/">meteorology</dc:subject>
            <dc:format xmlns:dc="http://purl.org/dc/elements/1.1/">image</dc:format>
        </csw:Record>
    </csw:SearchResults>
</csw:GetRecordsResponse>

```

```

        <dc:abstract xmlns:dct="http://purl.org/dc/terms/">This is the description for product
type: M02.ASCxxx1A</dc:abstract>
        <dc:spatial xmlns:dct="http://purl.org/dc/terms/">urn:x-
ogc:def:crs:EPSG:6.7:4326</dc:spatial>
        <ows:BoundingBox xmlns:ows="http://www.opengis.net/ows">
            <ows:LowerCorner>-180.0 -90.0</ows:LowerCorner>
            <ows:UpperCorner>180.0 90.0</ows:UpperCorner>
        </ows:BoundingBox>
    </csw:Record>
</csw:SearchResults>
</csw:GetRecordsResponse>

```

F.2.3.2.3. Mapping to csw:Records

Hints for the implementation...

- map rim:name onto csw:title
- map rim:description onto csw:abstract
- map csw:AnyText to a like-search on (rim:name or rim:description)

F.2.3.3. GetRecordById

Not supported in Minimal Conformance Level.

F.2.3.4. GetRepositoryItem

The following conditions for the getRepositoryItem operation have to be met:

- The operation is used to retrieve the repository item (the ISO19139 document) corresponding to some extrinsic object.
- The body of the response message includes the repository item as ISO19139 XML (same version as that of OGC CSW 2.0.2 AP ISO 1.0).
- Request: Only one identifier can be retrieved at once. The identifier is that of the value of the external identifier slot of a MetadataInformation ExtrinsicObject.

Example-Request:

http://varchive.eumetsat.org/csw_umarf/CollectionServlet?service=CSW&verison=2.0.2&request=GetRepositoryItem&Id=urn:HMA:EUM:M02:ASCxxx1A

F.3. INSPIRE Conformance Class

F.3.1. Introduction

Because collection catalogues are of great interest for the INSPIRE geospatial data infrastructure, it will be important to define a profile conformance level which is semantically aligned with the INSPIRE Draft Implementing Rules for Discovery and View Services (IR1), Drafting Team “Network Services”). This Discovery Service is based on the OGC CSW AP ISO specification:

“In order to provide search support for all search metadata elements as defined by the INSPIRE Metadata IRs, the OGC CSW ISO 19115/19119 Application Profile (CSW ISO AP) shall be used as the reference specification for the INSPIRE Discovery Service.”

This INSPIRE Discovery Service is not exactly the OGC CSW AP ISO but an extension of this...[see Technical Guidance Document for INSPIRE Discovery Services Drafting Team “Network Services”...]

The main idea of the Inspire Conformance level is to define a Conformance Class which is semantically aligned with the Inspire Discovery Services. The Inspire Conformance level comprises exactly those eBRIM/CIM RegistryObjects (and no more) which are required to map (within a bridge) Inspire discovery requests. If an implementation is conformant to this Inspire Conformance Class it can be integrated into the Inspire SDI by such a bridge.

The Inspire Conformance Level does nearly define an OGC conformant class. For this Conformance Level the Minimal Conformance Level is mandatory.

The Inspire Conformance Level requires the same mandatory operations and bindings as the Minimal Conformance Level. The GetRecordById- and the DescribeRecord-Operation are not considered as these would have to be implemented in a bridge (DescribeRecord native, GetRecordById by a mapping to GetRecords/GetRepositoryItem).

F.3.2. Information Model

The following list and figure YYY show the considered objectTypes of <<ExtrinsicObject>> and the supported associationTypes of <<Association>> within the INSPIRE eBRIM model (which are part of the full CIM model):

- <<ExtrinsicObject>> “MetadataInformation”
- <<ExtrinsicObject>> “DataMetadata”
- <<ExtrinsicObject>> “ServiceMetadata”
- <<ExtrinsicObject>> “Rights”
- <<ExtrinsicObject>> “CitedItem”
- <<ExtrinsicObject>> “Organization”
- <<ExtrinsicObject>> “LegalConstraints”
- <<ExtrinsicObject>> “SecurityConstraints”
- <<Association>> “CitedResponsibleParty”
- <<Association>> “ResourceConstraints”
- <<Association>> “ResourceMetadataInformation”
- <<Association>> “OperatesOn”

- <<Association>> “MetadataPointOfContact”
- <<Association>> “Specification”
- <<Association>> “Lineage”

Only DataMetadata and ServiceMetadata are linked to RepositoryItems.

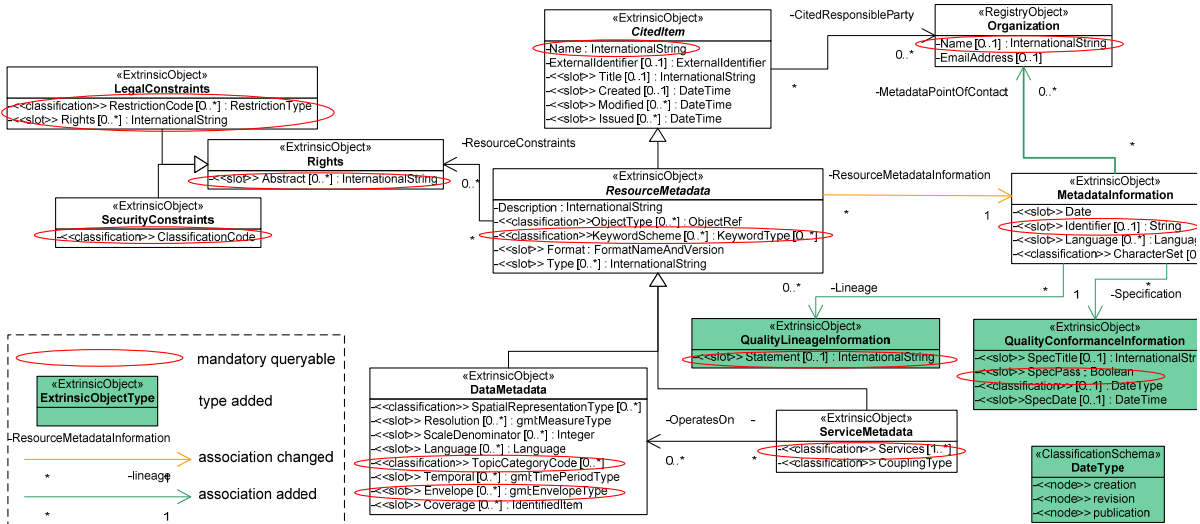


Figure 3: Information Model of the INSPIRE Conformance Class

The following ResourceMetadata objectTypes are supported:

- Dataset...

The metadata model does not only assure that the mandatory Inspire queryables can be mapped to CIM/Inspire queryables but also that all minimally needed ISO19139 elements (to create valid Inspire resultsets) can be filled by CIM/Inspire slots or classifications³. Figure XX shows how the minimally needed ISO19139 elements can be derived from the slots and classifications of the Inspire Conformance Class information model which have to be returned by a “full” response.

³ These are provided when asking for a „full“ resultset

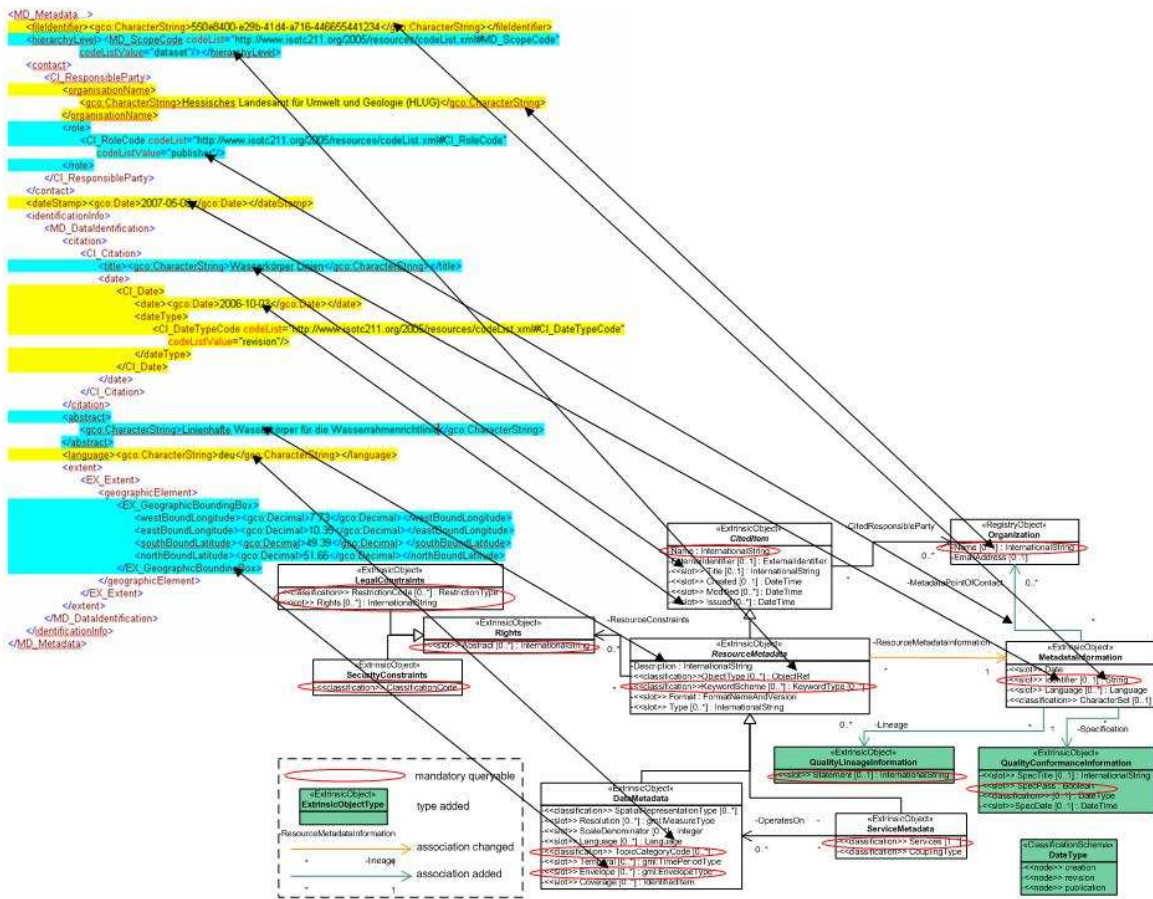


Figure 4: Information Model of the INSPIRE Conformance Class

What has been changed with regard to AP CIM:

Kommentar [uv2]: Describe only here if not already changed within CIM spec itself

Additions:

The mandatory Inspire Queryable "Lineage" cannot be mapped to CIM. Therefore the <<ExtrinsicObject>> "QualityLineageInformation" was introduced and the <<Association>> "lineage" between <<ExtrinsicObject>> "MetadataInformation" and <<ExtrinsicObject>> "QualityLineageInformation" added.

The mandatory Inspire Queryables Degree, SpecificationDate, SpecificationTitle, SpecificationDateType cannot be mapped to CIM. Therefore the <<ExtrinsicObject>> "QualityConformanceInformation" was introduced and the <<Association>> "specification" (Typ: urn:ogc:def:ebRIM-AssociationType:OGC:Specification) between <<ExtrinsicObject>> "MetadataInformation" and <<ExtrinsicObject>> "QualityConformanceInformation" added.

The Inspire Queryable MetadataPointOfContact cannot be mapped to CIM. Therefore the <<Association>> "metadataPointOfContact" between <<ExtrinsicObject>> "MetadataInformation" and <<ExtrinsicObject>> "Organization" was added.

Changes:

- <<ExtrinsicObject>> “DataMetadata”: The <<slots>> “References”, “Source” and “Format” are not considered (neither defined as queryable within INSPIRE discovery services nor defined as mandatory AP ISO queryable)
- <<ExtrinsicObject>> “IdentifiedItem” not considered (<<Association>> ResourceReferenceSystem (CRS) neither defined as queryable within INSPIRE discovery services nor defined as mandatory in AP ISO)
- <<ExtrinsicObject>> “CitedItem” in this conformance level abstract (not supported as separate <<ExtrinsicObject>>)
- <<Association>> “Authority” (from “IdentifiedItem” to “CitedItem”) not considered
- <<ExtrinsicObject>> “ServiceOperation” not considered
- <<Association>> “ParentMetadataInformation” not considered (neither defined as queryable within INSPIRE discovery services nor defined as mandatory AP ISO queryable)
- <<Association>> “ResourceMetadataInformation” now mandatory
- <<ExtrinsicObject>> “Image” not supported (queries concerning browse images neither defined as queryable within INSPIRE discovery services nor defined as mandatory in AP ISO)
- <<Association>> “Authority” (from “IdentifiedItem” to “CitedItem”) not considered

Clarifications:

- INSPIRE queryable “OtherConstraints” is mapped to slot “Rights” of <<ExtrinsicObject>> “LegalConstraints”
- INSPIRE queryable “Classification” is mapped to the <<classification>> of <<ExtrinsicObject>> “SecurityConstraints”
- INSPIRE queryable “AccessConstraints” is mapped to the <<classification>> of <<ExtrinsicObject>> “LegalConstraints”
- INSPIRE queryable “ConditionApplyingToAccessAndUse” is mapped to the <<slot>> Abstract of <<ExtrinsicObject>> “Rights”

• Identifier.....

• to check: type and/or ObjectType mandatory ?

• ResourceIdentifier to be mapped to AP CIM ExternalIdentifier

F.3.3. Operations

The Inspire Conformance Level requires the same mandatory operations and bindings as the Minimal Conformance Level. The GetRecordById- and the DescribeRecord-Operation are not considered as these would have to be implemented in a bridge (DescribeRecord native, GetRecordById by a mapping to GetRecords/GetRepositoryItem).

F.3.3.1. GetRecords

F.3.3.1.1. Request

Query TypeNames

The following typeNames are supported within a query:

- wrs:ExtrinsicObject
- rim:Association
- rim:RegistryObject
- rim:Classification

In the case of a CSW 2.0.2 base request, csw:Record must be used.

Aliases must be used if more than one instance of a type is involved in a query.

Search Attributes and Data types

The mandatory queryables include the queryables of the minimal conformance class plus those defined in **table xxx**. Other queryables based on the Inspire information model may be supported but are not mandatory.

Table F.1 – Mandatory Queryables

TypeName/OutputSchema	Queryable	Slot type
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType= DataMetadata ServiceMetadata]/@Name	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType= DataMetadata ServiceMetadata]/rim:Classification[KeywordScheme : KeywordType]	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType= DataMetadata]/rim:Classification[TopicCategoryCode]	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType= DataMetadata]/rim:Slot[@name=Envelope]	geometry
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType= ServiceMetadata]/rim:Classification[Services]	string
rim:RegistryObject/rim	/rim:RegistryObject [@objectType= Organization]/@Name	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType= MetadataInformation]/rim:Slot[@name=Identifier]	string

TypeName/OutputSchema	Queryable	Slot type
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType=QualityLineageInformation]/rim:Slot[@name=Statement]	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType=QualityConformanceInformation]/rim:Slot[@name=SpecPass]	boolean
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType=Rights]/rim:Slot[@name=Abstract]	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType=LegalConstraints]/rim:Slot[@name=Rights]	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType=LegalConstraints]/rim:Classification[RestrictionCode]	string
wrs:ExtrinsicObject/rim	/wrs:ExtrinsicObject[@objectType=SecurityConstraints]/rim:Classification[ClassificationCode]	string

ElementSetName

Only the predefined elementSets “brief”, “summary”, “full” and the typeNames “wrs:ExtrinsicObject” and “csw:Record” are supported.

Examples

The following examples shows a request with outputSchema ebRIM (using different typeNames). Further requests can be found in the Abstract Test Suite (ATS).

```
<csw:GetRecords maxRecords="10" outputFormat="application/xml"
outputSchema="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" resultType="results" service="CSW-ebRIM"
startPosition="1" version="1.0.0" xmlns:csw="http://www.opengis.net/cat/csw/2.0.2"
xmlns:ogc="http://www.opengis.net/ogc" xmlns:wrs="http://www.opengis.net/cat/wrs/1.0"
xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
  <csw:Query typeNames="wrs:ExtrinsicObject_e1_e2_e3 rim:Association_a1_a2">
    <csw:ElementSetName typeNames="wrs:ExtrinsicObject">full</csw:ElementSetName>
    <csw:Constraint version="1.1.0">
      <ogc:Filter>
        <ogc:Or>
          <ogc:And>
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>$a1/@associationType</ogc:PropertyName>
              <ogc:Literal>urn:ogc:def:ebRIM-
AssociationType:OGC:ResourceMetadataInformation</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>$a1/@sourceObject</ogc:PropertyName>
              <ogc:Literal>$e1/@id</ogc:Literal>
            </ogc:PropertyIsEqualTo>
            <ogc:PropertyIsEqualTo>
              <ogc:PropertyName>$e2/@id</ogc:PropertyName>
            </ogc:PropertyIsEqualTo>
          </ogc:And>
        </ogc:Or>
      </ogc:Filter>
    </csw:Constraint>
  </csw:Query>
</csw:GetRecords>
```

```

                                <ogc:Literal>urn:ogc:def:ebRIM-
ObjectType:OGC:DataMetadata</ogc:Literal>
                                </ogc:PropertyIsEqualTo>
                                <ogc:PropertyIsEqualTo>
                                <ogc:PropertyName>$e2/@objectType</ogc:PropertyName>
                                <ogc:Literal>urn:ogc:def:ebRIM-
ObjectType:OGC:MetadataInformation</ogc:Literal>
                                </ogc:PropertyIsEqualTo>
                                <ogc:PropertyIsEqualTo>
                                <ogc:PropertyName>$a2/@associationType</ogc:PropertyName>
                                <ogc:Literal>urn:ogc:def:ebRIM-
AssociationType:OGC:Specification</ogc:Literal>
                                </ogc:PropertyIsEqualTo>
                                <ogc:PropertyIsEqualTo>
                                <ogc:PropertyName>$a2/@sourceObject</ogc:PropertyName>
                                <ogc:Literal>$e2/@id</ogc:Literal>
                                </ogc:PropertyIsEqualTo>
                                <ogc:PropertyIsEqualTo>
                                <ogc:PropertyName>$e3/@id</ogc:PropertyName>
                                <ogc:PropertyName>$a2/@targetObject</ogc:PropertyName>
                                </ogc:PropertyIsEqualTo>
                                <ogc:PropertyIsEqualTo>
                                <ogc:PropertyName>$e3/@objectType</ogc:PropertyName>
                                <ogc:Literal>urn:ogc:def:ebRIM-
ObjectType:OGC:QualityConformanceInformation</ogc:Literal>
                                </ogc:PropertyIsEqualTo>
                                <ogc:PropertyIsEqualTo>
                                <ogc:PropertyName>$e3/@rim:Slot[@name='specPass']/rim:ValueList/rim:Value</ogc:PropertyName>
                                <ogc:Literal>true</ogc:Literal>
                                </ogc:PropertyIsEqualTo>
                                </ogc:And>
                                <ogc:PropertyIsEqualTo>
                                <ogc:PropertyName>$e1/@objectType</ogc:PropertyName>
                                <ogc:Literal>urn:ogc:def:ebRIM-
ObjectType:OGC:DataMetadata</ogc:Literal>
                                </ogc:PropertyIsEqualTo>
                                </ogc:Or>
                                </ogc:Filter>
                                </csw:Constraint>
                                </csw:Query>
</csw:GetRecords>

```

The following example shows a request with outputSchema csw:Record.

```

<csw:GetRecords maxRecords="10" outputFormat="application/xml"
outputSchema="http://www.opengis.net/cat/csw/2.0.2" resultType="results" service="CSW" startPosition="1"
version="2.0.2" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
xmlns:csw="http://www.opengis.net/cat/csw/2.0.2" xmlns:ogc="http://www.opengis.net/ogc"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:wrs="http://www.opengis.net/cat/wrs/1.0">
  <csw:Query typeNames="wrs:ExtrinsicObject">

```

```

<csw:ElementSetName typeName="csw:Record">summary</csw:ElementSetName>
<csw:Constraint version="1.1.0">
  <ogc:Filter>
    <ogc:PropertyIsLike escapeChar="\ " singleChar="?" wildCard="*">
      <ogc:PropertyName>title</ogc:PropertyName>
      <ogc:Literal>*ASC*</ogc:Literal>
    </ogc:PropertyIsLike>
  </ogc:Filter>
</csw:Constraint>
</csw:Query>
</csw:GetRecords>

```

F.3.3.2. GetRepositoryItem

s. F.2.3.4

F.3.4. Results for the CIM Spec (to be aligned with Inspire) (see also Wiki)

- Make the following things optional:
 - <<Association>> Authority (from IdentifiedItem to CitedItem)
 - <<ExtrinsicObject>> ServiceOperation
- Change the following things:
 - <<Association>> "ResourceMetadataInformation" now mandatory
- Add the following things:
 - The mandatory Inspire Queryable "Lineage" cannot be mapped to CIM. Therefore the <<ExtrinsicObject>> "QualityLineageInformation" with the slot "statement" [0..1] should be introduced and the <<Association>> "lineage" between <<ExtrinsicObject>> "MetadataInformation" and <<ExtrinsicObject>> "QualityLineageInformation" should be added.
 - The mandatory Inspire Queryables Degree, SpecificationDate, SpecificationTitle, SpecificationDateType cannot be mapped to CIM. Therefore the <<ExtrinsicObject>> "QualityConformanceInformation" with the slots specPass (boolean, [1]), specTitle (InternationalString, [0..1]), specDate (DateTime, [0..1]) and a DateType classification (DateType classification schema) should be introduced and the <<Association>> "specification" between <<ExtrinsicObject>> "MetadataInformation" and <<ExtrinsicObject>> "QualityConformanceInformation" should be added.
 - The Inspire Queryable MetadataPointOfContact cannot be mapped to CIM. Therefore the <<Association>> "metadataPointOfContact" between <<ExtrinsicObject>> "MetadataInformation" and <<ExtrinsicObject>> "Organization" should be added.

F.3.5. Mapping between the Inspire extended CIM Metadata and ISO19115/ISO19119

Introduction

For the modeling of some of the additional Inspire queryables additional ebRIM registry objects are needed within the Inspire CIM information model.

This section describes the mapping between these additional ebRIM registry objects and ISO 19115 / ISO 19119 as well as the mapping of the other additional Inspire queryables between the existing CIM ebRIM registry objects and ISO 19115 / ISO 19119.

In the following the mapping between CIM (Inspire) and ISO 19115/ISO19119 is presented through 3 column tables:

- the first column defines the ISO 19115/ISO19119 class properties;
- the second column defines the CIM (Inspire) implementation of each property
- the last column provides the Inspire queryable

Registration of Metadata Contact Information representing an additional Inspire queryable

An instance of Organization is created based on the properties of the instance of CI_ResponsibleParty. An instance of the association MetadataPointOfContact from an instance of MetadataInformation to Organization must be created for each instance of CI_ResponsibleParty (reachable via contact).

Table F.7 - From CI_ResponsibleParty to Organization

ISO 19115/ ISO 19119	CIM Inspire	Inspire Queryable
organizationName	Name	MetadataPointOfContact

Registration of Quality information representing additional Inspire queryables

Unique instances of QualityLineageInformation and QualityConformanceInformation are created based on the properties of the instance of DQ_DataQuality. An instance of the association Lineage from an instance of MetadataInformation to QualityLineageInformation must be created for each instance of LI_Lineage (reachable via dataQualityInfo/*/lineage).

Table F.7 - From DQ_DataQuality to QualityLineageInformation

ISO 19115/ ISO 19119	CIM Inspire	Inspire Queryable
statement	<<slot>>statement	Lineage

A further instance of the association Specification from an instance of MetadataInformation to QualityConformanceInformation must be created for an optional instance of DQ_ConformanceResult (reachable via dataQualityInfo/*/report/*/result/* and dataQualityInfo/*/report/*/result/*/specification/*), see [Table F.14](#).

Table F.14 - From DQ_DataQuality to QualityConformanceInformation

ISO 19115/ ISO 19119	CIM Inspire	Inspire Queryable
Title	<<slot>>specTitle	SpecificationTitle

ISO 19115/ ISO 19119	CIM Inspire	Inspire Queryable
Pass	<<slot>> specPass	Degree
dateType	<<classification>> DateType	SpecificationDateType
Date	<<slot>>specDate	SpecificationDate

Mapping of Inspire Constraint Queryables

The following shows how the Inspire queryables filtering use- and access-constraints have to be mapped to the CIM information model. For these queryables no additional eBRIM registry objects are needed within the Inspire CIM information model, only a mapping to existing eBRIM registry objects is needed.

Unique instances of Rights, LegalConstraints or SecurityConstraints are created based on the properties of the instance of MD_Constraints, MD_LegalConstraints and/or MD_SecurityConstraints. An instance of the association ResourceConstraints from an instance of ResourceMetadata to Rights or one of its subclass must be created for each instance of the association between MD_Identification and MD_Constraints.

Table F.7 – ExtrinsicObject Rights

ISO 19115/ ISO 19119	CIM	Inspire Queryable
useLimitation	<<ExtrinsicObject>> Rights, <<slot>>Abstract	ConditionApplyingToAccessAndUse

Table F.7 – ExtrinsicObject LegalConstraints

ISO 19115/ ISO 19119	CIM	Inspire Queryable
accessConstraints	LegalConstraints , <<classification>> RestrictionCode	AccessConstraints
	LegalConstraints, <<slot>> Rights	OtherConstraints
	<<classification>> RestrictionCode	Classification

F.3.5.1. General alternatives for bridging CSW AP ISO and CSW AP eBRIM EP CIM

Harvesting

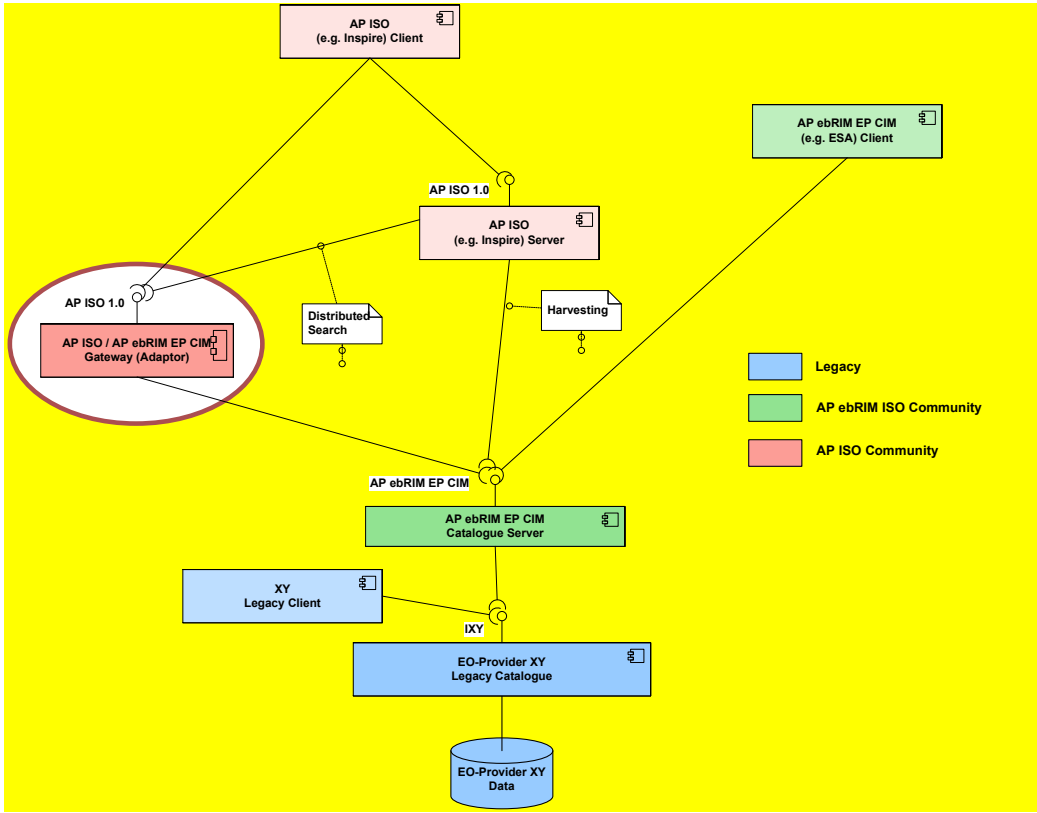


Figure 5: Proposed Conformance Levels versus query universe

Mappt getRecordByID auf getRepositoryItem Request.

.....

F.4. Conformance

F.4.1. Conformance requirement(s)

This standard defines two classes of conformance: class INSPIRE, class B,....

The intended application of the conformance classes may be stated here...

Any product claiming conformance with one of these classes shall pass all the requirements described in the abstract test suit in Annex....