

Änderungen am GM03 Datenmodell für Dienste

1. Einführung

Das Datenmodell GM03 wurde gemäss ISO 19115 modelliert. Darin fehlt die Möglichkeit zur Beschreibung von Diensten. In ISO 19119 gibt es ein entsprechendes Datenmodell.

In "OpenGIS Catalogue Services Specification 2.0.2 - ISO Metadata Application Profile" gibt es ein XML-Schema gemäss ISO 19119.

In "Draft Guidelines – INSPIRE metadata implementing rules based on ISO 19115 and ISO 19119" gibt es zusätzliche Anforderungen.

Im Folgenden werden die Änderungen am Datenmodell GM03 dokumentiert, um Dienste beschreiben zu können. Im Anhang sind relevante Ausschnitte aus den erwähnten Spezifikationen.

2. GM03_2Core

Keine Änderung

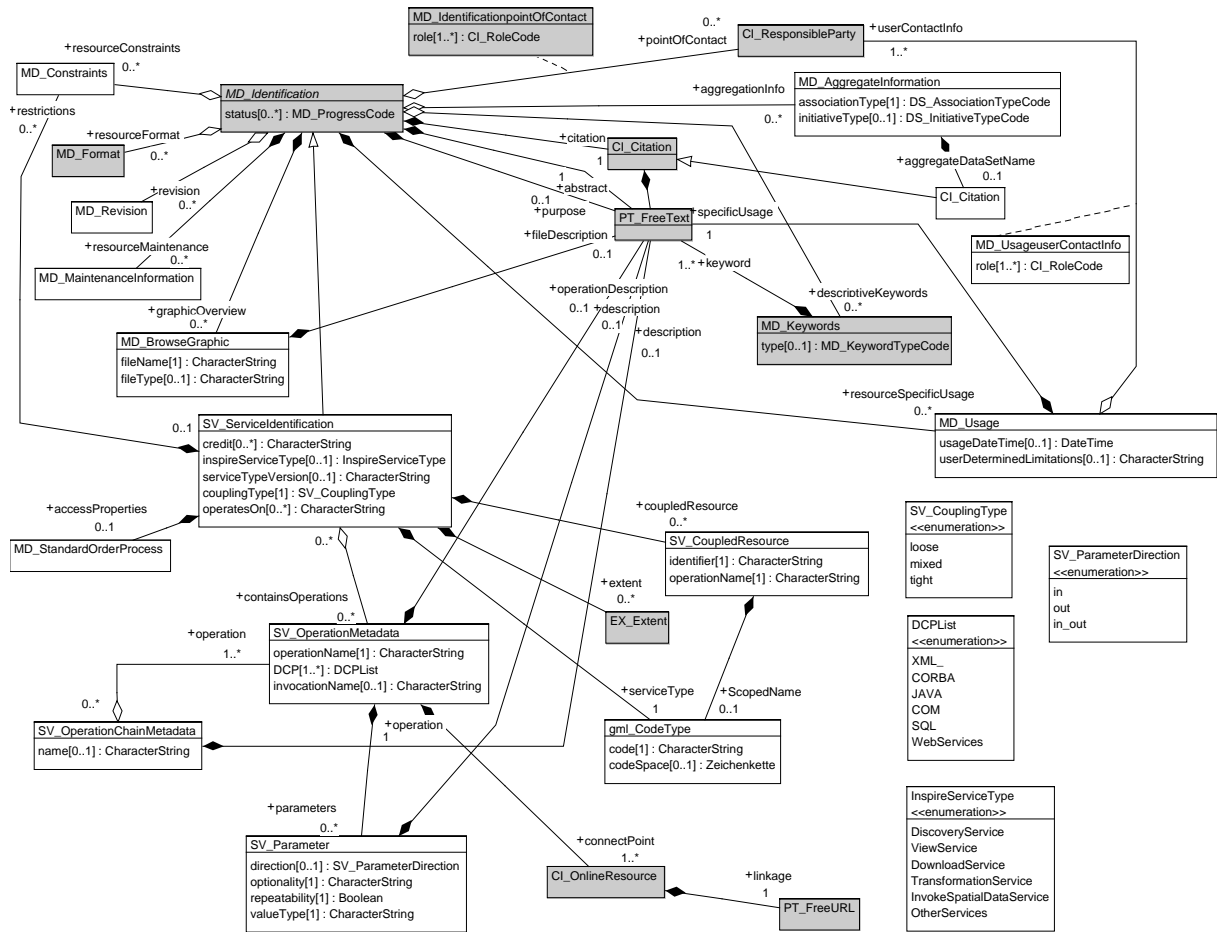
3. GM03_2Comprehensive

3.1. Metadaten für Dienste

3.1.1. Bisher

MD_ServiceIdentification
credit[0..*] : CharacterString

3.1.2. Neu

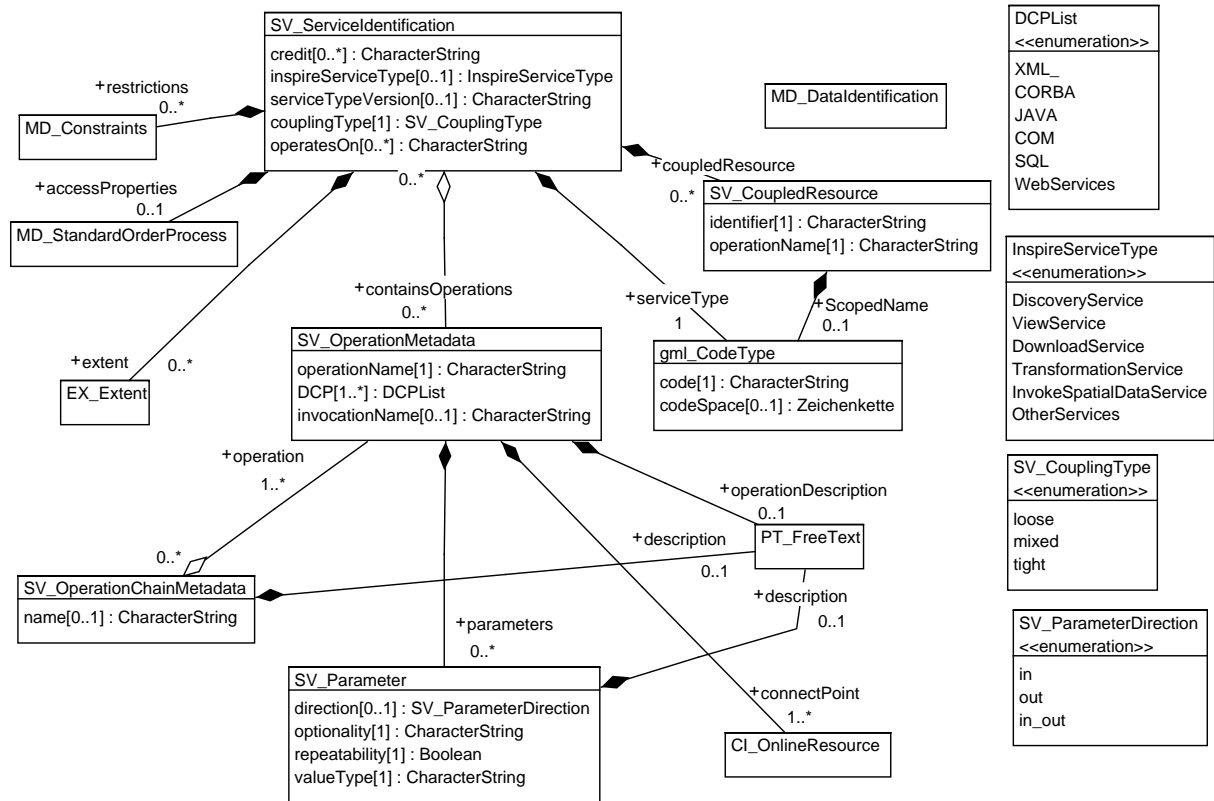


3.1.3. Aenderung

Klasse MD_ServiceIdentification in SV_ServiceIdentification umbenannt.

Folgende Klassen neu: SV_OperationMetadata, SV_Parameter, SV_CoupledResource, SV_OperationChainMetadata, gml_CodeType

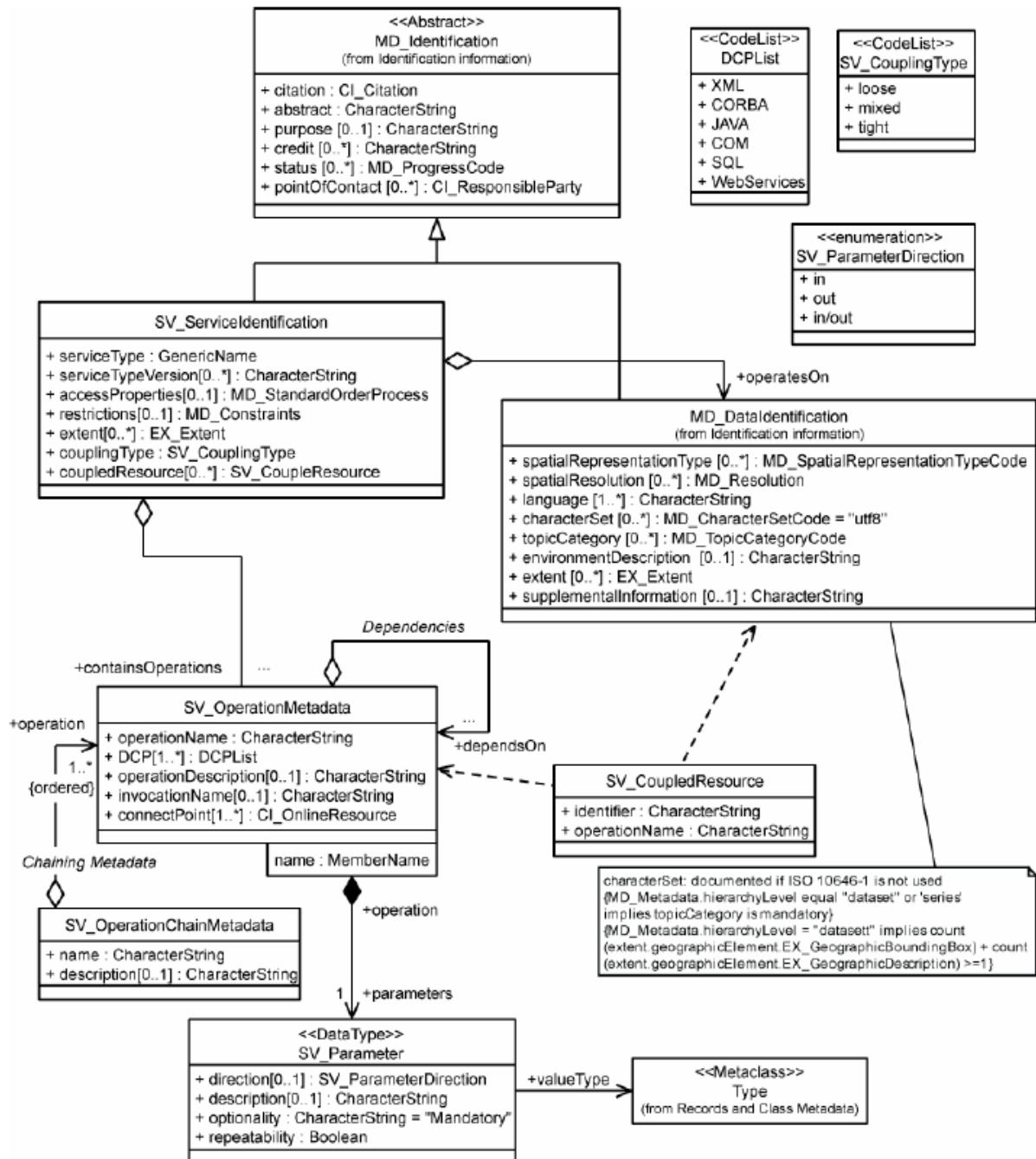
Folgende Wertebereiche neu: SV_CouplingType, SV_ParameterDirection, DCPList, InspireServiceType



Anhang

Die folgenden Abschnitte enthalten die Grundlagen, die für die Modellierung der Dienste-Metadaten verwendet wurden.

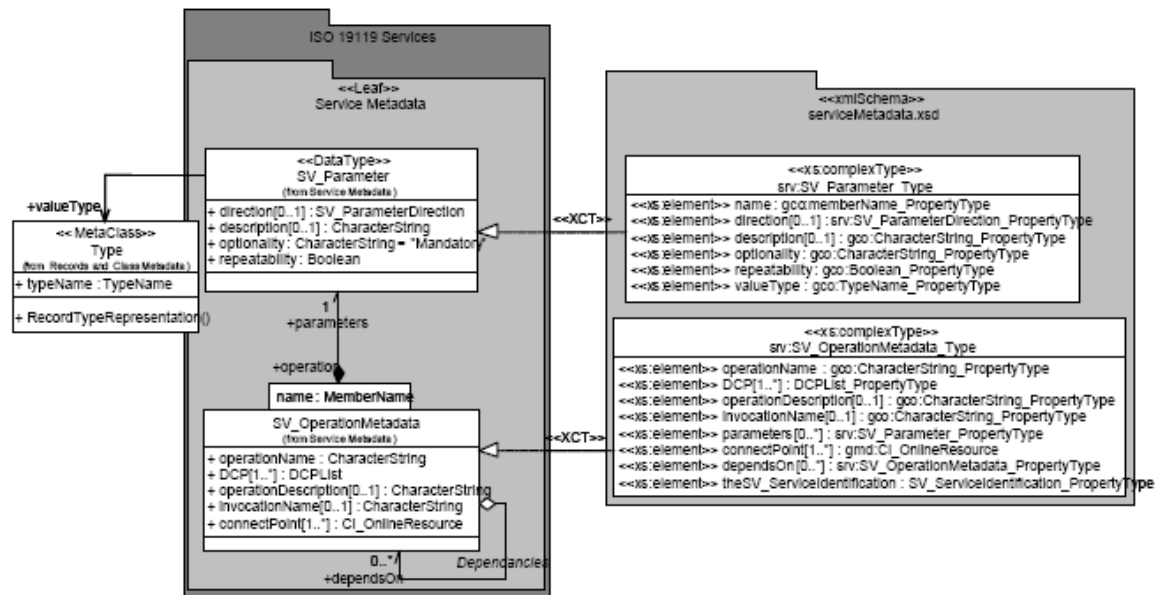
1. 19119 Amd 1



2. OGC CSW AP ISO

OGC Dokument 07-045

<http://schemas.opengis.net/iso/19139/20060504/srv/>



- **SV_Parameter**: in order to implement in XML the qualifier on the relationship between **SV_Parameter** and **SV_OperationMetadata**, the XML property name with type `gco:MemberName_PropertyType` is added to the definition of `srv:SV_Parameter_Type`.
 - **SV_OperationMetadata**: because of the qualifier on the relationship between **SV_OperationMetadata** and **SV_Parameter**, the multiplicity of the parameters property is implemented as `[0..*]`.
1. The multiplicity of `SV_ServiceIdentification.restrictions` is defined as `[0..1]` in clause C.2.2 4. of ISO 19119, although the definition specifies that this element describes legal and security constraints. In ISO 19115, all constraint elements are specified with a maximum cardinality of `n`. The multiplicity of restrictions has been modified to `[0..*]`.
 2. `MD_Constraints` is incorrectly spelled `MD_DataConstraints` in clause 2.2.2 4. of ISO 19119. restrictions have been implemented with type `MD_Constraints`.

SV_CoupledResource
+ identifier : CharacterString
+ operationName : CharacterString
+ ScopedName : CodeType

Figure 8: Extension to class <<SV_CoupledResource>>

Table 5 — Data dictionary for SV_CoupledResource

	Attribute name/Role name	Definition	Obligation/Condition	Maximum occurrence	Data type
1.	operation name	Name of the service operation	M	1	CharacterString
2.	identifier	Name of the identifier of a given tightly coupled dataset	M	1	CharacterString
3.	ScopedName	Scoped identifier of the resource in the context of the given service instance	O	1	CodeType

2.1.1. SV_ServiceIdentification

```

<xs:complexType name="SV_ServiceIdentification_Type">
  <xs:complexContent>
    <xs:extension base="gmd:AbstractMD_Identification_Type">
      <xs:sequence>
        <xs:element name="serviceType" type="gco:GenericName_PropertyType"/>
        <xs:element name="serviceTypeVersion"
type="gco:CharacterString_PropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="accessProperties"
type="gmd:MD_StandardOrderProcess_PropertyType" minOccurs="0"/>
        <xs:element name="restrictions" type="gmd:MD_Constraints_PropertyType"
minOccurs="0"/>
        <xs:element name="keywords" type="gmd:MD_Keywords_PropertyType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="extent" type="gmd:EX_Extent_PropertyType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="coupledResource"
type="srv:SV_CoupledResource_PropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="couplingType" type="srv:SV_CouplingType_PropertyType"/>
        <xs:element name="containsOperations"
type="srv:SV_OperationMetadata_PropertyType" maxOccurs="unbounded"/>
        <xs:element name="operatesOn"
type="gmd:MD_DataIdentification_PropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

2.1.2. SV_OperationMetadata

```
<xs:complexType name="SV_OperationMetadata_Type">
  <xs:complexContent>
    <xs:extension base="gco:AbstractObject_Type">
      <xs:sequence>
        <xs:element name="operationName"
type="gco:CharacterString_PropertyType"/>
        <xs:element name="DCP" type="srv:DCPList_PropertyType"
maxOccurs="unbounded"/>
        <xs:element name="operationDescription"
type="gco:CharacterString_PropertyType" minOccurs="0"/>
        <xs:element name="invocationName" type="gco:CharacterString_PropertyType"
minOccurs="0"/>
        <xs:element name="parameters" type="srv:SV_Parameter_PropertyType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="connectPoint"
type="gmd:CI_OnlineResource_PropertyType" maxOccurs="unbounded"/>
        <xs:element name="dependsOn"
type="srv:SV_OperationMetadata_PropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.1.3. SV_Parameter

```
<xs:complexType name="SV_Parameter_Type">
  <xs:complexContent>
    <xs:extension base="gco:AbstractObject_Type">
      <xs:sequence>
        <xs:element name="name" type="gco:MemberName_Type"/>
        <xs:element name="direction" type="srv:SV_ParameterDirection_PropertyType"
minOccurs="0"/>
        <xs:element name="description" type="gco:CharacterString_PropertyType"
minOccurs="0"/>
        <xs:element name="optionality" type="gco:CharacterString_PropertyType"/>
        <xs:element name="repeatability" type="gco:Boolean_PropertyType"/>
        <xs:element name="valueType" type="gco:TypeName_PropertyType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.1.4. SV_CoupledResource

```
<xs:complexType name="SV_CoupledResource_Type">
```

```

<xs:complexContent>
  <xs:extension base="gco:AbstractObject_Type">
    <xs:sequence>
      <xs:element name="operationName"
type="gco:CharacterString_PropertyType"/>
      <xs:element name="identifier" type="gco:CharacterString_PropertyType"/>
      <xs:element ref="gco:ScopedName" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

2.1.5. SV_OperationChainMetadata

```

<xs:complexType name="SV_OperationChainMetadata_Type">
  <xs:complexContent>
    <xs:extension base="gco:AbstractObject_Type">
      <xs:sequence>
        <xs:element name="name" type="gco:CharacterString_PropertyType"/>
        <xs:element name="description" type="gco:CharacterString_PropertyType"
minOccurs="0"/>
        <xs:element name="operation" type="srv:SV_OperationMetadata_PropertyType"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

2.1.6. gco:ScopedName

```

<xs:element name="ScopedName" type="gml:CodeType"
substitutionGroup="gco:AbstractGenericName"/>
<xs:complexType name="ScopedName_PropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="gco:ScopedName"/>
  </xs:sequence>
  <xs:attribute ref="gco:nilReason"/>
</xs:complexType>

```

2.1.7. gco:GenericName

```

<xs:element name="AbstractGenericName" type="gml:CodeType" abstract="true"/>
<xs:complexType name="GenericName_PropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="gco:AbstractGenericName"/>
  </xs:sequence>
  <xs:attribute ref="gco:nilReason"/>
</xs:complexType>

```

2.1.8. gml:CodeType

```

<complexType name="CodeType">

```

```

<annotation>
  <documentation>gml:CodeType is a generalized type to be used for a term,
keyword or name.
It adds a XML attribute codeSpace to a term, where the value of the codeSpace
attribute (if present) shall indicate a dictionary, thesaurus, classification scheme,
authority, or pattern for the term.</documentation>
</annotation>
<simpleContent>
  <extension base="string">
    <attribute name="codeSpace" type="anyURI"/>
  </extension>
</simpleContent>
</complexType>

```

2.1.9. gco:TypeName

```

<xs:complexType name="TypeName_Type">
  <xs:annotation>
    <xs:documentation>A TypeName is a LocalName that references either a
recordType or object type in some form of schema. The stored value "aName" is the
returned value for the "aName()" operation. This is the types name. - For parsing
from types (or objects) the parsible name normally uses a "." navigation separator, so
that it is of the form [class].[member].[memberOfMember]. ...</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="gco:AbstractObject_Type">
      <xs:sequence>
        <xs:element name="aName" type="gco:CharacterString_PropertyType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ..... -->
<xs:element name="TypeName" type="gco:TypeName_Type"/>
<!-- ..... -->
<xs:complexType name="TypeName_PropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="gco:TypeName"/>
  </xs:sequence>
  <xs:attributeGroup ref="gco:ObjectReference"/>
  <xs:attribute ref="gco:nilReason"/>
</xs:complexType>

```

3. INSPIRE Guidelines (MD_IR_and_ISO_20080425.pdf)

Id	MD IR Name	Examples of ISO 19119 values
1	Discovery Service	OGC:CSW
2	View Service	OGC:WMS
3	Download Service	OGC:WFS OGC:WCS
4	Transformation Service	OGC:WCTS
5	Invoke Spatial Data Service	OGC:WPS
6	Other Services	Any non registered value