



Emergency Situation Map

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1. INTRODUCTION

Emergency Situation Map profile describes how a user/organization is provided with a common operational picture of the emergency area using a real-time data and geographical maps. It describes how to get the data, maps and mash-ups.

2. OBJECTIVES

The objectives of implementing this profile are:

1. Getting the overview of the current situation in the emergency area.
2. Identifying emergency situation characteristics/attributes/hallmarks.
3. Identifying the critical emergency areas.
4. Identifying location and information related to emergency resources.
5. Identifying location and information related to rescue targets.
6. Comparing different information related to maps (e.g. terrain) or data (water levels at different locations).
7. Communicating the findings to other C2-SENSE and local parties.

3. SCOPE

This profile supports a process of providing C2-SENSE users with a common operational picture with maps and/or data. The intended scope for this profile includes:

- During and after emergency situations
- Among on-site coordination centers, local organizations, national organizations and non-governmental organizations

The activities specified in this profile are intended to provide a common ground for a decision support between organizations taking part in emergency operations. It is expected that all parties have necessary infrastructure/devices, to enable them to acquire maps and data, and to view them. The access is determined by the SLA agreements.

4. PROFILE DETAILED DESCRIPTION

4.2. Roles Involved

Actor	Description
Map Consumer	The Map Consumer is the legal person or organization who queries and requests maps and data. The additional role is to interpret the data (on maps), and to inform partners of the findings.
Map Server	Map Server is the server from which the base maps are received.
OOI Server	OOI Server is the server with the available data.

4.3. Actor Diagram

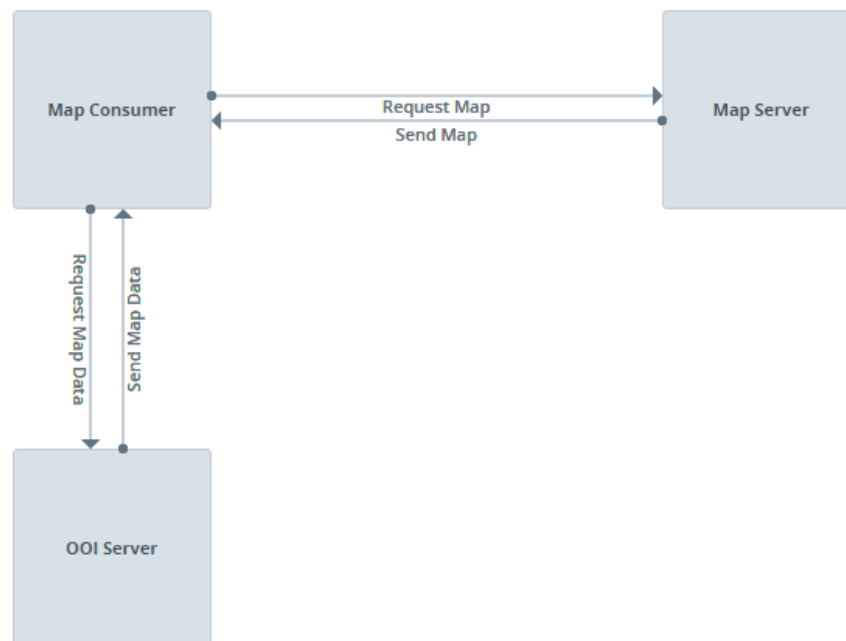


Figure above shows the actors directly involved in the Emergency Situation Map Profile and the possible messages to be exchanged between them.

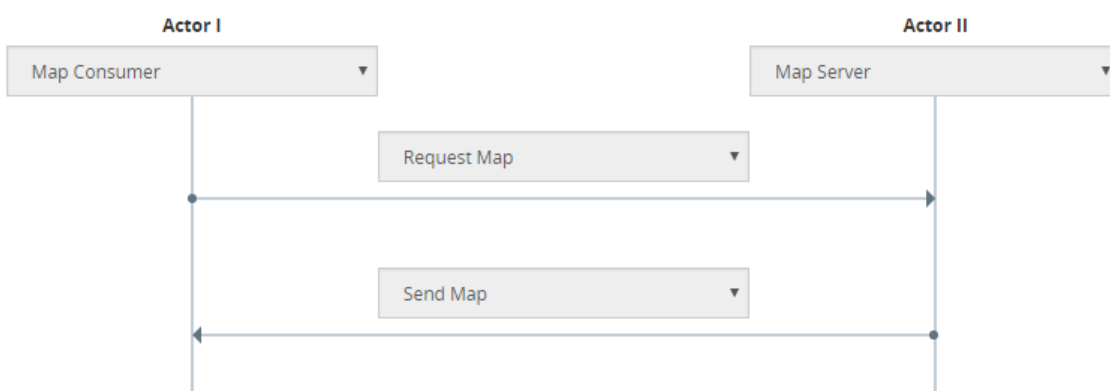
4.4. Transaction Information

4.4.1. Request Map

4.4.1.1. Description

Categories	Description and Values
Identifier	1457357768830
Description	The Map Consumer requests a base map by giving a set of parameters describing the map. The Map Server responds by providing the available maps.
Actors	Map Consumer, Map Server
Pre-conditions	The Map Consumer and the Map Server have already identified each other.
Post-conditions	The Map Consumer has received either a map or a description of why the map is not available.

4.4.1.2. Interaction Diagram



4.4.1.3. Request Map Message

4.4.1.3.1. Message Semantics

```
<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://www.opengis.net/wms" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:wms="http://www.opengis.net/wms" xmlns="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified" version="1.3.0.2">
  <import namespace="http://www.w3.org/1999/xlink"
schemaLocation="http://www.w3.org/1999/xlink.xsd"/>
  <element name="WMS_Capabilities">
    <complexType>
      <sequence>
        <element ref="wms:Service"/>
        <element ref="wms:Capability"/>
      </sequence>
      <attribute name="version" type="string" fixed="1.3.0"/>
      <attribute name="updateSequence" type="string"/>
    </complexType>
  </element>
  <element name="Name" type="string"/>
  <element name="Title" type="string"/>
  <element name="Abstract" type="string"/>
  <element name="KeywordList">
    <complexType>
      <sequence>
        <element ref="wms:Keyword" minOccurs="0" maxOccurs="unbounded"/>
      </sequence>
    </complexType>
  </element>
  <element name="Keyword">
    <complexType>
      <simpleContent>
        <extension base="string">
          <attribute name="vocabulary" type="string"/>
        </extension>
      </simpleContent>
    </complexType>
  </element>
  <element name="OnlineResource">
    <complexType>
      <attributeGroup ref="xlink:simpleAttrs"/>
    </complexType>
  </element>
  <element name="Format" type="string"/>
  <element name="Service">
    <complexType>
      <sequence>
        <element name="Name">
          <simpleType>
            <restriction base="string">
              <enumeration value="WMS"/>
            </restriction>
          </simpleType>
        </element>
      </sequence>
    </complexType>
  </element>
</schema>
```

```

        </element>
        <element ref="wms:Title"/>
        <element ref="wms:Abstract" minOccurs="0"/>
        <element ref="wms:KeywordList" minOccurs="0"/>
        <element ref="wms:OnlineResource"/>
        <element ref="wms:ContactInformation" minOccurs="0"/>
        <element ref="wms:Fees" minOccurs="0"/>
        <element ref="wms:AccessConstraints" minOccurs="0"/>
        <element ref="wms:LayerLimit" minOccurs="0"/>
        <element ref="wms:MaxWidth" minOccurs="0"/>
        <element ref="wms:MaxHeight" minOccurs="0"/>
    </sequence>
</complexType>
</element>
<element name="ContactInformation">
    <complexType>
        <sequence>
            <element ref="wms:ContactPersonPrimary" minOccurs="0"/>
            <element ref="wms:ContactPosition" minOccurs="0"/>
            <element ref="wms:ContactAddress" minOccurs="0"/>
            <element ref="wms:ContactVoiceTelephone" minOccurs="0"/>
            <element ref="wms:ContactFacsimileTelephone" minOccurs="0"/>
            <element ref="wms:ContactElectronicMailAddress" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="ContactPersonPrimary">
    <complexType>
        <sequence>
            <element ref="wms:ContactPerson"/>
            <element ref="wms:ContactOrganization"/>
        </sequence>
    </complexType>
</element>
<element name="ContactPerson" type="string"/>
<element name="ContactOrganization" type="string"/>
<element name="ContactPosition" type="string"/>
<element name="ContactAddress">
    <complexType>
        <sequence>
            <element ref="wms:AddressType"/>
            <element ref="wms:Address"/>
            <element ref="wms:City"/>
            <element ref="wms:StateOrProvince"/>
            <element ref="wms:PostCode"/>
            <element ref="wms:Country"/>
        </sequence>
    </complexType>
</element>
<element name="AddressType" type="string"/>

```

```
<element name="Address" type="string"/>
<element name="City" type="string"/>
<element name="StateOrProvince" type="string"/>
<element name="PostCode" type="string"/>
<element name="Country" type="string"/>
<element name="ContactVoiceTelephone" type="string"/>
<element name="ContactFacsimileTelephone" type="string"/>
<element name="ContactElectronicMailAddress" type="string"/>
<element name="Fees" type="string"/>
<element name="AccessConstraints" type="string"/>
<element name="LayerLimit" type="positiveInteger"/>
<element name="MaxWidth" type="positiveInteger"/>
<element name="MaxHeight" type="positiveInteger"/>
<element name="Capability">
  <complexType>
    <sequence>
      <element ref="wms:Request"/>
      <element ref="wms:Exception"/>
      <element ref="wms:_ExtendedCapabilities" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Layer" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="Request">
  <complexType>
    <sequence>
      <element ref="wms:GetCapabilities"/>
      <element ref="wms:GetMap"/>
      <element ref="wms:GetFeatureInfo" minOccurs="0"/>
      <element ref="wms:_ExtendedOperation" minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
</element>
<element name="GetCapabilities" type="wms:OperationType"/>
<element name="GetMap" type="wms:OperationType"/>
<element name="GetFeatureInfo" type="wms:OperationType"/>
<element name="_ExtendedOperation" type="wms:OperationType" abstract="true"/>
<complexType name="OperationType">
  <sequence>
    <element ref="wms:Format" maxOccurs="unbounded"/>
    <element ref="wms:DCPType" maxOccurs="unbounded"/>
  </sequence>
</complexType>
<element name="DCPType">
  <complexType>
    <sequence>
      <element ref="wms:HTTP"/>
    </sequence>
  </complexType>
</element>
```



```

<element name="HTTP">
  <complexType>
    <sequence>
      <element ref="wms:Get"/>
      <element ref="wms:Post" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="Get">
  <complexType>
    <sequence>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="Post">
  <complexType>
    <sequence>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="Exception">
  <complexType>
    <sequence>
      <element ref="wms:Format" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
</element>
<element name="_ExtendedCapabilities" abstract="true"/>
<element name="Layer">
  <complexType>
    <sequence>
      <element ref="wms:Name" minOccurs="0"/>
      <element ref="wms:Title"/>
      <element ref="wms:Abstract" minOccurs="0"/>
      <element ref="wms:KeywordList" minOccurs="0"/>
      <element ref="wms:CRS" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:EX_GeographicBoundingBox" minOccurs="0"/>
      <element ref="wms:BoundingBox" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Dimension" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Attribution" minOccurs="0"/>
      <element ref="wms:AuthorityURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Identifier" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:MetadataURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:DataURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:FeatureListURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Style" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:MinScaleDenominator" minOccurs="0"/>
      <element ref="wms:MaxScaleDenominator" minOccurs="0"/>
    </sequence>
  </complexType>
</element>

```

```
<element ref="wms:Layer" minOccurs="0" maxOccurs="unbounded"/>
</sequence>
<attribute name="queryable" type="boolean" default="0"/>
<attribute name="cascaded" type="nonNegativeInteger"/>
<attribute name="opaque" type="boolean" default="0"/>
<attribute name="noSubsets" type="boolean" default="0"/>
<attribute name="fixedWidth" type="nonNegativeInteger"/>
<attribute name="fixedHeight" type="nonNegativeInteger"/>
</complexType>
</element>
<element name="CRS" type="string"/>
<element name="EX_GeographicBoundingBox">
  <complexType>
    <sequence>
      <element name="westBoundLongitude" type="wms:longitudeType"/>
      <element name="eastBoundLongitude" type="wms:longitudeType"/>
      <element name="southBoundLatitude" type="wms:latitudeType"/>
      <element name="northBoundLatitude" type="wms:latitudeType"/>
    </sequence>
  </complexType>
</element>
<element name="BoundingBox">
  <complexType>
    <attribute name="CRS" type="string" use="required"/>
    <attribute name="minx" type="double" use="required"/>
    <attribute name="miny" type="double" use="required"/>
    <attribute name="maxx" type="double" use="required"/>
    <attribute name="maxy" type="double" use="required"/>
    <attribute name="resx" type="double"/>
    <attribute name="resy" type="double"/>
  </complexType>
</element>
<element name="Dimension">
  <complexType>
    <simpleContent>
      <extension base="string">
        <attribute name="name" type="string" use="required"/>
        <attribute name="units" type="string" use="required"/>
        <attribute name="unitSymbol" type="string"/>
        <attribute name="default" type="string"/>
        <attribute name="multipleValues" type="boolean"/>
        <attribute name="nearestValue" type="boolean"/>
        <attribute name="current" type="boolean"/>
      </extension>
    </simpleContent>
  </complexType>
</element>
<element name="Attribution">
  <complexType>
    <sequence>
```

```

        <element ref="wms:Title" minOccurs="0"/>
        <element ref="wms:OnlineResource" minOccurs="0"/>
        <element ref="wms:LogoURL" minOccurs="0"/>
      </sequence>
    </complexType>
  </element>
  <element name="LogoURL">
    <complexType>
      <sequence>
        <element ref="wms:Format"/>
        <element ref="wms:OnlineResource"/>
      </sequence>
      <attribute name="width" type="positiveInteger"/>
      <attribute name="height" type="positiveInteger"/>
    </complexType>
  </element>
  <element name="MetadataURL">
    <complexType>
      <sequence>
        <element ref="wms:Format"/>
        <element ref="wms:OnlineResource"/>
      </sequence>
      <attribute name="type" type="NMTOKEN" use="required"/>
    </complexType>
  </element>
  <element name="AuthorityURL">
    <complexType>
      <sequence>
        <element ref="wms:OnlineResource"/>
      </sequence>
      <attribute name="name" type="NMTOKEN" use="required"/>
    </complexType>
  </element>
  <element name="Identifier">
    <complexType>
      <simpleContent>
        <extension base="string">
          <attribute name="authority" type="string" use="required"/>
        </extension>
      </simpleContent>
    </complexType>
  </element>
  <element name="DataURL">
    <complexType>
      <sequence>
        <element ref="wms:Format"/>
        <element ref="wms:OnlineResource"/>
      </sequence>
    </complexType>
  </element>

```

```

<element name="FeatureListURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="Style">
  <complexType>
    <sequence>
      <element ref="wms:Name"/>
      <element ref="wms:Title"/>
      <element ref="wms:Abstract" minOccurs="0"/>
      <element ref="wms:LegendURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:StyleSheetURL" minOccurs="0"/>
      <element ref="wms:StyleURL" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="LegendURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
      <element ref="wms:OnlineResource"/>
    </sequence>
    <attribute name="width" type="positiveInteger"/>
    <attribute name="height" type="positiveInteger"/>
  </complexType>
</element>
<element name="StyleSheetURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="StyleURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="MinScaleDenominator" type="double"/>
<element name="MaxScaleDenominator" type="double"/>
<simpleType name="longitudeType">
  <restriction base="double">

```

```
<minInclusive value="-180"/>
<maxInclusive value="180"/>
</restriction>
</simpleType>
<simpleType name="latitudeType">
  <restriction base="double">
    <minInclusive value="-90"/>
    <maxInclusive value="90"/>
  </restriction>
</simpleType>
</schema>
```

4.4.1.3.2. Protocol Requirements

```
= "Body" element="wms:DropStoredQuery"/>
</wsdl:message>
<wsdl:portType name="wms">
  <wsdl:operation name="wms.getCapabilities">
    <wsdl:input message="wms-req:GetCapabilitiesRequest"/>
    <wsdl:output message="wms-resp:GetCapabilitiesResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.describeFeatureType">
    <wsdl:input message="wms-req:DescribeFeatureTypeRequest"/>
    <wsdl:output message="wms-resp:DescribeFeatureTypeResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.getPropertyValue">
    <wsdl:input message="wms-req:GetPropertyValueRequest"/>
    <wsdl:output message="wms-resp:GetPropertyValueResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.getFeature">
    <wsdl:input message="wms-req:GetFeatureRequest"/>
    <wsdl:output message="wms-resp:GetFeatureResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.getFeatureWithLock">
    <wsdl:input message="wms-req:GetFeatureWithLockRequest"/>
    <wsdl:output message="wms-resp:GetFeatureWithLockResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.lockFeature">
    <wsdl:input message="wms-req:LockFeatureRequest"/>
```

```

        <wsdl:output message="wms-resp:LockFeatureResponse"/>
        <wsdl:fault name="ServiceExceptionReport"
            message="wms-resp:ServiceExceptionReport"/>
    </wsdl:operation>
    <wsdl:operation name="wms.transaction">
        <wsdl:input message="wms-req:TransactionRequest"/>
        <wsdl:output message="wms-resp:TransactionResponse"/>
        <wsdl:fault name="ServiceExceptionReport"
            message="wms-resp:ServiceExceptionReport"/>
    </wsdl:operation>
    <wsdl:operation name="wms.listStoredQueries">
        <wsdl:input message="wms-req:ListStoredQueriesRequest"/>
        <wsdl:output message="wms-resp:ListStoredQueriesResponse"/>
        <wsdl:fault name="ServiceExceptionReport"
            message="wms-resp:ServiceExceptionReport"/>
    </wsdl:operation>
    <wsdl:operation name="wms.describeStoredQueries">
        <wsdl:input message="wms-req:DescribeStoredQueriesRequest"/>
        <wsdl:output message="wms-resp:DescribeStoredQueriesResponse"/>
        <wsdl:fault name="ServiceExceptionReport"
            message="wms-resp:ServiceExceptionReport"/>
    </wsdl:operation>
    <wsdl:operation name="wms.createStoredQuery">
        <wsdl:input message="wms-req:CreateStoredQueryRequest"/>
        <wsdl:output message="wms-resp:CreateStoredQueryResponse"/>
        <wsdl:fault name="ServiceExceptionReport"
            message="wms-resp:ServiceExceptionReport"/>
    </wsdl:operation>
    <wsdl:operation name="wms.dropStoredQuery">
        <wsdl:input message="wms-req:DropStoredQueryRequest"/>
        <wsdl:output message="wms-resp:DropStoredQueryResponse"/>
        <wsdl:fault name="ServiceExceptionReport"
            message="wms-resp:ServiceExceptionReport"/>
    </wsdl:operation>
</wsdl:portType>
</wsdl:definitions>

```

4.4.1.4. Send Map Message

4.4.1.4.1. Message Semantics

```

<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://www.opengis.net/wms" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:wms="http://www.opengis.net/wms" xmlns="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified" version="1.3.0.2">

```

```
<import namespace="http://www.w3.org/1999/xlink"
schemaLocation="http://www.w3.org/1999/xlink.xsd"/>
<element name="WMS_Capabilities">
  <complexType>
    <sequence>
      <element ref="wms:Service"/>
      <element ref="wms:Capability"/>
    </sequence>
    <attribute name="version" type="string" fixed="1.3.0"/>
    <attribute name="updateSequence" type="string"/>
  </complexType>
</element>
<element name="Name" type="string"/>
<element name="Title" type="string"/>
<element name="Abstract" type="string"/>
<element name="KeywordList">
  <complexType>
    <sequence>
      <element ref="wms:Keyword" minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
</element>
<element name="Keyword">
  <complexType>
    <simpleContent>
      <extension base="string">
        <attribute name="vocabulary" type="string"/>
      </extension>
    </simpleContent>
  </complexType>
</element>
<element name="OnlineResource">
  <complexType>
    <attributeGroup ref="xlink:simpleAttrs"/>
  </complexType>
</element>
<element name="Format" type="string"/>
<element name="Service">
  <complexType>
    <sequence>
      <element name="Name">
        <simpleType>
          <restriction base="string">
            <enumeration value="WMS"/>
          </restriction>
        </simpleType>
      </element>
      <element ref="wms:Title"/>
      <element ref="wms:Abstract" minOccurs="0"/>
      <element ref="wms:KeywordList" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
```

```
<element ref="wms:OnlineResource"/>
<element ref="wms:ContactInformation" minOccurs="0"/>
<element ref="wms:Fees" minOccurs="0"/>
<element ref="wms:AccessConstraints" minOccurs="0"/>
<element ref="wms:LayerLimit" minOccurs="0"/>
<element ref="wms:MaxWidth" minOccurs="0"/>
<element ref="wms:MaxHeight" minOccurs="0"/>
</sequence>
</complexType>
</element>
<element name="ContactInformation">
  <complexType>
    <sequence>
      <element ref="wms:ContactPersonPrimary" minOccurs="0"/>
      <element ref="wms:ContactPosition" minOccurs="0"/>
      <element ref="wms:ContactAddress" minOccurs="0"/>
      <element ref="wms:ContactVoiceTelephone" minOccurs="0"/>
      <element ref="wms:ContactFacsimileTelephone" minOccurs="0"/>
      <element ref="wms:ContactElectronicMailAddress" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="ContactPersonPrimary">
  <complexType>
    <sequence>
      <element ref="wms:ContactPerson"/>
      <element ref="wms:ContactOrganization"/>
    </sequence>
  </complexType>
</element>
<element name="ContactPerson" type="string"/>
<element name="ContactOrganization" type="string"/>
<element name="ContactPosition" type="string"/>
<element name="ContactAddress">
  <complexType>
    <sequence>
      <element ref="wms:AddressType"/>
      <element ref="wms:Address"/>
      <element ref="wms:City"/>
      <element ref="wms:StateOrProvince"/>
      <element ref="wms:PostCode"/>
      <element ref="wms:Country"/>
    </sequence>
  </complexType>
</element>
<element name="AddressType" type="string"/>
<element name="Address" type="string"/>
<element name="City" type="string"/>
<element name="StateOrProvince" type="string"/>
<element name="PostCode" type="string"/>
```



```

<element name="Country" type="string"/>
<element name="ContactVoiceTelephone" type="string"/>
<element name="ContactFacsimileTelephone" type="string"/>
<element name="ContactElectronicMailAddress" type="string"/>
<element name="Fees" type="string"/>
<element name="AccessConstraints" type="string"/>
<element name="LayerLimit" type="positiveInteger"/>
<element name="MaxWidth" type="positiveInteger"/>
<element name="MaxHeight" type="positiveInteger"/>
<element name="Capability">
  <complexType>
    <sequence>
      <element ref="wms:Request"/>
      <element ref="wms:Exception"/>
      <element ref="wms:_ExtendedCapabilities" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Layer" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="Request">
  <complexType>
    <sequence>
      <element ref="wms:GetCapabilities"/>
      <element ref="wms:GetMap"/>
      <element ref="wms:GetFeatureInfo" minOccurs="0"/>
      <element ref="wms:_ExtendedOperation" minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
</element>
<element name="GetCapabilities" type="wms:OperationType"/>
<element name="GetMap" type="wms:OperationType"/>
<element name="GetFeatureInfo" type="wms:OperationType"/>
<element name="_ExtendedOperation" type="wms:OperationType" abstract="true"/>
<complexType name="OperationType">
  <sequence>
    <element ref="wms:Format" maxOccurs="unbounded"/>
    <element ref="wms:DCPType" maxOccurs="unbounded"/>
  </sequence>
</complexType>
<element name="DCPType">
  <complexType>
    <sequence>
      <element ref="wms:HTTP"/>
    </sequence>
  </complexType>
</element>
<element name="HTTP">
  <complexType>
    <sequence>
      <element ref="wms:Get"/>

```

```
<element ref="wms:Post" minOccurs="0"/>
</sequence>
</complexType>
</element>
<element name="Get">
  <complexType>
    <sequence>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="Post">
  <complexType>
    <sequence>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="Exception">
  <complexType>
    <sequence>
      <element ref="wms:Format" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
</element>
<element name="_ExtendedCapabilities" abstract="true"/>
<element name="Layer">
  <complexType>
    <sequence>
      <element ref="wms:Name" minOccurs="0"/>
      <element ref="wms:Title"/>
      <element ref="wms:Abstract" minOccurs="0"/>
      <element ref="wms:KeywordList" minOccurs="0"/>
      <element ref="wms:CRS" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:EX_GeographicBoundingBox" minOccurs="0"/>
      <element ref="wms:BoundingBox" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Dimension" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Attribution" minOccurs="0"/>
      <element ref="wms:AuthorityURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Identifier" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:MetadataURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:DataURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:FeatureListURL" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:Style" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="wms:MinScaleDenominator" minOccurs="0"/>
      <element ref="wms:MaxScaleDenominator" minOccurs="0"/>
      <element ref="wms:Layer" minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
    <attribute name="queryable" type="boolean" default="0"/>
    <attribute name="cascaded" type="nonNegativeInteger"/>
  </complexType>
</element>
```

```
<attribute name="opaque" type="boolean" default="0"/>
<attribute name="noSubsets" type="boolean" default="0"/>
<attribute name="fixedWidth" type="nonNegativeInteger"/>
<attribute name="fixedHeight" type="nonNegativeInteger"/>
</complexType>
</element>
<element name="CRS" type="string"/>
<element name="EX_GeographicBoundingBox">
  <complexType>
    <sequence>
      <element name="westBoundLongitude" type="wms:longitudeType"/>
      <element name="eastBoundLongitude" type="wms:longitudeType"/>
      <element name="southBoundLatitude" type="wms:latitudeType"/>
      <element name="northBoundLatitude" type="wms:latitudeType"/>
    </sequence>
  </complexType>
</element>
<element name="BoundingBox">
  <complexType>
    <attribute name="CRS" type="string" use="required"/>
    <attribute name="minx" type="double" use="required"/>
    <attribute name="miny" type="double" use="required"/>
    <attribute name="maxx" type="double" use="required"/>
    <attribute name="maxy" type="double" use="required"/>
    <attribute name="resx" type="double"/>
    <attribute name="resy" type="double"/>
  </complexType>
</element>
<element name="Dimension">
  <complexType>
    <simpleContent>
      <extension base="string">
        <attribute name="name" type="string" use="required"/>
        <attribute name="units" type="string" use="required"/>
        <attribute name="unitSymbol" type="string"/>
        <attribute name="default" type="string"/>
        <attribute name="multipleValues" type="boolean"/>
        <attribute name="nearestValue" type="boolean"/>
        <attribute name="current" type="boolean"/>
      </extension>
    </simpleContent>
  </complexType>
</element>
<element name="Attribution">
  <complexType>
    <sequence>
      <element ref="wms:Title" minOccurs="0"/>
      <element ref="wms:OnlineResource" minOccurs="0"/>
      <element ref="wms:LogoURL" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
```

```
</complexType>
</element>
<element name="LogoURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
      <element ref="wms:OnlineResource"/>
    </sequence>
    <attribute name="width" type="positiveInteger"/>
    <attribute name="height" type="positiveInteger"/>
  </complexType>
</element>
<element name="MetadataURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
      <element ref="wms:OnlineResource"/>
    </sequence>
    <attribute name="type" type="NMTOKEN" use="required"/>
  </complexType>
</element>
<element name="AuthorityURL">
  <complexType>
    <sequence>
      <element ref="wms:OnlineResource"/>
    </sequence>
    <attribute name="name" type="NMTOKEN" use="required"/>
  </complexType>
</element>
<element name="Identifier">
  <complexType>
    <simpleContent>
      <extension base="string">
        <attribute name="authority" type="string" use="required"/>
      </extension>
    </simpleContent>
  </complexType>
</element>
<element name="DataURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
      <element ref="wms:OnlineResource"/>
    </sequence>
  </complexType>
</element>
<element name="FeatureListURL">
  <complexType>
    <sequence>
      <element ref="wms:Format"/>
```

```

        <element ref="wms:OnlineResource"/>
    </sequence>
</complexType>
</element>
<element name="Style">
    <complexType>
        <sequence>
            <element ref="wms:Name"/>
            <element ref="wms:Title"/>
            <element ref="wms:Abstract" minOccurs="0"/>
            <element ref="wms:LegendURL" minOccurs="0" maxOccurs="unbounded"/>
            <element ref="wms:StyleSheetURL" minOccurs="0"/>
            <element ref="wms:StyleURL" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="LegendURL">
    <complexType>
        <sequence>
            <element ref="wms:Format"/>
            <element ref="wms:OnlineResource"/>
        </sequence>
        <attribute name="width" type="positiveInteger"/>
        <attribute name="height" type="positiveInteger"/>
    </complexType>
</element>
<element name="StyleSheetURL">
    <complexType>
        <sequence>
            <element ref="wms:Format"/>
            <element ref="wms:OnlineResource"/>
        </sequence>
    </complexType>
</element>
<element name="StyleURL">
    <complexType>
        <sequence>
            <element ref="wms:Format"/>
            <element ref="wms:OnlineResource"/>
        </sequence>
    </complexType>
</element>
<element name="MinScaleDenominator" type="double"/>
<element name="MaxScaleDenominator" type="double"/>
<simpleType name="longitudeType">
    <restriction base="double">
        <minInclusive value="-180"/>
        <maxInclusive value="180"/>
    </restriction>
</simpleType>

```

```
<simpleType name="latitudeType">
  <restriction base="double">
    <minInclusive value="-90"/>
    <maxInclusive value="90"/>
  </restriction>
</simpleType>
</schema>
```

4.4.1.4.2. Protocol Requirements

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<wsdl:definitions
  targetNamespace="http://www.opengis.net/wms/requests/2.0"
  xmlns:wms="http://www.opengis.net/wms/2.0"
  xmlns:ows="http://www.opengis.net/ows/1.1"
  xmlns:wms-req="http://www.opengis.net/wms/requests/2.0"
  xmlns:wms-resp="http://www.opengis.net/wms/responses/2.0"
  xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <wsdl:import namespace="http://www.opengis.net/wms/responses/2.0"
    location="./wms-responses.wsdl"/>
  <wsdl:types>
    <xsd:schema targetNamespace="http://www.opengis.net/wms/2.0"
      xmlns:wms="http://www.opengis.net/wms/2.0"
      xmlns:gml="http://www.opengis.net/gml/3.2"
      xmlns:ogc="http://www.opengis.net/ogc/1.1"
      xmlns:xsd="http://www.w3.org/2001/XMLSchema"
      elementFormDefault="qualified" version="1.1.0">
      <xsd:include schemaLocation="../wms.xsd"/>
    </xsd:schema>
  </wsdl:types>
  <wsdl:message name="GetCapabilitiesRequest">
    <wsdl:part name="Body" element="wms:GetCapabilities"/>
  </wsdl:message>
  <wsdl:message name="DescribeFeatureTypeRequest">
    <wsdl:part name="Body" element="wms:DescribeFeatureType"/>
  </wsdl:message>
  <wsdl:message name="GetPropertyValueRequest">
    <wsdl:part name="Body" element="wms:GetPropertyValue"/>
  </wsdl:message>
  <wsdl:message name="GetFeatureRequest">
    <wsdl:part name="Body" element="wms:GetFeature"/>
  </wsdl:message>
  <wsdl:message name="GetFeatureWithLockRequest">
    <wsdl:part name="Body" element="wms:GetFeatureWithLock"/>
```

```
</wsdl:message>
<wsdl:message name="LockFeatureRequest">
  <wsdl:part name="Body" element="wms:LockFeature"/>
</wsdl:message>
<wsdl:message name="TransactionRequest">
  <wsdl:part name="Body" element="wms:Transaction"/>
</wsdl:message>
<wsdl:message name="ListStoredQueriesRequest">
  <wsdl:part name="Body" element="wms:ListStoredQueries"/>
</wsdl:message>
<wsdl:message name="DescribeStoredQueriesRequest">
  <wsdl:part name="Body" element="wms:DescribeStoredQueries"/>
</wsdl:message>
<wsdl:message name="CreateStoredQueryRequest">
  <wsdl:part name="Body" element="wms:CreateStoredQuery"/>
</wsdl:message>
<wsdl:message name="DropStoredQueryRequest">
  <wsdl:part name="Body" element="wms:DropStoredQuery"/>
</wsdl:message>
<wsdl:portType name="wms">
  <wsdl:operation name="wms.getCapabilities">
    <wsdl:input message="wms-req:GetCapabilitiesRequest"/>
    <wsdl:output message="wms-resp:GetCapabilitiesResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.describeFeatureType">
    <wsdl:input message="wms-req:DescribeFeatureTypeRequest"/>
    <wsdl:output message="wms-resp:DescribeFeatureTypeResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.getPropertyValue">
    <wsdl:input message="wms-req:GetPropertyValueRequest"/>
    <wsdl:output message="wms-resp:GetPropertyValueResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.getFeature">
    <wsdl:input message="wms-req:GetFeatureRequest"/>
    <wsdl:output message="wms-resp:GetFeatureResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wms.getFeatureWithLock">
    <wsdl:input message="wms-req:GetFeatureWithLockRequest"/>
    <wsdl:output message="wms-resp:GetFeatureWithLockResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wms-resp:ServiceExceptionReport"/>
  </wsdl:operation>
```

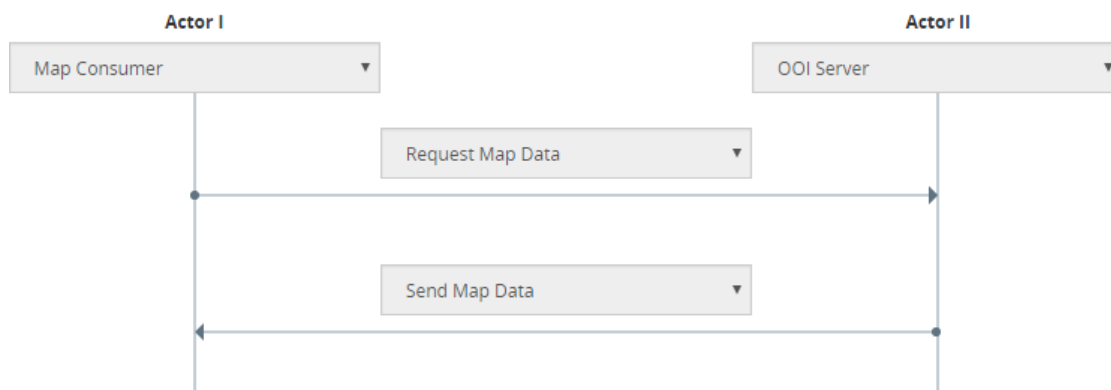
```
<wsdl:operation name="wms.lockFeature">
  <wsdl:input message="wms-req:LockFeatureRequest"/>
  <wsdl:output message="wms-resp:LockFeatureResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wms-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wms.transaction">
  <wsdl:input message="wms-req:TransactionRequest"/>
  <wsdl:output message="wms-resp:TransactionResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wms-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wms.listStoredQueries">
  <wsdl:input message="wms-req:ListStoredQueriesRequest"/>
  <wsdl:output message="wms-resp:ListStoredQueriesResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wms-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wms.describeStoredQueries">
  <wsdl:input message="wms-req:DescribeStoredQueriesRequest"/>
  <wsdl:output message="wms-resp:DescribeStoredQueriesResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wms-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wms.createStoredQuery">
  <wsdl:input message="wms-req:CreateStoredQueryRequest"/>
  <wsdl:output message="wms-resp:CreateStoredQueryResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wms-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wms.dropStoredQuery">
  <wsdl:input message="wms-req:DropStoredQueryRequest"/>
  <wsdl:output message="wms-resp:DropStoredQueryResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wms-resp:ServiceExceptionReport"/>
</wsdl:operation>
</wsdl:portType>
</wsdl:definitions>
```

4.4.2. Request Map Data

4.4.2.1. Description

Categories	Description and Values
Identifier	1457357768880
Description	The Map Consumer requests data by giving a set of parameters. The OOI Server responds by providing the available data.
Actors	Map Consumer, OOI Server
Pre-conditions	The Map Consumer and the OOI Server have already identified each other.
Post-conditions	The Map Consumer has received either data or a description/message of why they are not available.

4.4.2.2. Interaction Diagram



4.4.2.3. Request Map Data Message

4.4.2.3.1. Message Semantics

```

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.opengis.net/wfs/2.0"
  xmlns:wfs="http://www.opengis.net/wfs/2.0"
  xmlns:fes="http://www.opengis.net/fes/2.0"
  xmlns:ows="http://www.opengis.net/ows/1.1"

```

```
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
elementFormDefault="qualified" version="2.0.2">
  <xsd:import namespace="http://www.w3.org/XML/1998/namespace"
schemaLocation="http://www.w3.org/2001/xml.xsd"/>
  <xsd:import namespace="http://www.w3.org/1999/xlink"
schemaLocation="http://www.w3.org/1999/xlink.xsd"/>
  <xsd:import namespace="http://www.opengis.net/ows/1.1"
schemaLocation="http://schemas.opengis.net/ows/1.1.0/owsAll.xsd"/>
  <xsd:import namespace="http://www.opengis.net/fes/2.0"
schemaLocation="http://schemas.opengis.net/filter/2.0/filterAll.xsd"/>
  <xsd:complexType name="BaseRequestType" abstract="true">
    <xsd:attribute name="service" type="xsd:string" use="required" fixed="WFS"/>
    <xsd:attribute name="version" type="wfs:VersionStringType" use="required"/>
    <xsd:attribute name="handle" type="xsd:string"/>
  </xsd:complexType>
  <xsd:simpleType name="VersionStringType">
    <xsd:restriction base="xsd:string">
      <xsd:pattern value="2\.0\.\d+"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:attributeGroup name="StandardPresentationParameters">
    <xsd:attribute name="startIndex" type="xsd:nonNegativeInteger" default="0"/>
    <xsd:attribute name="count" type="xsd:nonNegativeInteger"/>
    <xsd:attribute name="resultType" type="wfs:ResultTypeType" default="results"/>
    <xsd:attribute name="outputFormat" type="xsd:string" default="application/gml+xml;
version=3.2"/>
  </xsd:attributeGroup>
  <xsd:simpleType name="ResultTypeType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="results"/>
      <xsd:enumeration value="hits"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:attributeGroup name="StandardResolveParameters">
    <xsd:attribute name="resolve" type="wfs:ResolveValueType" default="none"/>
    <xsd:attribute name="resolveDepth" type="wfs:positiveIntegerWithStar" default="*/>
    <xsd:attribute name="resolveTimeout" type="xsd:positiveInteger" default="300"/>
  </xsd:attributeGroup>
  <xsd:simpleType name="ResolveValueType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="local"/>
      <xsd:enumeration value="remote"/>
      <xsd:enumeration value="all"/>
      <xsd:enumeration value="none"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:simpleType name="positiveIntegerWithStar">
    <xsd:union memberTypes="xsd:positiveInteger wfs:StarStringType"/>
  </xsd:simpleType>
  <xsd:simpleType name="StarStringType">
```

```
<xsd:restriction base="xsd:string">
  <xsd:enumeration value="*" />
</xsd:restriction>
</xsd:simpleType>
<xsd:attributeGroup name="StandardInputParameters">
  <xsd:attribute name="inputFormat" type="xsd:string" default="application/gml+xml;
version=3.2" />
  <xsd:attribute name="srsName" type="xsd:anyURI" />
</xsd:attributeGroup>
<xsd:attributeGroup name="StandardResponseParameters">
  <xsd:attribute name="timeStamp" type="xsd:dateTime" use="required" />
  <xsd:attribute name="numberMatched" type="wfs:nonNegativeIntegerOrUnknown"
use="required" />
  <xsd:attribute name="numberReturned" type="xsd:nonNegativeInteger" use="required" />
  <xsd:attribute name="next" type="xsd:anyURI" />
  <xsd:attribute name="previous" type="xsd:anyURI" />
</xsd:attributeGroup>
<xsd:simpleType name="nonNegativeIntegerOrUnknown">
  <xsd:union>
    <xsd:simpleType>
      <xsd:restriction base="xsd:string">
        <xsd:enumeration value="unknown" />
      </xsd:restriction>
    </xsd:simpleType>
    <xsd:simpleType>
      <xsd:restriction base="xsd:nonNegativeInteger" />
    </xsd:simpleType>
  </xsd:union>
</xsd:simpleType>
<xsd:element name="Title">
  <xsd:complexType>
    <xsd:simpleContent>
      <xsd:extension base="xsd:string">
        <xsd:attribute ref="xml:lang" default="en" />
      </xsd:extension>
    </xsd:simpleContent>
  </xsd:complexType>
</xsd:element>
<xsd:element name="Abstract">
  <xsd:complexType>
    <xsd:simpleContent>
      <xsd:extension base="xsd:string">
        <xsd:attribute ref="xml:lang" default="en" />
      </xsd:extension>
    </xsd:simpleContent>
  </xsd:complexType>
</xsd:element>
<xsd:element name="Query" type="wfs:QueryType"
  substitutionGroup="fes:AbstractAdhocQueryExpression" />
<xsd:complexType name="QueryType">
```

```

<xsd:complexContent>
  <xsd:extension base="fes:AbstractAdhocQueryExpressionType">
    <xsd:attribute name="srsName" type="xsd:anyURI"/>
    <xsd:attribute name="featureVersion" type="xsd:string"/>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:element name="StoredQuery" type="wfs:StoredQueryType"
  substitutionGroup="fes:AbstractQueryExpression"/>
<xsd:complexType name="StoredQueryType">
  <xsd:complexContent>
    <xsd:extension base="fes:AbstractQueryExpressionType">
      <xsd:sequence>
        <xsd:element name="Parameter" type="wfs:ParameterType"
          minOccurs="0" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="ParameterType" mixed="true">
  <xsd:sequence>
    <xsd:any namespace="##other" processContents="lax" minOccurs="0"
      maxOccurs="1"/>
  </xsd:sequence>
  <xsd:attribute name="name" type="xsd:string" use="required"/>
</xsd:complexType>
<xsd:element name="GetCapabilities" type="wfs:GetCapabilitiesType"/>
<xsd:complexType name="GetCapabilitiesType">
  <xsd:complexContent>
    <xsd:extension base="ows:GetCapabilitiesType">
      <xsd:attribute name="service" type="ows:ServiceType" use="required"
        fixed="WFS"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="WFS_Capabilities" type="wfs:WFS_CapabilitiesType"/>
<xsd:complexType name="WFS_CapabilitiesType">
  <xsd:complexContent>
    <xsd:extension base="ows:CapabilitiesBaseType">
      <xsd:sequence>
        <xsd:element name="WSDL" minOccurs="0">
          <xsd:complexType>
            <xsd:complexContent>
              <xsd:restriction base="xsd:anyType">
                <xsd:attributeGroup ref="xlink:simpleAttrs"/>
              </xsd:restriction>
            </xsd:complexContent>
          </xsd:complexType>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```

```
<xsd:element ref="wfs:FeatureTypeList" minOccurs="0"/>
<xsd:element ref="fes:Filter_Capabilities" minOccurs="0"/>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:element name="FeatureTypeList" type="wfs:FeatureTypeListType"/>
<xsd:complexType name="FeatureTypeListType">
  <xsd:sequence>
    <xsd:element name="FeatureType" type="wfs:FeatureTypeType"
      maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FeatureTypeType">
  <xsd:sequence>
    <xsd:element name="Name" type="xsd:QName"/>
    <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="wfs:Abstract" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="ows:Keywords" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:choice>
      <xsd:sequence>
        <xsd:element name="DefaultCRS" type="xsd:anyURI"/>
        <xsd:element name="OtherCRS" type="xsd:anyURI" minOccurs="0"
          maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:element name="NoCRS">
        <xsd:complexType/>
      </xsd:element>
    </xsd:choice>
    <xsd:element name="OutputFormats" type="wfs:OutputFormatListType"
      minOccurs="0"/>
    <xsd:element ref="ows:WGS84BoundingBox" minOccurs="0"
      maxOccurs="unbounded"/>
    <xsd:element name="MetadataURL" type="wfs:MetadataURLType"
      minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="ExtendedDescription"
      type="wfs:ExtendedDescriptionType" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="OutputFormatListType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element name="Format" type="xsd:string"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="MetadataURLType">
  <xsd:attributeGroup ref="xlink:simpleAttrs"/>
  <xsd:attribute name="about" type="xsd:anyURI"/>
</xsd:complexType>
<xsd:complexType name="ExtendedDescriptionType">
  <xsd:sequence>
```

```

        <xsd:element ref="wfs:Element" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="Element" type="wfs:ElementType"/>
<xsd:complexType name="ElementType">
    <xsd:sequence>
        <xsd:element ref="ows:Metadata"/>
        <xsd:element ref="wfs:ValueList"/>
    </xsd:sequence>
    <xsd:attribute name="name" type="xsd:string" use="required"/>
    <xsd:attribute name="type" type="xsd:QName" use="required"/>
</xsd:complexType>
<xsd:element name="ValueList" type="wfs:ValueListType"/>
<xsd:complexType name="ValueListType">
    <xsd:sequence maxOccurs="unbounded">
        <xsd:element ref="wfs:Value"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="Value" type="xsd:anyType"/>
<xsd:element name="DescribeFeatureType" type="wfs:DescribeFeatureTypeType"/>
<xsd:complexType name="DescribeFeatureTypeType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>
                <xsd:element name="TypeName" type="xsd:QName" minOccurs="0"
                    maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attribute name="outputFormat" type="xsd:string"
                default="application/gml+xml; version=3.2"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="GetPropertyValue" type="wfs:GetPropertyValueType"/>
<xsd:complexType name="GetPropertyValueType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>
                <xsd:element ref="fes:AbstractQueryExpression"/>
            </xsd:sequence>
            <xsd:attribute name="valueReference" type="xsd:string"
                use="required"/>
            <xsd:attribute name="resolvePath" type="xsd:string"/>
            <xsd:attributeGroup ref="wfs:StandardPresentationParameters"/>
            <xsd:attributeGroup ref="wfs:StandardResolveParameters"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="ValueCollection" type="wfs:ValueCollectionType"/>
<xsd:complexType name="ValueCollectionType">
    <xsd:sequence>

```

```

        <xsd:element ref="wfs:member" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="wfs:additionalValues" minOccurs="0"/>
        <xsd:element ref="wfs:truncatedResponse" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attributeGroup ref="wfs:StandardResponseParameters"/>
</xsd:complexType>
<xsd:element name="member" type="wfs:MemberPropertyType"/>
<xsd:complexType name="MemberPropertyType" mixed="true">
    <xsd:choice minOccurs="0">
        <xsd:any processContents="lax" namespace="##other"/>
        <xsd:element ref="wfs:Tuple"/>
        <xsd:element ref="wfs:SimpleFeatureCollection"/>
    </xsd:choice>
    <xsd:attribute name="state" type="wfs:StateValueType"/>
    <xsd:attributeGroup ref="xlink:simpleAttrs"/>
</xsd:complexType>
<xsd:element name="Tuple" type="wfs:TupleType"/>
<xsd:complexType name="TupleType">
    <xsd:sequence>
        <xsd:element ref="wfs:member" minOccurs="2" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="additionalValues">
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="wfs:ValueCollection"/>
            <xsd:element ref="wfs:SimpleFeatureCollection"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="truncatedResponse">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ows:ExceptionReport"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:simpleType name="StateValueType">
    <xsd:union>
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:enumeration value="valid"/>
                <xsd:enumeration value="superseded"/>
                <xsd:enumeration value="retired"/>
                <xsd:enumeration value="future"/>
            </xsd:restriction>
        </xsd:simpleType>
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:pattern value="other:\w{2,}"/>
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:union>
</xsd:simpleType>

```

```

        </xsd:restriction>
    </xsd:simpleType>
</xsd:union>
</xsd:simpleType>
<xsd:element name="GetFeature" type="wfs:GetFeatureType"/>
<xsd:complexType name="GetFeatureType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>
                <xsd:element ref="fes:AbstractQueryExpression"
                    maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attributeGroup ref="wfs:StandardPresentationParameters"/>
            <xsd:attributeGroup ref="wfs:StandardResolveParameters"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="GetFeatureWithLock" type="wfs:GetFeatureWithLockType"/>
<xsd:complexType name="GetFeatureWithLockType">
    <xsd:complexContent>
        <xsd:extension base="wfs:GetFeatureType">
            <xsd:attribute name="expiry" type="xsd:positiveInteger"
                default="300"/>
            <xsd:attribute name="lockAction" type="wfs:AllSomeType"
                default="ALL"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="PropertyName"
    substitutionGroup="fes:AbstractProjectionClause">
    <xsd:complexType>
        <xsd:simpleContent>
            <xsd:extension base="xsd:QName">
                <xsd:attributeGroup ref="wfs:StandardResolveParameters"/>
                <xsd:attribute name="resolvePath" type="xsd:string"/>
            </xsd:extension>
        </xsd:simpleContent>
    </xsd:complexType>
</xsd:element>
<xsd:element name="FeatureCollection" type="wfs:FeatureCollectionType"
    substitutionGroup="wfs:SimpleFeatureCollection"/>
<xsd:complexType name="FeatureCollectionType">
    <xsd:complexContent>
        <xsd:extension base="wfs:SimpleFeatureCollectionType">
            <xsd:sequence>
                <xsd:element ref="wfs:additionalObjects" minOccurs="0"/>
                <xsd:element ref="wfs:truncatedResponse" minOccurs="0"/>
            </xsd:sequence>
            <xsd:attributeGroup ref="wfs:StandardResponseParameters"/>
            <xsd:attribute name="lockId" type="xsd:string"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

```



```

        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="additionalObjects">
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="wfs:ValueCollection"/>
            <xsd:element ref="wfs:SimpleFeatureCollection"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SimpleFeatureCollection" type="wfs:SimpleFeatureCollectionType"/>
<xsd:complexType name="SimpleFeatureCollectionType">
    <xsd:sequence>
        <xsd:element ref="wfs:boundedBy" minOccurs="0"/>
        <xsd:element ref="wfs:member" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="boundedBy" type="wfs:EnvelopePropertyType"/>
<xsd:complexType name="EnvelopePropertyType">
    <xsd:sequence>
        <xsd:any namespace="##other"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="ListStoredQueries" type="wfs:ListStoredQueriesType"/>
<xsd:complexType name="ListStoredQueriesType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType"/>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="ListStoredQueriesResponse" type="wfs:ListStoredQueriesResponseType"/>
<xsd:complexType name="ListStoredQueriesResponseType">
    <xsd:sequence>
        <xsd:element name="StoredQuery" type="wfs:StoredQueryListItemType" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="StoredQueryListItemType">
    <xsd:sequence>
        <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element name="ReturnFeatureType" type="xsd:QName" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
</xsd:complexType>
<xsd:element name="DescribeStoredQueries" type="wfs:DescribeStoredQueriesType"/>
<xsd:complexType name="DescribeStoredQueriesType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>

```

```

        <xsd:element name="StoredQueryId" type="xsd:anyURI" minOccurs="0"
            maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:element name="DescribeStoredQueriesResponse"
type="wfs:DescribeStoredQueriesResponseType"/>
<xsd:complexType name="DescribeStoredQueriesResponseType">
    <xsd:sequence>
        <xsd:element name="StoredQueryDescription" type="wfs:StoredQueryDescriptionType"
minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="StoredQueryDescriptionType">
    <xsd:sequence>
        <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="wfs:Abstract" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="ows:Metadata" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element name="Parameter" type="wfs:ParameterExpressionType" minOccurs="0"
maxOccurs="unbounded"/>
        <xsd:element name="QueryExpressionText" type="wfs:QueryExpressionTextType"
minOccurs="1" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
</xsd:complexType>
<xsd:element name="CreateStoredQuery" type="wfs:CreateStoredQueryType"/>
<xsd:complexType name="CreateStoredQueryType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>
                <xsd:element name="StoredQueryDefinition" type="wfs:StoredQueryDescriptionType"
minOccurs="0" maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="ParameterExpressionType">
    <xsd:sequence>
        <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="wfs:Abstract" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="ows:Metadata" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="name" type="xsd:string" use="required"/>
    <xsd:attribute name="type" type="xsd:QName" use="required"/>
</xsd:complexType>
<xsd:complexType name="QueryExpressionTextType" mixed="true">
    <xsd:choice>
        <xsd:any namespace="##other" processContents="skip" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:choice>

```

```

        <xsd:any namespace="##targetNamespace" processContents="skip" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:choice>
    <xsd:attribute name="returnFeatureTypes" type="wfs:ReturnFeatureTypesListType"
use="required"/>
    <xsd:attribute name="language" type="xsd:anyURI" use="required"/>
    <xsd:attribute name="isPrivate" type="xsd:boolean" default="false"/>
</xsd:complexType>
<xsd:simpleType name="ReturnFeatureTypesListType">
    <xsd:list itemType="xsd:QName"/>
</xsd:simpleType>
<xsd:element name="CreateStoredQueryResponse"
    type="wfs:CreateStoredQueryResponseType"/>
<xsd:complexType name="ExecutionStatusType">
    <xsd:attribute name="status" type="xsd:string" fixed="OK"/>
</xsd:complexType>
<xsd:complexType name="CreateStoredQueryResponseType">
    <xsd:complexContent>
        <xsd:extension base="wfs:ExecutionStatusType"/>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="DropStoredQuery">
    <xsd:complexType>
        <xsd:complexContent>
            <xsd:extension base="wfs:BaseRequestType">
                <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DropStoredQueryResponse" type="wfs:ExecutionStatusType"/>
<xsd:element name="LockFeature" type="wfs:LockFeatureType"/>
<xsd:complexType name="LockFeatureType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>
                <xsd:element ref="fes:AbstractQueryExpression" minOccurs="0"
maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attribute name="lockId" type="xsd:string"/>
            <xsd:attribute name="expiry" type="xsd:positiveInteger" default="300"/>
            <xsd:attribute name="lockAction" type="wfs:AllSomeType" default="ALL"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:simpleType name="AllSomeType">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="ALL"/>
        <xsd:enumeration value="SOME"/>
    </xsd:restriction>

```

```

</xsd:simpleType>
<xsd:element name="LockFeatureResponse" type="wfs:LockFeatureResponseType"/>
<xsd:complexType name="LockFeatureResponseType">
  <xsd:sequence>
    <xsd:element name="FeaturesLocked" type="wfs:FeaturesLockedType" minOccurs="0"/>
    <xsd:element name="FeaturesNotLocked" type="wfs:FeaturesNotLockedType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="lockId" type="xsd:string"/>
</xsd:complexType>
<xsd:complexType name="FeaturesLockedType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element ref="fes:ResourceId"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FeaturesNotLockedType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element ref="fes:ResourceId"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="Transaction" type="wfs:TransactionType"/>
<xsd:complexType name="TransactionType">
  <xsd:complexContent>
    <xsd:extension base="wfs:BaseRequestType">
      <xsd:sequence>
        <xsd:sequence minOccurs="0" maxOccurs="unbounded">
          <xsd:element ref="wfs:AbstractTransactionAction"/>
        </xsd:sequence>
      </xsd:sequence>
      <xsd:attribute name="lockId" type="xsd:string"/>
      <xsd:attribute name="releaseAction" type="wfs:AllSomeType" default="ALL"/>
      <xsd:attribute name="srsName" type="xsd:anyURI"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="AbstractTransactionAction" type="wfs:AbstractTransactionActionType"
abstract="true"/>
<xsd:complexType name="AbstractTransactionActionType" abstract="true">
  <xsd:attribute name="handle" type="xsd:string"/>
</xsd:complexType>
<xsd:element name="Insert" type="wfs:InsertType"
substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="InsertType">
  <xsd:complexContent>
    <xsd:extension base="wfs:AbstractTransactionActionType">
      <xsd:sequence>
        <xsd:any namespace="##other" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attributeGroup ref="wfs:StandardInputParameters"/>
    </xsd:extension>
  </xsd:complexContent>

```

```
</xsd:complexType>
<xsd:element name="Update" type="wfs:UpdateType"
substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="UpdateType">
  <xsd:complexContent>
    <xsd:extension base="wfs:AbstractTransactionActionType">
      <xsd:sequence>
        <xsd:element ref="wfs:Property" maxOccurs="unbounded"/>
        <xsd:element ref="fes:Filter" minOccurs="0"/>
      </xsd:sequence>
      <xsd:attribute name="typeName" type="xsd:QName" use="required"/>
      <xsd:attributeGroup ref="wfs:StandardInputParameters"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="Property" type="wfs:PropertyType"/>
<xsd:complexType name="PropertyType">
  <xsd:sequence>
    <xsd:element name="ValueReference">
      <xsd:complexType>
        <xsd:simpleContent>
          <xsd:extension base="xsd:string">
            <xsd:attribute name="action" type="wfs:UpdateActionType" default="replace"/>
          </xsd:extension>
        </xsd:simpleContent>
      </xsd:complexType>
    </xsd:element>
    <xsd:element name="Value" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="UpdateActionType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="replace"/>
    <xsd:enumeration value="insertBefore"/>
    <xsd:enumeration value="insertAfter"/>
    <xsd:enumeration value="remove"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:element name="Replace" type="wfs:ReplaceType"
substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="ReplaceType">
  <xsd:complexContent>
    <xsd:extension base="wfs:AbstractTransactionActionType">
      <xsd:sequence>
        <xsd:any namespace="##other"/>
        <xsd:element ref="fes:Filter"/>
      </xsd:sequence>
      <xsd:attributeGroup ref="wfs:StandardInputParameters"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

```

</xsd:complexType>
<xsd:element name="Delete" type="wfs:DeleteType"
  substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="DeleteType">
  <xsd:complexContent>
    <xsd:extension base="wfs:AbstractTransactionActionType">
      <xsd:sequence>
        <xsd:element ref="fes:Filter"/>
      </xsd:sequence>
      <xsd:attribute name="typeName" type="xsd:QName" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="Native" type="wfs:NativeType"
  substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="NativeType" mixed="true">
  <xsd:complexContent>
    <xsd:extension base="wfs:AbstractTransactionActionType">
      <xsd:sequence>
        <xsd:any processContents="lax" namespace="##other" minOccurs="0"/>
      </xsd:sequence>
      <xsd:attribute name="vendorId" type="xsd:string" use="required"/>
      <xsd:attribute name="safeToIgnore" type="xsd:boolean" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="TransactionResponse" type="wfs:TransactionResponseType"/>
<xsd:complexType name="TransactionResponseType">
  <xsd:sequence>
    <xsd:element name="TransactionSummary" type="wfs:TransactionSummaryType"/>
    <xsd:element name="InsertResults" type="wfs:ActionResultsType" minOccurs="0"/>
    <xsd:element name="UpdateResults" type="wfs:ActionResultsType" minOccurs="0"/>
    <xsd:element name="ReplaceResults" type="wfs:ActionResultsType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="version" type="wfs:VersionStringType" use="required"/>
</xsd:complexType>
<xsd:complexType name="TransactionSummaryType">
  <xsd:sequence>
    <xsd:element name="totalInserted" type="xsd:nonNegativeInteger" minOccurs="0"/>
    <xsd:element name="totalUpdated" type="xsd:nonNegativeInteger" minOccurs="0"/>
    <xsd:element name="totalReplaced" type="xsd:nonNegativeInteger" minOccurs="0"/>
    <xsd:element name="totalDeleted" type="xsd:nonNegativeInteger" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="ActionResultsType">
  <xsd:sequence>
    <xsd:element name="Feature" type="wfs:CreatedOrModifiedFeatureType"
maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

```

```
<xsd:complexType name="CreatedOrModifiedFeatureType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element ref="fes:ResourceId"/>
  </xsd:sequence>
  <xsd:attribute name="handle" type="xsd:string"/>
</xsd:complexType>
<xsd:complexType name="EmptyType"/>
</xsd:schema>
```

4.4.2.3.2. Protocol Requirements

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<wsdl:definitions
  targetNamespace="http://www.opengis.net/wfs/requests/2.0"
  xmlns:wfs="http://www.opengis.net/wfs/2.0"
  xmlns:ows="http://www.opengis.net/ows/1.1"
  xmlns:wfs-req="http://www.opengis.net/wfs/requests/2.0"
  xmlns:wfs-resp="http://www.opengis.net/wfs/responses/2.0"
  xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <wsdl:import namespace="http://www.opengis.net/wfs/responses/2.0"
    location="./wfs-responses.wsdl"/>
  <wsdl:types>
    <xsd:schema targetNamespace="http://www.opengis.net/wfs/2.0"
      xmlns:wfs="http://www.opengis.net/wfs/2.0"
      xmlns:gml="http://www.opengis.net/gml/3.2"
      xmlns:ogc="http://www.opengis.net/ogc/1.1"
      xmlns:xsd="http://www.w3.org/2001/XMLSchema"
      elementFormDefault="qualified" version="1.1.0">
      <xsd:include schemaLocation="../wfs.xsd"/>
    </xsd:schema>
  </wsdl:types>
  <wsdl:message name="GetCapabilitiesRequest">
    <wsdl:part name="Body" element="wfs:GetCapabilities"/>
  </wsdl:message>
  <wsdl:message name="DescribeFeatureTypeRequest">
    <wsdl:part name="Body" element="wfs:DescribeFeatureType"/>
  </wsdl:message>
  <wsdl:message name="GetPropertyValueRequest">
    <wsdl:part name="Body" element="wfs:GetPropertyValue"/>
  </wsdl:message>
  <wsdl:message name="GetFeatureRequest">
    <wsdl:part name="Body" element="wfs:GetFeature"/>
  </wsdl:message>
  <wsdl:message name="GetFeatureWithLockRequest">
    <wsdl:part name="Body" element="wfs:GetFeatureWithLock"/>
  </wsdl:message>
```

```
<wsdl:message name="LockFeatureRequest">
  <wsdl:part name="Body" element="wfs:LockFeature"/>
</wsdl:message>
<wsdl:message name="TransactionRequest">
  <wsdl:part name="Body" element="wfs:Transaction"/>
</wsdl:message>
<wsdl:message name="ListStoredQueriesRequest">
  <wsdl:part name="Body" element="wfs:ListStoredQueries"/>
</wsdl:message>
<wsdl:message name="DescribeStoredQueriesRequest">
  <wsdl:part name="Body" element="wfs:DescribeStoredQueries"/>
</wsdl:message>
<wsdl:message name="CreateStoredQueryRequest">
  <wsdl:part name="Body" element="wfs:CreateStoredQuery"/>
</wsdl:message>
<wsdl:message name="DropStoredQueryRequest">
  <wsdl:part name="Body" element="wfs:DropStoredQuery"/>
</wsdl:message>
<wsdl:portType name="wfs">
  <wsdl:operation name="wfs.getCapabilities">
    <wsdl:input message="wfs-req:GetCapabilitiesRequest"/>
    <wsdl:output message="wfs-resp:GetCapabilitiesResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.describeFeatureType">
    <wsdl:input message="wfs-req:DescribeFeatureTypeRequest"/>
    <wsdl:output message="wfs-resp:DescribeFeatureTypeResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.getPropertyValue">
    <wsdl:input message="wfs-req:GetPropertyValueRequest"/>
    <wsdl:output message="wfs-resp:GetPropertyValueResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.getFeature">
    <wsdl:input message="wfs-req:GetFeatureRequest"/>
    <wsdl:output message="wfs-resp:GetFeatureResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.getFeatureWithLock">
    <wsdl:input message="wfs-req:GetFeatureWithLockRequest"/>
    <wsdl:output message="wfs-resp:GetFeatureWithLockResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.lockFeature">
```



```
<wsdl:input message="wfs-req:LockFeatureRequest"/>
<wsdl:output message="wfs-resp:LockFeatureResponse"/>
<wsdl:fault name="ServiceExceptionReport"
  message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.transaction">
  <wsdl:input message="wfs-req:TransactionRequest"/>
  <wsdl:output message="wfs-resp:TransactionResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.listStoredQueries">
  <wsdl:input message="wfs-req:ListStoredQueriesRequest"/>
  <wsdl:output message="wfs-resp:ListStoredQueriesResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.describeStoredQueries">
  <wsdl:input message="wfs-req:DescribeStoredQueriesRequest"/>
  <wsdl:output message="wfs-resp:DescribeStoredQueriesResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.createStoredQuery">
  <wsdl:input message="wfs-req:CreateStoredQueryRequest"/>
  <wsdl:output message="wfs-resp:CreateStoredQueryResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.dropStoredQuery">
  <wsdl:input message="wfs-req:DropStoredQueryRequest"/>
  <wsdl:output message="wfs-resp:DropStoredQueryResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
</wsdl:portType>
</wsdl:definitions>
```

4.4.2.4. Send Map Data Message

4.4.2.4.1. Message Semantics

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.opengis.net/wfs/2.0"
```

```
xmlns:wfs="http://www.opengis.net/wfs/2.0"
xmlns:fes="http://www.opengis.net/fes/2.0"
xmlns:ows="http://www.opengis.net/ows/1.1"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
elementFormDefault="qualified" version="2.0.2">
  <xsd:import namespace="http://www.w3.org/XML/1998/namespace"
schemaLocation="http://www.w3.org/2001/xml.xsd"/>
  <xsd:import namespace="http://www.w3.org/1999/xlink"
schemaLocation="http://www.w3.org/1999/xlink.xsd"/>
  <xsd:import namespace="http://www.opengis.net/ows/1.1"
schemaLocation="http://schemas.opengis.net/ows/1.1.0/owsAll.xsd"/>
  <xsd:import namespace="http://www.opengis.net/fes/2.0"
schemaLocation="http://schemas.opengis.net/filter/2.0/filterAll.xsd"/>
  <xsd:complexType name="BaseRequestType" abstract="true">
    <xsd:attribute name="service" type="xsd:string" use="required" fixed="WFS"/>
    <xsd:attribute name="version" type="wfs:VersionStringType" use="required"/>
    <xsd:attribute name="handle" type="xsd:string"/>
  </xsd:complexType>
  <xsd:simpleType name="VersionStringType">
    <xsd:restriction base="xsd:string">
      <xsd:pattern value="2\.0\.\d+"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:attributeGroup name="StandardPresentationParameters">
    <xsd:attribute name="startIndex" type="xsd:nonNegativeInteger" default="0"/>
    <xsd:attribute name="count" type="xsd:nonNegativeInteger"/>
    <xsd:attribute name="resultType" type="wfs:ResultTypeType" default="results"/>
    <xsd:attribute name="outputFormat" type="xsd:string" default="application/gml+xml;
version=3.2"/>
  </xsd:attributeGroup>
  <xsd:simpleType name="ResultTypeType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="results"/>
      <xsd:enumeration value="hits"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:attributeGroup name="StandardResolveParameters">
    <xsd:attribute name="resolve" type="wfs:ResolveValueType" default="none"/>
    <xsd:attribute name="resolveDepth" type="wfs:positiveIntegerWithStar" default="*/>
    <xsd:attribute name="resolveTimeout" type="xsd:positiveInteger" default="300"/>
  </xsd:attributeGroup>
  <xsd:simpleType name="ResolveValueType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="local"/>
      <xsd:enumeration value="remote"/>
      <xsd:enumeration value="all"/>
      <xsd:enumeration value="none"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:simpleType name="positiveIntegerWithStar">
```

```

    <xsd:union memberTypes="xsd:positiveInteger wfs:StarStringType"/>
  </xsd:simpleType>
  <xsd:simpleType name="StarStringType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="*" />
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:attributeGroup name="StandardInputParameters">
    <xsd:attribute name="inputFormat" type="xsd:string" default="application/gml+xml;
version=3.2"/>
    <xsd:attribute name="srsName" type="xsd:anyURI"/>
  </xsd:attributeGroup>
  <xsd:attributeGroup name="StandardResponseParameters">
    <xsd:attribute name="timeStamp" type="xsd:dateTime" use="required"/>
    <xsd:attribute name="numberMatched" type="wfs:nonNegativeIntegerOrUnknown"
use="required"/>
    <xsd:attribute name="numberReturned" type="xsd:nonNegativeInteger" use="required"/>
    <xsd:attribute name="next" type="xsd:anyURI"/>
    <xsd:attribute name="previous" type="xsd:anyURI"/>
  </xsd:attributeGroup>
  <xsd:simpleType name="nonNegativeIntegerOrUnknown">
    <xsd:union>
      <xsd:simpleType>
        <xsd:restriction base="xsd:string">
          <xsd:enumeration value="unknown"/>
        </xsd:restriction>
      </xsd:simpleType>
      <xsd:simpleType>
        <xsd:restriction base="xsd:nonNegativeInteger"/>
      </xsd:simpleType>
    </xsd:union>
  </xsd:simpleType>
  <xsd:element name="Title">
    <xsd:complexType>
      <xsd:simpleContent>
        <xsd:extension base="xsd:string">
          <xsd:attribute ref="xml:lang" default="en"/>
        </xsd:extension>
      </xsd:simpleContent>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="Abstract">
    <xsd:complexType>
      <xsd:simpleContent>
        <xsd:extension base="xsd:string">
          <xsd:attribute ref="xml:lang" default="en"/>
        </xsd:extension>
      </xsd:simpleContent>
    </xsd:complexType>
  </xsd:element>

```

```
<xsd:element name="Query" type="wfs:QueryType"
  substitutionGroup="fes:AbstractAdhocQueryExpression"/>
<xsd:complexType name="QueryType">
  <xsd:complexContent>
    <xsd:extension base="fes:AbstractAdhocQueryExpressionType">
      <xsd:attribute name="srsName" type="xsd:anyURI"/>
      <xsd:attribute name="featureVersion" type="xsd:string"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="StoredQuery" type="wfs:StoredQueryType"
  substitutionGroup="fes:AbstractQueryExpression"/>
<xsd:complexType name="StoredQueryType">
  <xsd:complexContent>
    <xsd:extension base="fes:AbstractQueryExpressionType">
      <xsd:sequence>
        <xsd:element name="Parameter" type="wfs:ParameterType"
          minOccurs="0" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="ParameterType" mixed="true">
  <xsd:sequence>
    <xsd:any namespace="##other" processContents="lax" minOccurs="0"
      maxOccurs="1"/>
  </xsd:sequence>
  <xsd:attribute name="name" type="xsd:string" use="required"/>
</xsd:complexType>
<xsd:element name="GetCapabilities" type="wfs:GetCapabilitiesType"/>
<xsd:complexType name="GetCapabilitiesType">
  <xsd:complexContent>
    <xsd:extension base="ows:GetCapabilitiesType">
      <xsd:attribute name="service" type="ows:ServiceType" use="required"
        fixed="WFS"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="WFS_Capabilities" type="wfs:WFS_CapabilitiesType"/>
<xsd:complexType name="WFS_CapabilitiesType">
  <xsd:complexContent>
    <xsd:extension base="ows:CapabilitiesBaseType">
      <xsd:sequence>
        <xsd:element name="WSDL" minOccurs="0">
          <xsd:complexType>
            <xsd:complexContent>
              <xsd:restriction base="xsd:anyType">
                <xsd:attributeGroup ref="xlink:simpleAttrs"/>
              </xsd:restriction>
            </xsd:complexContent>
          </xsd:complexType>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

```

        </xsd:complexContent>
      </xsd:complexType>
    </xsd:element>
    <xsd:element ref="wfs:FeatureTypeList" minOccurs="0"/>
    <xsd:element ref="fes:Filter_Capabilities" minOccurs="0"/>
  </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:element name="FeatureTypeList" type="wfs:FeatureTypeListType"/>
<xsd:complexType name="FeatureTypeListType">
  <xsd:sequence>
    <xsd:element name="FeatureType" type="wfs:FeatureTypeType"
      maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FeatureTypeType">
  <xsd:sequence>
    <xsd:element name="Name" type="xsd:QName"/>
    <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="wfs:Abstract" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="ows:Keywords" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:choice>
      <xsd:sequence>
        <xsd:element name="DefaultCRS" type="xsd:anyURI"/>
        <xsd:element name="OtherCRS" type="xsd:anyURI" minOccurs="0"
          maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:element name="NoCRS">
        <xsd:complexType/>
      </xsd:element>
    </xsd:choice>
    <xsd:element name="OutputFormats" type="wfs:OutputFormatListType"
      minOccurs="0"/>
    <xsd:element ref="ows:WGS84BoundingBox" minOccurs="0"
      maxOccurs="unbounded"/>
    <xsd:element name="MetadataURL" type="wfs:MetadataURLType"
      minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="ExtendedDescription"
      type="wfs:ExtendedDescriptionType" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="OutputFormatListType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element name="Format" type="xsd:string"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="MetadataURLType">
  <xsd:attributeGroup ref="xlink:simpleAttrs"/>
  <xsd:attribute name="about" type="xsd:anyURI"/>

```

```

</xsd:complexType>
<xsd:complexType name="ExtendedDescriptionType">
  <xsd:sequence>
    <xsd:element ref="wfs:Element" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="Element" type="wfs:ElementType"/>
<xsd:complexType name="ElementType">
  <xsd:sequence>
    <xsd:element ref="ows:Metadata"/>
    <xsd:element ref="wfs:ValueList"/>
  </xsd:sequence>
  <xsd:attribute name="name" type="xsd:string" use="required"/>
  <xsd:attribute name="type" type="xsd:QName" use="required"/>
</xsd:complexType>
<xsd:element name="ValueList" type="wfs:ValueListType"/>
<xsd:complexType name="ValueListType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element ref="wfs:Value"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="Value" type="xsd:anyType"/>
<xsd:element name="DescribeFeatureType" type="wfs:DescribeFeatureTypeType"/>
<xsd:complexType name="DescribeFeatureTypeType">
  <xsd:complexContent>
    <xsd:extension base="wfs:BaseRequestType">
      <xsd:sequence>
        <xsd:element name="TypeName" type="xsd:QName" minOccurs="0"
          maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute name="outputFormat" type="xsd:string"
        default="application/gml+xml; version=3.2"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="GetPropertyValue" type="wfs:GetPropertyValueType"/>
<xsd:complexType name="GetPropertyValueType">
  <xsd:complexContent>
    <xsd:extension base="wfs:BaseRequestType">
      <xsd:sequence>
        <xsd:element ref="fes:AbstractQueryExpression"/>
      </xsd:sequence>
      <xsd:attribute name="valueReference" type="xsd:string"
        use="required"/>
      <xsd:attribute name="resolvePath" type="xsd:string"/>
      <xsd:attributeGroup ref="wfs:StandardPresentationParameters"/>
      <xsd:attributeGroup ref="wfs:StandardResolveParameters"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```

```
<xsd:element name="ValueCollection" type="wfs:ValueCollectionType"/>
<xsd:complexType name="ValueCollectionType">
  <xsd:sequence>
    <xsd:element ref="wfs:member" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="wfs:additionalValues" minOccurs="0"/>
    <xsd:element ref="wfs:truncatedResponse" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attributeGroup ref="wfs:StandardResponseParameters"/>
</xsd:complexType>
<xsd:element name="member" type="wfs:MemberPropertyType"/>
<xsd:complexType name="MemberPropertyType" mixed="true">
  <xsd:choice minOccurs="0">
    <xsd:any processContents="lax" namespace="##other"/>
    <xsd:element ref="wfs:Tuple"/>
    <xsd:element ref="wfs:SimpleFeatureCollection"/>
  </xsd:choice>
  <xsd:attribute name="state" type="wfs:StateValueType"/>
  <xsd:attributeGroup ref="xlink:simpleAttrs"/>
</xsd:complexType>
<xsd:element name="Tuple" type="wfs:TupleType"/>
<xsd:complexType name="TupleType">
  <xsd:sequence>
    <xsd:element ref="wfs:member" minOccurs="2" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="additionalValues">
  <xsd:complexType>
    <xsd:choice>
      <xsd:element ref="wfs:ValueCollection"/>
      <xsd:element ref="wfs:SimpleFeatureCollection"/>
    </xsd:choice>
  </xsd:complexType>
</xsd:element>
<xsd:element name="truncatedResponse">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ows:ExceptionReport"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:simpleType name="StateValueType">
  <xsd:union>
    <xsd:simpleType>
      <xsd:restriction base="xsd:string">
        <xsd:enumeration value="valid"/>
        <xsd:enumeration value="superseded"/>
        <xsd:enumeration value="retired"/>
        <xsd:enumeration value="future"/>
      </xsd:restriction>
    </xsd:simpleType>
  </xsd:union>
</xsd:simpleType>
```

```

    <xsd:simpleType>
      <xsd:restriction base="xsd:string">
        <xsd:pattern value="other:\w{2,}" />
      </xsd:restriction>
    </xsd:simpleType>
  </xsd:union>
</xsd:simpleType>
<xsd:element name="GetFeature" type="wfs:GetFeatureType"/>
<xsd:complexType name="GetFeatureType">
  <xsd:complexContent>
    <xsd:extension base="wfs:BaseRequestType">
      <xsd:sequence>
        <xsd:element ref="fes:AbstractQueryExpression"
          maxOccurs="unbounded" />
      </xsd:sequence>
      <xsd:attributeGroup ref="wfs:StandardPresentationParameters"/>
      <xsd:attributeGroup ref="wfs:StandardResolveParameters"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="GetFeatureWithLock" type="wfs:GetFeatureWithLockType"/>
<xsd:complexType name="GetFeatureWithLockType">
  <xsd:complexContent>
    <xsd:extension base="wfs:GetFeatureType">
      <xsd:attribute name="expiry" type="xsd:positiveInteger"
        default="300" />
      <xsd:attribute name="lockAction" type="wfs:AllSomeType"
        default="ALL" />
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:element name="PropertyName"
  substitutionGroup="fes:AbstractProjectionClause">
  <xsd:complexType>
    <xsd:simpleContent>
      <xsd:extension base="xsd:QName">
        <xsd:attributeGroup ref="wfs:StandardResolveParameters"/>
        <xsd:attribute name="resolvePath" type="xsd:string"/>
      </xsd:extension>
    </xsd:simpleContent>
  </xsd:complexType>
</xsd:element>
<xsd:element name="FeatureCollection" type="wfs:FeatureCollectionType"
  substitutionGroup="wfs:SimpleFeatureCollection"/>
<xsd:complexType name="FeatureCollectionType">
  <xsd:complexContent>
    <xsd:extension base="wfs:SimpleFeatureCollectionType">
      <xsd:sequence>
        <xsd:element ref="wfs:additionalObjects" minOccurs="0"/>
        <xsd:element ref="wfs:truncatedResponse" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```



```

        </xsd:sequence>
        <xsd:attributeGroup ref="wfs:StandardResponseParameters"/>
        <xsd:attribute name="lockId" type="xsd:string"/>
    </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:element name="additionalObjects">
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="wfs:ValueCollection"/>
            <xsd:element ref="wfs:SimpleFeatureCollection"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SimpleFeatureCollection" type="wfs:SimpleFeatureCollectionType"/>
<xsd:complexType name="SimpleFeatureCollectionType">
    <xsd:sequence>
        <xsd:element ref="wfs:boundedBy" minOccurs="0"/>
        <xsd:element ref="wfs:member" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="boundedBy" type="wfs:EnvelopePropertyType"/>
<xsd:complexType name="EnvelopePropertyType">
    <xsd:sequence>
        <xsd:any namespace="##other"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="ListStoredQueries" type="wfs:ListStoredQueriesType"/>
<xsd:complexType name="ListStoredQueriesType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType"/>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="ListStoredQueriesResponse" type="wfs:ListStoredQueriesResponseType"/>
<xsd:complexType name="ListStoredQueriesResponseType">
    <xsd:sequence>
        <xsd:element name="StoredQuery" type="wfs:StoredQueryListItemType" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="StoredQueryListItemType">
    <xsd:sequence>
        <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element name="ReturnFeatureType" type="xsd:QName" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
</xsd:complexType>
<xsd:element name="DescribeStoredQueries" type="wfs:DescribeStoredQueriesType"/>
<xsd:complexType name="DescribeStoredQueriesType">

```

```

<xsd:complexContent>
  <xsd:extension base="wfs:BaseRequestType">
    <xsd:sequence>
      <xsd:element name="StoredQueryId" type="xsd:anyURI" minOccurs="0"
        maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:element name="DescribeStoredQueriesResponse"
type="wfs:DescribeStoredQueriesResponseType"/>
<xsd:complexType name="DescribeStoredQueriesResponseType">
  <xsd:sequence>
    <xsd:element name="StoredQueryDescription" type="wfs:StoredQueryDescriptionType"
minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="StoredQueryDescriptionType">
  <xsd:sequence>
    <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="wfs:Abstract" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="ows:Metadata" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="Parameter" type="wfs:ParameterExpressionType" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="QueryExpressionText" type="wfs:QueryExpressionTextType"
minOccurs="1" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
</xsd:complexType>
<xsd:element name="CreateStoredQuery" type="wfs:CreateStoredQueryType"/>
<xsd:complexType name="CreateStoredQueryType">
  <xsd:complexContent>
    <xsd:extension base="wfs:BaseRequestType">
      <xsd:sequence>
        <xsd:element name="StoredQueryDefinition" type="wfs:StoredQueryDescriptionType"
minOccurs="0" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="ParameterExpressionType">
  <xsd:sequence>
    <xsd:element ref="wfs:Title" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="wfs:Abstract" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="ows:Metadata" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:attribute name="name" type="xsd:string" use="required"/>
  <xsd:attribute name="type" type="xsd:QName" use="required"/>
</xsd:complexType>
<xsd:complexType name="QueryExpressionTextType" mixed="true">
  <xsd:choice>

```

```

        <xsd:any namespace="##other" processContents="skip" minOccurs="0"
maxOccurs="unbounded"/>
        <xsd:any namespace="##targetNamespace" processContents="skip" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:choice>
    <xsd:attribute name="returnFeatureTypes" type="wfs:ReturnFeatureTypesListType"
use="required"/>
    <xsd:attribute name="language" type="xsd:anyURI" use="required"/>
    <xsd:attribute name="isPrivate" type="xsd:boolean" default="false"/>
</xsd:complexType>
<xsd:simpleType name="ReturnFeatureTypesListType">
    <xsd:list itemType="xsd:QName"/>
</xsd:simpleType>
<xsd:element name="CreateStoredQueryResponse"
    type="wfs:CreateStoredQueryResponseType"/>
<xsd:complexType name="ExecutionStatusType">
    <xsd:attribute name="status" type="xsd:string" fixed="OK"/>
</xsd:complexType>
<xsd:complexType name="CreateStoredQueryResponseType">
    <xsd:complexContent>
        <xsd:extension base="wfs:ExecutionStatusType"/>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="DropStoredQuery">
    <xsd:complexType>
        <xsd:complexContent>
            <xsd:extension base="wfs:BaseRequestType">
                <xsd:attribute name="id" type="xsd:anyURI" use="required"/>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DropStoredQueryResponse" type="wfs:ExecutionStatusType"/>
<xsd:element name="LockFeature" type="wfs:LockFeatureType"/>
<xsd:complexType name="LockFeatureType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>
                <xsd:element ref="fes:AbstractQueryExpression" minOccurs="0"
maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attribute name="lockId" type="xsd:string"/>
            <xsd:attribute name="expiry" type="xsd:positiveInteger" default="300"/>
            <xsd:attribute name="lockAction" type="wfs:AllSomeType" default="ALL"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:simpleType name="AllSomeType">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="ALL"/>
    </xsd:restriction>
</xsd:simpleType>

```

```

        <xsd:enumeration value="SOME"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:element name="LockFeatureResponse" type="wfs:LockFeatureResponseType"/>
<xsd:complexType name="LockFeatureResponseType">
    <xsd:sequence>
        <xsd:element name="FeaturesLocked" type="wfs:FeaturesLockedType" minOccurs="0"/>
        <xsd:element name="FeaturesNotLocked" type="wfs:FeaturesNotLockedType" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="lockId" type="xsd:string"/>
</xsd:complexType>
<xsd:complexType name="FeaturesLockedType">
    <xsd:sequence maxOccurs="unbounded">
        <xsd:element ref="fes:ResourceId"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FeaturesNotLockedType">
    <xsd:sequence maxOccurs="unbounded">
        <xsd:element ref="fes:ResourceId"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:element name="Transaction" type="wfs:TransactionType"/>
<xsd:complexType name="TransactionType">
    <xsd:complexContent>
        <xsd:extension base="wfs:BaseRequestType">
            <xsd:sequence>
                <xsd:sequence minOccurs="0" maxOccurs="unbounded">
                    <xsd:element ref="wfs:AbstractTransactionAction"/>
                </xsd:sequence>
            </xsd:sequence>
            <xsd:attribute name="lockId" type="xsd:string"/>
            <xsd:attribute name="releaseAction" type="wfs:AllSomeType" default="ALL"/>
            <xsd:attribute name="srsName" type="xsd:anyURI"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="AbstractTransactionAction" type="wfs:AbstractTransactionActionType"
abstract="true"/>
<xsd:complexType name="AbstractTransactionActionType" abstract="true">
    <xsd:attribute name="handle" type="xsd:string"/>
</xsd:complexType>
<xsd:element name="Insert" type="wfs:InsertType"
    substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="InsertType">
    <xsd:complexContent>
        <xsd:extension base="wfs:AbstractTransactionActionType">
            <xsd:sequence>
                <xsd:any namespace="##other" maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attributeGroup ref="wfs:StandardInputParameters"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

```

```

        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="Update" type="wfs:UpdateType"
substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="UpdateType">
    <xsd:complexContent>
        <xsd:extension base="wfs:AbstractTransactionActionType">
            <xsd:sequence>
                <xsd:element ref="wfs:Property" maxOccurs="unbounded"/>
                <xsd:element ref="fes:Filter" minOccurs="0"/>
            </xsd:sequence>
            <xsd:attribute name="typeName" type="xsd:QName" use="required"/>
            <xsd:attributeGroup ref="wfs:StandardInputParameters"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="Property" type="wfs:PropertyType"/>
<xsd:complexType name="PropertyType">
    <xsd:sequence>
        <xsd:element name="ValueReference">
            <xsd:complexType>
                <xsd:simpleContent>
                    <xsd:extension base="xsd:string">
                        <xsd:attribute name="action" type="wfs:UpdateActionType" default="replace"/>
                    </xsd:extension>
                </xsd:simpleContent>
            </xsd:complexType>
        </xsd:element>
        <xsd:element name="Value" minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="UpdateActionType">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="replace"/>
        <xsd:enumeration value="insertBefore"/>
        <xsd:enumeration value="insertAfter"/>
        <xsd:enumeration value="remove"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:element name="Replace" type="wfs:ReplaceType"
substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="ReplaceType">
    <xsd:complexContent>
        <xsd:extension base="wfs:AbstractTransactionActionType">
            <xsd:sequence>
                <xsd:any namespace="##other"/>
                <xsd:element ref="fes:Filter"/>
            </xsd:sequence>
            <xsd:attributeGroup ref="wfs:StandardInputParameters"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

```

```

        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="Delete" type="wfs:DeleteType"
    substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="DeleteType">
    <xsd:complexContent>
        <xsd:extension base="wfs:AbstractTransactionActionType">
            <xsd:sequence>
                <xsd:element ref="fes:Filter"/>
            </xsd:sequence>
            <xsd:attribute name="typeName" type="xsd:QName" use="required"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="Native" type="wfs:NativeType"
    substitutionGroup="wfs:AbstractTransactionAction"/>
<xsd:complexType name="NativeType" mixed="true">
    <xsd:complexContent>
        <xsd:extension base="wfs:AbstractTransactionActionType">
            <xsd:sequence>
                <xsd:any processContents="lax" namespace="##other" minOccurs="0"/>
            </xsd:sequence>
            <xsd:attribute name="vendorId" type="xsd:string" use="required"/>
            <xsd:attribute name="safeToIgnore" type="xsd:boolean" use="required"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:element name="TransactionResponse" type="wfs:TransactionResponseType"/>
<xsd:complexType name="TransactionResponseType">
    <xsd:sequence>
        <xsd:element name="TransactionSummary" type="wfs:TransactionSummaryType"/>
        <xsd:element name="InsertResults" type="wfs:ActionResultsType" minOccurs="0"/>
        <xsd:element name="UpdateResults" type="wfs:ActionResultsType" minOccurs="0"/>
        <xsd:element name="ReplaceResults" type="wfs:ActionResultsType" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="version" type="wfs:VersionStringType" use="required"/>
</xsd:complexType>
<xsd:complexType name="TransactionSummaryType">
    <xsd:sequence>
        <xsd:element name="totalInserted" type="xsd:nonNegativeInteger" minOccurs="0"/>
        <xsd:element name="totalUpdated" type="xsd:nonNegativeInteger" minOccurs="0"/>
        <xsd:element name="totalReplaced" type="xsd:nonNegativeInteger" minOccurs="0"/>
        <xsd:element name="totalDeleted" type="xsd:nonNegativeInteger" minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="ActionResultsType">
    <xsd:sequence>
        <xsd:element name="Feature" type="wfs:CreatedOrModifiedFeatureType"
maxOccurs="unbounded"/>

```

```
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="CreatedOrModifiedFeatureType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element ref="fes:ResourceId"/>
  </xsd:sequence>
  <xsd:attribute name="handle" type="xsd:string"/>
</xsd:complexType>
<xsd:complexType name="EmptyType"/>
</xsd:schema>
```

4.4.2.4.2. Protocol Requirements

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<wsdl:definitions
  targetNamespace="http://www.opengis.net/wfs/requests/2.0"
  xmlns:wfs="http://www.opengis.net/wfs/2.0"
  xmlns:ows="http://www.opengis.net/ows/1.1"
  xmlns:wfs-req="http://www.opengis.net/wfs/requests/2.0"
  xmlns:wfs-resp="http://www.opengis.net/wfs/responses/2.0"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <wsdl:import namespace="http://www.opengis.net/wfs/responses/2.0"
    location="./wfs-responses.wsdl"/>
  <wsdl:types>
    <xsd:schema targetNamespace="http://www.opengis.net/wfs/2.0"
      xmlns:wfs="http://www.opengis.net/wfs/2.0"
      xmlns:gml="http://www.opengis.net/gml/3.2"
      xmlns:ogc="http://www.opengis.net/ogc/1.1"
      xmlns:xsd="http://www.w3.org/2001/XMLSchema"
      elementFormDefault="qualified" version="1.1.0">
      <xsd:include schemaLocation="../wfs.xsd"/>
    </xsd:schema>
  </wsdl:types>
  <wsdl:message name="GetCapabilitiesRequest">
    <wsdl:part name="Body" element="wfs:GetCapabilities"/>
  </wsdl:message>
  <wsdl:message name="DescribeFeatureTypeRequest">
    <wsdl:part name="Body" element="wfs:DescribeFeatureType"/>
  </wsdl:message>
  <wsdl:message name="GetPropertyValueRequest">
    <wsdl:part name="Body" element="wfs:GetPropertyValue"/>
  </wsdl:message>
  <wsdl:message name="GetFeatureRequest">
    <wsdl:part name="Body" element="wfs:GetFeature"/>
  </wsdl:message>
```

```
</wsdl:message>
<wsdl:message name="GetFeatureWithLockRequest">
  <wsdl:part name="Body" element="wfs:GetFeatureWithLock"/>
</wsdl:message>
<wsdl:message name="LockFeatureRequest">
  <wsdl:part name="Body" element="wfs:LockFeature"/>
</wsdl:message>
<wsdl:message name="TransactionRequest">
  <wsdl:part name="Body" element="wfs:Transaction"/>
</wsdl:message>
<wsdl:message name="ListStoredQueriesRequest">
  <wsdl:part name="Body" element="wfs:ListStoredQueries"/>
</wsdl:message>
<wsdl:message name="DescribeStoredQueriesRequest">
  <wsdl:part name="Body" element="wfs:DescribeStoredQueries"/>
</wsdl:message>
<wsdl:message name="CreateStoredQueryRequest">
  <wsdl:part name="Body" element="wfs:CreateStoredQuery"/>
</wsdl:message>
<wsdl:message name="DropStoredQueryRequest">
  <wsdl:part name="Body" element="wfs:DropStoredQuery"/>
</wsdl:message>
<wsdl:portType name="wfs">
  <wsdl:operation name="wfs.getCapabilities">
    <wsdl:input message="wfs-req:GetCapabilitiesRequest"/>
    <wsdl:output message="wfs-resp:GetCapabilitiesResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.describeFeatureType">
    <wsdl:input message="wfs-req:DescribeFeatureTypeRequest"/>
    <wsdl:output message="wfs-resp:DescribeFeatureTypeResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.getPropertyValue">
    <wsdl:input message="wfs-req:GetPropertyValueRequest"/>
    <wsdl:output message="wfs-resp:GetPropertyValueResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.getFeature">
    <wsdl:input message="wfs-req:GetFeatureRequest"/>
    <wsdl:output message="wfs-resp:GetFeatureResponse"/>
    <wsdl:fault name="ServiceExceptionReport"
      message="wfs-resp:ServiceExceptionReport"/>
  </wsdl:operation>
  <wsdl:operation name="wfs.getFeatureWithLock">
    <wsdl:input message="wfs-req:GetFeatureWithLockRequest"/>
    <wsdl:output message="wfs-resp:GetFeatureWithLockResponse"/>
```



```
<wsdl:fault name="ServiceExceptionReport"
  message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.lockFeature">
  <wsdl:input message="wfs-req:LockFeatureRequest"/>
  <wsdl:output message="wfs-resp:LockFeatureResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.transaction">
  <wsdl:input message="wfs-req:TransactionRequest"/>
  <wsdl:output message="wfs-resp:TransactionResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.listStoredQueries">
  <wsdl:input message="wfs-req:ListStoredQueriesRequest"/>
  <wsdl:output message="wfs-resp:ListStoredQueriesResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.describeStoredQueries">
  <wsdl:input message="wfs-req:DescribeStoredQueriesRequest"/>
  <wsdl:output message="wfs-resp:DescribeStoredQueriesResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.createStoredQuery">
  <wsdl:input message="wfs-req:CreateStoredQueryRequest"/>
  <wsdl:output message="wfs-resp:CreateStoredQueryResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
<wsdl:operation name="wfs.dropStoredQuery">
  <wsdl:input message="wfs-req:DropStoredQueryRequest"/>
  <wsdl:output message="wfs-resp:DropStoredQueryResponse"/>
  <wsdl:fault name="ServiceExceptionReport"
    message="wfs-resp:ServiceExceptionReport"/>
</wsdl:operation>
</wsdl:portType>
</wsdl:definitions>
```