

## **ANNEX I**

The following Annex V is added to Regulation (EU) No 1089/2010:

'ANNEX V

### **IMPLEMENTING RULES FOR SPATIAL DATA SERVICES**

#### **PART A**

#### **Writing Conventions**

Similar to the Regulation (EC) No 1205/2008 the following writing conventions are used for the spatial data service metadata.

Where specified in the description of the metadata elements, the value domains shall be used with the multiplicity expressed in the relevant tables. In relation to a particular domain, each value is defined by:

- a numerical identifier,
- a textual name for humans which may be translated in the different Community languages,
- a language neutral name for computers (the value expressed between parenthesis),
- an optional description or definition.

The table present the following information:

- the first column contains the reference to the paragraph in the Annex defining the metadata element or group of metadata elements,
- the second column contains the name of the metadata element or group of metadata elements,
- the third column specifies the multiplicity of a metadata element. The expression of the multiplicity follows the unified modelling language (UML) notation for multiplicity, in which:
  - N means that there shall be only N instances of this metadata element in a result set,
  - 1..\* means that there shall be at least one instance of this element in a result set,
  - 0..1 indicates that the presence of the metadata element in a result set is conditional but can occur only once,
  - 0..\* indicates that the presence of the metadata element in a result set is conditional but the metadata element may occur once or more,
  - when the multiplicity is 0..1 or 0..\*, the condition defines when the metadata elements is mandated,

- the fourth column contains a conditional statement if the multiplicity of the element does not apply to all types of resources. All elements are mandatory in other circumstances.

## PART B

### **Metadata Element**

#### 1. Category

This is a citation of the status of the spatial data service versus invocability and, where appropriate, it indicates the implementing rules to which a spatial data service conforms.

The value domain of this metadata element is as follows:

##### 1.1 Not Invocable (notInvocable)

The spatial data service is not an invocable spatial data service.

##### 1.2 Invocable (invocable)

The spatial data service is an invocable spatial data service.

##### 1.3 Interoperable (interoperable)

The spatial data service is an interoperable spatial data service.

##### 1.4 Harmonised (harmonised)

The spatial data service is a harmonised spatial data service.

##### 1.5 Network Service (networkService)

The spatial data service is in conformity with Regulation No 976/2009.

## Part C

### **Instructions on multiplicity and conditions of the metadata elements**

The new metadata describing the spatial data service shall comprise the metadata elements or groups of metadata elements listed in Table 1.

Those metadata elements or groups of metadata elements shall be in accordance with the expected multiplicity and the related conditions set out in Table 1.

When no condition is expressed in relation to a particular metadata element, that element shall be mandatory.

*Table 1*

**Metadata for spatial data services**

Reference	New metadata elements	Multiplicity	Condition
1	Category	1	

PART D

**Uniqueness**

A spatial data service shall be described by only one metadata record.

PART E

**Additional requirements on metadata set out in Regulation (EU) No 1205/2008**

1. Specification

Whenever relevant, the Specification metadata element set out in Regulation (EU) No 1205/2008 shall also cite the regulation to which a spatial data service conforms.

## **ANNEX II**

The following Annex VI is added to Regulation (EU) No 1089/2010:

### **'ANNEX VI**

#### **IMPLEMENTING RULES FOR INVOCABLE SPATIAL DATA SERVICES**

##### **PART A**

##### **Additional Requirements on metadata set out in Regulation (EU) No 1205/2008**

###### **1. Resource Locator**

The Resource Locator metadata element set out in Regulation (EU) No 1205/2008 shall also contain all access points of an invocable spatial data service and they shall be unambiguously identified as such.

###### **2. Specification**

The Specification metadata element set out in Regulation (EU) No 1205/2008 shall also refer to or contain technical specifications, to which the invocable spatial data service fully conforms to, providing all the necessary technical elements (human or machine readable) to allow its invocation.

## **ANNEX III**

The following Annex VII is added to Regulation (EU) No 1089/2010:

### **'ANNEX VII**

## **INTEROPERABILITY ARRANGEMENTS FOR INVOCABLE SPATIAL DATA SERVICES**

### **PART A**

#### **Additional Requirements on metadata set out in Regulation (EU) No 1205/2008**

#### 1. Conditions applying to access and use

The Conditions applying to access and use set out in Regulation (EU) No 1205/2008 shall also refer to or contain technical restrictions in a human readable format supporting the machine to machine semantic interoperability.

#### 2. Responsible party

The responsible party set out in Regulation (EU) No 1205/2008 shall at least describe the custodian responsible organisation, corresponding to the Custodian responsible party role set out in Regulation (EU) No 1205/2008

### **PART B**

#### **Metadata Elements**

#### 1. Coordinate Reference System Identifier

Where appropriate, this is the list of coordinate reference systems supported by the spatial data service.

Each supported coordinate reference system shall be expressed using an identifier.

#### 2. Quality of Service

This is the quality of service that can be expected from the spatial data service. All criteria values shall be provided.

##### 2.1 Criteria

This is the criteria to which the measurements refer to.

The value domain of this metadata element is as follows:

##### 2.1.1 Availability (availability)

It describes the percentage of time the service is available.

### 2.1.2 Performance (performance)

It describes how fast a request to the spatial data service can be completed.

### 2.1.3 Capacity (capacity)

It describes the maximum number of simultaneous requests that can be completed with the declared performance.

## 2.2 Measurement

### 2.2.1 Description

It describes the measurement for each criterion.

The value domain of this metadata element is free text.

### 2.2.2 Value (value)

It describes the value of the measurement for each criterion.

The value domain of this metadata element is free text.

### 2.2.3 Unit (unit)

It describes the Unit of the measurement for each criterion.

The value domain of this metadata element is free text.

## Part C

### **Instructions on multiplicity and conditions of the metadata elements**

The metadata describing an interoperable spatial data service shall comprise the metadata elements or groups of metadata elements listed in Table 1.

Those metadata elements or groups of metadata elements shall be in accordance with the expected multiplicity and the related conditions set out in Table 1.

When no condition is expressed in relation to a particular metadata element, that element shall be mandatory.

*Table 1*

### **Metadata for interoperable spatial data services**

Reference	New metadata elements	Multiplicity	Condition
1	Coordinate reference system identifier	1..*	Mandatory if relevant
2	Quality of service	3..*	

## **ANNEX IV**

The following Annex VIII is added to Regulation (EU) No 1089/2010:

### **'ANNEX VIII**

## **HARMONISATION REQUIREMENTS FOR INTEROPERABLE SPATIAL DATA SERVICES**

### **Part A**

#### **Characteristics**

##### **1. Quality of Service**

The probability of a harmonised spatial data service to be available shall be 98 % of the time.

##### **2. Output encoding**

A harmonised spatial data service returning spatial objects in the scope of the Directive 2007/2/EC shall encode those spatial objects according to this regulation.

### **Part B**

#### **Metadata Elements**

##### **1. invocation metadata**

The invocation metadata document the interfaces of the harmonised spatial data service and lists the end points to enable machine-to-machine communication.

### **Part C**

#### **Instructions on multiplicity and conditions of the metadata elements**

The harmonised spatial data service metadata shall comprise the metadata element or group of metadata element listed in Table 1.

This metadata elements or group of metadata elements shall be in accordance with the expected multiplicity and the related conditions set out in Table 1.

When no condition is expressed in relation to a particular metadata element, that element shall be mandatory.

*Table 1*

#### **Metadata for harmonised spatial data services**

<b>Reference</b>	<b>New metadata elements</b>	<b>Multiplicity</b>	<b>Condition</b>
<b>1</b>	<b>invocation metadata</b>	<b>1..*</b>	

## Part D

### Operations

#### 1 List of operations

A harmonised spatial data service shall provide the operation listed in table 2.

*Table 2*

#### **Operations for harmonised spatial data services**

Operation	Role
Get Harmonised Spatial Data Service Metadata	Provides all necessary information about the service and describes service capabilities

#### 2 Get Harmonised Spatial Data Service Metadata Operation

##### 2.1 Get Harmonised Spatial Data Service Metadata Request

###### 2.1.1 Get Harmonised Spatial Data Service Metadata Request parameters

The Get Harmonised Spatial Data Service Metadata Request parameter indicates the natural language for the content of the Get Harmonised Spatial Data Service Metadata Response

##### 2.2 Get Harmonised Spatial Data Service Metadata Response

The Get Harmonised Spatial Data Service Metadata Response shall contain the following sets of parameters:

- Harmonised Spatial Data Service Metadata,
- Operations Metadata,
- Languages.

###### 2.2.1. Harmonised Spatial Data Service Metadata parameters

The Harmonised Spatial Data Service Metadata parameters shall at least contain the metadata set out in this Regulation and in Regulation (EU) No 1205/2008 INSPIRE metadata elements of the Harmonised Spatial Data Service.

###### 2.2.2. Operations Metadata parameters



The Operations Metadata parameter provides metadata about the operations of the Harmonised Spatial Data Service. These metadata parameters shall describe each operation. It shall at least describe each operation, including as a minimum a description of the data exchanged and the network address.

### 2.2.3. Languages parameter

Two language parameters shall be provided:

- the Response Language parameter indicating the natural language used in the Get Harmonised Spatial Data Service Metadata Response parameters,
- the Supported Languages parameter containing the list of the natural languages supported by the Harmonised Spatial Data Service.