Annex A
(normative)

Abstract Test Suite

The objective of the Abstract Test Suite (ATS) included in this Annex is to help the conformance testing process. It includes a set of tests to be applied on a data set to evaluate whether it fulfils the requirements included in this data specification and the corresponding parts of Commission Regulation No 1089/2010 (implementing rule as regards interoperability of spatial datasets and services, further referred to as ISDSS Regulation). This is to help data providers in declaring the conformity of a data set to the "degree of conformity, with implementing rules adopted under Article 7(1) of Directive 2007/2/EC", which is required to be provided in the data set metadata according to Commission Regulation (EC) No 2008/1205 (the Metadata Regulation).

Part 1 of this ATS includes tests that provide **input for assessing conformity with the ISDSS regulation.** In order to make visible which requirements are addressed by a specific test, references to the corresponding articles of the legal act are given. The way how the cited requirements apply to *Habitats and Biotopes* specification is described under the testing method.

In addition to the requirements included in ISDSS Regulation this Technical guideline contains TG requirements too. TG requirements are technical provisions that need to be fulfilled in order to be conformant with the corresponding IR requirement when the specific technical implementation proposed in this document is used. Such requirements relate for example to the default encoding described in section 9. **Part 2** of the ATS presents tests necessary for assessing the **conformity with TG requirements**.

NOTE   Conformance of a data set with the TG requirement(s) included in this ATS implies conformance with the corresponding IR requirement(s).

The **ATS is applicable to the data sets that have been transformed** to be made available through INSPIRE download services (i.e. the data returned as a response to the mandatory "Get Spatial Dataset" operation) rather than the original "source" data sets.

The requirements to be tested are grouped in several *conformance classes*. Each of these classes covers a specific aspect: one conformance class contains tests reflecting the requirements on the application schema, another on the reference systems, etc. **Each conformance class is identified by a URI** (uniform resource identifier) according to the following pattern:

http://inspire.ec.europa.eu/conformance-class/ir/hb/<conformance class identifier>

EXAMPLE 1 The URI *http://inspire.ec.europa.eu/conformance-class/ir/ef/rs* identifies the Reference Systems ISDSS conformance class of the Environmental Monitoring Facilities (EF) data theme.

The results of the tests should be published referring to the relevant conformance class (using its URI).

When an INSPIRE data specification contains **more than one application schema,** the requirements tested in a conformance class may differ depending on the application schema used as a target for the transformation of the data set. This will always be the case for the application schema conformance

class. However, also other conformance classes could have different requirements for different application schemas. In such cases, a separate conformance class is defined for each application schema, and they are distinguished by specific URIs according to the following pattern:

http://inspire.ec.europa.eu/conformance-class/ir/hb/<conformance class identifier>/ <application schema namespace prefix>

EXAMPLE 2 The URI *http://inspire.ec.europa.eu/conformance-class/ir/el/as/el-vec* identifies the conformity with the application schema (*as*) conformance class for the Elevation Vector Elements (*el-vec*) application schema.

An overview of the conformance classes and the associated tests is given in the table below.

Table 6. Overview of the tests within this Abstract Test Suite.

In order to be conformant to a conformance class, a data set has to pass **all** tests defined for that conformance class.

In order to be conformant with the ISDSS regulation the inspected data set needs to be conformant to **all** conformance classes in Part 1. The conformance class for overall conformity with the ISDSS regulation is identified by the URI *http://inspire.ec.europa.eu/conformance-class/ir/hb/.*

In order to be conformant with the Technical Guidelines, the dataset under inspection needs to be conformant to all conformance classes included both in Part 1 and 2. Chapter 8 describes in detail how to publish the result of testing regarding overall conformity and conformity with the conformance classes as metadata. The conformance class for overall conformity with the Technical Guidelines is identified by the URI *http://inspire.ec.europa.eu/conformance-class/tg/hb/3.0.*

It should be noted that data providers are not obliged to integrate / decompose the original structure of the source data sets when they deliver them for INSPIRE. It means that a conformant dataset can contain less or more spatial object / data types than specified in the ISDSS Regulation.

A dataset that contains less spatial object and/or data types can be regarded conformant when the corresponding types of the source datasets after the necessary transformations fulfil the requirements set out in the ISDSS Regulation.

A **dataset that contain more spatial object and/or data types** may be regarded as conformant when
- all the spatial object / data types that have corresponding types in the source dataset after the necessary transformations fulfil the requirements set out in the ISDSS Regulation and
- all additional elements of the source model (spatial object types, data types, attributes, constraints, code lists and enumerations together with their values) do not conflict with any rule defined in the interoperability target specifications defined for any theme within INSPIRE.

Open issue 1: Even though the last condition can be derived from Art. 8(4) of the Directive, the ISDSS Regulation does not contain requirements concerning the above issue. Therefore, no specific tests have been included in this abstract suite for testing conformity of extended application schemas. Annex F of the Generic Conceptual Model (D2.5) provides an example how to extend INSPIRE application schemas in a compliant way.

The ATS contains a detailed list of abstract tests. It should be noted that some tests in the Application schema conformance class can be automated by utilising xml **schema validation tools.** It should be noted that failing such validation test does not necessary reflect non-compliance to the application schema; it may be the results of erroneous encoding.

Each test in this suite follows the same structure:
- Requirement: citation from the legal texts (ISDSS requirements) or the Technical Guidelines (TG requirements);
- Purpose: definition of the scope of the test;
- Reference: link to any material that may be useful during the test;
- Test method: description of the testing procedure.

According to ISO 19105:2000 all tests in this ATS are basic tests. Therefore, this statement is not repeated each time.

Part 1
(normative)

Conformity with Commission Regulation No 1089/2010

A.1 Application Schema Conformance Class

Conformance class:
http://inspire.ec.europa.eu/conformance-class/ir/hb/as/hb
*http://inspire.ec.europa.eu/conformance-class/ir/hb/as/hb*d

A.1.1 Schema element denomination test

a) <u>Purpose</u>: Verification whether each element of the dataset under inspection carries a name specified in the target application schema(s).

b) <u>Reference</u>: Art. 3 and Art.4 of Commission Regulation No 1089/2010

c) <u>Test Method</u>: Examine whether the corresponding elements of the source schema (spatial object types, data types, attributes, association roles, code lists, and enumerations) are mapped to the target schema with the correct designation of mnemonic names.

NOTE   Further technical information is in the Feature catalogue and UML diagram of the application schema(s) in section 5.2.

A.1.2 Value type test

a) <u>Purpose</u>: Verification whether all attributes or association roles use the corresponding value types specified in the application schema(s).

b) <u>Reference</u>: Art. 3, Art.4, Art.6(1), Art.6(4), Art.6(5) and Art.9(1)of Commission Regulation No 1089/2010.

c) <u>Test Method</u>: Examine whether the value type of each provided attribute or association role adheres to the corresponding value type specified in the target specification.

NOTE 1 This test comprises testing the value types of INSPIRE identifiers, the value types of attributes and association roles that should be taken from enumeration and code lists, and the coverage domains.

NOTE 2 Further technical information is in the Feature catalogue and UML diagram of the application schema(s) in section 5.2.

A.1.3 Value test

a) <u>Purpose</u>: Verify whether all attributes or association roles whose value type is a code list or enumeration take the values set out therein.

b) <u>Reference</u>: Art.4 (3) of Commission Regulation No 1089/2010.

c) <u>Test Method</u>: When an attributes / association roles has "enumeration" or "codeList" type compare the values of each instance with those provided in the application schema. To pass this tests any instance of an attribute / association role

- Shall take only values explicitly specified in the code list when its type is codeList with extensibility value is "none".

NOTE 1   This test is not applicable to code lists with extensibility "any".

NOTE 2   When a data provider only uses code lists with narrower (more specific values) this test can be fully performed based on internal information.

A.1.4   Attributes/associations completeness test

a) Purpose: Verification whether each instance of spatial object type and data types include all attributes and association roles as defined in the target application schema.

b) Reference: Art. 3, Art.4(1), Art.4(2), and Art.5(2) of Commission Regulation No 1089/2010.

c) Test Method: Examine whether all attributes and association roles defined for a spatial object type or data type are present for each instance in the dataset.

NOTE 1   Further technical information is in the Feature catalogue and UML diagram of the application schema(s) in section 5.2.

NOTE 2   If an attribute has the stereotype «voidable», then according to the INSPIRE Generic Conceptual Model (section 9.8.4.3) one of the three "void reason" values "unknown", "unpopulated" or "withheld" shall be provided instead of the real values.

NOTE 3   If the characteristic described by the attribute or association role does not apply to the real world entity, the attribute or association role does not need to be present in the data set.

A.1.5   Abstract spatial object test

a) Purpose: Verification whether the dataset does NOT contain abstract spatial object / data types defined in the target application schema(s).

b) Reference: Art.5(3) of Commission Regulation No 1089/2010

c) Test Method: examine that there are NO instances of abstract spatial object / data types in the dataset provided.

NOTE   Further technical information is in the Feature catalogue and UML diagram of the application schema(s) in section 5.2.

A.1.6   Constraints test

a) Purpose: Verification whether the instances of spatial object and/or data types provided in the dataset adhere to the constraints specified in the target application schema(s).

b) Reference: Art. 3, Art.4(1), and Art.4(2) of Commission Regulation No 1089/2010.

c) Test Method: Examine all instances of data for the constraints specified for the corresponding spatial object / data type. Each instance shall adhere to all constraints specified in the target application schema(s).

NOTE   Further technical information is in the Feature catalogue and UML diagram of the application schema(s) in section 5.2.

A.1.7   Geometry representation test

a) <u>Purpose</u>: Verification whether the value domain of spatial properties is restricted as specified in the Commission Regulation No 1089/2010.

b) <u>Reference</u>: Art.12(1), Annex IV Section 17 of Commission Regulation No 1089/2010

c) <u>Test Method</u>: Check whether all spatial properties only use 0, 1 and 2-dimensional geometric objects that exist in the right 2-, 3- or 4-dimensional coordinate space, and where all curve interpolations respect the rules specified in the reference documents.

NOTE   Further technical information is in OGC Simple Feature spatial schema v1.2.1 [06-103r4].

A.1.8   Habitat type test

<u>Purpose</u>: It is mandatory to make available at least one habitat type according to a (pan-european) referenceHabitatTypeScheme listed in the ReferenceHabitatTypeSchemeValue code list. This encoding is intended to allow for queries on habitat types on a pan-European harmonized level as specified in the Commission Regulation No 1089/2010.

b) <u>Reference</u>: Annex IV, Section 17.5 (1) of Commission Regulation No 1089/2010

c) <u>Test Method</u>: Check whether at least one habitat type is available according pan-European harmonized level.

NOTE   This test only applies to the HabitatsAndBiotopes application schema.

A.2   Reference Systems Conformance Class

Conformance class:
http://inspire.ec.europa.eu/conformance-class/ir/hb/rs

A.2.1 Datum test

a) <u>Purpose</u>: Verify whether each instance of a spatial object type is given with reference to one of the (geodetic) datums specified in the target specification.

c) <u>Reference</u>: Annex II Section 1.2 of Commission Regulation No 1089/2010

b) <u>Test Method</u>: Check whether each instance of a spatial object type specified in the application schema(s) in section 5 has been expressed using:
- the European Terrestrial Reference System 1989 (ETRS89) within its geographical scope; or
- the International Terrestrial Reference System (ITRS) for areas beyond the ETRS89 geographical scope; or
- other geodetic coordinate reference systems compliant with the ITRS. Compliant with the ITRS means that the system definition is based on the definition of ITRS and there is a well-established and described relationship between both systems, according to the EN ISO 19111.

NOTE   Further technical information is given in Section 6 of this document.

A.2.2 Coordinate reference system test

a) <u>Purpose</u>: Verify whether the two- and three-dimensional coordinate reference systems are used as defined in section 6.

b) <u>Reference</u>: Section 6 of Commission Regulation 1089/2010.

c) <u>Test Method</u>: Inspect whether the horizontal and vertical components of coordinates one of the corresponding coordinate reference system has been:
- Three-dimensional Cartesian coordinates based on a datum specified in 1.2 and using the parameters of the Geodetic Reference System 1980 (GRS80) ellipsoid.
- Three-dimensional geodetic coordinates (latitude, longitude and ellipsoidal height) based on a datum specified in 1.2 and using the parameters of the GRS80 ellipsoid.
- Two-dimensional geodetic coordinates (latitude and longitude) based on a datum specified in 1.2 and using the parameters of the GRS80 ellipsoid.
- Plane coordinates using the ETRS89 Lambert Azimuthal Equal Area coordinate reference system.
- Plane coordinates using the ETRS89 Lambert Conformal Conic coordinate reference system.
- Plane coordinates using the ETRS89 Transverse Mercator coordinate reference system.
- For the vertical component on land, the European Vertical Reference System (EVRS) shall be used to express gravity-related heights within its geographical scope. Other vertical reference systems related to the Earth gravity field shall be used to express gravity-related heights in areas that are outside the geographical scope of EVRS.
- For the vertical component in marine areas where there is an appreciable tidal range (tidal waters), the Lowest Astronomical Tide (LAT) shall be used as the reference surface.
- For the vertical component in marine areas without an appreciable tidal range, in open oceans and effectively in waters that are deeper than 200 meters, the Mean Sea Level (MSL) or a well-defined reference level close to the MSL shall be used as the reference surface."
- For the vertical component in the free atmosphere, barometric pressure, converted to height using ISO 2533:1975 International Standard Atmosphere, or other linear or parametric reference systems shall be used. Where other parametric reference systems are used, these shall be described in an accessible reference using EN ISO 19111-2:2012.

NOTE   Further technical information is given in Section 6 of this document.

A.2.3 Grid test

a) <u>Purpose</u>: Verify that gridded data related are available using the grid compatible with one of the coordinate reference systems defined in Commission Regulation No 1089/2010

b) <u>Reference</u>: Annex II Section 2.1 and 2.2 of Commission Regulation 1089/2010.

c) <u>Test Method</u>: Check whether the dataset defined as a grid is compatible with one of the coordinate reference.
- Grid_ETRS89_GRS80 based on two-dimensional geodetic coordinates using the parameters of the GRS80 ellipsoid
- Grid_ETRS89_GRS80zn based on two-dimensional geodetic coordinates with zoning,
- Plane coordinates using the Lambert Azimuthal Equal Area projection and the parameters of the GRS80 ellipsoid (ETRS89-LAEA)
- Plane coordinates using the Lambert Conformal Conic projection and the parameters of the GRS80 ellipsoid (ETRS89-LCC)
- Plane coordinates using the Transverse Mercator projection and the parameters of the GRS80 ellipsoid (ETRS89-TMzn)

NOTE   Further technical information is given in Section 6 of this document.

A.2.4 View service coordinate reference system test

a) <u>Purpose</u>: Verify whether the spatial data set is available in the two dimensional geodetic coordinate system for their display with the INSPIRE View Service.

b) <u>Reference</u>: Annex II Section 1.4 of Commission Regulation 1089/2010

c) <u>Test Method</u>: Check that each instance of a spatial object types specified in the application schema(s) in section 5 is available in the two-dimensional geodetic coordinate system

NOTE   Further technical information is given in Section 6 of this document.

A.2.5 Temporal reference system test

a) <u>Purpose</u>: Verify whether date and time values are given as specified in Commission Regulation No 1089/2010.

b) <u>Reference</u>: Art.11(1) of Commission Regulation 1089/2010

c) <u>Test Method</u>: Check whether:
- the Gregorian calendar is used as a reference system for date values;
- the Universal Time Coordinated (UTC) or the local time including the time zone as an offset from UTC are used as a reference system for time values.

NOTE   Further technical information is given in Section 6 of this document.

A.2.6 Units of measurements test

a) <u>Purpose</u>: Verify whether all measurements are expressed as specified in Commission Regulation No 1089/2010.

b) <u>Reference</u>: Art.12(2) of Commission Regulation 1089/2010

c) <u>Test Method</u>: Check whether all measurements are expressed in SI units or non-SI units accepted for use with the International System of Units.

NOTE 1   Further technical information is given in ISO 80000-1:2009.

NOTE 2   Degrees, minutes and seconds are non-SI units accepted for use with the International System of Units for expressing measurements of angles.

A.3   Data Consistency Conformance Class

Conformance class:
*http://inspire.ec.europa.eu/conformance-class/ir/hb/dc/*hb
http://inspire.ec.europa.eu/conformance-class/ir/hb/dc/hbd

A.3.1 Unique identifier persistency test

a) <u>Purpose</u>: Verify whether the namespace and localId attributes of the external object identifier remain the same for different versions of a spatial object.

b) <u>Reference</u>: Art. 9 of Commission Regulation 1089/2010.

c) <u>Test Method</u>: Compare the namespace and localId attributes of the external object identifiers in the previous version(s) of the dataset with the namespace and localId attributes of the external object identifiers of current version for the same instances of spatial object / data types; To pass the test, neither the namespace, nor the localId shall be changed during the life-cycle of a spatial object.

NOTE 1   The localId test can be performed entirely on the basis of the information available in the database of the data providers.

NOTE 2 When using URI this test includes the verification whether no part of the construct has been changed during the life cycle of the instances of spatial object / data types.

NOTE 3 Further technical information is given in section 14.2 of the INSPIRE Generic Conceptual Model.

A.3.2 Version consistency test

a) Purpose: Verify whether different versions of the same spatial object / data type instance belong to the same type.

b) Reference: Art. 9 of Commission Regulation 1089/2010.

c) Test Method: Compare the types of different versions for each instance of spatial object / data type

NOTE 1 This can be performed entirely on the basis of the information available in the database of the data providers.

A.3.3 Life cycle time sequence test

a) Purpose: Verification whether the value of the attribute beginLifespanVersion refers to an earlier moment of time than the value of the attribute endLifespanVersion for every spatial object / object type where this property is specified.

b) Reference: Art.10(3) of Commission Regulation 1089/2010.

c) Test Method: Compare the value of the attribute beginLifespanVersion with attribute endLifespanVersion. The test is passed when the beginLifespanVersion value is before endLifespanVersion value for each instance of all spatial object/data types for which this attribute has been defined.

NOTE 1 this test can be performed entirely on the basis of the information available in the database of the data providers.

A.3.4 Validity time sequence test

a) Purpose: Verification whether the value of the attribute validFrom refers to an earlier moment of time than the value of the attribute validTo for every spatial object / object type where this property is specified.

b) Reference: Art.12(3) of Commission Regulation 1089/2010.

c) Test Method: Compare the value of the attribute validFrom with attribute validTo. The test is passed when the validFrom value is before validTo value for each instance of all spatial object/data types for which this attribute has been defined.

NOTE 1 this test can be performed entirely on the basis of the information available in the database of the data providers.

A.3.5 Update frequency test

a) Purpose: Verify whether all the updates in the source dataset(s) have been transmitted to the dataset(s) which can be retrieved for the hb using INSPIRE download services.

b) Reference: Art.8 (2) of Commission Regulation 1089/2010.

c) Test Method: Compare the values of beginning of life cycle information in the source and the target datasets for each instance of corresponding spatial object / object types. The test is passed when the difference between the corresponding values is less than 6 months.

NOTE 1 this test can be performed entirely on the basis of the information available in the database of the data providers.

A.4   Metadata IR Conformance Class

Conformance class:
http://inspire.ec.europa.eu/conformance-class/ir/hb/md

A.4.1 Metadata for interoperability test

a) Purpose: Verify whether the metadata for interoperability of spatial data sets and services described in 1089/2010 Commission Regulation have been created and published for each dataset related to the HB data theme.

b) Reference: Art.13 of Commission Regulation 1089/2010

c) Test Method: Inspect whether metadata describing the coordinate reference systems, temporal reference system, encoding, character encoding and when applicable topological consistency have been created and published.

NOTE   Further technical information is given in section 8 of this document.

A.5   Information Accessibility Conformance Class

Conformance class:
http://inspire.ec.europa.eu/conformance-class/ir/hb/ia
http://inspire.ec.europa.eu/conformance-class/ir/hbd/ia

A.5.1 Code list publication test

a) Purpose: Verify whether the values of each code list that allow narrower values or any other value than specified in Commission Regulation 1089/2010 are published in a register.

b) Reference: Art.6(3)

b) Reference: Art.6(3) and Annex IV Section 17

NOTE   Further technical information is given in section 5 of this document.

A.5.2 CRS publication test

a) Purpose: Verify whether the identifiers and the parameters of coordinate reference system are published in common registers.

 b) Reference: Annex II Section 1.5

c) Test method: Check whether the identifier and the parameter of the CRS used for the dataset are included in a register. .

NOTE   Further technical information is given in section 6 of this document.

A.5.3 CRS identification test

a) <u>Purpose</u>: Verify whether identifiers for other coordinate reference systems than specified in Commission Regulation 1089/2010 have been created and their parameters have been described according to EN ISO 19111 and ISO 19127.

 b) <u>Reference</u>: Annex II Section 1.3.4

c) <u>Test method</u>: Check whether the register with the identifiers of the coordinate reference systems is accessible.

NOTE   Further technical information is given in section 6 of this document.

A.5.4 Grid identification test

a) Purpose: Verify whether identifiers for other geographic grid systems than specified in Commission Regulation 1089/2010 have been created and their definitions have been either described with the data or referenced.

b) <u>Reference</u>: Annex II Section 2.1 and 2.2

c) <u>Test Method</u>: Check whether the identifiers for grids have been created. Inspect the dataset and/or the metadata for inclusion of grid definition.

NOTE   Further technical information is given in section 6 of this document.

A.6   Data Delivery Conformance Class

Conformance class:
http://inspire.ec.europa.eu/conformance-class/ir/hb/de

A.6.1 Encoding compliance test

a) <u>Purpose</u>: Verify whether the encoding used to deliver the dataset comply with EN ISO 19118.

b) <u>Reference</u>: Art.7 (1) of Commission Regulation 1089/2010.

c) <u>Test Method</u>: Follow the steps of the Abstract Test Suit provided in EN ISO 19118.

NOTE 1   Datasets using the default encoding specified in Section 9 fulfil this requirement.

NOTE 2   Further technical information is given in Section 9 of this document.

A.7   Portrayal Conformance Class

Conformance class:
http://inspire.ec.europa.eu/conformance-class/ir/hb/po

A.7.1 Layer designation test

a) <u>Purpose</u>: verify whether each spatial object type has been assigned to the layer designated according to Commission Regulation 1089/2010.

b) Reference: Art. 14(1), Art14(2) and Annex IV Section 17.

c) <u>Test Method</u>: Check whether data is made available for the view network service using the specified layers respectively:
HB.Habitat
NOTE   Further technical information is given in section 11 of this document.

<div align="center">

Part 2
(informative)

Conformity with the technical guideline (TG) Requirements

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A.8 Technical Guideline Conformance Class

Conformance class:
http://inspire.ec.europa.eu/conformance-class/tg/hb/3.0

A.8.1 Multiplicity test

a) <u>Purpose</u>: Verify whether each instance of an attribute or association role specified in the application schema(s) does not include fewer or more occurrences than specified in section 5.

c) <u>Reference</u>: Feature catalogue and UML diagram of the application schema(s) in section 5 of this guideline.

b) <u>Test Method</u>: Examine that the number of occurrences of each attribute and/or association role for each instance of a spatial object type or data type provided in the dataset corresponds to the number of occurrences of the attribute / association role that is specified in the application schema(s) in section 5.

A.8.2 CRS http URI test

a) <u>Purpose</u>: Verify whether the coordinate reference system used to deliver data for INSPIRE network services has been identified by URIs according to the EPSG register.

c) <u>Reference</u>: Table 2 in Section 6 of this technical guideline

b) <u>Test Method</u>: Compare the URI of the dataset with the URIs in the table.

NOTE 1   Passing this test implies the fulfilment of test A6.2

NOTE 2   Further reference please see *http://www.epsg.org/geodetic.html*

A.8.3 Metadata encoding schema validation test

a) <u>Purpose</u>: Verify whether the metadata follows an XML schema specified in ISO/TS 19139.

c) <u>Reference</u>: Section 8 of this technical guideline, ISO/TS 19139

b) <u>Test Method</u>: Inspect whether provided XML schema is conformant to the encoding specified in ISO 19139 for each metadata instance.

NOTE 1   Section 2.1.2 of the Metadata Technical Guidelines discusses the different ISO 19139 XML schemas that are currently available.

A.8.4 Metadata occurrence test

a) <u>Purpose</u>: Verify whether the occurrence of each metadata element corresponds to those specified in section 8.

c) <u>Reference</u>: Section 8 of this technical guideline

b) <u>Test Method</u>: Examine the number of occurrences for each metadata element. The number of occurrences shall be compared with its occurrence specified in Section 8:

NOTE 1   Section 2.1.2 of the Metadata Technical Guidelines discusses the different ISO 19139 XML schema

A.8.5 Metadata consistency test

a) <u>Purpose</u>: Verify whether the metadata elements follow the path specified in ISO/TS 19139.

c) <u>Reference</u>: Section 8 of this technical guideline, ISO/TS 19139

b) <u>Test Method</u>: Compare the XML schema of each metadata element with the path provide in ISO/TS 19137.

NOTE 1   This test does not apply to the metadata elements that are not included in ISO/TS 19139.

A.8.6 Encoding schema validation test

a) <u>Purpose</u>: Verify whether the provided dataset follows the rules of default encoding specified in section 9 of this document

c) <u>Reference</u>: section 9 of this technical guideline

b) <u>Test Method</u>: Inspect whether provided encoding(s) is conformant to the encoding(s) for the relevant application schema(s) as defined in section 9:

NOTE 1   Applying this test to the default encoding schema described in section 9 facilitates testing conformity with the application schema specified in section 5. In such cases running this test with positive result may replace tests from A1.1 to A1.4 provided in this abstract test suite.

NOTE 2   Using Schematron or other schema validation tool may significantly improve the validation process, because some some complex constraints of the schema cannot be validated using the simple XSD validation process. On the contrary to XSDs Schematron rules are not delivered together with the INSPIRE data specifications. Automating the process of validation (e.g. creation of Schematron rules) is therefore a task and an opportunity for data providers.

A.8.7 Style test

a) <u>Purpose</u>: Verify whether the styles defined in section 11.2 have been made available for each specified layer.

b) <u>Reference</u>: section 11.2.

c) <u>Test Method</u>: Check whether the styles defined in section 11.2 have been made available for each specified layer.