



INSPIRE

Infrastructure for Spatial Information in Europe

Draft Technical Guidance to implement INSPIRE View Services

Drafting Team “Network Services”

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1 Introduction

According to Article 5(4) of the Directive, the INSPIRE Implementing Rules shall take account of relevant, existing international standards and user requirements. In the context of spatial data services, the European standard EN ISO 19128 :2005(E) – (WMS 1.3.0) has been identified as the most relevant standard to implement INSPIRE View Services on the grounds of its stability and widespread use. Other standards may also be used as long as they conform with the Implementing Rules.

Two other OGC standards to portray geographic information are associated with the EN ISO 19128 :2005(E) (see paragraph about Styling):

- OGC Styled Layer Descriptor Profile of the Web Map Service Implementation Specification (05-078r4) and its corrigendum1 for OGC Implementation Specification SLD 1.1.0 (07-123r1) ;
- OGC Symbology Encoding Implementation Specification (05-077r4), which is a language used for styling feature and coverage data, and independent of any service interface specification.

The aim of this document is to explain how this standard must be used to setup an INSPIRE View Service according to the View Services Implementing Rules defined in the document “Draft Implementing Rules for View Services”.

Important : This is an initial version of this document that will be developed further in collaboration with the stakeholder community and relevant standardization organizations.

This document will be publicly available as a ‘non-paper’, as it does not represent an official position of the Commission, and as such can not be invoked in the context of legal procedures.
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2 Normative references

These implementation rules incorporate, by dated or undated reference, provisions from other publications. For dated references, subsequent amendments to or revisions of any of these publications apply to these implementations rules only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

These normative references are cited at the appropriate places in the text and the publications are listed hereafter :

- [1] INSPIRE Network services Architecture document ;
- [2] **OGC 05-077r4-Version:1.1.0 (revision 4)** - Symbology Encoding Implementation Specification ; and **OGC 05-078r4 Version: 1.1.0 (revision 4)** - Styled Layer Descriptor profile of the Web Map Service Implementation Specification
- [3] OpenGIS® Catalogue Services Specification 2.0.2 -ISO Metadata Application Profile ;
- [4] ISO 19128:2005(E) : Geographic information — Web map server interface ;
- [5] Technical Guidance Document for INSPIRE Discovery Services.

Other important normative references :

ISO/IEC 2382-1 : 1993, *Information technology – Vocabulary – Part 1: Fundamental terms* ;
ISO 19119 : 2005, *Geographic information – Services* ;
ISO 19119:2005 PDAM 1, *Geographic information – Services* ;
ISO/IEC Directives, Part 2 - Rules for the structure and drafting of International Standards

EUR 20120 – *Map projection for Europe* – Institute for environment and sustainability, JRC, Eurogeographics – 2001

W3C Recommendation (24 June 2003) : SOAP Version 1.2 Part 1: Messaging Framework, <http://www.w3.org/TR/SOAP/> ;

W3C. QoS for Web Services : Requirements and Possible Approaches. <http://www.w3c.or.kr/kr-office/TR/2003/ws-qos/>.

3 INSPIRE Profile of ISO 19128:2005(E)

3.1 General background

The base specification of an INSPIRE View Service is ISO 19128:2005(E) international standard.

Although this specification lays down the basic behaviour of an INSPIRE View Service, some aspects need to be extended or profiled with respect to the requirements of the INSPIRE Directive and the Implementing Rules for View services.

The 3.3 and subsequent sections specify required extension/profile to the base specification. They are laid down following the ISO 19128:2005(E) document structure, from its section 6.9.

The following items need special attention for implementation :

- WMO (World Meteorological Organization) data and services : serving WMO data through WMS is technically only feasible for end products and not for basic WMO data, far too huge and complex. These WMO end products (and corresponding CRS) handled by WMS, still have to be defined by TWG when they'll be set up ;
- Use of SOAP : see [1] (section 7) ;

the Architecture document also gives important details about the rights management in INSPIRE infrastructure (section 7.2 and Annex A).

3.2 View service operations

Function (from IR)	WMS Operation	M/O ¹
Get Service Metadata	GetCapabilities	M
Get Map	GetMap	M
Get Feature Information	GetFeatureInfo	O

Table 1 : View Service Functions

These three operations shall use parameters defined in the ISO 19128 WMS standard, but this section specifies the role of some parameters in the INSPIRE context.

3.3 Common requests parameters for the 3 operations

INSPIRE extension/profile to ISO 19128:2005(E)

LANGUAGE

The mandatory parameter LANGUAGE defines the client's preferred language. The language values are based on ISO 639-2, alpha 3 codes as used in the INSPIRE Metadata Implementing Rules.

The response documents are returned in this preferred language if it is supported. If there is no support for the requested language, the documents are returned in the service default language (generally the Member State language being one of the official 23 European languages).

However, following the European Interoperability Framework (EIF, see chapter 7.1) services should at least support parts of the service responses to be provided in English.

To identify the different languages a language code list is provided.(see annex C of this document).

Motives :

¹ M/O: Mandatory / Optional

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There is not yet a standard way to deal with multilingualism when using ISO or OGC public standards specification to implement INSPIRE Network Services. The View Service must provide a way for a client application to request results according to the specified language. Several elements are language dependent :

- the service capabilities (result of the GetCapabilities operation) and managed by the service provider. These capabilities describe the service itself but also layers provided by the service (with several elements language dependent: title, abstract, keywords...);
- the map if it contains texts language dependent, and managed by the data provider ;
- the dataset metadata provided for each layer, and managed by the metadata provider ;
- the legend attached to each layer, and managed by the data provider ;
- the information returned by the GetFeatureInfo operation, and managed by the data provider ;
- the service exceptions, managed by the service provider.

It is worth noting that the return documents are not multilingual, but hold only one language : either the specified language given by the LANGUAGE parameter or the service default language.

3.4 Service exceptions

INSPIRE extension/profile to ISO 19128:2005(E)

The error messages (exceptions) are either expressed in the service's default language (suppose that the request is wrong and the LANGUAGE parameter has not been interpreted before issuing the error/exception text) or in the preferred (requested) language in other cases.

3.5 Get Service Metadata

3.5.1 General

According to Article 11 metadata for INSPIRE services shall be available.

- a) The metadata of a View Service shall be available :
 - through the service Capabilities, as defined in the WMS Standard ISO19128:2005,§ 7.2.4., are mandatory and defined when a WMS is set up. They consist of server's information, supported operations, parameters values, dataset metadataURL ;
 - through the Get Service Metadata operation of the Discovery service.
- b) Metadata of the datasets represented in the layers of the View Service are available :
 - through a metadataURL that shall refer to an existing resource, corresponding to a "Get Metadata by ID" operation of the Discovery service.

metadata URL points at the "qualified" INSPIRE dataset metadata;- layer exposed in the service are described in the service metadata. The layer metadata can be different from the "qualified" INSPIRE dataset, whilst still linked with.

Example: the view service expose an TRANSPORTNETWORKS.ROADS layer (say it is an harmonized name constructed from the INSPIRE name and the INSPIRE featurtype). This layer points (metadataURL) at the INSPIRE metadata for the roads dataset. These metadata says nothing about the rendering and selection of featurtype. The view service metadata contain the layer description for this layer along with explanation on generalization, styles and attributes selection for rendering. The layer's metadata and dataset metadata are different. The layer's metadata use dataset metadata in its genealogy (quality).

3.5.2 GetCapabilities operations

Request parameter	Mandatory/optional	Description
VERSION=version	O	Request version
SERVICE=WMS	M	Service type
REQUEST=GetCapabilities	M	Request name
LANGUAGE=code	M	Request language
FORMAT=MIME_type	O	Output format of service metadata
UPDATESEQUENCE=string	O	Sequence number or string for cache control

Table 2 : GetCapabilities parameters

3.5.3 GetCapabilities request parameters

INSPIRE extension/profile to ISO 19128:2005(E) :

LANGUAGE (mandatory)

Client's preferred language, defined by a 3-letter code as described in ISO 639-2 (ISO 639-3:2007).

3.5.4 GetCapabilities response

3.5.4.1 General service metadata

3.5.4.2 INSPIRE extension/profile to ISO 19128:2005(E) :

3.5.4.2.1 CONTACT INFORMATION

Contact information shall be **mandatory** :

- Contact address ;
- Email ;
- Phone, fax.

3.5.4.2.2 RESPONSE LANGUAGE

Language of the current capabilities response (see annex C of this document).

3.5.4.2.3 SUPPORTED LANGUAGES

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Supported languages for the service operations (see annex C of this document).

3.5.4.3 **Layer properties**

3.5.4.4

INSPIRE extension/profile to ISO 19128:2005(E) :

3.5.4.4.1 STYLE

There is no requirement in the Directive about portrayal, but to guarantee that maps are presented consistently from the different MS some rules are necessary.

For the styling for features, the thematic working group set-up by the European Commission to draft the Implementing Rules for laying down technical arrangements for the interoperability and, where practicable, harmonisation of spatial data sets and services, are also in charge of the provision of feature styling whenever a European/International solution exist for the specific spatial data theme and is assessed as fit for purpose.

- **STYLE NAME and definition**

For on-the fly symbolized layers :

- A very minimum default style must be defined for INSPIRE themes (at least to be able to see something on a map): this is the "INSPIRE:DEFAULT" style name (black point, line or polygon on a transparent background, 1 pixel width) ;When an "harmonised" style is defined across Europe for a spatial object type , then this style becomes the default style, encoded in SE 1.1 or later. (see the OGC documents [2]. Its name is still "INSPIRE:DEFAULT". Its content reflects the harmonised name of the layer. Its definition is out of the scope of NS DT. TWGs should managed definitions. All definitions should be handled in a shared location and managed as a register. It should be possible to simply reference from a data specification existing portrayal rules and symbols, where appropriate. INSPIRE data specification may already include more than the default style, too (in case several styles are known and used for different purposes). Such additional styles have to be named as part of the INSPIRE data specification. All SE-based definitions are to be managed as a register ;
- Waiting these "harmonised" styles, and if providers do not want to use the too poor "INSPIRE:DEFAULT" style, they may use their available national or thematic styles (for example : IGNF:TRANSPORTNETWORKS.ROADS)
- **LEGEND**
 - A legend URL by layer and by supported language is mandatory ;
 - Mime type for legend is "image/png" (8 bits) (one image, for simple legends, when the legend may be displayed on one image) or HTML (for complex legends, when the legend needs several pages for example).

3.5.4.4.2 COORDINATES REFERENCE SYSTEM

- ETRS89 : pan-European CRS with datum ETRS89 in geographic coordinates shall be supported for continental Europe. CRS:84 is recommended outside continental Europe ;
- Wherever relevant in these horizontal CRSs may be supported :
 - ETRS-LAEA : pan-European CRS with datum ETRS89 in European Lambert azimuthal equal area projection ;
 - ETRS-LCC : pan-European CRS with datum ETRS89 in European Lambert conformal conic projection ;
 - ETRS-TM26 to ETRS-TM39 : pan-European CRS with datum ETRS89 in European transverse Mercator projection ;
 - ETRS89/(X,Y,Z) : pan-European CRS with datum ETRS89 in Cartesian coordinates ;
 - ETRS89 ellipsoidal heights ;

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- World Geodetic System 1984 (ITRF91, at epoch 1994.0) CRSs-based (geographic, projection or Cartesian coordinates) for the non-continental European areas that are maintained by legal authorities ;
- Thematic and parametric CRSs covering e.g. Meteorology or Oceanography (see ISO19111-2) ;
- Universal Polar Stereographic (UPS) (used in Meteorology) ;

For some cases, there is a link between CRSs and scale range. However, the choice of the most relevant projection may not only be linked to the scale.

- Wherever relevant in these vertical CRSs may be supported :
 - EVRF_AMST/NH : normal heights of the United European Levelling Network in relation to the tide gauge in Amsterdam ;
 - EVRF_AMST/CP: geopotential numbers of the United European Levelling Network in relation to the tide gauge in Amsterdam ;
 - Height systems for the non-continental European areas that are maintained by legal authorities.

The value of the CRS parameter depends on the coordinate reference systems catalogue being used. The NS DT is encouraging setting up such a catalogue for the INSPIRE framework.

The NS DT recommends using CRSs from <http://crs.bkg.bund.de/crs-eu/>. The ETRS89 default geographic reference system would then be "CRS-EU:ETRS89".

The NS DT recommends using "CRS:84" for non-continental European areas. As a work-around solution, EPSG codes may be used (See <http://www.epsg.org/>).

3.5.4.4.3 SCALE DENOMINATORS

The scale denominators are left optional but their use is recommended. The applicable scales are mostly defined in data specifications IR.

3.5.4.4.4 METADATA URL

- Metadata provided for each layer shall follow the INSPIRE Metadata Implementing Rules. The relationship between ISO 19128 and ISO 19115 metadata fields may be found in table 5 of [4] ;
- Metadata records are stored in an INSPIRE catalogue (so that it is possible to discover datasets and services via the discovery service). To access the metadata related to the dataset displayed as a layer by the view service, the MetadataURL shall contains a call to the discovery service to get this metadata record . The operation used is the getRecordById with the Metadata ID as parameter. See example in annex G of [3] ;
- The TYPE attribute is fixed to "INSPIRE:ISO19115:2003".

3.5.4.5 Description of layers in the View Service capabilities

The description of a layer shall use elements defined for the service capabilities in the ISO19128:2005(E) standard, but this paragraph specifies the role of some parameters for the INSPIRE View Service.

Layer elements	Mandatory/ optional	Description
Name	M	For machine-to-machine communication, used in the getMap request. (see also [3] §7.2.2.2). To be harmonized by INSPIRE TWG. Recommendation by NS DT : THEME.FEATURETYPE in uppercase without spaces
Title	M	Human readable title. To be harmonized by by INSPIRE TWG. Subject to multilingualism
Abstract	M	Text describing the layer. Subject to multilingualism
KeywordList	M	List of keywords describing the layer, to support catalog search (to be harmonized the INSPIRE metadata element Keyword Value, see [5] §3.2.3).
Style: Name Title Abstract LegendURL (with Format and Size)	M	See § 3.5.4.3.1 Defaults to "INSPIRE:DEFAULT"
EX_GeographicBoundingBox	M	Area covered by the layer (westBoundLongitude, eastBoundLongitude, southBoundLatitude, and northBoundLatitude in decimal degrees). Element used to facilitate geographic searches
CRS	M	Coordinate reference system.
BoundingBox	M	Bounding box corners (lower left, upper right) in CRS units.
MinScaleDenominator MaxScaleDenominator	O	Appropriate range of scales for viewing the layer (recommended)
MetadataURL	M	Link to metadata about the data corresponding to the layer. The « type » attribute value must be : "INSPIRE:ISO19115:2003"
Dimension	O	Some geographic information may be available at other dimensions (for example, satellite images in different wavelength bands)
Layer attribute		
queryable	O	If the View Service offers the GetFeatureInfo operation for this layer, then the value of the layer attribute "queryable" must be 1

Table 3 : Layer elements and attributes

Some of these elements' value (e.g. Name, Title, Abstract) still have to be defined by DS DT and TWG.

3.6 Get Map

3.6.1 GetMap operation

Request parameter	Mandatory/ optional	Description
VERSION=1.3.0	M	Request version
REQUEST=GetMap	M	Request name
LAYERS=layer_list	M	Comma-separated list of one or more map layers.
STYLES=style_list	M	Comma-separated list of one rendering style per requested
CRS=namespace:identifier	M	Coordinate reference system
BBOX=minx,miny,maxx,maxy	M	Bounding box corners (lower left, upper right) in CRS units
WIDTH=output_width	M	Width in pixels of map picture
HEIGHT=output_height	M	Height in pixels of map picture
FORMAT=output_format	M	Output format of map. At least supported : Portable Network Graphics format(PNG; MIME type "image/png") and the GIF (Graphics Interchange Format) without LZW compression (MIME type "image/gif")
LANGUAGE=code	M	Request language
TRANSPARENT=TRUE FALSE	O	Background transparency of map (default=FALSE)
BGCOLOR=color_value	O	Hexadecimal red-green-blue colour value for the background color (default=0xFFFFFF)
EXCEPTIONS=exception_format	O	The format in which exceptions are to be reported by the WMS (default=XML)
TIME=time	O	Time value of layer desired
ELEVATION=elevation	O	Elevation of layer desired
Other sample dimension(s)	O	Value of other dimensions as appropriate

Table 4: GetMap parameters

3.6.2 GetMap response

INSPIRE extension/profile to ISO 19128:2005(E) :

When the STYLE parameter is left blank in the GetMap request, the INSPIRE default styling applies in the GetMap response.

3.7 Get Feature Information

- The GetFeatureInfo (optional) :
 - Shall support at least "INFO_FORMAT=text/html" ;
 - Shall return the information in the supported language(s).

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4 INSPIRE Profile of Cache WMS

Operating a WMS can be stressing for a MS infrastructure when MS datasets are large and the INSPIRE performances have to be met. A lightweight profile of WMS can be used to lower the initial effort to bring datasets to the network. Based on OGC's WMS 1.1.1, it is possible to use a Tile caching service as defined in http://wiki.osgeo.org/wiki/WMS_Tiling_Client_Recommendation.

The main differences with the ISO 19128:2005 are in the GetMap operation.

The GetMap operation supports a new parameter called TILED whose value is always TRUE.

The CRS parameter of GetMap operation is now named SRS, but values for the INSPIRE view service are still relevant.

It is recommended to use ETRS89 ellipsoidal coordinate reference system when using a tile cache map service.

5Annex A – Examples of SLD usage (informative)

The following XML description is an example of SLD (Styled Layer Descriptor) to define a symbol for a point representing a borehole (FeatureType : BSS_Sondage). Three rules are used to define this symbol according to values of some properties.

```
<StyledLayerDescriptor version="1.1.0" xmlns:ogc="http://www.opengis.net/ogc"
xmlns:xlink="http://www.w3.org/1999/xlink">
  <NamedLayer>
    <Name>BSS_Sondages</Name>
    <UserStyle>
      <FeatureTypeStyle>
        <FeatureTypeName>BSS_Sondage</FeatureTypeName>
```

<i>Rule #1: If there is more than one image (NB_IMAGES>1) then a border is drawn (border.gif)</i>
--

```
  <Rule>
    <ogc:Filter>
      <ogc:PropertyIsGreaterThan>
        <ogc:PropertyName>NB_IMAGES</ogc:PropertyName>
        <ogc:Literal>0</ogc:Literal>
      </ogc:PropertyIsGreaterThan>
    </ogc:Filter>
    <PointSymbolizer>
      <Graphic>
        <ExternalGraphic>
          <OnlineResource xlink:type="simple" xlink:href="http://.../images/bss/bordure.gif"/>
          <Format>image/gif</Format>
        </ExternalGraphic>
        <Size>15</Size>
      </Graphic>
    </PointSymbolizer>
  </Rule>
```

Rule #2 : If a « COUPE » (borehole description or drawing) is available then the symbol is filled with the « remp.gif » background

```

<Rule>
  <ogc:Filter>
    <ogc:Or>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>COUPE_GEOLOGIQUE</ogc:PropertyName>
        <ogc:Literal>Presente</ogc:Literal>
      </ogc:PropertyIsEqualTo>
      <ogc:PropertyIsEqualTo>
        <ogc:PropertyName>COUPE_SIMPLIFIEE</ogc:PropertyName>
        <ogc:Literal>Presente</ogc:Literal>
      </ogc:PropertyIsEqualTo>
    </ogc:Or>
  </ogc:Filter>
  <PointSymbolizer>
    <Graphic>
      <ExternalGraphic>
        <OnlineResource xlink:type="simple" xlink:href="http://.../images/bss/rempe.gif"/>
        <Format>image/gif</Format>
      </ExternalGraphic>
      <Size>15</Size>
    </Graphic>
  </PointSymbolizer>
</Rule>

```

Rule #3 : If the borehole is an « OUVRAGE » then the symbol « croix.gif » is drawn

```

<Rule>
  <ogc:Filter>
    <ogc:PropertyIsEqualTo>
      <ogc:PropertyName>OUVRAGE</ogc:PropertyName>
      <ogc:Literal>OUI</ogc:Literal>
    </ogc:PropertyIsEqualTo>
  </ogc:Filter>
  <PointSymbolizer>
    <Graphic>
      <ExternalGraphic>
        <OnlineResource xlink:type="simple" xlink:href="http://.../images/bss/croix.gif"/>
        <Format>image/gif</Format>
      </ExternalGraphic>
      <Size>15</Size>
    </Graphic>
  </PointSymbolizer>
</Rule>
</FeatureTypeStyle>
</UserStyle>
</NamedLayer>
</StyledLayerDescriptor>

```

Annex B – How View services work within INSPIRE

This section describes essential use cases of View Services. These use cases show interactions between providers, users, as well as services. Figure 5 shows the overall system that contains major interactions between the actors. An actor is a person, organization or external system that plays a role in one or more interactions with the system. Four actors are identified :

Publisher : A publisher publishes layers through a View Service. This actor may also be the owner of the resource that is described. It is assumed that the organisation or individual performing the publisher role has the owners permission to publish the metadata ;A layer is basic unit of **geographic information** that may be requested as a map from a server; this set of features makes up a basic unit of geographic information that may be requested as a map.

- 1.Viewer : This actor asks for layers and uses their visualization ;
- 2.View Service : This is a system that allows the viewing of one or more layers ;
- 3.Administrator : This actor manages the establishment and maintenance of the View Service.

Figure 5 : View Services use cases

Within the domain of View Service five use cases are essential: publish, discover, request map, request info on a feature, and manage. The discover use case is not in the View Service scope but in the Discovery Service scope, and it is essential because to view a layer (representing features) it must have been discovered first. The discover use case is described in the Discovery Services chapter (Paragraph 6.3.2.).

Publish use case

A publisher publishes layers and owns the resource. As an alternative, the publisher might be a broker that does not own the resource, but publishes layers on behalf of a publisher. A layer is a well-defined set of INSPIRE features portrayed according to portrayal rules.

Request capabilities use case

A viewer, searches for data, and therefore requests a View service to send him its capabilities on itself and the data it serves.

Request map use case

A viewer, having discovered data that satisfies his or her requirements (through the discover use case) requests those layer(s) to be returned as a map (visualisation, view) of that data within a defined geographic extent

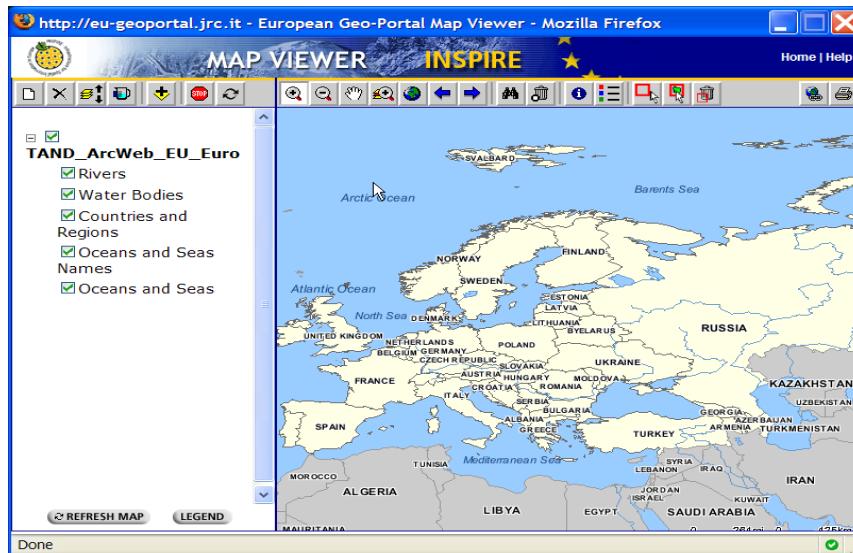


Figure 6 : Request Map result in a client application

Request feature info use case

Once the View Service has sent the map to the client application, a viewer may ask for information on a feature he points out on the map.

Manage use case

An administrator manages the View Service including the data (layers) available from this service.

Annex C – Capabilities extension for multilingualism

Capabilities extension for multilingualism

The following XSD Schema defines the XSD Types that are needed to provide additional information on multilingual aspects. This information has to be provided in a capabilities documents that is returned by an INSPIRE View Service.

The XML Elements that comply with the following shall be applied in the <ExtendedCapabilities> section of the capabilities document.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
  targetNamespace="http://www.inspire.org"
  xmlns:INSPIRE='http://www.inspire.org'
  xmlns:wms="http://www.opengis.net/wms"
  xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <xs:import
    namespace="http://www.opengis.net/wms"
    schemaLocation="http://schemas.opengis.net/wms/" />
  </xs:import>
  <xs:complexType name="ViewCapabilitiesType">
    <xs:annotation>
      <xs:documentation>Additional capabilities for INSPIRE
Viex service</xs:documentation>
    </xs:annotation>
    <xs:extension base="wms:_ExtendedCapabilities">
      <xs:sequence>
        <xs:element name="Languages" type="INSPIRE:LanguagesType"
minOccurs="0" />
        <xs:element name="CurrentLanguage" type="INSPIRE:LanguageType" />
      </xs:sequence>
    </xs:extension>

  </xs:complexType>
  <xs:element name="ViewCapabilities" type="INSPIRE:ViewCapabilitiesType"
substitutionGroup="wms:_ExtendedCapabilities">
    </xs:element
  <xs:complexType name="LanguagesType">
    <xs:annotation>
      <xs:documentation>List of languages defined by a 3-letter code as
described in ISO 639-2 that are supported by this service
instance.</xs:documentation>
    </xs:annotation>
    <xs:sequence>
      <xs:element name="Language" type="INSPIRE:LanguageType"
minOccurs="1" maxOccurs="unbounded">
        </xs:element>
      </xs:sequence>
    </xs:complexType>

  <xs:complexType name="LanguageType">
    <xs:simpleContent>
      <xs:extension base="xs:string">
        <xs:attribute name="default" type="xs:boolean" use="optional"
default="false" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType></xs:schema>
```

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XML Example for extended capabilities

```
[...]  
<ows:ExtendedCapabilities>  
  <INSPIRE:ViewCapabilities>  
    <INSPIRE:Languages>  
      <INSPIRE:Language>ENG</Language>  
      <INSPIRE:Language default="true">FRA</Language>  
    </INSPIRE:Languages>  
    <INSPIRE:CurrentLanguage>  
      <INSPIRE:Language>ENG</Language>  
    </INSPIRE:  </INSIRE:ViewCapabilities>  
</ows:ExtendedCapabilities>
```