

Representación de la distribución de especies en INSPIRE

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Sumario



- Que es INSPIRE
- A quien obliga
- El tema 19 del Anexo III (SD)
 - El esquema
 - Atributos
 - La unidad taxonómica
 - La unidad espacial
 - Sobre datos primarios
- El tema 7 del Anexo III (EF)

Qué es INSPIRE

La Directiva 2007/2/CE

- Conocida como INSPIRE (INfraestructure for SPatial InfoRmation in Europe)
- Impulsores:



- Coordinación de la implementación:



- 7 capítulos
[Disposiciones generales, metadatos, interoperabilidad de los conjuntos y servicios de datos espaciales, servicios de red, puesta en común de los datos, (acuerdos de intercambio, acceso y reutilización de datos), coordinación y medidas complementarias (mecanismos de monitorización) y disposiciones finales]
- 3 anexos
I: datos de referencia (9 temas), II: datos básicos (4 temas) y III: temáticos (21 temas)

Qué es INSPIRE

INSPIRE: Principios del Plan de Acción (1):

- Tiene cómo justificación el medio ambiente
- El concepto arranca de la Conferencia de Río de Janeiro de 1992 y se pone en marcha en EEUU en 1994 creando la National Spatial Data Infrastructure

Ventajas para el usuario:

- La información geográfica debe ser **abundante y disponible** bajo condiciones que no inhiban su uso extensivo.
- Debe ser fácil **descubrir** la información geográfica disponible, y en qué condiciones puede conseguirse y usarse.
- Datos geográficos **fáciles de entender** e interpretar, y seleccionables de forma sencilla.
- Los datos espaciales deben ser difundidos en condiciones que permitan su **utilización generalizada**.
- Se deben facilitar, como **mínimo** y con carácter **gratuito**, los **servicios de localización** de conjuntos de datos espaciales
- Deben ser accesibles a través de servicios de red - **Internet**
- Prevé el **desarrollo de servicios de valor añadido** por parte de terceros, tanto en provecho de las autoridades públicas como de los particulares

Qué es INSPIRE

INSPIRE: Principios del Plan de Acción (1):

Novedades operativas:

- Debe ser posible **combinar** información geográfica con **total continuidad** para toda **Europa** desde **diversas fuentes**, y compartirla entre usuarios y aplicaciones.
- Datos **recogidos una vez y mantenidos** en el nivel donde se logra **máxima efectividad**.
- Debe ser posible que la **información** recogida en un nivel sea **compartida** por otros niveles.
- Se solapa con Directiva 2003/4/CE (información ambiental) y se complementa con Directiva 2003/98/CE (reutilización información del sector público)
- Los datos espaciales serán compatibles con Galileo (proyección WGS84-ETRS89) y con GMES (temática)
- Todas las infraestructuras espaciales serán **compatibles** entre sí y **accesibles** a través de un geoportal comunitario

<http://eu-geoportal.jrc.it/>

- **Esta Directiva** que obliga a los Estados Miembros, en España, con la Ley de transposición en fase final.... **obliga a las Comunidades Autónomas.**

Qué es INSPIRE



Anexo I: de referencia

Sistema de coordenadas de referencia

Sistema de cuadrículas geográficas

Nombres geográficos

Unidades administrativas

Direcciones

Parcelas catastrales

Redes de transporte

Hidrografía

Lugares protegidos

9 Temas

Interoperabilidad y armonización de los conjuntos de datos, a más tardar el **15 de mayo de 2009**

Qué es INSPIRE

Anexo II: básicos

Modelos de Elevación

Ocupación del suelo

Ortoimágenes

Geología

4 Temas: Las normas de ejecución se adoptarán a más tardar el **15 de mayo de 2012**



Qué es INSPIRE



Anexo III: temáticos

Unidades estadísticas
Edificios
Suelos (edafología)
Uso del suelo
Salud y seguridad humanas
Servicios de utilidad pública y estatales
Instalaciones de observación del medio ambiente
Instalaciones de producción e industriales
Instalaciones agrícolas y de acuicultura
Distribución de la población - demografía

Zonas sujetas a ordenación (nitratos, vertederos, minería, ruido, etc.)

Zonas de riesgos naturales

Meteorología

Oceanografía física (olas, corrientes, etc.)

Regiones marinas

Regiones biogeográficas

Hábitats y Biotopos

Distribución de Especies

Recursos energéticos

Recursos minerales

21 Temas

Las normas de ejecución se adoptarán a más tardar el **15 de mayo de 2012**

A quien obliga

Administration General del Estado

Comunidades Autónomas



Universidades
Empresas privadas
Voluntariamente

Administración local
(IG generada por un mandato nacional/regional)



2012-11-21

Sevilla: Seminario INSPIRE

5

El tema 19 del Anexo III



INSPIRE Infrastructure for Spatial Information in Europe

D2.8.III.19 Data Specification on *Species Distribution* – Technical Guidelines

The INSPIRE Directive defines *Species Distribution* as geographical distribution of occurrence of animal and plant species aggregated by grid, region, administrative unit or other analytical unit [Directive 2007/2/EC]. At this point we have to define that when the data specification talks about "species" throughout the document it should be considered as a synonym of the correct scientific term of "taxon".

Generalidades

The INSPIRE Directive defines *Species Distribution* as geographical distribution of occurrence of animal and plant species aggregated by grid, region, administrative unit or other analytical unit [Directive 2007/2/EC]. At this point we have to define that when the data specification talks about "species" throughout the document it should be considered as a synonym of the correct scientific term of "taxon".

local authorities or scientist, however, an extended model is provided with the possibility to link to the original observations used as sources for the aggregations. (raw' field observation data)

A final point resulting from the definition is that the distributions may be represented in a wide range of formats, such as points, grid cells at different scales or polygons of specifically defined areas (analytical units).

La conceptualización se realiza usando diagramas UML

La información se expresa en un lenguaje informático: XML

¿XML?

```
<?xml version="1.0" encoding="UTF-8"?>  
<correo xmlns="http://www.ideo.es" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  
  xsi:schemaLocation="http://www.ideo.es/correo.xsd">  
  <origen>alice@mfom.es</origen>  
  <destino>bob@mfom.es</destino>  
  <asunto>Avances IDEE</asunto>  
  <texto>La IDE de Andalucía se incorporará a la IDEE en breve.</texto>  
</correo>
```

❖ Documento XML

```
<?xml version="1.0"?>  
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="http://www.ideo.es"  
  xmlns="http://www.ideo.es" elementFormDefault="qualified">  
  <xs:element name="correo">  
    <xs:complexType>  
      <xs:sequence>  
        <xs:element name="origen" type="xs:string"/>  
        <xs:element name="destino" type="xs:string"/>  
        <xs:element name="asunto" type="xs:string"/>  
        <xs:element name="cuerpo" type="xs:string"/>  
      </xs:sequence>  
    </xs:complexType>  
  </xs:element></xs:schema>
```

❖ Esquema XML



BY

El esquema

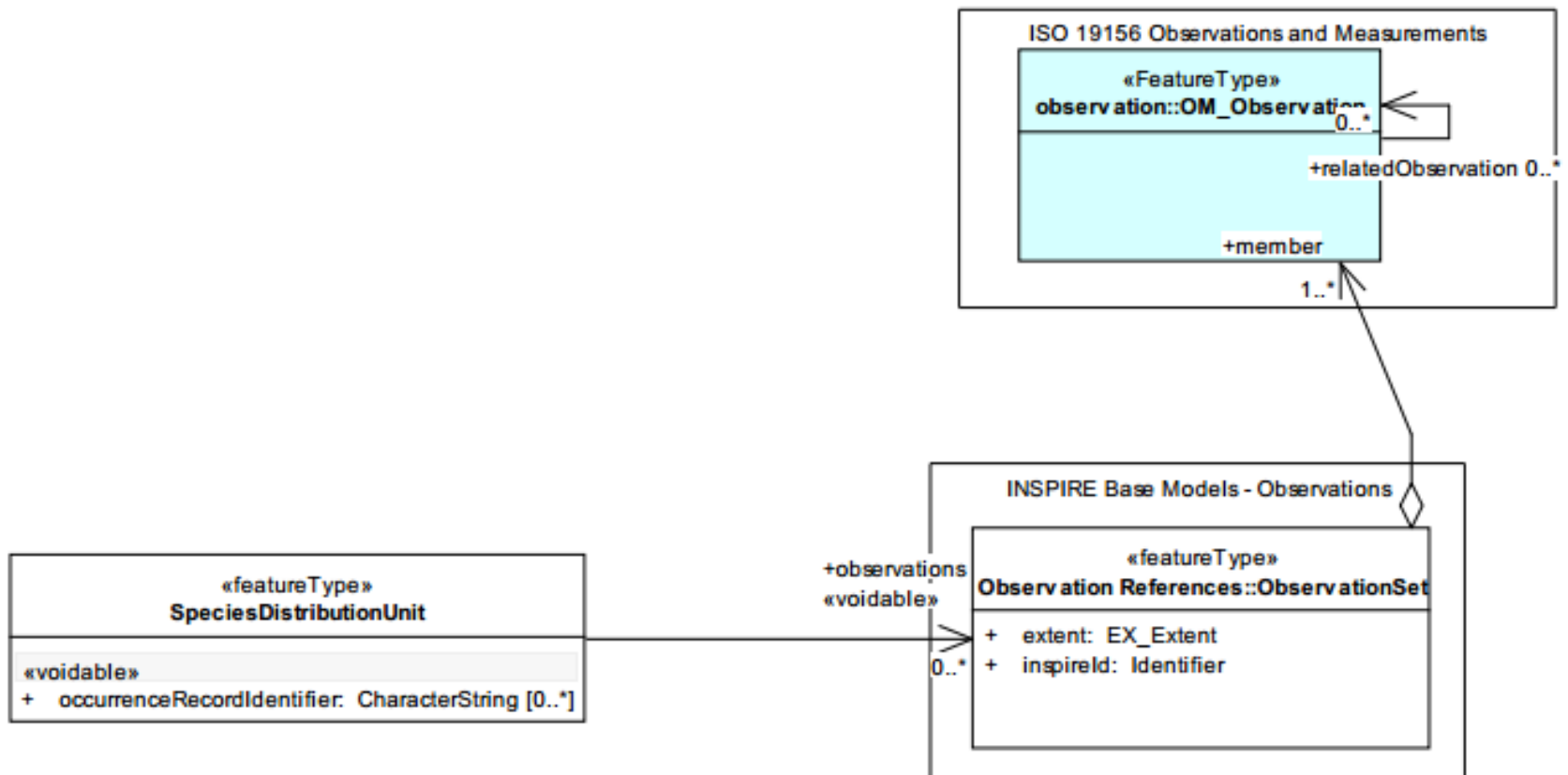
- Elementos propios
- Elementos de otros esquemas: “application schema may include references (e.g. in attributes or inheritance relationships) to common types or types defined in other spatial data themes. (Imported types)”

La unidad taxonómica

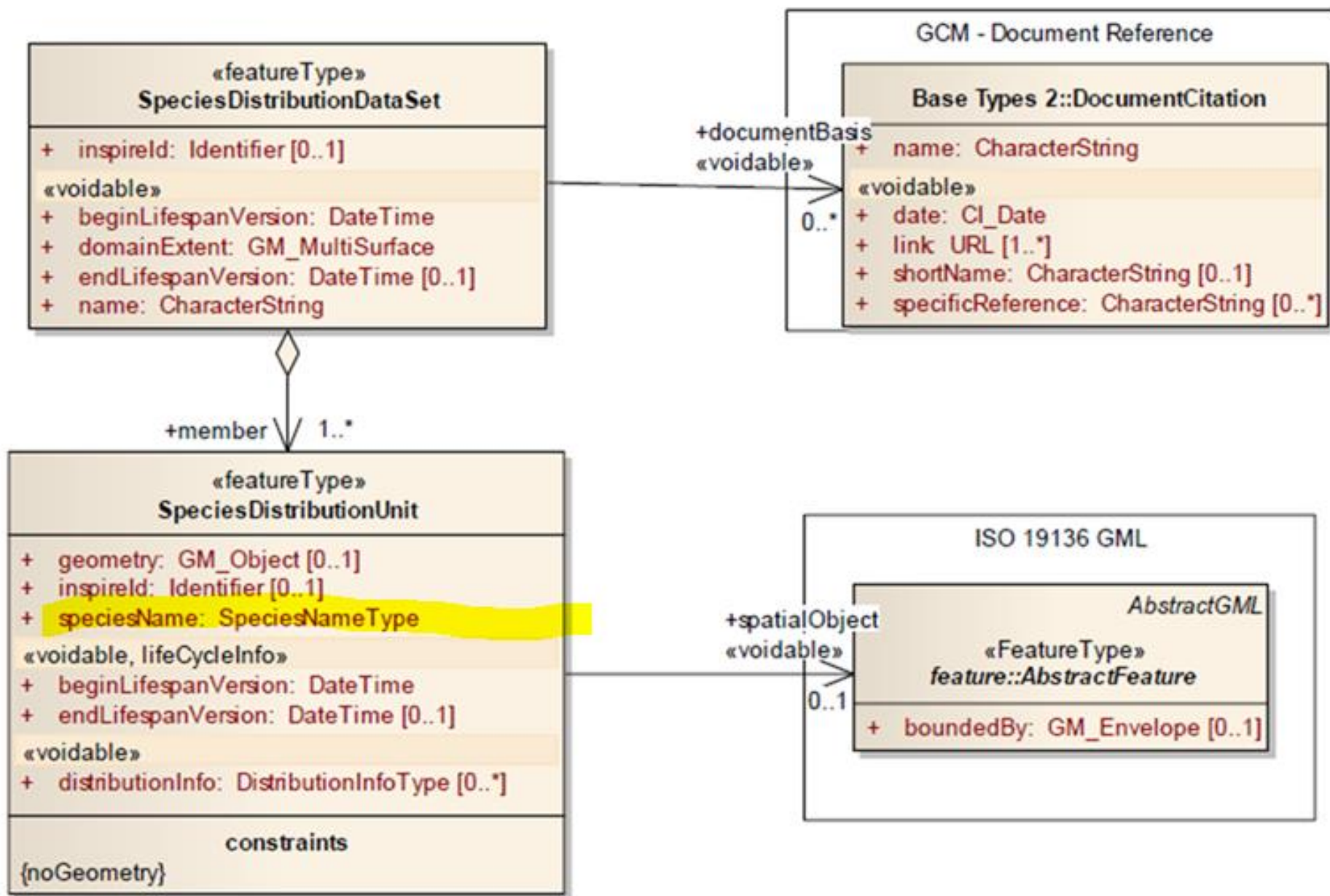
- Species=taxon
- Each unit specifies a reference SpeciesScheme which refers to a choice of three widely known reference lists and a referenceSpeciesID refers to an ID from that reference list for the given species of interest. **EU-Nomen** is the preferred reference list to be used. If a taxon is listed in EU-Nomen, this reference must be used as first choice. If it is not listed in EU-Nomen, the second choice is **EUNIS**, if not in EUNIS, **Natura2000** can be used,

Esquema UML de alto nivel

- ligar “unidad de distribución” a datos primarios > featureType SourceInformation



class Species Distribution overview



«dataType»
DistributionInfoType

- + occurrenceCategory: OccurrenceCategoryValue
- «voidable»
- + collectedFrom: Date
 - + collectedTo: Date
 - + populationSize: PopulationSizeType [0..1]
 - + populationType: PopulationTypeValue [0..1]
 - + residencyStatus: ResidencyStatusValue [0..1]
 - + sensitiveInfo: Boolean [0..1]

«dataType»
SpeciesNameType

- + referenceSpeciesId: ReferenceSpeciesCodeValue
 - + referenceSpeciesScheme: ReferenceSpeciesSchemeValue
- «voidable»
- + localSpeciesId: LocalSpeciesNameCodeValue [0..1]
 - + localSpeciesName: CharacterString [0..1]
 - + localSpeciesScheme: CharacterString [0..1]
 - + qualifier: QualifierValue [0..1]
 - + referenceSpeciesName: CharacterString

«dataType»
RangeType

- + lowerBound: Integer [0..1]
- + upperBound: Integer [0..1]

«dataType»
PopulationSizeType

- + countingMethod: CountingMethodValue
- + countingUnit: CountingUnitValue
- + populationSize: RangeType

INSPIRE		Reference: D2.8.III.19_v3.0
TWG-SD	Data Specification on <i>Species Distribution</i>	2013-12-10 Page 36

SpeciesNameType

Description: The authorized ReferenceSpeciesScheme (EU-Nomen, Unis and Nature Directives) provides reference species lists which defines the ReferenceSpeciesName with its scientific name plus author and ReferenceSpeciesId.

Multiplicity: 1

Stereotypes: «voidable»

Attribute: localSpeciesId

Name: local species id

Value type: LocalSpeciesNameCodeValue

Definition: Identifier used in national nomenclature.

Description: The taxonID used in national nomenclature databases.

Multiplicity: 0..1

Stereotypes: «voidable»

Attribute: localSpeciesScheme

Name: local species scheme

Value type: CharacterString

Definition: Name of local species classification scheme (bibliographic reference).

Multiplicity: 0..1

Stereotypes: «voidable»

“voidable”

- EU-NOMEN

The EU-Nomen portal enables the correct use of species names and their classification, to more accurately manage information on animals and plants. This is the first all-taxa inventory for European species. (Source: EU-Nomen website).

The portal is one of the outcomes of the PESI (Pan-European Species Directories Infrastructure) project. The objective of this project was to integrate and secure taxonomically authoritative species name registers that underpin the management of biodiversity in Europe. PESI will integrate the three main all-taxon registers in Europe, namely the *European Register of Marine Species*, *Fauna Europaea*, and *Euro+Med PlantBase* in coordination with EU based nomenclatures and the network of EU based Global Species Databases. (Source: PESI website)

- EUNIS

EUNIS data are collected and maintained by the *European Topic Centre on Biological Diversity* for the *European Environment Agency* and the *European Environmental Information Observation Network* to be used for environmental reporting and for assistance to the NATURA2000 process (EU Birds and Habitats Directives) and coordinated to the related EMERALD Network of the Bern Convention.

- NATURA2000

Natura 2000 is a European network of important ecological sites under the Birds Directive and Habitats Directive and has the aim of conserving biodiversity on land and at sea by protecting the most seriously threatened habitats and species across Europe. This legislation is called the Habitats Directive (adopted in 1992) and complements the Birds Directive adopted in 1979. Within the legislation special attention is paid to two groups of species. The first consists of fauna species listed in Annex II to the Habitats Directive. These include a number of marine mammals and certain fish. Secondly, various sea birds are also very important to the Natura 2000 network. These are protected under the Birds Directive, and their prevalence, population size and distribution are criteria for the nomination of Special Protection Areas (SPAs) that form part of Natura 2000.

Kingdom: Animalia > Phylum: Chordata > Class: Aves > Order: Passeriformes > Family: Corvidae > Genus: Cyanopica > Species: Cyanopica cyanus

Azure-winged Magpie - *Cyanopica cyanus* (Pallas, 1776)



Quick facts

- Threat status Europe: **Not evaluated** (IUCN)
- Protected by **1** international agreement
- **22** Natura 2000 sites are designated for the species.

i

Saxifraga-Jan van der Straaten

[Images from the web](#)

Cyanopica cooki

Species in GBIF Backbone Taxonomy

Animalia Chordata Aves Passeriformes Corvidae Cyanopica

2.052

0

Occurrences

Infraspecies

[View occurrences](#)

Cyanopica cyanus (Pallas, 1776)

Species in GBIF Backbone Taxonomy

Animalia Chordata Aves Passeriformes Corvidae Cyanopica

1.492

9

Occurrences

Infraspecies

[View occurrences](#)

Overview

FULL NAME

Cyanopica cooki

TAXONOMIC STATUS

Accepted species

EXTERNAL LINKS

- [Encyclopedia of Life](#)
- [Catalogue of Life](#)
- [Biodiversity Heritage Library](#)

COMMON NAMES

- Iberian Magpie eng
 - Iberian magpie
- [more](#)

ACCORDING TO

IOC World Bird Names

GBIF ID [5844936](#)

Overview

FULL NAME

Cyanopica cyanus (Pallas, 1776)

TAXONOMIC STATUS

Accepted species

COMMON NAMES

- Rabilargo spa
 - Azure winged Magpie eng
 - azure winged magpie
- [more](#)

ACCORDING TO

The Clements Checklist

ORIGINAL NAME

[Corvus cyanus Pallas, 1776](#)



EXTERNAL LINKS

- [Encyclopedia of Life](#)
- [Catalogue of Life](#)
- [Biodiversity Heritage Library](#)

GBIF ID [7341881](#)



Georeferenced data

VIEWRECORDS

All 2,026 | [In viewable area](#)

DISTRIBUTIONS

Text based [distributions](#) present in some sources.



Georeferenced data

VIEWRECORDS

All 930 | [In viewable area](#)

DISTRIBUTIONS

Text based [distributions](#) present in some sources.

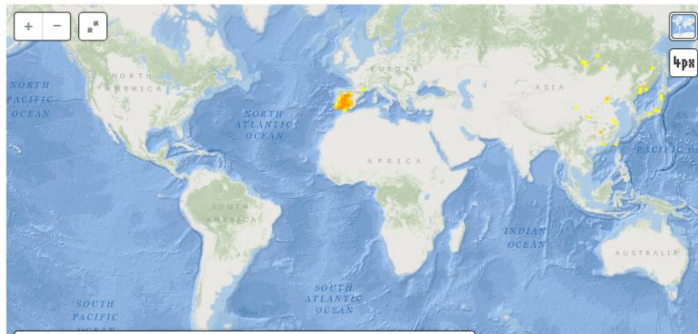
eol.org/pages/916487/maps

Cyanopica cyanus

Azure-winged Magpie [learn more about names for this taxon](#)

[add to a collection](#)

Overview Detail 105 Media **3 Maps** Names Community Resources Literature Updates





Higher Classification: > Kingdom Protozoa > Subkingdom Sarcomastigota > Phylum Amoebozoa > Subphylum Mycetozoa > Class Myxogastrea > Order Echinostelida > Family Echinosteliaceae > Genus Echinostelium

Echinostelium apitectum K.D. Whitney

Rank: Species
Taxon Status: accepted

Relationships towards this taxon

Genus group names

Echinostelium de Bary accepted genus name

Literature

nomenclatural reference Mycologia 72(5), 1980



Environment
no data

Importance
no data

Provided by



Citation

Echinostelium apitectum K.D. Whitney. Accessed through: Index Fungorum at <http://www.indexfungorum.org/names/NamesRecord.asp?RecordID=112803>

Image

no data

Occurrence



● Present
 ● Absent
 ● Doubtful
 ● Native
 ● Introduced
 ● Naturalised
 ● Invasive
 ● Managed
 ● No data

Information

Overview

FULL NAME
 Echinostelium apitectum K.D. Whitney, 1980

SYNONYMS
 · [Echinostelium vanderpoelii Nann.-Bremek., D.W. Mitch., T.N. Lakh. & R.K. Chopra, 1991](#)

TAXONOMIC STATUS
 Accepted species

ACCORDING TO
 The Catalogue of Life, 3rd January 2011

PUBLISHED IN
 Mycologia 72(5): 954 (1980)

ORIGINAL NAME
[Echinostelium apitectum K.D. Whitney, 1980](#)

HABITAT
 Not marine

EXTERNAL LINKS
 · [Encyclopedia of Life](#)
 · [Catalogue of Life](#)
 · [Biodiversity Heritage](#)

GBIF ID 3213209



Georeferenced

VIEW RECORDS
 All 131 | In viewable area

DISTRIBUTIONS
 Text based distribution from some sources.



EU-nomen enables the correct use of species names and their classification, to more accurately manage information on animals and plants. This is the first all-taxa inventory for European species.

[Read more about this portal.](#)



Tweets

 **EU-nomen** @EU_nomen
PESI was presented at the COST Action Alien Challenge at Ispra
brc.ac.uk/alien-challeng...

 Follow

16 Dec

Time posted: 16 Dec 2013, 20:51:07 (UTC)

 **EU-nomen** @EU_nomen
PESI welcomes new Focal Points in Croatia (State Institute for Nature Protection) and Czech (Nature Conservation Agency CZ)

13 Jun 13

 **EU-nomen** @EU_nomen
Fauna Europaea version 2.6.1 has been released: bit.ly/NrFx3j
Expand

24 May 13



Name Search

Insert (part of) taxon

[to advanced search](#)

- Show only accepted taxa
 Common Names

Highlight Species



La unidad espacial

IR Requirement

Annex II, Section 1.2

Datum for three-dimensional and two-dimensional coordinate reference systems

For the three-dimensional and two-dimensional coordinate reference systems and the horizontal component of compound coordinate reference systems used for making spatial data sets available, the datum shall be the datum of the European Terrestrial Reference System 1989 (ETRS89) in areas within its geographical scope, or the datum of the International Terrestrial Reference System (ITRS) or other geodetic coordinate reference systems compliant with ITRS in areas that are outside the geographical scope of ETRS89. Compliant with the ITRS means that the system definition is based on the definition of the ITRS and there is a well documented relationship between both systems, according to EN ISO 19111.

IR Requirement

Annex II, Section 1.3

Coordinate Reference Systems

Spatial data sets shall be made available using at least one of the coordinate reference systems specified in sections 1.3.1, 1.3.2 and 1.3.3, unless one of the conditions specified in section 1.3.4 holds.

1.3.1. Three-dimensional Coordinate Reference Systems

- 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.

1.3.2. Two-dimensional Coordinate Reference Systems

- 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.

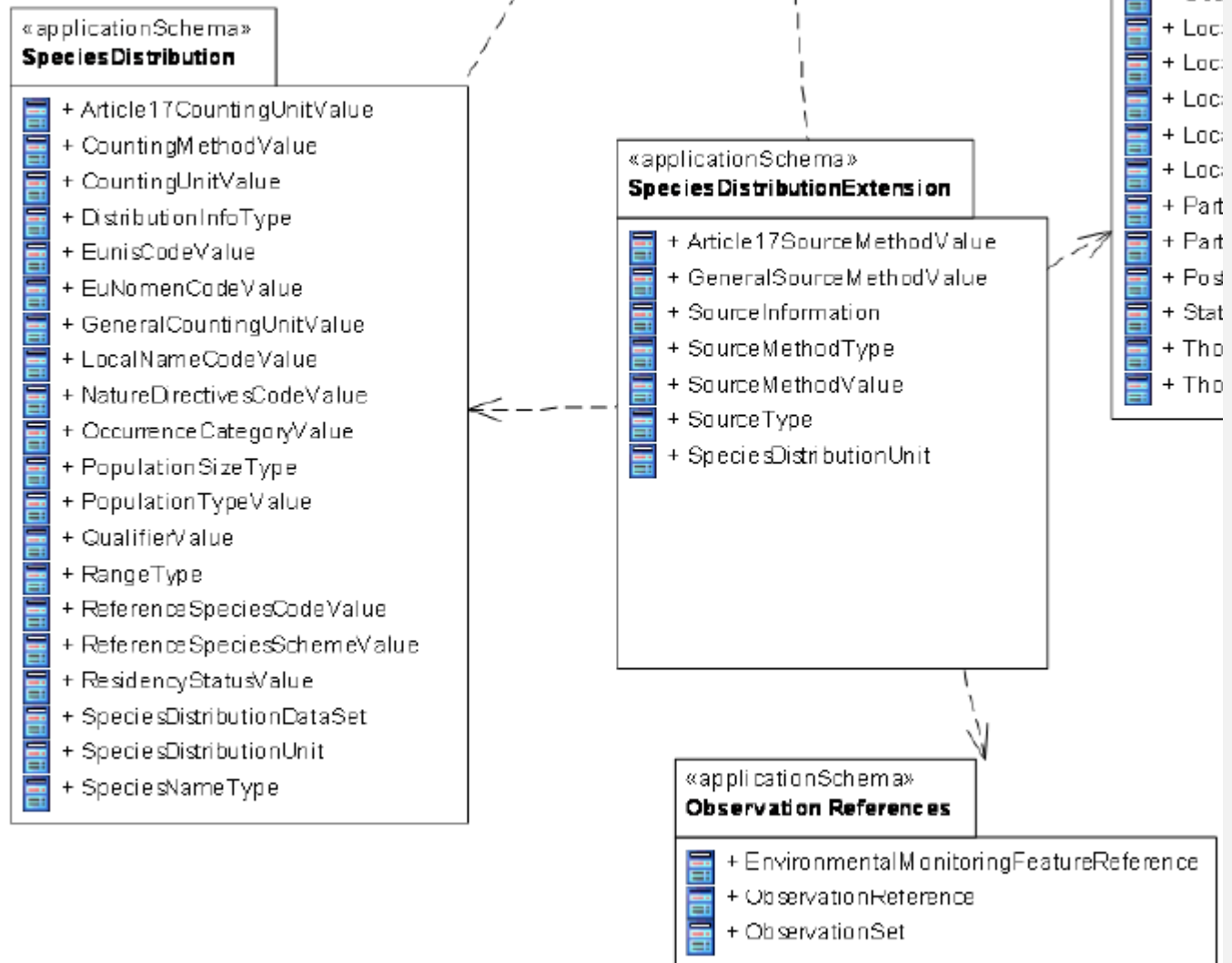
Species distribution extension

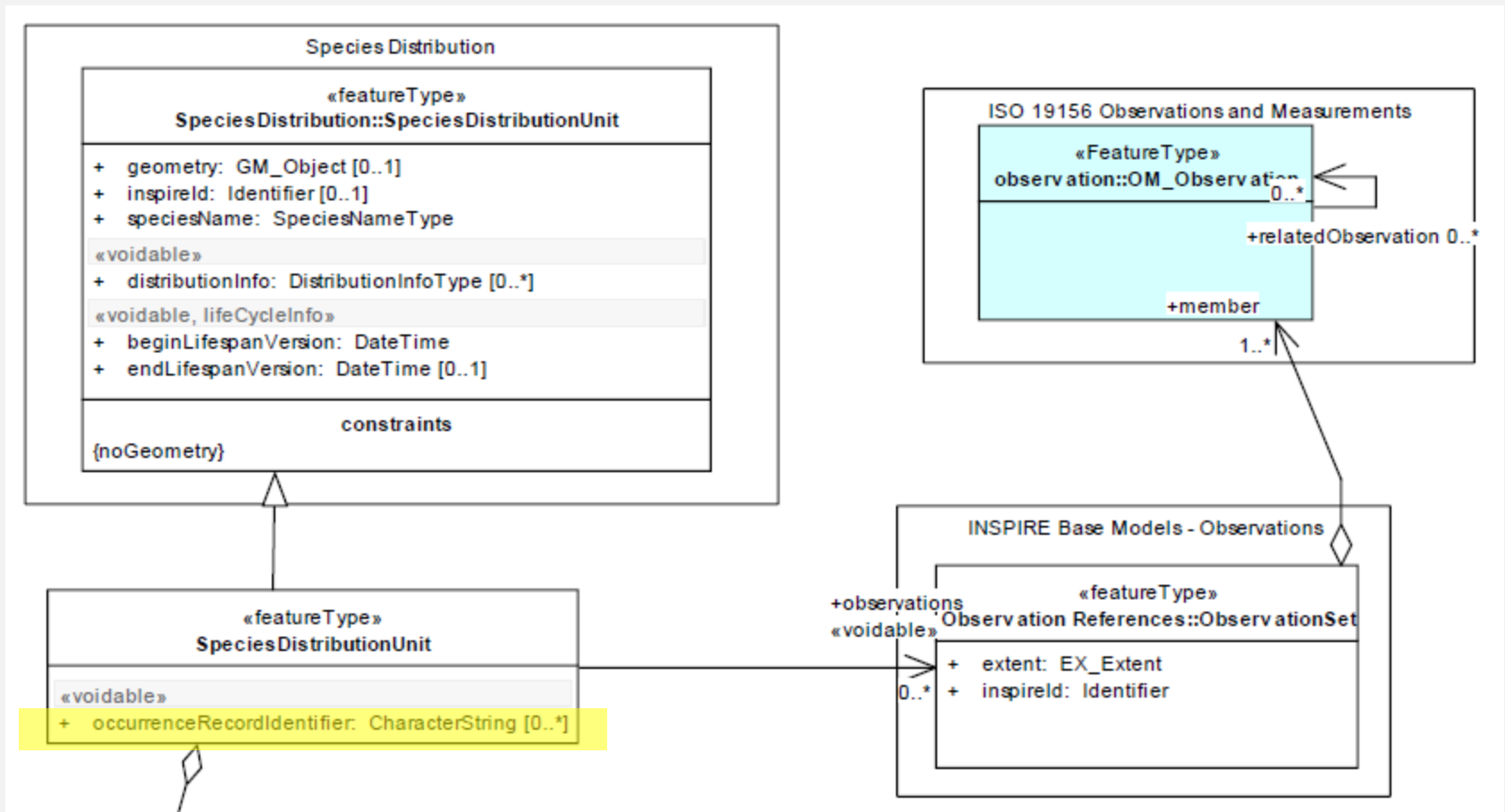
If required, it is also possible to provide a reference from *SpeciesDistributionUnit* to observation data. This is done via a reference from spatial object type *SpeciesDistributionInfoUnit* to the relevant underlying observations in the *SpeciesDistributionUnit* as an attribute *occurrenceRecordIdentifier*. Darwin Core and ABCD are widely used standards for collection data and observations interpreted as collection information within the biodiversity domain. The Darwin Core Triple provides a globally unique identifier combining (institution, collection, catalog number). It is also possible to apply a reference to the INSPIRE_ObservationCollection which again links to single observations. The observation model is based on the ISO 19158 Observations and Measurements standard.

Species distribution extension

INSPIRE	Reference: D2.8.III.19_v3.0		
TWG-SD	Data Specification on <i>Species Distribution</i>	2013-12-10	Page 46

5.4.1.2. UML Overview





5.4.2.3. Code lists

5.4.2.3.1. Article17SourceMethodValue

Article17SourceMethodValue

Name: article 17 source method value

Definition: The methods that have been used in the sources for compiling the information about the occurrences of the species within a species distribution unit for article 17 purposes.

Description: Describes how the information about the occurrences of the species within a species distribution unit has been compiled.
NOTE The values of the list are found here:
http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2007-2012/reporting_guidelines/reporting-formats_1/_EN_1.0_&a=d


Extensibility: none

Identifier: <http://inspire.ec.europa.eu/codelist/Article17SourceMethodValue>

Values: The allowed values for this code list comprise only the values specified in *Annex C*. *Annex C* includes recommended values that may be used by data providers.

inspire.ec.europa.eu/codelist/Article17SourceMethodValue

About | Contact | Legal notice



INSPIRE REGISTRY

Enhancing access to European spatial data

European Commission > INSPIRE > INSPIRE registry > Error 404 Not Found

INSPIRE registry

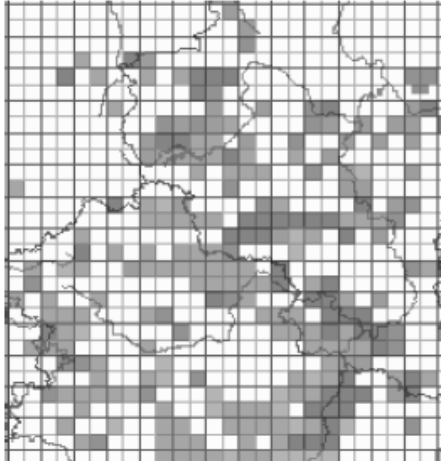
The requested resource could not be found on this server.

If you requested a code list value recommended in the INSPIRE data specification Technical Guidelines for an [empty code list](#), please note that these recommended values are not currently included in the INSPIRE registry.

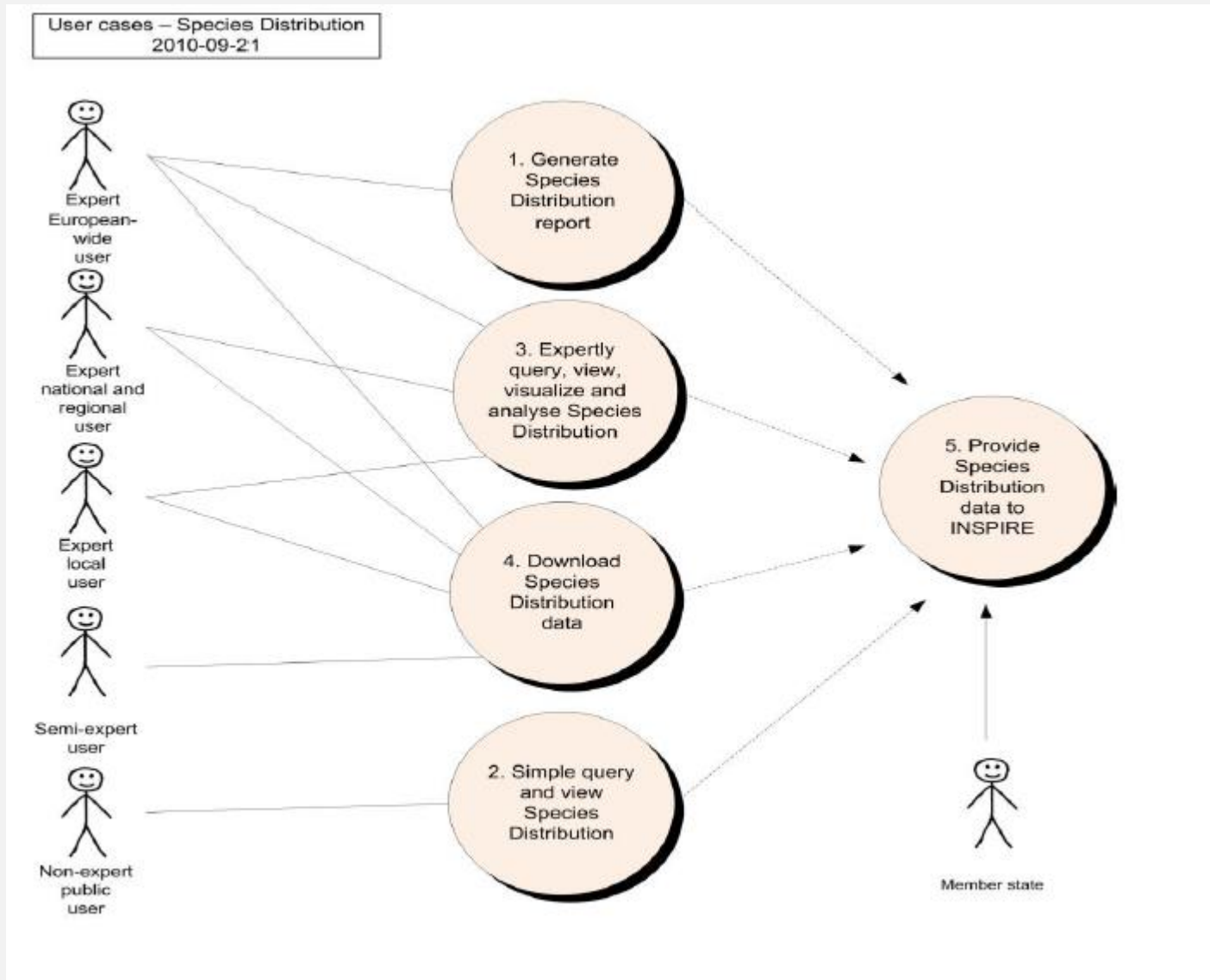
HTTP error code: 404 Not Found

For detailed informations about the HTTP request supported by this registry system you can read the About section.

Representación

Style Name	SD.SpeciesDistribution.Default
Default Style	yes
Style Title	Species Distribution Default Style
Style Abstract	This layer style is for representing presence information of species occurrences in grid cells or irregular shaped areas as analytical aggregation units without any further differentiation of additional attributes.
Symbology	<p>Fill colour: 50% GREY RGB 80,80,80 Outline colour: SOLID BLACK Abstract: The geometry is rendered with a 50% grey (#808080) fill and a black outline.</p> 

Casos de Uso (Anexo B)



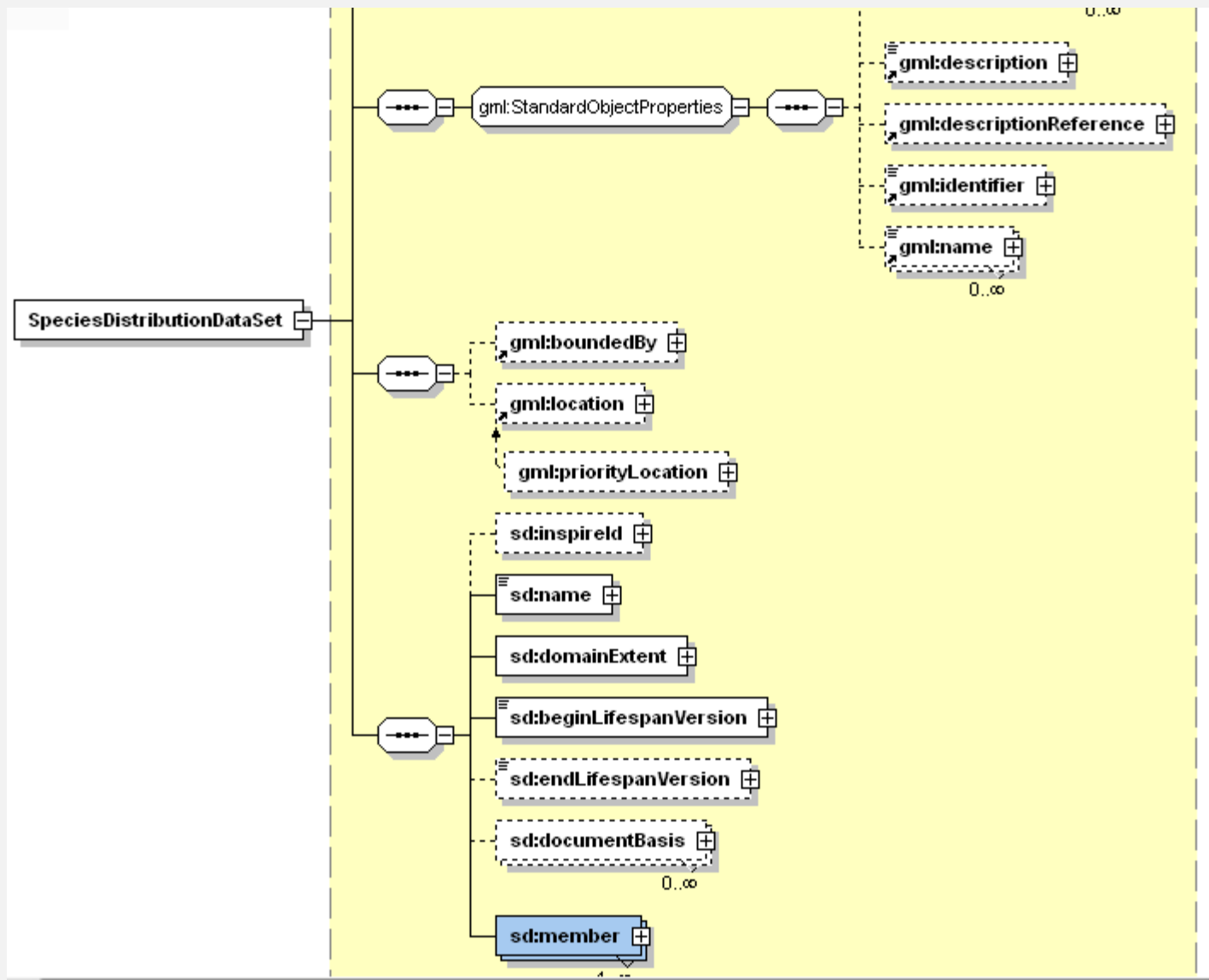
Annex C
(normative)
Code list values

INSPIRE Application Schema 'SpeciesDistribution'

Code List
<i>CountingMethodValue</i>
<i>GeneralCountingUnitValue</i>
<i>OccurrenceCategoryValue</i>
<i>QualifierValue</i>
<i>ReferenceSpeciesSchemeValue</i>
<i>ResidencyStatusValue</i>

Detalle del esquema (XSD) de las especificaciones de SD

<http://inspire.ec.europa.eu/schemas/sd/3.0/SpeciesDistribution.xsd>





INSPIRE

Infrastructure for Spatial Information in Europe

D2.8.II/III.7 Data Specification on *Environmental Monitoring Facilities* – Technical Guidelines

- Básicamente es una adopción de la norma ISO 19156: Observaciones y medidas (también adoptada por AENOR como norma UNE

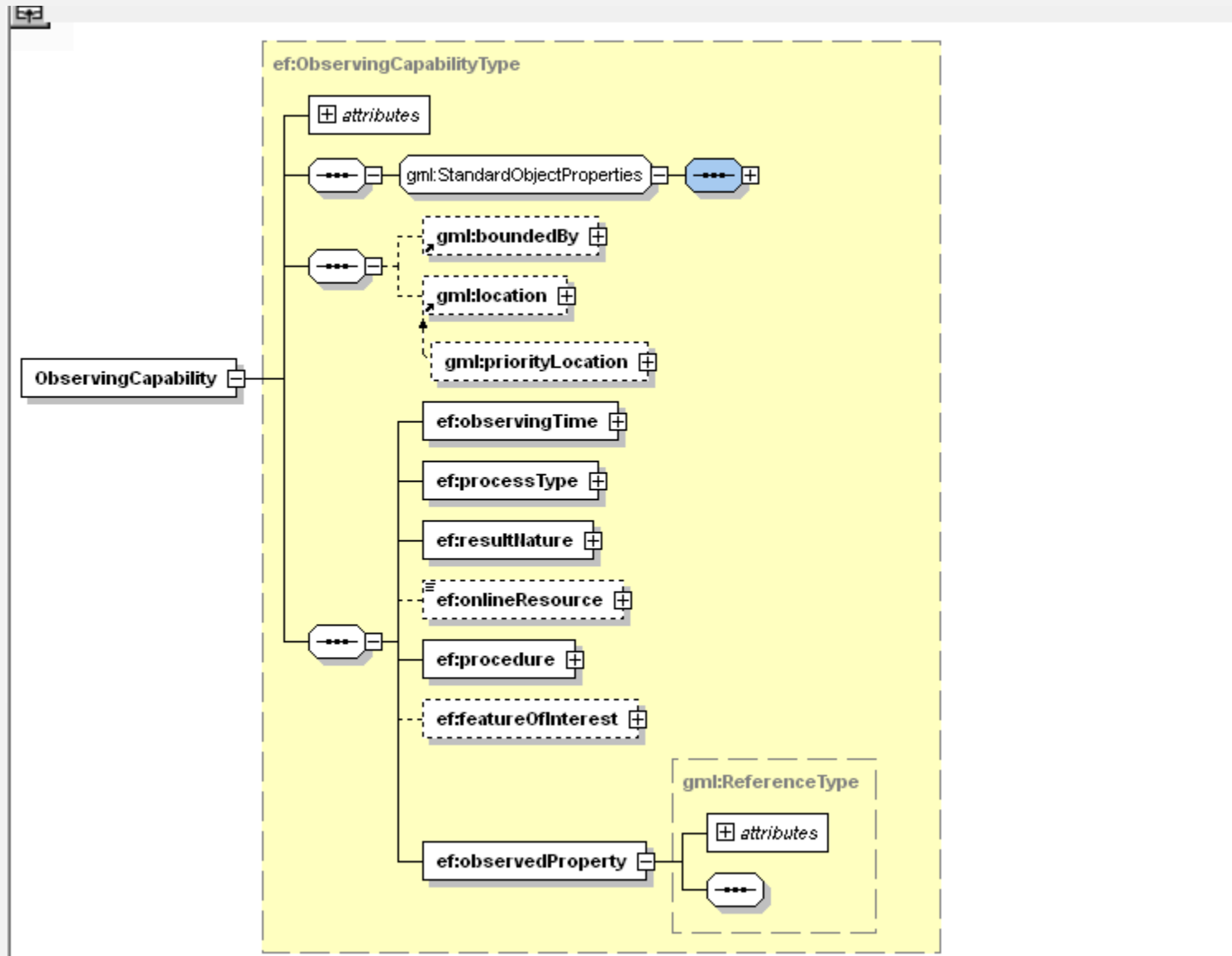
Resultados de la búsqueda, ordenados por código					
Código, título y comité	Fecha	Idioma	Formato	Precio (€)	Cesta
UNE-EN ISO 19156:2014 Información geográfica. Observaciones y mediciones. (ISO 19156:2011). Estado: Vigente <u>CTN: AEN/CTN 148 - INFORMACIÓN GEOGRÁFICA DIGITAL</u>	2014-04-09	<input type="text" value="Español"/>	<input type="text" value="PDF"/>	58,48 €	

The application schema for *Environmental Monitoring Facilities* contains 4 spatial object types:

- Environmental Monitoring Programme
- Environmental Monitoring Activity
- Environmental Monitoring Network
- Environmental Monitoring Facility

<http://inspire.ec.europa.eu/index.cfm/pageid/2>

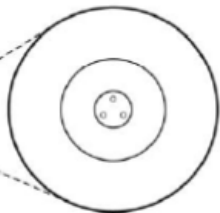
Detalle del esquema (XSD) de las especificaciones de EF



• **Environmental Monitoring Facility with Observing Capabilities and Observations: Sample Plot**

In the next example we show how Observing Capabilities are attached to a specific *Environmental Monitoring Facilities* instance. In this example, the *Environmental Monitoring Facilities* instance describes a Sample Plot, so a lower hierarchy level than shown in the previous example. The Phenomenon being observed is the occurrence of individual species from a checklist; the Process Used describes the field inventory methodology. The Feature of Interest is the Sample Plot.

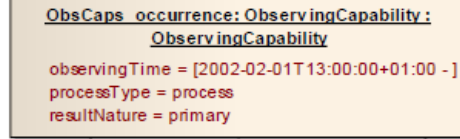
object Sample plot Observing Capability



Sample plot



+observingCapability



Domain

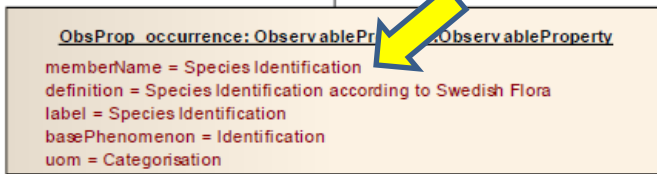
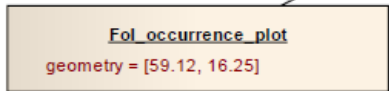
+observedProperty

Phenomenon

ProcessUsed

+procedure

+featureOfInterest



Para discutir

- Nuestras tareas permanecen invariables, INSPIRE solo afecta al “cómo”
- No vale la pena que cada uno haga su pasarela; necesitamos unir esfuerzos, coordinarnos... y hacer un ejemplo
- Componente taxonómico presenta problemas de base

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