

# Methodology for Adaptation of Mapping INSPIRE Data Specifications

Gregorio Urquía Osorio

Lisbon, 26th May 2015

# Tragsatec



We perform activities of **engineering, consulting and technical assistance** in agriculture, forestry, rural development, environment and marine environment, both in studies and projects as well as technical services.





**Databank of Nature (BDN) -  
Spanish Inventory of Natural  
Heritage and Biodiversity  
(IEPNB)**

# Databank of Nature - Spanish Inventory of Natural Heritage and Biodiversity

## ■ Data models

Databank of Nature keeps a extense document with the data models of the geographic layers that are stored in Databank Nature's GIS.

### BLOCK 1: PROTECTED SPACES, NATURA 2000 AND PROTECTED AREAS BY INTERNATIONAL BODIES

- Áreas Importantes para las Aves en España (IBAS)
- Humedales españoles inscritos en la lista del convenio (RAMSAR)
- Espacios Naturales protegidos (ENP)
- Red Natura 2000
- Lista Nacional de Lugares de Importancia Comunitaria (LIC)
- Lista Nacional de Zonas de Especial Conservación (ZEC)
- Zona de Especial Protección para las Aves (ZEPAS)
- Red Natura 2000
- Reservas de la Biosfera (MaB)
- Zonas especialmente protegidas de importancia para el mar Mediterráneo (ZEPIM)
- Áreas protegidas del Convenio para la Protección del Medio Ambiente Marino del Atlántico Nordeste (OSPAR)

# Databank of Nature - Spanish Inventory of Natural Heritage and Biodiversity

## ■ Data models

### BLOCK 2: INVENTORIES

- Inventario Nacional de Hábitat (HABITAT)
- Inventario Nacional de Biodiversidad (Hábitat y Especies)
- Atlas y Manual de los Hábitat Naturales y Seminaturales de España
- Inventario Español de Especies Terrestres
- Inventario Nacional de Erosión de Suelos (INES)
- Tercer Inventario Forestal Nacional (IFN3)
- Montes que tienen alguna relación de dominio con la Administración Forestal (PROPIEDAD)
- Inventario Español de Patrimonios Forestales
- Mapa Forestal de España 1:50.000 (MFE50)
- Mapa Forestal de España 1:25.000 (MFE25)
- Mapa Forestal de España. Foto Fija 2009
- Mapa Forestal de España 1:200.000 (MFE200)
- Inventario Español de Zonas Húmedas
- Inventario Español de Parques Zoológicos
- Inventario de Paisajes



# Databank of Nature - Spanish Inventory of Natural Heritage and Biodiversity

## ■ Data models



### BLOCK 3: THEMATICS

- Regiones Biogeográficas
- Malla 100 x 100 km
- Malla 10 x 10 km
- Malla 1 x 1 km

### BLOQUE 4: BASE CARTOGRAPHY

- Límites administrativos: Comunidades autónomas
- Límites administrativos: Provincias
- Límites administrativos: Términos municipales

### BLOQUE 5: MARINE BIODIVERSITY

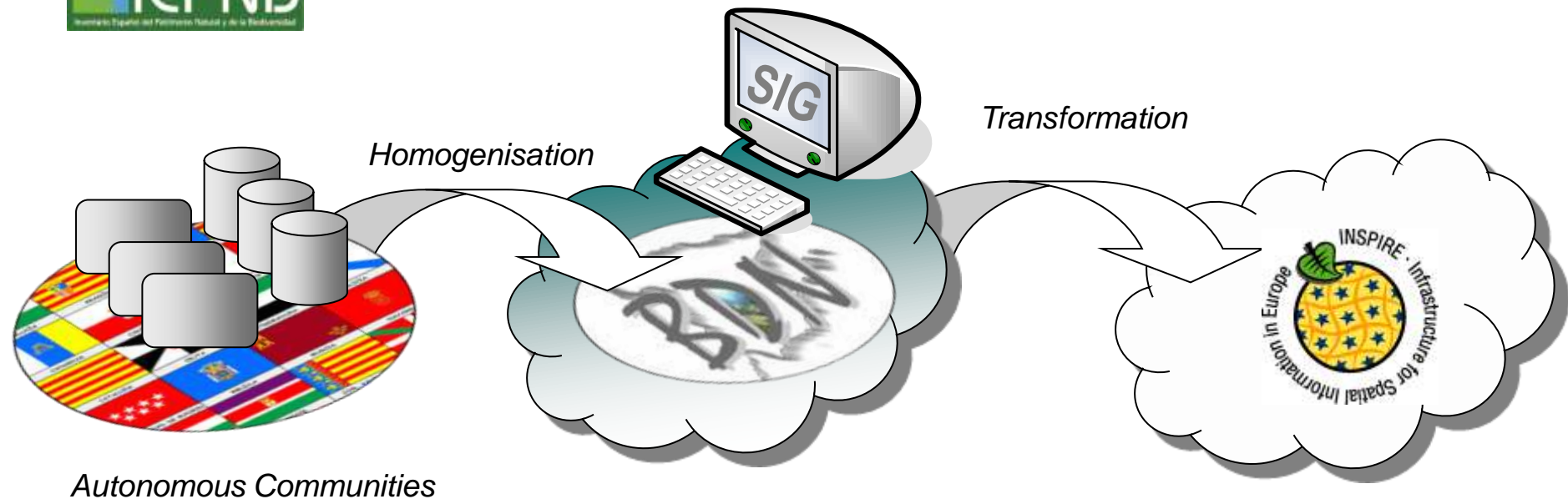
# Databank of Nature - Spanish Inventory of Natural Heritage and Biodiversity

## Spanish Inventory of Natural Heritage and Biodiversity



### FUNCTIONS:

- Data entry: by Autonomous Communities (Regional governments)
- Data analysis: Homogenisation
- Dissemination of INSPIRE adapted data



# Databank of Nature - Spanish Inventory of Natural Heritage and Biodiversity



## Spanish Inventory of Natural Heritage and Biodiversity

### Componentes IEPNB

1	Ecosistemas	1a Catálogo Español de Hábitats en Peligro de Desaparición 1b Inventario Español de Zonas Húmedas 1c Inventario Español de Hábitats terrestres 1d Inventario Español de Hábitats marinos 1e Inventario de paisajes 1f Mapa Forestal de España
2	Fauna y Flora	2a Inventario Español de Especies terrestres 2b Inventario Español de Especies marinas 2c Listado de Especies Silvestres en Régimen de Protección Especial incluyendo el Catálogo Español de Especies Silvestres
3	Recursos genéticos	3a Inventario Español de Bancos de Material Biológico y Genético referido a especies silvestres 3b Inventario Español de Parques Zoológicos 3c Recursos Genéticos Forestales
4	Recursos naturales	4a Inventario Español de Caza y Pesca 4b Inventario Español de los conocimientos tradicionales 4c Inventario Forestal Nacional 4d Mapa de suelos del Proyecto de Lucha contra la Desertificación en el Mediterráneo (LUCDEME) 4e Otros componentes de la Estadística Forestal Española
5	Espacios protegidos y/o de interés	5a Dominio público hidráulico 5b Dominio público marítimo-terrestre 5c Inventario de Espacios Naturales Protegidos, Red Natural 2000 y Áreas protegidas por instrumentos internacionales 5d Inventario Español de Lugares de Interés Geológico 5e Inventario Español de Patrimonios Forestales. Catálogo de montes de utilidad pública 5f Red de vías pecuarias 5g Zonas de Alto Riesgo de Incendio
6	Efectos negativos sobre el patrimonio natural y la biodiversidad	6a Catálogo Español de Especies Exóticas Invasoras 6b Daños Forestales. Redes nivel I y II 6c Estadística General de Incendios forestales 6d Inventario Nacional de Erosión de Suelos 6e Registro Estatal de Infractores de Caza y Pesca 6f Red de Estaciones Experimentales de Seguimiento de la Erosión y la Desertificación (RESEL)
7	Recursos complementarios	7a Educación, sensibilización y divulgación ambiental 7b Instrumentos administrativos relacionados con la conservación y el uso del patrimonio natural y la biodiversidad



# Databank of Nature - Spanish Inventory of Natural Heritage and Biodiversity

## ■ Databank of Nature competence

Databank of Nature is included in INSPIRE as Legally Mandated Organisation (LMO) and the INSPIRE themes of Databank of Nature are the following:

- ANNEX I: Theme 9: Protected sites
  - Protected Natural Spaces
  - Natura 2000
  - Ramsar
  - Zepim
  - Ospar
  - Mab
- ANNEX III: Theme 17 : Biogeographical regions
- ANNEX III: Theme 18 : Habitats and Biotopes
- ANNEX III: Theme 19: Species Distribution



02

# Participation in **INSPIRE**

## Participation in INSPIRE

- INSPIRE Annex II+III DS Testing
- Common Database on Designated Areas (CDDA) as per INSPIRE
- SIGPAC –FEGA (LPIS)
- Geographic gazetter of Castilla La Mancha



03

# **Adaptation methodology**

## ■ Adaptation stages

- Initial study
- Mapping rules and matching table
- UML diagram creation with the original data and the application scheme.
- Download/selection of the XSD template to use (INSPIRE web)
- Datasets transformation to GML files according to INSPIRE
- Validation of the transformation and Abstract test suite
- Technical document with the details of the adaptation and transformation

# Adaptation methodology

## ■ Initial study

The initial study of the original data (datasets to be adapted) and the study of the data specifications published by INSPIRE for each theme are essential to start the work.

The data specification of INSPIRE themes are drawn up following the Standard UNE EN-ISO 19131 that describes the geographic data requirements, based on the concepts of other ISO 19100 standards.

### Specifications sections:

- Product Identification
- Content: a) Data model b) Phenomenon catalog
- Reference system
- Data entry
- Representation
- Quality
- Distribution
- Maintenance
- Metadata (specified by INSPIRE and following the application of the norms ISO 19115, ISO 19119)



INSPIRE  
Infrastructure for Spatial Information in Europe

#### D2.8.1.9 Data Specification on Protected Sites Protected Sites – Technical Guidelines

Title	D2.8.1.3 Data Specification on Protected Sites – Technical Guidelines
Creator	INSPIRE Thematic Working Group Protected Sites
Date	2014-04-17
Subject	INSPIRE Data Specification for the spatial data theme Protected Sites
Publisher	European Commission Joint Research Centre
Type	Text
Description	This document describes the INSPIRE Data Specification for the spatial data theme Protected Sites.
Contributor	Members of the INSPIRE Thematic Working Group Protected Sites
Format	Portable Document Format (pdf)
Source	
Rights	Public
Identifier	D2.8.1.3_v3.2
Language	En
Relation	Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an infrastructure for Spatial Information in the European Community (INSPIRE)
Coverage	Project duration

# Adaptation methodology

## Mapping rules and matching table

- Analysis of the data model and the application scheme of each theme specifications
- Matching table: Establish the relation between the original data and the INSPIRE data model information.
- UML diagram generation of the original data, help document with the Matching table to create the relations at the data transformation.

PS\_SIMPLE.xlsx - Microsoft Excel

	A	B	C	D	E	F	G	H	I
4									Identificador necesario en GML, generado por el propio programa con unas características determinadas
5	geometry		GM_Object	Geometría a que define los límites del espacio protegido	1				
6	inspireID		Identifer	Identificador interno de objeto del objeto espacial	1				
7		namespace							
8		localId					SITES	ES BDN/CDDA. SITE_CODE (b SITES)	
9	legalFoundationDate		DateTime	Fecha en la que se creó legalmente el espacio protegido	1		SITES	YEAR (b SITES)	El campo YEAR contiene el año y se pide con formato DateTime (AAAA-MM-DDTHH:MM:SS). La información que aparece en las tablas de la base de datos LAV y LAVREFERENCE es a nivel de designación no a nivel de site como se refiere en las especificaciones de datos de Protected Sites
10	legalFoundationDocument		CI_Citation	URL o cita textual que remite al año legal que creó el lugar protegido	1				
11		site	character string						
12		date	CI_date						
13			CI_DateType						

## Adaptation methodology

- Download/selection of XSD schemes to use

INSPIRE provides XSD schemes to use for the datasets transformation to GML. These templates have been updated in April to 4.0 version which provides XSD schemes to use when transforming the data sets into GML.

The Protected sites scheme is still being discussed at INSPIRE Thematic Clusters, and will be published soon.



# Adaptation methodology

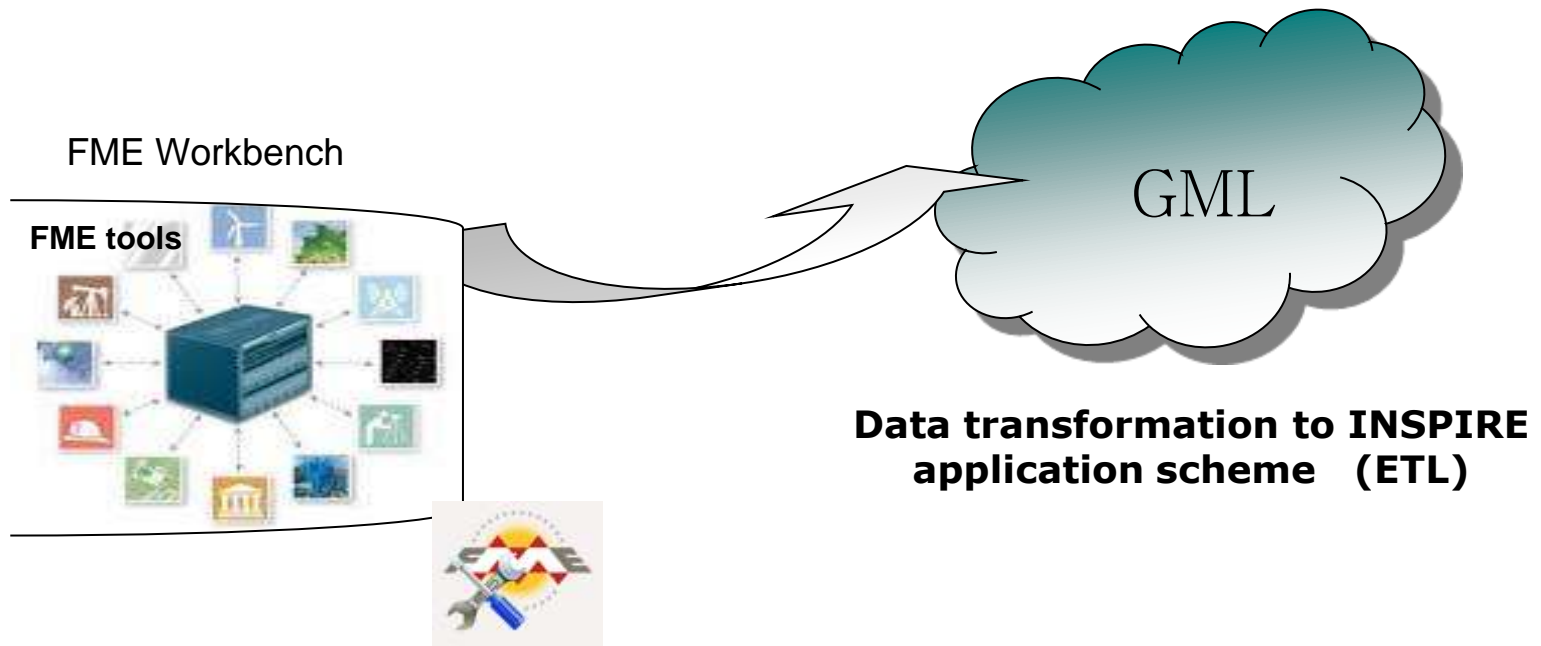
- Data transformation and GML files
  - Define the workflow to create INSPIRE compliant datasets
  - Directives for the mapping and storing of transformation rules for reuse

Transformation tools used:

Geoconverter (GEOBIDE)



- Data transformation and GML files



# Adaptation methodology

## ■ Validation, Abstract Test Suite

- Facilitate the understanding and meaning.
- Abstract Test Suite: Specific tests to help to define the data as per INSPIRE.
- It is a set of tests that are applied to the datasets to evaluate the compliance level with the INSPIRE implementation rules

## ■ Documentation

To complete the data transformation, these must be accompanied by some specifications that define the final product according to UNE EN-ISO 19131 standards or a technical document that describes the product

### Abstract Test Suite

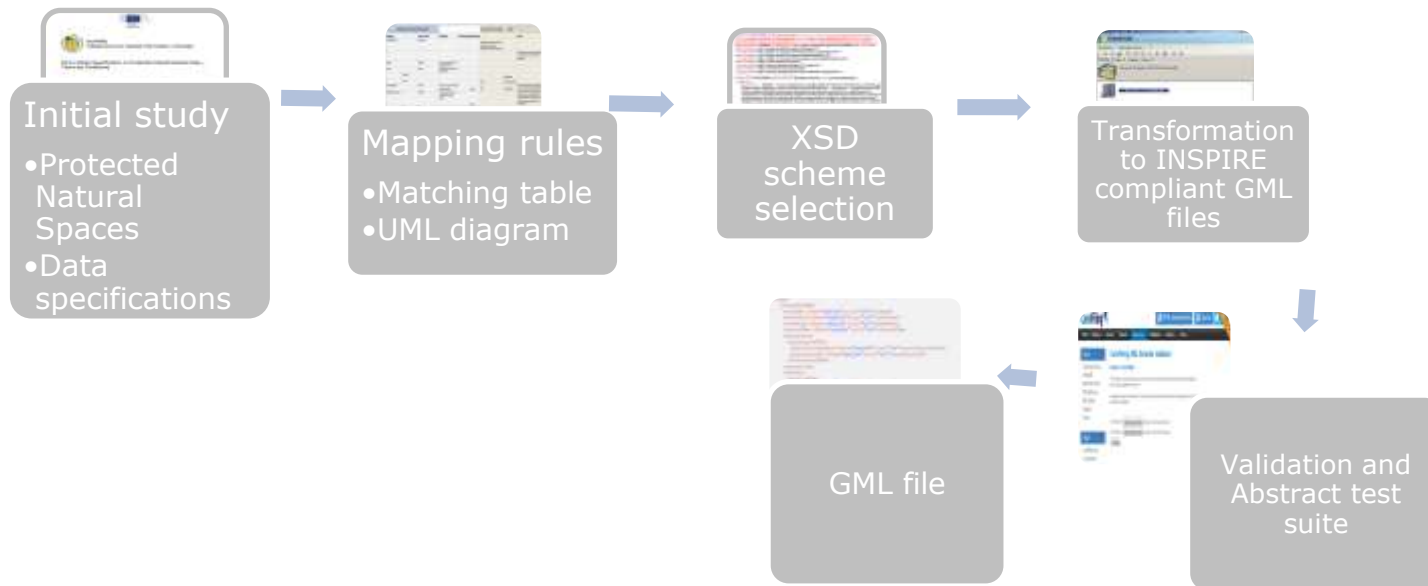
- A.1 Application Schema Conformance Class
  - 1 Schema element denomination test
  - 2 Value type test
  - 3 Value test
  - 4 Attributes/associations completeness test
  - 5 Abstract spatial object test
  - 6 Constraints test
  - 7 Geometry representation test
- A.2 Reference Systems Conformance Class
  - 1 Datum test
  - 2 Coordinate reference system test
  - 3 View service coordinate reference system test
  - 4 Temporal reference system test
  - 5 Units of measurements test
- A.3 Data Consistency Conformance Class
  - 1 Unique identifier persistency test
  - 2 Version consistency test
  - 3 Update frequency test
- A.4 Metadata IR Conformance Class
  - 1 Metadata for interoperability test
- A.5 Information Accessibility Conformance Class
  - 1 Code list publication test
  - 2 CRS publication test
  - 3 CRS identification test
- A.6 Data Delivery Conformance Class
  - 1 Encoding compliance test
- A.7 Portrayal Conformance Class
  - 1 Layer designation test
- A.8 Technical Guideline Conformance Class
  - 1 Multiplicity test
  - 2 CRS http URI test
  - 3 Metadata encoding schema validation test
  - 4 Metadata occurrence test
  - 5 Metadata consistency test
  - 6 Encoding schema validation test
  - 7 Style test



04

## **Protected Natural Spaces adaptation**

# Protected Natural Spaces adaptation



## ■ Initial study

BDN includes the information on autonomous communities and generates the data sets for protected natural spaces (ENP) at national level.

The data model for ENP was changed two years ago and some attributes of the data set were adapted to the attributes of INSPIRE Protected Sites application scheme.

The current data dictionary is as follows:

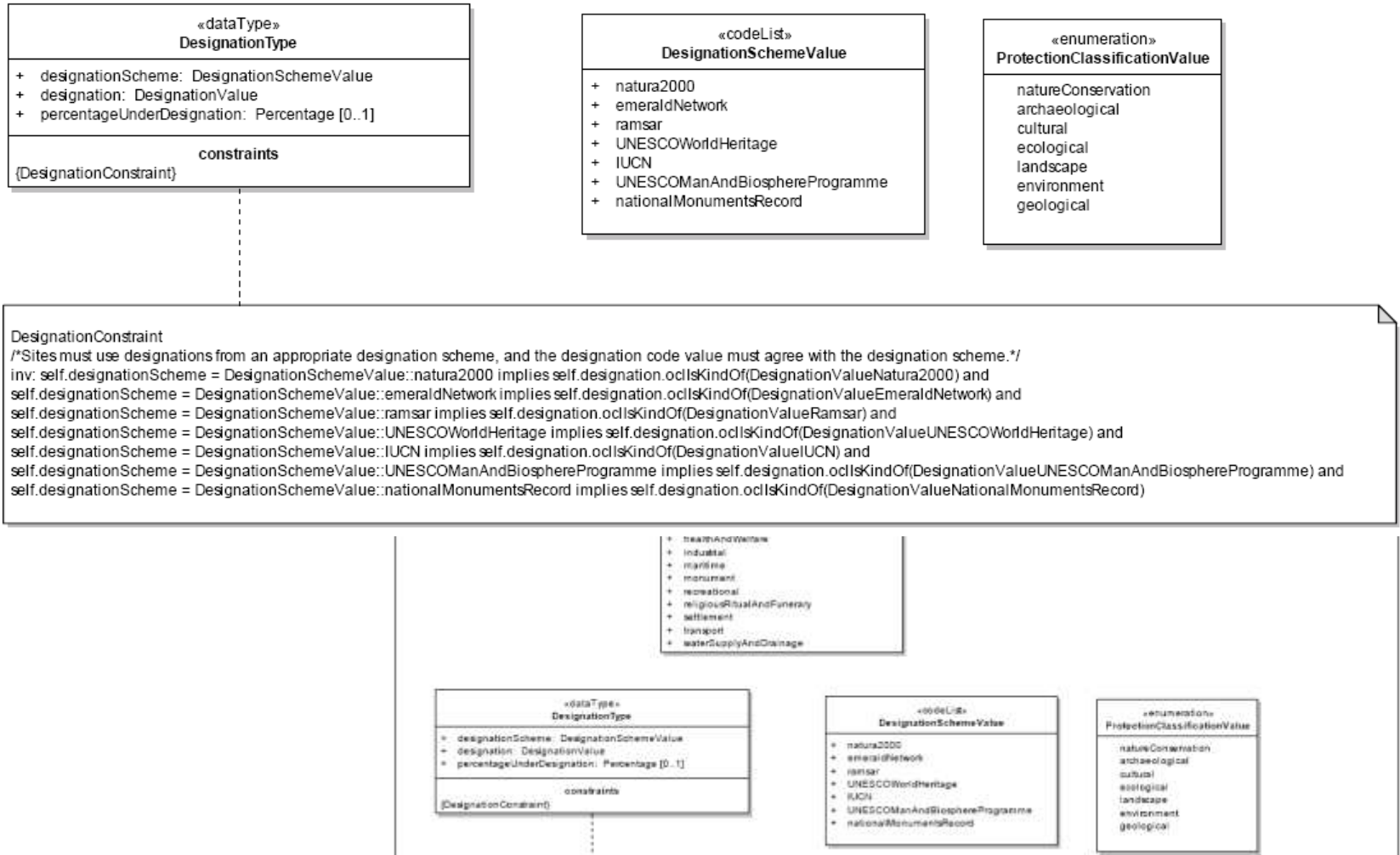


## DESCRIPCIÓN DE LOS CAMPOS DE:

*Espacios Naturales Protegidos y Reservas Marinas*

ATTRIBUTE NAME	DEFINITION	DATA TYPE	ORIGIN OF THE DATA	DOMAIN
InspireID				
SITE_CODE				
ESSITECODE	Code that has correspondence with the SITE_CODE_NAT of the database CDDA, formed by the prefix of Spain, followed by the corresponding NUTS and correlative number as producing organism according to the date of declaration.	Character String		
INSPIRE	External object identifier of the protected site. Pending approval.	Character String	Text	
DATE	The date that the protected site was legally created. (AAAAMMDD)	Date		
NORMA	Text citation referencing the legal act that created the protected site.	Character String	Text	
D_SCHEME	Scheme used according to table DesignationSchemeValue, in this case: "IUCN"	Character String	Code List	<a href="#">DesignationSchemeValue</a>
SITE_DESIG	Designation according to table of the CDDA: <i>Iutbl_IUCN_categories</i>	Class	Code List	<a href="#">IUCN</a>
PERCENTAGE	Percentage (%) of the site included in the declaration	Real		
SITENAME	The name of the designated area	Character String	Text	
SP_CLASS	Classification according to table <i>ProtectionClasificationValue</i>	Character String	Enumeration	<a href="#">Sp_class</a>
FIGURA_LP	Protection figure of the site based on the table <i>designations</i> of CDDA	Character String	Code List	<a href="#">Designations</a>
URL	URL referencing the legal act that created the protected site.referred in the field <i>LegalFoundationDocument</i>	Character String	Hiperlink	
AREA_HA	Surface (GIS) in hectares calculated for: Peninsula y Baleares: ETRS89UTMH30 EPSG:25830 and Canarias: WGS84 EPSG:32630	Integer		
CCAA	Region code that has declared the site.	Class	Code List	<a href="#">NUTs</a>
CATEGORY	Category of the national designation type. A: Protected Sites y B: Marine Reserves	Character String	Text	

# Protected Natural Spaces adaptation





## ■ Mapping rules and matching table

	A	B	C	D	E	F	G	H	I
1	ESQUEMA DE APLICACIÓN PS SIMPLE						BASE DE DATOS/TABLAS	CDDA	
2	<b>ATRIBUTO</b>		<b>TIPO DE VALOR</b>	<b>DEFINICIÓN</b>	<b>MULTIPLICIDAD</b>	<b>ESTEREOTIPO</b>			<b>NOTAS</b>
3	PROTECTED SITES		featureType				CDDA-ESP-20140310.mdb TABLAS: sites, designations, site_boundaries, designation_boundaries, national_overview		
4	id								Identificador necesario en GML generado por el propio programa con unas características determinadas
5	geometry		GM_Object	Geometría que define los límites del espacio protegido	1				
6	inspireID		Identifier	Identificador externo de objeto del objeto espacial	1				
7		namespace						ES.BON.CDDA.	
8		localId					SITES	SITE_CODE (tb SITES)	
9	legalFoundationDate		DateTime	Fecha en la que se creó legalmente el espacio protegido	1	voidable	SITES	YEAR (tb SITES)	El campo YEAR contiene el año y se pide con formato DateTime (AAAA-MM-DDT00:00:00)
10	legalFoundationDocument		CI_Citation	URL o cita textual que remite al acto legal que creó el lugar protegido	1				La información que aparece en las tablas de la base de datos LAW y LAWREFERENCE es a nivel de designación no a nivel de site como se refiere en las especificaciones de datos de Protected Sites
11		title	character string			voidable			
12		date	CI_title						
13			CI_DateType						
14									
15	siteDesignation		DesignationType	La designación (tipo) de sitio protegido. Al menos se requiere una asignación	1..*	voidable	SITES	IUCNCAT (tb SITES)	
16		designationScheme	<a href="#">DesignationSchemeValue</a>					IUCN	
17		designation						IUCNDesignationValue	
18		percentageUnderDesignation						100%	
19	siteName	GeographicalName	language nameStatus nativeness pronunciation (PronunciationOfName) sourceOfName spelling (SpellingOfName) script text	Nombre del lugar protegido	0..*				
20	siteProtectionClassification		<a href="#">ProtectionClassificationValue</a>		1..*	voidable	SITES	SITE_NAME (tb SITES)	natureConservation

## Protected Natural Spaces adaptation

- Download/selection of the XSD template to use

<http://inspire.ec.europa.eu/schemas/>

```
<?xml version="1.0" encoding="UTF-8" ?>
- <schema xmlns="http://www.w3.org/2001/XMLSchema" xmlns:base="urn:x-inspire:specification:gmlas:BaseTypes:3.2"
  xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:gn="urn:x-
  inspire:specification:gmlas:GeographicalNames:3.0" xmlns:ps="urn:x-inspire:specification:gmlas:ProtectedSites:3.0"
  elementFormDefault="qualified" targetNamespace="urn:x-inspire:specification:gmlas:ProtectedSites:3.0" version="3.0">
  <import namespace="urn:x-inspire:specification:gmlas:BaseTypes:3.2"
    schemaLocation="http://inspire.ec.europa.eu/schemas/base/3.2/BaseTypes.xsd" />
  <import namespace="urn:x-inspire:specification:gmlas:GeographicalNames:3.0"
    schemaLocation="http://inspire.ec.europa.eu/schemas/gn/3.0/GeographicalNames.xsd" />
  <import namespace="http://www.opengis.net/gml/3.2"
    schemaLocation="http://schemas.opengis.net/gml/3.2/gml.xsd" />
  <import namespace="http://www.isotc211.org/2005/gmd"
    schemaLocation="http://schemas.opengis.net/iso/19139/20070417/gmd/gmd.xsd" />
  <!-- XML Schema document created by ShapeChange -->
- <element name="ProtectedSite" substitutionGroup="gml:AbstractFeature" type="ps:ProtectedSiteType">
- <annotation>
  <documentation>-- Definition -- An area designated or managed within a framework of international, Community and
  Member States' legislation to achieve specific conservation objectives. -- Description -- Each protected site has a
  boundary defined through formal, legal or administrative agreements or decisions. The establishment of a
  protected site is normally underpinned by legislation and thus given weight in decisions about land use change and
  spatial planning. Each Site is normally selected as a representative example of a wider resource and selected
  through a formal criterion based approach. A protected site can be a contiguous extent of land/sea or a collection
  of discrete areas that together represent a single formal Protected Site. This class has the attributes, constraints
  and associations that are part of the Simple application schema.</documentation>
  </annotation>
- </element>
- <complexType name="ProtectedSiteType">
- <complexContent>
  - <extension base="gml:AbstractFeatureType">
  - <sequence>
  - <element name="geometry" type="gml:GeometryPropertyType">
  - <annotation>
    <documentation>-- Definition -- The geometry defining the boundary of the Protected Site. --
    Description -- The geometry may be determined by a wide range of methods, including surveying,
    digitisation or visual reference to natural features or cadastral boundaries and may be defined by
    the legal document that creates the protected area. The geometry included in a data set that uses
    this data model is stored as a fixed geometry by coordinates, not by reference to natural, cadastral
    or administrative boundaries, although it may originally have been defined from
    these.</documentation>
    </annotation>
  - </element>
  - <element name="inspireID" type="base:IdentifierPropertyType">
  - <annotation>
    <documentation>-- Definition -- External object identifier of the protected site. -- Description -- NOTE
    An external object identifier is a unique object identifier published by the responsible body, which
    may be used by external applications to reference the spatial object. The identifier is an identifier of
    the spatial object, not an identifier of the real-world phenomenon.</documentation>
```

# Protected Natural Spaces adaptation

## Dataset transformation to INSPIRE compliant GML files

The screenshot shows the Geobide software interface. The main window is titled 'Nombre del archivo XSD que define el esquema:' and contains the path 'X:\BDN2014\_17\ENP\_INSPIRE\GML\_INSPIRE\XSD\ProtectedSites.xsd'. Below this, it says 'Relación de los nodos del esquema con la tabla de atributos/valores de los elementos geométricos (MatchingTable):'. The central area displays a tree structure for the 'ProtectedSite' schema with the following nodes: id, inspireID, legalFoundationDate, legalFoundationDocument, location, siteDesignation (with sub-nodes DesignationType and siteName), GeographicalName (with sub-nodes grammaticalGender, grammaticalNumber, language, nameStatus, nativeness, pronunciation, and sourceOfName), spelling, and siteProtectionClassification. At the bottom, there is an 'Expresión:' field. On the left, a smaller window titled 'Convertor de formatos Geobide' shows 'Fuentes de datos CAD/GIS' with a file named '... 2015 ESP ETRS89H30'. A checkbox 'Ordenar la entrada de las fuentes de d' is visible, along with an information icon and a note: 'Esta opción preordena la carga de comportamiento por defecto establecido el nombre de los ficheros cuando s'.

## ■ Dataset transformation to INSPIRE compliant GML files

```
<ps:geometry>
  <gml:MultiSurface gml:id="_4845b534-3fa8-45b7-a877-788af14d0c70" srsName="urn:ogc:def:crs:EPSG::4258">
    <gml:surfaceMember>
      <gml:Polygon gml:id="_725e7519-261e-46fb-bfbb-ba916fa72dd1" srsName="urn:ogc:def:crs:EPSG::4258">
        <gml:exterior>
          <gml:LinearRing>
            <gml:posList>42.359491748462084</gml:posList>
          </gml:LinearRing>
        </gml:exterior>
      </gml:Polygon>
    </gml:surfaceMember>
  </gml:MultiSurface>
</ps:geometry>
```

```
<ps:inspireID>
  <base:Identifier>
    <base:localId>389019</base:localId>
    <base:namespace>EU.EUROPA.ENVIRONMENT.PS.CDDA.ESP.ESP</base:namespace>
  </base:Identifier>
</ps:inspireID>
```

```
<ps:legalFoundationDate>1991-01-01T00:00:00+01:00</ps:legalFoundationDate>
  <ps:legalFoundationDocument>
    <gmd:CI_Citation>
      <gmd:title gco:nilReason="missing"></gmd:title>
      <gmd:date gco:nilReason="missing"></gmd:date>
    </gmd:CI_Citation>
  </ps:legalFoundationDocument>
```

## ■ Dataset transformation to INSPIRE compliant GML files

```

<ps:siteDesignation>
  <ps:DesignationType>
    <ps:designationScheme
codeSpace="http://dd.eionet.europa.eu/vocabulary/inspire/DesignationSchemeValue">nationalDesignationTypeCode</ps:design
ationScheme>
    <ps:designation codeSpace="http://dd.eionet.europa.eu/vocabulary/cdda/designations">ES10</ps:designation>
    <ps:percentageUnderDesignation>100</ps:percentageUnderDesignation>
  </ps:DesignationType>
</ps:siteDesignation>
<ns:siteDesignation>
<ps:siteName>
  <gn:GeographicalName>
    <gn:language nilReason="unpopulated" xsi:nil="true"></gn:language>
    <gn:nativeness nilReason="unpopulated" xsi:nil="true"></gn:nativeness>
    <gn:nameStatus nilReason="unpopulated" xsi:nil="true"></gn:nameStatus>
    <gn:sourceOfName nilReason="unpopulated" xsi:nil="true"></gn:sourceOfName>
    <gn:pronunciation>
      <gn:PronunciationOfName>
        <gn:pronunciationSoundLink nilReason="unpopulated" xsi:nil="true"></gn:pronunciationSoundLink>
        <gn:pronunciationIPA nilReason="unpopulated" xsi:nil="true"></gn:pronunciationIPA>
      </gn:PronunciationOfName>
    </gn:pronunciation>
    <gn:spelling>
      <gn:SpellingOfName>
        <gn:text>Sierra y los Cañones de Guara</gn:text>
        <gn:script nilReason="unpopulated" xsi:nil="true"></gn:script>
      </gn:SpellingOfName>
    </gn:spelling>
  </gn:GeographicalName>
</ps:siteName>
  <ps:siteProtectionClassification>natureConservation</ps:siteProtectionClassification>
</ps:ProtectedSite>
</gml:featureMember>

```

# 04 Protected Natural Spaces adaptation

- Validation of the transformation and Abstract test suite

The GML is validated with a XML files validator, in our case we use the following:

The screenshot shows the CoreFiling XML Schema Validator website. The main navigation bar includes links for Home, Solutions, Services, Products, Open source, Publications, About us, and Join us. A prominent blue button reads 'FREE UK Companies Open Data'. The page title is 'CoreFiling XML Schema Validator' with version '1.2.0.r278285'. The validation status is shown as 'Well Formed: VALID' and 'Schema Validation: VALID'. Below this, there is a 'Validate another document' link. The interface also features a sidebar with 'Tools' and 'Legal' sections, and a main content area with an 'XML Instance' field containing 'Seleccionar archivo' and a 'Validate' button. A 'Fork me on GitHub' banner is visible on the right side.

# 04 Protected Natural Spaces adaptation

## ■ Validation of the transformation and Abstract test suite

Also we do the compliance tests included in the Protected Sites data specifications.

### Abstract Test Suite

- A.1 Application Schema Conformance Class
  - 1 Schema element denomination test
  - 2 Value type test
  - 3 Value test
  - 4 Attributes/associations completeness test
  - 5 Abstract spatial object test
  - 6 Constraints test
  - 7 Geometry representation test
- A.2 Reference Systems Conformance Class
  - 1 Datum test
  - 2 Coordinate reference system test
  - 3 View service coordinate reference system test
  - 4 Temporal reference system test
  - 5 Units of measurements test
- A.3 Data Consistency Conformance Class
  - 1 Unique identifier persistency test
  - 2 Version consistency test
  - 3 Update frequency test
- A.4 Metadata IR Conformance Class
  - 1 Metadata for interoperability test
- A.5 Information Accessibility Conformance Class
  - 1 Code list publication test
  - 2 CRS publication test
  - 3 CRS identification test
- A.6 Data Delivery Conformance Class
  - 1 Encoding compliance test
- A.7 Portrayal Conformance Class
  - 1 Layer designation test
- A.8 Technical Guideline Conformance Class
  - 1 Multiplicity test
  - 2 CRS http URI test
  - 3 Metadata encoding schema validation test
  - 4 Metadata occurrence test
  - 5 Metadata consistency test
  - 6 Encoding schema validation test
  - 7 Style test

- Technical document with the details of adaptations and transformations made accompanying the GML file





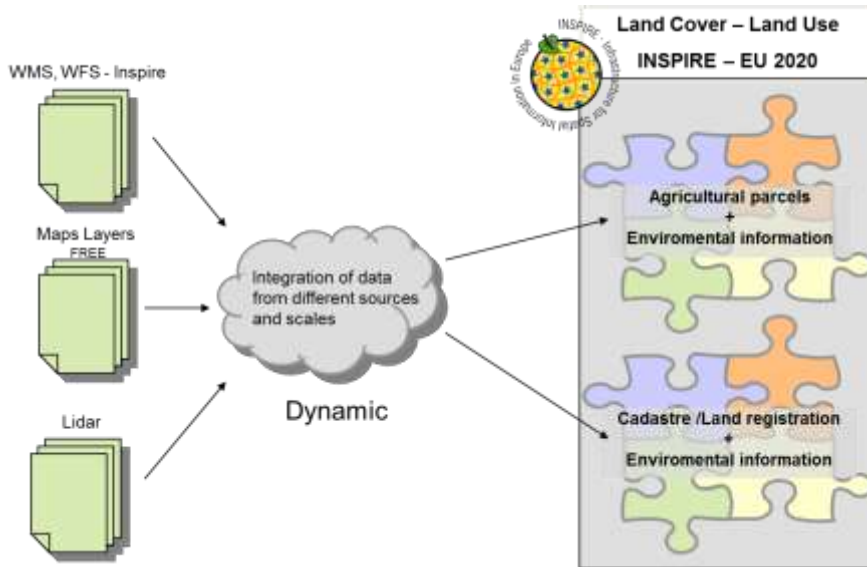
05

**Use in other projects**

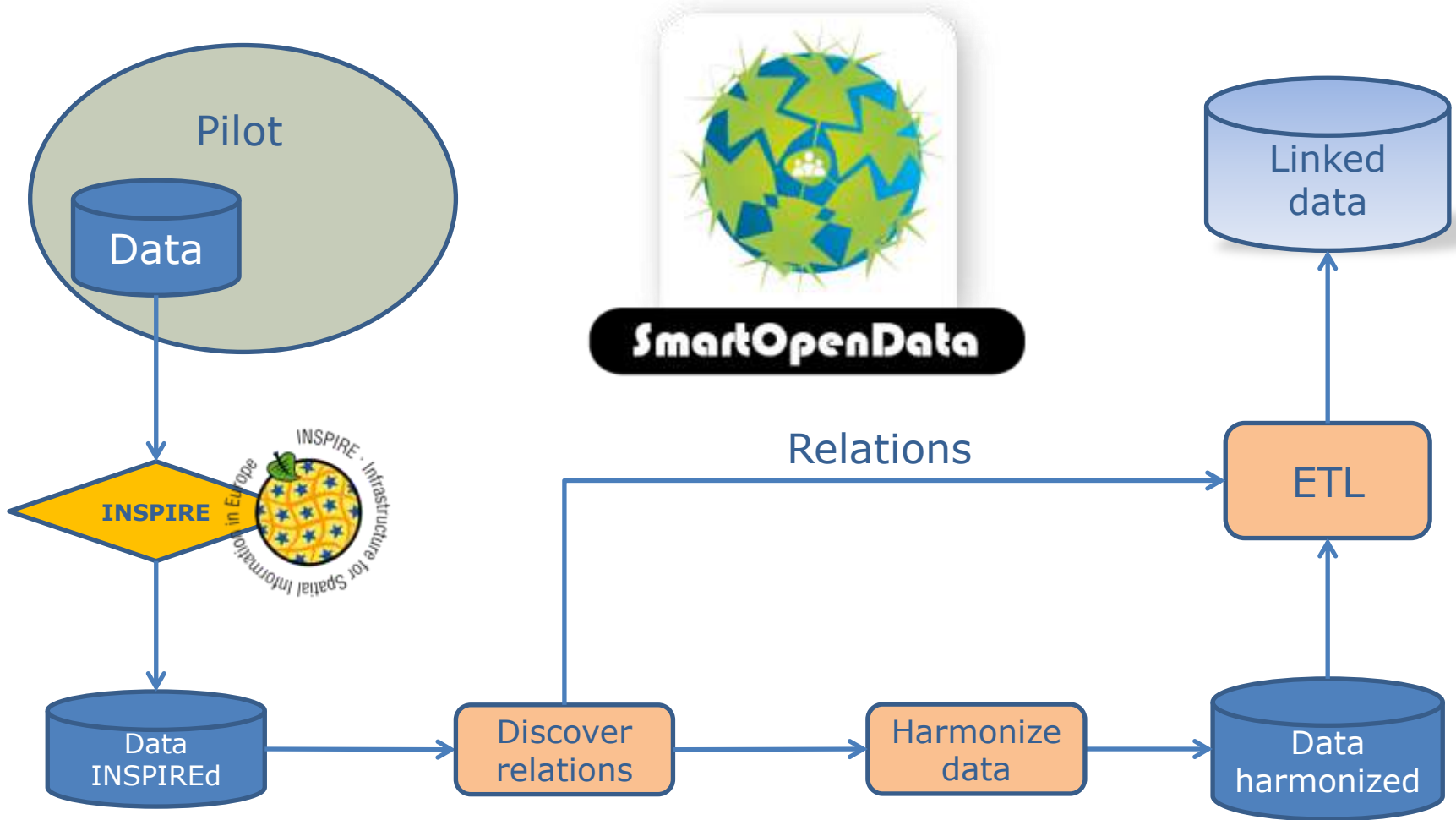


# proDataMarket

proDataMarket aims to create a data marketplace for property-related data and disrupt the property-related data market across Europe, showing innovation across sectors where property-related data value chains are relevant, by leveraging and transferring technologies from the emerging Data-as-a-Service and Linked Data domains.



# 05 SmartOpenData



THANK YOU FOR YOUR  
ATTENTION

[guo@tragsa.es](mailto:guo@tragsa.es)

[www.tragsa.es](http://www.tragsa.es)

