INSPIRE
Infrastructure for Spatial Information in Europe

D2.8.I.9 INSPIRE Data Specification on Protected Sites – Guidelines

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Foreword
How to read the document?

This guideline describes the INSPIRE Data Specification on *Protected sites* as developed by the Thematic Working Group Protected sites using both natural and a conceptual schema languages. The data specification is based on the agreed common INSPIRE data specification template.

The guideline contains detailed technical documentation of the data specification highlighting the mandatory and the recommended elements related to the implementation of INSPIRE. The technical provisions and the underlying concepts are often illustrated by examples. Smaller examples are within the text of the specification, while longer explanatory examples are attached in the annexes. The technical details are expected to be of prime interest to those organisations that are/will be responsible for implementing INSPIRE within the field of *Protected sites*.

At the beginning of the document, two executive summaries are included that provide a quick overview of the INSPIRE data specification process in general, and the content of the data specification on *Protected sites* in particular. We highly recommend that managers, decision makers, and all those new to the INSPIRE process and/or information modelling should read these executive summaries first.

The UML diagrams (in Chapter 5) offer a rapid way to see the main elements of the specifications and their relationships. Chapter 5 also contains the Feature Catalogue including the definition of the spatial object types, attributes, and relationships. People having thematic expertise but not familiar with UML can fully understand the content of the data model focusing on the Feature Catalogue. Users might also find the Feature Catalogue especially useful to check if it contains the data necessary for the applications that they run.

Legal Notice

Interoperability of Spatial Data Sets and Services – General Executive Summary

The challenges regarding the lack of availability, quality, organisation, accessibility, and sharing of spatial information are common to a large number of policies and activities and are experienced across the various levels of public authority in Europe. In order to solve these problems it is necessary to take measures of coordination between the users and providers of spatial information. The Directive 2007/2/EC of the European Parliament and of the Council adopted on 14 March 2007 aims at establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) for environmental policies, or policies and activities that have an impact on the environment.

INSPIRE will be based on the infrastructures for spatial information that are created and maintained by the Member States. To support the establishment of a European infrastructure, Implementing Rules addressing the following components of the infrastructure are being specified: metadata, interoperability of spatial data themes (as described in Annexes I, II, III of the Directive) and spatial data services, network services and technologies, data and service sharing, and monitoring and reporting procedures.

INSPIRE does not require collection of new data. However, after the period specified in the Directive[1] Member States have to make their data available according to the Implementing Rules.

Interoperability in INSPIRE means the possibility to combine spatial data and services from different sources across the European Community in a consistent way without involving specific efforts of humans or machines. It is important to note that "interoperability" is understood as providing access to spatial data sets through network services, typically via Internet. Interoperability may be achieved by either changing (harmonising) and storing existing data sets or transforming them via services for publication in the INSPIRE infrastructure. It is expected that users will spend less time and efforts on understanding and integrating data when they build their applications based on data delivered within INSPIRE.

In order to benefit from the endeavours of international standardisation bodies and organisations established under international law their standards and technical means have been referenced, whenever possible.

To facilitate the implementation of INSPIRE, it is important that all stakeholders have the opportunity to participate its specification and development. For this reason, the Commission has put in place a consensus building process involving data users and providers together with representatives of industry, research, and government. These stakeholders, organised through Spatial Data Interest Communities (SDIC) and Legally Mandated Organisations (LMO)[2], have provided reference materials, participated in the user requirement and technical[3] surveys, proposed experts for the Data Specification Drafting Team[4] and Thematic Working Groups[5], expressed their views on the drafts of the technical documents of the data specification development framework[6]; they have reviewedreviewed and tested the draft data specifications and have been invited to comment the draft structure of the implementing rule on interoperability of spatial data sets and services.

The development framework elaborated by the Data Specification Drafting Team aims at keeping the data specifications of the different themes coherent. It summarises the methodology to be used for the

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[1] For Annex I data: within two years of the adoption of the corresponding Implementing Rules for newly collected and extensively restructured data and within 7 years for other data in electronic format still in use.

[2] The number of SDICs and LMOs on 21/08/2009 was 301 and 176 respectively

[3] Surveys on unique identifiers and usage of the elements of the spatial and temporal schema,

[4] The Data Specification Drafting Team has been composed of experts from Austria, Belgium, Czech Republic, France, Germany, Greece, Italy, Netherlands, Norway, Poland, Switzerland, UK, and the European Environmental Agency

[5] The Thematic Working Groups of Annex I themes have been composed of experts from Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy Netherland, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, UK, the European Commission, and the European Environmental Agency

[6] Four documents describing common principles for data specifications across all spatial data themes. See further details in the text.

data specifications and provides a coherent set of requirements and recommendations to achieve interoperability. The pillars of the framework are four technical documents:

– The Definition of Annex Themes and Scope[7] describes in greater detail the spatial data themes defined in the Directive, and thus provides a sound starting point for the thematic aspects of the data specification development.

– The Generic Conceptual Model[8] defines the elements necessary for interoperability and data harmonisation including cross-theme issues. It specifies requirements and recommendations with regard to data specification elements of common use, like the spatial and temporal schema, unique identifier management, object referencing, a generic network model, some common code lists, etc. Those requirements of the Generic Conceptual Model that are directly implementable will be included in the Implementing Rule on Interoperability of Spatial Data Sets and Services.

– The Methodology for the Development of Data Specifications[9] defines a repeatable methodology enabling to arrive from user requirements to a data specification through a number of steps including use-case development, initial specification development and analysis of analogies and gaps for further specification refinement.

– The "Guidelines for the Encoding of Spatial Data"[10] defines how geographic information can be encoded to enable transfer processes between the systems of the data providers in the Member States. Even though it does not specify a mandatory encoding rule it sets GML (ISO 19136) as the default encoding for INSPIRE.

Based on the data specification development framework, the Thematic Working Groups have created the INSPIRE data specification for each Annex I theme. The data specifications follow the structure of "ISO 19131 Geographic information - Data product specifications" standard. They include the technical documentation of the application schema, the spatial object types with their properties, and other specifics of the spatial data themes using natural language as well as a formal conceptual schema language[11].

A consolidated model repository, feature concept dictionary, and glossary are being maintained to support the consistent specification development process and potential further reuse of specification elements. The consolidated model consists of the harmonised models of the relevant standards from the ISO 19100 series, the INSPIRE Generic Conceptual Model, and the application schemas[12] developed for each spatial data theme. The multilingual INSPIRE Feature Concept Dictionary contains the definition and description of the INSPIRE themes together with the definition of the spatial object types present in the specification. The INSPIRE Glossary defines all the terms (beyond the spatial object types) necessary for understanding the INSPIRE documentation including the terminology of other components (metadata, network services, data sharing, and monitoring).

By listing a number of requirements and making the necessary recommendations, the data specifications enable full system interoperability across the Member States, within the scope of the application areas targeted by the Directive. They are published as technical guidelines and provide the basis for the content of the Implementing Rule on Interoperability of Spatial Data Sets and Services for data themes included in Annex I of the Directive. The Implementing Rule will be extracted from the data specifications keeping in mind the technical feasibility as well as cost-benefit considerations. The Implementing Rule will be legally binding for the Member States.

In addition to providing a basis for the interoperability of spatial data in INSPIRE, the data specification development framework and the thematic data specifications can be reused in other environments at

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[7] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.3_Definition_of_Annex_Themes_and_scope_v3.0.pdf
[8] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.5_v3.1.pdf
[9] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.6_v3.0.pdf
[10] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.7_v3.0.pdf
[11] UML – Unified Modelling Language
[12] Conceptual models related to specific areas (e.g. INSPIRE themes)

local, regional, national and global level contributing to improvements in the coherence and interoperability of data in spatial data infrastructures.

Protected sites -- Executive Summary

The Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 (INSPIRE) sets generic rules for establishing an Infrastructure for Spatial Information in the European Community. As a building block of the infrastructure, provisions on the interoperability of spatial data sets and services are foreseen. The thematic areas affected by the Directive are listed in the Annexes of the Directive.

Theme *Protected sites* is included in Annex I, which means that it is considered as reference data, i.e. data that constitute the spatial frame for linking and/or pointing at other information that belongs to other thematic fields. There are strong interdependencies between this and some Themes listed in Annex III that are still to be fully developed like Area Management/Restriction/Regulation Zones and Reporting Units; Bio-geographical Regions; Habitats and Biotopes and Species Distribution.

The INSPIRE data specification on *Protected sites* has been prepared following the participative principle of a consensus building process. The stakeholders, based on their registration as a Spatial Data Interest Community (SDIC) or a Legally Mandated Organisation (LMO) had the opportunity to bring forward user requirements and reference materials, propose experts for the specification development, and to participate in the review of the data specifications. The Thematic Working Group responsible for the specification development was composed of experts coming from Germany, United Kingdom, and the European Environment Agency. The specification process took place according to the methodology elaborated for INSPIRE respecting the requirements and the recommendation of the INSPIRE Generic Conceptual Model[13], which is one of the elements that ensures a coherent approach and cross theme consistency with other themes in the Directive.

The INSPIRE Directive defines a Protected Site as an "Area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives" [Directive 2007/2/EC]. According to the International Union for the Conservation of Nature (IUCN) a Protected Site is an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.

Within the INSPIRE context, Protected Sites may be located in terrestrial, aquatic and/or marine environments, and may be under either public or private ownership. They may include localities with protection targets defined by different sectors and based on different objectives. Objectives for protection may include: the conservation of nature; the protection and maintenance of biological diversity and of natural resources and the protection of person-made objects including buildings, pre-historic and historic archaeological sites, other cultural objects, or sites with specific geological, hydrogeological or geomorphological value. Protected Sites may receive protection due to more than one type of objective, and may have a double or multifarious designation status.

Protected sites may differ greatly in their reasons for protection, their designation and their management. Examples of legislation under which Protected Sites included in this INSPIRE theme are designated, managed and regulated include:
- the Habitats Directive (1992) (Directive 92/43/EC);
- the Birds Directive (1979) (Directive 79/409/EC);
- the Water Framework Directive (2000) (Directive 2000/60/EEC)
- the World Heritage Convention (1975);
- the Ramsar Convention (1971);
- the Barcelona Convention (1976);
- the Helsinki Convention (1974);
- the OSPAR Convention (1992) and
- the national laws of each European country and EU and international sector policies (for example, relating to nature conservation, forests or fisheries).

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[13] Both the methodology and the Generic Conceptual Model are part of the framework documents prepared by the Data Specification Drafting Team. These documents formed the basis for the data specification work of the Thematic Working Group.

Based on the reference materials and the user requirements, the Thematic Working Group considered five use cases:

1. Generate European Protected Sites spatial data report, a Europe-wide application including Natura 2000 sites, for expert users including national and regional government, the European Commission and the European Environment Agency;
2. Naively query and view Protected Sites, applicable at local, regional and Europe-wide level, for non-expert/public users;
3. Expertly query, view, visualise and analyse Protected Sites at local, regional, cross-border levels, to support environmental impact assessment and decision making;
4. Download Protected Sites data, for expert or semi-expert users;
5. Provide Protected Sites data according to EU legal obligations and data-flows (EU Member States).

The data specification has been based, as far as possible, on existing standards. Apart from ISO standards, the TWG has also used the reference material and the user requirements, the majority of which are expressed through existing legislation as already mentioned. The specification is documented using ICT techniques such as the Unified Modelling Language (UML), Geography Markup Language (GML) and Object Constraint Language (OCL).

One of the goals of this data specification is to illustrate how Member States could use the INSPIRE model to structure the exhaustive information on protected sites like those required for Natura2000 reporting[14], while keeping a very simple and easy way for Member States to provide Protected Sites information in general. Consequently, two application schemas are included within the Protected sites data specification, each for a different purpose:

- Simple: A very limited set of fundamental attributes, including geometry, identifier, name and legal foundation date and document reference. Only current Protected Sites are included.
- Full: The full model including all attributes and historical as well as current Protected Sites, but with most attributes being optional, so values may be omitted.

A detailed third application schema related to reporting under Natura2000 has been developed on the basis of the current Standard Data Form for reporting under Natura2000.

The reporting on Natura2000 is being revised by the Commission, hereby assisted by the relevant Committee and expert groups. This will lead to a "new" Standard Data Form and related data structure in 2010.

The detailed example of a Natura2000 application schema, based on the "old" Standard Data Form is now included in a separate "INSPIRE NATURA2000 working paper". to illustrate how Natura2000 site data could be structured in conformance with INSPIRE.

Depending on the outcome of Natura2000 reporting revision process, an updated Natura2000 application schema may be included in these Guidelines again in the future.

Additional application schemas specific to other purposes may be created by Member States or other European organisations and added to the model. Specific application schemas may be updated as a result of decisions and agreements at European level.

In all cases, Protected Sites have a known location, boundary and area, based on formal, legal or administrative agreements or decisions. Protected Site boundaries are often defined relative to cadastral boundaries, natural boundaries or to some other feature, or sometimes they are approximately defined on the basis of the extent of the presence of a particular species. However, in the INSPIRE context, all Protected Sites have distinct boundaries of their own, rather than being defined relative to some other spatial object type.

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[14] Natura2000 has been used as one of the inputs into the INSPIRE Protected Sites Data Product Specification. Under Natura2000, Member States are required to update information on Natura2000 sites to the European Commission at least every six years. This part of the reporting process has a number of mandatory attributes.

As the specification on INSPIRE *Protected sites* is the result of detailed analysis of user requirements and strong consideration of existing initiatives, it is expected that it will also form a solid part of a multi-purpose European spatial data infrastructure.

Acknowledgements

Many individuals and organisations have contributed to the development of these Guidelines.

The Thematic Working Group Protected Sites (TWG-PS) included:
Seifert Markus (TWG Facilitator), Kristin Stock (TWG Editor), Franz Daffner, Dirk Hinterlang, Andrew Newman, Keith Porter, Rania Spyropoulou, Vanda Nunes de Lima (European Commission contact point).

The Drafting Team Data Specifications included:
Clemens Portele (Chair), Andreas Illert (Vice-chair), Kristine Asch, Marek Baranowski, Eric Bayers, Andre Bernath, Francis Bertrand, Markus Erhard, Stephan Gruber, Heinz Habrich, Stepan Kafka, Dominique Laurent, Arvid Lillethun, Ute Maurer-Rurack, Keith Murray, George Panopoulos, Claudia Pegoraro, Marcel Reuvers, Anne Ruas, Markus Seifert, Peter Van Oosterom, Andrew Woolf and the European Commission contact points: Steve Peedell, Katalin Tóth, Paul Smits, Vanda Nunes de Lima.

The data specifications team of the Spatial Data Infrastructures Unit of the Joint Research Centre included the members who have been participating at different steps of the process:
Freddy Fierens, Anders Friis-Christensen, Darja Lihteneger, Michael Lutz, Vanda Nunes de Lima, Nicole Ostländer, Steve Peedell, Jan Schulze Althoff, Paul Smits, Robert Tomas, Katalin Tóth, Martin Tuchyna.

The Consolidated UML repository has been set up by Michael Lutz, Anders Friis-Christensen, and Clemens Portele. The INSPIRE Registry has been developed by Angelo Quaglia and Michael Lutz. The INSPIRE Feature Concept Dictionary and Glossary has been consolidated by Darja Lihteneger. The data specification testing has been coordinated by Martin Tuchyna. The Testing Wiki has been set up by Loizos Bailas, Karen Fullerton and Nicole Ostländer. Web communication and tools for the consultations have been developed by Karen Fullerton and Hildegard Gerlach.

The stakeholders participated, as Spatial Data Interested Communities (SDIC) or Legally Mandated Organisations (LMO), in different steps of the development of the data specification development framework documents and the technical guidelines, providing information on questionnaires and user surveys, participating in the consultation process and workshops, testing the draft data specifications and supporting the work of their members in the Thematic Working Groups and Drafting Team Data Specifications.

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Table of contents

1 Scope

This document specifies a harmonised data specification for the spatial data theme *Protected sites* as defined in Annex I of the INSPIRE Directive.

This data specification provides the basis for the drafting of Implementing Rules according to Article 7 (1) of the INSPIRE Directive [Directive 2007/2/EC]. The entire data specification will be published as implementation guidelines accompanying these Implementing Rules.

2 Overview

2.1 Name and acronyms

INSPIRE data specification for the theme *Protected sites*

2.2 Informal description

__Definition:__

Area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives [Directive 2007/2/EC].

__Description:__

According to the International Union for the Conservation of Nature (IUCN) a Protected Site is **an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.**

Within the INSPIRE context, Protected Sites may be located in terrestrial, aquatic and/or marine environments, and may be under either public or private ownership. They may include localities with protection targets defined by different sectors and based on different objectives. Objectives for protection may include: the conservation of nature; the protection and maintenance of biological diversity and of natural resources and the protection of person-made objects including buildings, pre-historic and historic archaeological sites, other cultural objects, or sites with specific geological, hydrogeological or geomorphological value. Protected Sites may receive protection due to more than one type of objective, and may have a double or multifarious designation status.

Protected sites may differ greatly in their reasons for protection, their designation and their management. Examples of legislation under which Protected Sites included in this INSPIRE theme are designated, managed and regulated include:
▪ the Habitats Directive (1992) (Directive 92/43/EC);
▪ the Birds Directive (1979) (Directive 79/409/EC);
▪ the Water Framework Directive (2000) (Directive 2000/60/EEC)
▪ the World Heritage Convention (1975);
▪ the Ramsar Convention (1971);
▪ the Barcelona Convention (1976);
▪ the Helsinki Convention (1974);
▪ the OSPAR Convention (1992) and
▪ the national laws of each European country and EU and international sector policies (for example, relating to forests or fisheries).

This overview description describes a wide range of Protected Sites, but in practise, each Site differs greatly in its reasons for protection, its designation and its management. In addition to this INSPIRE *Protected sites* Data Specification, a number of other specifications for Protected Sites exist at the

national, European and international levels. Natura2000 is a particularly important specification that has been used as an input into the INSPIRE data specification on *Protected sites* and is referred to throughout this document, but a number of other specifications also informed this specification (for example, the Common Database on Designated Areas and the International Union for the Conservation of Nature categories).

This Specification identifies two application schemas of Protected Sites, each with a different purpose:

▪ Simple: A very limited set of fundamental attributes, including geometry, identifier, name and legal foundation date and document reference. Only current (non-historical) Protected Sites are included.

▪ Full: The full model including all attributes and historical as well as current Protected Sites, but with most attributes being optional, so values may be omitted.

A third, detailed: application schema for Natura2000 is included in a separate "INSPIRE NATURA2000 working paper". This application schema includes the full model with all attributes and historical as well as current Protected Sites and with mandatory attributes required for updating and maintaining of Natura2000 site data by Member States. This application schema reflects the requirements by the date this data specification was developed and illustrates how Natura2000 site data could be structured in conformance with INSPIRE.

The reporting on Natura2000 is being revised by the Commission, hereby assisted by the relevant Committee and expert groups. This will lead to a "new" Standard Data Form and related data structure in 2010.

Depending on the outcome of Natura2000 reporting revision process, an updated Natura2000 application schema may be included in these Guidelines in the future.

In all cases, Protected Sites have a known location, boundary and area, based on formal, legal or administrative agreements or decisions. In the INSPIRE context, all Protected Sites have distinct boundaries of their own, rather than being defined relative to some other spatial object type.

2.3 Normative References

[Directive 2007/2/EC] 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)

2.4 Information about the creation of the specification

Document title: INSPIRE Data Specification *Protected sites*
Reference date: 2010-04-26
Responsible party: INSPIRE TWG *Protected sites*
Language: English

2.5 Terms and definitions

Terms and definitions necessary for understanding this document are defined in the INSPIRE Glossary[15].

In addition the following terms and definitions are used:

(1) Natura2000

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[15] The INSPIRE Glossary is available from http://inspire-registry.jrc.ec.europa.eu/registers/GLOSSARY

Natura 2000 is a European Union-wide network of nature protection areas established under the 1992 Habitats Directive. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) designated under the 1979 Birds Directive. The establishment of this network of protected areas also fulfils a Community obligation under the UN Convention on Biological Diversity.

(2) Protected Site
A Protected Site is an area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives. Protected Sites and Protected Areas are synonymous.

(3) Protected Area
Protected Sites and Protected Areas are synonymous.

(4) Annex I, II, III
Mentions of Annexes I, II and III in this specification refer to Annexes to the INSPIRE Directive. These Annexes identify the themes that fall within each Annex of the Directive [DS D2.3].

(5) Annex A, B, C, D, E, F
Mentions of Annexes A to F refer to Annexes to this specification. They appear at the end of this document.

2.6 Symbols and abbreviations

CDDA	Common Database on Designated Areas
EU	European Union
GML	Geographic Markup Language
INSPIRE	Infrastructure for Spatial Information in Europe
IUCN	International Union for the Conservation of Nature
Natura2000	A European Union-wide network of nature protection areas established under the 1992 Habitats Directive and the 1979 Birds Directive.
OSPAR	Oslo and Paris Commissions
PS	Protected Site
SDF	Standard Data Form used by Natura2000 to collect Protected Sites data.
SLD	Styled Layer Descriptor
TWG	Thematic Working Group
UML	Unified Modeling Language
UN	United Nations
URI	Unified Resource Identifier

2.7 Notation of requirements and recommendations

To make it easier to identify the mandatory requirements and the recommendations for spatial data sets in the text, they are highlighted and numbered.

Requirement X	Requirements are shown using this style.

Recommendation X	Recommendations are shown using this style.

2.8 Conformance

Requirement 1	Any dataset claiming conformance with this INSPIRE data specification shall pass the requirements described in the abstract test suite presented in Annex A to this specification.

3 Specification scopes

This data specification has only one scope, the general scope.

4 Identification information

Table 1 – Information identifying the INSPIRE data specification *Protected sites*

Title	INSPIRE data specification *Protected sites*
Abstract	Within the INSPIRE context, Protected Sites may be located in terrestrial, aquatic and/or marine environments, and may be under either public or private ownership. They may include localities with protection targets defined by different sectors and based on different objectives. Objectives for protection may include: the conservation of nature; the protection and maintenance of biological diversity and of natural resources and the protection of person-made objects including buildings, pre-historic and historic archaeological sites, other cultural objects, or sites with specific geological, hydrogeological or geomorphological value. Protected Sites may receive protection due to more than one type of objective, and may have a double or multifarious designation status. In all cases, Protected Sites have a known location, boundary and area, based on formal, legal or administrative agreements or decisions. Protected Site boundaries are often defined relative to cadastral boundaries, natural boundaries or to some other feature, or sometimes they are approximately defined on the basis of the extent of the presence of a particular species. However, in the INSPIRE context, all Protected Sites have distinct boundaries of their own, rather than being defined relative to some other spatial object type.
Topic categories	Environment
Geographic description	The INSPIRE data specification *Protected sites* covers spatial data sets which relate to an area where a Member State has and/or exercises jurisdictional rights. It may also cover other geographical areas within which INSPIRE is applied, even if they are not current EU Member States. Protected Sites may overlap if they are of a different designation, but do not necessarily provide complete and contiguous coverage of an entire Member State.
Purpose	The purpose of this document is to specify a harmonised data specification for the spatial data theme *Protected sites* as defined in Annex I of the INSPIRE Directive. Data products based on the *Protected sites* Data Specification are intended to be used for the following purposes: 1. To generate European spatial data reports. 2. To allow the public to query and view information about Protected Sites locally and regionally. 3. To allow experts to visualise and analyse Protected Sites locally, regionally, nationally and Europe-wide. 4. To allow experts and semi-experts to download data from a single country, a subset of countries or across Europe. Annex B to this specification contains the use cases for the Protected Sites data product.
Spatial representation type	vector

Spatial resolution	The INSPIRE *Protected sites* theme is designed to be used at all levels of spatial resolution: the European level, the National level, the Regional level and the Local level. For this reason, the highest available resolution is to be used. Spatial resolution varies widely across different Protected Sites and is largely dictated by the method of capture and the data source. Protected Sites are normally referenced to existing mapping of the cadastre and natural features, and thus the resolution of the Protected Site depends on the resolution of the underlying data source and the method of capture (often digitisation). Typical scales of capture range from larger than 1:5,000 (accuracy less than +/-1m) to 1:100,000 (accuracy +/-25m), corresponding to the local level and regional level respectively. **Recommendation 1** It is recommended that data products complying with the INSPIRE *Protected sites* Data Specification contain the highest resolution data at the data source that the Member States can provide, as Protected Sites data may be used at a local level as well as broader scales.
Jurisdictional Scope	The INSPIRE *Protected sites* data specification applies to all Protected Sites that are defined by the international, European Community or national legislation of Member States, even if the legislation is administered at the local or provincial level. Protected Sites that are not defined by legislation at any of these levels are not considered within the scope of the INSPIRE *Protected sites* theme. **Requirement 2** Member States providing data to comply with the INSPIRE *Protected sites* theme must provide data on all Protected Sites defined by international, European Community or national legislation, subject to the other constraints described in this specification (refer particularly to Geographical Scope and Thematic Scope).
Geographical Scope	This INSPIRE *Protected sites* data specification covers spatial data sets that relate to an area where a Member State (or other State complying with INSPIRE) has and/or exercises jurisdictional rights, or where no jurisdictional rights exist (that is, in marine areas outside the jurisdiction of a particular Member State). Member States are responsible for the management of data about Protected Sites within their own jurisdiction. The assignment of Protected Sites to the jurisdiction of Member States may not coincide with Member State geographical boundaries, because neighboring Member States sometimes agree to assign the management of Protected Sites according to other criteria. For example, if a protected species inhabits two neighboring countries on either side of a river, the two Member States concerned may agree that each Member State will manage a Protected Site on their own side of the river protecting that species, even if the river does not coincide with the legal geographical boundary between the two Member States. **Requirement 3** Member States providing data to comply with the INSPIRE *Protected sites* theme must provide data about Protected Sites under their management and administration, for which they are responsible.
Thematic Scope	The thematic scope of the INSPIRE data specification on *Protected sites* is defined on the basis of two criteria: • The protection of the Site must be defined by **legislation** (whether international, European Community or national) and • The protection of the Site must be for **specific conservation objectives**, whether nature, cultural or other conservation.

	In contrast, the closely related *AREA MANAGEMENT/RESTRICTION/REGULATION ZONES AND REPORTING UNITS* theme (from Annex III of the INSPIRE Directive) is concerned with areas that are designated for other purposes, or with non-legislative administrative mechanisms. Refer to [DS-D2.3] for more details.

Table 2a – Examples of Protected Site exclusions and inclusions

In this theme	Not in this theme
• protected archaeological sites; • protected buildings; • salmonid and cyprinid waters (Fresh Water Fish Directive); • shellfish growing waters (Shellfish Growing Waters Directive).	• restricted areas around drinking water sources (Water Framework Directive); • nitrate-vulnerable zones (Nitrates Directive); • dumping sites; • noise reduction zones; • planning and land use controls; • prospecting and mining permit areas; • river basin districts; • coastal zone management areas; • bathing waters (Bathing Waters Directive);

Application schemas	The INSPIRE data specification on *Protected sites* includes three application schemas: • The Simple application schema includes basic, core information about Protected Sites. • The Full application schema contains a number of additional attributes, all of which are optional. Member State selection of the appropriate application schema to use should depend on internal processes and requirements, and on user requirements. As a minimum, the Simple application schema must be supported, but Member States may choose to support the Full application schema, e.g. in order to meet their internal requirements.

> **Requirement 4** In order to comply with the INSPIRE data specification on *Protected sites*, at a minimum data must meet the Simple application schema.

Member States may choose to create their own application schemas for internal purposes by selecting subsets of the Full application schema or extending this application schema with additional attributes. Refer to [DS-D2.5] for more information.

> **Recommendation 2**   If Member States want to make available additional information on Protected Sites, they should use the Full application schemas (or an extension thereof).

5 Data content and structure

Requirement 5	Spatial data sets related to the theme *Protected sites* shall be provided using the spatial object types and data types specified in the application schemas in this section.

Requirement 6	Each spatial object shall comply with all constraints specified for its spatial object type or data types used in values of its properties, respectively.

Recommendation 3	The reason for a void value should be provided where possible using a listed value from the VoidValueReason code list to indicate the reason for the missing value.

NOTE   The application schema specifies requirements on the properties of each spatial object including its multiplicity, domain of valid values, constraints, etc. All properties have to be reported, if the relevant information is part of the data set. Most properties may be reported as "void", if the data set does not include relevant information. See the Generic Conceptual Model [INSPIRE DS-D2.5] for more details.

5.1 Basic notions

This section explains some of the basic notions used in the INSPIRE application schemas. These explanations are based on the GCM [DS-D2.5].

5.1.1 Placeholder and candidate types

This data specification may include types (typically spatial object types) that will be fully specified as part of an Annex II or III spatial data theme, but is already used as a value type of an attribute or association role of a type included in this data specification. Two kinds of such types are distinguished:

  − A *placeholder type* acts as a placeholder for a spatial object type for which only a definition is specified (based on the requirements of the Annex I theme). It receives the stereotype «placeholder».

  − A *candidate type* already has a preliminary specification comprising the definition as well as attributes and associations to other types. It does not receive a specific stereotype.

Both placeholder and candidate types are placed in the application schema package of the thematically related Annex II or III spatial data theme. Their specifications will be revisited during the specification work of the Annex II or III theme.

If the existing preliminary specification elements of such types fulfil the requirements of the spatial data themes of Annex II or II they are kept and, if necessary, are complemented with further attributes or association roles.

If the existing preliminary specifications of a placeholder or candidate type do not fulfil the requirements of the spatial data theme of Annex II or III the placeholder or the candidate type will be moved into the application schema of the Annex I theme, and, if necessary, their specification will be completed. For the Annex II or III spatial data theme a new spatial object will be created.

Placeholders and candidate types are listed in a separate subsection of the Feature Catalogue.

5.1.2 Voidable characteristics

If a characteristic of a spatial object is not present in the spatial data set, but may be present or applicable in the real world, the property shall receive this stereotype.

If and only if a property receives this stereotype, the value of *void* may be used as a value of the property. A *void* value shall imply that no corresponding value is contained in the spatial data set maintained by the data provider or no corresponding value can be derived from existing values at reasonable costs, even though the characteristic may be present or applicable in the real world.

It is possible to qualify a value of void in the data with a reason using the VoidValueReason type. The VoidValueReason type is a code list, which includes the following pre-defined values:
- *Unpopulated*: The characteristic is not part of the dataset maintained by the data provider. However, the characteristic may exist in the real world. For example when the "elevation of the water body above the sea level" has not been included in a dataset containing lake spatial objects, then the reason for a void value of this property would be 'Unpopulated'. The characteristic receives this value for all objects in the spatial data set.
- *Unknown*: The correct value for the specific spatial object is not known to, and not computable by the data provider. However, a correct value may exist. For example when the "elevation of the water body above the sea level" *of a certain lake* has not been measured, then the reason for a void value of this property would be 'Unknown'. This value is applied on an object-by-object basis in a spatial data set.

NOTE   It is expected that additional reasons will be identified in the future, in particular to support reasons / special values in coverage ranges.

The «voidable» stereotype does not give any information on whether or not a characteristic exists in the real world. This is expressed using the multiplicity:
- If a characteristic may or may not exist in the real world, its minimum cardinality shall be defined as 0. For example, an if an Address may or may not have a house number, the multiplicity of the corresponding property shall be 0..1.
- If at least one value for a certain characteristic exists in the real world, the minimum cardinality shall be defined as 1. For example, if an Administrative Unit always has at least one name, the multiplicity of the corresponding property shall be 1..*.

In both cases, the «voidable» stereotype can be applied. A value (the real value or void) only needs to be made available for properties that have a minimum cardinality of 1.

5.1.3 Code lists and Enumerations

5.1.3.1 Style

All code lists and enumerations use the following modelling style:
- No initial value is specified, but only the attribute name part is used.
- The attribute name conforms to the usual rules for attributes names, i.e. is a lowerCamelCase name. Exceptions are words that consist of all uppercase letters (acronyms).

5.1.3.2 Governance

Two types of code lists can be distinguished:
- code lists that shall be managed centrally in the INSPIRE code list register and only values from that register may be used, and
- code lists that may be extended by data providers.

All code lists that are centrally managed shall receive the tagged value "codeList" with the preliminary value "urn:x-inspire:def:codeList:INSPIRE:<name of the class>".

5.1.4 Stereotypes

In the application schemas in this sections several stereotypes are used that have been defined as part of a UML profile for use in INSPIRE [INSPIRE DS-D2.5]. These are explained in Table 3 below.

Table 3 – Stereotypes (adapted from [INSPIRE DS-D2.5])

Stereotype	Model element	Description
applicationSchema	Package	An INSPIRE application schema according to ISO 19109 and the Generic Conceptual Model.
featureType	Class	A spatial object type.
type	Class	A conceptual, abstract type that is not a spatial object type.
dataType	Class	A structured data type without identity.
union	Class	A structured data type without identity where exactly one of the properties of the type is present in any instance.
enumeration	Class	A fixed list of valid identifiers of named literal values. Attributes of an enumerated type may only take values from this list.
codeList	Class	A flexible enumeration that uses string values for expressing a list of potential values.
placeholder	Class	A placeholder class (see definition in section 5.1.1).
voidable	Attribute, association role	A voidable attribute or association role (see definition in section 5.1.2).
lifeCycleInfo	Attribute, association role	If in an application schema a property is considered to be part of the life-cycle information of a spatial object type, the property shall receive this stereotype.
version	Association role	If in an application schema an association role ends at a spatial object type, this stereotype denotes that the value of the property is meant to be a specific version of the spatial object, not the spatial object in general.

5.2 Application schemas

5.2.1 Description

5.2.1.1 Narrative description

The ProtectedSite class is the heart of the application schemas, containing a number of attributes with their own complex data types also defined within the schemas, including most importantly the features for which the Site is protected. Such features may include Habitats, Species or Buildings. A number of additional classes and data types are also included, all of which describe particular aspects or attributes of the ProtectedSite class.

There are interdependencies between the *Protected sites* data specification and some of the Annex III Data Specifications that are still to be developed. Specifically, the *HABITATS AND BIOTOPES, SPECIES DISTRIBUTION* and *BIO-GEOGRAPHICAL REGIONS* themes contain features on which the *Protected sites* theme depends. For this reason, these three themes have been temporarily modelled in the process of developing this data specification. They have been modelled in a way that will allow future development of the themes beyond the requirements of the *Protected sites* theme, but that will support current and future use of the *Protected sites* Data Specification. The *AREA MANAGEMENT/RESTRICTION/REGULATION ZONES AND REPORTING UNITS* theme in Annex III may also prove relevant to the *Protected sites* data specification when it is modelled, but is not addressed in this Specification directly.

In order to meet the twin objectives of allowing Member States to use the INSPIRE model to report exhaustive information on protected sites like those required for Natura2000 reporting and providing a very simple, easy option for Member States to provide their Protected Sites information to the INSPIRE process, two application schemas are included within the INSPIRE Protected Sites Data Specification: The Simple application schema contains only current Protected Sites and a very limited set of fundamental attributes, including geometry, identifier, name and legal foundation date and document reference. The Full application schema, which builds on the Simple application schema, contains the full model including all attributes and historical as well as current Protected Sites, but with most attributes being optional, so values may be omitted.

All INSPIRE-compliant data sets must use one of these application schemas and must specify which one is used (see Requirement 7). Additional application schemas specific to other purposes may be created by Member States or other European organisations. Specific application schemas may be updated as a result of decisions and agreements at European level. One example for such a specific application schema is the Natura2000 application schema, which is included in the "INSPIRE NATURA2000 working paper". This application schema illustrates how Natura2000 site data could be provided in conformance with INSPIRE.

Requirement 7	INSPIRE-compliant *Protected sites* data sets are required to use one of the two application schemas and to indicate which application schema they have used in their data set metadata (see Section 8.1.5).

5.2.1.2 UML diagrams of the two application schemas

The application schemas contain a central class called ProtectedSite. This contains Protected Sites of all types, possibly including multiple versions (depending on the application schema). Different versions of the same site can be differentiated using the objectIdentifier. The two application schemas each have their own version of the ProtectedSite class, the Simple application schema version representing the core, with the Full application schema describing a further specialisation by including additional attributes and constraints.

In addition to the application schemas for each of the two application schemas, provisional application schemas for the three Annex III themes on which the *Protected sites* theme depends are included in Annexes D, E and F. This is because they are essential for the use of the *Protected sites* theme, but they have not yet been fully developed and published as Data Specifications in their own right. When this occurs, they will be removed from this Specification.

The Annex III themes that are connected to the *Protected sites* theme are:
- Habitats and Biotopes (Annex D): A Site may be protected because of the Habitats that occur on it, and the characteristics of such habitats are important for its protection.
- SpeciesDistribution (Annex E): A Site may be protected because of the Species that exist on it, and the characteristics of such species are important for its protection.
- Bio-geographical Regions (Annex F): Natura2000 reporting requires that the bio-geographical region within which a Protected Site falls be identified. This can be determined by spatial query against the Bio-geographical Regions theme, so is not explicitly included in the *Protected sites* application schema.
- Buildings: Buildings are a common reason for the creation of a Protected Site. These have not yet been modelled and so are not included as an Annex to this document. However, Protected Sites that have been created for the purpose of protecting a building may still be included within the Protected Sites theme.

5.2.1.2.1 *The Simple application schema*

The Simple application schema (Figure 1) contains a very limited set of fundamental attributes, including geometry, identifier, name, designation type, legal foundation date and document reference. Only current Protected Sites are included. The Simple application schema is a subset of the Full application schema.
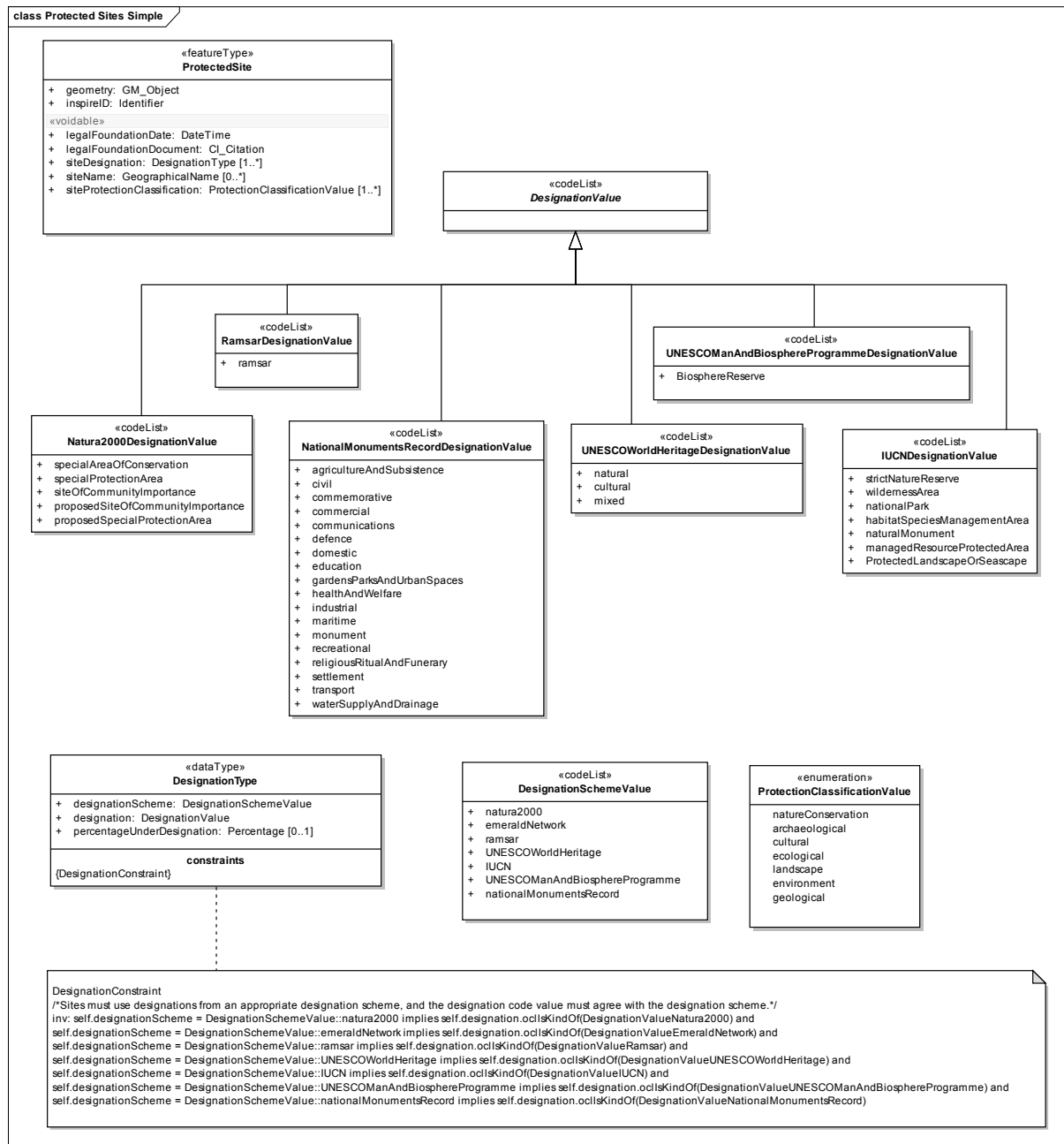
Figure 1 – UML Diagram: Simple application schema

5.2.1.2.2 The Full Application schema

The Full application schema (Figure 2) includes all attributes and historical as well as current Protected Sites, but most attributes are optional. Member States may populate subsets of attributes within this application schema to suit their requirements. In the diagram, additional elements (compared to the Simple application schema) are shown in blue, and elements imported from other application schemas in green.

NOTE For better readability, the sub-types of DesignationValue and the code list values of ActivityValue are not shown in the diagram.
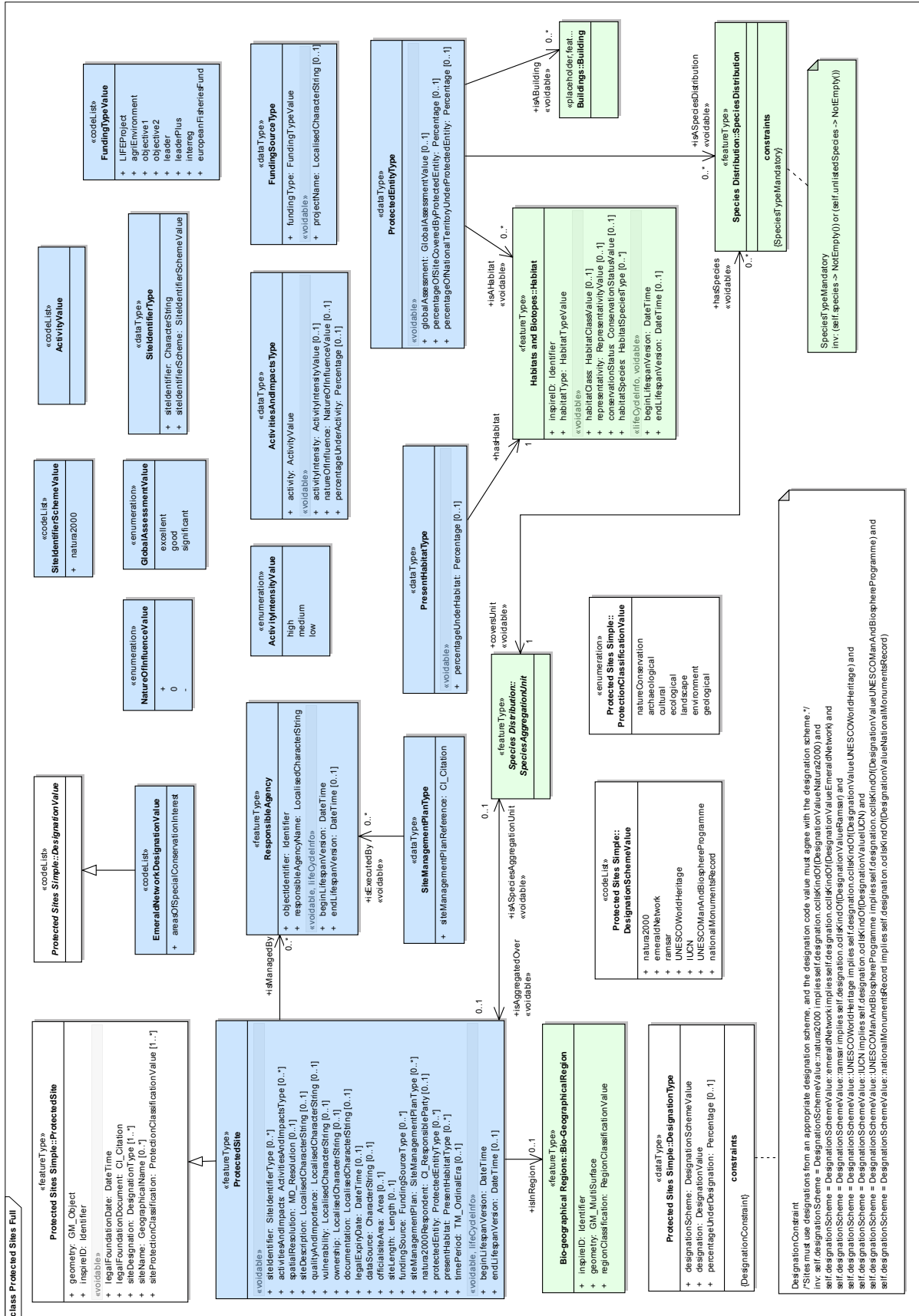
Figure 2 – UML Diagram: Full application schema

5.2.1.3   Consistency between spatial data sets

Some Protected Site boundaries are originally defined in the real world relative to cadastral or natural boundaries. These areas are defined by the approximate location of the presence of a protected object (for example, species or habitat), which may be known to exist up to a natural (most likely) or cadastral feature. However, the INSPIRE *Protected sites* data specification represents Protected Sites as absolute, not relative geometries. That is, they have their own, absolute geometries and their geographical location is not dependent on other features (other than during their original delineation). This is because many Member States do not update Protected Site geometries if there are changes to cadastral or natural boundaries, and in any case, the legal definition of a Protected Site remains fixed even if there are underlying changes to the cadastral boundary or the location of natural features.

5.2.1.4   Identifier management

The *Protected sites* data specification uses the Identifier dataType from the INSPIRE General Conceptual Model [DS-D2.5]. These identifiers include version number, so can be used to track changes to an object. The use of identifiers in combination with dates is described in more detail in Section 5.2.1.7.

Additional identifiers may also be represented with the siteIdentifier attribute, which includes both the siteIdentifier and the scheme within which the identifier is defined. This attribute may be used to store the Natura2000 site code in the case of Natura2000 sites, but may also contain the United Nations Environment Programme World Conservation Monitoring Centre identifiers (these are sometimes used for CDDA purposes), or other national identifiers, depending on the site.

5.2.1.5   Modelling of object references

References between classes within the *Protected sites* UML model are represented using the objectIdentifier attribute. References to data types are represented using attributes of the relevant data type. This also applies to references to other INSPIRE data themes (for example, the Geographical Names theme).

External references are represented as URIs or textual citations.

5.2.1.6   Geometry representation

Requirement 8	The value domain of spatial properties used in this specification is restricted to the Simple Feature spatial schema as defined by [OGC 06-103r3] (Implementation Specification for Geographic Information – Simple feature access – Part 1: Common Architecture v1.2.0).

NOTE   The specification restricts the spatial schema to 0-, 1-, 2-, and 2.5-dimensional geometries where all curve interpolations are linear.

NOTE   The topological relations of two spatial objects based on their specific geometry and topology properties can in principle be investigated by invoking the operations of the types defined in ISO 19107 (or the methods specified in OGC 06-103r3).

Recommendation 4	Protected Site geometries in INSPIRE-compliant *Protected sites* data sets may be point, line or polygon geometries. However, it is recommended that sites with an area of greater than 1 hectare be represented as polygons.

Recommendation 5	Protected Site geometries in INSPIRE-compliant *Protected sites* data sets that are polygons may be simple, single polygons or aggregated polygons, according to the shape of the actual Protected Site. That is, aggregated

polygons are to be used if the Protected Site itself contains disjoint or island polygons. Simple polygon geometries are to be used if the Protected Site itself is a simple polygon.

Recommendation 6 All spatial objects should be provided at the source accuracy where possible.

Recommendation 7 The accuracy should be specified for each spatial object using the spatialResolution attribute for the Full application schema.

Recommendation 8 All spatial objects should have a positional accuracy of 100 metres or better.

If a site has multiple designations, different features should be provided for each designation. Protected Sites features may overlap each other, but normally only if they are of different designation types. Usually sites of the same designation type do not overlap.

5.2.1.7   Temporality representation

The application schemas use the derived attributes "beginLifespanObject" and "endLifespanObject" to record the lifespan of a spatial object.

The attribute "beginLifespanVersion" specifies the date and time at which this version of the spatial object was inserted or changed in the spatial data set. The attribute "endLifespanVersion" specifies the date and time at which this version of the spatial object was superseded or retired in the spatial data set.

NOTE 1   The attributes specify the beginning of the lifespan of the version in the spatial data set itself, which is different from the temporal characteristics of the real-world phenomenon described by the spatial object. This lifespan information, if available, supports mainly two requirements: First, knowledge about the spatial data set content at a specific time; second, knowledge about changes to a data set in a specific time frame. The lifespan information should be as detailed as in the data set (i.e., if the lifespan information in the data set includes seconds, the seconds should be represented in data published in INSPIRE) and include time zone information.

NOTE 2 Changes to the attribute "endLifespanVersion" does not trigger a change in the attribute "beginLifespanVersion".

Recommendation 9 If life-cycle information is not maintained as part of the spatial data set, all spatial objects belonging to this data set should provide a void value with a reason of "unpopulated".

In addition to these system dates, the application schema also stores the real world date on which a change to the Protected Site occurs (legalFoundationDate). This is independent of anything that happens in any system.

The beginLifespanVersion stores the date on which the data instance representing the Protected Site was first created, and the endLifespanVersion is populated when some attribute or geometry of that instance changes. At this point, an entirely new instance is created repeating all of the attributes of the instance that have not changed, and providing new values for the attributes or geometries that have changed.   The new instance uses the same value for objectIdentifier.localId and objectIdentifier.nameSpace, but has a new value for objectIdentifier.version. Using this method for representing temporality, all of the versions of a Protected Site can be established by looking for all the   ProtectedSite   instances   with   the   same   value   for   objectIdentifier.localID   and objectIdentifier.namespace.

The system dates can also be used for incremental updates. Instances that have been added since the last update can be determined by finding instances whose beginLifespanVersion is after the date of the last update. Instances that have been changed since the last update can be determined by finding instances whose endLifespanVersion is after the date of the last update.

The Simple application schema does not include system lifecycle information and does not store historical versions of features. The Full application schema includes full temporality and historical versions.

5.2.1.8 Protected Site names

Names are an important attribute of Protected Sites. The name attribute in the ProtectedSite class uses the GeographicalName data type from the INSPIRE Geographical Names Data Specification. This data type includes a number of attributes that specify the language and pronunciation of the name.

Recommendation 10 The language of the name should be filled in most cases, except if the data
                       producer does not know the language of the name.

5.2.1.9 Habitats and Protected Sites

Annex 1 of the Habitat Directive specifies a number of habitat types for which a Protected Site may be established and should be protected. These habitats are an important aspect of Protected Sites and are required as part of Natura2000 reporting. Natura2000 reporting also requires that all of the habitats that exist on a Protected Site (whether protected or not) be described as part of the general information about the Site. However, these latter habitats may be described using more general categorisations.

The *Protected sites* Full application schema models these two different connections using two different attributes with data types including references to the Habitat class from the Habitat and Biotopes theme.
1. The first attribute (protectedEntity) links a Protected Site with only those habitats (or alternatively Species or Buildings) that are protected and can be described using the categories in Annex 1 of the Habitats Directive. This association requires that the percentage of the Site covered by each habitat be described, but the total of all of these percentages may not equal 100% because the entire Site may not be covered with protected habitats.
2. The second association (presentHabitat) links a Protected Site with Habitat that exist on the site, whether or not they are protected. These habitats may be fully described using the categories from Annex 1 of the Habitat Directive, but must also be described (and may only be described) using more general habitat classes specified in the Natura2000 Standard Data Form. This may be required in some cases because habitat classes may need to be determined from land cover maps or imagery and the more detailed habit type from Annex 1 of the Habitats Directive is not known. The total of the percentages of all habitats linked to a particular Protected Site through this association must equal 100%.

It is possible that the same habitat will be linked to the same Protected Site through both associations. This may occur in the case of habitats that are protected under Annex 1 of the Habitat Directive. However, this would only occur if both the habitat class and habitat type for a given habitat were known. This is not currently common due to the lack of direct mapping between the general habitat classifications required by the second association and the more specific habitat types used by Annex 1 of the Habitats Directive. It is intended that as the Habitats and Biotopes Theme is developed and Member States work towards providing data that conforms to the models used in that Theme and in the *Protected sites* theme, these two types of habitats will start to be represented in similar ways, and thus the coding systems will merge. In this case, the direct association will only need to store links to habitats that are not protected, and the combination of the links through both associations will then be used to establish the entire set of habitats that exist on a Site.

5.2.1.10 Designations and Classifications

A large number of different classification schemes for Protected Sites have been devised, some of which are explicitly represented in the INSPIRE data specification on *Protected sites* (for example, IUCN Categories, Natura2000 designations) and all of which may be incorporated using the DesignationType data type.

There is no single classification scheme used for all purposes across all Protected Sites and this specification does not attempt to create such a classification scheme. Instead, the specification is flexible enough to accommodate all classification schemes (including those used within a Member State), requiring only a very simple classification based on the purpose of protection (siteProtectionClassification). However, this may mean that comparison of specialised designations across Europe may be difficult in cases in which different designation schemes are used.

5.2.2 Feature catalogue – Simple application schema

Table 4 – Feature catalogue metadata

Feature catalogue name	INSPIRE feature catalogue Protected Sites Simple
Scope	Protected Sites Simple
Version number	3.1
Version date	2010-02-14
Definition source	INSPIRE data specification Protected Sites Simple

Table 5 – Types defined in the feature catalogue

Type	Package	Stereotypes	Section
DesignationSchemeValue	Protected Sites Simple	«codeList»	5.2.2.3.2
DesignationType	Protected Sites Simple	«dataType»	5.2.2.2.1
DesignationValue	Protected Sites Simple	«codeList»	5.2.2.3.3
IUCNDesignationValue	Protected Sites Simple	«codeList»	5.2.2.3.4
NationalMonumentsRecordDesignationValue	Protected Sites Simple	«codeList»	5.2.2.3.5
Natura2000DesignationValue	Protected Sites Simple	«codeList»	5.2.2.3.6
ProtectedSite	Protected Sites Simple	«featureType»	5.2.2.1.1
ProtectionClassificationValue	Protected Sites Simple	«enumeration»	5.2.2.3.1
RamsarDesignationValue	Protected Sites Simple	«codeList»	5.2.2.3.7
UNESCOManAndBiosphereProgrammeDesignationValue	Protected Sites Simple	«codeList»	5.2.2.3.8
UNESCOWorldHeritageDesignationValue	Protected Sites Simple	«codeList»	5.2.2.3.9

5.2.2.1 Spatial object types

5.2.2.1.1 ProtectedSite

ProtectedSite	
Definition:	An area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives.

ProtectedSite

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.
Status:	Proposed
Stereotypes:	«featureType»

Attribute: geometry

Value type:	GM_Object
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.
Multiplicity:	1

Attribute: inspireID

Value type:	Identifier
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.
Multiplicity:	1

Attribute: legalFoundationDate

Value type:	DateTime
Definition:	The date that the protected site was legally created. This is the date that the real world object was created, not the date that its representation in an information system was created.
Description:	NOTE In the case of Natura2000 sites, a protected site may go through several different stages (for example, proposed as SCI, confirmed as SCI, designated as SAC). A new version of the site is created for each of these different stages (because there is a change in the designation), and the new version should have the date on which the new stage was legally assigned as the legalFoundationDate (for example, when designated as a SAC, the version for the SAC would have the designation date as the legalFoundationDate).
Multiplicity:	1
Stereotypes:	«voidable»

Attribute: legalFoundationDocument

Value type:	CI_Citation
Definition:	A URL or text citation referencing the legal act that created the Protected Site.
Multiplicity:	1
Stereotypes:	«voidable»

Attribute: siteDesignation

Value type:	DesignationType
Definition:	The designation (type) of Protected Site.

ProtectedSite

Description:	At least one designation is required, but designations may be available using a number of different designation schemes, all of which can be accommodated in the DesignationSchemeValue codelist.
Multiplicity:	1..*
Stereotypes:	«voidable»

Attribute: siteName

Value type:	GeographicalName
Definition:	The name of the Protected Site.
Description:	NOTE 1 Several names in different languages may be expressed.
	NOTE 2 It is recommended that the language of the name (part of the GeographicalName data type) be filled where ever possible. This is an important identifying attribute of a Protected Site.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: siteProtectionClassification

Value type:	ProtectionClassificationValue
Definition:	The classification of the protected site based on the purpose for protection.
Description:	The site may have more than one classification.
Multiplicity:	1..*
Stereotypes:	«voidable»

5.2.2.2 Data types

5.2.2.2.1 DesignationType

DesignationType

Definition:	A data type designed to contain a designation for the Protected Site, including the designation scheme used and the value within that scheme.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: designation

Value type:	DesignationValue
Definition:	The actual Site designation.
Multiplicity:	1

Attribute: designationScheme

Value type:	DesignationSchemeValue
Definition:	The scheme from which the designation code comes.
Multiplicity:	1

Attribute: percentageUnderDesignation

Value type:	Percentage
Definition:	The percentage of the site that falls under the designation. This is used in particular for the IUCN categorisation. If a value is not provided for this attribute, it is assumed to be 100%
Multiplicity:	0..1

Constraint: DesignationConstraint

Natural language:	Sites must use designations from an appropriate designation scheme, and the designation code value must agree with the designation scheme.

DesignationType

OCL:	inv: self.designationScheme = DesignationSchemeValue::natura2000 implies self.designation.oclIsKindOf(DesignationValueNatura2000) and self.designationScheme = DesignationSchemeValue::emeraldNetwork implies self.designation.oclIsKindOf(DesignationValueEmeraldNetwork) and self.designationScheme = DesignationSchemeValue::ramsar implies self.designation.oclIsKindOf(DesignationValueRamsar) and self.designationScheme = DesignationSchemeValue::UNESCOWorldHeritage implies self.designation.oclIsKindOf(DesignationValueUNESCOWorldHeritage) and self.designationScheme = DesignationSchemeValue::IUCN implies self.designation.oclIsKindOf(DesignationValueIUCN) and self.designationScheme = DesignationSchemeValue::UNESCOManAndBiosphereProgramme implies self.designation.oclIsKindOf(DesignationValueUNESCOManAndBiosphereProgramme) and self.designationScheme = DesignationSchemeValue::nationalMonumentsRecord implies self.designation.oclIsKindOf(DesignationValueNationalMonumentsRecord)

5.2.2.3   Enumerations and code lists

5.2.2.3.1   ProtectionClassificationValue

ProtectionClassificationValue

Definition:	The protected site classification based on the purpose of protection.
Status:	Proposed
Stereotypes:	«enumeration»

Value: natureConservation

Definition:	The Protected Site is protected for the maintenance of biological diversity.

Value: archaeological

Definition:	The Protected Site is protected for the maintenance of archaeological heritage.

Value: cultural

Definition:	The Protected Site is protected for the maintenance of cultural heritage.

Value: ecological

Definition:	The Protected Site is protected for the maintenance of ecological stability.

Value: landscape

Definition:	The Protected Site is protected for the maintenance of landscape characteristics.

Value: environment

Definition:	The Protected Site is protected for the maintenance of environmental stability.

Value: geological

Definition:	The Protected Site is protected for the maintenance of geological characteristics.

5.2.2.3.2   DesignationSchemeValue

DesignationSchemeValue

Definition:	The scheme used to assign a designation to the Protected Sites.
Description:	NOTE 1 Schemes may be internationally recognised (for example, Natura2000 or the Emerald Network schemes), or may be national schemes (for example, the designations used for nature conservation in a particular Member State).
	NOTE 2 Typically, this code list will be extended with code schemes used within Member States.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	May be extended by data providers

Value: emeraldNetwork

Definition:	The Protected Site has a designation under the Emerald Network.
Description:	The Emerald Network is an ecological network to conserve wild flora and fauna and their natural habitats in Europe.

DesignationSchemeValue

Value: IUCN	
Definition:	The Protected Site has a classification using the International Union for Conservation of Nature classification scheme.

Value: nationalMonumentsRecord	
Definition:	The Protected Site has a classification using the National Monuments Record classification scheme.

Value: natura2000	
Definition:	The Protected Site has a designation under either the Habitat Directive (92/43/EEC) or the Birds Directive (79/409/EEC).

Value: ramsar	
Definition:	The Protected Site has a designation under the Ramsar Convention.
Description:	The Ramsar Convention provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Value: UNESCOManAndBiosphereProgramme	
Definition:	The Protected Site has a designation under UNESCO Man and Biosphere programme.

Value: UNESCOWorldHeritage	
Definition:	The Protected Site has a designation under UNESCO World Heritage Convention.

5.2.2.3.3   DesignationValue

DesignationValue (abstract)	
Definition:	Abstract base type for code lists containing the classificaiton and desigation types under different schemes.
Description:	NOTE 1Some of these designation and classification lists are closed (for example, Natura2000), while some change regularly.
	NOTE 2 Typically, additional code lists will be created as sub-types of this type to represent designation or classification values within Member States, e.g. natuurbeschermingsGebieden, rijksBeschermdeArcheologischeGebieden, nationaleParken, nationaleLandschappen etc. in the Netherlands.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	May be extended by data providers

5.2.2.3.4   IUCNDesignationValue

IUCNDesignationValue	
Subtype of:	DesignationValue
Definition:	A code list for the International Union for the Conservation of Nature classification scheme.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:DesignationValueIUCN

Value: habitatSpeciesManagementArea	
Definition:	The Protected Site is classified as a habitat species management area under the IUCN classification scheme.

Value: managedResourceProtectedArea	
Definition:	The Protected Site is classified as a managed resource protected area under the IUCN classification scheme.

Value: nationalPark	
Definition:	The Protected Site is classified as a national park under the IUCN classification scheme.

IUCNDesignationValue

Value: naturalMonument	
Definition:	The Protected Site is classified as a natural monument under the IUCN classification scheme.

Value: protectedLandscapeOrSeascape	
Definition:	The Protected Site is classified as a protected landscape or seascape under the IUCN classification scheme.

Value: strictNatureReserve	
Definition:	The Protected Site is classified as a strict nature reserve under the IUCN classification scheme.

Value: wildernessArea	
Definition:	The Protected Site is classified as a wilderness area under the IUCN classification scheme.

5.2.2.3.5 NationalMonumentsRecordDesignationValue

NationalMonumentsRecordDesignationValue

Subtype of:	DesignationValue
Definition:	A code list for the National Monuments Record classification scheme.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:DesignationValueNationalMonumentsRecord

Value: agricultureAndSubsistence	
Definition:	The Protected Site is classified as an agricultural or subsistence monument under the National Monuments Record classification scheme.

Value: civil	
Definition:	The Protected Site is classified as a civil monument under the National Monuments Record classification scheme.

Value: commemorative	
Definition:	The Protected Site is classified as a commemorative monument under the National Monuments Record classification scheme.

Value: commercial	
Definition:	The Protected Site is classified as a commercial monument under the National Monuments Record classification scheme.

Value: communications	
Definition:	The Protected Site is classified as a communications monument under the National Monuments Record classification scheme.

Value: defence	
Definition:	The Protected Site is classified as a defence monument under the National Monuments Record classification scheme.

Value: domestic	
Definition:	The Protected Site is classified as a domestic monument under the National Monuments Record classification scheme.

Value: education	
Definition:	The Protected Site is classified as a education monument under the National Monuments Record classification scheme.

Value: gardensParksAndUrbanSpaces	
Definition:	The Protected Site is classified as a garden, park or urban space monument under the National Monuments Record classification scheme.

Value: healthAndWelfare	
Definition:	The Protected Site is classified as a health and welfare monument under the National Monuments Record classification scheme.

Value: industrial

NationalMonumentsRecordDesignationValue	
Definition:	The Protected Site is classified as a industrial monument under the National Monuments Record classification scheme.

Value: maritime	
Definition:	The Protected Site is classified as a maritime monument under the National Monuments Record classification scheme.

Value: monument	
Definition:	The Protected Site is classified as a monument with some unclassified form under the National Monuments Record classification scheme.

Value: recreational	
Definition:	The Protected Site is classified as a recreational monument under the National Monuments Record classification scheme.

Value: religiousRitualAndFunerary	
Definition:	The Protected Site is classified as a religious, ritual or funerary monument under the National Monuments Record classification scheme.

Value: settlement	
Definition:	The Protected Site is classified as a settlement under the National Monuments Record classification scheme.

Value: transport	
Definition:	The Protected Site is classified as a transport monument under the National Monuments Record classification scheme.

Value: waterSupplyAndDrainage	
Definition:	The Protected Site is classified as a water supply and drainage monument under the National Monuments Record classification scheme.

5.2.2.3.6 Natura2000DesignationValue

Natura2000DesignationValue	
Subtype of:	DesignationValue
Definition:	A code list for the Natura2000 designation scheme.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:DesignationValueNatura2000

Value: proposedSiteOfCommunityImportance	
Definition:	The Protected Site is proposed as a Site of Community Interest (SCI) under Natura2000.

Value: proposedSpecialProtectionArea	
Definition:	The Protected Site is proposed as a Special Protection Area (SPA) under Natura2000.

Value: siteOfCommunityImportance	
Definition:	The Protected Site is designated as a Site of Community Interest (SCI) under Natura2000.

Value: specialAreaOfConservation	
Definition:	The Protected Site is designated as a Special Area of Conservation (SAC) under Natura2000.

Value: specialProtectionArea	
Definition:	The Protected Site is designated as a Special Protection Area (SPA) under Natura2000.

5.2.2.3.7 RamsarDesignationValue

RamsarDesignationValue	
Subtype of:	DesignationValue
Definition:	A code list for the Ramsar Convention designatoin scheme.
Status:	Proposed

RamsarDesignationValue

Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:DesignationValueRamsar

Value: ramsar

Definition:	The Protected Site is designated under the Ramsar Convention.

5.2.2.3.8   UNESCOManAndBiosphereProgrammeDesignationValue

UNESCOManAndBiosphereProgrammeDesignationValue

Subtype of:	DesignationValue
Definition:	A code list for the World Heritage Man and Biosphere Programme classification scheme.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:DesignationValueUNESCOManAndBiosphereProgramme

Value: BiosphereReserve

Definition:	The Protected Site is designated as a Biosphere Reserve under the World Heritage Man and Biosphere Programme.

5.2.2.3.9   UNESCOWorldHeritageDesignationValue

UNESCOWorldHeritageDesignationValue

Subtype of:	DesignationValue
Definition:	A code list for the World Heritage designation scheme.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:DesignationValueUNESCOWorldHeritage

Value: cultural

Definition:	The Protected Site is designated as a cultural World Heritage site.

Value: mixed

Definition:	The Protected Site is designated as a mixed World Heritage site.

Value: natural

Definition:	The Protected Site is designated as a natural World Heritage site.

5.2.2.4   Imported types (informative)

This section lists definitions for feature types, data types and enumerations and code lists that are defined in other application schemas. The section is purely informative and should help the reader understand the feature catalogue presented in the previous sections. For the normative documentation of these types, see the given references.

5.2.2.4.1   Identifier

Identifier

Package:	Base Types [see DS-D2.5]
Definition:	External unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.
Description:	NOTE1 External object identifiers are distinct from thematic object identifiers.
	NOTE 2 The voidable version identifier attribute is not part of the unique identifier of a spatial object and may be used to distinguish two versions of the same spatial object.
	NOTE 3 The unique identifier will not change during the life-time of a spatial object.

5.2.2.4.2 GeographicalName

GeographicalName	
Package:	Geographical Names [see DS-D2.8.I.3]
Definition:	Proper noun applied to a real world entity.

5.2.3 Feature catalogue – Full application schema

Table 6 – Feature catalogue metadata

Feature catalogue name	INSPIRE feature catalogue *Protected sites* - Full
Scope	*Protected sites*
Version number	3.1
Version date	2010-02-14
Definition source	INSPIRE Data specification *Protected sites*

Table 7 – Types defined in the feature catalogue

Type	Package	Stereotypes	Section
ActivitiesAndImpactsType	Protected Sites Full	«dataType»	5.2.3.2.1
ActivityIntensityValue	Protected Sites Full	«enumeration»	5.2.3.3.1
ActivityValue	Protected Sites Full	«codeList»	5.2.3.3.4
Bio-GeographicalRegion	Bio-geographical Regions	«featureType»	5.2.3.4.2
Building	Buildings	«placeholder,featureType»	5.2.3.4.5
EmeraldNetworkDesignationValue	Protected Sites Full	«codeList»	5.2.3.3.5
FundingSourceType	Protected Sites Full	«dataType»	5.2.3.2.2
FundingTypeValue	Protected Sites Full	«codeList»	5.2.3.3.6
GlobalAssessmentValue	Protected Sites Full	«enumeration»	5.2.3.3.2
Habitat	Habitats and Biotopes	«featureType»	5.2.3.4.4
NatureOfInfluenceValue	Protected Sites Full	«enumeration»	5.2.3.3.3
PresentHabitatType	Protected Sites Full	«dataType»	5.2.3.2.3
ProtectedEntityType	Protected Sites Full	«dataType»	5.2.3.2.4
ProtectedSite	Protected Sites Full	«featureType»	5.2.3.1.1
ResponsibleAgency	Protected Sites Full	«featureType»	5.2.3.1.2
SiteIdentifierSchemeValue	Protected Sites Full	«codeList»	5.2.3.3.7
SiteIdentifierType	Protected Sites Full	«dataType»	5.2.3.2.5
SiteManagementPlanType	Protected Sites Full	«dataType»	5.2.3.2.6
SpeciesAggregationUnit	Species Distribution	«featureType»	5.2.3.4.3
SpeciesDistribution	Species Distribution	«featureType»	5.2.3.4.1

5.2.3.1 Spatial object types

5.2.3.1.1 ProtectedSite

ProtectedSite	
Subtype of:	ProtectedSite
Definition:	An area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives.

ProtectedSite

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 Full application schema.
Status:	Proposed
Stereotypes:	«featureType»

Attribute: activitiesAndImpacts

Value type:	ActivitiesAndImpactsType
Definition:	Impacts resulting from human activities or natural processes that positively or negatively affect the conservation status of the protected site.
Description:	This information is needed to inform evaluation of conservation status of a Protected Site. This includes management activities such as grazing or cutting, land uses such as mineral extraction or transport and natural processes such as disease fluvial erosion.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: beginLifespanVersion

Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was inserted or changed in the spatial data set.
Description:	NOTE This date is recorded to enable the generation of change only update files.
Multiplicity:	1
Stereotypes:	«voidable,lifeCycleInfo»

Attribute: dataSource

Value type:	CharacterString
Definition:	The agency or organisation that is responsible for maintaining and providing the data about the Protected Site. This may be represented in the form of the URL or name and address of the organisation.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: documentation

Value type:	LocalisedCharacterString
Definition:	References to publications and scientific data concerning the Protected Site.
Description:	NOTE 1 This attribute corresponds to item 4.6 of the Natura2000 SDF. NOTE 2 Information entered should be made according to standard conventions for scientific references. Unpublished items or communications referring to the information given in the recording form should be included where ever useful.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: endLifespanVersion

Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was superseded or retired in the spatial data set.
Description:	NOTE This date is recorded primarily for those systems which "close" an entry in the spatial data set in the event of an attribute change.
Multiplicity:	0..1
Stereotypes:	«voidable,lifeCycleInfo»

ProtectedSite

Attribute: fundingSource
Value type:	FundingSourceType
Definition:	The source(s) of financial support that are being used to implement the management plan on a Protected Site.
Description:	NOTE Funding of management on Protected Sites is critical to securing desired conservation status. The resources are supplied from a variety of sources, ranging from private land owners to European funding schemes.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: legalExpiryDate
Value type:	DateTime
Definition:	The date that the protected site was legally destroyed. This is the date that the real world object was destroyed, not the date that its representation in an information system was destroyed or changed.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: natura2000Respondent
Value type:	CI_ResponsibleParty
Definition:	The person responsible for completing Natura2000 reporting on the Site.
Description:	NOTE This is likely to be a person from the ResponsibeAgency, but may not be.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: officialsiteArea
Value type:	Area
Definition:	The official area of the site in hectares. This may not the same as area calculated from the geometry.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: ownership
Value type:	LocalisedCharacterString
Definition:	A general description of the site ownership.
Description:	NOTE This attribute corresponds to item 4.5 of the Natura2000 SDF.
	EXAMPLES Private, State, conservation NGO.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: presentHabitat
Value type:	PresentHabitatType
Definition:	A habitat that exists on the Site.
Description:	NOTE This is distinct from the Habitats for which the Site is protected. These are represented in the protectedEntity attribute.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: protectedEntity
Value type:	ProtectedEntityType
Definition:	An entity that is protected by a designated protected site (that is, the object or reason for protection).
Description:	EXAMPLE Such entities may include habitats, species and geological, archaeological, cultural and other types of entities.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: qualityAndImportance

ProtectedSite

Value type:	LocalisedCharacterString
Definition:	An overall indication of the quality and importance of the Site, in view of the conservation objectives of the various Directives.
Description:	NOTE This attribute corresponds to item 4.2 of the Natura2000 SDF.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: siteDescription

Value type:	LocalisedCharacterString
Definition:	A general description of the Site and its characteristics.
Description:	NOTE This attribute corresponds to item 4.1 of the Natura2000 SDF.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: siteIdentifier

Value type:	SiteIdentifierType
Definition:	The identifier for the Site using some national or international identification scheme.
Description:	This is distinct from the inspireID, which is a unique identifier for the record.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: siteLength

Value type:	Length
Definition:	The length of the site, normally used if the area is not populated.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: siteManagementPlan

Value type:	SiteManagementPlanType
Definition:	The Site Management Plans that set out practical actions and measures that are needed to ensure that the features for which the site is designated are maintained.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: spatialResolution

Value type:	MD_Resolution
Definition:	The spatial resolution of the protected site geometry. This may relate to a scale of capture value.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: timePeriod

Value type:	TM_OrdinalEra
Definition:	For historical or archaeological Sites, the era in which the Site is thought to originate.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: vulnerability

Value type:	LocalisedCharacterString
Definition:	The nature and extent of pressures on the Site from human and other influences and the fragility of habitats and ecosystems found there.
Description:	NOTE This attribute corresponds to item 4.3 of the Natura2000 SDF.
Multiplicity:	0..1
Stereotypes:	«voidable»

Association role: isASpeciesAggregationUnit

Value type:	SpeciesAggregationUnit

ProtectedSite

Definition:	A link to the SpeciesAggregationUnit feature type that represents the generic aspects of different types of units over which species may be distributed.
Multiplicity:	0..1
Stereotypes:	«voidable»

Association role: isInRegion

Value type:	Bio-GeographicalRegion
Definition:	The bio-geographical region to which a Protected Site is assigned.
Description:	Although Protected Sites may exist across the boundary of more than one biogeographical region, it is usually assigned to one region for Natura2000 purposes. If this is the case, this attribute is used to indicate the officially assigned biogeographical region used by the Member State.
Multiplicity:	0..1

Association role: isManagedBy

Value type:	ResponsibleAgency
Definition:	The Agency that is responsible (either entirely or in combination with other agencies) for the management of the Protected Site.
Multiplicity:	0..*

5.2.3.1.2   ResponsibleAgency

ResponsibleAgency

Definition:	The agency, organisation or body responsible for selecting, describing and designating the protected site.
Description:	NOTE Responsibility for establishing a protected site allows all interested parties to know who to liaise with over queries or requests for more detailed information on each Area. The responsible body will vary according to the basis of establishment with national governments ultimately responsible for Natura2000 sites, down to voluntary bodies responsible for local designations or quasi-legislative protected sites.
Status:	Proposed
Stereotypes:	«featureType»

Attribute: beginLifespanVersion

Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was inserted or changed in the spatial data set.
Description:	NOTE This date is recorded to enable the generation of change only update files.
Multiplicity:	1
Stereotypes:	«voidable,lifeCycleInfo»

Attribute: endLifespanVersion

Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was superseded or retired in the spatial data set.
Description:	NOTE This date is recorded primarily for those systems which "close" an entry in the spatial data set in the event of an attribute change.
Multiplicity:	0..1
Stereotypes:	«voidable,lifeCycleInfo»

Attribute: objectIdentifier

Value type:	Identifier
Definition:	A unique identifier for the Responsible Agency.
Multiplicity:	1

Attribute: responsibleAgencyName

Value type:	LocalisedCharacterString
Definition:	The name of the agency responsible for managing the protected site .

ResponsibleAgency

Multiplicity:	1

5.2.3.2   Data types

5.2.3.2.1   ActivitiesAndImpactsType

ActivitiesAndImpactsType

Definition:	Impacts resulting from human activities or natural process that positively or negatively affect the conservation status of the Protected Site. Information needed to inform evaluation of conservation status of a Protected Site.
Description:	EXAMPLE This includes management activities such as grazing or cutting, land uses such as mineral extraction or transport and natural processes such as disease fluvial erosion.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: activity

Value type:	ActivityValue
Definition:	The activities that occur on the site using the Natura2000 activity types from Appendix E in the Natura 2000 explanatory notes (Standard Data Form Item 6.1).
Multiplicity:	1

Attribute: activityIntensity

Value type:	ActivityIntensityValue
Definition:	The intensity of the activity's influence on the site.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: natureOfInfluence

Value type:	NatureOfInfluenceValue
Definition:	The nature of the influence of the activity on the site (positive, negative or neutral).
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: percentageUnderActivity

Value type:	Percentage
Definition:	The percentage of the protected site over which the activity occurs.
Multiplicity:	0..1
Stereotypes:	«voidable»

5.2.3.2.2   FundingSourceType

FundingSourceType

Definition:	The source(s) of financial support that are being used to implement the management plan on a protected site.
Description:	NOTE Funding of management on protected sites is critical to securing desired conservation status. The resources are supplied from a variety of sources, ranging from private land owners to European funding schemes.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: fundingType

Value type:	FundingTypeValue
Definition:	The funding type.
Multiplicity:	1

Attribute: projectName

Value type:	LocalisedCharacterString

FundingSourceType

Definition:	The name and reference to the project that funds management of the Protected Site.
Multiplicity:	0..1
Stereotypes:	«voidable»

5.2.3.2.3   PresentHabitatType

PresentHabitatType

Definition:	A habitat that exists on the Protected Site.
Description:	NOTE This is distinct from the Habitats for which the Site is protected (see ProtectedEntityType).
Status:	Proposed
Stereotypes:	«dataType»

Attribute: percentageUnderHabitat

Value type:	Percentage
Definition:	The percentage of the total protected site that is covered by the Habitat.
Description:	NOTE This may include part or all of the specified Habitat. The percentages for all the habitats present on a protected site should add up to 100%.
Multiplicity:	0..1
Stereotypes:	«voidable»

Association role: hasHabitat

Value type:	Habitat
Definition:	The relationship between a protected site and a habitat that exists on that Site.
Multiplicity:	1

5.2.3.2.4   ProtectedEntityType

ProtectedEntityType

Definition:	An entity that is protected by a designated protected site (that is, the object or reason for protection).
Description:	EXAMPLE Such entities may include habitats, species and geological, archaeological, cultural and other types of entities.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: globalAssessment

Value type:	GlobalAssessmentValue
Definition:	The value of the Site for conservation of the protected entity (species, habitat, etc) concerned.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: percentageOfNationalTerritoryUnderProtectedEntity

Value type:	Percentage
Definition:	The percentage of the total occurrence of the protected entity in the national territory that appears on the Protected Site.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: percentageOfSiteCoveredByProtectedEntity

Value type:	Percentage
Definition:	The percentage of the total area of the protected site that is covered by the protected entity (habitat, species, etc).
Description:	NOTE Protected entities may not cover the entire protected site, so these percentages may not add up to 100 for a given site.
Multiplicity:	0..1
Stereotypes:	«voidable»

Association role: isABuilding

ProtectedEntityType

Value type:	Building
Definition:	The role of a building as a protected entity.
Multiplicity:	0..*
Stereotypes:	«voidable»

Association role: isAHabitat

Value type:	Habitat
Definition:	The role of a Habitat as a protected entity
Multiplicity:	0..*
Stereotypes:	«voidable»

Association role: isASpeciesDistribution

Value type:	SpeciesDistribution
Definition:	The role of a Species Distribution as a protected entity.
Multiplicity:	0..*
Stereotypes:	«voidable»

5.2.3.2.5   SiteIdentifierType

SiteIdentifierType

Definition:	An identifier for the Protected Site, using some identification scheme. A Site may have several identifiers using different schemes.
Description:	EXAMPLE A site may have a Natura2000 identifier as well as a national identifier. NOTEIdentifiers are unique within the specified scheme.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: siteIdentifier

Value type:	CharacterString
Definition:	The identifier for the Site.
Multiplicity:	1

Attribute: siteIdentifierScheme

Value type:	SiteIdentifierSchemeValue
Definition:	The scheme from which the identifier for the Site comes.
Multiplicity:	1

5.2.3.2.6   SiteManagementPlanType

SiteManagementPlanType

Definition:	Site Management Plans are descriptions that set out practical actions and measures that are needed to ensure that the features for which the site is designated are maintained.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: siteManagementPlanReference

Value type:	CI_Citation
Definition:	The URL or citation for a document that describes the site management plans.
Multiplicity:	1

Association role: isExecutedBy

Value type:	ResponsibleAgency
Definition:	The Agency that is responsible (either in part or in total) for executing the Site Management Plan.
Multiplicity:	0..*
Stereotypes:	«voidable»

5.2.3.3 Enumerations and code lists

5.2.3.3.1 *ActivityIntensityValue*

ActivityIntensityValue	
Definition:	A code indicating the level of intensity of the influence of the activities in and around the site.
Status:	Proposed
Stereotypes:	«enumeration»
Value: high	
Definition:	The impacts and activities carried out on and around the Protected Site have a high intensity of influence.
Value: medium	
Definition:	The impacts and activities carried out on and around the Protected Site have a medium intensity of influence.
Value: low	
Definition:	The impacts and activities carried out on and around the Protected Site have a low intensity of influence.

5.2.3.3.2 *GlobalAssessmentValue*

GlobalAssessmentValue	
Definition:	A code indicating the global value of the site for conservation purposes.
Status:	Proposed
Stereotypes:	«enumeration»
Value: excellent	
Definition:	The Site has excellent value for conservation of the habitat concerned in global terms.
Value: good	
Definition:	The Site has good value for conservation of the habitat concerned in global terms.
Value: significant	
Definition:	The Site has significant value for conservation of the habitat concerned in global terms.

5.2.3.3.3 *NatureOfInfluenceValue*

NatureOfInfluenceValue	
Definition:	A code indicating the nature of the influence of activities in and around the site.
Status:	Proposed
Stereotypes:	«enumeration»
Value: -	
Definition:	The Protected Site is negatively influenced by impacts or activities in and around the site.
Value: +	
Definition:	The Protected Site is positively influenced by impacts or activities in and around the site.
Value: 0	
Definition:	The Protected Site is neutrally influenced by impacts or activities in and around the site.

5.2.3.3.4 *ActivityValue*

ActivityValue	
Definition:	The codes of the activities and impacts that occur on and around the site. In the case of the Natura2000 application schema, the values must come from the Natura2000 activity types from Appendix E in the Natura 2000 explanatory notes (Standard Data Form Item 6.1). In the case of the Full application schema, values may also come from Water Framework Directive.

ActivityValue

Status:	Proposed
Stereotypes:	«codeList»
Governance:	May be extended by data providers

Value: abandonmentOfPastoralSystems
Definition:	"141 Abandonment of pastoral systems" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: acidification
Definition:	"953 acidification" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: burning
Definition:	"180 Burning" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: campingAndCaravans
Definition:	"608 camping and caravans" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: canalisation
Definition:	"830 Canalisation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: circuitTrack
Definition:	"604 circuit, track" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: collapseOfTerrainLandslide
Definition:	"943 collapse of terrain, landslide" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: collectionInsectsReptilesAmphibians
Definition:	"241 collection (insects, reptiles, amphibians.....)" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: communicationNetworks
Definition:	"500 Communication networks" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: continuousUrbanisation
Definition:	"401 continuous urbanisation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: damageByGameSpecies
Definition:	"976 damage by game species" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: discharges
Definition:	"420 Discharges" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: discontinuousUrbanisation
Definition:	"402 discontinuous urbanisation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: dispersedHabitation
Definition:	"403 dispersed habitation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: disposalOfHouseholdWaste
Definition:	"421 disposal of household waste" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: disposalOfIndustrialWaste
Definition:	"422 disposal of industrial waste" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: disposalOfInertMaterials

ActivityValue

Definition:	"423 disposal of inert materials" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: drainage

Definition:	"810 Drainage" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: drift-netFishing

Definition:	"213 drift-net fishing" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: dryingOut

Definition:	"920 Drying out" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: dryingOutAccumulationOfOrganicMaterial

Definition:	"951 drying out / accumulation of organic material" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: dumpingDepositingOfDredgedDeposits

Definition:	"860 Dumping, depositing of dredged deposits" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: dykesEmbankmentsArtificialBeachesGeneral

Definition:	"870 Dykes, embankments, artificial beaches, general" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: earthquake

Definition:	"946 earthquake" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: electricityLines

Definition:	"511 electricity lines" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: energyTransport

Definition:	"510 Energy transport" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: erosion

Definition:	"900 Erosion" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: eutrophication

Definition:	"952 eutrophication" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: exploitationWithoutReplanting

Definition:	"167 Exploitation without replanting" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: explorationAndExtractionOfOilOrGas

Definition:	"313 Exploration and extraction of oil or gas" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: factory

Definition:	"411 factory" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: faunalCompetition

Definition:	"961 competition (example: gull/tern)" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: faunalGeneticPollution

Definition:	"964 genetic pollution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: faunalParasitism

ActivityValue

Definition:	"962 parasitism" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: fertilisation

Definition:	"120 Fertilisation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: fire

Definition:	"948 fire" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: fishAndShellfishAquaculture

Definition:	"200 Fish and Shellfish Aquaculture" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: fixedLocationFishing

Definition:	"211 fixed location fishing" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: flooding

Definition:	"840 Flooding" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: floralCompetition

Definition:	"971 competition" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: floralGeneticPollution

Definition:	"974 genetic pollution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: floralParasitism

Definition:	"972 parasitism" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: forestryClearance

Definition:	"164 Forestry clearance" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: generalForestryManagement

Definition:	"160 General Forestry management" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: glidingDeltaPlaneParaglidingBalooning

Definition:	"625 gliding, delta plane, paragliding, balooning" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: golfCourse

Definition:	"601 golf course" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: grazing

Definition:	"140 Grazing" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: handCuttingOfPeat

Definition:	"311 hand cutting of peat" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: hippodrome

Definition:	"605 hippodrome" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: hunting

Definition:	"230 Hunting" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: improvedAccessToSite

ActivityValue

Definition:	"530 Improved access to site" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: industrialOrCommercialAreas

Definition:	"410 Industrial or commercial areas" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: industrialStockage

Definition:	"412 industrial stockage" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: infillingOfDitchesDykesPondsPoolsMarshesOrPits

Definition:	"803 infilling of ditches, dykes, ponds, pools, marshes or pits" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: interpretativeCentres

Definition:	"610 Interpretative centres" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: interspecificFaunalRelations

Definition:	"960 Interspecific faunal relations" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: interspecificFloralRelations

Definition:	"970 Interspecific floral relations" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: introductionOfDisease

Definition:	"973 introduction of disease" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: introductionOfDisease

Definition:	"963 introduction of disease" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: inundation

Definition:	"941 inundation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: invasionByASpecies

Definition:	"954 invasion by a species" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: irrigation

Definition:	"130 Irrigation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: lackOfPollinatingAgents

Definition:	"975 lack of pollinating agents" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: landfillLandReclamationAndDryingOutGeneral

Definition:	"800 Landfill, land reclamation and drying out, general" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: leisureFishing

Definition:	"220 Leisure fishing" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: managementOfAquaticAndBankVegetationForDrainagePurposes

Definition:	"811 management of aquatic and bank vegetation for drainage purposes" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: managementOfWaterLevels

Definition:	"853 management of water levels" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: mechanicalRemovalOfPeat

ActivityValue

Definition:	"312 mechanical removal of peat" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: militaryManouvres

Definition:	"730 Military manouvres" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: mines

Definition:	"320 Mines" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: modificationOfCultivationPractices

Definition:	"101 Modification of cultivation practices" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: modificationOfHydrographicFunctioningGeneral

Definition:	"850 Modification of hydrographic functioning, general" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: modificationOfMarineCurrents

Definition:	"851 modification of marine currents" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: modifyingStructuresOfInlandWaterCourses

Definition:	"852 modifying structures of inland water courses" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: motorisedVehicles

Definition:	"623 motorised vehicles" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: mountaineeringRockClimbingSpeliology

Definition:	"624 mountaineering, rock climbing, speliology" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: mowingCutting

Definition:	"102 Mowing / Cutting" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: naturalCatastrophes

Definition:	"940 Natural catastrophes" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: nauticalSports

Definition:	"621 nautical sports" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: noiseNuisance

Definition:	"710 Noise nuisance" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: openCastMining

Definition:	"321 open cast mining" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherAgricultureAndForestryActivities

Definition:	"190 Agriculture and forestry activities not referred to above" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherCommunicationNetworks

Definition:	"509 other communication networks" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherDischarges

Definition:	"424 other discharges" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherFormsOfEnergyTransport

ActivityValue

Definition:	"513 other forms of energy transport" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherFormsOfTakingFauna

Definition:	"244 other forms of taking fauna" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherFormsOfTransportationAndCommunication

Definition:	"590 Other forms of transportation and communication" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherFormsOrMixedFormsofInterspecificFaunalCompetition

Definition:	"969 other forms or mixed formsof interspecific faunal competition" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherFormsOrMixedFormsofInterspecificFloralCompetition

Definition:	"979 other forms or mixed formsof interspecific floral competition" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherFormsOrMixedFormsOfPollution

Definition:	"709 other forms or mixed forms of pollution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherHumanInducedChangesInHydraulicConditions

Definition:	"890 Other human induced changes in hydraulic conditions" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherHuntingFishingOrCollectingActivities

Definition:	"290 Hunting, fishing or collecting activities not referred to above" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherIndustrialCommercialAreas

Definition:	"419 other industrial / commercial areas" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherLeisureAndTourismImpacts

Definition:	"690 Other leisure and tourism impacts not referred to above" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherMiningAndExtractionActivities

Definition:	"390 Mining and extraction activities not referred to above" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherNaturalCatastrophes

Definition:	"949 other natural catastrophes" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherNaturalProcesses

Definition:	"990 Other natural processes" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherOutdoorSportsAndLeisureActivities

Definition:	"629 other outdoor sports and leisure activities" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherPatternsOfHabitation

Definition:	"409 other patterns of habitation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherPollutionOrHumanImpactsActivities

Definition:	"750 Other pollution or human impacts/activities" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherSportLeisureComplexes

Definition:	"609 other sport / leisure complexes" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: otherUrbanisationIndustrialAndSimilarActivities

ActivityValue

Definition:	"490 Other urbanisation, industrial and similar activities" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: outdoorSportsAndLeisureActivities

Definition:	"620 Outdoor sports and leisure activities" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: pathsTracksCyclingTracks

Definition:	"501 paths, tracks, cycling tracks" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: peatExtraction

Definition:	"310 Peat extraction" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: pillagingOfFloristicStations

Definition:	"251 pillaging of floristic stations" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: pipeLines

Definition:	"512 pipe lines" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: planting

Definition:	"161 Planting" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: polderisation

Definition:	"801 polderisation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: pollution

Definition:	"700 Pollution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: portAreas

Definition:	"504 port areas" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: predation

Definition:	"965 predation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: professionalFishing

Definition:	"210 Professional fishing" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: quarries

Definition:	"301 quarries" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: railwayLinesTGV

Definition:	"503 railway lines, TGV" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: reclamationOfLandFromSeaEstuaryOrMarsh

Definition:	"802 reclamation of land from sea, estuary or marsh" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: removalOfBeachMaterials

Definition:	"302 removal of beach materials" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: removalOfDeadAndDyingTrees

Definition:	"166 Removal of dead and dying trees" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: removalOfHedgesAndCopses

ActivityValue

Definition:	"151 Removal of hedges and copses" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: removalOfSedimentsMud

Definition:	"820 Removal of sediments (mud...)" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: removalOfUndergrowth

Definition:	"165 Removal of undergrowth" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: replanting

Definition:	"163 Replanting" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: restructuringAgriculturalLandHolding

Definition:	"150 Restructuring agricultural land holding" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: routesAutoroutes

Definition:	"502 routes, autoroutes" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: saltWorks

Definition:	"330 Salt works" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: sandAndGravelExtraction

Definition:	"300 Sand and gravel extraction" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: seaDefenseOrCoastProtectionWorks

Definition:	"871 sea defense or coast protection works" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: shipping

Definition:	"520 Shipping" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: siltingUp

Definition:	"910 Silting up" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: skiingComplex

Definition:	"602 skiing complex" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: skiingOff-piste

Definition:	"626 skiing, off-piste" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: soilPollution

Definition:	"703 soil pollution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: sportAndLeisureStructures

Definition:	"600 Sport and leisure structures" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: sportsPitch

Definition:	"607 sports pitch" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: stadium

Definition:	"603 stadium" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: stockFeeding

ActivityValue

Definition:	"171 stock feeding" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: storageOfMaterials

Definition:	"440 Storage of materials" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: stormCyclone

Definition:	"944 storm, cyclone" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: submersion

Definition:	"930 Submersion" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: takingFromNestFalcons

Definition:	"242 taking from nest (falcons)" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: takingRemovalOfFaunaGeneral

Definition:	"240 Taking / Removal of fauna, general" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: takingRemovalOfFloraGeneral

Definition:	"250 Taking / Removal of flora, general" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: tidalWave

Definition:	"947 tidal wave" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: tramplingOveruse

Definition:	"720 Trampling, overuse" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: trappingPoisoningPoaching

Definition:	"243 trapping, poisoning, poaching" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: trawling

Definition:	"212 trawling" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: tunnel

Definition:	"508 tunnel" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: urbanisedAreasHumanHabitation

Definition:	"400 Urbanised areas, human habitation" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: useOfPesticides

Definition:	"110 Use of pesticides" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: vandalism

Definition:	"740 Vandalism" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: volcanicActivity

Definition:	"945 volcanic activity" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: walkingHorseridingAndNon-motorisedVehicles

Definition:	"622 walking, horseriding and non-motorised vehicles" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: waterPollution

ActivityValue

Definition:	"701 water pollution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: aerodromeHeliport

Definition:	"506 aerodrome, heliport" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: agriculturalStructures

Definition:	"430 Agricultural structures" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: airPollution

Definition:	"702 air pollution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: airport

Definition:	"505 airport" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: animalBreeding

Definition:	"170 Animal breeding" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: antagonismArisingFromIntroductionOfSpecies

Definition:	"966 antagonism arising from introduction of species" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: antagonismWithDomesticAnimals

Definition:	"967 antagonism with domestic animals" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: artificialPlanting

Definition:	"162 Artificial planting" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: attractionPark

Definition:	"606 attraction park" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: avalanche

Definition:	"942 avalanche" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: baitDigging

Definition:	"221 bait digging" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: biocenoticEvolution

Definition:	"950 Biocenotic evolution" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

Value: bridgeViaduct

Definition:	"507 bridge, viaduct" in Appendix E of the Explanatory Notes to the Natura2000 Standard Data form.

5.2.3.3.5   EmeraldNetworkDesignationValue

EmeraldNetworkDesignationValue

Subtype of:	DesignationValue
Definition:	A code list for the Emerald Network classification scheme.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:DesignationValueEmeraldNetwork

Value: areasOfSpecialConservationInterest

EmeraldNetworkDesignationValue

Definition:	The Protected Site is designated as an area of special conservation interest by the Emerald Network.

5.2.3.3.6   FundingTypeValue

FundingTypeValue

Definition:	A list of possible funding types.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	May be extended by data providers

Value: agriEnvironment

Definition:	The Protected Site is funded by the European Commission, Agri Environment.

Value: europeanFisheriesFund

Definition:	The Protected Site is funded by the European Commission, European Fisheries Fund.

Value: interreg

Definition:	The Protected Site is funded by the European Commission, INTERREG Programme.

Value: leader

Definition:	The Protected Site is funded by the European Commission, Leader Programme.

Value: leaderPlus

Definition:	The Protected Site is funded by the European Commission, Leader Plus Programme.

Value: LIFEProject

Definition:	The Protected Site is funded by the European Commission, LIFE or LIFE+ Programme.

Value: objective1

Definition:	The Protected Site is funded by the European Commission, Objective 1 Programme.

Value: objective2

Definition:	The Protected Site is funded by the European Commission, Objective 2 Programme.

5.2.3.3.7   SiteIdentifierSchemeValue

SiteIdentifierSchemeValue

Definition:	The scheme within which the Site identifier was assigned.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	May be extended by data providers

Value: natura2000

Definition:	The identifier for the Site was assigned under the Natura2000 identification scheme.

5.2.3.4   Candidate types and placeholders

5.2.3.4.1   SpeciesDistribution

SpeciesDistribution

Package:	Species Distribution [Candidate type that might be extended in Annex II/III INSPIRE data specification]
Definition:	The geographical distribution of occurrence of animal or plant species aggregated by grid, region, administrative unit or other analytical unit.
Description:	NOTE Many other attributes may be added to this class when the theme is properly developed as part of Annex III. Currently, only those attributes needed to support the Protected Sites theme in Annex I are included.

SpeciesDistribution

Status:	Proposed
Stereotypes:	«featureType»

Attribute: beginLifespanVersion	
Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was inserted or changed in the spatial data set.
Description:	NOTE This date is recorded to enable the generation of change only update files.
Multiplicity:	1
Stereotypes:	«voidable,lifeCycleInfo»

Attribute: breedingPopulation	
Value type:	SpeciesPopulationType
Definition:	The population of the species that is breeding in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: endLifespanVersion	
Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was superseded or retired in the spatial data set.
Description:	NOTE This date is recorded primarily for those systems which "close" an entry in the spatial data set in the event of an attribute change.
Multiplicity:	0..1
Stereotypes:	«voidable,lifeCycleInfo»

Attribute: inspireID	
Value type:	Identifier
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.
Multiplicity:	1

Attribute: isolation	
Value type:	IsolationValue
Definition:	The degree of isolation of the population present in the aggregation unit in relation to the natural range of the species.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: residentPopulation	
Value type:	SpeciesPopulationType
Definition:	The population of the species in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: species	
Value type:	SpeciesTypeValue
Definition:	The species type from Annex II of the Habitat Directive and Annex I and reference list for Article 4(2) of the Birds Directive.
Multiplicity:	0..1
Stereotypes:	«voidable»

SpeciesDistribution

Attribute: stagingPopulation	
Value type:	SpeciesPopulationType
Definition:	The population of the species that is migrating or moulting temporarily in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: unlistedSpecies	
Value type:	UnlistedSpeciesType
Definition:	The type of species in the aggregation unit, if not included in the Species Type code list.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: winteringPopulation	
Value type:	SpeciesPopulationType
Definition:	The population of the species that is wintering in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.
Multiplicity:	0..1
Stereotypes:	«voidable»

Association role: coversUnit	
Value type:	SpeciesAggregationUnit
Definition:	The unit that the species is distributed over. A number of different types of aggregation unit are possible.
Multiplicity:	1
Stereotypes:	«voidable»

Association role: existsInHabitat	
Value type:	HabitatSpeciesType
Definition:	The habitat within which the species lives.
Multiplicity:	0..*

Constraint: SpeciesTypeMandatory	
Natural language:	inv: (self.species -> NotEmpty()) or (self.unlistedSpecies -> NotEmpty())
OCL:	

5.2.3.4.2   Bio-GeographicalRegion

Bio-GeographicalRegion

Package:	Bio-geographical Regions [Candidate type that might be extended in Annex II/III INSPIRE data specification]
Definition:	An area of relatively homogeneous ecological conditions with common characteristics.
Status:	Proposed
Stereotypes:	«featureType»

Attribute: geometry	
Value type:	GM_MultiSurface
Definition:	The geometry showing the spatial extents of the region.
Multiplicity:	1

Attribute: inspireID	
Value type:	Identifier
Definition:	A unique identifier for the region.
Multiplicity:	1

Attribute: regionClassification

Bio-GeographicalRegion

Value type:	RegionClassificationValue	
Definition:	The clasification of the region.	
Multiplicity:	1	

5.2.3.4.3   SpeciesAggregationUnit

SpeciesAggregationUnit (abstract)

Package:	Species Distribution [Candidate type that might be extended in Annex II/III INSPIRE data specification]
Definition:	The aggregation unit over which the species is distributed. This model only includes ProtectedSite as an aggregation unit, but others may be added in the future (for example, administrative units and grid units).
Status:	Proposed
Stereotypes:	«featureType»

Association role: hasSpecies

Value type:	SpeciesDistribution
Definition:	The distribution of species over the particular aggregation unit.
Multiplicity:	0..*
Stereotypes:	«voidable»

Association role: isAggregatedOver

Value type:	ProtectedSite
Definition:	The region, administative or analytical unit over which the species distribution is aggregated.
Description:	A species distribution may be aggregated over a number of different types of units for different purposes.
Multiplicity:	0..1
Stereotypes:	«voidable»

5.2.3.4.4   Habitat

Habitat

Package:	Habitats and Biotopes [Candidate type that might be extended in Annex II/III INSPIRE data specification]
Definition:	Geographical areas characterised by specific ecological conditions, processes, structure and (life support) functions that physically support the organisms that live there.
Description:	Includes terrestrial and aquatic areas distinguished by geographical, abiotic and biotic features, whether entirely natural or semi-natural. NOTE Many other attributes may be added to this class when the theme is properly developed as part of Annex III. Currently, only those attributes needed to support the Protected Sites theme in Annex I are included.
Status:	Proposed
Stereotypes:	«featureType»

Attribute: beginLifespanVersion

Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was inserted or changed in the spatial data set.
Description:	NOTE This date is recorded to enable the generation of change only update files.
Multiplicity:	1
Stereotypes:	«lifeCycleInfo,voidable»

Attribute: conservationStatus

Value type:	ConservationStatusValue
Definition:	The conservation status of the habitat, expressing a combination of the degree of conservation of the structure, the degree of conservation of the functions and the restoration possibilities.

Habitat

Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: endLifespanVersion

Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was superseded or retired in the spatial data set.
Description:	NOTE This date is recorded primarily for those systems which "close" an entry in the spatial data set in the event of an attribute change.
Multiplicity:	0..1
Stereotypes:	«lifeCycleInfo,voidable»

Attribute: habitatClass

Value type:	HabitatClassValue
Definition:	The generic habitat class.
Description:	The classification is used by Natura2000, item 4.1 of the Standard Data Form. This classification is similar to Habitat Type, but is more general. However, there is no simple mapping from HabitatClass to Habitat Type, and Natura 2000 requires both, so it is retained. Ultimately, however, this duplication should be addressed.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: habitatSpecies

Value type:	HabitatSpeciesType
Definition:	The species that exists within the habitat and its distribution.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: habitatType

Value type:	HabitatTypeValue
Definition:	The habitat type using the habitat types included in Annex 1 of the Habitat Directive 92/43/EEC.
Multiplicity:	1

Attribute: inspireID

Value type:	Identifier
Definition:	External object identifier of the habitat.
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.
Multiplicity:	1

Attribute: representativity

Value type:	RepresentativityValue
Definition:	The degree to which the habitat is typical of the full range of habitats of its type (as indicated by the habitatType attribute).
Multiplicity:	0..1
Stereotypes:	«voidable»

5.2.3.4.5   Building

Building

Package:	Buildings [Placeholder to be fully specified in Annex II/III INSPIRE data specification]
Definition:	A building is a covered facility, usable for the protection of humans, animals, things or the production of economic goods. A building refers to any structure permanently constructed or erected on its site.

5.2.3.5 Imported types (informative)

This section lists definitions for feature types, data types and enumerations and code lists that are defined in other application schemas. The section is purely informative and should help the reader understand the feature catalogue presented in the previous sections. For the normative documentation of these types, see the given references.

5.2.3.5.1 NetworkArea

NetworkArea (abstract)

Package:	Network [see DS-D2.5]
Definition:	A 2-dimensional element in a network.

5.2.3.5.2 ProtectedSite

ProtectedSite

Package:	Protected Sites Simple [see section 5.2.2.1.1]
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.

5.2.3.5.3 Identifier

Identifier

Package:	Base Types [see DS-D2.5]
Definition:	Unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.
Description:	NOTE1 External object identifiers are distinct from thematic object identifiers. NOTE 2 The voidable version identifier attribute is not part of the unique identifier of a spatial object and may be used to distinguish two versions of the same spatial object. NOTE 3 The unique identifier will not change during the life-time of a spatial object.

5.2.3.5.4 DesignationValue

DesignationValue (abstract)

Package:	Protected Sites Simple [Include reference to the document that includes the package, e.g. INSPIRE data specification, ISO standard or the GCM]
Definition:	Abstract base type for code lists containing the classificaiton and desigation types under different schemes.
Description:	NOTE 1Some of these designation and classification lists are closed (for example, Natura2000), while some change regularly. NOTE 2 Typically, additional code lists will be created as sub-types of this type to represent designation or classification values within Member States, e.g. natuurbeschermingsGebieden, rijksBeschermdeArcheologischeGebieden, nationaleParken, nationaleLandschappen etc. in the Netherlands.

6 Reference systems

6.1 Coordinate reference systems

6.1.1 Datum

Requirement 9	For the coordinate reference systems used for making available the INSPIRE spatial data sets, the datum shall be the datum of the European Terrestrial Reference System 1989 (ETRS89) in areas within its geographical scope, and 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 established and described relationship between both systems, according to EN ISO 19111.

6.1.2 Coordinate reference systems

Requirement 10	INSPIRE spatial data sets shall be made available using one of the three-dimensional, two-dimensional or compound coordinate reference systems specified in the list below.
	Other coordinate reference systems than those listed below may only be used for regions outside of continental Europe. The geodetic codes and parameters for these coordinate reference systems shall be documented, and an identifier shall be created, according to EN ISO 19111 and ISO 19127.

1. Three-dimensional Coordinate Reference Systems
    – Three-dimensional Cartesian coordinates
    – Three-dimensional geodetic coordinates (latitude, longitude and ellipsoidal height), using the parameters of the GRS80 ellipsoid

2. Two-dimensional Coordinate Reference Systems
    – Two-dimensional geodetic coordinates, using the parameters of the GRS80 ellipsoid
    – Plane coordinates using the Lambert Azimuthal Equal Area projection and the parameters of the GRS80 ellipsoid
    – Plane coordinates using the Lambert Conformal Conic projection and the parameters of the GRS80 ellipsoid
    – Plane coordinates using the Transverse Mercator projection and the parameters of the GRS80 ellipsoid

3. Compound Coordinate Reference Systems
   – For the horizontal component of the compound coordinate reference system, one of the two-dimensional coordinate reference systems specified above shall be used
   – 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. The geodetic codes and parameters for these vertical reference systems shall be documented and an identifier shall be created, according to EN ISO 19111 and ISO 19127
   – For the vertical component measuring the depth of the sea floor, where there is an appreciable tidal range, the Lowest Astronomical Tide shall be used as reference surface. In marine areas without an appreciable tidal range, in open oceans and effectively in waters that are deeper than 200 m, the depth of the sea floor shall be referenced to the Mean Sea Level
   – For the vertical component measuring depths above the sea floor in the free ocean, barometric pressure shall be used
   – For the vertical component in the free atmosphere, barometric pressure, converted to height using ISO 2533:1975 International Standard Atmosphere shall be used

6.1.3 Display

Requirement 11	For the display of the INSPIRE spatial data sets with the View Service specified in D003152/02 Draft Commission Regulation implementing Directive 2007/2/EC of the European Parliament and of the Council as regards Network Services, at least the two dimensional geodetic coordinate system shall be made available.

6.1.4 Identifiers for coordinate reference systems

Requirement 12	For referring to the non-compound coordinate reference systems listed in this Section, the identifiers listed below shall be used. For referring to a compound coordinate reference system, an identifier composed of the identifier of the horizontal component, followed by a slash (/), followed by the identifier of the vertical component, shall be used.

- ETRS89-XYZ for Cartesian coordinates in ETRS89
- ETRS89-GRS80h for three-dimensional geodetic coordinates in ETRS89 on the GRS80 ellipsoid
- ETRS89-GRS80 for two-dimensional geodetic coordinates in ETRS89 on the GRS80
- EVRS for height in EVRS
- LAT for depth of the sea floor, where there is an appreciable tidal range
- MSL for depth of the sea floor, in marine areas without an appreciable tidal range, in open oceans and effectively in waters that are deeper than 200m
- ISA for pressure coordinate in the free atmosphere
- PFO for Pressure coordinate in the free ocean
- ETRS89-LAEA for ETRS89 coordinates projected into plane coordinates by the Lambert Azimuthal Equal Area projection
- ETRS89-LCC for ETRS89 coordinates projected into plane coordinates by the Lambert Conformal Conic projection
- ETRS89-TMzn for ETRS89 coordinates projected into plane coordinates by the Transverse Mercator projection

6.2 Temporal reference system

Requirement 13	The Gregorian Calendar shall be used for as a reference system for date values, and the Universal Time Coordinated (UTC) or the local time including the time zone as an offset from UTC shall be used as a reference system for time values.

7 Data quality

This section includes a description of data quality elements and sub-elements as well as the associated basic data quality measures to be used to describe data related to the spatial data theme *Protected sites* (see Table 8).

NOTE   Additional guidance documents on procedures and methods that can be used to implement the basic data quality measures introduced in this section will be provided at a later stage.

Data quality information can be described at the level of spatial object (feature), spatial object type (feature type), dataset or dataset series. Data quality information at spatial object level is modelled directly in the application schema (Chapter 5).

Recommendation 11 Aggregated data quality information should ideally be collected at the level of spatial object types and included in the dataset (series) metadata.

Chapter 8 describes the corresponding metadata elements to report about this data quality information.

Table 8 – List of all data quality elements used in the spatial data theme *Protected sites*

Section	Data quality element	Data quality sub-element	Scope(s)
7.1.1	Completeness	Commission	dataset series; dataset; spatial object type
7.1.2	Completeness	Omission	dataset series; dataset; spatial object type
7.2.1	Positional accuracy	Absolute or external accuracy	dataset series; dataset; spatial object type
7.2.2	Positional accuracy	Spatial Resolution	spatial object

7.1 Completeness

7.1.1 Commission

Commission should be documented using the rate of excess items.

Name	**Rate of excess items**
Alternative name	–
Data quality element	Completeness
Data quality sub-element	Commission
Data quality basic measure	Error rate
Definition	Number of excess items in the dataset in relation to the number of items that should have been present.
Description	–
Parameter	–
Data quality value type	Real, percentage, ratio (example: 0,0189 ; 98,11% ; 11:582)

Data quality value structure	–
Source reference	–
Example	–
Measure identifier	3 (ISO 19138)

7.1.2 Omission

Omission should be documented using the rate of missing items.

Name	**Rate of missing items**
Alternative name	–
Data quality element	Completeness
Data quality sub-element	Omission
Data quality basic measure	Error rate
Definition	Number of missing items in the dataset in relation to the number of items that should have been present.
Description	–
Parameter	–
Data quality value type	Real, percentage, ratio (example: 0,0189 ; 98,11% ; 11:582)
Data quality value structure	–
Source reference	–
Example	–
Measure identifier	7 (ISO 19138)

7.2 Positional accuracy

7.2.1 Absolute or external accuracy

Absolute or external accuracy should be documented using Two-dimensional random variable X and Y.

Name	Two-dimensional random variable X and Y
Alternative name	Accuracy
Data quality element	Positional accuracy
Data quality sub-element	Absolute or external accuracy
Data quality basic measure	Two-dimensional random variable X and Y
Definition	An indication of the accuracy of the data set as an aggregate.
Description	This measure is an indication of the accuracy of the features within the data set or feature type, and should reflect the feature within the data set or feature type that is least accurate.
Parameter	
Data quality value type	Real
Data quality value structure	
Source reference	
Example	
Measure identifier	*37*

7.2.2 Spatial resolution

Spatial resolution at the spatial object level should be documented using ProtectedSite.spatialResolution attribute.

Name	**Spatial Resolution**

Alternative name	-
Data quality element	Positional accuracy
Data quality sub-element	Absolute or external accuracy
Data quality basic measure	Two-dimensional random variable X and Y *See also ISO 19138, section 7.2.5 and Annex C*
Definition	The spatial resolution of a geometry. This may relate to a scale of capture value.
Description	Spatial resolution is usually determined on the basis of the method of capture and the source documents used to perform data capture. Protected Sites are normally referenced to existing mapping of the cadastre and natural features, and thus the resolution of the Protected Site depends on the resolution of the underlying data source and the method of capture (often digitisation). Typical scales of capture range from larger than 1:5,000 (accuracy less than +/-1m) to 1:100,000 (accuracy +/-25m), corresponding to the local level and regional level respectively.
Parameter	This data quality measure is to be reported in the ProtectedSites.spatialResolution attribute (see Chapter 5).
Data quality value type	MD_Resolution
Data quality value structure	-
Source reference	-
Example	-
Measure identifier	

8 Dataset-level metadata

Metadata can be reported for each individual spatial object (spatial object-level metadata) or once for a complete dataset or dataset series (dataset-level metadata). Spatial object-level metadata is fully described in the application schema (section 0). If data quality elements are used at spatial object level, the documentation shall refer to the appropriate definition in section 7. This section only specifies dataset-level metadata elements.

For some dataset-level metadata elements, in particular on data quality and maintenance, a more specific scope can be specified. This allows the definition of metadata at sub-dataset level, e.g. separately for each spatial object type. When using ISO 19115/19139 to encode the metadata, the following rules should be followed:

- The scope element (of type DQ_Scope) of the DQ_DataQuality subtype should be used to encode the scope.
- Only the following values should be used for the level element of DQ_Scope: Series, Dataset, featureType.
- If the level is featureType the levelDescription/MDScopeDescription/features element (of type Set< GF_FeatureType>) shall be used to list the feature type names.

NOTE   The value featureType is used to denote spatial object type.

Mandatory or conditional metadata elements are specified in Section 8.1. Optional metadata elements are specified in Section 8.2. The tables describing the metadata elements contain the following information:
- The first column provides a reference to a more detailed description.
- The second column specifies the name of the metadata element.
- The third column specifies the multiplicity.
- The fourth column specifies the condition, under which the given element becomes mandatory (only for Table 9 and Table 10).

8.1 *Mandatory and conditional metadata elements*

<table>
<tr><td>Requirement 14</td><td>The metadata describing a spatial data set or a spatial data set series related to the theme Protected sites shall comprise the metadata elements required by Regulation 1205/2008/EC (implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata) for spatial datasets and spatial dataset series (Table 9) as well as the metadata elements specified in Table 10.</td></tr>
</table>

Table 9 – Metadata for spatial datasets and spatial dataset series specified in Regulation 1205/2008/EC (implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata)

Metadata Regulation Section	Metadata element	Multiplicity	Condition
1.1	Resource title	1	
1.2	Resource abstract	1	
1.3	Resource type	1	
1.4	Resource locator	0..*	Mandatory if a URL is available to obtain more information on the resource, and/or access related services.
1.5	Unique resource identifier	1..*	
1.7	Resource language	0..*	Mandatory if the resource includes textual information.
2.1	Topic category	1..*	
3	Keyword	1..*	
4.1	Geographic bounding box	1..*	
5	Temporal reference	1..*	
6.1	Lineage	1	
6.2	Spatial resolution	0..*	Mandatory for data sets and data set series if an equivalent scale or a resolution distance can be specified.
7	Conformity	1..*	
8.1	Conditions for access and use	1..*	
8.2	Limitations on public access	1..*	
9	Responsible organisation	1..*	
10.1	Metadata point of contact	1..*	
10.2	Metadata date	1	

10.3	Metadata language	1	

Table 10 – Mandatory and conditional theme-specific metadata for the theme *Protected sites*

INSPIRE Data Specification *Protected sites* Section	Metadata element	Multiplicity	Condition
8.1.1	Coordinate Reference System	1	
8.1.2	Temporal Reference System	1	Mandatory, if the spatial data set or one of its feature types contains temporal information that does not refer to the Gregorian Calendar or the Coordinated Universal Time.
8.1.3	Encoding	1..*	
8.1.4	Character Encoding	0..*	Mandatory, if a non-XML-based encoding is used that does not support UTF-8

8.1.1 Coordinate Reference System

Metadata element name	Coordinate Reference System – Horizontal Component
Definition	Description of the coordinate reference system used in the dataset.
ISO 19115 number and name	13. referenceSystemInfo
ISO/TS 19139 path	referenceSystemInfo
INSPIRE obligation / condition	mandatory
INSPIRE multiplicity	1
Data type(and ISO 19115 no.)	189. MD_CRS
Domain	Either the referenceSystemIdentifier (RS_Identifier) or the projection (RS_Identifier), ellipsoid (RS_Identifier) and datum (RS_Identifier) properties shall be provided.
Implementing instructions	

Example	referenceSystemIdentifier:
	    code: ETRS_89
	    codeSpace: INSPIRE RS registry

Example XML encoding	
Comments	

8.1.2 Temporal Reference System

Metadata element name	Temporal Reference System
Definition	Description of the temporal reference systems used in the dataset.
ISO 19115 number and name	13. referenceSystemInfo
ISO/TS 19139 path	referenceSystemInfo
INSPIRE obligation / condition	mandatory if the data set or one of its feature types contains temporal information
INSPIRE multiplicity	0..*
Data type(and ISO 19115 no.)	186. MD_ReferenceSystem

Domain	No specific type is defined in ISO 19115 for temporal reference systems. Thus, the generic MD_ReferenceSystem element and its reference SystemIdentifier (RS_Identifier) property shall be provided.
Implementing instructions	

Example	referenceSystemIdentifier:
	    code: GregorianCalendar
	    codeSpace: INSPIRE RS registry

Example XML encoding	
Comments	

8.1.3 Encoding

Metadata element name	Encoding
Definition	Description of the computer language construct that specifies the representation of data objects in a record, file, message, storage device or transmission channel
ISO 19115 number and name	271. distributionFormat
ISO/TS 19139 path	distributionInfo/MD_Distribution/distributionFormat
INSPIRE obligation / condition	mandatory
INSPIRE multiplicity	1
Data type (and ISO 19115 no.)	284. MD_Format
Domain	See B.2.10.4. The following property values shall be used for default and alternative encodings specified in section 9.3: Default Encoding − name: Protected sites GML application schema − version: version 3.1; GML, version 3.2.1 − specification: D2.8.I.9 Data Specification on Protected sites – Guidelines
Implementing instructions	
Example	name: Protected sites GML application schema version: version 3.1, GML, version 3.2.1 specification: D2.8.I.9 Data Specification on Protected sites – Guidelines
Example XML encoding	
Comments	

8.1.4 Character Encoding

Metadata element name	Metadata dataset character set
Definition	Full name of the character coding standard used for the dataset.
ISO 19115 number and name	4. characterSet
ISO/TS 19139 path	IdentificationInfo/*/characterSet
INSPIRE obligation / condition	Mandatory, if a non-XML-based encoding is used that does not support UTF-8
INSPIRE multiplicity	0..*
Data type(and ISO 19115 no.)	40. MD_CharacterSetCode
Domain	Codelist (See B.5.10 of ISO 19115)
Implementing instructions	
Example	
Example XML encoding	
Comments	

8.1.5 Application Schema

Metadata element name	Application Schema
Definition	The application schema that the data set complies with.
ISO 19115 number and name	21. applicationSchemaInfo
ISO/TS 19139 path	applicationSchemaInfo
INSPIRE obligation / condition	mandatory
INSPIRE multiplicity	1
Data type(and ISO 19115 no.)	320. MD_ApplicationSchemaInformation
Domain	See B.2.12 of ISO 19115
Implementing instructions	
Example	
Example XML encoding	
Comments	

8.2 Optional metadata elements

Recommendation 12 The metadata describing a spatial data set or a spatial data set series related to the theme *Protected sites* should comprise the theme-specific metadata elements specified in Table 11.

Table 11 – Optional theme-specific metadata for the theme *Protected sites*

INSPIRE Data Specification *Protected sites* Section	Metadata element	Multiplicity
8.2.1	Maintenance Information	0..1
8.2.2	Data Quality – Completeness – Commission	0..*
8.2.3	Data Quality – Completeness – Omission	0..*
8.2.4	Data Quality - Positional accuracy – Absolute or external accuracy	0..*

8.2.1 Maintenance Information

Metadata element name	Maintenance information
Definition	information about the scope and frequency of updating
ISO 19115 number and name	30. resourceMaintenance
ISO/TS 19139 path	identificationInfo/MD_Identification/resourceMaintenance
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..1
Data type(and ISO 19115 no.)	142. MD_MaintenanceInformation

Domain	This is a complex type (lines 143-148 from ISO 19115). At least the following elements should be used (the multiplicity according to ISO 19115 is shown in parentheses): – maintenanceAndUpdateFrequency [1]: frequency with which changes and additions are made to the resource after the initial resource is completed / domain value: MD_MaintenanceFrequencyCode: – updateScope [0..*]: scope of data to which maintenance is applied / domain value: MD_ScopeCode – maintenanceNote [0..*]: information regarding specific requirements for maintaining the resource / domain value: free text
Implementing instructions	
Example	
Example XML encoding	
Comments	

8.2.2 Data Quality – Completeness – Commission

Metadata element name	Data Quality – Completeness – Commission
Definition	DQ Completeness: presence and absence of features, their attributes and their relationships; Commission: excess data present in the dataset, as described by the scope
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	109. DQ_CompletenessCommission
Domain	Lines 100-107 from ISO 19115
Implementing instructions	
Example	
Example XML encoding	
Comments	See clause 7.1.1 in Chapter 7 for detailed information.

8.2.3 Data Quality – Completeness – Omission

Metadata element name	Data Quality – Completeness – Omission
Definition	data absent from the dataset, as described by the scope
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	110. DQ_CompletenessOmission
Domain	Lines 100-107 from ISO 19115
Implementing instructions	
Example	
Example XML encoding	
Comments	See clause 7.1.2 in Chapter 7 for detailed information.

8.2.4 Data Quality – Positional Accuracy – Absolute or external accuracy

Metadata element name	Data Quality - Positional accuracy - Absolute or external accuracy

Definition	closeness of reported coordinate values to values accepted as or being true
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..*
Data type(and ISO 19115 no.)	117. DQ_AbsoluteExternalPositionalAccuracy
Domain	Lines 100-107 from ISO 19115
Implementing instructions	
Example	
Example XML encoding	
Comments	See clause 7.2.1 in Chapter 7 for detailed information.

8.3 Guidelines on using metadata elements defined in Regulation 1205/2008/EC

8.3.1 Conformity

The *Conformity* metadata element defined in Regulation 1205/2008/EC allows to report the conformance with the Implementing Rule for interoperability of spatial data sets and services or another specification. The degree of conformity of the dataset can be *Conformant* (if the dataset is fully conformant with the cited specification), *Not Conformant* (if the dataset does not conform to the cited specification) or *Not evaluated* (if the conformance has not been evaluated).

Recommendation 13 In order to report conceptual consistency with this INSPIRE data specification, the *Conformity* metadata element should be used. The value of *Conformant* should be used for the *Degree* element only if the dataset passes all the requirements described in the abstract test suite presented in Annex A. The *Specification* element should be given as follows:
- title: "INSPIRE Data Specification on <Theme Name> – Guidelines"
- date:
  - dateType: publication
  - date: 2010-04-26

8.3.2 Lineage

Following the ISO 19113 Quality principles, if a data provider has a procedure for quality validation of their spatial data sets then the data quality elements listed in the Chapter 8 should be used. If not, the *Lineage* metadata element (defined in Regulation 1205/2008/EC) should be used to describe the overall quality of a spatial data set.

According to Regulation 1205/2008/EC, lineage "is a statement on process history and/or overall quality of the spatial data set. Where appropriate it may include a statement whether the data set has been validated or quality assured, whether it is the official version (if multiple versions exist), and whether it has legal validity. The value domain of this metadata element is free text".

Recommendation 14 Apart from describing the process history, if feasible within a free text, the overall quality of the dataset (series) should be included in the *Lineage* metadata element. This statement should contain any quality information required for interoperability and/or valuable for use and evaluation of the data set (series).

8.3.3 Temporal reference

According to Regulation 1205/2008/EC, at least one of the following temporal reference metadata elements shall be provided: temporal extent, date of publication, date of last revision, date of creation.

Recommendation 15 If feasible, the date of the last revision of a spatial data set should be reported using the *Date of last revision* metadata element.

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9 Delivery

9.1 Delivery medium

Requirement 15   Data conformant to this INSPIRE data specification shall be made available through an INSPIRE network service.

Requirement 16   All information that is required by a calling application to be able to retrieve the data through the used network service shall be made available in accordance with the requirements defined in the Implementing Rules on Network Services.

EXAMPLE 1   Through the Get Spatial Objects function, a download service can either download a pre-defined data set or pre-defined part of a data set (non-direct access download service), or give direct access to the spatial objects contained in the data set, and download selections of spatial objects based upon a query (direct access download service). To execute such a request, some of the following information might be required:
  – the list of spatial object types and/or predefined data sets that are offered by the download service (to be provided through the Get Download Service Metadata operation),
  – and the query capabilities section advertising the types of predicates that may be used to form a query expression (to be provided through the Get Download Service Metadata operation, where applicable),
  – a description of spatial object types offered by a download service instance (to be proviced through the Describe Spatial Object Types operation).

EXAMPLE 2   Through the Transform function, a transformation service carries out data content transformations from native data forms to the INSPIRE-compliant form and vice versa. If this operation is directly called by an application to transform source data (e.g. obtained through a download service) that is not yet conformant with this data specification, the following parameters are required:
Input data (mandatory). The data set to be transformed.
  – Source model (mandatory, if cannot be determined from the input data). The model in which the input data is provided.
  – Target model (mandatory). The model in which the results are expected.
  – Model mapping (mandatory, unless a default exists). Detailed description of how the transformation is to be carried out.

9.2 Delivery content

The INSPIRE data specification on *Protected sites* does not specify the configuration in which Member States should supply information about Protected Sites within the Member State. Member States may choose to deliver different data sets for different designations, different geographical areas, different protection classifications or other criteria. However, it is recommended that a single delivery service for all Protected Sites be made available in some way, whether by aggregation of other services (for example, an OGC Web Processing Service) or by direct data access.

Recommendation 16 Member States should provide a single delivery web service providing access to all Protected Sites in the Member State.

9.3 Data sensitivity

Some data in the Annex III themes related to the INSPIRE *Protected sites* theme is sensitive in some contexts. For example, access to information about the location of endangered species may need to be restricted to certain user groups. This issue is addressed in Articles 17(6) and 17(7) in the INSPIRE Directive [Directive 2007/2/EC], which allow Member States to manage sharing of their own sensitive data, and is not discussed further in this data specification.

9.4 Encodings

9.4.1 Encoding for application schemas Protected Sites – Simple and Protected Sites – Full

Requirement 17	Data conformant to the application schemas Protected Sites – Simple or Protected Sites – Full shall be encoded using the encoding specified in section 9.4.1.1.

9.4.1.1 Default Encoding: GML Application Schemas

Format name: Protected Sites - Simple GML Application Schema
Version of the format: 3.1, GML, version 3.2.1
Reference to the specification of the format: ISO 19136:2007
Character set: UTF-8

Format name: Protected Sites - Full GML Application Schema
Version of the format: 3.1, GML, version 3.2.1
Reference to the specification of the format: ISO 19136:2007
Character set: UTF-8

The GML Application Schemas are distributed in a zip-file separately from the data specification document.

10 Data Capture

Member States may capture Protected Sites data using their own processes and according to their own specifications and requirements, provided they can perform the necessary transformations to provide INSPIRE-compliant *Protected sites* data to fulfil INSPIRE Directive obligations.

11 Portrayal

This clause defines the rules for layers and styles to be used for portrayal of the spatial object types defined for this theme.

11.1 Layer Types

The *Protected sites* theme is represented with a number of layers. By default, a layer containing the contents of the entire ProtectedSite spatial object type is to be provided. Additionally, view services may optionally provide layers reflecting:

- the site protection classification (ProtectedSite.siteProtectionClassification);
- the site designation (ProtectedSite.siteDesignation.designation) and
- the site designation scheme (ProtectedSite.siteDesignation.designationScheme).

This allows users to view only specific Protected Sites if they are not interested in all of them. This is likely to be the case often since the *Protected sites* theme includes content from a number of different information communities.

Requirement 18 If an INSPIRE view service supports the portrayal of data related to the theme *Protected sites*, it shall provide a layer of the PS.ProtectedSites type (see Table 9).

Recommendation 17 If an INSPIRE view service supports the portrayal of data related to the theme *Protected sites,* it should provide layers for site designations, site designation schemes and site protection classifications (see Table 9).

Table 12: Layer types for the spatial data theme *Protected sites*

Layer Type	Layer Title	Spatial object type(s)	Keywords
PS.ProtectedSite	Protected Sites	ProtectedSite	conservation
PS.ProtectedSites NatureConservation	Protected Sites – Nature Conservation	ProtectedSite where ProtectedSite.siteProtectionClassification = 'natureConservation'	conservation, nature
PS.ProtectedSites Archeaological	Protected Sites – Archaeological	ProtectedSite where ProtectedSite.siteProtectionClassification = 'archaeological'	conservation, archaeology
PS.ProtectedSites Cultural	Protected Sites – Cultural	ProtectedSite where ProtectedSite.siteProtectionClassification = 'cultural'	conservation, culture

PS.ProtectedSites Ecological	Protected Sites – Ecological	ProtectedSite where ProtectedSite.siteProtectionClassification = 'ecological'	conservation, ecology
PS.ProtectedSites Landscape	Protected Sites – Landscape	ProtectedSite where ProtectedSite.siteProtectionClassification = 'landscape'	conservation, landscape
PS.ProtectedSites Environment	Protected Sites – Environment	ProtectedSite where ProtectedSite.siteProtectionClassification = 'environment'	conservation, environment
PS.ProtectedSites Geological	Protected Sites – Geological	ProtectedSite where ProtectedSite.siteProtectionClassification = 'geological'	conservation, geology
PS.ProtectedSites <siteDesignation.designationScheme with first letter capitalised> (a layer should be provided for each designation scheme using codes in the DesignationSchemeValue codelist)	Protected Sites - <siteDesignation.designationScheme>	ProtectedSite where ProtectedSite.siteDesignation.designationScheme = <...> (the matching designation scheme value)	Conservation, Natura2000 (if the designation scheme is Natura2000)
PS.ProtectedSites <siteDesignation.designation with first letter capitalised> (a layer should be provided for each designation type using codes in the DesignationValue codelist)	Protected Sites - <siteDesignation.designation>	ProtectedSite where ProtectedSite.siteDesignation.designation = <...> (the matching designation value)	Conservation, Natura2000 (if the designation value is a Natura2000 designation)

11.2 Default Styles

Requirement 19	If an INSPIRE view network service supports the portrayal of spatial data sets corresponding to the spatial data theme Protected Sites, it shall support the default styles specified in the tables in this section.
	If no user-defined style is specified in a portrayal request for a specific layer to an INSPIRE view service, the default style specified in this section for that layer shall be used.

Table 13: Default styles for the spatial data theme Protected Sites

Layer Name	PS.ProtectedSite
Style Name	PS.ProtectedSite.Default

Style Title	Protected Sites Default Style
Style Description	Point geometries are rendered as a square with a size of 6 pixels, with a 50% grey (#808080) fill and a black outline. Line geometries are rendered as a solid black line with a stroke width of 1 pixel. Polygon geometries are rendered using a 50% grey (#808080) fill and a solid black outline with a stroke width of 1 pixel.
Symbology	`<sld:NamedLayer>` `<se:Name>PS.ProtectedSites</se:Name>` `<sld:UserStyle>` `<se:Name>PS.ProtectedSite.Default</se:Name>` `<sld:IsDefault>1</sld:IsDefault>` `<se:FeatureTypeStyle version="1.1.0" xmlns:PS="urn:x-inspire:specification:ProtectedSites:3.1">` `<se:Description>` `<se:Title>Protected Sites Default Style</se:Title>` `<se:Abstract>Point geometries are rendered as a square with a size of 6 pixels, with a 50% grey (#808080) fill and a black outline. Line geometries are rendered as a solid black line with a stroke width of 1 pixel. Polygon geometries are rendered using a 50% grey (#808080) fill and a solid black outline with a stroke width of 1 pixel.</se:Abstract>` `</se:Description>` `<se:FeatureTypeName>PS:ProtectedSite</se:FeatureTypeName>` `<se:Rule>` `<se:PolygonSymbolizer>` `<se:Geometry>` `<ogc:PropertyName>PS:geometry</ogc:PropertyName>` `</se:Geometry>` `</se:PolygonSymbolizer>` `<se:LineSymbolizer>` `<se:Geometry>` `<ogc:PropertyName>PS:geometry</ogc:PropertyName>` `</se:Geometry>` `</se:LineSymbolizer>` `<se:PointSymbolizer>` `<se:Geometry>` `<ogc:PropertyName>PS:geometry</ogc:PropertyName>` `</se:Geometry>` `</se:PointSymbolizer>` `</se:Rule>` `</se:FeatureTypeStyle>` `</sld:UserStyle>` `</sld:NamedLayer>`

11.3 Other Well-defined Styles

No other well-defined styles are defined in this specification.

11.4 Layers organization

Several of the layers are aggregations of other layers in the *Protected sites* theme, as shown in Table 10.

Table 10: Aggregated layers for the spatial data theme *Protected sites***Aggregated Layer**	**Component Layer**
PS.ProtectedSite	PS.ProtectedSitesNatureConservation + PS.ProtectedSitesArcheaological + PS.ProtectedSitesCultural + PS.ProtectedSitesEcological + PS.ProtectedSitesLandscape + Ps.ProtectedSitesEnvironment +

	PS.ProtectedSitesGeological
PS.ProtectedSite	All of the PS.ProtectedSites<siteDesignation.designationScheme> layers (the combined set of all designation schemes),
PS.ProtectedSites<siteDesignation.designationScheme>	All of the PS.ProtectedSites<siteDesignation.designation> layers (the combined set of all designations in a particular scheme make up the layer for the entire scheme).

Bibliography

[DS-D2.3]   INSPIRE DS-D2.3, Definition of Annex Themes and Scope, v3.0, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.3_Definition_of_Annex_Themes_and_scope_v3.0.pdf

[DS-D2.5]   INSPIRE DS-D2.5, Generic Conceptual Model, v3.1, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.5_v3.1.pdf

[DS-D2.6]   INSPIRE DS-D2.6, Methodology for the development of data specifications, v3.0, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.6_v3.0.pdf

[DS-D2.7]   INSPIRE DS-D2.7, Guidelines for the encoding of spatial data, v3.0, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.7_v3.0.pdf

[DS-D2.8.I.3] INSPIRE DS-D2.8.I.3, INSPIRE Data Specifiications on Geographical Names – Guidelines, v3.0

 [Habitat Directive]   Directive 92/43/EEC. 1992

[Birds Directive]   Directive 79/409/EEC. 1979

[Water Framework Directive] Directive 2000/60/EEC. 2000

[Ramsar Convention]   http://www.ramsar.org/   1971

[Helsinki Convention]   http://www.helcom.fi/ 1974

[OSPAR Convention]   http://www.ospar.org/ 1992

[World Heritage Convention] http://whc.unesco.org 1975

[Barcelona Convention]   http://www.unep.ch/regionalseas/regions/med/t_barcel.htm 1976

[Natura2000]   http://ec.europa.eu/environment/nature/natura2000/index_en.htm

[CDDA]   Common Database on Designated Areas
                             http://dd.eionet.europa.eu/dataset.jsp?mode=view&ds_id=2445

Annex A
(normative)

Abstract Test Suite

Any dataset conforming to this INSPIRE data specification shall meet all requirements specified in this document.

NOTE   A common abstract test suite including detailed instructions on how to test each requirement will be added at a later stage.

Annex B
(informative)
Use Cases

This Annex describes the use cases for the INSPIRE *Protected sites* theme and associated data specification. The first part provides a use case diagram showing the interactions between the five use cases that have been defined and the actors. The remaining parts describe each of the five use cases in turn. The use cases are:

1. Generate European Protected Sites spatial data report (Europe-wide, including Natura 2000 sites; expert user/regional government including European Commission and European Environment Agency).
2. Naively query and view Protected Sites (local, regional and Europe-wide; non-expert/public user).
3. Expertly query, view, visualise and analyse Protected Sites (local, regional, cross-border; to support environmental impact assessment and decision making).
4. Download Protected Sites data (expert /semi-expert user).
5. Provide Protected Sites data according to EU legal obligations and dataflows (EU Member State).

The selected use cases are intended to encompass the range of uses of Protected Sites data, as well as the different scales, user groups and outputs, and to identify any issues of particular relevance for the theme.

UML use case diagram.
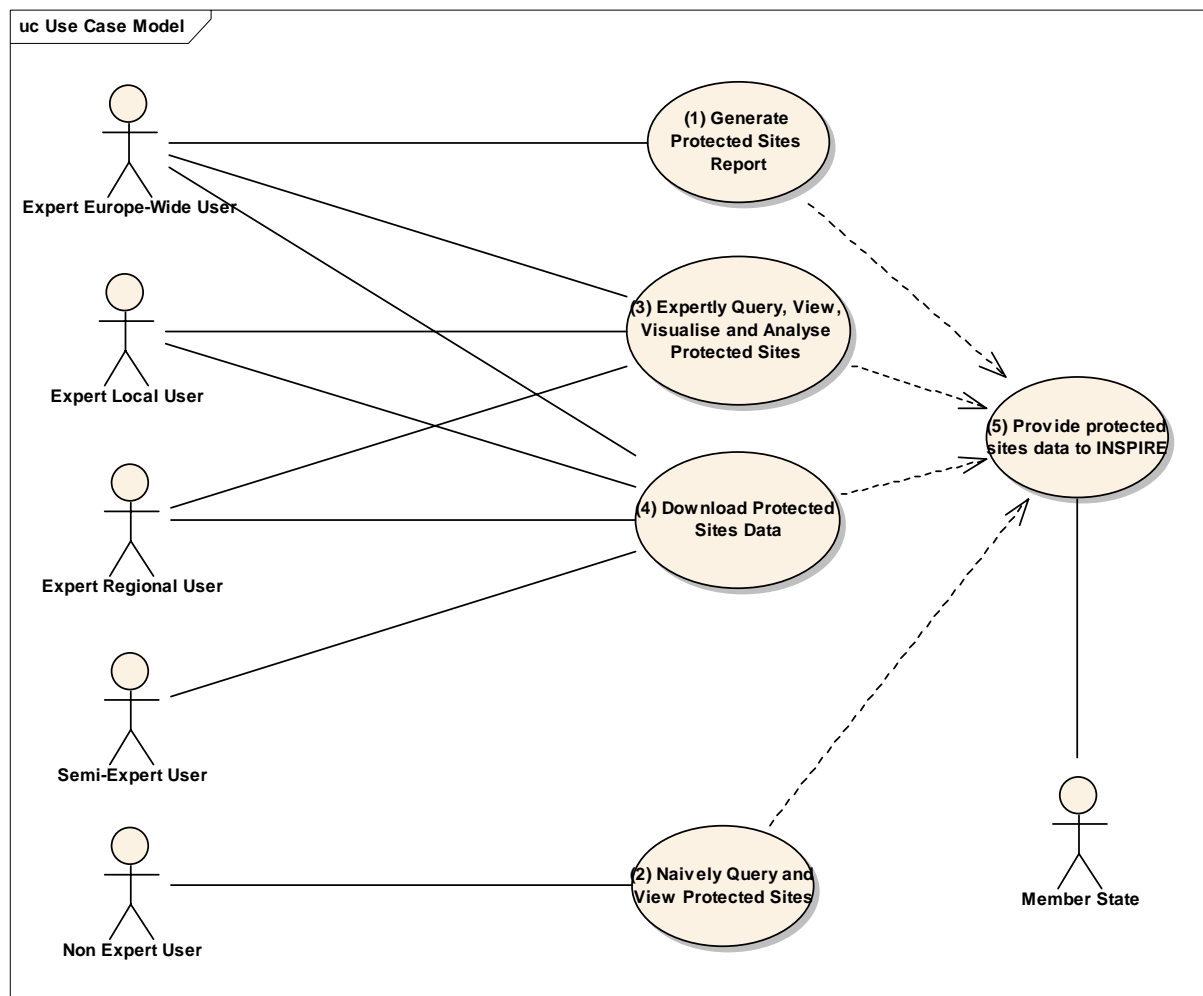
Use Case 1: Generate European Protected sites Spatial Data Report

The scenario for the Generate European Protected Sites Spatial Data Report is that a European expert user would like to collate all necessary information on Protected Sites in a GIS-database or application for generating standard overviews and/or tabulations on all Protected Sites across Europe. The results will contribute to special reporting obligations at the European level (for example, biodiversity indicators, European Commission composite reports under Art. 17 of the Habitat Directive).

Use Case Description	
Name	Generate European Protected Sites Spatial Data Report
Priority	High
Description	The user analyzes cross-border datasets on Protected Sites (for example, those created in Use Case 5) up to a European extent by means of a GIS-application to create overview-maps and/or tabulations on Protected Sites data. The results will be part of special reports of different kinds such as progress in area coverage of Protected Sites per category in the EU (indicators) and composite assessments of the implementation of the EU Directives at the European or bio-geographical level
Pre-condition	Quality controlled Protected Sites data sets are available to the user in line with INSPIRE specifications and the INSPIRE registry provides all necessary information for standardised access to data. The user has access to the INSPIRE GenerateReport Web Processing Service.
Flow of Events – Basic Path	
Step 1.	The user calls a Web Processing Service, specifying the area of interest. This would commonly encompass all of Europe, but may also be restricted to a particular country or geographical region (using administrative boundaries or boundaries of bio-geographical regions as defined in INSPIRE). The user also selects the reporting items required.
Step 2.	The Web Processing Service generates a report using source data from each of the member states in the selected area or across Europe.
Step 3.	The user receives the report and uses it to determine the status of Protected Sites across Europe.
Post-condition	The report may be for later comparison of versions. GIS-analyses and resulting data have to be described and stored for later use.
Data source: INSPIRE-Conformant Protected Sites Data Set Provided by Member State	
Description	Report data generated for Protected Sites to provide summary details across Europe.
Data provider	Each member state or (national) focal point.
Geographic scope	Europe wide, although a smaller area may be selected.
Thematic scope	INSPIRE Annex I 9. Protected Sites.
Scale, resolution	As made applicable by data provider.
Delivery	Textual report and associated geometry information.
Documentation	INSPIRE *Protected sites* Data Specification

Use Case 2: Naively Query and View Protected sites

The scenario for the Naively Query and View Protected Sites use case is that a user would like to find out about Protected Sites in his or her neighbourhood. It is assumed that the user is aware of and has access to a basic publicly accessible (probably web based) GIS that contains the relevant data. For example, a dog walker may be interested in finding out about the countryside he walks his dog in and how it is protected. In this scenario, the user would use a publicly accessible GIS to zoom/pan to or find, by gazetteer search, the location of interest and display the data on screen.

Use Case Description	
Name	Naively Query and View Protected Sites
Priority	High
Description	The user uses a publicly accessible (probably web based) GIS to zoom/pan to or find, by gazetteer search, the location of interest and display the data on screen.
Pre-condition	Protected sites are available in line with INSPIRE specifications to the user by relevant Web Map Services and Web Feature Services. The user has access to a publicly accessible (probably web based) GIS that displays data using the INSPIRE rules.
Flow of Events – Basic Path	
Step 1.	The user uses the GIS to zoom and/or pan to the area of interest, or selects a particular place, protected site or administrative area name from a list (this list comes from the INSPIRE Geographic Names data set).
Step 2.	The GIS queries the relevant Web Map Service and presents the data in the client application. It also optionally displays contextual information about heritage, land classification and other types of land designations that are related to Protected Sites (layers can be switched on and off).
Step 3.	The user uses an information tool in the client application to click on a Protected Sites feature on the map.
Step 4.	The GIS queries the relevant Web Feature Service and presents the attribute data for the selected Protected Sites feature in the client application. In addition to the attributes, this service may also provide links to related information about ownership of parcels within the protected site, species data and feature condition information.
Post-condition	
Data source: Member State Web Map Service and Web Feature Service on Protected sites	
Description	This use case uses Web Map Services and Web Feature Services from each of the EU member states that serve their Protected Sites data in the INSPIRE GML map projection parameters (for web map service) and application schema format (for web feature service).
Data provider	Each member state.
Geographic scope	All EU member states, but GIS application selects and displays only a subset of that area, depending on the extents of the current map being viewed. Such a map would normally show a relatively small area for the purposes of a naïve user.
Thematic scope	Protected sites and geographic names.
Scale, resolution	Data is served at the most appropriate scale and resolution. This will vary depending on the scale of the map being viewed, and will be controlled within the parameters of the GIS and the client application.
Delivery	INSPIRE *Protected sites* GML Application Schema, graphical map.
Documentation	INSPIRE *Protected sites* Data Specification.

Use Case 3: Expertly Query, View, Visualise and Analyse Protected sites

The scenario for the Expertly Query, View, Visualise and Analyse Protected Sites use case is that a user needs to ensure that the protected site will not be adversely affected by any proposed land-use change. This is a routine requirement of any agency responsible for administering Protected Sites systems through formal consultation from other legitimate land use planning agencies. In this scenario, the user would start with a proposal generated by developer and supplied to the user through an agreed consultation process. The user would then use information on Protected Sites to evaluate the potential impact of the proposed development on the protected site features and purposes. A typical such example could be a consultation on the route of a new gas pipeline across countryside through Environmental Impact Assessment legislation.

Use Case Description	
Name	Expertly Query, View, Visualize and Analyze Protected Sites
Priority	High
Description	The user creates a view of Protected Sites within the planning proposal area and assesses potential impacts.
Pre-condition	Protected Sites are available in line with INSPIRE specifications to the user and INSPIRE registry provides all necessary information for standardised access to data. The user has access to a client GIS with basic selection tools.
Flow of Events – Basic Path	
Step 1.	*Define the scope of the potential impact area:* The user is provided with the geographical boundary of the planning proposal, with detail of the proposed infrastructure, construction access routes, storage/disposal areas, construction plant locations and operating details. These details are supplied as digital GIS data, or are digitised from paper maps.
Step 2.	*Display Protected sites boundaries on scope area:* The user downloads[16] Protected Sites data to his or her local GIS tool and views the relationship between the Protected Sites and the proposed land use changes, both during and after construction.
Step 3.	*Categorise protected features subject to protection:* The user identifies the protected features on each site that falls within, or intersects the scope area, optionally distinguishing between habitat types, species and other site related features.
Step 4.	*Assess sensitivity of protected features:* The user uses specialist advice (either using existing procedures, or in consultation with relevant specialists) to determine the sensitivity of each feature to the type of development proposed (e.g. only affected if development crosses the protected site boundary, or affected if disturbance is within 2km of the boundary). The sensitivity depends upon the type of development and includes both construction impacts and operating impacts post-construction.
Step 5.	*Categorise potential impacts of development:* The user, in consultation with relevant experts, assesses the likely affects of the proposed development (land take; impacts on water, soil and air; etc.) during and after construction).
Step 6.	*Assess the spatial extent of development impacts:* The user creates boundary information for each of the relevant impacts predicted to arise from the development in his or her own GIS.
Step 7.	*Apply constraints check*: The user applies a buffer to each protected site that reflects the sensitivity of the site. The outline of the buffer provides the potential impact area on each identified feature on the Protected Sites and is used in all further assessment of impact. The buffer distance can be several kilometres when groundwater, diffuse pollution or air pollution is involved.

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[16] See use case 4.

Use Case Description	
Step 8	***Assess overall impact of development on Protected sites:*** The user runs a query to tabulate the overlap between the sensitivity of site features and the anticipated impacts of the development proposal.
Step 9.	**Impact assessment:** The user identifies conflicts between development and existing Protected Sites and their features.
Post-condition	The user has an audit trail of the impact assessment for use in contested inquiries to resolve any conflicts.
Data source: INSPIRE-Conformant Protected Sites Data Set Provided by Member State	
Description	This use case uses Protected Sites data from national sources, often within an organisation. Cross border assessments will require consistent standards of protected site definition in order to maintain a coherent defence case in any planning enquiry.
Data provider	Each member state.
Geographic scope	All EU Member States, but with appropriate cross border cooperation where necessary.
Thematic scope	*Protected sites.*
Scale, resolution	The Protected Site boundary data will need to be available at the scale relevant to the application. Localised development proposals may use base maps at 1:2,500 or better and legal constraints of conflicting land uses (roads vs nature conservation) may require accurate boundary matching.
Delivery	INSPIRE *Protected sites* GML Application Schema.
Documentation	INSPIRE *Protected sites* Data Specification.

Use Case 4: Download Protected sites Data

The scenario for the Download Protected Sites Data use case is that a user would like to download Protected Sites data for use on their own systems (a desktop GIS for example). For example, an non-government environmental agency may be interested in using the Protected Sites data in their own, advanced analysis with their own and other data sets. In this scenario, the user would select the area and feature types of interest and receive the appropriate Protected Sites feature types in the appropriate area.

Use Case Description	
Name	Download Protected Sites Data
Priority	Medium
Description	The user downloads Protected Sites data and associated metadata in a selected area and with selected feature types included.
Pre-condition	Protected sites are available in line with INSPIRE specifications to the user and INSPIRE registry provides all necessary information for standardised access to data. The user has access to a client GIS with basic selection tools.
Flow of Events – Basic Path	
Step 1.	The user selects the area of interest graphically on a map (this can be part of a member state, a whole member state or more than one member state) of from a textual list of countries (selecting either one or more than one country).
Step 2.	The user selects the feature types of interest from a list of all of the Protected Sites feature types (one or more[17]).
Step 3.	The user invokes the download.
Step 4.	The system calls the relevant Web Feature Services to retrieve the information from the member states[18].
Step 5.	The response is provided to the user in the GML Application Schema generated from the Protected Sites package of the INSPIRE data model.
Step 6.	The user handles the response in his or her chosen manner (for example, by saving the GML data returned by the web service/s to the local computer).
Post-condition	The user has a copy of the Protected Sites data according to his or her geographical and feature type selection saved in the format of the GML application schema generated from the Protected Sites package of the INSPIRE data model.
Data source: Member State Protected Sites Web Feature Service for each member state	
Description	This use case uses web feature services from each of the EU member states that serve their Protected Sites data in the INSPIRE GML application schema format.
Data provider	Each member state.
Geographic scope	All EU member states, but user can select only a subset of that area, either a subset of member states, a single member state or only part of a member state. In the latter case, a web feature service filter is required.
Thematic scope	Protected sites. This use case could be expanded to include all themes, as it is generic.
Scale, resolution	Data is provided at the most detailed scale and resolution available. The user may be given the option to select scale and resolution if required.
Delivery	INSPIRE *Protected sites* GML Application Schema.

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[17] It is not yet clear how many Protected Sites feature types there will be.
[18] For multiple member states, this may be returned either as a series of separate responses for each member state, or using an amalgamation web service to combine the responses from the web feature service for each member state. The web service architecture is beyond the scope of the current activity, so this aspect is not further detailed here.

Use Case Description	
Documentation	INSPIRE *Protected sites* Data Specification.

Use Case Description	
Documentation	INSPIRE *Protected sites* Data Specification.

Use Case 5: Provide Protected sites Data Using INSPIRE Specifications

The scenario for the Provide Protected Sites Data Using INSPIRE Specifications use case is that a member state or other organisation (for example, the European Environment Agency) is to provide data according to the INSPIRE process. This use case involves data input according to INSPIRE, rather than output/use. All of the other use cases involve INSPIRE data output or use. This use case identifies the different steps that the member state might go through in providing data .

This use case describes a generic process that is envisaged after INSPIRE is implemented. As background material, Appendix A contains use cases describing the current data flows for one particular member state (UK), which contributes data to the European Environment Agency.

Use Case Description	
Name	Provide Protected Sites data using INSPIRE data model
Priority	High
Description	The user is an EU member state, and prepares and provides its data using the INSPIRE specifications, in the form of a static data set,
Pre-condition	Agreement to reporting data specifications and formats at the European level such as nationally designated areas, Natura 2000 sites, and on data collection cycle and reporting deadlines
Flow of Events – User 1	
Step 1.	Before expiration of a reporting deadline, the user prepares the national data for submission including mapping from the national data to the INSPIRE Protected Sites Data Specification.
Step 2.	The user uploads the national data according to agreed INSPIRE standards. She or he can upload an entire data set, or only a part of that data set, selected by geographical area of Protected Sites category.
Step 3.	The system generates a quality check report for the uploaded data and determines whether there are any issues. The quality control report assesses issues of match between the different member states' data sets (for example, cross border issues) and compliance with the INSPIRE Data Specification.
Step 4.	The user reviews the quality check report and modifies the data set as required to ensure compliance.
Step 5.	The user uploads the modified national data to the agreed repository
Step 6.	The system generates a quality check report for the second upload.
Step 7.	The user reviews the quality check report and verifies that no further changes are needed (if further changes are required, the flow of events returns to Step 4.
Step 8.	The user provides metadata to the agreed repository
Step 9.	The user publishes the data and metadata according to INSPIRE regulations in multiple, appropriate forms. Such forms are likely to at least include OGC web services for the data served by the member state (most importantly Web Map Service and Web Feature Service), registered with the INSPIRE registry.
Post-condition	The member state's data set is available in line with INSPIRE standards.
Data source: Member State Data Set	
Description	This use case uses data sets from each member state and submits them to an INSPIRE compatible infrastructure.
Data provider	Each EU member state as well as some other related organisations (for example, the European Environmental Agency).
Geographic scope	All EU member states and the pan-European area, or parts thereof.
Thematic scope	Protected sites.

Use Case Description	
Scale, resolution	The highest resolution that the member state can provide.
Delivery	Data is to be delivered in the form of the INSPIRE GML application schema, either directly or through OGC web services.
Documentation	INSPIRE *Protected sites* Data Specification, member states data set documentation.

Appendix A: Use Cases for the Current Data Supply Flow in the UK

The UK currently undergoes an internal process (Use Case A.1) to prepare data for supply to the European Environment Agency, which performs its own process to prepare the data for supply to other parties (Use Case A.2). These uses case illustrate the current process and can be used to gain a more detailed understanding of the changes involved in moving towards the described Use Case 5 for the INSPIRE project.

Use Case A.1: Provide UK Protected sites Data to EEA (Current Workflow)

This scenario is for the collation of data on Natura 2000 Protected Sites within member states for submission to Europe. Example is for the United Kingdom where the Joint Nature Conservation Committee (JNCC) staff collate GI data on Protected Sites from the four country agencies within the UK. This is formerly submitted by the UK Government to the EU Commission as a consolidated data layer with supporting database for incorporation into the European dataset. The GI layers and the database are managed by the EEA and the European Topic Centre for Nature Conservation on behalf of the Commission. Sites under the Habitats Directive (SACs) are treated slightly differently to those protected by the Birds Directive (SPAs) in the manner in which data is packaged for European submission. The user case presented here describes the process by which new sites and amended sites are added to the existing cumulative data layer for reporting through to the EEA. There has been a version of the cumulative data layer since the mid 1990's.

The cumulative data layer contains GI boundaries for all designated SACs and SPAs as a single version showing the original, subsequently amended, boundary with site code[19], name and source file name. Amended boundaries are extensions or deletions to the original boundary that have been subject to stakeholder consultation and approved by the relevant authority in each member state.

Use Case Description	
Name	Provide UK Protected Sites Data to EEA (Current Workflow)
Priority	High
Description	The user (collating body) receives Protected Sites data and associated metadata from each country (region) within the Member State and creates a single contribution to the European reporting process.
Pre-condition	The user has access to a client GIS with basic selection tools and contributing countries (regions) provide data to known standards and quality. There are previous versions of the cumulative data layer held by the EEA on behalf of Europe.
Flow of Events – Basic Path for SACs	
Step 1.	The user (collator) requests data on new and amended sites from country agencies in the UK as part of a coordinated exercise to provide a batched update to the EEA (these batches are called tranches and we are now at tranche 36).
Step 2.	The user (agency data owners) provide the protected site boundary as a .shp or equivalent file with site name, site code (UK code supplied by JNCC), paper copy of the site map and a copy of attributes in a the N2K database. For new sites this will involve a new site code number, for existing (amended) sites this will have the same site code number as the original site, but a new source file name.
Step 3.	The JNCC undertake a minimal quality check on the boundary data and UK code are correct, and assumes that each agency has applied geometry and other validation procedures. (The UK agencies have an agreed process for QA).

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[19] The site code (UKxxxxxxx) is a unique identifier for each site and provides the link between the GI layer and the N2K database.

Use Case Description	
Step 4.	The JNCC then adds the new site boundaries and attribute data and deletes all old polygons with the same site code from the cumulative data layer and replaces them with amended site data. (The only change in the new cumulative layer is that the site area will have gone up or down for amended sites).
Step 5.	The cumulative layer and the supporting N2K database are then submitted to the EEA for incorporation into the European layer.
Post-condition	The JNCC has a copy of the current cumulative boundary layer and N2K database and the EEA further process this to create the combined European layer.

Flow of Events – Basic Path for SACs	
Step 1.	As above, but site boundaries collected from agencies when approved, not as batches/tranches.
Step 2.	As above
Step 3.	As above
Step 4.	As above…

Data source: Internal systems of each member state	
Description	This use case uses country derived data created according to nationally agreed standards. This data is used in GIS within each user agency and also made available through web-mapping systems[20] and websites.
Data provider	Country (=regional) agencies create and own the data and pass this to Europe through the UK coordinating body, the JNCC.
Geographic scope	Similar process must operate in all EU member states.
Thematic scope	Protected sites. This use case could be expanded to include all themes, as it is generic.
Scale, resolution	Data is provided at the most detailed scale and resolution available at the time of the official site submission to Europe. Subsequent improvements in resolution/accuracy are not captured by the current process. Many of these changes are driven by changes to the base mapping layer (the standard now is to use the Ordnance Survey's detailed Master Map for this purpose). In the UK this is dealt with by publication of both the cumulative data layer (as submitted to Europe) and a dynamic data layer that provides access to up to date boundaries adjusted for current base maps and accuracy.
Delivery	Data files direct to EEA
Documentation	Flow not documented

Issues to note:

1. The current process does not allow member states to update the cumulative data layer with the 'accurate' digital boundary available. The only way to make such changes "official" according to the EU is for the member state to resubmit the entire site (with amended paper maps, data forms and supporting database). Once the site has been approved by the relevant authority in the UK the boundary version remains the same on the European cumulative data layer.

2. Updated site boundaries on the cumulative data layer are not easily detectable from using the digital cumulative data layer or the N2K database as there is no version attribute to denote change. This can lead to confusion in use of the data layer by wider users.

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[20] Use of UK generated boundary data is restricted by licensing issues imposed b the national mapping agency, Ordnance Survey. Use of boundaries by end-users requires them to be licensed to use OS products. This is a serious constraint on public use.

3. Cross border sites are dealt with through an agreed protocol between the countries; one country takes the lead in defining and providing JNCC with relevant site boundary. This is done in cooperation with the adjoining country to ensure that the site boundaries are defined consistently across the country border.

4. Cross member state boundaries (UK and Eire) are resolved by defining two sites on each side of the international border.

5. Issues arise when the cumulative data layer is used in other GIS systems when geometric standards differ between systems an example include unclosed polygons. This is one reason why the JNCC provide access to two versions of the same data; one is the European standard cumulative data layer, the other is the UK dynamic data layer. The latter is the preferred download by UK users as it integrates better with their current use of base reference mapping.

Use Case A.2: Provide EEA Protected sites Data for External Use (Current Workflow)

Use Case Description	
Name	Provide EEA Protected Sites Data for External Use (Current Workflow)
Priority	High
Description	User 1 views, quality controls, and publishes quality control report on national data officially submitted to European level, on nationally designated areas, or Natura 2000 sites, or Internationally designated sites and their associated metadata, separately. User 1 also downloads, edits and merges national data officially submitted to European level, in each category of the above, establishing the relevant metadata. User 1 also prepares the relevant European data sets for each category for uploading on a specific viewer interface which allows selections of subsets or individual sites (EEA -ETC/BD) now in use case 5, simplified User 2 views, quality controls and publishes the downloadable European data set for each category and the relevant quality control reports. User 2 also uploads the specific viewer interface with the European data sets and their associated metadata (EEA data center). User 3 downloads the versioned European data sets and associated metadata and views and/ or downloads data quality control reports of European data sets per country for each category. User 3 uses the data sets in spatial analyses and / or research and provides data to indicators and assessments (EEA, European Commission, Countries and any others). User 4 views, queries and/ or downloads selected subsets of European protected area datasets and associated metadata. User 4 uses the data sets and provides data to indicators and assessments. (EEA, European Commission, countries and any others). User 5 queries and/or downloads national data officially submitted to European level, on all three categories and their associated metadata as well as quality control reports for the national data officially submitted to the European level, per country and/or category. User 5 uses the data sets and provides data to indicators and assessments (EEA, European Commission, countries and any others).
Pre-condition	Agreement to reporting data specifications and formats at the European level such as nationally designated areas, Natura 2000 sites, also agreement on organisation and content of viewers, and on data collection cycle and reporting deadlines.
Flow of Events – User 1	
Step 1.	After expiration of a reporting deadline, User 1 proceeds with accessing national data officially submitted to European level and performs quality control with regard to compliance with agreed formats which include feature categories.
Step 2.	User 1 prepares a first quality check report per country and provides feedback to data provider.
Step 3.	Data provider may respond with second submission correcting mistakes and other omissions.
Step 4.	User 1 performs quality check on the second national delivery and sends feedback to data provider.
Step 5	User 1 downloads national data into a versioned European database.
Step 6	User 1 edits European database keeping track of changes in metadata according to the quality control report**.**

Use Case Description			
Step 7	User 1 delivers versioned European database to User 2.		
Step 8	User 1 may respond to feedback from User 2.		
Step 9	User 1 may redeliver versioned European database to user 2.		
Step 10	(optional) User 1 performs the same editing to a non merged national data version.		
Step 11	(optional) User 1 delivers edited non merged national report data version to user 2.		
Step 12	User 1 transfers the final versioned European data set into the EUNIS format.		
Step 13	User 1 delivers the versioned European database in this format to User 2.		
Flow of Events – User 2			
Step 1.	User 2 performs quality control to the merged versioned European data set on the basis of previous versions and gives feedback to User 1, which may lead to a second delivery of the European data base.		
Step 2.	User 2 publishes the quality check report of the European data set per country and provides feedback to data providers.		
Step 3.	User 2 publishes the downloadable European data set (and optionally the edited non merged national data set).		
Step 4	User 2 uploads the viewer with the versioned European data set.		
Step 5	(optional) User 1 delivers edited non merged national report data version to user 2.		
Flow of Events – User 3			
Step 1.	User 3 identifies the downloadable versioned European data sets as published by user 2 EEA - Data - Nationally designated areas (National - CDDA) and EEA - Data - Natura 2000 EUNIS database		
Step 2.	User 3 selects the desired category		
Step 3.	User 3 invokes downloading of the whole dataset		
Step 4	User 3 identifies quality control reports related to the selected category per country http://cdr.eionet.europa.eu/resultsdataflow		
Step 5	User 3 invokes viewing/ downloading of quality control reports, eg NL_CDDA data delivery 2007		
Flow of Events – User 4			
Step 1	User views content and query possibilities EUNIS - Welcome to EUNIS Database,		
Step 2	User queries easy search, advanced search, statistics and other features		
Step 3	Report is generated and can be downloaded		
Post-condition	There are on going discussions between the respective data providers and European Institutions.		
Data source: EEA/ ETC-BD/ DC ENV			
Description	This use case uses EEA web services where nationally designated areas data reported annually by countries and the Nature 2000 database and data sets submitted from each of the EU member states to the European Commission, under the habitats Directive		
Data provider	Each EU member state as well EEA member and associated country		

Use Case Description	
Geographic scope	All EU member states and the Pan European area, according to the case (category). User can select full coverage of nationally designated areas, as well as a subset of that area, either a subset of member states, a single member state or only part of a member state. In the latter case, a web feature service filter is required.
Thematic scope	Official national data flows which establish European data sets on protected areas. This use case is in the core of operations of the Biodiversity data center, hosted by the EEA following an agreement between EEA, EUROSTAT, DG ENV and JRC. It is also contributing directly to the UN List of protected areas.
Scale, resolution	Natura 2000 sites are given at 100.000 scale, Discussions are in progress for CDDA.
Delivery	
Documentation	

Annex C
(informative)
Temporary UML Model and Feature Type Catalogue for Annex III Habitats and Biotopes Theme

This annex lists definitions for feature types, data types, enumerations and code lists that are included in Annex III of the INSPIRE Directive. Annex III themes have not yet been fully defined, but the definitions contained herein are needed for the *Protected sites* theme to fully realise its objectives. It is anticipated that the contents of this Annex III theme will change when it is fully defined, but that it will continue to support the *Protected sites* theme in meeting its objectives.
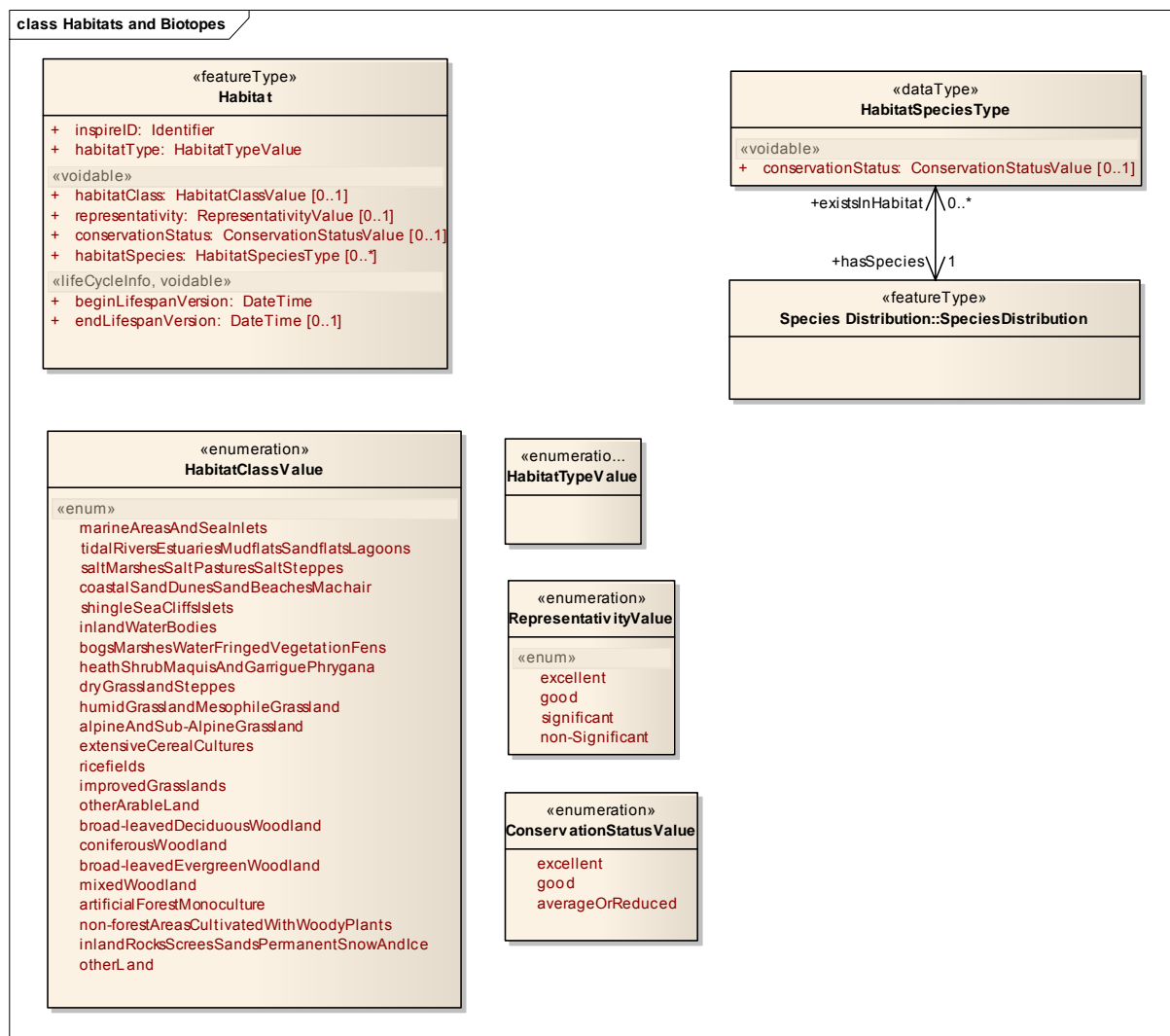

Figure D.1 – UML model: Habitats and Biotopes Theme

Table D.1 – Types defined in the feature catalogue

Type	Package	Stereotypes	Section
ConservationStatusValue	Habitats and Biotopes	«enumeration»	C.3.1
Habitat	Habitats and Biotopes	«featureType»	C.1.1

Type	Package	Stereotypes	Section
HabitatClassValue	Habitats and Biotopes	«enumeration»	C.3.2
HabitatSpeciesType	Habitats and Biotopes	«dataType»	C.2.1
HabitatTypeValue	Habitats and Biotopes	«enumeration»	C.3.3
RepresentativityValue	Habitats and Biotopes	«enumeration»	C.3.4

C.1 Spatial object types

C.1.1 Habitat

Habitat	
Definition:	Geographical areas characterised by specific ecological conditions, processes, structure and (life support) functions that physically support the organisms that live there. Includes terrestrial and aquatic areas distinguished by geographical, abiotic and biotic features, whether entirely natural or semi-natural. Many other attributes may be added to this class when the theme is properly developed as part of Annex III. Currently, only those attributes needed to support the Protected Sites theme in Annex I are included.
Status:	Proposed
Stereotypes:	«featureType»
Attribute: representativity	
Value type:	RepresentativityValue
Definition:	The degree to which the habitat is typical of the full range of habitats of its type (as indicated by the habitatType attribute).
Multiplicity:	0..1
Stereotypes:	«voidable»
Attribute: conservationStatus	
Value type:	ConservationStatusValue
Definition:	The conservation status of the habitat, expressing a combination of the degree of conservation of the structure, the degree of conservation of the functions and the restoration possibilities.
Multiplicity:	0..1
Stereotypes:	«voidable»
Attribute: beginLifespanVersion	
Value type:	DateTime
Definition:	The date that the object that represents the Habitat was created in the system. A new object is created each time an attribute is changed, and the beginLifespanVersion stores the date that the new object was created. The identifier data type used by the objectIdentifier attribute includes both a unique numerical identifier (localID) and version number, so any objects created with changed attributes or geometries use the same localID with a new version number. The localID, version number, beginLifespanVersion and endLifespanVersion can all be used in combination to examine the lifecycle of a given Habitat. The beginLifespanVersion and endLifespanVersion can also be used to perform incremental updates.
Multiplicity:	1
Stereotypes:	«lifeCycleInfo,voidable»
Attribute: endLifespanVersion	
Value type:	DateTime

Habitat

Definition:	The date that the object that represents the Habitat was expired in the system. An object is expired only when the attributes change and a new object with the new attributes is created. When the new object is created, the preceding object's endLifespanVersion is set to the same value as the new object's beginLifespanVersion. The identifier data type used by the objectIdentifier attribute includes both a unique numerical identifier (localID) and version number, so any objects created with changed attributes or geometries use the same localID with a new version number. The localID, version number, beginLifespanVersion and endLifespanVersion can all be used in combination to examine the lifecycle of a given Habitat. If the endLifespanVersion is null, this indicates that the object is the current representation of the Habitat (whether or not the Habitat itself has been expired). The beginLifespanVersion and endLifespanVersion can also be used to perform incremental updates.	
Multiplicity:	0..1	
Stereotypes:	«lifeCycleInfo,voidable»	

Attribute: habitatSpecies

Value type:	HabitatSpeciesType
Definition:	The species that exists within the habitat and its distribution.
Multiplicity:	0..*
Stereotypes:	«voidable»

Attribute: inspireID

Value type:	Identifier
Definition:	The unique identifier for the Habitat.
Multiplicity:	1

Attribute: habitatType

Value type:	HabitatTypeValue
Definition:	The habitat type using the habitat types included in Annex 1 of the Habitat Directive 92/43/EEC.
Multiplicity:	1

Attribute: habitatClass

Value type:	HabitatClassValue
Definition:	The generic habitat class. The classification is used by Natura2000, item 4.1 of the Standard Data Form. This classification is similar to Habitat Type, but is more general. However, there is no simple mapping from HabitatClass to Habitat Type, and Natura 2000 requires both, so it is retained. Ultimately, however, this duplication should be addressed.
Multiplicity:	0..1
Stereotypes:	«voidable»

C.2 Data types

C.2.1 HabitatSpeciesType

HabitatSpeciesType

Definition:	A species that exists in the habitat as expressed using a distribution within a particular aggregation unit.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: conservationStatus

Value type:	ConservationStatusValue
Definition:	The degree of conservation of the features of the habitat that are important for the species and the possibilities for restoration.
Multiplicity:	0..1

HabitatSpeciesType

Stereotypes:	«voidable»

Association role: hasSpecies

Value type:	SpeciesDistribution
Definition:	The species that lives in the habitat.
Multiplicity:	1

C.3 Enumerations and code lists

C.3.1 ConservationStatusValue

ConservationStatusValue

Definition:	The possible code that may be used to describe the conservation status of the site, expressing a combination of the degree of conservation of the structure, the degree of conservation of the functions and the restoration possibilities.
Status:	Proposed
Stereotypes:	«enumeration»

Value: excellent

Definition:	

Value: good

Definition:	

Value: averageOrReduced

Definition:	

C.3.2 HabitatClassValue

HabitatClassValue

Definition:	The generic habitat class. The classification is used by Natura2000, item 4.1 of the Standard Data Form. This classification is similar to Habitat Type, but is more general. However, there is no simple mapping from Habitat Class to Habitat Type, and Natura 2000 requires both, so it is retained. Ultimately, however, this duplication should be addressed.
Status:	Proposed
Stereotypes:	«enumeration»

Value: marineAreasAndSeaInlets

Definition:	

Value: tidalRiversEstuariesMudflatsSandflatsLagoons

Definition:	

Value: saltMarshesSaltPasturesSaltSteppes

Definition:	

Value: coastalSandDunesSandBeachesMachair

Definition:	

Value: shingleSeaCliffsIslets

Definition:	

Value: inlandWaterBodies

Definition:	

Value: bogsMarshesWaterFringedVegetationFens

Definition:	

Value: heathShrubMaquisAndGarriguePhrygana

Definition:	

Value: dryGrasslandSteppes

Definition:	

HabitatClassValue
Value: humidGrasslandMesophileGrassland
Definition:
Value: alpineAndSub-AlpineGrassland
Definition:
Value: extensiveCerealCultures
Definition:
Value: ricefields
Definition:
Value: improvedGrasslands
Definition:
Value: otherArableLand
Definition:
Value: broad-leavedDeciduousWoodland
Definition:
Value: coniferousWoodland
Definition:
Value: broad-leavedEvergreenWoodland
Definition:
Value: mixedWoodland
Definition:
Value: artificialForestMonoculture
Definition:
Value: non-forestAreasCultivatedWithWoodyPlants
Definition:
Value: inlandRocksScreesSandsPermanentSnowAndIce
Definition:
Value: otherLand
Definition:

C.3.3 HabitatTypeValue

HabitatTypeValue	
Definition:	A set of codes to indicate the habitat type using the Natura 2000 habitat types under Annex 1 of the Habitat Directive 92/43/EEC. The code values may be found at: http://converters.eionet.europa.eu/xmlfile/habitats.xml and http://converters.eionet.europa.eu/xmlfile/habitats_per_ms_and_bg.xml
Status:	Proposed
Stereotypes:	«enumeration»

C.3.4 RepresentativityValue

RepresentativityValue	
Definition:	A code indicating how typical the site is of the habitat type described (for which is it protected).
Status:	Proposed
Stereotypes:	«enumeration»
Value: excellent	
Definition:	
Value: good	
Definition:	
Value: significant	

RepresentativityValue

Definition:

Value: non-Significant

Definition:

C.4 Imported types

C.4.1 Identifier

Identifier

Package:	Base Types [see DS-D2.5]
Definition:	Unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.
Description:	NOTE1 External object identifiers are distinct from thematic object identifiers.
	NOTE 2 The voidable version identifier attribute is not part of the unique identifier of a spatial object and may be used to distinguish two versions of the same spatial object.
	NOTE 3 The unique identifier will not change during the life-time of a spatial object.

C.4.2 SpeciesDistribution

SpeciesDistribution

Package:	Species Distribution [see Annex E]
Definition:	The geographical distribution of occurrence of animal or plant species aggregated by grid, region, administrative unit or other analytical unit. Many other attributes may be added to this class when the theme is properly developed as part of Annex III. Currently, only those attributes needed to support the Protected Sites theme in Annex I are included.

Annex D
(informative)
Temporary UML Model and Feature Type Catalogue for Annex III Species Distribution Theme

This annex lists definitions for feature types, data types, enumerations and code lists that are included in Annex III of the INSPIRE Directive.   Annex III themes have not yet been fully defined, but the definitions contained herein are needed for the *Protected sites* theme to fully realise its objectives. It is anticipated that the contents of this Annex III theme will change when it is fully defined, but that it will continue to support the *Protected sites* theme in meeting its objectives.
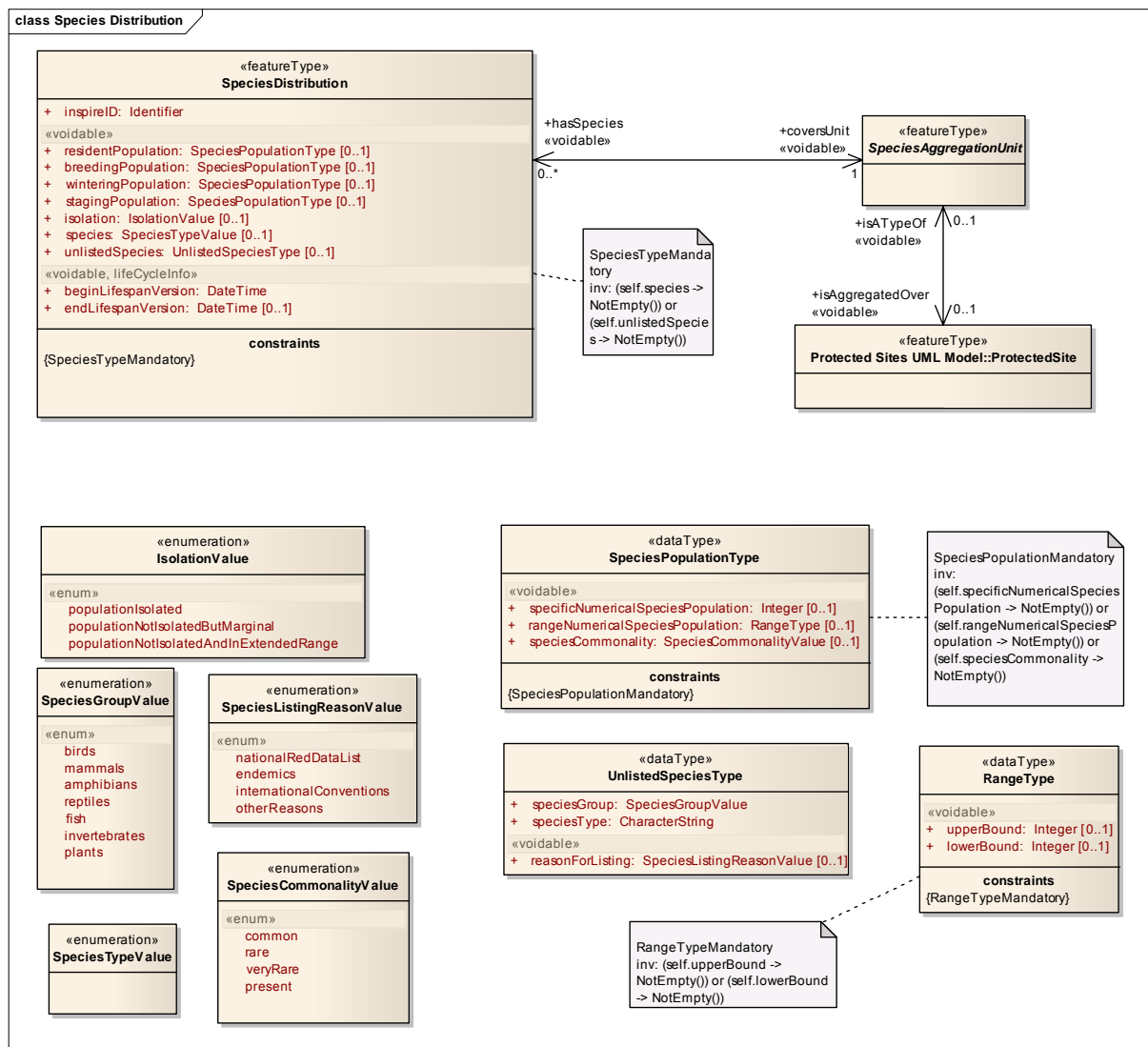

Figure E.1 – UML model: Species Distribution Theme

Table E.1 – Types defined in the feature catalogue

Type	Package	Stereotypes	Section
IsolationValue	Species Distribution	«enumeration»	D.3.1

Type	Package	Stereotypes	Section
RangeType	Species Distribution	«dataType»	D.2.1
SpeciesAggregationUnit	Species Distribution	«featureType»	D.1.1
SpeciesCommonalityValue	Species Distribution	«enumeration»	D.3.2
SpeciesDistribution	Species Distribution	«featureType»	D.1.2
SpeciesGroupValue	Species Distribution	«enumeration»	D.3.3
SpeciesListingReasonValue	Species Distribution	«enumeration»	D.3.4
SpeciesPopulationType	Species Distribution	«dataType»	D.2.2
SpeciesTypeValue	Species Distribution	«enumeration»	D.3.5
UnlistedSpeciesType	Species Distribution	«dataType»	D.2.3

D.1 Spatial object types

D.1.1 SpeciesAggregationUnit

SpeciesAggregationUnit (abstract)	
Definition:	The aggregation unit over which the species is distributed. This model only includes ProtectedSite as an aggregation unit, but others may be added in the future (for example, administrative units and grid units).
Status:	Proposed
Stereotypes:	«featureType»
Association role: hasSpecies	
Value type:	SpeciesDistribution
Definition:	The distribution of species over the particular aggregation unit.
Multiplicity:	0..*
Stereotypes:	«voidable»
Association role: isAggregatedOver	
Value type:	ProtectedSite
Definition:	The region, adminstative or analytical unit over which the species distribution is aggregated. A species distribution may be aggregated over a number of different types of units for different purposes.
Multiplicity:	0..1
Stereotypes:	«voidable»

D.1.2 SpeciesDistribution

SpeciesDistribution	
Definition:	The geographical distribution of occurrence of animal or plant species aggregated by grid, region, administrative unit or other analytical unit. Many other attributes may be added to this class when the theme is properly developed as part of Annex III. Currently, only those attributes needed to support the Protected Sites theme in Annex I are included.
Status:	Proposed
Stereotypes:	«featureType»
Attribute: inspireID	
Value type:	Identifier
Definition:	A unique identifier for the species distribution.
Multiplicity:	1
Attribute: residentPopulation	
Value type:	SpeciesPopulationType
Definition:	The population of the species in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.

SpeciesDistribution

Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: breedingPopulation

Value type:	SpeciesPopulationType
Definition:	The population of the species that is breeding in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: winteringPopulation

Value type:	SpeciesPopulationType
Definition:	The population of the species that is wintering in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: stagingPopulation

Value type:	SpeciesPopulationType
Definition:	The population of the species that is migrating or moulting temporarily in the aggregation unit. This may be a single number, a range, a lower or upper limit or a character from SpeciesPopulationType.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: isolation

Value type:	IsolationValue
Definition:	The degree of isolation of the population present in the aggregation unit in relation to the natural range of the species.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: species

Value type:	SpeciesTypeValue
Definition:	The species type from Annex II of the Habitat Directive and Annex I and reference list for Article 4(2) of the Birds Directive.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: beginLifespanVersion

Value type:	DateTime
Definition:	The date that the object that represents the SpeciesDistribution was created in the system. A new object is created each time an attribute is changed, and the beginLifespanVersion stores the date that the new object was created. The identifier data type used by the objectIdentifier attribute includes both a unique numerical identifier (localID) and version number, so any objects created with changed attributes or geometries use the same localID with a new version number. The localID, version number, beginLifespanVersion and endLifespanVersion can all be used in combination to examine the lifecycle of a given SpeciesDistribution. The beginLifespanVersion and endLifespanVersion can also be used to perform incremental updates.
Multiplicity:	1
Stereotypes:	«voidable,lifeCycleInfo»

Attribute: unlistedSpecies

Value type:	UnlistedSpeciesType
Definition:	The type of species in the aggregation unit, if not included in the Species Type code list.

SpeciesDistribution

Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: endLifespanVersion

Value type:	DateTime
Definition:	The date that the object that represents the SpeciesDistribution was expired in the system. An object is expired only when the attributes change and a new object with the new attributes is created. When the new object is created, the preceding object's endLifespanVersion is set to the same value as the new object's beginLifespanVersion. The identifier data type used by the objectIdentifier attribute includes both a unique numerical identifier (localID) and version number, so any objects created with changed attributes or geometries use the same localID with a new version number. The localID, version number, beginLifespanVersion and endLifespanVersion can all be used in combination to examine the lifecycle of a given SpeciesDistribution. If the endLifespanVersion is null, this indicates that the object is the current representation of the Species Distribution (whether or not the Species Distribution itself has been expired). The beginLifespanVersion and endLifespanVersion can also be used to perform incremental updates.
Multiplicity:	0..1
Stereotypes:	«voidable,lifeCycleInfo»

Association role: existsInHabitat

Value type:	HabitatSpeciesType
Definition:	The habitat within which the species lives.
Multiplicity:	0..*

Association role: coversUnit

Value type:	SpeciesAggregationUnit
Definition:	The unit that the species is distributed over. A number of different types of aggregation unit are possible.
Multiplicity:	1
Stereotypes:	«voidable»

Constraint: SpeciesTypeMandatory

Natural language:	inv: (self.species -> NotEmpty()) or (self.unlistedSpecies -> NotEmpty())
OCL:	

D.2 Data types

D.2.1 RangeType

RangeType

Definition:	A data type expressing an upper and lower range.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: upperBound

Value type:	Integer
Definition:	The upper bound of the range. If the value of this attribute is null and lowerBound is populated, this implies that the value is between the lowerBound and infinity.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: lowerBound

Value type:	Integer
Definition:	The lower bound of the range. If the value of this attribute is null and upperBound is populated, this implies that the value is between the upperBound and zero.

RangeType

Multiplicity:	0..1
Stereotypes:	«voidable»

Constraint: RangeTypeMandatory

Natural language:	inv: (self.upperBound -> NotEmpty()) or (self.lowerBound -> NotEmpty())
OCL:	

D.2.2 SpeciesPopulationType

SpeciesPopulationType

Definition:	A data type allowing three different ways of expressing the population of a species in an aggregation unit.
Status:	Proposed
Stereotypes:	«dataType»

Attribute: specificNumericalSpeciesPopulation

Value type:	Integer
Definition:	A species population in which a specific number is known.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: rangeNumericalSpeciesPopulation

Value type:	RangeType
Definition:	A range value indicating the species population using upper and lower bounds, only used if the specificNumericalSpeciesPopulation is not known.
Multiplicity:	0..1
Stereotypes:	«voidable»

Attribute: speciesCommonality

Value type:	SpeciesCommonalityValue
Definition:	A simple code indicating how common or rare the species is in the aggregation unit. This should only be used if a specific numerical or range value is not available.
Multiplicity:	0..1
Stereotypes:	«voidable»

Constraint: SpeciesPopulationMandatory

Natural language:	inv: (self.specificNumericalSpeciesPopulation -> NotEmpty()) or (self.rangeNumericalSpeciesPopulation -> NotEmpty()) or (self.speciesCommonality -> NotEmpty())
OCL:	

D.2.3 UnlistedSpeciesType

UnlistedSpeciesType

Definition:	A species type that appears in the aggregation unit and must be recorded for some reason, but that is not one of the species types listed in the SpeciesType codelist (from associated Birds and HabitatDirectives). Such unlisted types should not be included simply because they occur, but only if their recording is needed for some reason (for example, if they are protected).
Status:	Proposed
Stereotypes:	«dataType»

Attribute: speciesGroup

Value type:	SpeciesGroupValue
Definition:	The broad group within which the species falls.
Multiplicity:	1

Attribute: speciesType

UnlistedSpeciesType

Value type:	CharacterString
Definition:	The type of species, if not included in the predefined types in SpeciesType.
Multiplicity:	1

Attribute: reasonForListing

Value type:	SpeciesListingReasonValue
Definition:	The motivation for including the species type in the assessment. This may relate to some particular convention or the endemic nature of the population.
Multiplicity:	0..1
Stereotypes:	«voidable»

D.3 Enumerations and code lists

D.3.1 IsolationValue

IsolationValue

Definition:	A set of codes to represent the degree of isolation present in the aggregation unit in relation to the natural range of the species.
Status:	Proposed
Stereotypes:	«enumeration»

Value: populationIsolated
Definition:

Value: populationNotIsolatedButMarginal
Definition:

Value: populationNotIsolatedAndInExtendedRange
Definition:

D.3.2 SpeciesCommonalityValue

SpeciesCommonalityValue

Definition:	A code indicating the commonality of the species in the aggregation unit.
Status:	Proposed
Stereotypes:	«enumeration»

Value: common
Definition:

Value: rare
Definition:

Value: veryRare
Definition:

Value: present
Definition:

D.3.3 SpeciesGroupValue

SpeciesGroupValue

Definition:	A code indicating the broad group within which the species falls.
Status:	Proposed
Stereotypes:	«enumeration»

Value: birds
Definition:

Value: mammals
Definition:

Value: amphibians	
Definition:	

Value: reptiles	
Definition:	

Value: fish	
Definition:	

Value: invertebrates	
Definition:	

Value: plants	
Definition:	

D.3.4 SpeciesListingReasonValue

SpeciesListingReasonValue	
Definition:	A code indicating the motivation for including an unlisted species type in the assessment of the species distribution.
Status:	Proposed
Stereotypes:	«enumeration»

Value: nationalRedDataList	
Definition:	

Value: endemics	
Definition:	

Value: internationalConventions	
Definition:	

Value: otherReasons	
Definition:	

D.3.5 SpeciesTypeValue

SpeciesTypeValue	
Definition:	The species type using species from Article 4.1 and 4.2 of the Birds Directive (Council Directive 79/409/EEC) and Annex II of Council Directive 92/43/EEC. A full listing of the species types can be found at http://converters.eionet.europa.eu/xmlfile/taxonomy.xml.
Status:	Proposed
Stereotypes:	«enumeration»

D.4 Imported types

D.4.1 ProtectedSite

ProtectedSite	
Package:	Protected Sites Simple [Section 5.2.2]
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.

D.4.2 Identifier

Identifier	
Package:	Base Types [DS-D2.5]
Definition:	Unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.
Description:	NOTE1 External object identifiers are distinct from thematic object identifiers.
	NOTE 2 The voidable version identifier attribute is not part of the unique identifier of a spatial object and may be used to distinguish two versions of the same spatial object.
	NOTE 3 The unique identifier will not change during the life-time of a spatial object.

D.4.3 HabitatSpeciesType

HabitatSpeciesType	
Package:	Habitats and Biotopes [Annex D]
Definition:	A species that exists in the habitat as expressed using a distribution within a particular aggregation unit.

Annex E
(informative)
Temporary UML Model and Feature Type Catalogue for Annex III Bio-geographical Regions Theme

This annex lists definitions for feature types, data types, enumerations and code lists that are included in Annex III of the INSPIRE Directive.   Annex III themes have not yet been fully defined, but the definitions contained herein are needed for the *Protected sites* theme to fully realise its objectives. It is anticipated that the contents of this Annex III theme will change when it is fully defined, but that it will continue to support the *Protected sites* theme in meeting its objectives.
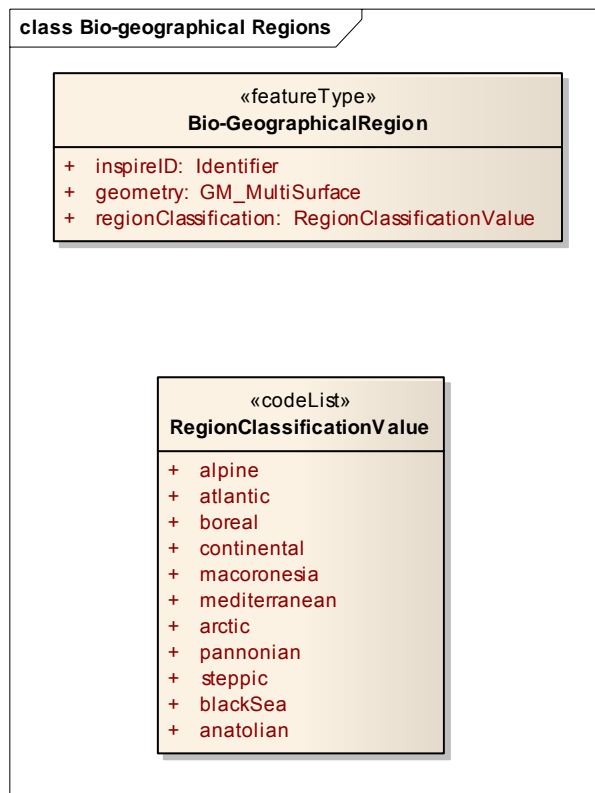

Figure F.1 – UML model: Bio-geographical Regions Theme

Table F.1 – Types defined in the feature catalogue

Type	Package	Stereotypes	Section
Bio-GeographicalRegion	Bio-geographical Regions	«featureType»	E.1.1
RegionClassificationValue	Bio-geographical Regions	«codeList»	E.2.1

E.1 Spatial object types

E.1.1 Bio-GeographicalRegion

Bio-GeographicalRegion

Bio-GeographicalRegion	
Definition:	An area of relatively homogeneous ecological conditions with common characteristics.
Status:	Proposed
Stereotypes:	«featureType»
Attribute: inspireID	
Value type:	Identifier
Definition:	A unique identifier for the region.
Multiplicity:	1
Attribute: geometry	
Value type:	GM_MultiSurface
Definition:	The geometry showing the spatial extents of the region.
Multiplicity:	1
Attribute: regionClassification	
Value type:	RegionClassificationValue
Definition:	The clasification of the region.
Multiplicity:	1

E.2 Enumerations and code lists

E.2.1 RegionClassificationValue

RegionClassificationValue	
Definition:	A set of codes to be used for the bio-geographic region classification.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:RegionClassificationValue
Value: alpine	
Definition:	
Value: atlantic	
Definition:	
Value: boreal	
Definition:	
Value: continental	
Definition:	
Value: macoronesia	
Definition:	
Value: mediterranean	
Definition:	
Value: arctic	
Definition:	
Value: pannonian	
Definition:	
Value: steppic	
Definition:	
Value: blackSea	
Definition:	
Value: anatolian	
Definition:	

E.3 Imported types

E.3.1 Identifier

Identifier	
Package:	Base Types [see DS-D2.5]
Definition:	Unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.
Description:	NOTE1 External object identifiers are distinct from thematic object identifiers.
	NOTE 2 The voidable version identifier attribute is not part of the unique identifier of a spatial object and may be used to distinguish two versions of the same spatial object.
	NOTE 3 The unique identifier will not change during the life-time of a spatial object.