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Plan4all

Assessment of Project Solutions

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1 Introduction

The Plan4all project is focused on the harmonization of spatial planning data based on the existing best practices in EU regions and municipalities and the results of current research projects. Results from the project consist of both detailed description and summary of the current situation and standards, a proposal, a testing and an implementation of spatial planning metadata profile, a set of common data models and some harmonization procedures. The important part of the Plan4all project is networking standards of spatial planning data, based on previously collected and analyzed experiences, and then defining common procedures and methodologies for spatial data sharing and utilization of new pan-European standards for spatial planning data within the EU.

The expected results from Plan4all are also European forums for SDI (Spatial Data Infrastructure) in spatial planning, a database and analysis in terms of organization, sharing, and harmonization and SDI recommendations for spatial planning.

The Plan4all project aims to implement the INSPIRE Directive into spatial planning processes, mainly based on building spatial planning data models and metadata profiles.

1.1 Scope

The aim of the Work Package 8 “Validation” is to continuously verify and evaluate results of Plan4All work. In particular, based on a validation methodology proposed within Task 8.1, the objective of this WP is to validate standards and recommendations coming from Plan4all WPs 3, 4 and 5 and to guarantee their consistency with INSPIRE implementing rules.

The present deliverable D8.2 “Validation of Project Solutions” deals with a subset of project work. In particular, the goal of the Task 8.2 was to validate Plan4all products, which consist of metadata profiles, data models and network services concerning spatial planning data according to the INSPIRE Directive. The assessment of Plan4all products has been continuous and has given feedback to WP3, WP4, WP5 and WP7. In order to accomplish this task, a V&V (Verification and Validation) phase has been planned, which has been customized on the basis of the different nature of each expected product. As for the verification process, project solutions have been checked with respect to relevant INSPIRE documents and users' requirements.

A different approach has been followed within the validation process. It has involved different Plan4all stakeholders and domain experts, who contributed to determine the efficiency and efficacy of project solutions. In particular, they experimented with requirements and proved how solutions supported their work.

1.2 History of the document

This deliverable results from a set of documents produced while carrying out task activities. The underlying protocol was illustrated and discussed among the involved partners at the Project Meeting, held in Vienna, 18-20 May 2010. Then, it was integrated within the WP8 where the whole validation methodology was described.

As for the delivered documents, beside the detailed description of the methodology adopted to the project goal, they contain both the intermediate evaluations performed on the initial

versions of Metadata Profile and Data Models, and feedback sent to specific partners in order to refine their proposals.

The analysis of the final versions originated conclusions and final remarks useful to improve current project solutions. Indeed, a shared opinion about the project solutions is to informally extend the corresponding validation activities, because the implicit nature of the expected results and the process meant to reach them require a project-long validation phase. The main key partners acting as Metadata Profile and Data Model designers are in fact reconsidering some parts of their proposals in order to achieve a suitable final version to share with all partners and to present through an internal concluding seminar.

2 Definitions and scope of Spatial Plan Metadata and Themes

The following section provides a brief description of Spatial Plan Metadata and the seven INSPIRE data themes relevant to Plan4all. In particular, details useful to understand requirements adopted during the design phase and checked within the Validation process are recalled.

2.1 Spatial Plan Metadata Profile

The Plan4All metadata profile is meant to provide users with a framework to support the harmonized data specifications for the INSPIRE spatial data themes. In particular, the metadata profile is intended for both discovery and documentation of spatial plans (evaluation, use), its components (datasets) and corresponding services, according to national legislation (digital or not digital), datasets which are part of digital spatial plans, and spatial services providing access to digital spatial plans. Possible single textual documents inside a spatial plan may be linked from metadata records.

As for the development of the profile, two different levels have been taken into account. According to the INSPIRE requirements, the definition of metadata elements on dataset level is required for each spatial data theme (Land Cover, Land Use, Utility and Government services, Production and industrial facilities, Agricultural and aquaculture facilities, Area management/restriction/regulation zones and reporting units, Natural risk zones), in addition to the mandatory metadata elements set of the INSPIRE Metadata Regulation. Moreover, as a main objective of the project, the definition of an overall spatial planning metadata profile applicable for spatial plan as a whole was expected.

As for the first level, in D3.1 “Analysis of National Requirements on Spatial Planning Metadata“ conclusions about the common set of metadata requirements and recommendations used for Task 3.2 and WP4 are given. Moreover, the INSPIRE “Metadata Regulation” is mandatory for all spatial data themes of the INSPIRE Directive Annexes. Indeed, the INSPIRE document “Technical Guidelines based on EN ISO 19115 and EN ISO 19119” provides technical guidelines for the implementation of the INSPIRE Metadata Regulation on the base of ISO 19115 and ISO 19119. The document compares the core requirements of ISO 19115 against those of INSPIRE, the conclusion is that the conformance to ISO 19115 does not guarantee the conformance to INSPIRE. On the other hand, the conformance to INSPIRE Metadata Implementing Rules does not guarantee the conformance to ISO 19115.

As for the second level, D4.1 provided an deep analysis of conceptual models used in single countries. The result of this analysis allowed designers to sketch an initial common agreement across Europe.

The proposed metadata profile has been designed by accomplishing the following steps:

- an initial metadata elements table from national legislation and user requirements has been derived;
- element names and meaning have been consolidated;
- mapping to ISO 19139 and INSPIRE elements have been realized;
- extra elements over ISO profile have been solved.

2.2 Themes investigated by Plan4All

In the following, some basic requirements are recalled useful to obtain a high level description of the themes investigated by Plan4All. In particular, the INSPIRE definition, relevant feature types / attributes, and overlaps are repeated. More details can be found in "D2.3 Definition of Annex Themes and Scope v3.0", which provides an exhaustive description of these themes.

Land Cover

Definition: Physical and biological cover of earth's surface including artificial surfaces, agricultural areas, forests, (semi-)natural areas, wetlands, water bodies;

Important feature types: (examples based on CORINE for illustrative purpose only):

- Artificial surfaces (Urban fabric – Industrial, commercial and transport units – Mine, dump and constructions sites – Artificial, non-agricultural vegetated areas);
- Agricultural areas (Arable land – Permanent crops – Pastures)
- Wetlands (Inland wetlands – Maritime wetlands)
- ...

Important attributes: Area, perimeter, land cover type

Links and overlaps with other themes: Orthoimagery, Land use. Strong links with themes that can be considered elements of land cover such as Transport Networks, Hydrography, Buildings, Production and industrial facilities, Agricultural and aquaculture facilities, Oceanographic geographical features.

Land Use

Definition: Territory characterised according to its current and future planned functional dimension or socio-economic purpose (e.g. residential, industrial, commercial, agricultural, forestry, recreational, etc.);

Important feature types:

- Boundary of plan/regulation;
- Land use category area;
- Land use regulation area;
- Land use restriction area;
- Elements within a plan (road boundaries, building boundaries, ...)

Important attributes: land use category, land use regulation category, land use restriction category, present/existing or proposed/future, legal reference, date of entry into force, link to text regulations for each area;

Links and overlaps with other themes: Cadastral Parcels, Hydrography, Transport Networks, Protected Sites, Land Cover, Buildings, Human Health and safety, Utility and governmental services, Production and industrial facilities, Agricultural and aquaculture facilities, Population distribution, Area management/restriction/regulation zones and reporting units, Natural risk zones, Habitats and biotopes, Energy resources, Mineral resources.

Utility and Government Services

Definition: includes utility facilities such as sewage, waste management, energy supply and water supply, administrative and social governmental services such as public administrations, civil protection sites, schools and hospitals;

Important feature types and attributes: a series of feature types and attributes for each type of information (utilities, waste, administration and governmental facilities) are provided in INSPIRE D2.3 (refer to that document);

Links and overlaps with other themes: Hydrography, Buildings, Land use, Environmental monitoring facilities, Production and industrial facilities, Energy resources.

Production and industrial facilities

Definition: Industrial production sites, including installations covered by Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control and water abstraction facilities, mining, storage sites;

Important feature types and attributes: a series of feature types and attributes for different types of facilities are provided in INSPIRE D2.3 (please refer to that document);

Links and overlaps with other themes: the datasets addresses in this theme may overlap with other themes and borders between themes should be identified. Particular care towards: Land Use, Agricultural and aquaculture facilities (closely related), Utility and government services, Environmental monitoring facilities, Buildings, Addresses, Energy resources, Mineral resources.

Agricultural and aquaculture facilities

Definition: farming and production facilities, including irrigation systems, greenhouses, and stables;

Important feature types and attributes: these facilities may have an exact location of site (point area). Objects may be spatially expressed as points, but if the production area is substantial, area coverage may be relevant.

- Attributes for agricultural facilities and for aquaculture facilities: classification systems, kind of facility, role of facility in production system, kind of production, kind of emission (different substances), quantity of emission (different substances);

Links and overlaps with other themes: Buildings, Addresses, Hydrography (for irrigation systems), Land Cover, Land Use, Production and industrial facilities, Environmental monitoring facilities.

Area management/restriction/regulation zones and reporting units

Definition: areas managed, regulated or used for reporting at International, European, national, regional and local levels. It includes dumping sites, restricted areas around drinking water resources, nitrate-vulnerable zones, regulated fairways at sea or large inland waters, areas for dumping of waste, noise restriction zones, prospecting and mining permit areas, river basin districts, relevant reporting units and coastal zone management areas;

Important feature types and attributes:

- Attributes for management regions: sector, sub-sector, management activity type, responsible organisation, year of verification;

Links and overlaps with other themes: Administrative units, Transport networks, Hydrography, Geology, Statistical units, Land use, natural risk zones, Sea regions, Biogeographical units, Mineral resources, Energy resources.

Natural risk zones

Definition: vulnerable areas characterize according to natural hazards (all atmospheric, hydrological, seismic, volcanic and wildfire phenomena that, because of their location, severity, and frequency, have the potential to affect society), e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions;

Important feature types and attributes: see INSPIRE D2.3 for details;

Links and overlaps with other themes: the broad field of natural risks may link and overlap many other themes, mostly concerning physical environment, such as Land use, Elevation, Hydrography, Land Cover, Geology, Environmental protection facilities, Meteorological geographical features, Oceanographic geographical features.

3 Methodology and Actors for the Validation of Project Solutions

The product assessment stream has been performed within the task 8.2 through a cyclic process which have appraised Plan4all products, i.e, metadata profiles, data models and networking services architecture concerning spatial planning data.

The task activities for the overall assessment have been based on a Verification and Validation (V&V) phase, which has been customized on the basis of the different nature of each expected product. In particular, all product have been verified according to the INSPIRE requirements and existing best practices, and validated by involving different Plan4all stakeholders and domain experts.

As for the validation of project solutions, proper methods taken from the Software Engineering (SE) discipline have been useful to accomplish such a task. In particular, a V&V phase has been planned, meant to check that the final product conforms to its specification (verification) and meets the needs of customers involved (validation). In particular, as for the verification process:

- the resulting Metadata Profile has been checked with respect to the INSPIRE Metadata Regulation and user requirements document;
- the proposed Data Models, expressed at conceptual level, have been checked with respect to the INSPIRE Generic Conceptual Model, the requirements and recommendations applicable to the Plan4all themes, and the analysis document describing specific conceptual models used in single European countries;
- the network service architecture has been checked with respect to the INSPIRE directive for sharing spatial planning data and requirements described in D5.1.

A different approach has been adopted within the validation process which involves different Plan4all stakeholders and domain experts (Annex I). As a matter of fact, requirements validation techniques has revealed useful in this respect, because they are intended to help develop the solution and check the requirement satisfaction. In these techniques, an important role is played by users, who can experiment with requirements and prove how the solution supports their work. To this aim, a specific means has been adopted within the task 8.2 to capture users' contribution to the validation process, namely a questionnaire. In particular, as for the Metadata Profiles and the Data Models, they have been validated through a cyclic process involving different Plan4all stakeholders. Differently, as the assessment of network service architecture which strongly depends on its implementation, has been validated in terms of its completeness with respect to functional and no-functional requirements of a reference architecture.

3.1 Methodology

The overall assessment can be structured as follows:

Metadata Profile

Input Documents: Metadata Profile, Textual documents containing details and comments.

Tasks:

- An INSPIRE-compliance verification
In order to accomplish this step, a Reference section listed by Task 3.2 partners has been taken into account.

- A validation phase which consisted of a check accomplished by some involved partners (see table 1) along with stakeholders and domain experts. Each partner was required to contribute to the analysis of the produced profile by instantiating it with general data referring to a given spatial plan.

Expected Documents: Report on accomplished steps for the compilation of the metadata profile. Problems in terms of comprehension of metadata profile, matching between data and metadata could be highlighted here.

Data Models

Input Documents: UML diagrams, Feature Catalogues, Textual documents containing details and comments.

Tasks:

- A syntactic check whose aim is to analyze the quality of the data models in terms of
 - i. Correctness
 - ii. Completeness
 - iii. Minimality
 - iv. Readability

Expected Documents: Possible restructured data models

- An INSPIRE-compliance verification (AMFM);
In order to accomplish this step, a Reference section listed by Task 4.2 partners has been taken into account.
- A semantic check whose aim was to “read” the model to derive its content in terms of statements (AMFM).
- A validation phase which consisted of a content validation performed by external subjects in order to check the applicability of models. A set of guidelines has been provided to this aim.

Expected Documents: Report on accomplished steps for the management of the case study. It also includes the evaluated effectiveness in agreement with the provided guidelines. Problems in terms of comprehension of diagrams, matching between data could also be highlighted here.

Networking architecture

Input Documents: INSPIRE Technical Architecture - Overview, INSPIRE Network Services Architecture, Plan4All D5.1 Analysis of Demand on European Spatial Planning Data Sharing, Standard Reference Model of Open Distributed Processing (RM-ODP), OGC WebServices Common Specifications, OGC Reference Model- ORM, Plan4all deliverable D2.3 INSPIRE Requirements Analysis.

Tasks:

- the network service architecture has been validated in terms of its completeness with respect to functional and no-functional requirements of a reference architecture and checked with respect to the input documents

Expected Documents: Report on results

3.2 Validation Management Structure

The validation management structure defined in deliverable D.8.1 proposed two management levels (Validation Manager and Regional Validation Managers) and one operational level

(VLO). Based on subsequent observations, some changes have been applied meant to better distribute work and distinguish the role of each partner. The new structure is shown in Figure 1.

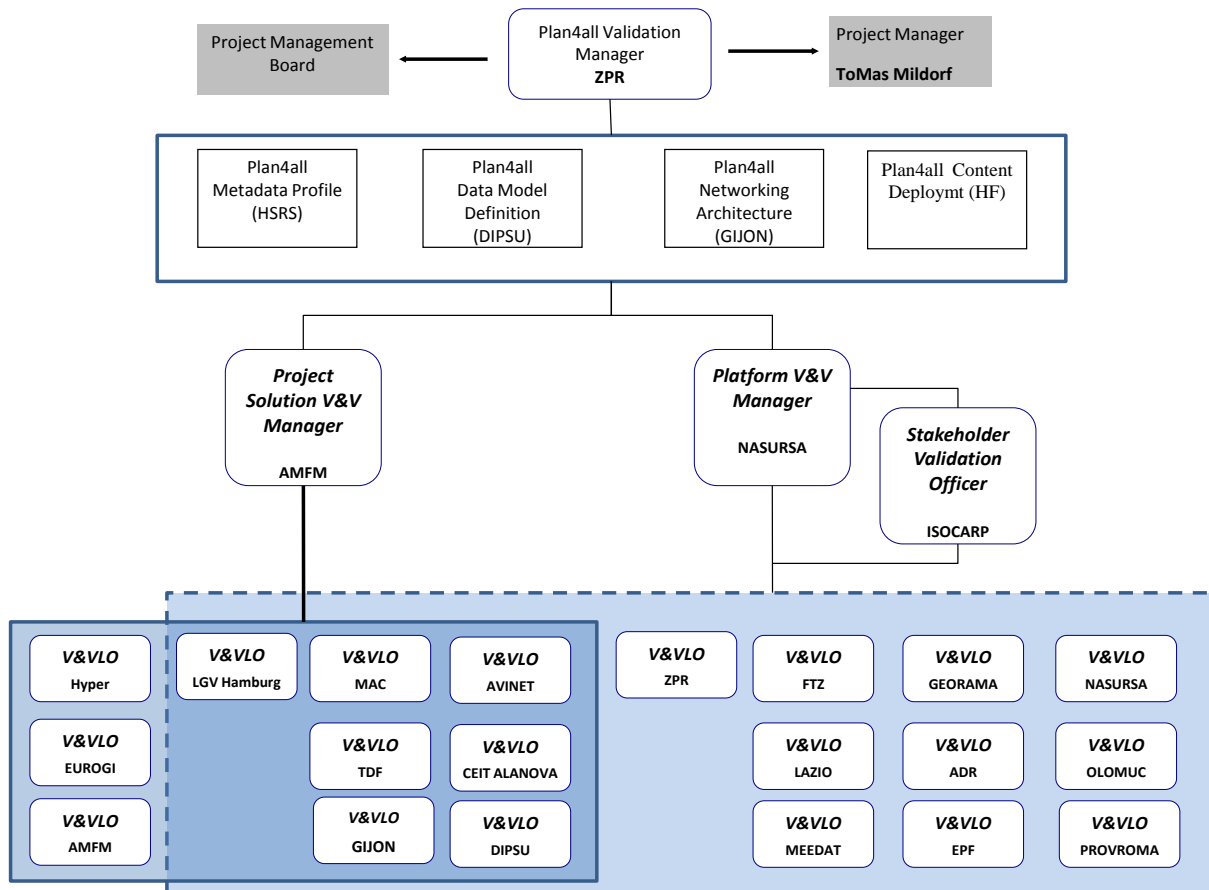


Figure 1 - The Plan4all Validation Management Structure

Provided the roles that the Project Manager and the Plan4All Management Board are in charge of, in the following paragraphs, the responsibilities of each actor of the assessment process are described.

- Validation Manager (VM): the Plan4all Validation Manager has overall responsibility for the successful execution and conclusion of Work Package 8 of the project, “Validation”. Within this context the Manager will:
 - receive written regional analyses and compile a project register of results across the regions;
 - provide a bimonthly summary report to the Project Manager and recommend corrective action for any identified shortcomings on data/metadata/services/applications at the regional level. The summary report will consist of an analysis of the V&V reports. It will follow the following format:
 - Start date of WP
 - Planned end date of WP
 - Objective of WP
 - Current status of WP
 - Summary of current status of tasks
 - Progress of WP against Work Plan
 - Expected end of WP

- Reason for any expected delay of WP (including delays of tasks or deliverables)
 - Which other WPs could be influenced by the delay (including interdependencies with task and deliverables).
 - The V&V summary reports as appendices.
 - visit the Plan4all Geoportal deployment site at least once, and will also visit any regional deployment whose indicators are not rating as expected for two consecutive bimonthly reports to review the test bed site itself and the validation methods used.
- Project Solutions Verification and Validation Manager (Project Solutions V&V Manager) is in charge of:
- monitoring the progress of validation and verification activities in each deployment;
 - receiving metadata and themes profile V&V reports from VLO's and SVO and cross-check results;
 - providing a report on Project Solutions V&V results to the Validation Manager. This report will also describe progress to the WP leader. The deliverable will contain the following information:
 - Start date of task (or deliverable)
 - Planned end date of task (deliverable)
 - Objective of task (deliverable)
 - Current status of task (deliverable)
 - Progress of task (deliverable) against WP
 - Expected end of task (deliverable)
 - Reason for any expected delay
 - Which other tasks (deliverables) might be influenced by this delay (if any)
 - The V&V reports as appendices.
 - preparing from regional contributions a final “D8.2. Validation of Project Solutions” report for delivery at the end of the project.
- Verification and Validation Liaison Officer (V&VLO): will be responsible for making the practical arrangements necessary to ensure that V&V activities can be carried out as intended. There will be one V&VLO for each partner involved in Task 8.2. His responsibilities will be:
- planning, resourcing and scheduling the V&V activities within the overall constraints and guidelines provided by the Plan4all Validation Strategy;
 - providing the Project Solutions V&V Manager with a list of potential users to be involved in validation activities;
 - providing the Project Solutions V&V Manager with a report on Verification activities;
 - responding to reasonable ad-hoc requests from the Project Solutions V&V Manager.

3.3 List of participants

Number	Short Name	Country	Role	PMs	People	V&VLO Responsible
23	AMFM	IT	V&V manager, V&VLO	3.9	Monica M. L. Sebillio, Vincenzo Del Fatto, Pasquale Di Donato, Franco Vico,	Franco Vico
18	DIPSU	IT	V&VLO	3	Flavio Camerata, Pietro Elisei	Flavio Camerata
4	TDF	LV	V&VLO	2	Kaspars Skalbergs, Peteris Bruns	
13	Hyper	IT	V&VLO	2	Guido Parchi, Norma Zanetti, Alfredo Iembo, Raffaele Guerriero, Alfredo Iembo	Alfredo Iembo
6	LGV Hamburg	DE	V&VLO	1	Katharina Lupp, Kai-Uwe Krause	Katharina Lupp
14	GIJON	ES	V&VLO	2	Pedro Lopez, Jeronimo de la Iglesia	Pedro Lopez,
15	MAC	IE	V&VLO	1	John O'Flaherty, Joe Cantwell	John O'Flaherty
16	CEIT ALANOVA	AT	V&VLO	1	Manfred Schrenk, Wolfgang Wasserburger, Julia Neuschmid, Daniela Patti	Daniela Patti
17	AVINET	NO	V&VLO	1		

3.4 Partners involved in validation of Metadata Profile and Themes

	MAC	GIJON	DIPSU	AMFM	ALANOVA	AVINET	HYPORBOREA	LGV	TDF
Profile-Theme/ partner –p.m.	1,5	2	3	3	1	1	2	1	2
Metadata Profile	X	X	X	X	X	X	X	X	X
Land cover Theme			X		X				
Land use Theme	X							X	
Agricultural and aquaculture facilities Theme		X		X					
Production and industrial facilities Theme						X	X		
Area management /restriction/regulation zones and reporting units Theme							X		X
Utility and Government services Theme		X	X						
Natural Risk Zones Theme									X

Table 1

4 Description of Validation Kits

In the following Section a brief description of Validation kit content is given. They are summarized in terms of material and format, whereas details about their specificity are given in Annex 2.

4.1 Metadata Profile

In the Validation Kit package for the Metadata Profile, the following material is contained (Annex 2):

1. A Plan4All - presentation.doc file containing a section concerning the Plan4All project and a section about the Work Package 8. The former describes the project in terms of objectives and work-plan, the latter contains a brief description Work Package 8 and a description of Task 8.2 in terms of objectives, methodology and role of stakeholders in the validation activities.
2. A Plan4All Metadata Profile - eng.doc file containing a brief description of the Task 8.2 along with details about the proposed Metadata Profile.
3. A questionnaire to be filled by project stakeholders involved in the validation step, where questions about three different parts of the metadata profile are posed.
4. A List of Potential Expert Users.doc file to be filled by project partners involved in the validation step.

4.2 Themes

In the Validation Kit package for the seven themes, the following material is contained (Annex III):

1. A Guidelines for the V&VLO.doc file, containing the list of documents necessary for the Verification and Validation Activities and their description.
2. A Plan4All - presentation.doc file containing a section concerning the Plan4All project and a section about the Work Package 8. The former describes the project in terms of objectives and work-plan, the latter contains a brief description Work Package 8 and a description of Task 8.2 in terms of objectives, methodology and role of stakeholders in the validation activities.
3. A [name of theme] - Plan4all validation.doc file, containing a brief introduction and a description of a given theme, instructions for the validation activities on it, in particular on class attributes, enumerations and code lists. Finally, four general questions about the completeness and the general comprehension of the proposed model.
4. A [name of theme] - Plan4all validation.xls file, containing the questionnaire to be filled by project stakeholders involved in the validation step, where questions about all class attributes are posed.
5. A UML.jpg or .doc file, containing the data model specified by using the Unified Modeling Language (UML).
6. A feature_catalogue.doc file, containing the feature catalogue which describe each attribute, class, enumeration, code list and relative types of the proposed model.

5. Verification of Project Solutions

This Section is meant to describe results obtained during the verification phase. In particular, each project solution is analyzed and both general and specific remarks are provided which may be used to face emerging issues and refine initial proposals.

5.1 Metadata Profile

When verifying the INSPIRE compliance of the current proposal for a Metadata Profile, two international standards have been taken into account, namely ISO and INSPIRE, and position documents have been referred, such as INSPIRE metadata Regulation, INSPIRE Metadata Implementing Rules and INSPIRE Generic Conceptual Model. On the basis of this documentation, significant conclusions have been assumed, which state that guidelines for INSPIRE metadata implementing rules ensure that metadata is not in conflict with ISO 19115, but that the full conformance to it entails additional metadata elements which are not required by INSPIRE. Moreover, a relevant support has been provided by D3.1, where some requirements for metadata elements over INSPIRE profile have detected through questionnaires. Such requirements come from national metadata standards, national spatial planning legislation, and user requirements for spatial planning metadata.

Metadata profile has been presented as a platform independent list of metadata elements in tabular form, along with the ISO19139 and INSPIRE mapping. The whole proposal consists of three sets of items, concerning spatial plan metadata, dataset metadata and spatial service metadata, respectively. Each table is structured as follows.

INS	ISO	ELEMENT	Mult	DESCRIPTION
1.1	360	Spatial plan title	1	Name by which the spatial plan is known.

Moreover, a detailed description of each element is provided, also in a tabular form as follows.

Plan4all	Multiplicity	[1]
	Description	Name by which the cited resource is known.
	Note	
Inspire	Reference	Part B 1.1
	Element name	Resource title
	Obligation condition	Mandatory
	Multiplicity	[1]
ISO 19115	Number	360
	Name	title

	Definition	Name by which the cited resource is known.
	XPath	identificationInfo[1]/*/citation/*/title
	Data type	CharacterString
	Domain	Free text
	Example	Spatial Plan of Olomouc municipality

By analyzing the correspondence between Plan4All items and ISO/INSPIRE relevant elements, it has been possible to check the compliance of the Metadata Profile with requirements specified in respective documents.

The analysis has recognized associations between items and detected additional elements specified for solving some special requirements. In the following, metadata elements are grouped according to their compliance with either ISO/INSPIRE or ISO over INSPIRE profile

ISO/INSPIRE compliant spatial plan metadata:

Spatial plan title, Spatial plan abstract, Resource type, Resource locator, Unique resource identifier, Spatial plan language, Topic category, Keyword, Geographic bounding box, Reference date, Temporal extent, Lineage, Spatial Resolution, Conditions for access and use, Limitations on public access, Responsible organization, Metadata point of contact, Metadata date, Metadata Language.

ISO compliant spatial plan metadata (over INSPIRE profile):

Spatial plan type, Geographic boundary polygon, Spatial extent description, Process step, File identifier, Metadata standard name, Metadata standard version, Presentation form, Application schema, Data quality scope, Reference system information, Maintenance and update frequency, Purpose, Status, Legal relevance.

ISO/INSPIRE compliant dataset metadata:

Resource title, Resource abstract, Resource type, Resource locator, Unique resource identifier, Resource language, Topic category, Keyword, Geographic bounding box, date, Temporal extent, Lineage, Spatial resolution, Conformity, Conditions for access and use, Limitations on public access, Responsible organization, Metadata point of contact, Metadata date, Metadata language

ISO compliant dataset metadata (over INSPIRE profile):

File identifier, Parent identifier, Metadata standard name, Metadata standard version, Spatial representation type, Geometry type, Image, Character set, Application schema, Data quality scope, Reference system info, Distribution format, Transfer options, Maintenance and update frequency, Source, Process step.

ISO/INSPIRE compliant spatial services metadata:

Resource title, Resource abstract, Resource type, Resource locator, Unique resource identifier, Keyword, Geographic bounding box, date, Temporal extent, Temporal reference, Conformity, Conditions for access and use, Limitations on public access, Responsible organization, Metadata point of contact, Metadata date, Metadata language, Coupled resource, Spatial data service type

ISO compliant spatial services metadata (over INSPIRE profile):

File identifier

As for special requirements, they have been individually solved. The need of additional queryables for spatial planning activities over the INSPIRE ones has been managed by introducing predefined sentences in text elements. As an example, spatial plan types are specified through the hierarchyLevelName code list. In order to distinguish spatial plan metadata, the form is spatialPlan.<type>, whose values represent spatial plan hierarchy level names.

As for specific elements over the INSPIRE metadata profile, a mapping between spatial planning common used terms and ISO 19115 code lists has been established. As an example, the set {Applicant, Procurer, Creator, Designer, Publisher, Contributor, Submitter, Evaluator} concerning the role that the organizations play during preparation, creation and adoption phase of a spatial plan has been mapped to ISO 19115 responsible party role codes. Analogously, the most basic milestones of a spatial plan life cycle are mapped by ISO elements, while detailed descriptions of particular steps are documented by processStep element according to national legislation

Based on the above considerations, it is possible to state that in case of both an explicit reference to the INSPIRE standard, and extensions of its basic profile, the proposed Metadata Profile results compliant with requirements described in D3.1, thus guaranteeing the achievement of a project goal. Differently, the whole proposal lacks the profile focused on the seven themes investigated by Plan4All. Indeed, given the strong dependency of this part on the seven conceptual data models, it was agreed to postpone this goal at the end of WP4, in order to exploit the proposed schemas and integrate them with the corresponding metadata profiles. Currently, these profiles are not available and their validation cannot be carried out.

5.2 Land Cover

INSPIRE-compliance verification

According to the document D2.3 "Definition of Annex Themes and Scope", Land Cover is related with Land Use, Production and Industrial Facilities and Agricultural and Aquaculture Facilities. In particular, the *Production and Industrial Facilities* and the *Agricultural and Aquaculture Facilities* themes can be considered elements characterizing a land cover.

In the proposed data model, this property hasn't been handled and the underlying overlaps cannot be detected.

Syntactic check

- Correctness
 - The *LandCoverStandardisedArea* and the *LandCoverOriginalArea* classes are associated through an aggregation, which is also named *isRelatedTo*. This causes

misunderstanding, because an aggregation association is meaningful by itself (part of).

- Completeness
 - The schema seems to be complete
- Minimality
 - a general concern:
 - spatial and topological relationships are based on a geometry attribute whose presence characterizes a spatial object / a feature type. Based on their characteristics, some topological relationships have to be explicitly expressed within a schema, others can be calculated. A common approach should be then agreed among data model designers: is it necessary to explicitly specify (and what?) spatial and/or topological relationships? If so, it implies that the Completeness requirement of the schema is satisfied to the detriment of the Readability requirement. Otherwise, in case only a subset of spatial relationships is described it is necessary to motivate such a choice in terms of requirements.
 - As for this schema, the recursive *neighbourgh* association derives from the geometry attribute. Is it necessary to explicitly express it? If so, it should be motivated.
- Readability
 - requirements are represented in a simple and easy-to-understand manner.

Semantic check

The proposed schema has been read in order to derive its content. The following statements have been extracted.

- A *LandCoverArea* **is adjacent to** one or more *LandCoverArea(s)*
- A *LandCoverStandardisedArea* **is a kind of** *LandCoverArea*
- A *LandCoverOriginalArea* **is a kind of** *LandCoverArea*
- A *LandCoverStandardisedArea* **is an aggregation of** *LandCoverOriginalArea(s)*

5.3 Land Use

INSPIRE-compliance verification

According to the INSPIRE document D2.3 "Definition of Annex Themes and Scope", two main land use definitions should be taken into account, namely a functional one and a sequential one. Basically, the former highlights the underlying socio-economic purpose of land use such as agricultural and forestry, the latter refers to operations on land that humans carry out in order to exploit resources and derive benefits. This approach emphasizes two diverse but strongly related aspects of the same topic. In fact, it is possible to determine functional areas within urban or rural areas by exploiting socio-economic data, and at the same time a proper usage of land resources through an appropriate series of operations may notably affect the socio-economic shape of a land. General spatial planning mechanisms meant to reach the above goals are land regulation and land use plans. They provide common guidelines and tools for spatial planning, but when applied they generate different situations depending on national or regional legislation into force. This implies

that single organizations may define their own proper strategies for executing a land use plan and establishing its results.

The INSPIRE document D2.3 "Definition of Annex Themes and Scope" also recommends to use the ISIC classification (International Standard Classification of All Economic Activities) drawn up by the United Nations in order to classify the land use phenomenon from a functional point of view.

The 17 first-level categories are:

- Agriculture, Hunting and Forestry
- Fishing
- Mining and Quarrying
- Manufacturing
- Electricity, Gas and Water Supply
- Construction
- Wholesale and Retail Trade, Repair of motor vehicles, motorcycles and Personal and household goods
- Hotels and Restaurants
- Transport, Storage and Communication
- Financial intermediation
- Real estate, Renting and Business activities
- Public Administration and Defence, Compulsory social security
- Education
- Health and Social work
- Other Community, Social and Personal Service Activities
- Private Households with Employed Persons
- Extra-territorial Organizations and Bodies

The proposed model integrates such an organization through the `generalLandUseType` attribute of the `FunctionIndications` class, which is associated with the `GeneralLandUseType` enumeration and the `SpecificLandUseType` code list.

As for feature types and attributes, they depend on kind of land use and land use plan. Basically, the representation of a plan can be structured as a layered dataset, where different areas, such as category and regulation are modelled, each associated with the corresponding attribute. This approach has been followed when modelling the corresponding classes, each representing a specific issue of a land use plan which can be managed as a layer within a logical schema.

Finally, some overlaps and links exist among the Land Use theme and some Plan4All investigated themes, namely Land Cover, Utility and Governmental Services, Productions and industrial Facilities, Agricultural and Aquaculture Facilities, Area Management/restriction/regulation Zones and Reporting Units, and Natural Risk Zones. Such overlaps are handled through the enumerations whose values are taken from the corresponding Plan4All data models, such as `NaturalRiskSafetyAreas` and the associated values `InundatedRiskZone`, `StormRiskZone`, `DroughtRiskZone`, `AvalanchesRiskZone`, `VolcanicActivityRiskZone`, `EarthMovesRiskZone`, `OtherHazardsRiskZone`. What about other overlaps?

A general remark arises from comments by partners involved within the validation phase. They emphasize that the classification adopted by INSPIRE is mainly focused on economic aspects. It is

difficult to fit it with the planners' point of view. Indeed, land use planning is devoted to take care of the public assets and to ensure and regulate the general public convenience in order to manage and protect those goods and activities - of all kinds - that combine to maintain the citizens' living environment. From an INSPIRE perspective, these functions are considered in terms of economic revenue, whereas other relevant aspects related to planning, such as the public responsibilities concerning the social and the environmental issues, are implicitly excluded.

Syntactic check

- Correctness
 - Among PlanObject, PlanFeature and Textual Regulation there exists a cycle. It may cause misunderstanding, then it should be avoided unless the underlying meaning implies a different interpretation. In this case, the association should be named in order to help the schema readability.
 - Many subtypes have been introduced, all of them are represented as partial specializations,
 - the associated Feature Catalogue does not mention them as partial / total subtypes,
 - the AdministrativeInformation is a subset. Does it imply that in some cases it may be not instanced? Is this compliant with the current directions?
- Completeness / Readability
 - Navigability is never shown (it is assumed that associations are bidirectional)
- Minimality
 - The schema seems to be minimal

Semantic check

The proposed schema has been read in order to derive its content. The following statements have been extracted, the absence of navigability has been interpreted as bidirectional associations.

- A *PlanObject* **replaces** zero or one *PlanObject*
- A *PlanObject* **is replaced by** zero or one *PlanObject*
- A *PlanObject* **is related to** zero or one *Graphical Information*
- A *Graphical Information* **refers to** one *PlanObject*
- A *PlanObject* **is related to** zero or more *Textual Information(s)*
- A *Textual Information* **refers to** one *PlanObject*
- A *PlanObject* **is related to** zero or more *Textual Regulation(s)*
- A *Textual Regulation* **refers to** one *PlanObject*
- A *PlanObject* **is related to** zero or more *Raster(s)*
- A *Raster* **refers to** one *PlanObject*
- A *PlanObject* **is related to** zero or more *PlanFeature(s)*
- A *PlanFeature* **refers to** one *PlanObject*
- A *PlanObject* **specializes** in *AdministrativeInformation*
- A *PlanObject* **is related to** zero or more *PlanFeature(s)*
- A *PlanFeature* **refers to** one *PlanObject*
- A *PlanFeature* **is related to** zero or more *Textual Regulation(s)*
- A *Textual Regulation* **refers to** one *PlanFeature*

- A *PlanFeature* **specializes** in *DevelopmentApplication*
- A *PlanFeature* **specializes** in *ConditionsAndConstraints*
- A *PlanFeature* **specializes** in *FunctionIndications*
- A *FunctionIndications* **specializes** in *ConstructionIndications*
- A *FunctionIndications* **specializes** in *DimensioningIndications*
- A *FunctionIndications* **specializes** in *IndirectExecution*

Classes/Attributes from INSPIRE / Plan4All themes:

- Addresses,
- Natural Risk Zones
- Protected Sites
- Area Management/Restriction/Regulation Zones and Reporting Units

5.4 Agricultural and Aquaculture Facilities

INSPIRE-compliance verification

According to the document D2.3 "Definition of Annex Themes and Scope", Agricultural and Aquaculture facilities can be specialized in farming equipment and production facilities (including irrigation systems, greenhouses and stables). How are greenhouses and stables handled through the proposed data model?

A dismissed product / substance may be transferred towards sites for disposal / recovery / waste management, which are in turn handled through other data models. How is this requirement satisfied? Should the link be explicitly expressed?

According to the document D2.3 "Definition of Annex Themes and Scope", objects featuring this domain may be spatially expressed as points, but where production area is substantial, area coverage may be relevant, e.g. greenhouse areas or mussels production sites at sea. Is it possible to handle objects as points through the proposed data model?

The Agricultural and Aquaculture Facilities theme and the Production and Industrial Facilities theme are strongly related. However, some basic differences appear within the proposed schemas. First, relationships used between similar concepts are semantically and syntactically different. Indeed, Facility Site and Industrial Area classes and Facility Site and Installation classes are related through an "inside" association, whereas the corresponding similar concepts are differently managed within this schema, namely FacilitySite and AgriculturalAquacultureHolding classes and FacilitySite and Installation classes are related through a composition. Another not properly handled similarity refers to the Product and Substance concepts, their relationships and specializations. Finally, the Substance class in the dictionary for the codification and description of Substance of Agricultural and Aquaculture Facilities theme is similarly defined in Production and Industrial Facilities theme, but missing of an Inspireid (*Substance_Inspireid*) which identifies the substance.

Syntactic check

- Correctness:
 - The association "is related to" between *Easement* and *WaterSources* classes and *Easement* and *IrrigationElement* classes should be better specified, "related to" is too general.

- references to *Addresses* and *AdministrativeUnit* from INSPIRE are missing within the associated package
- Minimality:
 - the *DismissedProduct* and *DismissedSubstance* classes are similarly described, in terms of attributes (*calculationType*, *totalAmount*) and enumerations (*CalculationType*);
 - the *OffsiteTransferredProduct* and *OffsiteTransferredSubstance* classes are similarly described, in terms of attributes (*transferType*, *transferMeans*) and enumerations (*TransferType*, *TransferMeans*);
 - the *WasteSubstance* and *WasteProduct* classes are similarly described, in terms of attributes (*recoveryQuantity*, *disposalQuantity*, *siteAddresses*).
 - The *input* associations between *Activity* and *Product* classes and between *Activity* and *Substance* are similarly described.
 - The *output* associations between *Activity* and *Product* classes and between *Activity* and *Substance* are similarly described.
 - The *dismissing* associations between *Activity* and *Product* classes and between *Activity* and *Substance* are similarly described.
- Completeness
 - The schema seems to be complete
- Readability
 - requirements are represented in a simple and easy-to-understand manner.

Semantic check

The proposed schema has been read in order to derive its content. The following statements have been extracted.

- An *AgriculturalAcquacultureHolding* **is composed of** one or more *FacilitySite(s)*
- An *AgriculturalAcquacultureHolding* **possesses** one or more *Certification(s)*
- An *AgriculturalHolding* **is a kind of** *AgriculturalAcquacultureHolding*
- An *AcquacultureHolding* **is a kind of** *AgriculturalAcquacultureHolding*
- A *FacilitySite* **is composed of** zero or more *IrrigationUnit(s)*
- A *FacilitySite* **is served by** one or more *WaterSource(s)*
- An *IrrigationUnit* **makes use of** one or more *IrrigationElement(s)*
- zero or more *Easement(s)* **are related to** an *IrrigationElement*
- zero or more *Easement(s)* **are related to** a *WaterSource*
- A *FacilitySite* **is composed of** one or more *Installation(s)*
- An *AgriculturalInstallation* **is a kind of** *Installation*
- An *AcquacultureInstallation* **is a kind of** *Installation*
- An *Installation* **carries out** one or more *Activity(ies)*
- one or more *Activity(ies)* **outputs** zero or more *Product(s)*
- zero or more *Product* **are input** for one or more *Activity*
- An *Activity* **dismisses** zero or more *DismissedProduct(s)*
- one or more *Activity(ies)* **outputs** zero or more *Substance(s)*
- zero or more *Substance(s)* **are input** for one or more *Activity*

- A *DismissedProduct* is a kind of *Product*
- An *OffsiteTransferredProduct* is a kind of *DismissedProduct*
- A *WasteProduct* is a kind of *OffsiteTransferredProduct*
- An *Activity* **dismisses** zero or more *DismissedSubstance(s)*
- A *DismissedSubstance* is a kind of *Substance*
- A *DismissedSubstance* is **specialized** in either an *OffsiteTransferredSubstance* or an *AccidentalRelease*
- A *WasteSubstance* is a kind of *OffsiteTransferredSubstance*

Classes/Attributes from INSPIRE / Plan4All themes:

- Area Management/Restriction/Regulation Zones and Reporting Units
- Addresses,
- AdministrativeUnit

Attributes associated with a dictionary:

- NACE_code_rev2, CPA_code - dictionary for the codification and description of Activity and Product
- ClassificationCode, ParticularTypeOfFarming - dictionary for the codification and description of the type of farming.
- CAS_Number, substance_name - dictionary for the codification and description of Substance.
- Other dictionaries are cited which are not related to specific attributes. They refer to regulations and directives.

5.5 Area Management / Restriction / Regulation Zones and Reporting Units

INSPIRE-compliance verification

According to the document D2.3 "Definition of Annex Themes and Scope", Area Management/Restriction/Regulation Zones and Reporting Units are areas managed, regulated or used for reporting at international, European, national, regional and local levels. This theme includes dumping sites, restricted areas around drinking water sources, nitrate-vulnerable zones, regulated fairways at sea or large inland waters, areas for the dumping of waste, noise restriction zones, prospecting and mining permit areas, river basin districts, relevant reporting units and coastal zone management areas.

The proposed model has been already modified on the basis of a previous review phase between AMFM (task 8.2 leader) and Ceit Alanova (model designers). The model incorporates suggestions proposed by AMFM.

A further refinement may be useful concerning the restricted area located around drinking water sources (*RestrictedAreaAroundDrinkingWaterSources* class). First, both *drinkingWaterSource* and *restrictionZone* should be defined as spatial objects, thus including a geometry attribute. Then, in agreement with national/state law, each restriction zone is associated with a drinking water source (and vice versa?), thus the current association is suitable. On the contrary, the association between *restrictionZone* and *RestrictedAreaAroundDrinkingWaterSources* may be designed as an aggregation, because a restricted area located around drinking water sources consists of a set of restriction zones.

Syntactic check

- Correctness:
 - The *Id_object*: String of the *AreaManagemenAbstractClass* Class should be replaced with *InspireId*: Identifier.
 - The proposed model does not diversify Enumeration and CodeList. An enumeration is frozen: it is not possible to add new elements to an enumeration. Code list on the other hand are extensible. Could the empty enumerations be expressed as codelists?
 - Associations between a `<<featuretype>>` class and a `<<type>>` class should be uni-directional. An arrow on the side of the `<<type>>` class should be added.
 - The correct name of the INSPIRE Application Schema imported by this model is *GeographicalName*
- Completeness:
 - Association names are missing. They should be added avoiding general terms as “is related to”.
 - Overlaps with Land Cover, Protected Sites and Biogeographical Units should be better expressed.
- Minimality:
 - the *DumpingSite* class specializes in three subclasses, namely *DumpingSiteForNonHazardousWaste*, *DumpingSiteForHazardousWaste* and *DumpingSiteForInertWaste*. Beside attributes belonging to the *DumpingSite* class, such subclasses contain two attributes which semantically seems to share the same meaning independently of the waste type, namely *disposalQuantity* and *recoveryQuantity*. In case a further refinement could not be applied in terms of generalization, the underlying reason should be motivated.
- Readability:
 - Navigability is never shown (it is assumed that associations are bidirectional)

Semantic check

The proposed schema has been read in order to derive its content. The following statements have been extracted, the absence of navigability has been interpreted as bidirectional associations.

- An *AreaManagemenAbstractClass* **is related to** zero or one *ResponsibleOrganization*
- zero or one *ResponsibleOrganization* **is related to** a an *AreaManagemenAbstractClass*
- A *ResponsibleOrganization* **is related to** one or more *Address(es)*
- one or more *Addressess* **is related to** a *ResponsibleOrganization*
- An *AreaManagemenAbstractClass* **is related to** zero or one *LegalReference*
- zero or one *LegalReference* **is related to** an *AreaManagemenAbstractClass*
- A *DumpingSite* **is a kind of** *AreaManagemenAbstractClass*
- A *DumpingSiteForNonHazardousWaste* **is a kind of** *DumpingSite*
- A *DumpingSiteForHazardousWaste* **is a kind of** *DumpingSite*
- A *DumpingSiteForInertWaste* **is a kind of** *DumpingSite*
- A *RestrictedAreaAroundDrinkingWaterSources* **is a kind of** *AreaManagemenAbstractClass*
- A *RestrictedAreaAroundDrinkingWaterSources* **is related to** one or more *RestrictionZone(s)*

- A *RestrictionZone* **is related to** a *DrinkingWaterSource*
- A *NoiseRestrictionZone* **is a kind of** *AreaManagemenAbstractClass*
- A *NoiseRestrictionZone* **is related to** one or more *RestrictionTime(s)*
- A *RegulatedFairwaysAtSeaOrLargeInlandWaters* **is a kind of** *AreaManagemenAbstractClass*
- A *RegulatedFairwaysAtSeaOrLargeInlandWaters* **is related to** one or more *RestrictionTime(s)*
- A *NitrateVulnerableZone* **is a kind of** *AreaManagemenAbstractClass*
- An *AreasForTheDumpingOfWasteAtSea* **is a kind of** *AreaManagemenAbstractClass*
- An *AreasForTheDumpingOfWasteAtSea* **is related to** a *RegionSea*
- An *AreasWithRightToUsePropertyWithoutPossessment* **is a kind of** *AreaManagemenAbstractClass*
- A *CoastalZoneManagementAreas* **is a kind of** *AreaManagemenAbstractClass*
- A *CoastalZoneManagementAreas* **is related to** a *RegionSea*
- A *CoastalZoneManagementAreas* **is related to** one or more *HarbourDistrict*
- A *CoastalZoneManagementAreas* **is related to** one or more *FisheryZone(s)*
- A *CoastalZoneManagementAreas* **is related to** a *BoudaryBetweenNationSea*
- A *RiverBasinDistricts* **is a kind of** *AreaManagemenAbstractClass*
- A *RiverBasinDistricts* **is a kind of** *Hydrography*
- A *RiverBasinDistricts* **is related to** one or more *WaterBodies*
- A *ProspectingAndMiningPermitAreas* **is a kind of** *AreaManagemenAbstractClass*
- *OtherManagementRegulationRestrictionAreas* **is a kind of** *AreaManagemenAbstractClass*

Classes/Attributes from INSPIRE / Plan4All themes:

- Hydrography
- SeaRegions
- Land Use
- Transport Network
- GeographicalName
- Addresses

5.6 Production and Industrial Facilities

INSPIRE-compliance verification

According to the document D2.3 "Definition of Annex Themes and Scope", production/industry facilities can be specialized in Industrial sites, Nuclear installation location, Energy resource extraction and production site, and Mines.

In the proposed schema, how is it possible to distinguish among them? It results necessary because some of them have to satisfy legal obligations and/or basic requirements to be reported. Moreover, the given definition also refers to water abstraction, mining and storage sites. The latter may be storage sites for different kinds of "products" needed as input in industrial/production processes, or may be seen as storage sites for real products and also form "waste" from the production process. Analogously, a dismissed product / substance may be transferred towards sites for disposal /

recovery / waste management, which are in turn handle through other data models. How is this requirement satisfied? A Plan4All theme is focused on this topic, namely Waste treatment facilities and waste storage. Should the link be explicitly expressed when transferring the waste product/substance?

The Production and Industrial Facilities theme and the Agricultural and Aquaculture Facilities theme are strongly related. However, some basic differences appear within the proposed schemas. First, relationships used between similar concepts are semantically and syntactically different. Indeed, FacilitySite and AgriculturalAquacultureHolding classes and FacilitySite and Installation classes are related through a composition, whereas the corresponding similar concepts are differently managed within this schema, namely Facility Site and Industrial Area classes and Facility Site and Installation classes are related through an "inside" association. Another not properly handled similarity refers to the Product and Substance concepts, their relationships and specializations.

Syntactic check

- Correctness
 - Addressed (it should be codified as Addresses from INSPIRE)
 - The *Offsite Transferred Product* class is defined as a subclass of the *Dismissed Product* class. However, its attributes don't represent properties of a product. On the contrary, they can be specified as attributes of an association between the *Dismissed Product* class and a (missing) corresponding dumping site where it should be handled.
 - The *Offsite Transferred Substance* class is defined as a subclass of the *Dismissed Substance* class. However, its attributes don't represent properties of a substance. On the contrary, they can be specified as attributes of an association between the *Dismissed Substance* class and a (missing) corresponding dumping site where it should be handled.
- Completeness
 - Navigability is never shown (it is assumed that associations are bidirectional)
- Minimality
 - the *Dismissed Product* and *Dismissed Substance* classes are similarly described, in terms of attributes (calculationType, totalAmount) and enumerations (CalculationType);
 - the *Offsite Transferred Product* and *Offsite Transferred Substance* classes are similarly described, in terms of attributes (transferType, transferMeans) and enumerations (TransferType, TransferMeans);
 - the *Waste Substance* and *Waste Product* classes are similarly described, in terms of attributes (recoveryQuantity, disposalQuantity, siteAddresses).
 - the association Dismissing between *Activity* and *Dismissed Product* classes and the association Used/Dismissing between *Activity* and *Used/Dismissed Substance* are similarly described.
- Readability
 - In order to improve schema readability, it might be useful to adopt the color conventions as illustrated in the INSPIRE Document "Methodology for the

development of data specification". In that case a legend describes color usage associated with parts of the UML diagram, namely blue as part of GCM, green for part of ISO, pink as part of the specific model, and yellow for other external related classes.

Semantic check

The proposed schema has been read in order to derive its content. The following statements have been extracted, the absence of navigability has been interpreted as bidirectional associations.

- An *Industrial Area* **contains** one or more *Facility Site(s)*
- A *Facility Site* **contains** one or more *Installation(s)*
- An *Activity* **is carried out** in one or more *Installation(s)*
- An *Installation* **carries out** one or more *Activity(/ies)*
- An *Activity* **outputs** one or more *Product(s)*
- A *Product* **is outputted** by only one *Activity*
- A *Product* **is an input** for one or more *Activity(/ies)*
- An *Activity* **receives** one or more *Product(s)*
- A *Dismissed Product* **is a kind of** *Product*
- A *Dismissed Product* **is dismissed** by one or more *Activity(/ies)*
- An *Activity* **dismisses** zero or more *Dismissed Product(s)*
- An *Offsite Transferred Product* **is a kind of** *Dismissed Product*
- A *Waste Product* **is a kind of** *Offsite Transferred Product*
- An *Activity* **uses/dismisses** zero or more *Used/Dismissed Substance(S)*
- A *Used/Dismissed Substance* **is used/dismissed** by one or more *Activity(/ies)*
- A *Dismissed Substance* **is a kind of** *Used/Dismissed Substance*
- A *Dismissed Substance* **is specialized** in either an *Offsite Transferred Substance* or a *Release*
- A *Waste Substance* **is a kind of** *Offsite Transferred Substance*

Classes/Attributes from INSPIRE / Plan4All themes:

- Addresses,
- AdministrativeUnit

Attributes associated with a dictionary:

- Substance_inspiredId, CAS_Number, substance_name - dictionary for the codification on Substances and thresholds
- NACE_code_rev2, CPA_code - dictionary for the codification and description of Activity and Product

5.7 Utility and Government Services

INSPIRE-compliance verification

According to the document D2.3 "Definition of Annex Themes and Scope", the Utility and Governmental Services theme is a very broad theme and refers to a wide set of utility services/networks, such as environmental protection facilities, waste management facilities and waste storage, controlled waste treatment sites for non-hazardous waste at land, energy supply and

water supply associated with the corresponding transmission lines and transmission systems, public administrations, civil protection sites, schools and hospitals.

The proposed schema models a subset of these utilities and services, namely the official or regulated facility for the waste treatment and / or storage at land. The completion of the theme is needed in terms of transmission systems and environmental protection facilities.

In the following the INSPIRE compliance of the controlled waste treatment facilities is verified.

5.7.1 Controlled Waste Treatment Facilities

INSPIRE-compliance verification

According to the document D2.3 "Definition of Annex Themes and Scope", the Waste treatment facilities and waste storage subtheme includes controlled waste treatment sites for non-hazardous waste at land, such as landfills and incinerators, regulated areas for dumping of waste at sea, illegal or non-controlled dumping of waste - sea and land, mining waste, sewage sludge, controlled waste treatment facilities for hazardous waste at land, such as thermal treatment, nuclear waste treatment and storage, and other treatment for hazardous waste (e.g. chemical).

The proposed schema lacks some aspects relevant for the management of the controlled waste treatment facilities. As an example, nuclear waste treatment and storage should be handled also by taking into account potential risks, the management of mining waste requires spatial data such as location of mines and tailings in order to control possible contamination of soil and waste. Some of these issues might be solved also by taking into account overlaps with other themes.

Syntactic check

- Correctness
 - The MRFType enumeration and the WastewaterType enumeration are not populated.
 - Address (it should be codified as Addresses from INSPIRE)
- Completeness
 - Navigability is never shown (it is assumed that associations are bidirectional)
- Minimality
 - the *RecoveryOperation*, the *Waste* and the *DisposalOperation* classes are similarly described. They contain the same set of attributes and are associated with the *WasteTreatmentAuthorized* class.
- Readability
 - enumerations should be populated also within the UML class diagram for a better schema readability.
 - In order to improve schema readability, it might be useful to adopt the color conventions as illustrated in the INSPIRE Document "Methodology for the development of data specification". In that case a legend describes color usage associated with parts of the UML diagram, namely blue as part of GCM, green for part of ISO, pink as part of the specific model, and yellow for other external related classes.

Semantic check

The proposed schema has been read in order to derive its content. The following statements have been extracted, the absence of navigability has been interpreted as bidirectional associations.

- A *ControlledWasteTreatmentFacility* **is related to** *zero or more WasteTreatmentAuthorized(s)*
- A *WasteTreatmentAuthorized* **refers** to one *ControlledWasteTreatmentFacility*
- A *WasteTreatmentAuthorized* **is related to** one or more *Waste(s)*
- A *Waste* **refers** to zero or more *WasteTreatmentAuthorized(s)*
- A *WasteTreatmentAuthorized* **is related to** one or more *RecoveryOperation(s)*
- A *RecoveryOperation* **refers** to zero or more *WasteTreatmentAuthorized(s)*
- A *WasteTreatmentAuthorized* **is related to** one or more *DisposalOperation(s)*
- A *DisposalOperation* **refers** to zero or more *WasteTreatmentAuthorized(s)*
- *WastesAuthorized* is an association class tied to the association between *WasteTreatmentAuthorized* and *Waste*
- *RecoveryOperationAuthorized* is an association class tied to the association between *WasteTreatmentAuthorized* and *RecoveryOperation*
- *DisposalOperationAuthorized* is an association class tied to the association between *WasteTreatmentAuthorized* and *DisposalOperation*
- A *WastewaterTreatmentFacility* **is a kind of** *ControlledWasteTreatmentFacility*
- A *RefuseMaterialsStorageAndRecoveryFacility* **is a kind of** *ControlledWasteTreatmentFacility*
- An *Incinerator* **is a kind of** *ControlledWasteTreatmentFacility*
- A *Landfill* **is a kind of** *ControlledWasteTreatmentFacility*

5.8 Natural Risk Zones

INSPIRE-compliance verification

According to the document D2.3 "Definition of Annex Themes and Scope", Natural Risk Zones are defined as vulnerable areas characterised according to natural hazards (all atmospheric, hydrologic, seismic, volcanic and wildfire phenomena that, because of their location, severity, and frequency, have the potential to seriously affect society), e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions. In particular, they are zones where natural hazards areas intersect with highly populated areas and/or areas of particular environmental/ cultural/ economic value.

As for overlaps with other themes, the proposed model expresses the various types of natural risk zones as specializations of the general *RiskZone* class. This class contains two attributes that informally represent relationships with Land Cover and Production and Industrial Facilities themes (without expressing the cardinality). On the contrary, the INSPIRE document D2.3 "Definition of Annex Themes and Scope" emphasizes that the Natural Risk Zones theme overlaps the Land Use theme and does not mention the Production and Industrial Facilities Theme. It is important to notice that, although the description of various types of risk zones seems to be exhaustive, relationships with other themes should be deepened in a clearer and complete manner.

The INSPIRE document D2.3 "Definition of Annex Themes and Scope" lists various examples of important natural hazards. How Coastal Erosion and Radon Areas are handled in the proposed model?

Syntactic check

- Correctness:
 - The proposed model does not diversify concepts of enumeration and code list. An enumeration is frozen: it is not possible to add new elements to its set of values. Code list on the other hand are extensible. Could the empty enumerations be expressed as codelists? Or there exists a possible set of values?
 - The *RiskZone* class contains the *Inspireid* attribute defined as an Int. It should be an Identifier
- Completeness:
 - The composition association between *InundatedRiskZone* class and *Embankment* is not clear and the cardinality is missing. The *Embankment* class does not have attributes.
 - The type of some attributes should be clarified for understanding the origin (Does addresses come from INSPIRE? And GeographicalName?)
 - Minimality
 - requirements are represented a minimal manner, no redundancies exist.
 - Readability
 - requirements are represented in a simple and easy-to-understand manner.

Semantic check

The proposed schema has been read in order to derive its content. The following statements have been extracted.

- An *InundatedRiskZone* is a **kind of** *RiskZone*
- An *InundatedRiskZone* is **composed of** *Embankment* (?)
- A *StormRiskZone* is a **kind of** *RiskZone*
- A *DroughtRiskZone* is a **kind of** *RiskZone*
- An *AvalanchesRiskZone* is a **kind of** *RiskZone*
- A *VolcanicActivityRiskZone* is a **kind of** *RiskZone*
- An *EarthmovesRiskZone* is a **kind of** *RiskZone*
- An *OtherHazardsRiskZone* is a **kind of** *RiskZone*
- The *RiskZone* class contains the *Address* attribute. It seems to be redundant and/or inapplicable

Classes/Attributes from INSPIRE / Plan4All themes:

- Addresses,
- GeographicalName

5.9 Networking Architecture

When verifying the INSPIRE compliance of the current proposal for the Plan4all Networking Architecture, several international standards and position documents have been referred, namely the INSPIRE Technical Architecture Overview, the INSPIRE Network Services Architecture, the international standard Reference Model of Open Distributed Processing (RM-ODP), the OGC specifications, such as OGC WebServices Common Specifications, the OGC Reference Model-ORM, the recommendations of the Plan4all deliverable D2.3, INSPIRE Requirements Analysis, the work of WP5, the Plan4all deliverable D5.1, concerning the Analysis of Demand on European

Spatial Planning Data Sharing, and the Plan4all deliverable D5.2, dealing with Plan4all Networking Architecture.

The network architecture have been validated in terms of its completeness with respect to functional and no-functional requirements of a reference architecture and checked with respect to the mentioned documents. In particular, by analyzing the correspondence between Plan4All Networking Architecture items and ISO/INSPIRE relevant elements, it has been possible to check the compliance of the Networking Architecture with requirements specified in respective documents.

The diagram in Figure 2 is proposed in the Plan4all deliverable D5.2 "The Plan4all Networking Architecture". It gives an overview of how the Plan4all reference model matches with some reference standards and specifications.

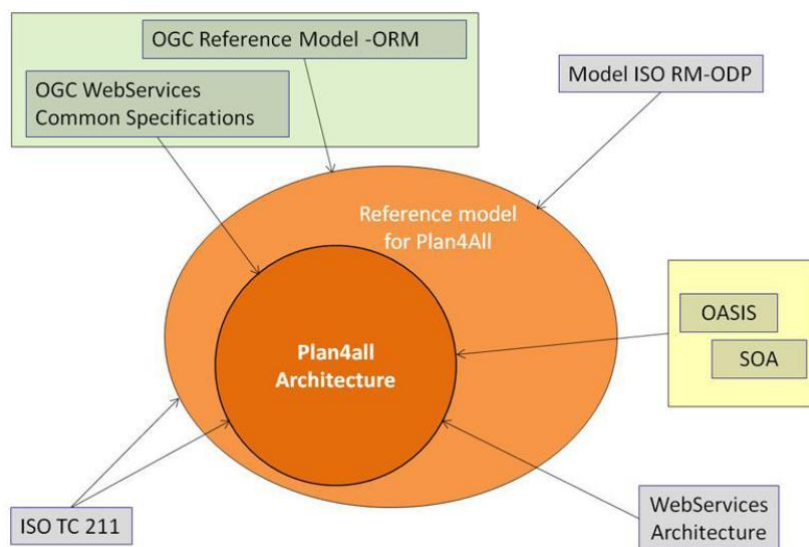


Figure 2. The Plan4all Architecture compared with reference standard and specifications.

As for the INSPIRE compliance of the project solution, in the following two images are shown, namely the INSPIRE reference Architecture (see Figure 3) and the Plan4All Networking Architecture (see Figure 4). The former is based on the description provided in the INSPIRE document “D3.5 INSPIRE Network Services Architecture”. The latter is based on the design proposed in Plan4All D5.2.

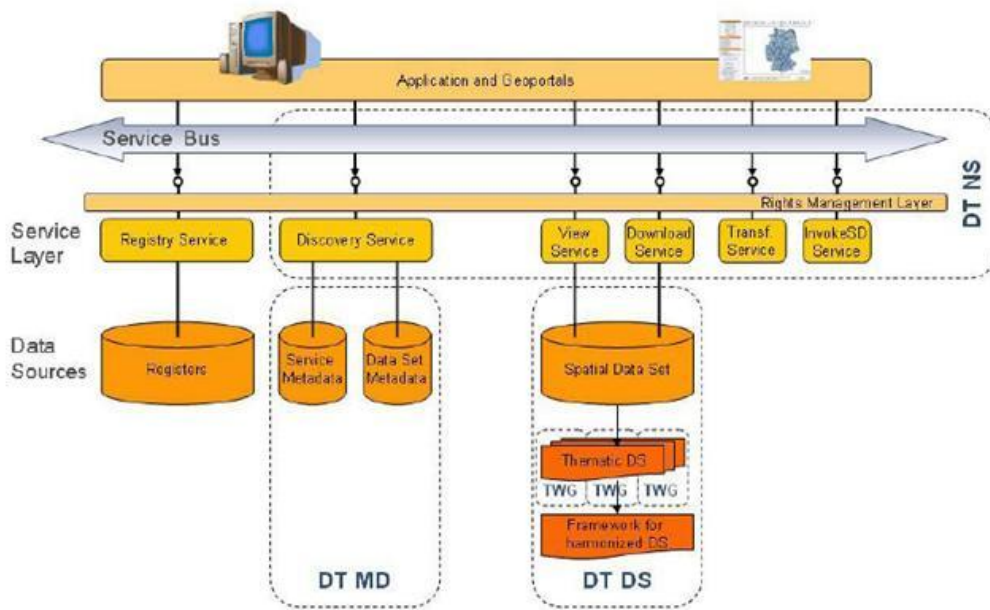


Figure 3. INSPIRE reference Architecture.

The core of the INSPIRE reference Architecture consists of different INSPIRE Service Types, namely Discovery, View, Download, Transform and Invoke. Such services have to be accessed via the Rights Management Layer and may be accessed by applications and geoportals via the INSPIRE services bus.

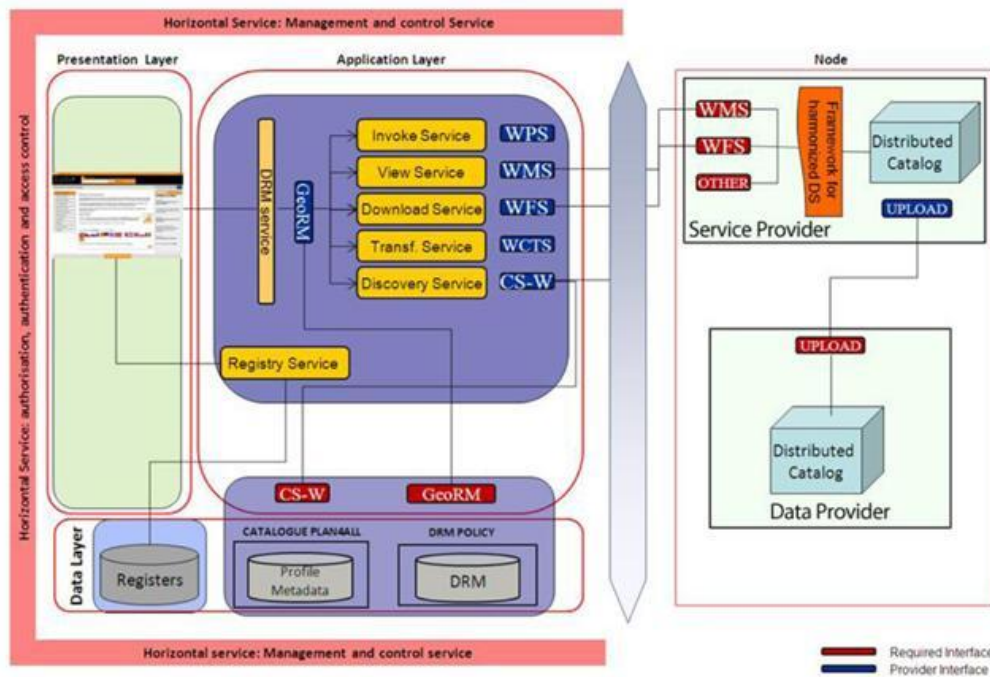


Figure 4. Plan4All Networking Architecture

The Plan4All Networking Architecture has been designed by adopting the RM-ODP approach, in particular with reference to the OGC Reference Model (ORM), in order to comply to OGC standards and specifications and to ISO/TC211 standard series, according to T.5.1 requirements about services design. A service-oriented approach has been adopted according to INSPIRE and Plan4all requirements defined in T5.1.

Figure 3 depicts how the system components of the Plan4All Networking Architecture are distributed. As illustrated by the diagram, the architecture is a “metadata system”, and it implements the INSPIRE principles, according to the following requirements:

- data are to be collected only once and managed where this can be done in the most efficient way;
- it has to be possible to both combine data coming from different sources and share them among many users and applications;
- it has to be possible to easily identify which geographic information is available, to assess its usefulness according to his goals, and the conditions according to which it is possible to obtain and use the same information.

Once produced, planning data can be either provided to the Plan4all Architecture by the same data provider, through the Spatial Data Infrastructure, or by a third party (service provider), on behalf of the data provider. The service provider has to expose OWS interfaces to the Internet, in order to be consumed by Plan4all, INSPIRE, or other users through the pan-European registry.

The functionalities (Invoke, View, Download, Transfer, Discovery, DRM Services) provided by the Plan4all Architecture will allow for searching for data through queries on the metadata resources, and the access to the resources will be managed according to DRM policies.

Finally, although embedded within the adopted standards and specifications, significant requirements such as multilingual aspects and quality of service should be better emphasized within D5.2 in order to make easy their detection and the subsequent implementation of this functionality.

6. Validation of Project Solutions

This Section is meant to describe results obtained from partners and stakeholders during the validation phase. In particular, each project solution is analyzed and both general and specific remarks are provided which may be used to face emerging issues and refine initial proposals. Details can be found in Annex IV and Annex V.

6.1 Metadata Profile

Based on stakeholders' evaluations, the proposed metadata profile seems to be clear, reasonable and complete in terms of metadata for spatial planning, dataset and spatial services. Some general comments about the overall proposal can be summarized as follows.

General comments

The proposal suitably covers all elements featuring the spatial planning domain. It also supports INSPIRE requirements and may be a good starting point for evolving national metadata profiles for data within all themes. Punctual observations are related to the number of services and to the code list extensions. The former may result limited in operation on local or provincial level. The latter may be necessary due to different reasons, such as language issues where one term does not find a single literal translation, and lack of appropriate values for specific scenarios. A solution suggested by stakeholders is to allow each country to design their own catalog profiles by extending existing code list elements. This would retain the integration on the European level while allowing sufficient detail on the local.

Another current concern refers to metadata availability. The challenge is that existing metadata are generally rather poor because a lot of information is implicit when used in the context of a municipality – but becomes explicit when taken out of this context – e.g. published on the Internet. This will lead to a significant challenge when creating metadata from local profiles.

Specific comments by stakeholders.

In the following some specific matters are listed. Some of them derive from national / local points of view related to solutions that could be not shared by other partners. An agreement should be reached about them.

- The meaning of Unique resource identifier, Data Quality Scope, and Reference date should be clarified.
- The differences between Process step and Status, Conditions for access and use and Limitations on public access, should be clarified.
- Process Step enumeration. Additional values may be added: Elaboration, Adoption, Legal force, Obsolete.
- Spatial resolution. In some cases the scale of the original data is different from the scale of representation in the plan. How can this situation be reported?

6.2 Land Cover

General comments

Most of the issues discussed by stakeholders are due to the aggregation / association between LandCoverOriginalArea and LandCoverStandardisedArea and the associated multiplicity. As depicted by the schema, single land cover original areas can be allocated to one or zero land cover areas classified in agreement with the chosen international classification system (in this case Corine). It might cause wholes within the dataset thus resulting not compliant with Corine definition.

An open issue highlighted during the validation phase is related to the choice of an object-oriented approach for designing a data model which is inherently hierarchical. Indeed, according to the ISO feature-geometry-model, this model is a description of single land cover features, then more appropriate terms should be used, e.g., the term standardClassification might be substitute by LandcoverElementDescription, thus resulting more conform with the feature-geometry-model. This observation is in line with the current research which, provided the continuity of Corine, is devoted to overcome some of its limitations and proposes a classification based on ISO19144 through a Land Cover Meta Language (LCMC). This meta language is meant to address the harmonization of different Land Cover Classification Systems, so that data from multiple sources can be compared and integrated. LCMC documents the ontology of a classification system by performing the analysis of the smallest semantic elements from which a composition in schemas is then feasible. This approach will allow to harmonize datasets modelled according to the schema proposed within Plan4all without affecting their consistency, thus preserving their compliance with respect to the INSPIRE requirements.

Finally, a refinement that could be applied to the schema refers to the chosen classification system. Corine and LCCS are suitable examples, but it would be more appropriate to allow users to select a system, to annotate it and instantiate the corresponding value. This would imply the extension of the LandCoverStandardisedArea class by an attribute ClassificationSystemType associated with the ClassificationSystem code list, whose value are currently (but not limited to) Corine and LCCS. This solution would allow also to satisfy the requirement of taking into account the minimum mapping unit, that could be associated with the chosen classification system.

Specific comments by stakeholders

In the following some specific matters are listed. Some of them derive from national / local points of view related to solutions that could be not shared by other partners. An agreement should be reached about them.

- Source (class: LandCoverArea).
 - Its meaning is not clear.
 - No value for this attribute at data level. Indeed, this information can be found in the metadata. Maybe it should be set to voidable.
 - Land cover information can be collected from many sources, such as a validated scientific paper, or photographs of the landscape (bearing also a temporal reference) not only of a cartographic kind.
- BeginLifeSpanVersion and EndLifeSpanVersion (class: LandCoverStandardisedArea).

- What is the difference between “changed and “superseded”? If two separate attributes are requested, the former could be associated with the date of creation and change of the object, the latter may refer to the date it has been retired. In this case, the multiplicity of the former should be [1..*], because the possible changes can be infinite.
- BeginLifeSpanVersion (class: LandCoverStandardisedArea). This attribute should not be voidable, the information about the date of the survey is very important.
- ClassificationLink (class: LandCoverOriginalArea).
 - It should be set to voidable because origin datasets may not contain this information.

6.3 Land Use

General comments

The main concern that arises from the stakeholders' comments is related to the object investigated by the Land Use theme. Many stakeholders share the opinion that some limitations met during the case study instancing phase are due to the meaning of terms. In fact, they have frequently annotated that sometimes it was difficult to understand what item is under investigation, namely a whole plan, its components, a single zoning. Moreover, they have carried a high level of uncertainty while instancing some attribute values because both the whole plan and its components could have satisfied the given property.

Another issue strongly related to the above observation refers to the scope of this theme. Partners from different countries have pointed out that it overlaps with many topics belonging to other themes, also depending on national responsible authorities (e.g., Utility Services required for the specific planned land use, such as Waste Collection and Telecommunications, are relevant to the Ireland Local Authorities, who are the Planning Authorities). This implies that in case the model is to be used for inter-institutional and cross-border purposes, it should be more concise and contain less detailed information, or else the implementations of a Plan4All dataset might result unsustainable.

A more thorough study should be made in order to isolate the essential information to be used for these purposes. On the other hand, on the basis of an observation already discussed during the verification phase, the land use model addressed by Plan4all is meant to describe a plan, it is not focused on the administrative processes related to it. Thus, information concerning the administrative information (AdministrativeInformation) and the development applications (DevelopmentApplication) could be omitted.

The INSPIRE description partially solves this issue. It provides designers with elements useful to obtain a global view of characterizing items and properties of the Land Use theme, while many details are left to the national indications. However, in this case, best practices analysis cannot produce a common shared solution by itself, because local / national solutions sometimes represent an answer to the diverse needs developed during time and strongly depending on punctual requirements. It should be appropriate and fruitful to support these activities through a top-down approach to capture general indications, that can be then deepened and integrated according to specific requirements.

Starting from details of the analysis made by stakeholders involved in this phase, it is possible summarize their observations as follows. As for attributes the main and recurrent requirement is

referred to their multiplicity. Indeed, many attributes have a minimum cardinality equal to zero (such as `macroClassificationOfLand`, `protectedSite` and `typeOfBuilding`) due to either their possible absence within specific datasets or their meaning which assigns them with a diverse class (e.g., the `interventionType` attribute, which could be associated also with the `FunctionalIndications` class). In order to improve the schema and avoid such ambiguities, they might be specified as voidable attributes, thus allowing a correct management of values when they are not available.

As for enumerations and code lists, different stakeholders have proposed several modifications in terms of both new values and changes to the existing ones. In particular, they have emphasized that the approach followed during the design phase has been focused on modelling information related to city planning. On the contrary, information, such as agricultural and natural components result incomplete or difficult to handle in terms of both a wider multi thematic plan and sectional plans. Moreover, in many cases stakeholders have also suggested to associate a description with each enumeration / code list value, thus allowing a correct interpretation and avoiding redundancies. This approach might also overcome the request of including a *Other* value, which in turn may cause misuse and an excessive proliferation of *ad hoc* solutions.

Finally, it is worth to noticing that a useful missing information is related to the person in charge of plan data. This is a need in line with the requirement of data quality also expressed through the associated metadata.

Specific comments by stakeholders

In the following some specific matters are listed. Some of them derive from national / local points of view related to solutions that could be not shared by other partners. An agreement should be reached about them.

Classes and attributes

- It should be useful to add a class concerning territorial assets exposed to a certain risk, e.g., in case of a river basin plan, what kinds of assets are exposed to the flood risk (agricultural areas, stables, residential buildings, etc.)?
- Some attributes may have different values depending on the meaning they are associated to. As an example, in case *temporalExtentTo* is referred to a plan, then it is unlimited. On the contrary, some plan constraints have a five years life.
- Attribute: `constraintDescription`. It should be profitable to make an explicit a reference to technical rules and regulations in force.
- Attributes: `EasementType` and `IndirectExecution`. The meaning of these attributes is not clear.

Enumerations

- `ApplicationStatus`. An additional value may be added: `Under Appeal` (Development application having been rejected by the responsible authority but is now under appeal by the Applicant).
- `GeneralLandUseTyps`. An additional value may be added: `MixedDevelopmentZone`.
- `EasementType`. An additional value may be added: `PreservationStatute`
- `HierarchyLevelName`. An additional value may be added: `SpatialPlan.district` (it can be the case of a plan concerning a river basin district).

- PlanType. It should have a [1..*] multiplicity.
- RestrictionZone. An additional value may be added: Special Protected Areas under the Habitats Directive/Birds Directive/Natura 2000.
- Property. The Private value may be expanded: Private Corporate (Private land owned by a company) and Private Individual ”(Private land owned by an individual). Moreover, this attribute may result either not applicable or multivalued. In particular, the specification concerning the property can be related to a single land parcel, not to a Plan Feature, because the latter is often related to more than one land parcel at the same time.

Code lists

ApplicationType. Proposed values:

- Request for a new building permit.
- Request to extend an existing building.
- Request to redefine the use of an existing building.
- Request to demolish an existing building.

OtherConstructionIndication. Proposed values:

- Concrete
- Timber Framed
- Insulating Concrete Formwork
- Structural Insulated Panels
- Brick Construction
- Steel Framed Homes
- Log Houses
- Straw Bale Buildings
- Cob Construction
- Adobe Construction

OtherTerritorialClassification / SpecificLandUseType. Proposed values:

- Residential
- Industry / Enterprise
- Commercial / Retail / Town or District or Neighbourhood Centre
- Community / Services Infrastructure / Utilities
- Open Space / Amenity / Conservation / Recreation
- Agriculture / Aquaculture / Forestry / Rural
- Mixed Use
- Other.

RoofShape. Additional values may be added:

- Gabled that can be subdivided into Side-gabled, Front-gabled or Cross-gabled,
- Hipped that can be subdivided into Simple, Pyramidal or Cross-hipped
- Dormers
- Gables and
- Others, including Gambrel, Saltbox, Hip, Mansard, Shed, Valley, Flat

TypeOfBuilding. Additional values may be added:

- Agricultural buildings,

- Commercial buildings,
- Residential Buildings,
- Educational buildings,
- Government buildings,
- Industrial buildings,
- Military buildings,
- Parking and storage,
- Religious buildings,
- Transit stations,
- Other (from http://en.wikipedia.org/wiki/List_of_building_types).

6.4 Agricultural and Aquaculture Facilities

General comments

Stakeholders' experience on the specific theme and the lack of adequate case study instances did not allow a complete analysis of the proposed model. Indeed, validation has been carried out mainly on the Agricultural component of the data model because most of involved stakeholders are experts in this field rather than in the Aquaculture domain.

Generally, stakeholders have highlighted a problem with the geometry attribute belonging to several classes. They suggest that such an attribute should be defined as voidable because frequently there are no geometries associated with the corresponding classes, only addresses are available. As suggested by INSPIRE, Agricultural and Aquaculture Facilities may have an exact location of site (point, area) and the objects may be spatially expressed as points. However, where production area is substantial, area coverage may be relevant. Then, the solution should be to avoid the geometry as a voidable attribute and to handle it in two different ways, namely as an address attribute or a point/area geometry type.

Specific comments by stakeholders

In the following some specific matters are listed. Some of them derive from national / local points of view related to solutions that could be not shared by other partners. An agreement should be reached about them.

- At a first glance, one important missing element is the cultivated fields with their different kinds of cultivations. This should be added as an essential spatial element. A standard classification of the agricultural fields can be found in the Commission Regulation 1200/2009/EC, also mentioned in the proposed data model for what concerns typologies of agricultural installations and water sources.
- A link with the theme Land Cover should be established.
- As for facility sites and installations, agricultural holdings may not have such assets. As an example, there are holdings which rent the land and hire third parties for working on it. This means that the multiplicity of the associations between AgricultureAquacultureHolding and FacilitySite, and between FacilitySite and Installation should be [1] to [0..*], rather than [1] to [1..*].

- A holding might have its legal headquarters in a municipality and its facility site in another one. The location attribute in AgricultureAquacultureHolding and the attributes address in FacilitySite should be more carefully rethought.
- As for the certification, in some Italian Regions it refers to the holding, in other Regions to the facility site. In the proposed model, this information is associated only with the holding.
- IrrigationUnit. The information concerning the irrigation unit (i.e., a surface irrigated from the same water source) is not applicable. In the current databases, the information is managed at cadastral parcel level.
- AgriculturalInstallationType (class: AgriculturalInstallation). Among the values concerning the animal shelters of the AgriculturalInstallationType enumeration only AnimalHousing_LayingHens, AnimalHousing_Pigs, AnimalHousing_Cattle, and AnimalHousing are applicable. Moreover, in the current databases, the cattle housing is actually divided into two categories, namely milk cattle and other cattle. A value for the sheep shelters should be added. AgriculturalInstallationType (class: AgriculturalInstallation). As for the values of the enumeration AgriculturalInstallationType, the current databases do not support any information concerning the energy production facilities.
- WaterSourceType (class: WaterSource). Among the values of the enumeration “WaterSourceType”, only OnFarmGroundWater and OffFarmWaterSupplyNetwork are applicable.
- IrrigationMethod (class: IrrigationUnit). Not applicable information in the current datasets. The attribute should be therefore set to voidable.
- EasementType (class: Easement). No applicable information in the current datasets. The attribute should be therefore set to voidable.

6.5 Area management/Restriction/Regulation Zones and Reporting Units

General comments

Stakeholders’ experience on the specific theme and the lack of adequate case study instances did not allow a detailed analysis of the proposed model. According to the questionnaire answers the model groups well (Areas managed, regulated or used for reporting at international, European, national, regional and local levels) areas managed, regulated or used for data communication at international, European, National, Regional and local levels as listed in Annex III of INSPIRE directive. Nevertheless, several model attributes have been considered not applicable and some problems have been highlighted with *sector* and *subsector* attributes of AreaManagementAbstractClass class and an enumeration is suggested, capable to manage *working days*, *holidays*, and *weekends* values.

4.6 Production and Industrial Facilities

General comments

According to the questionnaire answers, the attributes of classes in the proposed model seems to be useful, complete and clear.

Specific comments by stakeholders

Classes and attributes

Some stakeholders have suggested to add a set of attribute to the Installation class, namely, Owner's of installation Name and Surname, Fiscal Code and VAT Code of installation, Company registered office, and Authorization Number and Date. This is reasonable if different installations related to the same facility site may have different owners, otherwise it is more appropriate adding them to the FacilitySite class. Analogously, adding a statusValue, validFrom and validTo is reasonable if different installations related to the same facility site may have different status and validity time. It could be appropriate to define these attributes as voidable.

The model does not completely represent the industrial activities regulated by the IPPC directive (2008/1/EC).

Enumerations

- In the CalculationType enumeration the unknown values are not allowed. In case they are necessary, the corresponding attribute should be *voidable*
- In the TransferMeans enumeration, the Waste value may substitute the SolideWaste value.

Code Lists

- In the StatusValue code list, values suggested by stakeholders (Idle and Dismissed) may be added.

6.7 Utility and Government Services

General comments

Most of the issues highlighted by stakeholders are due to the incompleteness of the model with respect to the INSPIRE requirements. In particular, stakeholders have pointed out that the following issues are missing:

- regulated areas for dumping of waste at sea;
- illegal or non-controlled dumping of waste – sea and land;
- mining waste;
- sewage sludge: generation, sewage pipelines networks and sewage treatment facilities (only “sewage treatment facilities” is modelled as “WasteWaterTreatmentFacilities”, the “generation” part and the “sewage pipelines networks” are missing).

Moreover, all networks and point information are missing, namely sewage networks (geometries and information about the type and the dimensions of the pipes) along with information concerning the waste collection (for example, the routes of the trucks collecting the urban waste and the position of the garbage bins).

Specific comments by stakeholders

In the following some specific matters are listed. Some of them derive from national / local points of view related to solutions that could be not shared by other partners. An agreement should be reached about them.

- If the waste treatment facility is “controlled”, then it should be necessarily “authorised”, so the multiplicity of the association between ControlledWasteTreatmentFacility and WasteTreatmentAuthorised should be [1..*]
- Geometry (ControlledWasteTreatmentFacility). The geometry is not necessarily a polygon. Some datasets have also points for indicating plants, septic tanks and sewage lift stations.
- WasteWaterTreatmentFacilityType (enumeration)
 - it is not clear if stand-alone septic tanks (e.g. tanks not connected to the main sewage pipes, like Imhoff tanks) can be described by the literal “Agricultural or zootechnical wastewater treatment plant;
 - a literal referring to the constructed wetlands for the natural treatment of wastewater is missing.

6.8 Natural Risk Zones

General comments

The validation of the Natural Risk Zones theme needs further analysis and evaluation. Stakeholders’ experience on this specific theme and the lack of adequate case study instances did not allow a detailed and complete analysis of the proposed model. Indeed, only one stakeholder has been involved in the validation process and the case study instance covers an exiguous part of the model.

Final remarks

This Section is devoted to emphasize some general observations risen during the verification phase applied to the schemas proposed for the seven themes investigated by the Plan4All project.

Preliminaries

Some issues discussed in Section 4 derive from the adoption of the UML as modeling language, which allows to handle and illustrate similar concepts with different approaches. The concepts of specialization and association class are examples of this flexibility. The former can be depicted through both the annotation tree and single arrowed associations. The latter may represent both a class depending on an association established between two classes, and a relation attribute according to the Entity-Relationship approach.

The idea has been to notify designers when similar situations have been managed in different manner. In fact, a goal of the present project is to define an homogeneous approach for those themes that share some components and are then strongly related.

In the following, some basic concepts are recalled.

- Associations are always assumed to be bi-directional; this means that both classes are aware of each other and their relationship, unless a uni-directional association is qualified. In this case, two classes are related, but only one class knows that the relationship exists. Moreover, the uni-directional association includes a role name and a multiplicity value, but unlike the standard bi-directional association, the uni-directional association only contains the role name and multiplicity value for the known class.
- An enumeration represents a list of domain values. This set is fixed and no-empty.
- A code list represents a list of domain values which can be extended, depending on users' requirements. It may be initially empty.
- An association with an aggregation relationship indicates that one class is a part of another class. In an aggregation relationship, the child class instance can outlive its parent class. An aggregation is represented through an unfilled diamond shape on the parent class's association end.
- The composition relationship is a kind of aggregation relationship, but the child class's instance lifecycle is dependent on the parent class's instance lifecycle. It is represented by a filled diamond shape.
- An association class includes valuable information about the primary association it is tied to. The association line between the primary classes intersects a dotted line connected to the association class
- According to the INSPIRE document D2.8.I.4 "INSPIRE Data Specification on Administrative units – Guidelines", voidable attributes should be used when a characteristic of a spatial object is not present in the spatial dataset, but may be present or applicable in the real world. If and only if a property receives this stereotype, the value of *void* may be used as a value of the property. It is possible to qualify a value of void in the data with the following pre-defined values:

Unpopulated: The characteristic is not part of the dataset and all objects in the spatial data set receive this value;

Unknown: The correct value for the specific spatial object is not known to, and not computable. However, a correct value may exist. This value is applied on an object-by-object basis in a spatial data set. As for the information on whether or not a characteristic exists in the real world, this is expressed by using the multiplicity.

Comments derived from the verification and validation phases on Metadata Profile

Generally speaking, the proposed metadata profile has met an agreement among partners and stakeholders. Both questionnaires and evaluations performed through the instantiation of case studies have highlighted that a core of elements is shared and accepted in terms of name, type, and properties. However, there exist a subset of elements that appear to be critical, namely Unique resource identifier, Data Quality Scope, Reference date, Process step, Status, Conditions for access and use, Limitations on public access, whose meaning should be clarified, even though in some cases a better explanation can be found in the INSPIRE regulations.

Another general issue concerns the extent of metadata profile. In some cases, stakeholders have pointed out that specifications of other compound elements or additional information about spatial plans may result not necessary because more specific data have to be put into the appropriate theme, e.g. Land Use. This comment has a twofold implication. First, it emphasizes that spatial planning management strongly depends on organization / institution in charge of it, whose task also consists of bounding the scope and establishing the appropriate threshold of detail. Second, it highlights the need of dataset level metadata for each spatial data theme. Indeed, while the proposal for a Metadata Profile has been designed by considering it applicable for spatial plan as a whole, specifications of single metadata profiles associated with each theme have been postponed at the end of WP4. This solution has been adopted in order to exploit the proposed schemas and integrate the resulting metadata profiles within the overall profile. Anyhow, the current lack of such profiles has limited the real stakeholders' capability to acquire a global view of the topic under investigation, thus reducing the effectiveness of their contribution.

Comments derived from the verification phase on themes

In the following, some issues are faced and possible solutions are suggested. A common agreement should be reached in order to harmonize the project solutions.

- A feature type / spatial object has a geometry, which automatically generates topological relationships. Typically, connectivity and contiguity are handled through the topology, other relationships are established by performing a calculation on (x, y) coordinates. This approach implies that these sets have to be distinguished during the design phase. In particular, the former set should be explicitly expressed when necessary, the latter can be omitted. Along this line, the model designers have to reach an agreement on what relationships and when to represent them. Indeed, diverse solutions have been adopted in proposed schemas also in case of similar concepts, thus increasing dissimilarities among them.
- Even if it is not a UML basic characteristic, it may be useful to specify properties for specialization / generalization. According to the Entity Relationship language, a specialization can be partial / total and overlapping / disjoint, thus allowing four different

combinations. In case a subset has been specified it represents a partial and disjoint specialization. In case two or more subclasses have been associated with a superclass, the specialization can be

- either total (each instance of the superclass is always an instance of one or more subclasses) or partial (an instance of the superclass may not belong to any subclasses), and
- either disjoint (an instance can be a member of at most one of the subclasses of the specialization) or overlapping (the same instance may be a member of more than one subclasses).

These further properties allow designers to provide users with additional details about spatial objects, useful to express constraints and mandatory items.

- As for the theme overlaps, designers have adopted different solutions to express this property. In some cases a theme has been referenced through an attribute type, in others it has been embedded as enumeration values, finally a class has been related and a comment has been added, such as "INSPIRE theme". Also in this case, it should be suitable to adopt the same approach when possible. In case a different solution is used, it should be motivated. Again, the adoption of a color convention as illustrated in the INSPIRE Document "Methodology for the development of data specification" may help the achievement of this goal and improve the schema readability.
- *Inspireid* has been used every time an identifier was required. However, in some cases it has been typed as an Identifier, in others it has been further detailed, such as an integer. Also in this case a common approach should be agreed.
- A similar observation for the Address and Geographical Name themes and their usage within the proposed schemas.

Comments derived from the validation phase on themes

By analysing stakeholders' comments and their questionnaire answers, a general observation could be annotated. Although most remarks are related to the enumeration and code list values, significant comments refer also to the scope of themes under investigation. Indeed, starting from the INSPIRE indications some fundamental requirements can be set, which provide designers with a global view of the theme extent. However, many stakeholders share the opinion that some limitations met during the case study instancing phase are due to the meaning of terms. In fact, they have frequently annotated that sometimes it is difficult to understand what item is under investigation, and information provided by designers does not bridge this gap, due to the lack of a common shared approach.

This lack also generates a relevant level of uncertainty that available best practices are not able to overcome.

Another issue highlighted by stakeholders refers to the overlaps among themes. Partners and stakeholders from different countries have pointed out that these overlaps also depend on national regulations. Besides INSPIRE indications, which propose high level links for inter-institutional and cross-border purposes, other relationships among themes have been identified by domain expert users, which have to be managed in order to obtain an exhaustive representation of real scenarios.

To reach this goal, a refinement of models may be fruitful, based on a top-down approach to capture general indications, that can be then deepened and integrated according to specific requirements.

As for enumerations and code lists, stakeholders have proposed both new values and changes to the existing ones. Moreover, they have also suggested to associate a description with each enumeration / code list value, thus allowing a correct interpretation and avoiding redundancies. Again, this need should be satisfied by identifying a core of relevant items and assigning them a wider meaning. To this aim, institutions at national or regional level may be involved, on the basis of the expertise they have about these specific topics. They could code a given domain also on behalf of lower level institutions, such as municipalities. This solution might then avoid a misuse and an excessive proliferation of *ad hoc* solutions.

Finally, in order to guarantee data interoperability and cross-border cooperation as a consequential effect of the spatial planning data harmonization, the attribute Country should be always considered.

Annex I. List of stakeholders

Annex II. Validation kit for Metadata Profile

Annex III. Validation Kits for Theme Data Models

Annex IV. Questionnaires from Stakeholders about Metadata Profile

Annex V. Questionnaires from Stakeholders about Themes

Annex I. List of Expert Users / Stakeholders

Organization	Organization Scope / Mission	Contact Person	Skills	Mail	Assigned Metadata Profile / Theme	Partner
Limerick Co. Co.	Local Authority	Anne Breslin	Planner/GIS	abreslin@limerickcoco.ie	Land Use	MAC
Kerry Co. Co	Local Authority	Meadhbh Keegan	Planner/GIS	mkeegan@kerrycoco.ie	Land Use	MAC
South Tipperary Co. Co.	Local Authority	Eddie Meegan	Planner/GIS	eddie.meegan@southtippcoco.ie	Land Use	MAC
MAC		John O'Flaherty	ICT/Regional Development	j.oflaherty@mac.ie	Metadata	MAC
Provincia di Roma	Local Authority	Monica Rizzo	DBA –	m.rizzo@provincia.roma.it	Production and industrial Theme metadata	Hyperborea
Provincia di Roma	Local Authority	Anna Maria Eremitaggio	Funzionario	a.eremitaggio@provincia.roma.it	Area Management	Hyperborea
Dipartimento Studi Urbani – Università Roma Tre		Flavio Camerata	ricercatore	dipsu@plan4all.it	metadata	DIPSU

Innova Puglia		Tina Caroppo		c.caroppo@innova.puglia.it	Land Use	AMFM
Arendal Municipality	Local planning authority	Heidi Liv Tomren	Senior GIS and planning exprt	HeidiLiv.Tomren@arendal.kommu.no	Spatial plan	AVINET
National Road Authorities	National infrastructure planning authorities	Per Roald Andersen	Division Director	pan@vegvesen.no	Spatial plan	AVINET
Asplan Viak	Planning Consultancy	Frank Haugan	Senior Consultant	Frank.Haugan@asplanviak.no	Spatial plan	AVINET
Sogn og Fjordane County Municipality,	Regional Planning Division	Jo Tore Kristoffersen	GIS analyst, spatial planner		Production and Industrial Facilities	AVINET
Ayto Gijón	Planner	Senen Casal	Responsible of the planning departament	scasal@gijon.es	AquaAgricultural Facilities Metadata Validation	GIJON
Ayto Gijón	Responsible of the Cartographic Department	Agustín Lanero	Technician	alanero@gijon.es	Utility and Government Services -Waste Management AquaAgricultural Facilities Metadata Validation	GIJON
Ministry of Environment and	Responsible for spatial planning	Edvins Kapostins	Spatial planner	Edvins.kapostins@varam.gov.lv	Area management	TDF

regional Development						
Latvia's Geospatial Information Agency	Head of GIS and IT Department	Arvids Ozols	GIS Engineer	Arvids.ozols@lgia.gov.lv	Natural Risk Zones	TDF
Riga city council City development department	Spatial planning unit Riga city council City development department	Andris Ločmanis	Project manager	Andris.locmanis@riga.lv	Area management Natural Risk Zones	TDF
State Regional Development Agency	Latvias geoportal State Regional Development Agency	Vita Narnicka	IT project management	vita.narnicka@vzraa.gov.lv	Area management Natural Risk Zones	TDF
Latio, Ltd	Spatial planning and surveying, GIS	Normunds Abols	IT engineer	Normunds.abols@latio.lv	.Area management Natural Risk Zones	TDF
CentropeMAP			Spatial Planner		Metadata	Ceit Alanova
BOSC		Kristine Brune	Technical Expert-geographer	kristine@bosc.lv	Metadata	TDF
DIPSU		Flavio Camerata			Land cover	DIPSU
Sapienza Università di	University	Laura Facioni	Botanist and expert in GIS	laura.facioni@gmail.com	Land cover	DIPSU

Roma						
Insiel SPA	IT Company	Alessandra Benvenuti			Land Use	AMFM
Region of Friuli-Venezia-Giulia		Mauro Pascoli			Land Use	AMFM
Po River Basin Authority		Massimo Pancaldi			Land Use	AMFM
FH Wiener Neustadt / Umweltbundesamt Wien	University of Applied Research Wr. Neustadt / Environmental Agency Austria	Roland Grillmayer			Land Cover	Ceit Alanova
FH Wiener Neustadt / Umweltbundesamt Wien	University of Applied Research Wr. Neustadt / Environmental Agency Austria	Christoph Perger			Land Cover	Ceit Alanova
FH Wiener Neustadt / Umweltbundesamt Wien	University of Applied Research Wr. Neustadt / Environmental Agency Austria	Gebhard Banko			Land Cover	Ceit Alanova
CSI Piemonte	Consortium of public	Ezio Bellatorre			AquaAgricultural	AMFM

	authorities for the Information System of the Region of Piedmont				Facilities	
CSI Piemonte	Consortium of public authorities for the Information System of the Region of Piedmont	Marco Cavagnoli			AquaAgricultural Facilities	AMFM
CSI Piemonte	Consortium of public authorities for the Information System of the Region of Piedmont	Emilio De Palma			AquaAgricultural Facilities	AMFM
CSI Piemonte	Consortium of public authorities for the Information System of the Region of Piedmont	Mauro Vasone			AquaAgricultural Facilities	AMFM
CSI Piemonte	Consortium of public authorities for the Information System of the Region of Piedmont	Stefano Ambrogio	Analista senior		Natural Risk Zone	AMFM

Annex II. Validation kit for Metadata Profile

This section contains the documentation provided to the partners for validating the Metadata Profile. In such a validation kit package the following material is contained :

1. A Plan4All - presentation.doc file containing a section concerning the Plan4All project and a section about the Work Package 8. The former describes the project in terms of objectives and work-plan, the latter contains a brief description Work Package 8 and a description of Task 8.2 in terms of objectives, methodology and role of stakeholders in the validation activities.
2. A Plan4All Metadata Profile - eng.doc file containing a brief description of the Task 8.2 along with details about the proposed Metadata Profile.
3. A questionnaire to be filled by project stakeholders involved in the validation step, where questions about three different parts of the metadata profile are posed.

A List of Potential Expert Users.doc file to be filled by project partners involved in the validation step.

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material:

1. A Plan4All - presentation.doc file containing a brief description of the project.
2. A Plan4All Metadata Profile - eng.doc file containing a brief description of the Task 8.2 along with details about the Metadata Profile proposed.
3. The questionnaire
4. A List of Potential Expert Users.doc

Please, fill in the document 4. and send it us as soon as possible. Further modifications can be applied during the accomplishment of this task.

More details about Plan4All and current solutions are given in www.plan4all.eu and <http://www.wiki.plan4all.eu>

List of Potential Expert Users / Stakeholders

Organization	Organization Scope / Mission	Contact Person	Skills	Mail	Assigned Metadata Profile / Theme	Date	Comments

Plan4All Affiliated Partner: _____

Plan4All

The harmonisation of spatial planning data according to the INSPIRE Directive based on the existing best practices in EU regions and municipalities and the results of current research projects. May 2009 - October 2011

Plan4all is a European project co-funded by the Community programme: eContentplus. **Plan4all** is a consortium of 24 partners including universities, private companies, international organisations and public administrations. Figure 1 illustrates the Plan4All network.

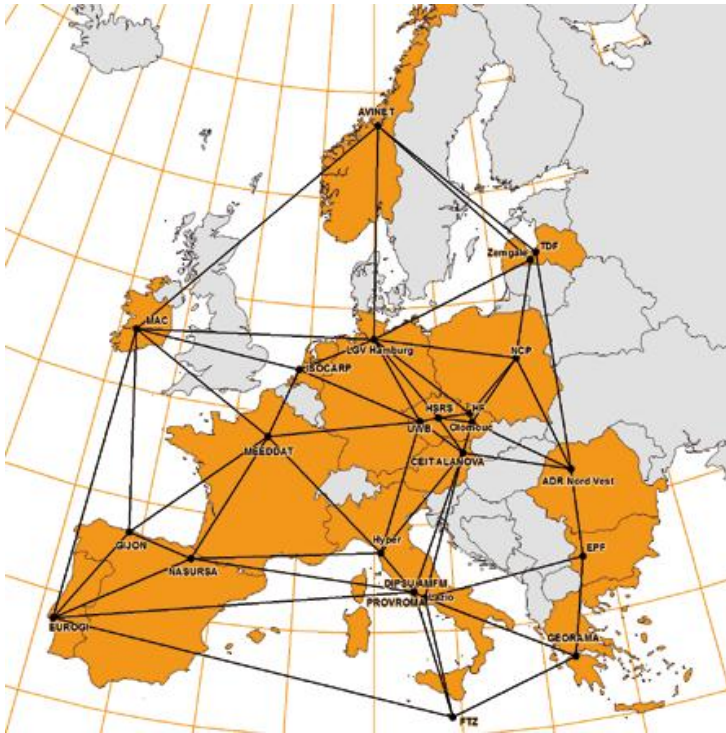


Figura 1 Plan4All network

Plan4all Objectives

The main Plan4All objective is to **harmonise spatial planning data and related metadata according to the INSPIRE principles. In particular, it aims to:**

1. Promote Plan4all and INSPIRE in countries, regions and municipalities;
2. Design the spatial planning metadata profile;
3. Design the data model for selected spatial data themes related to spatial planning;
4. Design the networking architecture for sharing data and services in spatial planning;
5. Validate the metadata profile, data models and networking architecture on local and regional levels;
6. Establish a European portal for spatial planning data;
7. Deploy spatial planning data and metadata on local and regional level.

Plan4All work-plan

As shown in Figure 2, the Plan4all work-plan is divided into 9 work packages. The focus is on WP 3, 4 and 5 where fundamental results are expected, namely a metadata profile, data models for seven spatial data themes (shown in Figure 3), and a networking architecture. The other WPs are devoted to the experimentation and validation, as well as to the dissemination of the obtained results.

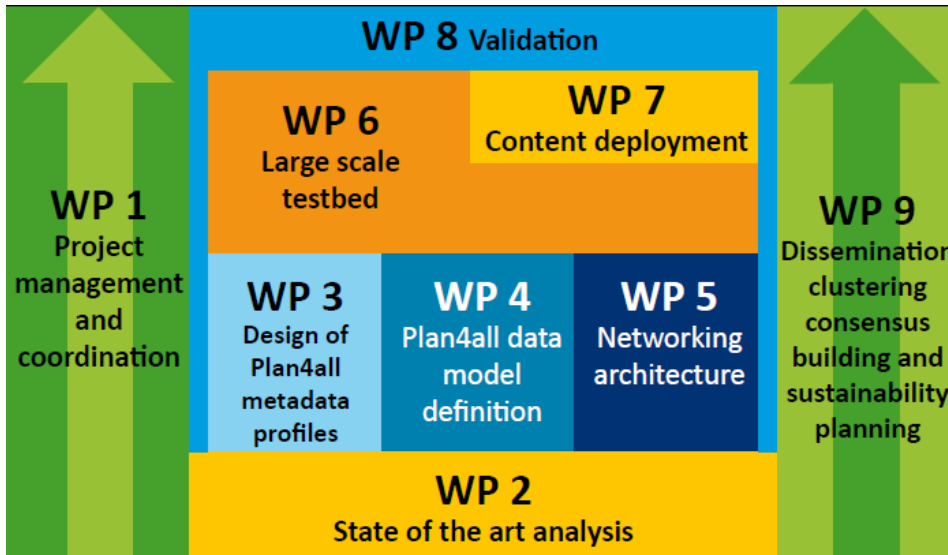


Figure 2. The work-plan and relationships among the WPS

<p>7 INSPIRE spatial data themes in focus of Plan4all:</p> <ol style="list-style-type: none"> 1. Land cover 2. Land use 3. Utility and Government services 4. Production and industrial facilities 5. Agricultural and aquaculture facilities 6. Area management/restriction/regulation zones and reporting units 7. Natural risk zones 	
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Figure 3. 7 Inspire spatial data themes

The Work Package 8. The validation methodology

During the final steps of the tasks devoted to the specification of metadata profile, data models and networking architecture, a validation phase is scheduled which involves both subjects of the project and external users, expert of domains related to the selected seven themes and interested in experimenting the proposed solutions.

To this aim, WP8 consists of 3 tasks, namely task 8.1, where the methodology and some guidelines are given, task 8.2 where project solutions will be evaluated in terms of products (metadata, data models and services), and task 8.3 devoted to the platform validation.

Reference documentation is enclosed. It concerns the guidelines referring to the methodology application (task 8.1), and the detailed description of the procedure that will be adopted.

Task 8.2. Validation of project products

The overall assessment process designed for the task 8.2 is based on two fundamental elements, namely the involved actors and the phases to be accomplished. The former refers to two specific typologies, partners and end/ultimate users, whose activities are differently characterized on the basis of their expertise. The latter refers to the methodology designed to reach the goal of the task. Both these factors play an important role in the product assessment stream, and are expected to provide an effective contribution to the achievement of the project goals.

Task 8.2 Objectives

The goal of the Task 8.2 is to validate Plan4all products, which consist of a metadata profile, a set of seven data models and a networking architecture, all concerning spatial planning data according to the INSPIRE Directive. In particular, special attention will be devoted to the specification of the conceptual data models referring to the seven themes extracted from the Annex II and Annex III and described in the INSPIRE “D2.3 Definition of Annex Themes and Scope v3.0”, namely Land Cover, Land Use, Agricultural and Aquaculture Facilities, Production and Industrial Facilities, Area Management / Restriction /Regulation Zones and Reporting Units, Utility and Government Services, Natural Risk Zones. For each of them an Application Schema and a Feature Catalogue are expected that will provide European and regional expert users and governments with a uniform approach to the spatial planning.

The methodology

The overall assessment will be structured as follows. As for the metadata profile, its INSPIRE-compliance will be validated, along with the users' requirements satisfaction. As for the seven themes investigated in the project, a data model expressed through UML is expected for each of them, which will allow for harmonising the approach to the spatial planning. Finally, as the assessment of the network service architecture strongly depends on its implementation, the customer satisfaction with respect to this project solution is in charge of the Task 8.3 on the basis of results from WP6 large scale testbed. Then, in Task 8.2 the network service architecture will be validated in terms of its completeness with respect to functional and no-functional requirements of a reference architecture.

Methodology details

Metadata Profiles

Input Documents: Metadata Profiles (D3.2 - European Spatial Planning Metadata Profile),
Textual documents containing details and comments

Reference material:

- a. Plan4all deliverable D8.1. Validation Methodology
- b. Plan4all deliverable D3.1. Analysis of National Requirements on Spatial Planning Metadata
- c. Plan4all deliverable D2.4 User Analysis Report
- d. INSPIRE Metadata Regulation
- e. Plan4all deliverable D2.3 INSPIRE Requirements Analysis.

Tasks:

1. An INSPIRE-compliant verification
2. A validation phase which consists of

Expected Documents: Report on the INSPIRE-compliance verification and validation activities.

Data Models

Input Documents: Application Schemas expressed as UML diagrams, Feature Catalogues, a possible Feature Concept Dictionary, (D4.2 - Plan4All Conceptual data model definition for selected themes), Textual documents containing details and comments

Reference material:

- a. Plan4all deliverable D8.1. Validation Methodology
- b. Plan4all deliverable D4.1. Analysis of conceptual data models for selected themes used in single countries
- c. Plan4all deliverable D2.4 User Analysis Report
- d. D2.5 INSPIRE Generic Conceptual Model
- e. Plan4all deliverable D2.3 INSPIRE Requirements Analysis.

Tasks

1. A syntactic check whose aim is to analyse the quality of the data models in terms of
 - Correctness
 - Completeness
 - Minimality
 - Readability

Expected Documents: Possible restructured data models

2. An INSPIRE-compliant verification
3. A semantic check whose aim is to “read” the model to derive its content in terms of statements.
4. A validation phase

Expected Documents: Report on accomplished steps for the management of the case study. It also includes the evaluated effectiveness in agreement with the provided guidelines. Problems in terms of comprehension of diagrams, matching between data can also be highlighted here.

Networking service architecture

The assessment of network service architecture strongly depends on its implementation. The customer satisfaction with respect to this project solution is in charge of the task 8.3 on the basis of results from WP6 large scale testbed.

Therefore, in task 8.2 the network service architecture will be validated in terms of its completeness with respect to functional and no-functional requirements of a reference architecture. The attention will be focused on verifying that the missing SDI services, detected for every partner, are going to be properly designed.

In particular, the network service architecture will be checked (AMFM) with respect to

- the INSPIRE directive, such as the INSPIRE Technical Architecture Overview and INSPIRE Network Services Architecture
- the international standard Reference Model of Open Distributed Processing (RM-ODP)

- the OGC specifications such as OGC WebServices Common Specifications and OGC Reference Model- ORM
- the recommendations of the Plan4all deliverable D2.3, INSPIRE Requirements Analysis
- the previous work of WP 5, the Plan4all deliverable D5.1, Analysis of Demand on European Spatial Planning Data Sharing

The role of stakeholders in the validation activities

As previously stated, expert users play an important role within the validation activities. In fact, they are in charge of evaluating proposed solutions through a detailed analysis of the given specifications and their application to a case study taken from a domain referring to the spatial planning field.

While realizing the required tasks, both expert users and Plan4All partners may benefit from the expected results. In fact, whereas on the one hand Plan4All could take advantage of the expert users' experience asking them to get involved in decision making activities, on the other hand they could actively take part in the validation tasks. This will imply the growth of their expertise in these domains, thus assuming the role as precursor with respect to following adoption of proposed solutions, due to the knowledge acquired about processes leading to the final solutions.

Plan4All Metadata Profile

The aim of Plan4All work-plan for WP3 is the specification of a Metadata Profile for spatial planning.

In order to reach this goal, two preparatory documents have been provided concerning the requirement analysis for the definition of metadata in the spatial planning domain, both at national and user level. In particular, some specific needs over the Inspire recommendations have been emphasized, raising from the results obtained through a questionnaire for data collection. In fact, it detected that some elements may vary among countries on the basis of national laws, as well as it could be necessary to introduce additional elements to complete specifications of a spatial plan, its datasets and related services.

The current proposal is based on such requirements and provides for three different metadata typologies, namely spatial plan, datasets and services metadata. In particular, as for the first set it refers to a plan as a whole, linking all phases (from evaluation to approval, from execution to expiration) and all documents referring to it, at each level (regional, national and European). The second set concerns data involved within a plan, while the third one refers to services which allows for accessing digital spatial plans.

In the following, the abovementioned sets are described. For each of them, the multiplicity and a brief description are given. More details can be found in D-3.2.2 "Plan4All Metadata Profile - Final Version".

Legend

Multiplicity: it corresponds to number of values allowed for a specific element. 1 = one and only one value is allowed; 0..* = 0 or more values are allowed; 1..* = 1 or more values are allowed.

Codelist: it consists of a set of allowed values for the specified element (green colour).

Compound element: it corresponds to a composite element, made up of a set of atomic values (red colour).

Spatial Plan Metadata

Element	Multiplicity	Description	Data Sample
Spatial plan title	1	Name by which the spatial plan is known.	Spatial Plan of Olomouc municipality
Spatial plan abstract	1	Brief narrative summary of the content of the resource(s).	Local plan of Olomouc draft published according to Act. No. 183/2006
Resource type	1	Type of the resource. (dataset)	dataset
Spatial plan type	1	Type of spatial plan regarding areal scope.	spatialPlan.local
Resource locator	0..*	Mandatory if a URL is available to obtain more information on the resource, and/or access related services.	http://portal.plan4all.eu/services/wms?service=WMS OGC:WMS-1.1.1-http-get-capabilities Regulation Description for regulation document
Unique resource identifier	1..*	Unique identifier of spatial plan	http://www.olomouc.cz#SPATIALPLAN2010
Spatial plan language	1..*	Spatial Plan language.	eng
Topic category	1..*	Main theme(s) of the dataset.	imageryBaseMapsEarthCover
Keyword	1..*	Commonly used word(s) or formalized word(s) or phrase(s) used to describe the subject and the originating controlled vocabulary.	Keyword: Land use Thesaurus:

			title: "GEMET Thesaurus version 2.1" date: 2008-06-13, dateType: publication
Geographic bounding box	1..*	Geographic position of the Spatial Plan expressed by the smallest bounding rectangle.	12.09 18.91 48.59 51.04
Geographic boundary polygon	0..*	boundary enclosing the dataset, expressed as the closed set of (x,y) coordinates of the polygon	<i>List of coordinates</i>
Spatial extent description	0..1	Description of spatial extent of dataset; text.	Olomouc municipality,Czech republic
Reference date	1..*	Spatial plan reference date.	2010-06-14
Temporal extent	0..*	Spatial plan effecting and expiration date.	2008-06-14 3000-01-01
Lineage	1	General explanation of the data producer's knowledge about the lineage of a dataset.	Local plan of Olomouc draft was created according to Act. No. 183/2006 Coll. and subsequent legislative
Process step	0..*	Description of legal milestones during the spatial plan design. <i>description</i>	Description: procurement approval DateTime: 2008-09-15T00:00:00 Processor: Statutární město Olomouc, role: owner
Spatial Resolution	0..*	Mandatory for spatial plan if an equivalent scale or a resolution distance can be specified.	10000 10 meters
Conditions for access and use	0..*	Conditions for access and use of spatial data sets and	no conditions apply

		services, where applicable	
Limitations on public access	0..*	Access or other constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the resource.	intellectualPropertyRights (rights to financial benefit from and control of distribution of non-tangible property that is a result of creativity).
Responsible organisation	1..*	Identification of, and means of communication with, person(s) and organization(s) associated with the resource(s). role	
Metadata point of contact	1..*	Party responsible for the metadata information.	Josef Novák Magistrát města Olomouce Horní náměstí 583 779 11 Olomouc Czech republic http://www.olomouc.eu podatelna@mmol.cz
Metadata date	1	Date that the metadata was created.	2005-03-27
Metadata Language	1	Language used for documenting metadata (main language)	eng
File identifier	1	Metadata file identifier.	00d32154-1656-4fcc-9ddd-6dbe9a1baeb0
Metadata standard name	1	Name of the metadata standard.	ISO19115/19119 - Plan4All profile

Metadata standard version	1	Name of the metadata standard version.	2003/Cor.1:2006 – Plan4all:2010
Presentation form	1..*	Mode in which the resource is presented.	mapDigital
Application schema	0..*	Provides information about the conceptual schema of a Spatial plan data.	<pre> <gmd:MD_ApplicationSchemaInformation> <gmd:name> <gmd:CI_Citation> <gmd:title> <gco:CharacterString>My model title</gco:CharacterString> </gmd:title> <gmd:date> <gmd:CI_Date> <gmd:date> <gco:Date>2009</gco:Date> </gmd:date> <gmd:dateType> <gmd:CI_DateTypeCode codeListValue="creation" codeList="..."/> </gmd:dateType> </gmd:CI_Date> </gmd:date> </gmd:CI_Citation> </gmd:name> <gmd:schemaLanguage> <gco:CharacterString>UML</gco:CharacterString> </gmd:schemaLanguage> <gmd:constraintLanguage> <gco:CharacterString>OCL</gco:CharacterString> </gmd:constraintLanguage> <gmd:softwareDevelopmentFile> <gco:Binary src="http://link-to-binary-file.bin"/> </gmd:softwareDevelopmentFile> </gmd:MD_ApplicationSchemaInformation> </pre>
Data quality scope	1	Level to which data quality information apply.	dataset
Reference system information	0..*	Information on reference system	CodeSpace: urn:ogc:def:crs:EPSG:: Code: 4326
Maintenance and update frequency	0..1	Information on updates frequency.	annually
Purpose	0..1	Summary of the intentions with which the resource(s)	Public proceedings of Local plan of

		was developed	Olomouc draft
Status	0..*	Represents the status of the resource described by metadata. Possible values are in the ISO 19115 code list 'MD_ProgressCode'.	completed
Legal relevance	0..*	Legal character.	NO LEGAL RELEVANCE.

The first set of metadata elements defines spatial plan properties. Generally speaking, it describes a plan in terms of title, abstract and type (areal scope). The unique identifier, language, on-line address of the resource, the theme category (in this case "planningCadastre") and few keywords are also required. Finally, some elements refer to geographic properties, such as spatial resolution, reference system, and boundary enclosing the dataset.

As for the metadata elements, it represents a resource itself, then some properties are required, such as responsible organization, contact point, name and version of the adopted standard.

Dataset Metadata

Element	Multiplicity	Description	Data sample
Resource title	1	Name by which the cited resource is known.	
Resource abstract	1	Brief narrative summary of the content of the resource(s).	
Resource type	1	“dataset” or “series” should be used	dataset
Resource locator	0..*	Mandatory if a URL is available to obtain more information on the resource, and/or access related services.	
Unique resource identifier	1..*	Value uniquely identifying an object within a namespace.	
Resource language	0..*	Mandatory if the resource includes textual information.	eng
Topic category	1..*	Main theme(s) of the dataset.	planningCadastre, biota
Keyword	1..*	Commonly used word(s) or formalised word(s) or phrase(s) used to describe the subject.	
Geographic bounding box	1..*	Geographic position of the dataset expressed by the smallest bounding rectangle.	
date	1..*	Reference date for the resource	2010-09-30 publication
Temporal extent	0..*	Spatial plan effecting and expiration date.	
Lineage	1	General explanation of the data producer’s	

		knowledge about the lineage of a dataset.	
Spatial resolution	0..*	Mandatory for data sets and data set series if an equivalent scale or a resolution distance can be specified.	
Conformity	1..*	Conformity of spatial data sets with the implementing rules provided for in Article 7(1) and any additional document	true
Conditions for access and use	1..*	Conditions for access and use of spatial data sets and services, and where applicable	
Limitations on public access	1..*	Access or other constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the resource.	
Responsible organisation	1..*	Identification of, and means of communication with, person(s) and organization(s) associated with the resource(s)	
Metadata point of contact	1..*	Party responsible for the metadata information.	
Metadata date	1	Date that the metadata was created.	
Metadata language	1	Language used for documenting metadata.	
File identifier	1	Metadata file identifier.	
Parent identifier	0..1	File identifier of the metadata to which a metadata is a child. It is used for identification of Spatial Plan which the dataset is part of.	4c91d585-483c-4d83-85ad-12400a01080d

Metadata standard name	1	Name of the metadata standard.	
Metadata standard version	1	Name of the metadata standard version.	
Spatial representation type	1..*	Method used to spatially represent geographic information (e.g. vector)	
Geometry type	0..*	Represents the geometrical type of a spatial dataset whose spatial representation type is 'Vector', and it may assume 3 possible values: Point, Polyline or Polygon.	Polygon
Image	0..*	An image to illustrate the data that has been returned.	http://mydomain/picture.png
Character set	0..*	Character coding used for the dataset.	
Application schema	0..*	Provides information about the conceptual schema of a dataset	
Data quality scope	1	Level to which data quality information apply.	
Reference system info	1..*	Information on reference system.	
Distribution format	1..*	Information on distribution format.	Shapefile, version 1.0
Transfer options	0..*	Number of volumes, data carriers etc...	Medium: cdRom, volumes: 6
Maintenance and update frequency	0..1	Information on updates frequency.	
Source	0..*	Represents the description of the dataset from which the present dataset is derived through the production process described within the metadata	Description: Master coverage for digital spatial plan Scale denominator: 1000

		element 'Lineage'.	SourceReferenceSystem: urn:ogc:def:crs:EPSG::2065 Title: Cadastral map. Date: revision: 2010-05-12
Process step	0..*	Description of process step of data acquisition or processing.	Digitizing on scanned raster maps 2009-01-01T08:30:00

This set of elements concerns datasets involved within a spatial plan. They partially recall some elements of the previous set, being now referred to data considered as a resource. As for the remaining ones, the following elements have been considered: conformity of spatial data sets with the implementing rules, identifier of the spatial plan which the dataset is part of, method and geometry used to spatially represent geographic information, an image to illustrate the data, format and version of data distribution, and finally dataset description from which the present dataset is derived through the production process described within the metadata element 'Lineage'.

Spatial Services Metadata

Element	Multiplicity	Description	Data Sample
Resource title	1	Name by which the cited service is known.	
Resource abstract	1	Brief narrative summary of the content of the service.	
Resource type	1	“service” should be used	service
Resource locator	0..*	URL of the service	
Unique resource identifier	0..*	Value uniquely identifying an object within a namespace.	
Keyword	1..*	Commonly used word(s) or formalised word(s) or phrase(s) used to describe the subject.	
Geographic bounding box	1..*	Geographic position of the service expressed by the smallest bounding rectangle	
date	1..*	reference date for the cited resource	
Temporal extent	0..*	Spatial plan effecting and expiration date.	
Temporal reference	1..*	Time period, covered by the content of the dataset	
Conformity	1..*	Conformity of spatial data sets with the implementing rules provided for in Article 7(1) and any additional document	
Conditions for access and use	1..*	Conditions for access and use of spatial data services, where applicable	

Limitations on public access	1..*	Access or other constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the resource.	
Responsible organisation	1..*	Identification of, and means of communication with, person(s) and organization(s) associated with the resource(s).	
Metadata point of contact	1..*	Party responsible for the metadata information.	
Metadata date	1	Date that the metadata was created.	
Metadata language	1	Language used for documenting metadata.	
File identifier	1	Metadata file identifier.	
Coupled resource	0..*	Provides information about the datasets that the service operates on.	http://image2000.jrc.it#image2000_1_nl2_multi
Spatial data service type	1	A service type name from a registry of services.	view, OGC:WMS

This set of elements refers to services through which the access to digital spatial plan data is guaranteed. Besides the elements it shares with the previous ones, new elements are considered referring to both the information about the dataset on which the service operates, and the service type, derived from a service registry.

Definition of compound elements and codelists.

In the following, a set of solutions are provided for the compound elements and codelists.

Compound elements definition

Responsible party

Element	Multiplicity	Description
individualName	0..1	Name of the responsible person: surname, given name, title separated by a delimiter.
organisationName	0..1	Name of the responsible organisation. Mandatory if available.
deliveryPoint	0..*	Address line for the location (as described in ISO 11180, Annex A).
city	0..1	City of the location.
postalCode	0..1	ZIP or other postal code.
country	0..1	Country of the physical address.
electronicMailAddress	1..*	Address of the electronic mailbox of the responsible organization or individual.
linkage	0..*	location (address) for on-line access using a Uniform Resource Locator address or similar addressing scheme such as http://www.plan4all.eu .
role	1	Function performed by the responsible party.

It is strongly recommended to provide full postal address including country name or linkage.

Process step

Element	Multiplicity	Description	Plan4all meaning
description	1	description of the event, including related parameters or tolerances	Name of legal Spatial Plan design milestone according to concrete national law.
rationale	0..1	requirement or purpose for the process step	
dateTime	0..1	date and time or range of date and time on or over which the process step occurred	Date of process step confirmation
processor	0..1	Party, who is involved in the processStep	Processor – see party table (4.4.1)

Source

Element	Multiplicity	Description	Plan4all meaning
description	1	detailed description of the level of the source data	Description of the resource and rationale of this use
scaleDenominator	0..1	denominator of the representative fraction on a source map	Strongly recommended because it influence result accuracy
sourceReferenceSystem	0..1	spatial reference system used by the source data	RS_Identifier
sourceCitation	0..1	recommended reference to be used for the source data	Title and reference date should be filled

Codelists for Spatial Planning

Spatial plan type

Hierarchy level name	Description
spatialPlan.country	National plans or policies
spatialPlan.state	State level documentation (<u>for federal countries</u>)
spatialPlan.regional	Regional plans
spatialPlan.subRegional	Provincial level (province or other sub-regional level denomination)
spatialPlan.supraLocal	Super Local level (e.g. mountain communities or aggregations of municipalities)
spatialPlan.local	Municipality level - local plans
spatialPlan.subLocal	Plans for part of municipality area like zone plans, regulatory plans, development plans etc.
spatialPlan.other	Level not listed here
spatialPlan	Spatial plan metadata without qualification

Organization roles

This mapping is supposed to be used for Spatial Plan Metadata, not for dataset or services metadata.

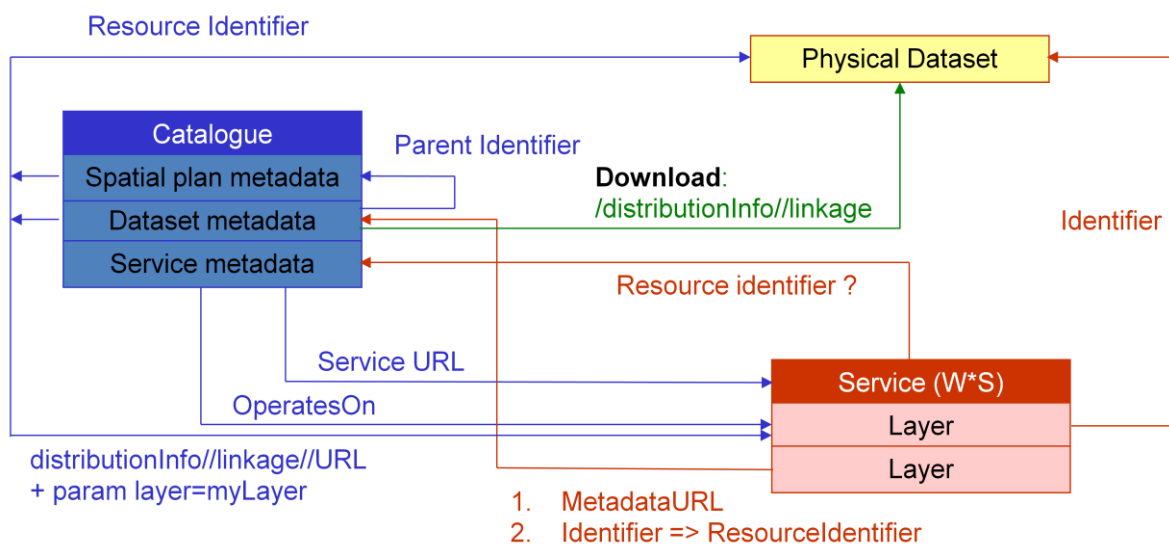
Name	ISO Code	Description
Applicant	user	Specific user - demandant on plan issue
Procurer	custodian	Party, who formally controls plan creating (typically authority with extended power office)
Creator	originator	Person, organisation or a service that is primarily responsible for creating the plan
Designer	author	Authorized planner - person responsible for creating the plan inside Creator organisation
Publisher	publisher	Organisation that published (issued) the plan
Contributor	processor	Person, organisation or service that has made contributions to the content of the plan and/or processed the data in a manner such that the plan has been modified
Submitter	owner	Party, who order plan creation
Evaluator	principalInvestigator	Respective authority - organisation that controlled compliance with upper level documentation

Spatial plan life cycle phases mapping.

Name	ISO mapping
Work start	<i>Creating metadata record about this plan</i>
Adoption (publication)	<ul style="list-style-type: none"> • identificationInfo/*/status = 'underDevelopment' • identificationInfo/*/citation/*/date (dateType=publication)
Coming into force	<ul style="list-style-type: none"> • identificationInfo/*/extent/*/temporalElement/*/extent/TimePeriod/gml:beginPosition
Expiration	<ul style="list-style-type: none"> • identificationInfo/*/status = 'completed' • identificationInfo/*/extent/*/temporalElement/*/extent/TimePeriod/gml:endPosition

Linking between metadata records

Figure 1 shows relationships among the Plan4All infrastructure components.



Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

Questionnaire

Please, fill in the following questionnaire.

Spatial Planning Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes		
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes		
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No		
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there information that couldn't be specified?		Yes		
		No		
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes		
		No		
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes		

		No		
If Yes:	What?			
	How?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes		
		No		
If Yes:	What?			
	How should they be specified?			
Are there codelists to be deleted?		Yes		
		No		
If Yes:	What?			
	Why?			

Dataset Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes		
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes		
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No		
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		
		No		
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes		
		No		
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes		
		No		
If Yes:	What?			
	How?			

Are there elements to be modified in codelist? (specification of new codelist)		Yes		
		No		
If Yes:	What?			
	How should they be specified?			

Spatial Service Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes		
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes		
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No		
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		
		No		
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)				
		No		
If Yes:	What?			
	How should they be arranged?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes		
		No		
If Yes:	What?			
	How should they be specified?			

Final remarks

The overall proposal:

Spatial Planning Metadata:

Dataset Metadata:

Spatial Service Metadata:

Annex III. Validation Kits for Theme Data Models

This section contains the documentation provided to the partners and stakeholders for validating the Plan4all theme models. In the Validation Kit package for the seven themes, the following material is contained :

1. A Guidelines for the V&VLO.doc file, containing the list of documents necessary for the Verification and Validation Activities and their description. [THIS DOCUMENT IS COMMON TO ALL THEMES]
2. A Plan4All - presentation.doc file containing a section concerning the Plan4ll project and a section about the Work Package 8. The former describes the project in terms of objectives and work-plan, the latter contains a brief description Work Package 8 and a description of Task 8.2 in terms of objectives, methodology and role of stakeholders in the validation activities. [THIS DOCUMENT IS COMMON TO ALL VALIDATION KITS - PLEASE REFER TO THE ANNEX I]
3. A [name of theme] - Plan4all validation.doc file, containing a brief introduction and a description of a given theme, instructions for the validation activities on it, in particular on class attributes, enumerations and code lists. Finally, four general questions about the completeness and the general comprehension of the proposed model.
4. A [name of theme] - Plan4all validation.xls file, containing the questionnaire to be filled by project stakeholders involved in the validation step, where questions about all class attributes are posed.
5. A UML.jpg or .doc file, containing the data model specified by using the Unified Modeling Language (UML).
6. A feature_catalogue.doc file, containing the feature catalogue which describe each attribute, class, enumeration, code list and relative types of the proposed model.

Land Cover

1. Introduction

In order to validate the seven data models designed for the themes of the Plan4all project, a specific task is planned, which is composed of the following steps:

1. Each partner involved in Plan4all task 8.2 is provided with a document for the validation of the assigned theme. This document is a simplified document (oriented to non-expert users) containing a list of classes and attributes, along with a questionnaire, derived from the data models and catalog features produced in the Task 4.2
2. For each single theme the Plan4all partners have to involve one or more stakeholders, who are in charge of filling the list of attributes of the data model with a real world case study (related to the stakeholder's expertise). In particular,
 - a. the first part of the questionnaire evaluates the understanding and the usefulness of each attribute, namely:
 - Have you used the attribute? If not, why?
 - Is the attribute redundant? If so, why?
 - Is the meaning of the attribute clear? If not, why?
 - Is the type of the attribute clear? If not, why?
 - Is the type the attribute appropriate? If not, why?
 - Is the multiplicity of the attribute appropriate?
 - Is the attribute sufficient to express what you have to state? If not, why?
 - b. the second part of the questionnaire evaluates the understanding, the usefulness and the completeness of enumerations,
 - c. the third part of the questionnaire evaluates the general characteristics of the model, namely:
 - What general concepts of the specific theme do not map into the model?
 - Are there data of the case study that do not fit?
 - Are there redundant parts?
 - Final remarks about the model

2. Theme description

Definition: (INSPIRE, 2007)

Physical and biological cover of the earth's surface including artificial surfaces, agricultural areas, forests, (semi-)natural areas, wetlands, water bodies.

Description: Land cover data represent a (bio)physical description of the earth surface. It concerns to broad applications in many fields of human activity, whose unique goal is in nature conservation, monitoring the impact of industrial and agricultural processes and planning and project activities. Land cover typology includes features such as artificial surfaces, agricultural areas, forests, (semi-)natural areas, wetlands, water bodies. In this way it is different from the land use data dedicated to the description of the use of the earth surface.

Each typology of the above elements are divided in separate subgroups in order to describe all features useful for environmental matters and existing in Europe and are produced with an adequate minimum area threshold (“Minimum mapping Unit”).

Land cover is described by the hierarchical nomenclature system, which classes must be defined and kept in time in order to identify land cover changes within time series.

Land cover information has to be homogenous and comparable between different locations in Europe, based on the infrastructures for Land Cover information created by the Member States (if existing), and made available and maintained at the most appropriate level. Classification should be consistent with LCCS and CORINE.

Important feature types and attributes:

Six basic features should be considered, with specific properties attached, namely Artificial surfaces, Agricultural areas, Forests, (semi-)natural areas, Wetlands, and Water bodies

Each of these features should be then divided in features or subgroups.

Important attributes: Area, perimeter, Land cover type.

In the following a brief description of the salient characteristics of the data model proposed in WP 4.2 is given.

The basic element of the data model is homogeneous area in terms of land cover. Homogeneity of the area is determined by two parameters – the details of the model and the classifications used.

Such area relates to other homogeneous area in terms of land cover (relation neighbourhood in the model), because data of the theme land cover are connected to continuous surface.

The model consists of two main classes, namely LandCoverStandardisedArea, and LandCoverOriginalArea. These classes inherit common attributes (inspireId, geometry and source) from the abstract class LandCoverArea. Geometry is defined as the Multipolygon, which is defined by one or more Polygons, referenced through polygonMember elements.

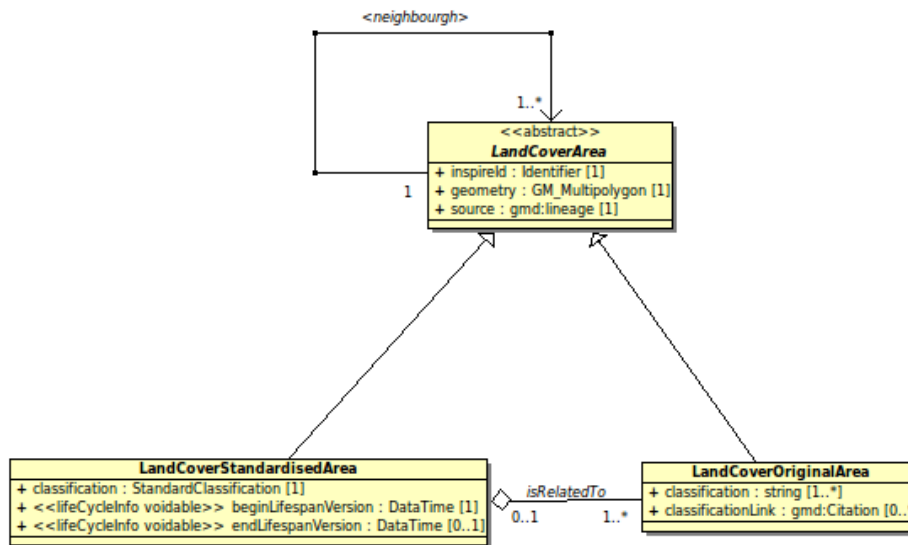
As for the standard classification system, the CORINE land cover has been chosen and embedded within the enumeration, but this nomenclature can be replaced by others (e.g. LUCAS or FAO LCCS) based on different requirements.

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material

1. A Plan4All - presentation.doc file, containing a brief description of the project.
2. A Land Cover - Plan4all validation.doc file, containing instructions for validating the model.
3. A Land Cover - Plan4all validation.xls file, containing the questionnaire.
4. A Classes.png file, containing the data model in UML
5. A Feature_Catalogue_Land_Cover.doc file, containing the feature catalogue.

More details about Plan4All and current solutions are given in www.plan4all.eu and <http://www.wiki.plan4all.eu>



<<enum>> StandardClassification	
+ 1_Artificial_Surfaces	
+ 11_Urban_Fabric	
+ 111_Continuous_Urban_Fabric	
+ 112_Discontinuous_Urban_Fabric	
+ 12_Industrial_Commercial_And_Transport_Units	
+ 121_Industrial_And_Commercial_Units	
+ 122_Road_And_Rail_Networks	
+ 123_Sea_Ports	
+ 124_Airports	
+ 13_Mine_Dump_And_Constructions_Sites	
+ 131_Mineral_Extraction_Sites	
+ 132_Dump_Sites	
+ 133_Construction_Sites	
+ 14_Artificial_Non_Agricultural_Vegetated_Areas	
+ 141_Green_Urban_Areas	
+ 142_Sport_And_Leisure_Facilities	
+ 2_Agricultural_areas	
+ 21_Arable_Land	
+ 211_Non_Irrigated_Arable_Land	
+ 212_Permanently_Irrigated_Arable_Land	
+ 213_Rice_Fields	
+ 22_Permanent_Crops	
+ 221_Vineyards	
+ 222_Fruit_Trees_And_Berry_Plantations	
+ 223_Olive_Groves	
+ 23_Pastures	
+ 231_Pastures	
+ 24_Heterogeneous_Agricultural_Areas	
+ 241_Annual_Crops_Associated_With_Permanent_Crops	
+ 242_Complex_Cultivation_Patterns	
+ 243_Land_Principally_Occupied_By_Agriculture	
+ 244_Agro_Forestry_Areas	
+ 3_Forest_and_semi_natural_areas	
+ 31_Forests	
+ 311_Broad_Leaved_Forests	
+ 312_Coniferous_Forests	
+ 313_Mixed_Forests	
+ 32_Scrub_AndOr_Herbaceous_Vegetation_Associations	
+ 321_Natural_Grasslands	
+ 322_Moors_And_Heathland	
+ 323_Sclerophyllous_Vegetation	
+ 324_Transitional_Woodland_Scrub	
+ 33_Open_Spaces_With_Little_Or_No_Vegetation	
+ 331_Beaches_Dunes_Sands	
+ 332_Bare_Rocks	
+ 333_Sparsely_Vegetated_Areas	
+ 334_Burnt_Areas	
+ 335_Glaciers_And_Perpetual_Snow	
+ 4_Wetlands	
+ 41_Inland_Wetlands	
+ 411_Inland_Marshes	
+ 412_Peat_Bogs	
+ 42_Maritime_Wetlands	
+ 421_Salt_Marshes	
+ 422_Salines	
+ 423_Intertidal_Flats	
+ 5_Water_Bodies	
+ 51_Inland_Waters	
+ 511_Water_Courses	
+ 512_Water_Bodies	
+ 52_Marine_Waters	
+ 521_Coastal_Lagoons	
+ 522_Estuaries	
+ 523_Sea_And_Ocean	

3. Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

4. Part one. Class Attributes.

The first part of the questionnaire evaluates the understanding and the usefulness of each single attribute. Each attribute is described by the following elements:

Class	Attribute	Type	Multiplicity	Notes	Case study instance
Data model Class to which the attribute belongs	Attribute name	Attribute type: it indicates the domain to which the attribute belongs. It may be either a number (int, float), a text (), or a default value of a list (enumeration)	Multiplicity: it corresponds to the number of permitted values for the specific element. 1 = one and only one value; 0 ..* = from 0 to more; 1 .. * = from 1 to more;	Description of the meaning of the attribute and possible notes.	The attribute value related to the case study provided by the expert user / stakeholder

For each row of the attached .xls table, please provide the attribute value related to the case study and answer the questions.

5. Part two. Enumerations

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	description	Value	Notes
StandardClassification	All values are defined in CLC : 5 classes of 1 st level, 15 classes of 2 nd level, 44 classes of 3 rd levels.	1_Artificial_Surfaces	
		11_Urban_Fabric	
		111_Contiuous_Urban_Fabric	
		112_Disontiuous_Urban_Fabric	
		12_Industrial_Commercial_And_Transport_Units	
		121_Industrial_And Commercial_Units	
		122_Road_And_Rails_Networks	
		123_Sea_Ports	
		124_Airports	
		13_Mine_Dump_And_Costructions_Sites	
		131_Mineral_Extraction_Sites	

Enumeration	description	Value	Notes
		132_Dump_Sites	
		133_Contruction_Sites	
		14_Artificial_Non_Agricultural_Vegetated_Areas	
		141_Green_Urban_Areas	
		142_Sport_And_Leisure_Facilities	
		2_Agricultural_areas	
		21_Arable_Land	
		211_Non_Irrigated_Arable_Land	
		212_Permanently_Irrigated_Arable_Land	
		213_Rice_Fields	
		22_Permant_Crops	
		221_Vineyards	
		222_Fruit_Trees_And_Berry_Plantations	
		223_Olive_Groves	
		23_Pastures	
		231_Pastures	
		24_heterogeneous_Agricultural_Areas	

Enumeration	description	Value	Notes
		241_Annual_Crops_Associated_With_Permanet_Crops	
		242_Complex_Cultivation_Pattern	
		243_Land_Principally_Occupied_By_Agriculture	
		244_Agro_Forestry_Areas	
		3_Forrest_and_semi_natural_areas	
		31_Forrest	
		311_Broad_Leaved_Forests	
		312_Coniferous_Forrest	
		313_Mixed_Forests	
		32_Scrub_AndOr_Herbaceous_Vegetation_Associations	
		321_Natural_Grasslands	
		322_Moors_And_Heathland	
		323_Sclerophylous_Vegetation	
		324_Transitional_Woodland_Scrub	
		33_Open_Spaces_With_Little_Or_No_Vegetation	
		331_Beaches_Dunes_Sand	
		332_Bare_Rocks	

Enumeration	description	Value	Notes
		333_Sparsely_Vegetated_Areas	
		334_Burnt_Areas	
		335_Glaciers_And_Perpetual_Snow	
		4_ Wetlands	
		41_ Inland_Wetlands	
		411_ Inland_ Marshes	
		412_ Peat_Bogs	
		42_ Maritime_Wetland	
		421_ Salt_ Marshes	
		422_ Salines	
		423_ Intertidal_Flats	
		5_ Water_Bodies	
		51_ Inland_Waters	
		511_ Water_Courses	
		512_ Water_Bodies	
		52_ Marine_Waters	
		521_ Coastal_Lagoons	

Enumeration	description	Value	Notes
		522_Estuaries	
		523_Sea_And_Ocean	

Comment

Feature Catalogue

[TAKEN FROM D4.2]

6. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

1. What general concepts of the specific theme do not map into the model?
2. Are there data/information of the case study that do not fit ?
3. Are there redundant parts?
4. General comments about the model

Land Use

1. Introduction

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

2. Theme description

The rationale underlying the proposal of the schema designed for the *Land Use* theme appears to be different from the others due to its specific nature. This observation is strongly emphasized in the *Land Use - introduction* document associated with the schema proposed. Here, the authors motivate their choices aiming to keep the design general enough thus taking into account all territorial government systems.

Briefly, they state that it was necessary to clarify some details taken from the [doc inspire] where the definition of Land Use may generate confusion. Indeed, the definition is "Territory characterized according to its current and future planned functional dimension or socio-economic purpose (e.g. residential, industrial, commercial, agricultural, forestry, recreational)." The former element of this definition associates the land use concept with a functional aspect related to socio-economic characteristics. The latter specifies a sequential aspect of the land use concept by expressing it in terms of operations on land, meant to obtain products and/or benefits through its resources.

When analyzing this description, some further aspects have been detected by the authors, which suggest to consider also features related to the planner's point of view, such as the involvement of different sectors, e.g. environmental, and the planning levels, e.g. from local to national.

This investigation led them to design a data model general enough to include different systems acting on land and affecting it significantly.

Important feature types and attributes:

Features representing a land use plan strongly depends on its typology. However, a minimal set can be identified which determines the structure to be taken into account during its development, namely boundary of plan/regulation, category area, regulation area, restriction area, and elements within a plan (road boundaries, building boundaries, forest/agricultural land boundaries etc).

Consequently, important attributes are land use category, land use regulation category, land use restriction category, present/existing or proposed/planned/future, legal reference, date of entry into force, link to text regulations for each area.

In the following a brief description of salient characteristics of the data model proposed in WP 4.2 is given.

The focus of the model consists of two classes, namely *PlanObject* and *PlanFeatures*, referring to the plan itself and its composition in terms of indications, respectively.

The former class specializes the administrative information and is related to specifications for the graphical output, the textual parts of the plan, and the raster files referring to old plans in paper form. The latter specializes all kinds of indications, from the most general classification of the municipal land (e.g. urbanized/to be urbanized/rural/natural), down to the specific function for the

single land parcel. Also conditions and constraints acting on urban development are specialization of this class.

The proposed schema also contains a set of enumerations and code lists meant to specify, and possibly extend, values of the domain attributes.

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material

1. A Plan4All - presentation.doc file, containing a brief description of the project.
2. A Land use - Plan4all validation.doc file, containing instructions for validating the model.
3. A Land use - Plan4all validation.xls file, containing the questionnaire.
4. A D4-2_LU_UML.jpg file, containing the data model in UML
5. A D4-2_LU_feature_catalogue.doc file, containing the feature catalogue.

More details about Plan4All and current solutions are given in www.plan4all.eu and <http://www.wiki.plan4all.eu>

3. Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

4. Part one. Class Attributes.

The first part of the questionnaire evaluates the understanding and the usefulness of each single attribute. Each attribute is described by the following elements:

Class	Attribute	Type	Multiplicity	Notes	Case study instance
Data model Class to which the attribute belongs	Attribute name	Attribute type: it indicates the domain to which the attribute belongs. It may be either a number (int, float), a text (), or a default value of a list (enumeration)	Multiplicity: it corresponds to the number of permitted values for the specific element. 1 = one and only one value; 0 ..* = from 0 to more; 1 .. * = from 1 to more;	Description of the meaning of the attribute and possible notes.	The attribute value related to the case study provided by the expert user / stakeholder

For each row of the attached .xls table, please provide the attribute value related to the case study and answer the questions.

5. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
ApplicationStatus	NOTE States if the application has been received, approved, rejected, etc., by the responsible authority	received	Development application having been received by the responsible authority
		approved	Development application having been approved by the responsible authority
		rejected	Development application having been rejected by the responsible authority

Comment

Enumeration	Description	Value	Notes
EasementType	<p>Classification of the type of easement connected to the protection of areas around public utilities or to the public use of certain resources.</p> <p>SOURCE Plan4all “Area management/restriction/regulation zones and reporting units” data model</p>	ConiferousForestRights	
		GrazingRights	
		FishingRights	
		DeciduousForestRights	
		HayingRights	
		MountainFarmRights	
		RightOfWay	
		BuildingBan	
		LeasedOutArea	
		CommonArea	
		BreakWaterPropertyRights	
		Mooring	
		RightToLight	
		AviationRight	
		RailroadEasement	
UtilityEasement			
SidewalkEasement			

Enumeration	Description	Value	Notes
		ViewEasement	
		DrivewayEasement	
		BeachAccessProperty	
		DeadEndEasement	
		RecreationalEasement	
		HistoricPreservationEasement	

Comment

Enumeration	Description	Value	Notes
GeneralLandUseType	General indication on the land use of an area.	Residential	
		IndustrialCommercial	
		ServicesOfGeneralInterest	All services; comprises tourism services.
		Green	Public parks
		AreasOfNaturalInterest	Comprises woods
		Agriculture	
		Water	

Enumeration	Description	Value	Notes
		RoadTrafficInfrastructure	Comprises both networks and nodes.
		RailwayTrafficInfrastructure	Comprises both networks and nodes.
		OtherTrafficInfrastructure	NOTE Comprises both networks and nodes. EXAMPLE Parking lots, airports, cycle tracks, intermodal nodes.
		SpecialDevelopmentZone	Area for special use or special function. EXAMPLE Malls, hotels, stadiums for sport, convention centres, energy extraction.
		Mining	Area for mining purposes.
		Quarrying	Area for quarrying purposes
		TechnicalInfrastructure	EXAMPLE Energy and waste supply and disposal, energy networks
		Other	Other functions

Comment

Enumeration	Description	Value	Notes
	Territorial hierarchy of	SpatialPlan.country	Plan at country (NUTS 0) level.

Enumeration	Description	Value	Notes
HierarchyLevelName	plan	SpatialPlan.state	Plan at federal state (NUTS I) level
		SpatialPlan.regional	Plan at regional (NUTS II) level
		SpatialPlan.subRegional	Plan at sub-regional (NUTS III) level.
		SpatialPlan.supraLocal	Plan at supra-municipal (LAU 1) level
		SpatialPlan.local	Plan at municipal (LAU 2) level.
		SpatialPlan.subLocal	Plan at sub-municipal level.
		SpatialPlan.other	Other type of spatial plan

Comment

Enumeration	Description	Value	Notes
MacroClassificationOf Land	Division of the planned area into macro-zones NOTE The macro-zones are non-overlapping partitions of the total plan area and cover the entire plan area. They are used in some countries usually for municipal plans	Urbanised	Land already urbanised. NOTE Allowed interventions usually are renovation or regeneration of the existing buildings and districts
		ToBeUrbanised	Free land that can be urbanised NOTE Part of the territory, usually rural, where the new developments are allowed
		Rural	Rural part of the territory that cannot be urbanised. NOTE Allowed interventions usually comprise only transformations aimed at improving or developing agricultural activities

Enumeration	Description	Value	Notes
		Natural	Natural part of the territory that cannot be urbanised. EXAMPLE Can comprise woods, forests, meadows and other natural or semi-natural areas
		Other	Other types of macro-zones

Comment

Enumeration	Description	Value	Notes
NaturalRiskSafetyArea	Classification of natural risks threatening human settlements. SOURCE Plan4all “Natural risk zones” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.	InundatedRiskZone	A tract periodically covered by flood water. SOURCE INSPIRE Data Specification on Hydrography
		StormRiskZone	Area at risk of storms. SOURCE Plan4all “Natural risk zones” data model
		DroughtRiskZone	Area at risk of storms SOURCE According to the proposal for a Directive of the European Parliament and of the Council establishing a framework for the protection of soil and amending Directive 2004/35/EC
		AvalanchesRiskZone	Area at risk of avalanches. SOURCE Plan4all “Natural risk zones” data model.
		VolcanicActivityRiskZone	Area at risk of volcanic activities . SOURCE Plan4all “Natural risk zones” data model.
		EarthMovesRiskZone	Area at risk of earthmoves SOURCE Plan4all “Natural risk zones” data model.
		OtherHazardsRiskZone	Area at risk of other hazards.SOURCE Plan4all “Natural risk zones” data model.

Comment.....

Enumeration	Description	Value	Notes
ProtectedSitesSimple::ProtectionClassificationValue	The protected site classification based on the purpose of protection SOURCE INSPIRE Data Specification on Protected Sites.	NatureConservation	The Protected Site is protected for the maintenance of biological diversity
		Archaeological	The Protected Site is protected for the maintenance of archaeological heritage
		Cultural	The Protected Site is protected for the maintenance of cultural heritage
		Ecological	The Protected Site is protected for the maintenance of ecological stability
		Landscape	The Protected Site is protected for the maintenance of landscape characteristics
		Environment	The Protected Site is protected for the maintenance of environmental stability
		Geological	The Protected Site is protected for the maintenance of geological characteristics.

Comment

Enumeration	Description	Value	Notes
RegulationNature	Legal nature of the land use indication NOTE Indicates whether the land use indication is legally binding or not.	GenerallyBinding	The land use indication is binding for everybody
		BindingForDevelopers	The land use indication is binding only for developers.
		BindingOnlyForAuthorities	The land use indication is binding only for certain authorities.
		NonBinding	The land use indication is not binding

Comment

Enumeration	Description	Value	Notes
RestrictionZone	Classification of areas managed, regulated or used for reporting at international, European, national, regional and local levels. Plan4all “Area management/restriction/regulation zones and reporting units” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.	DumpingSites	
		NoiseRestrictionZones	
		ProspectingAndMiningPermitAreas	
		RiverBasinDistricts	
		CoastalZoneManagementAreas	
		AreasForTheDumpingOfWasteAtSea	
		RegulatedFairwaysAtSeaOrLargeInlandWaters	
		NitrateVulnerableZones	
		DrinkingWaterSource	

Comment

Enumeration	Description	Value	Notes
ProcessStepGeneral	General indication of the step of the planning process that the plan is	Elaboration	Plan under elaboration
		Adoption	Plan in the process of being legally adopted

Enumeration	Description	Value	Notes
	undergoing NOTE This enumeration contains values that are common to most planning systems	LegalForce	Plan already adopted and being legally binding or active
		Obsolete	Plan having been substituted by another plan, or not being any longer in force

Comment

Enumeration	Description	Value	Notes
Property	Property of the plot of land that the land use indication applies to.	Public	Public land.
		Private	Private land.
		PrivateWithSpecialPublicRights	Private land having special public rights. EXAMPLE The railway companies in Austria follow this principle
		PrivateOrganisedButPublicHeld	Privately organised land being publicly held. EXAMPLE The federal forests in Austria belong to a company, but are held by the Ministry of Forests
		Unknown	Unknown owner.

Comment

b. Codelists provided by the designer.

Please, for the filled codelists provide a comment for each codelist by specifying whether

- the codelist is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

For the empty codelists, please provide values and descriptions. Since the possible dimensioning indications are numerous, value types and measuring units have to respect the given rules.

Index	
Definition:	Indications concerning any ratio to be respected by the developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Site occupancy index.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

HeightIndication	
Definition:	Indications concerning the height of developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Gutter height.
Stereotypes:	«codeList»
Value: ... (free text) (m) : Float	

SurfaceIndication	
Definition:	Indications concerning the surface of developments.

Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Floor space.
Stereotypes:	«codeList»
Value: ... (free text) (m²) : Float	

UnitIndication	
Definition:	Indications concerning the number of units to be respected.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE 1 Maximum number of storeys. EXAMPLE 2 Minimum number of companies.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

VolumeIndication	
Definition:	Indications concerning the volume of developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Cubic capacity.
Stereotypes:	«codeList»
Value: ... (free text) (m³) : Float	

OtherDimensioningIndications	
Definition:	All possible further dimensioning indications.
Description:	NOTE Free attributes can be inserted in this code list.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

Codelist	Description	Value	Notes
ApplicationType	Type of application		
	EXAMPLE		
	Request of building permit.		

Comment

Codelist	Description	Value	Notes
InterventionCategory	Type of intervention allowed.	OrdinaryMaintenance	Ordinary maintenance of buildings. EXAMPLE Renovation of the plaster of a façade.
		ExtraordinaryMaintenance	Extraordinary maintenance of buildings. EXAMPLE Installation of photovoltaic panels on the roof.
		RestorationConservation	Conservation a historic building, and/or restoration respecting its traditional features. Conservation of a natural environment, and/or restoration respecting its natural features. EXAMPLE 1 Restoration of cornices of a historic building. EXAMPLE 2 Reconstruction of a sand dune in a compromised coastal environment.
		Renovation	Renovation of a building, also with changes of function, shape and volume. EXAMPLE Transformation of a villa into a hotel.
		Enlargement	Addition of new volumes to a building
		NewBuilding	Construction of a new building
		NatureEnhancement	Improvement of the status of a natural environment. EXAMPLE Strengthening of an ecological network
		CompensationMeasures	Measures for compensating the negative outcomes of an intervention. NOTE Compensations can be executed also in other areas of the concerned territory.

Codelist	Description	Value	Notes
			EXAMPLE Plantation of a wood in order to compensate a quarrying permit
		SoilConsolidation	Measures for consolidating soils in areas with hydro-geological instabilities. EXAMPLE Consolidation of slopes by means of bioengineering techniques

Comment

Codelist	Description	Value	Notes
OtherConstructionIndication	Specifies other indications about the allowed manner of construction.		

Comment

Codelist	Description	Value	Notes
OtherTerritorialClassification	Division of the planned area into functional homogeneous macro-areas. EXAMPLE Can be areas with homogeneous functional characteristics, which overlap to the general and specific		

Codelist	Description	Value	Notes
	indications of land use.		

Comment

Codelist	Description	Value	Notes
PlanFeatureStatus	Status of the land use indication of the plan feature (existing or planned). NOTE Land use can indicate both the current and the future function of territory. SOURCE INSPIRE D2.3 "Definition of Annex Themes and scope" v3.0.	Existing	The land use is already existing at the time of the plan.
		Planned	The land use is planned by the plan
		Removal	The land use indication refers to an existing settlement or infrastructure that has to be removed in the future

Comment

Codelist	Description	Value	Notes
PlanType	Specific type of plan.	BindingLandUsePlan	
		PreparatoryLandUsePlan	
		StateDevelopmentPlan	
		StructureVisionPlan	
		ZoningPlan	
		MunicipalStructurePlan	Plan containing the general, middle-long term strategic

Codelist	Description	Value	Notes
			decisions regarding the development and the protection of the municipal territory. NOTE Classifies the territory into homogeneous geographical/functional/landscape areas, defines the necessary facilities, sets the general conditions influencing the development.
		MunicipalOperationalPlan	Plan defining the rules of land transformation and protection for the short term. NOTE Contains defined regulations about quantity and density, infrastructures and utilities, conditions and constraints
		ExecutiveDevelopmentPlan	Plan defining in detail the type of land transformation. NOTE Often being the last step of the planning process, this plan contains the direct provisions to be applied to the land parcel in terms of quantities, density, utilities.
		LandscapePlan	Plan defining the landscape features and the means for protecting them.

Comment

Codelist	Description	Value	Notes
ProcessStepSpecific	Specific indication of the step of the planning process that the plan is undergoing. NOTE The code list is extendible in order to be adaptable to all legal frameworks and planning systems	PlanPreparationDecision	
		Draft	
		EarlyInvolvementPublicAuthorities	
		EarlyPublicParticipation	
		InvolvementPublicAuthorities	
		Adopted	Plan having been adopted by the responsible authority but not yet approved by the controlling authority

Codelist	Description	Value	Notes
		PublicObservations	Plan having been published after adoption for receiving observations from stakeholders
		CounterDeductions	Process of preparation of the responses by the responsible authority to the observations by the stakeholders
		Approved	Plan having been approved by the controlling authority and being legally in force
		MunicipalStatute	

Comment

Codelist	Description	Value	Notes
RasterFileType	Type of raster file of image	pdf	
		tiff	
		bitmap	
		jpg	
		png	
		ecw	
		geotiff	

Comment

Codelist	Description	Value	Notes
RoofShape	Specifies the allowed roof shape.	FlatRoof	
		ShedRoof	

Codelist	Description	Value	Notes
		MansardRoof	

Comment

Codelist	Description	Value	Notes
SpecificLandUseType	Specific indication on the land use of an area		

Comment

Codelist	Description	Value	Notes
TypeOfBuilding	Specifies the allowed building type	DetachedHouse	
		SemiDetachedHouse	
		TerracedHouse	

Comment

Feature Catalogue

[TAKEN FROM D4.2]

6. Part three. Final remarks

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

Utility and Government Services

1. Introduction

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

2. Theme description

Definition (INSPIRE)

Includes utility facilities such as sewage, waste management, energy supply and water supply, administrative and social governmental services such as public administrations, civil protection sites, schools and hospitals.

Controlled waste treatment sites for non-hazardous waste at land: geographical location of official or regulated facilities for waste treatment and storage; Included in the spatial component category "environmental protection facilities"

- *Storage sites at land - landfills;*
- *Incinerators;*
- *Other treatment facilities.*

Information on kind of treatment, kind of substances treated, capacity, percentage biodegradable waste, energy recovery from incinerators and landfills

This data model has been elaborated starting from the INSPIRE document "Drafting Team "Data Specifications" – deliverable D2.3: Definition of Annex Themes and Scope". Moreover, other reference directive and laws have been taken into account, i.e.:

- Directive 91/156/CEE, 91/689/CEE, e 94/62/CEE
- Italian D.M. 22/97
- Decreto del Ministero dell'Ambiente n. 372/98
- Code list of wastes in conformity of 2000/532/EC annex (wastes classification)
- Code list of disposal operations in conformity of 2008/98/EC annex I (operations classification)
- Code list of recovery operations in conformity of 2008/98/EC annex II (operations classification)

The general structure refers to the waste management facilities, which can be specialized into specific facility subtypes.

The model includes specific information on wastes and operations performed in the facility.

Main model classes:

- *ControlledWasteTreatmentFacility* – abstract representation of Official or regulated facility for waste treatment and / or storage at land (i.e.: landfill, incinerator, etc.), holding all common attributes such as operations, wastes, quantities, etc...;
- *WasteTreatmentAuthorized* - Facility treatment authorized, describing the wastes and the kind of treatment (disposal or recovery) applied;
- *Waste* - Code list of wastes in conformity of 2000/532/EC annex;

- *RecoveryOperation* - Code list of recovery operations in conformity of 2008/98/EC annex II;
- *DisposalOperation* - Code list of disposal operations in conformity of 2008/98/EC annex I;
- *Landfill* - Site for the disposal of waste materials by burial;
- *Incinerator* - Facility for the combustion (or other high temperature treatment) of waste materials;
- *RefuseMaterialsStorageAndRecoveryFacility* - Facility that receives, separates, treats and prepares recyclable materials from wastes; sometimes combining a sorting facility with a biological treatment of organic materials (such as composting);
- *WastewaterTreatmentFacility* - Facility for removing contaminants from wastewater, liquid wastes or household sewage. It includes physical, chemical, and biological processes to remove physical, chemical and biological contaminants

The model uses a number of “dictionaries” referred to the model main classes, modelled as enumerations, as following:

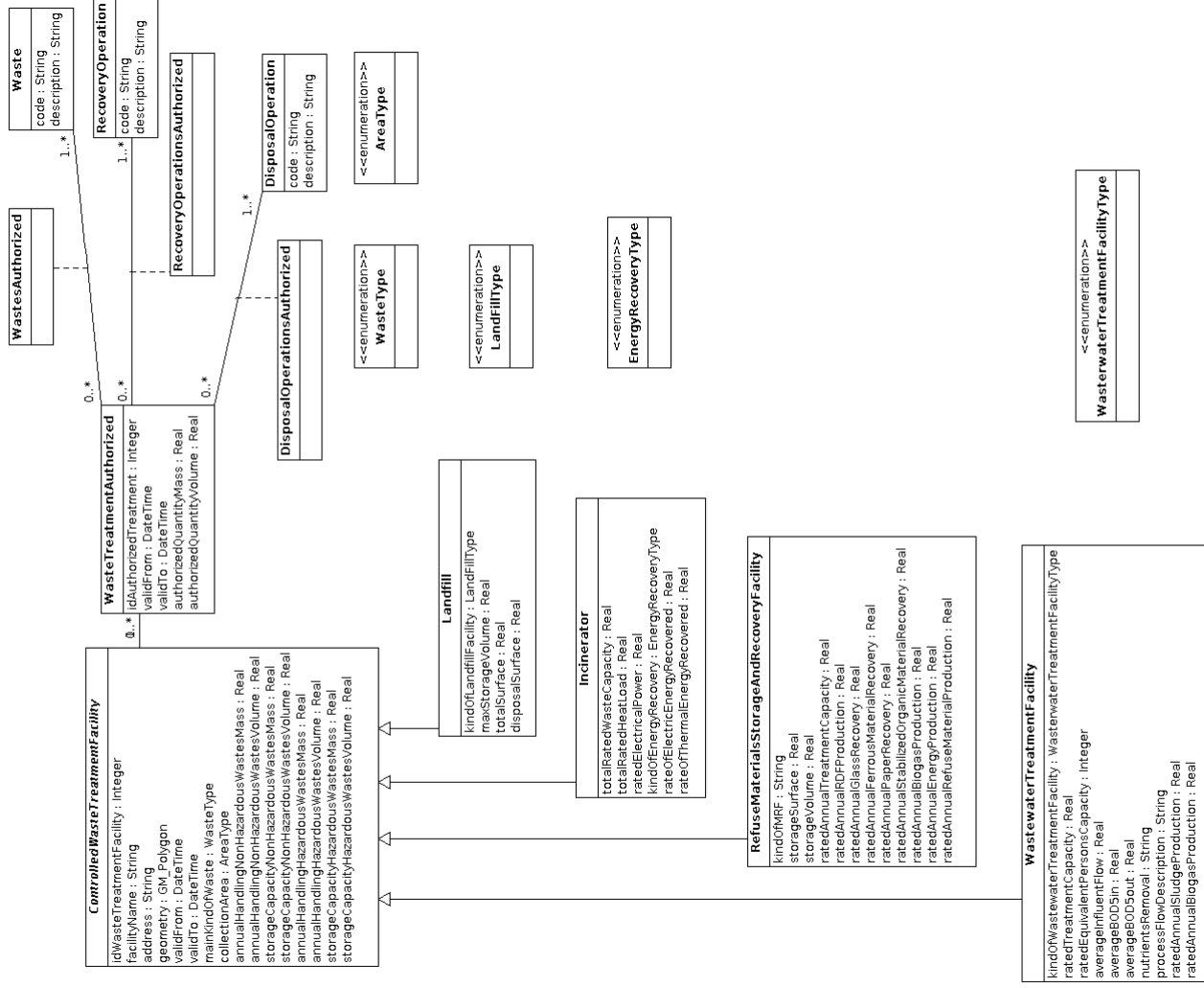
- the codification of waste types;
- the codification of managed area types
- the codification of landfill types
- the codification of forms of energy recovered
- the codification of wastewater treatment facility types

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material

1. A Plan4All - presentation.doc file, containing a brief description of the project.
2. A Utility and Government - Waste Management - Plan4all validation.doc file, containing instructions for validating the model.
3. A Utility and Government- Waste Management - Plan4all validation.xls file, containing the questionnaire.
4. A controlled_waste_treatment_2.png file, containing the data model in UML
5. A D4-2_UGS_WMF_Feature_catalogue.doc file, containing the feature catalogue.

More details about Plan4All and current solutions are given in www.plan4all.eu and <http://www.wiki.plan4all.eu>



7. Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

8. Part one. Class Attributes.

The first part of the questionnaire evaluates the understanding and the usefulness of each single attribute. Each attribute is described by the following elements:

Class	Attribute	Type	Multiplicity	Notes	Case study instance
Data model Class to which the attribute belongs	Attribute name	Attribute type: it indicates the domain to which the attribute belongs. It may be either a number (int, float), a text (), or a default value of a list (enumeration)	Multiplicity: it corresponds to the number of permitted values for the specific element. 1 = one and only one value; 0 ..* = from 0 to more; 1 .. * = from 1 to more;	Description of the meaning of the attribute and possible notes.	The attribute value related to the case study provided by the expert user / stakeholder

For each row of the attached .xls table, please provide the attribute value related to the case study and answer the questions.

9. Part two. Enumerations and codelists

c. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
WasteType	Waste types	Hazardous waste	
		Non hazardous waste	
		Radioactive waste	

Comment

Enumeration	Description	Value	Notes
AreaType	Collection area types	National	
		International	
		Regional	

Enumeration	Description	Value	Notes
		Interregional	
		Municipal	
		Intermunicipal	

Comment

Enumeration	Description	Value	Notes
LandFillType	LandFillType	Landfill for hazardous waste	
		Landfill for non hazardous waste	
		Landfill for inert waste	

Comment

Enumeration	Description	Value	Notes
EnergyRecoveryType	Forms of energy recovered.	Electric energy	
		Thermal energy	
		Electric and thermal energy	

Enumeration	Description	Value	Notes
		(cogeneration)	

Comment

Enumeration	Description	Value	Notes
WastewaterTreatmentFacilityType	Wastewater treatment facility types.	Hazardous liquid wastes treatment plant	
		Sewage treatment plant	
		Industrial wastewaters treatment plant	
		Agricultural or zootechnical wastewaters treatment plant	
		Radioactive wastewater treatment plant	

Comment

Feature Catalogue

[TAKEN FROM D4.2]

10. Part three. Final remarks

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

Production and industrial facilities

1. Introduction

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

2. Theme description

According to the INSPIRE specification, the *Agricultural and Aquaculture Facilities* theme is defined as farming equipment and production facilities. In particular, the farming facilities are constructions used in agricultural production. Agriculture is defined to include cropping of annual crops or perennials and rearing/ breeding of animals. Facilities can be classified according to the NACE1.1 used in official statistics. Examples of farming productions facilities are irrigation systems, greenhouses, stables, tanks and pipelines. Analogously, the aquaculture facilities consist of productions and treatment facilities for fish, mussels, seaweed and other kinds of aquaculture. Aquaculture does only include permanent or semi-permanent systems for breeding of the organisms, and does not include locations for catching animals or plants in their natural environment. Aquaculture facilities may exist both in marine waters, inland water environments and as terrestrial production systems.

Important feature types and attributes:

A production/ industry facility may have an exact location of site (point, area). However, there exist specific facilities which are characterized by different kinds of objects, such as transmission lines considered as linked objects to the "true" production/ industry facilities.

Concerning attributes, the same structure of attributes should as far as possible be used as for agricultural and aquaculture facilities.

Production/ industry facility

- id
- name
- classification system
- classification of activity/ production , Nace-code
- volume of production, per component and time
- volume of emission, per component and time
- owner/ responsible
- emission permitted volume
- etc

Storage facility

- id
- name
- classification system
- class/type
- component, name and volume
- owner/ responsible organisation

Waste site

- id

- name
- classification system
- class/type
- component, name and volume
- owner/ responsible organization

In the following a brief description of the salient characteristics of the data model proposed in WP 4.2 is given.

The general model focuses on a main class, namely *Activity*. It refers to the industrial production activities that are substances and products that can be dangerous, polluting, processed into waste at the end of the production chain and accidentally released into the environment. This latter issue is also managed by the schema, which includes specific information on emissions of pollutants in the air, water and land, on the off-site transfers of waste and pollutants in wastewater and its emission thresholds.

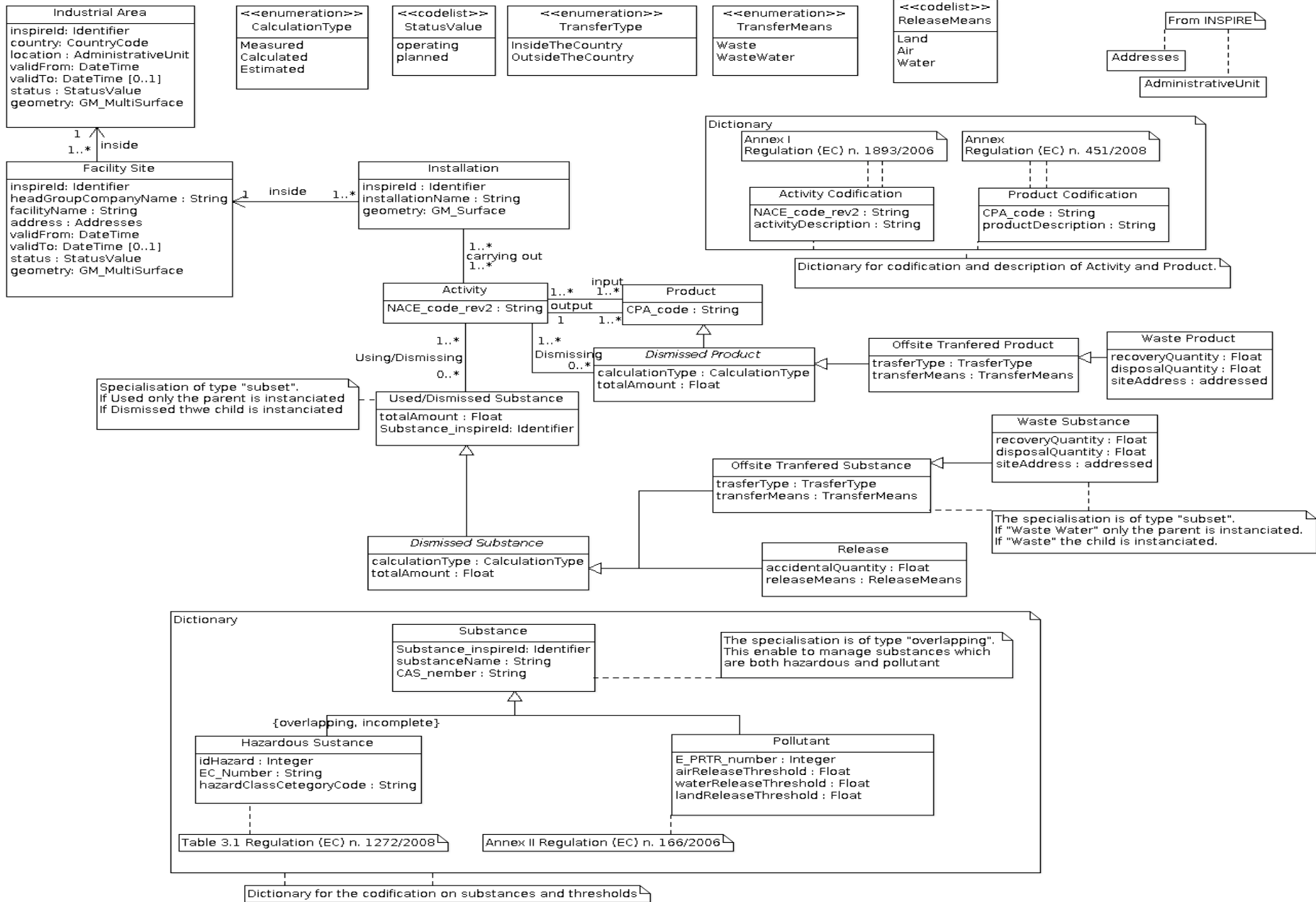
The proposed data model contains also a set of dictionaries referring to the referenced regulations and directives, and enumerations and code lists meant to specify, and possibly extend, values of the domain attributes.

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material

1. A Plan4All - presentation.doc file, containing a brief description of the project.
2. A Production and Industrial Facilities - Plan4all validation.doc file, containing instructions for validating the model.
3. A Production and Industrial Facilities - Plan4all validation.xls file, containing the questionnaire.
4. ProductionIndustrialFacilities.png file, containing the data model in UML
5. A Feature_catalogueProvRoma_AMFM.doc file, containing the feature catalogue.

More details about Plan4All and current solutions are given in www.plan4all.eu and <http://www.wiki.plan4all.eu>



3. Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

4. Part one. Class Attributes.

The first part of the questionnaire evaluates the understanding and the usefulness of each single attribute. Each attribute is described by the following elements:

Class	Attribute	Type	Multiplicity	Notes	Case study instance
Data model Class to which the attribute belongs	Attribute name	Attribute type: it indicates the domain to which the attribute belongs. It may be either a number (int, float), a text (), or a default value of a list (enumeration)	Multiplicity: it corresponds to the number of permitted values for the specific element. 1 = one and only one value; 0 ..* = from 0 to more; 1 .. * = from 1 to more;	Description of the meaning of the attribute and possible notes.	The attribute value related to the case study provided by the expert user / stakeholder

For each row of the attached .xls table, please provide the attribute value related to the case study and answer the questions.

5. Part two. Enumerations and codelists

d. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
CalculationType	Type of calculation for dismissed products and substances..	Measured	
		Calculated	
		Estimated	

Comment

Enumeration	Description	Value	Notes
TransferType		InsideTheCountry	
		OutsideTheCountry	

Comment

Enumeration	Description	Value	Notes
TransferMeans		Waste	
		WasteWater	

Comment

a. Codelists provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the codelist is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
ReleaseMeans	Indicates into which means the release of a product or substance takes place.	Land	
		Air	
		Water	

Comment

Codelist	Description	Value	Notes
StatusValue	Indicates whether a facility site is operating or planned.	Operating	
		Planned	

Comment

Feature Catalogue

[TAKEN FROM D4.2]

6. Part three. Final remarks

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

Agricultural and aquaculture facilities

1. Introduction

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

2. Theme description

According to the INSPIRE specification, the *Agricultural and Aquaculture Facilities* theme is defined as farming equipment and production facilities. In particular, the farming facilities are constructions used in agricultural production. Agriculture is defined to include cropping of annual crops or perennials and rearing/ breeding of animals. Facilities can be classified according to the NACE1.1 used in official statistics. Examples of farming productions facilities are irrigation systems, greenhouses, stables, tanks and pipelines. Analogously, the aquaculture facilities consist of productions and treatment facilities for fish, mussels, seaweed and other kinds of aquaculture. Aquaculture does only include permanent or semi-permanent systems for breeding of the organisms, and does not include locations for catching animals or plants in their natural environment. Aquaculture facilities may exist both in marine waters, inland water environments and as terrestrial production systems.

Important feature types and attributes:

Agricultural productions/treatment facility and aquaculture production/treatment facility may have an exact location of site (point, area). Objects may be spatially expressed as points, but where production area is substantial, area coverage may be relevant, e.g. greenhouse areas or mussels production sites at sea.

Documentation of the facilities' location may exist as coordinates or indirectly through the address, property or building. In particular, important properties to take into account are the following.

- Agricultural facility
- classification system
- kind of facility
- role of facility in production system
- kind of production
- quantity of production
- kind of emission, different substances
- quantity of emission, different substances
- system for disease control
-
- Aquaculture facility
- classification system
- kind of facility
- role of facility in production system
- kind of production
- quantity of production
- kind of emission, different substances
- quantity of emission, different substances

In the following a brief description of the salient characteristics of the data model proposed in WP 4.2 is given.

The focus of the model consists of two main classes, namely *AgriculturalAquacultureHolding* and *Activity*. The former has been designed starting from the Regulation n. 1166/2008 on farm structure surveys and survey on agricultural production methods, which has been then extended also to include the aquaculture field. This class refers to a single unit (both technically and economically) which has a single management and which undertakes agricultural and/or aquaculture activities. It consists of a set of installations, a set of irrigation units, and is served by one or more water sources for irrigation and/or production purposes. As for the latter, activities performed by the installations output products along with possible dismissing substances and products. The task of their disposal has to be monitored in agreement with the European directives.

The proposed data model contains also a set of dictionaries referring to the referenced regulations and directives, and enumerations and code lists meant to specify, and possibly extend, values of the domain attributes.

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material

1. A Plan4All - presentation.doc file, containing a brief description of the project.
2. AquaAgricultural Facilities Plan4all validation.doc file, containing instructions for validating the model.
3. Un AquaAgricultural Facilities Plan4all validation.xls file, containing the questionnaire.
4. D4-2_AF_UML.jpg file, containing the data model in UML
5. A D4-2_AF_feature_catalogue.doc file, containing the feature catalogue.

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Dictionary for the typology of agricultural installations and water resources

Regulation (EC) n. 1200/2009 implementing Regulation (EC) n. 1831/2003 as regards cover regards livestock unit coefficients and definition of the character

Dictionary for the typology of irrigation methods

FAO Corporate Document Repository

Dictionary for the codification and description of the type of farming

TypeOfFarming

- + administrativeCode: string
- + particularTypeOfFarming: string

Table 6.4 of Annex I of Regulation (EC) n. 1831/2003 establishing a Community typology for agricultural holdings

Dictionary for the definition of agricultural and aquaculture holding

Regulation (EC) n. 1831/2003 on farm productive sweeps and the survey on agricultural production methods

Dictionary for codification and description of Activity and Product

ActivityClassification

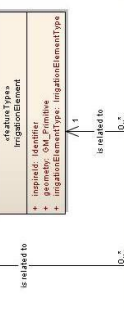
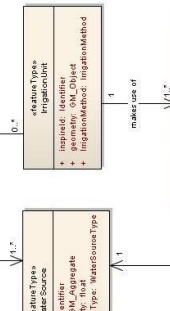
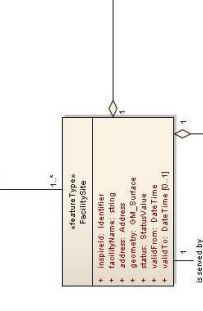
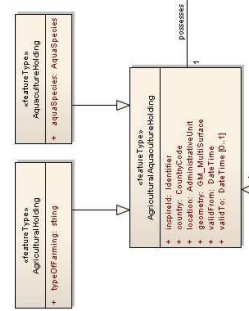
- + NAEE_Cat_Code: string
- + activityDescription: string

ProductClassification

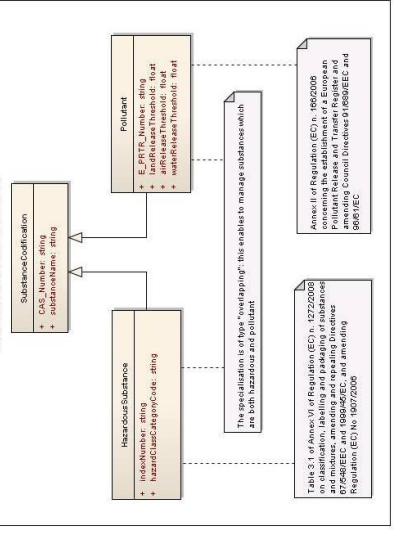
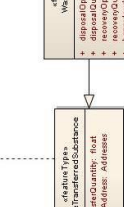
- + EPA_Cat_Code: string
- + productDescription: string

Annex 1, II and III of Directive (EC) n. 98/2006 on waste

Annex 1, II and III of Directive (EC) n. 98/2006 on waste

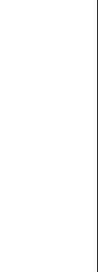


This address is to be used with the facility, which means that the limited production is not transferred



The specialisation is of type "overlapping": this enables to manage substances which are both hazardous and pollutant

Table 3.1 of Annex VI of Regulation (EC) n. 1831/2003 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 609/67/EEC and 609/68/EEC and amending Regulation (EC) No 1807/2006



3. Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

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The first part of the questionnaire evaluates the understanding and the usefulness of each single attribute. Each attribute is described by the following elements:

Class	Attribute	Type	Multiplicity	Notes	Case study instance
Data model Class to which the attribute belongs	Attribute name	Attribute type: it indicates the domain to which the attribute belongs. It may be either a number (int, float), a text (), or a default value of a list (enumeration)	Multiplicity: it corresponds to the number of permitted values for the specific element. 1 = one and only one value; 0 ..* = from 0 to more; 1 .. * = from 1 to more;	Description of the meaning of the attribute and possible notes.	The attribute value related to the case study provided by the expert user / stakeholder

For each row of the attached .xls table, please provide the attribute value related to the case study and answer the questions.

5. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
AccidentalReleaseMeans	Indicates into which means the accidental release of a product or substance takes place.	Land	
		Air	
		Water	

Comment

Enumeration	Description	Value	Notes
AgriculturalInstallationType	Type of agricultural installation, according to Regulation (EC) n. 1200/2009.	ManureTank_Covered	
		DungStorage_Covered	

Enumeration	Description	Value	Notes
		SlurryStorage_Covered	
		ManureTank_Open	
		DungStorage_Open	
		SlurryStorage_Open	
		AnimalHousing_Cattle	
		AnimalHousing_Pigs	
		AnimalHousing_LayingHens	
		AnimalHousing_Other	
		EnergyProductionFacility_Wind	
		EnergyProductionFacility_Biomass	
		EnergyProductionFacility_Solar	
		EnergyProductionFacility_Hydro	
		EnergyProductionFacility_Other	
		Other	

Comment

Enumeration	Description	Value	Notes
CalculationType	Type of calculation for dismissed products and substances..	Measured	
		Calculated	
		Estimated	

Comment

Enumeration	Description	Value	Notes
EasementType	Classification of the type of easement connected to the protection of areas around public utilities or to the public use of certain resources.	UtilityEasement	Easement attached to an irrigation element. EXAMPLE Easement attached to water canals allowing for their maintenance.
		RightOfWay	Right of way for the exploitation of a water source or an irrigation element. NOTE If the water source or the irrigation element is outside the holding, the right of way will allow the owner to have access to it. If the water source or the irrigation element is inside the holding, other owners will be allowed to have access in order to exploit it.

Comment

Enumeration	Description	Value	Notes
IrrigationMethod	Method of irrigation, according to FAO. SOURCE FAO Corporate Document Repository.	FurrowIrrigation	
		BasinIrrigation	
		SprinklerIrrigation	
		DripIrrigation	
		BorderIrrigation	

Comment

Enumeration	Description	Value	Notes
StatusValue	Indicates whether a facility site is operating or planned.	Operating	
		Planned	

Comment

Enumeration	Description	Value	Notes
WaterSourceType	Type of water source, according to Regulation (EC) n. 1200/2009.	OnFarmGroundWater	
		OnFarmPondDam	

Enumeration	Description	Value	Notes
		OffFarmLakeRiverWaterCourse	
		OffFarmWaterSupplyNetwork	
		Other	

Comment

b. Codelists provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the codelist is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Codelist	Description	Value	Notes
AquacultureInstallationType	Type of aquaculture installation. SOURCE SOSI Norwegian standard.	LandBasedFishFarm	
		FloatingFishFarm	
		BuoySuspensionFishFarm	

Comment

Codelist	Description	Value	Notes
AquaSpecies	Species bred in the aquaculture installation	Perch	
		Goldsinny	
		Mussels	
		AnglerFish	
	SOURCE: SOSI Norwegian standard.	Sprat	
		Natural/FlatOyster	
		Northern/SpottedWolfFish	
		NorthernPike	
		Seawolf/AtlanticWolfFish	
		IcelandScallop	
		QueenScallop	
		Grayling	
		SeaBass	
		HeartClam/SpinyCockle	
	Lobster		
	Haddock		
	Scallops		

Codelist	Description	Value	Notes
		KingCrab	
		Crab	
		Crawfish	
		SeaUrchin	
		OceanQuahog	
		Halibut	
		Burbot/Eelpout	
		Salmonid	
		Wrasse	
		Hake	
		Mackerel	
		Marine	
		ClamMussel	
		HorseMussel	
		Turbot	
		Shrimp	

Codelist	Description	Value	Notes
		Lumpfish	
		Plaice	
		Char	
		Pollock/Saithe	
		Herring	
		Shells	
		Flounder	
		Snail	
		WolfFish	
		Tench	
		Cod	
		Sole	
		Eel	
		Trout	
		Oysters	
Flounder			

Comment

Codelist	Description	Value	Notes
IrrigationElementType	Type of irrigation device.	UndergroundWaterPipe	
		Canal	
		WaterPump	

Comment

Feature Catalogue

[TAKEN FROM D4.2]

6. Part three. Final remarks

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

Area management/restriction/regulation zones and reporting units

1. Introduction

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

2. Theme description

The data model has been developed according the requirements from “Area management/Restriction/Regulation zones and Reporting Units” theme of INSPIRE Annex III. By definition these are areas managed, regulated or used for reporting at international, European, national, regional and local levels.

The areas/zones included in the data model are:

- areas for dumping sites
- restricted areas around drinking water sources
- nitrate-vulnerable zones
- regulated fairways at sea or large inland waters
- areas for the dumping of waste
- noise restriction zones
- prospecting and mining permit areas
- river basin districts
- coastal zone management areas
- areas with the right to use a property without possessing it

The theme “area management” deals with a very wide range of features from local to international level. Also there are several links and overlaps with other INSPIRE themes: Transport Networks, Land Use, Administrative Units, Hydrography, Sea Regions, Mineral Resources, Administrative Units, etc. In some cases the data model duplicates physical features which are defined in Annex I themes. For example some reporting units are collections of administrative units (or single administrative units) and some management units are actual physical water bodies. For this reason the data model includes the duplicate geometry, as probable recipients will not have the access to all other INSPIRE data and therefore this would overcome unsatisfactory linkages between Annex I and Annex III themes.

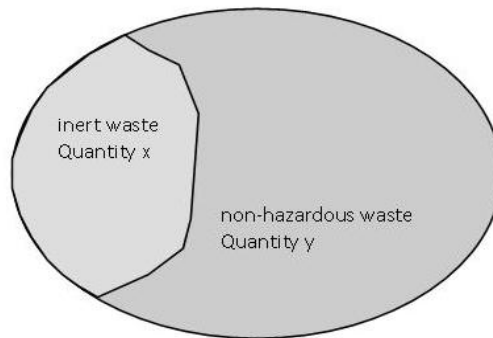
In general the theme “area management” and its feature types deal with information content from any sector – e.g. environmental, transport, health, education, energy, fisheries, agriculture, etc. Because area management covers so many different sectors another approach could be to create a more abstract model although this could only record a minimal subset of metadata for each area without any specific sector attributes. Therefore, one more feature class was added to the data model which can describe in a more general way any other management/restriction/regulation zone and reporting unit in addition to the ones mentioned above.

The AbstractClass contains attributes that are valid for all subclasses (e. g. object ID, geometry, etc.). The subclasses are:

- **Dumping sites:** one dumping site can have one or more addresses and one or more sections for different kind of waste, which can be dumping areas for inert, hazardous and non-

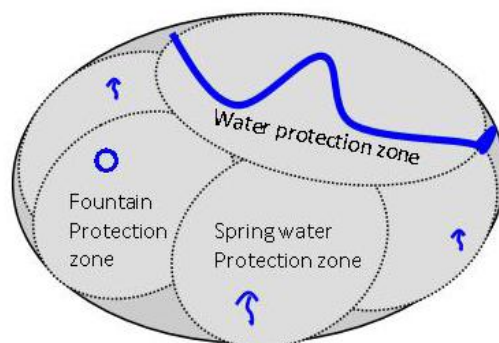
hazardous waste. Inert waste is waste that is neither chemically or biologically reactive and will not decompose. Examples of this are sand, drywall, and concrete. Hazard waste is defined in the European Waste Catalogue 200/53/EC. Hazardous waste has one of the following factors: ignitability (i. e. flammable), reactivity, corrosivity and toxicity. Non-hazardous waste is all other kind of waste. In Addition to European Regulations, there are national regulations or regulations on regional/local level as well.

1 Dumping Site



- **Drinking water sources:** There is one restricted area around one or more drinking water source(s). Depending on the drinking water source (fountain, spring water, surface water, water tanks or cistern) there can be different types of restrictions zones around the water source (fountain protection zone, spring water protection zone, 60 days stream zone to extraction, etc.) depending on national/state law (e. g. drinking water regulations on Austrian state level). Other reference: Quality of water intended for human consumption,

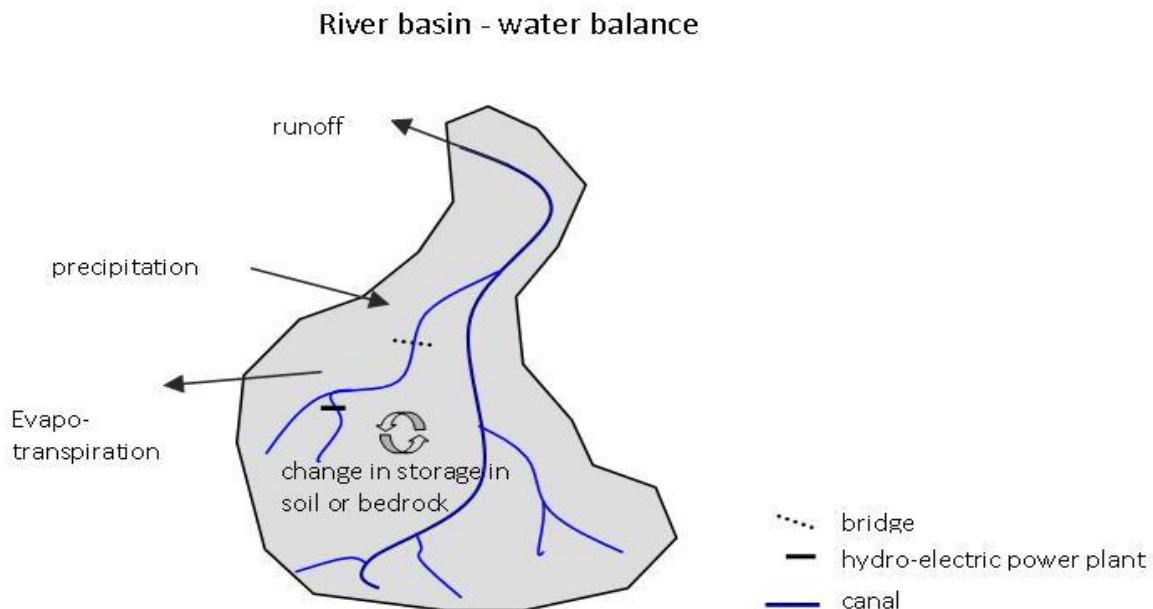
Restricted area around drinking water sources



directive 1998/83/EC.

- **Nitrate vulnerable zones:** Designation for areas of land that drain into nitrate polluted water, or water which could become polluted by nitrates. Reference: Good agriculture practice FAO guidelines.

- **Regulated fairways at sea or inland waters** helps determine where particular vessels are allowed to travel. Relevant are the kind of waterway information (traffic sign, water level, etc.) and the name of the waterway. Reference: Code Européen des voies de la navigation interieure (European Code for Interior Navigation). The feature class is connected to the INSPIRE theme Transport Networks: Water Transport Networks.
- **Areas for the dumping of waste at sea:** definition of areas where the dumping of (liquid) waste at sea is allowed or restricted according the OSPAR commission. Important attributes are the kind of waste and its quantity. The feature class is connected to the INSPIRE theme Sea Regions. References: Dumping of waste at sea directive 2006/12/EC.
- **Coastal zone management areas** include the management of fishery, the definition of boundaries, the management of harbor districts, etc. Reference: Water framework directive 2000/60/EC.
- **Areas with the right to use property without possession.** Definition of areas/certain properties with easements and activities that are accepted (e. g. fishery rights, forest rights, mooring rights, etc.).
- **River basin districts:** The area of land from which all (surface) run-off flows through a sequence of streams, rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta. Related to INSPIRE Theme Hydrography. Reference: Harmonised river information service directive 2005/44/EC.



- **Prospecting and mining permit areas:** areas with permit to search and mine for certain minerals and a certain quantity. References: Management of waste from extractive industries directive 2006/21/EC; Control of major accident hazards involving dangerous substances directive 2003/105/EC.

- **Noise restriction zones:** zones where certain noise (e. g. airport, street, industry, sport noise) is restricted at certain times. Reference: Environmental noise restriction directive 2002/49/EC.

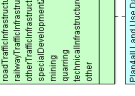
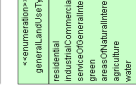
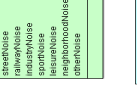
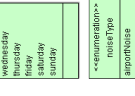
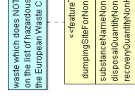
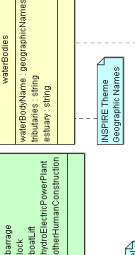
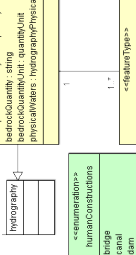
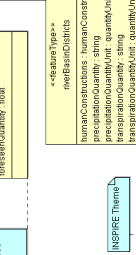
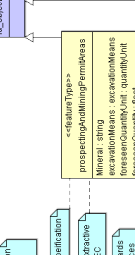
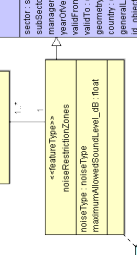
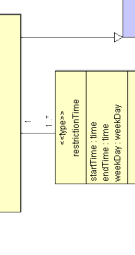
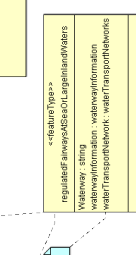
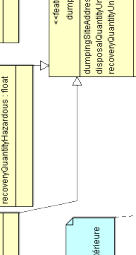
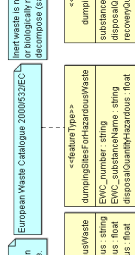
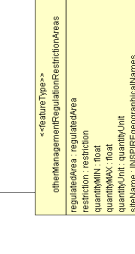
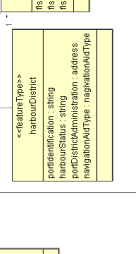
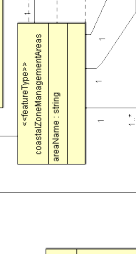
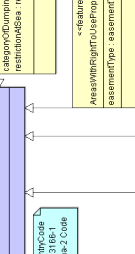
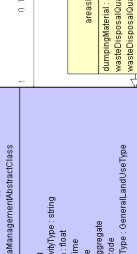
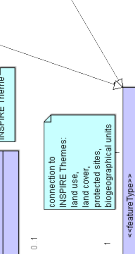
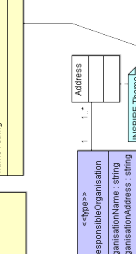
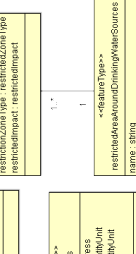
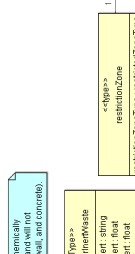
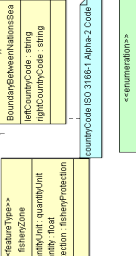
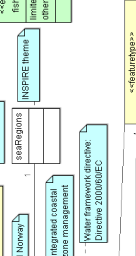
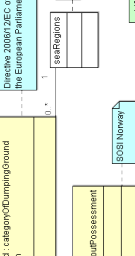
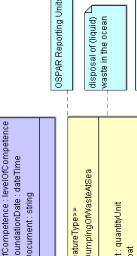
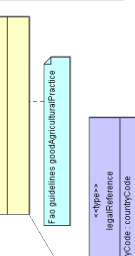
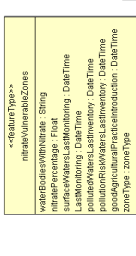
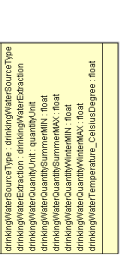
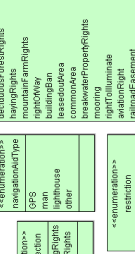
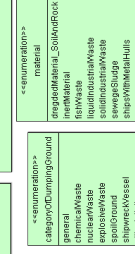
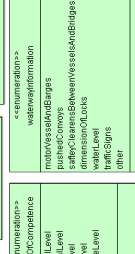
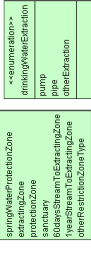
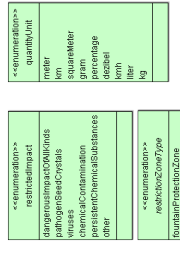
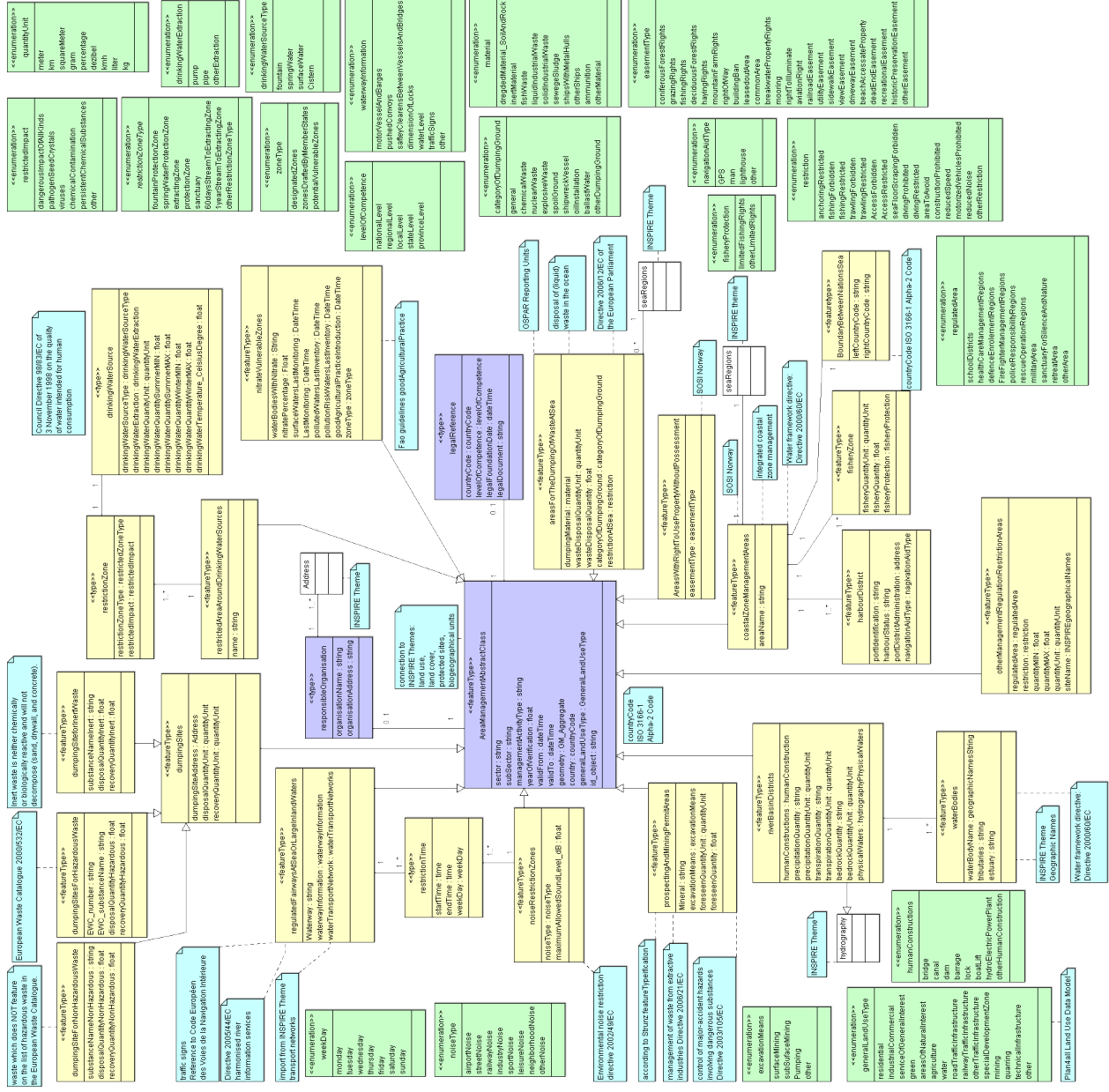
As “area management” covers information from different sectors, a class was added to the data model which can describe **any other management/regulation/restriction area** and reporting unit but with less metadata.

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material

1. A Plan4All - presentation.doc file, containing a brief description of the project.
2. A Area Management - Plan4all validation.doc file, containing instructions for validating the model.
3. A Area Management - Plan4all validation.xls file, containing the questionnaire.
4. A Plan4all_area_management_data_specification_v12_ceit.gif file, containing the data model in UML
5. A Plan4all_task4.2_area_management_feature_catalogue_v10_ceit.doc file, containing the feature catalogue.

More details about Plan4All and current solutions are given in www.plan4all.eu and <http://www.wiki.plan4all.eu>



3. Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

4. Part one. Class Attributes.

The first part of the questionnaire evaluates the understanding and the usefulness of each single attribute. Each attribute is described by the following elements:

Class	Attribute	Type	Multiplicity	Notes	Case study instance
Data model Class to which the attribute belongs	Attribute name	Attribute type: it indicates the domain to which the attribute belongs. It may be either a number (int, float), a text (), or a default value of a list (enumeration)	Multiplicity: it corresponds to the number of permitted values for the specific element. 1 = one and only one value; 0 ..* = from 0 to more; 1 .. * = from 1 to more;	Description of the meaning of the attribute and possible notes.	The attribute value related to the case study provided by the expert user / stakeholder

For each row of the attached .xls table, please provide the attribute value related to the case study and answer the questions.

5. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
QuantityUnit		Meter	
		Km	
		squaremeter	
		gram	
		percentage	
		dezibel	
		Km/h	
		liter	
		Kg	

Comment

Enumeration	Description	Value	Notes
GeneralLandUseType	Import from Plan4all Land Use Data Model General indication on the land use of an area.	Residential	
		IndustrialCommercial	
		ServicesOfGeneralInterest	All services; comprises tourism services.
		Green	Public parks
		AreasOfNaturalInterest	Comprises woods
		Agriculture	
		Water	
		RoadTrafficInfrastructure	Comprises both networks and nodes.
		RailwayTrafficInfrastructure	Comprises both networks and nodes.
		OtherTrafficInfrastructure	NOTE Comprises both networks and nodes. EXAMPLE Parking lots, airports, cycle tracks, intermodal nodes.
SpecialDevelopmentZone	Area for special use or special function. EXAMPLE Malls, hotels, stadiums for sport, convention centres, energy extraction.		
Mining	Area for mining purposes.		

Enumeration	Description	Value	Notes
		Quarrying	Area for quarrying purposes
		TechnicalInfrastructure	EXAMPLE Energy and waste supply and disposal, energy networks
		Other	Other functions

Comment

Enumeration	Description	Value	Notes
drinkingWaterExtraction		Pump	
		Pipe	
		otherExtraction	

Comment

Enumeration	Description	Value	Notes
levelOfCompetence		nationalLevel	
		stateLevel	

Enumeration	Description	Value	Notes
		regionalLevel	
		provincialLevel	
		localLevel	

Comment

Enumeration	Description	Value	Notes
drinkingWaterSourceType		fountain	
		springWater	
		surfaceWater	
		Cistern	

Comment

Enumeration	Description	Value	Notes
	Types of restriction zones (Area)	fountainProtectionZone	

Enumeration	Description	Value	Notes
restrictionZoneType		springWaterProtectionZone	
		extractingZone	
		protectionZone	
		sanctuary	
		60DaysStreamToExtractingZone	
		1DayStreamToExtractingZone	
		otherRestrictionZoneType	

Comment

Enumeration	Description	Value	Notes
RestrictedImpact	Types of restrictions (Activities)	dangerousImpactOfAllKind	
		pathogenSeedCrystals	
		viruses	
		chemicalContamination	
		persistentChemicalSubstances	

Enumeration	Description	Value	Notes
		other	

Comment

Enumeration	Description	Value	Notes
zoneType	Types of zones	designatedZones	
		zonesDraftedByMemberStates	
		potentialVulnerableZones	

Comment

Enumeration	Description	Value	Notes
waterwayInformation		motorVesselAndBarges	
		pushedConvoys	
		safteyClearensBetweenVesselsAndBridges	
		dimensionOfLocks	

Enumeration	Description	Value	Notes
		waterLevel	
		trafficSigns	
		other	

Comment

Enumeration	Description	Value	Notes
Material		dregdedMaterial_soilAndRock	
		inertMaterial	
		fishWaste	
		liquidIndustrialWaste	
		solidIndustrialWaste	
		sewageSludge	
		shipsWithMetalHulls	
		otherShips	
		ammunition	

Enumeration	Description	Value	Notes
		otherMaterial	

Comment

Enumeration	Description	Value	Notes
NavigationAidType		GPS	
		Man	
		Lighthouse	
		Other	

Comment

Enumeration	Description	Value	Notes
fisheryProtection		limitedFishingRights	
		otherLimitedRights	

Comment

Enumeration	Description	Value	Notes
humanConstruction		bridge	
		canal	
		dam	
		barrage	
		lock	
		boatlift	
		HydroElectricPowerPlant	
		otherHumanConstruction	

Comment

Enumeration	Description	Value	Notes
excavationMeans		surfaceMining	
		subSufaceMining	
		Pumping	

Enumeration	Description	Value	Notes
		Other	

Comment

Enumeration	Description	Value	Notes
noiseType		airportNoise	
		streetNoise	
		railwayNoise	
		industryNoise	
		sportNoise	
		leisureNoise	
		neighborhoodNoise	
		otherNoise	

Comment

Enumeration	Description	Value	Notes
weekDay		Monday	
		Tuesday	
		Wednesday	
		Thursday	
		Friday	
		Saturday	
		Sunday	

Comment

Enumeration	Description	Value	Notes
regulatedArea		schoolDistricts	
		healthCareManagementRegions	
		defenceEnrolementRegions	
		fireFighterManagementRegions	
		policeResponsibilityRegions	

Enumeration	Description	Value	Notes
		rescueOperationRegions	
		militaryArea	
		sanctuaryForSilenceAndNature	
		retreatArea	
		otherArea	

Comment

Enumeration	Description	Value	Notes
categoryOfDumpingGround		general dumping ground	
		chemical waste dumping ground	
		nuclear waste dumping ground	
		explosives dumping ground	
		spoil ground	
		shipwreck Vessel dumping ground	
		oil installations	

Enumeration	Description	Value	Notes
		ballast water	
		otherDumpingGround	

Comment.....

Enumeration	Description	Value	Notes
restriction		anchoringRestricted	
		fishingForbidden	
		fishingRestricted	
		trawlingForbidden	
		trawlingRestricted	
		accessForbidden	
		accessRestricted	
		seaFloorScrapingForbidden	
		divingProhibited	
		divingRestricted	
		areaToAvoid	

Enumeration	Description	Value	Notes
		constructionProhibited	
		reducedSpeed	
		motorizedVehiclesProhibited	
		reducedNoise	
		otherRestriction	

Comment

Enumeration	Description	Value	Notes
easementType		Coniferous forest rights	
		Grazing rights	
		Fishing rights	
		Deciduous forest rights	
		Haying rights	
		Mountain farm rights	
		Right of way	
		Building ban	

Enumeration	Description	Value	Notes
		Leased-out area	
		Common area	
		Breakwater property rights	
		Mooring	
		Right to illuminate	
		Aviation right	
		Railroad easement	
		Utility easement	
		Sidewalk easement	
		View easement	
		Driveway easement	
		Beach access property	
		Dead end easement	
		Recreational easement	
		Historic preservation easement.	

Comment

Feature Catalogue

[TAKEN FROM D4.2]

6. Part three. Final remarks

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

Natural risk zones

1. Introduction

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

2. Theme description

Definition: (INSPIRE, 2007)

Vulnerable areas characterized according to natural hazards (all atmospheric, hydrologic, seismic, volcanic and wildfire phenomena that, because of their location, severity, and frequency, have the potential to seriously affect society), e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions.

Description:

"Natural risk zones" are zones where natural hazards areas intersect with highly populated areas and/or areas of particular environmental/ cultural/ economic value. Risk in this context is defined as: $\text{risk} = \text{hazard} \times \text{probability of its occurrence} \times \text{vulnerability of the exposed populations and of the environmental, cultural and economic assets in the zone considered}$.

Natural hazards are natural processes or phenomena occurring in the biosphere that may constitute a damaging event. Natural hazards can be classified by origin namely: geological, hydrometeorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing. An international definition on hazard is relevant in defining the theme. The internationally agreed terminology on disasters should be adopted in this document (UNISDR): Hazards is defined as a potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterised by its location, intensity, frequency and probability. Geological hazards are natural earth processes or phenomena that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Geological hazard includes internal earth processes or tectonic origin, such as earthquakes, geological fault activity, tsunamis, volcanic activity and emissions as well as external processes such as mass movements: landslides, rockslides, rock falls or avalanches, surfaces collapses, expansive soils and debris or mud flows. Geological hazards can be single, sequential or combined in their origin and effects.

Hydrometeorological hazards are natural processes or phenomena of atmospheric, hydrological or oceanographic nature, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hydrometeorological hazards include: floods, debris and mud floods; tropical cyclones, storm surges, thunder/hailstorms, rain and wind storms, blizzards and other severe storms; drought, desertification, wildland fires, temperature extremes, sand or dust storms; permafrost and snow or ice avalanches. Hydrometeorological hazards can be single, sequential or combined in their origin and effects.

Many of the hazards are sudden in their nature. However, several categories of natural hazards with major impacts on civil security and on environmental/ cultural and economic assets are not sudden in nature. They may be permanent phenomena going unnoticed (e.g.: radon gas emanations, deficit or excess of elements in soils and water), or slow phenomena (slow ground motion). Technological hazards are commonly sudden failure of a construction or a process causing significant damage. Natural hazards have the potential to precipitate technological hazards. Usually continuous processes like pollution/emission is not classified as hazards. However, repeated emissions might be called hazards, e.g. large scale chemical, radiation or oil spills. Continuous pollution and other environmental problems may have an adverse effect also on the size and frequency of some kinds of natural hazards.

Knowledge about "Natural hazards areas" is important in the identification and delineation of risk zones. The natural hazards areas may reflect all atmospheric, meteorological, hydrologic, geological and wildfire phenomena that, because of their location, severity, and frequency, have the potential to seriously affect society, e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions, shrinking and swelling soils, radon gas emanations, deficit or excess of trace elements in soils or water. Data and services are probably needed for both risk assessment and emergency situations Special warning services may be relevant.

Underneath is given examples of some important natural hazards, with information on occurrence: location and frequency and with some information on the datasets, coverage etc.

Areas prone to flooding by inland waters and lakes:

Areas flooded due to exceptional raise of water table in groundwater, rivers and lakes, affecting adjacent land or areas further away being at the same altitude or lower than the flooding water. Affecting housing and industrial sites, agricultural land, transport network, sewage systems, dams etc: Occurrence: Flat river plains, delta areas, valley bottoms and shorelines.

- Physical mapping of areas susceptible to flooding, line for highest recorded level, also division into zones with different susceptibility classes. Data needs: detailed elevation model and measurements in the field
- Areas with certain regulations/ restrictions for different land use/ resource use linked to flooding risk.
- Constructions for flood control
- Data set on restriction zones on land use/ building/ activities downstream reservoirs in case of reservoir brake-down
- Drainage capacity of ground and soil sealing areas with low drainage capacity

Areas prone to flooding by spring tide/ exceptional sea level rise

Areas prone to flooding due to exceptional raise of water table the sea and backwaters, affecting adjacent land or areas further away being at the same altitude or lower than the flooding water. Affecting housing and industrial sites, agricultural land, transport network, sewage systems, dams etc Occurrence: Flat coastal areas, areas lower than original sea level. Commonly harbours, trade areas etc. Frequency: Floods, as storms, are among the most common natural disasters in Europe – with the effect of being of the most costly in terms of economy and insurance.

- Physical mapping of areas susceptible to flooding, line for highest recorded level, also division into zones with different susceptibility classes. Data needs: detailed elevation model and/or measurements in the field.
 - measures by radar satellites or air born equipment to measure water level
 - field measurement
- Constructions for flood control
- Areas with certain regulations/ restrictions for different land use/ resource use linked to flooding risk.

Earthquakes

Earthquakes are widespread in the EU and other European Countries. The most destructive events have occurred in the Mediterranean countries, particularly Greece and Italy, which are in the collision zone between the Eurasian and African crustal plates. Through the last three decades several thousand persons have died and injured, several hundred thousand became homeless in events in Greece and Italy. Data needed for getting overview and handling the hazard:

- date and time of occurrence; - epicenter location, depth, with a liability index - Magnitude and type of magnitude used - Observations (local intensity (MSK 1964 standard) with a liability index) - Triggered effects - Fault
- Data needed for emergency/ rescue operations

Volcano eruptions:

A few active volcanoes exist in the EU and other European Countries. The activity is low and generally the threats are minimal compared to other natural hazards. Some destructive events have occurred in the Mediterranean countries, such as Italy over the past decades. Actions are usually coped with at the local level.

- It is difficult to outline important spatial data sets linked to volcano activities. There might exist maps on expected lava flow channels and restriction areas for certain activities.

Mud slides, land slides and quick (saline leached) clay soils slides:

- clay rich shrinking and swelling soils
- areas of unstable terrain, slide area divided into zones of different susceptibility classes
- borehole locations with further information on the salt content etc
- affected area if area is subject to slumping and landslip
- Areas with activity restrictions – which kinds of operations are allowed in order to prevent slides and which areas are not to be built on. Different countries have different threshold levels e.g. concerning slope degree on land used for buildings, the values depending on the ground condition (soil, clay, bedrock)

Areas prone to mountain blocks slides and stone slides:

Occurrence: Mountain block slides mostly in alpine environment with "young landscapes" where frost and water erosion is active, stone slides areas with steep slopes and loose material. Problems occur where land use includes settlements, infrastructure etc.

- Physical mapping of areas susceptible to land block slides divided into zones with different susceptibility classes. Based on mapping of bedrock structures.

- Physical mapping of areas susceptible to stone slides divided into zones with different susceptibility classes. Further info on kind of material. A rough assessment can be based on analysis of slope angle, slope length and rock stability.
- Anticipated affected areas followed by a land block slide; the stone masses themselves and following flooded areas.
- Areas with certain regulations/ restrictions for different land use/ resource use linked to land block slide risk and stone slide risk.
- Constructions for directing stone slides

Areas prone to snow slides - avalanches:

Occurrence: In areas with significant snow cover combined with steep slopes. Wind will affect the creation of snowdrifts.

- Physical mapping of areas susceptible to snow slides divided into zones with different susceptibility classes
- Areas with certain regulations/ restrictions for different land use/ resource use linked to snow slide risk.
- Constructions for directing slides

Areas susceptible to forest, bush and grassland fires

Areas susceptible to forest, bush and grassland fires can be analyzed by using

- Satellite images
- Vegetation cover, composition and strata
- Elevation data
- Meteorological data, Precipitation, temperature, winds,

Areas of installations prone to storms/ wind damage

Occurrence: Unclear picture; seas, coastal areas and narrow valleys, but also other areas within the continent. In addition storms, as floods, are among the most common natural disasters in Europe – thus also being the most costly in terms of economy and insurance.

- Data sets. Areas with recorded extreme wind

Coastal erosion

Coastal erosion is an important and costly category of natural hazard of growing significance in a climate change context

Radon areas

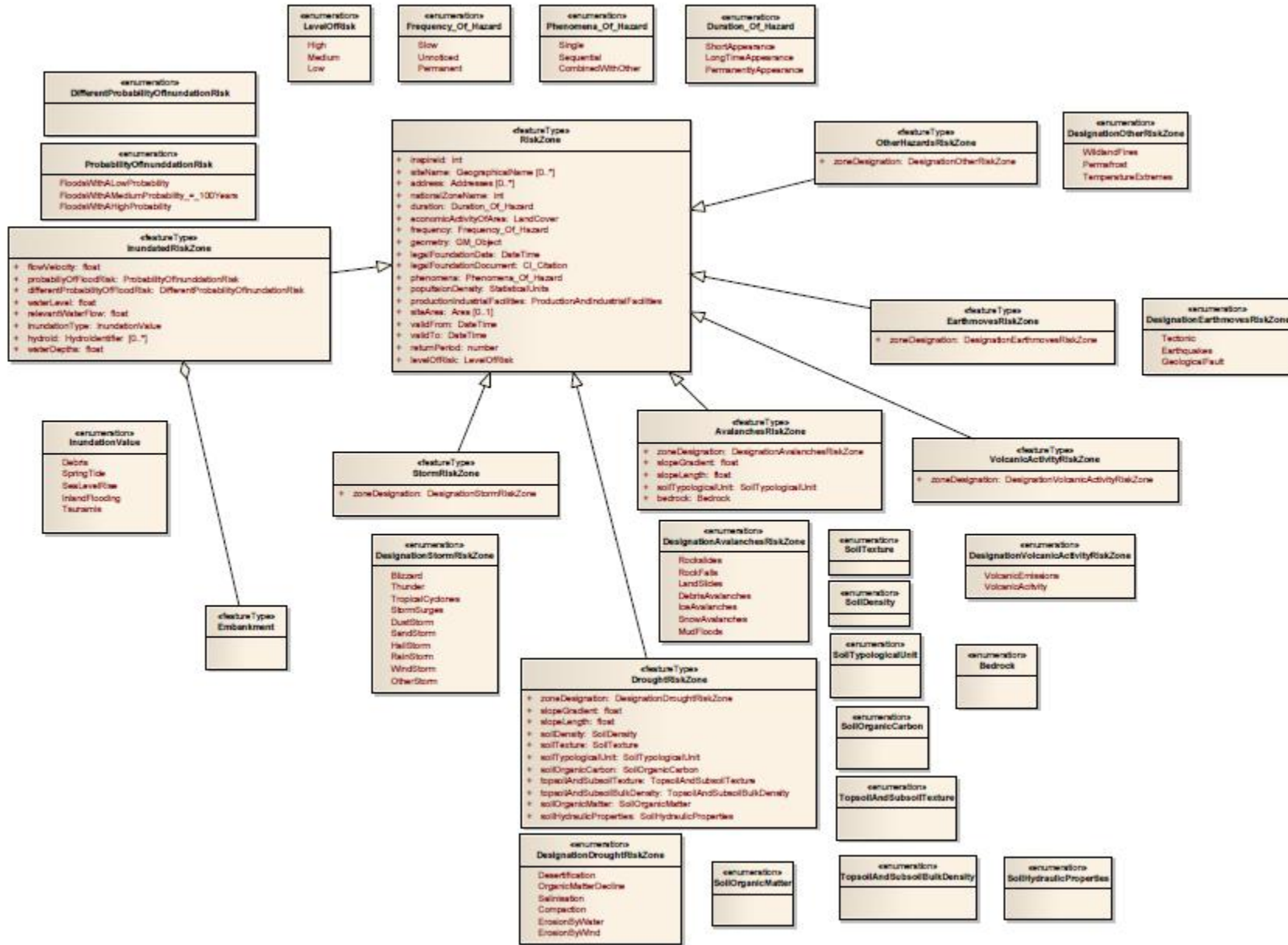
Natural radiation from bedrocks and unconsolidated rocks are considered as natural risk zones due to a possible high radon concentration in indoor air.

Task 8.2 - Guidelines for the V&VLO

In this package, you will find the following material

1. A Plan4All - presentation.doc file, containing a brief description of the project.
2. Un Natural Risk Zones Plan4all validation.doc file, containing instructions for validating the model.
3. Un Natural Risk Zones Plan4all validation.xls file, containing the questionnaire.
4. Natural_risk_zone_data_model_100804.pdf file, containing the data model in UML
5. A Natural_risk_zone_data_model_documentation_100804.pdf file, containing the feature catalogue.

More details about Plan4All and current solutions are given in www.plan4all.eu and <http://www.wiki.plan4all.eu>



3. Expert User / Stakeholder

Title:	
Name:	
Role:	
Skills:	
Organization:	
Address:	
E-mail:	
Date:	

4. Part one. Class Attributes.

The first part of the questionnaire evaluates the understanding and the usefulness of each single attribute. Each attribute is described by the following elements:

Class	Attribute	Type	Multiplicity	Notes	Case study instance
Data model Class to which the attribute belongs	Attribute name	Attribute type: it indicates the domain to which the attribute belongs. It may be either a number (int, float), a text (), or a default value of a list (enumeration)	Multiplicity: it corresponds to the number of permitted values for the specific element. 1 = one and only one value; 0 ..* = from 0 to more; 1 .. * = from 1 to more;	Description of the meaning of the attribute and possible notes.	The attribute value related to the case study provided by the expert user / stakeholder

For each row of the attached .xls table, please provide the attribute value related to the case study and answer the questions.

5. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Value	Notes
LevelOfRisk	High	high risk
	Medium	medium risk
	Low	low risk

Comment

Enumeration	Value	Notes
Frequency_Of_Hazard	Slow	according to "Data Specifications" – deliverable D2.3: Definition of Annex Themes and Scope, 7.12 Natural risk zones
	Unnoticed	according to "Data Specifications" – deliverable D2.3: Definition of Annex Themes and Scope, 7.12 Natural

Enumeration	Value	Notes
		risk zones
	Permanent	according to "Data Specifications" – deliverable D2.3: Definition of Annex Themes and Scope, 7.12 Natural risk zones

Comment

Enumeration	Value	Notes
Duration_Of_Hazard	ShortAppearance	
	LongTimeAppearance	
	PermanentlyAppearance	

Comment

Enumeration	Value	Notes
Phenomena_Of_Hazard	Single	
	Sequential	
	CombinedWithOther	

Enumeration	Value	Notes

Comment

Enumeration	Value	Notes
ProbabilityOfInundationRisk	FloodsWithALowProbability	floods with a low probability, or extreme event scenarios
	FloodsWithAMediumProbability=_100Years	floods with a medium probability (likely return period = 100 years)
	FloodsWithAHighProbability	floods with a high probability, where appropriate

Comment

Enumeration	Value	Notes
DesignationAvalanchesRiskZone	Rockslides	
	RockFalls	
	LandSlides	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (f), landslides brought about by the down-slope, moderately rapid to rapid movement of masses of soil and rock material

Enumeration	Value	Notes
	DebrisAvalanches	
	IceAvalanches	
	SnowAvalanches	
	MudFloods	

Comment

Enumeration	Value	Notes
DesignationDroughtRiskZone	Desertification	Desertification is the degradation of land in arid and dry sub-humid areas
	OrganicMatterDecline	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (b), organic matter decline brought about by a steady downward trend in the organic fraction of the soil, excluding undecayed plant and animal residues, their partial decomposition products, and the soil biomass
	Salinisation	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (d), salinisation through the accumulation in soil of soluble salts
	Compaction	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (c), compaction through an increase in bulk density and a decrease in soil porosity
	ErosionByWater	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (a), erosion by water
	ErosionByWind	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (a), erosion by wind

Enumeration	Value	Notes

Comment

Enumeration	Value	Notes
DesignationEarthmovestRiskZone	Tectonic	
	Earthquakes	
	GeologicalFault	

Comment

Enumeration	Value	Notes
DesignationOtherRiskZone	WildlandFires	
	Permafrost	
	TemperatureExtremes	

Comment

Enumeration	Value	Notes
DesignationStormRiskZone	Blizzard	
	Thunder	
	TropicalCyclones	
	StormSurges	
	DustStorm	
	SandStorm	
	HailStorm	
	RainStorm	
	WindStorm	
	OtherStorm	

Comment.....

Enumeration	Value	Notes
	VolcanicEmissions	

Enumeration	Value	Notes
DesignationVolcanicActivityRiskZone	VolcanicAcitivity	

Comment

Enumeration	Value	Notes
InundationValue	Debris	
	SpringTide	
	SeaLevelRise	
	InlandFlooding	
	Tsunamis	

Comment

b. Enumerations filled by expert users / stakeholders

The following list includes Enumerations which have to be filled by expert users/ stakeholders.

Please, provide the value (and its description) for each Enumeration in the list.

Enumeration	Value	Notes
DifferentProbabilityOfInundationRisk		

Enumeration	Value	Notes
SoilTexture		

Enumeration	Value	Notes
SoilDensity		

Enumeration	Value	Notes
SoilTypologicalUnit		

Enumeration	Value	Notes

Enumeration	Value	Notes
SoilOrganicCarbon		

Enumeration	Value	Notes
TopsoilAndSubsoilTexture		

Enumeration	Value	Notes
TopsoilAndSubsoilBulkDensity		

Enumeration	Value	Notes
Bedrock		

Enumeration	Value	Notes
SoilHydraulicProperties		

Enumeration	Value	Notes

Enumeration	Value	Notes
SoilOrganicMatter		

Feature Catalogue

[TAKEN FROM D4.2]

6. Part three. Final remarks

[COMMON TO ALL THEMES - PLEASE REFER TO THE LAND COVER THEME]

Annex IV. Questionnaires from Stakeholders about Metadata Profile

Expert User / Stakeholder (MAC)

Title:	Dr
Name:	John O'Flaherty
Role:	SME/Partner
Skills:	ICT/Regional Development
Organization:	MAC
Address:	Lonsdale Road, National Technology Park, Limerick, Ireland.
E-mail:	j.oflaherty@mac.ie
Date:	16/04/2011

Questionnaire

Please, fill in the following questionnaire.

Spatial Planning Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	✓	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	✓	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	✓	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there information that couldn't be specified?		Yes	✓	More specific data will be put into the appropriate Theme, e.g.
		No		

			Land Use.
If Yes:	What information wasn't specified?		
	Why?	Not provided element	
		Unsuitable multiplicity	
		Other	
Are there atomic elements which should be further decomposed? (specification of other compound elements)	Yes	✓	More specific data will be put into the appropriate Theme, e.g. Land Use
	No		
If Yes:	What?		
	How?		
Are there unnecessary compound elements? (union of element components)	Yes	✓	
	No		
If Yes:	What?		
	How should they be arranged?		
Are there codelists to extend?	Yes	✓	
	No		
If Yes:	What?		
	How?		
Are there elements to be modified in codelist?	Yes		

(specification of new codelist)		No	✓	
If Yes:	What?			
	How should they be specified?			
Are there codelists to be deleted?		Yes	✓	
		No		
If Yes:	What?			
	Why?			

Dataset Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	✓	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	✓	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	✓	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes	✓	Further details will be in the specific theme profile, e.g. Land Use.
		No		

If Yes:	What information wasn't specified?		
	Why?	Not provided element	
		Unsuitable multiplicity	
		Other	
Are there atomic elements which should be further decomposed? (specification of other compound elements)	Yes	✓	As above.
	No		
If Yes:	What?		
	How?		
Are there unnecessary compound elements? (union of element components)	Yes	✓	
	No		
If Yes:	What?		
	How should they be arranged?		
Are there codelists to extend?	Yes	✓	
	No		
If Yes:	What?		
	How?		
Are there elements to be modified in codelist? (specification of new codelist)	Yes	✓	
	No		

If Yes:	What?	
	How should they be specified?	

Spatial Service Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	✓	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	✓	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	✓	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes	✓	
		No		
If Yes:	What information wasn't specified?			
	Why?	Not provided element		

		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	✓	
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)			✓	
		No		
If Yes:	What?			
	How should they be arranged?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes	✓	
		No		
If Yes:	What?			
	How should they be specified?			

Final remarks

The overall proposal:

___ Seems to be clear, reasonable and complete.

Spatial Planning Metadata:

___ Same ___

Dataset Metadata:

___ Same ___

Spatial Service Metadata:

___ Same ___

Expert User / Stakeholder (Hyper)

Title:	
Name:	Monica Rizzo
Role:	
Skills:	GeoDB engineer WebGIS developer Technical consultant for PTPG (Piano Territoriale Provinciale Generale, i.e. the main planning tool for the Organization)
Organization:	Provincia di Roma – Dip. VI (Governo del Territorio) – Servizio 3 (Sistema informativo geografico)
Address:	
E-mail:	
Date:	

Questionnaire

Please, fill in the following questionnaire.

Spatial Planning Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	Yes	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	Yes	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	No	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there information that couldn't be specified?		Yes		
		No	No	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes		
		No	No	
If Yes:	What?			

	How should they be arranged?			
Are there codelists to extend?		Yes	No	
		No		
If Yes:	What?			
	How?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes	No	
		No		
If Yes:	What?			
	How should they be specified?			
Are there codelists to be deleted?		Yes	No	
		No		
If Yes:	What?			
	Why?			

Dataset Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	Yes	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	Yes	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	No	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		
		No	No	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		
		No	No	
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes		
		No	No	
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes		
		No	No	

If Yes:	What?			
	How?			
Are there elements to be modified in codelist? (specification of new codelist)	Yes			
	No			
If Yes:	What?			
	How should they be specified?			

Spatial Service Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	Yes	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	Yes	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	No	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		
		No	No	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		
		No	No	
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes		
		No	No	
If Yes:	What?			
	How should they be arranged?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes		
		No	No	

If Yes:	What?	
	How should they be specified?	

Final remarks

The overall proposal:

Spatial Planning Metadata:

Dataset Metadata:

Spatial Service Metadata:

Scheda Anagrafica Utente Esperto / Stakeholder (DIPSU)

Titolo:	
Nome (referente):	Flavio Camerata
Ruolo:	ricercatore
Competenze:	urbanistica – sistemi informativi territoriali
Organizzazione:	Dipartimento Studi Urbani – Università Roma Tre
Indirizzo:	Via della Madonna dei Monti, 40 Roma
E-mail:	dipsu@plan4all.it
Data compilazione:	gennaio 2011

Questionario

Dopo aver analizzato un caso di studio relativo ad un piano territoriale, rispondere alle seguenti domande.

Metadati per la descrizione delle informazioni relative al piano

Domanda		Risposta		Commento
Gli elementi e quindi la loro descrizione risultano chiari?		Sì		Non sempre
		No		
Se No:	Quali elementi non sono chiari?	<ul style="list-style-type: none"> - Unique resource identifier: la spiegazione non è molto chiara, anche rispetto all'esempio che rimanda al sito di un comune; inoltre, le norme ISO e INSPIRE cui si fa riferimento non parla di URL... - Reference date: la descrizione non è molto chiara (<i>Other dates may be mapped with corresponding date types</i>): se si inserisce più di una data, come si fa a capire a cosa si riferiscono le singole date? - Non è chiara la differenza tra "Process step" e "Status". Se però "Status" si riferisce, per esempio, alla necessità di aggiornamento di un piano vecchio ma ancora in vigore, questa differenza andrebbe spiegata meglio - Non è chiara la differenza, così com'è spiegata, fra "Conditions for access and use" e "Limitations on public access". Nella norma INSPIRE è spiegato meglio. - Non è chiaro a cosa "Metadata file identifier" si riferisca - Data quality scope: la descrizione non è chiara. Nella norma ISO è spiegata meglio 		
L'ordine con cui vengono presentati gli elementi è efficace?		Sì	X	
		No		
Se No:	Come andrebbe modificato?			
Ci sono elementi non utilizzati?		Sì	X	
		No		
Se Sì:	Quali elementi non sono stati utilizzati?	Si vedano le risposte alla prima domanda		
Perché?		Non necessari		
		Ridondanti		
		Non chiari	Per gli elementi non chiari si vedano le risposte alla prima domanda	
		Molteplicità non adatta		
		Tipo non adatto		
		Altro		
Ci sono informazioni che non è stato possibile descrivere?		Sì	X	
		No		

Se Sì:	Quali informazioni non sono state descritte?	- Spatial resolution: ci sono dei casi in cui il dato originario è a una scala diversa rispetto alla scala con la quale viene rappresentato nel piano (ad esempio, sulla tavola di piano "Uso del suolo", in scala 1:20.000, viene riportato un dato originariamente redatto in scala 1:10.000, o viceversa). Forse esiste un modo per riportare questa informazione?		
	Perché?	Elemento non presente		
		Molteplicità non adatta		
		Altro		
Esistono elementi atomici che andrebbe ulteriormente scomposti? (definizione di altri elementi composti - compound element)		Sì		
		No	X	
Se Sì:	Quali?			
	Come andrebbero scomposti?			
Esistono elementi composti non utili? (accorpamento delle componenti in un unico elemento)		Sì		
		No	X	
Se Sì:	Quali?			
	Come andrebbero composti?			
Esistono codelist da ampliare?		Sì	X	
		No		
Se Sì:	Quali?	- Process step: forse si potrebbero inserire alcuni valori di base comuni a tutti i paesi (come è stato fatto nel modello dati del Land Use).		
	Con quali valori?	Ad esempio "Elaboration", "Adoption", "Legal force", "Obsolete" (si veda il modello dati del Land Use).		
Esistono elementi da trasformare in codelist? (definizione di nuove codelist)		Sì		
		No	X	
Se Sì:	Quali?			
	Come andrebbero definite?			
Esistono codelist da eliminare?		Sì		
		No	X	
Se Sì:	Quali?			
	Perché?			

Metadati per la descrizione delle informazioni relative ai dataset

Domanda		Risposta		Commento
Gli elementi e quindi la loro descrizione risultano chiari?		Sì		Non sempre
		No		
Se No:	Quali elementi non sono chiari?	<ul style="list-style-type: none"> - Unique resource identifier: la spiegazione non è molto chiara, anche rispetto all'esempio che rimanda al sito di un comune; inoltre, le norme ISO e INSPIRE cui si fa riferimento non parla di URL... - Resource type: non è chiaro quando dovrebbe essere usato "series" invece di "dataset" - Non è chiara la differenza, così com'è spiegata, fra "Conditions for access and use" e "Limitations on public access". Nella norma INSPIRE è spiegato meglio. - Data quality scope: la descrizione non è chiara. Nella norma ISO è spiegata meglio 		
L'ordine con cui vengono presentati gli elementi è efficace?		Sì	X	
		No		
Se No:	Come andrebbe modificato?			
Ci sono elementi non utilizzati?		Sì	X	
		No		
Se Sì:	Quali elementi non sono stati utilizzati?			
	Perché?	Non necessari		
		Ridondanti		
		Non chiari	Per gli elementi non chiari si vedano le risposte alla prima domanda	
		Molteplicità non adatta		
		Tipo non adatto		
		Altro		
Ci sono informazioni che non è stato possibile descrivere?		Sì	X	
		No		
Se Sì:	Quali informazioni non sono state descritte?	Si veda la risposta alla domanda successiva		
	Perché?	Elemento non presente		
		Molteplicità non adatta		
		Altro	X	
Esistono elementi atomici che andrebbe ulteriormente scomposti? (definizione di altri elementi composti - compound element)		Sì	X	
		No		
Se Sì:	Quali?	<ul style="list-style-type: none"> - Temporal extent: per alcuni tipi di dati potrebbe essere necessario scomporre questo elemento 		

	Come andrebbero scomposti?	I vincoli urbanistici decadono dopo un certo numero di anni nel caso in cui il Comune non realizzi l'intervento previsto. Ad esempio, se il piano prevede un vincolo di inedificabilità per una certa area su cui si prevede di costruire una strada, il vincolo può decadere automaticamente se dopo tot anni la strada non viene realizzata dal Comune. Supponendo l'esistenza di un dataset specifico che contenga i vincoli urbanistici (anche se in genere queste informazioni sono contenute nello stesso dataset del piano), in questo caso l'elemento potrebbe essere scomposto in "expiration date" e "conditions". Il primo valore riporterebbe la data in cui il vincolo decade, il secondo sarebbe un campo di testo libero che esprime la condizione alla quale il vincolo permane (p.e. "previsione di costruzione di strada comunale").		
Esistono elementi composti non utili? (accorpamento delle componenti in un unico elemento)	Sì			
	No	X		
Se Sì:	Quali?			
	Come andrebbero composti?			
Esistono codelist da ampliare?	Sì			
	No	X		
Se Sì:	Quali?			
	Con quali valori?			
Esistono elementi da trasformare in codelist? (definizione di nuove codelist)	Sì			
	No	X		
Se Sì:	Quali?			
	Come andrebbero definite?			

Metadati per la descrizione delle informazioni relative ai servizi

Domanda		Risposta		Commento
Gli elementi e quindi la loro descrizione risultano chiari?		Sì		Non sempre
		No		
Se No:	Quali elementi non sono chiari?	<ul style="list-style-type: none"> - Unique resource identifier: la spiegazione non è molto chiara, anche rispetto all'esempio che rimanda al sito di un comune; inoltre, le norme ISO e INSPIRE cui si fa riferimento non parla di URL... - Temporal reference: la descrizione non è chiara; neanche il rimando a ISO chiarisce - Non è chiara la differenza, così com'è spiegata, fra "Conditions for access and use" e "Limitations on public access". Nella norma INSPIRE è spiegato meglio. 		
L'ordine con cui vengono presentati gli elementi è efficace?		Sì	X	
		No		
Se No:	Come andrebbe modificato?			
Ci sono elementi non utilizzati?		Sì	X	
		No		
Se Sì:	Quali elementi non sono stati utilizzati?			
	Perché?	Non necessari		
		Ridondanti		
		Non chiari	Per gli elementi non chiari si vedano le risposte alla prima domanda	
		Molteplicità non adatta		
		Tipo non adatto		
		Altro		
Ci sono informazioni che non è stato possibile descrivere?		Sì		
		No	X	
Se Sì:	Quali informazioni non sono state descritte?			
	Perché?	Elemento non presente		
		Molteplicità non adatta		
		Altro		
Esistono elementi atomici che andrebbe ulteriormente scomposti? (definizione di altri elementi composti - compound element)		Sì		
		No	X	
Se Sì:	Quali?			
	Come andrebbero scomposti?			

Esistono elementi composti non utili? (accorpamento delle componenti in un unico elemento)		Sì		
		No	X	
Se Sì:	Quali?			
	Come andrebbero composti?			
Esistono elementi da trasformare in codelist? (definizione di nuove codelist)		Sì		
		No	X	
Se Sì:	Quali?			
	Come andrebbero definite?			

Commenti generali

Sulla proposta complessiva:

Sui metadati per i piani territoriali:

Sui metadati per i dataset:

Sui metadati per i servizi:

Expert User / Stakeholder (GIJON)

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Skills:	Technician
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Date:	

Questionnaire

Please, fill in the following questionnaire.

Spatial Planning Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	YES	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	YES	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes	NO	
		No		
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there information that couldn't be specified?		Yes	NO	
		No		
If Yes:	What information wasn't specified?			

	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	NO	
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes	NO	
		No		
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes	NO	
		No		
If Yes:	What?			
	How?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes	NO	
		No		
If Yes:	What?			
	How should they be specified?			
Are there codelists to be deleted?		Yes	NO	
		No		
If Yes:	What?			

	Why?	
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Dataset Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	YES	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	YES	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	NO	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes	NO	
		No		
If Yes:	What information wasn't specified?			
	Why?	Not provided element		

		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	NO	
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes	NO	
		No		
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes		
		No		
If Yes:	What?			
	How?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes	NO	
		No		
If Yes:	What?			
	How should they be specified?			

Spatial Service Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	YES	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	YES	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes	NO	
		No		
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes	NO	
		No		
If Yes:	What information wasn't specified?			
	Why?	Not provided element		

		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	NO	
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)			NO	
		No		
If Yes:	What?			
	How should they be arranged?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes	NO	
		No		
If Yes:	What?			
	How should they be specified?			

Final remarks

The overall proposal:

___ CORRECT _____

Spatial Planning Metadata:

CORRECT _____

Dataset Metadata

___ CORRECT _____

Spatial Service Metadata:

___ CORRECT _____

Expert User / Stakeholder (AVINET)

Title:	Senior Consultant
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Role:	Planner, GIS expert
Skills:	Planning, GIS, data modeling
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E-mail:	<u>Frank.haugan@asplanviak.no</u>
Date:	20.03.2011

Questionnaire

Please, fill in the following questionnaire.

Spatial Planning Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	X	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	X	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	X	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there information that couldn't be specified?		Yes	X	Some information which doesn't exist in source
		No		

			schema
If Yes:	What information wasn't specified?		Population of EU-specific info, INSPIRE identifier etc
	Why?	Not provided element	
		Unsuitable multiplicity	
		Other	X
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	X
		No	
If Yes:	What?		
	How?		
Are there unnecessary compound elements? (union of element components)		Yes	X
		No	
If Yes:	What?		
	How should they be arranged?		
Are there codelists to extend?		Yes	X
		No	
If Yes:	What?		

	How?			
Are there elements to be modified in codelist? (specification of new codelist)	Yes	X		
	No			
If Yes:	What?			
	How should they be specified?			
Are there codelists to be deleted?	Yes	X		
	No			
If Yes:	What?			
	Why?			

Dataset Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	X	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	X	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	X	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		
		No	X	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		

		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	X	
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes	X	
		No		
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes	X	Some code lists may need to be extended due to language issues where one term does not find a single literal translation
		No		
If Yes:	What?			
	How?	Perhaps design a flexible way in which each country may design their own catalog profiles – extending existing code list		

		elements. This would retain the integration on the European level while allowing sufficient detail on the local.		
Are there elements to be modified in codelist? (specification of new codelist)	Yes			
	No		X	
If Yes:	What?			
	How should they be specified?			

Spatial Service Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	X	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	X	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	X	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		
		No	X	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		

		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	X	
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)			X	
		No		
If Yes:	What?			
	How should they be arranged?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes	X	
		No		
If Yes:	What?			
	How should they be specified?			

Final remarks

The overall proposal:

The proposal has good coverage of all elements within the planning domain. It also aligns well with INSPIRE and may be a good starting point for evolving national metadata profiles for data within all the themes. The challenge, though, is that metadata which exists are generally rather poor because a lot of information which should have been in the data is implicit when used in the context of a municipality – but becomes explicit when taken out of this context – e.g. published on the Internet. This will lead to a significant challenge when creating the metadata from local profiles.

Spatial Planning Metadata:

While I have been working a lot with spatial planning data – my particular skills lie closer to the GIS domain. As such, I am not comfortable to evaluate the full detail of the planning proposal. From a technical perspective, however, it looks comprehensive and good.

Dataset Metadata:

Dataset metadata aligns well with both national metadata profiles in Norway and INSPIRE targets to be implemented in the future. Useful.

Spatial Service Metadata:

Service level metadata were also useful – and the only observation I make is that the number of services in operation on local or provincial level is limited.

Expert User/Stakeholder (Ceit Alanova)

Title:	CentropeMAP
Name:	
Role:	TechAdmin
Skills:	Spatial Planner
Organization:	CentropeMAP
Address:	
E-mail:	
Date:	20110404

Questionnaire

Please, fill in the following questionnaire.

Spatial Planning Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	x	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	x	(yes)
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	x	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there information that couldn't be specified?		Yes		(no)
		No	x	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		(no)
		No	x	
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes		(no)
		No	x	
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes	x	

		No		
If Yes:	What?	Process Step		
	How?	should be an enumeration like <i>Spatial plan type</i> because different legislation in the countries makes „Process step“ incomparable or incomprehensible otherwise		
Are there elements to be modified in codelist? (specification of new codelist)		Yes	x	(no)
		No		
If Yes:	What?			
	How should they be specified?			
Are there codelists to be deleted?		Yes	x	(no)
		No		
If Yes:	What?			
	Why?			

Dataset Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	x	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	x	(yes)
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	x	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		(no)
		No	x	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		(no)
		No	x	
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes		(no)
		No	x	
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes		(no)
		No	x	
If Yes:	What?			
	How?			

Are there elements to be modified in codelist? (specification of new codelist)		Yes	x	(no)
		No		
If Yes:	What?			
	How should they be specified?			

Spatial Service Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	x	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	x	(yes)
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes		
		No	x	
If Yes:	What elements are not useful?			
	Why?	Unnecessary		
		Redundant		
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes		(no)
		No	x	
If Yes:	What information wasn't specified?			
	Why?	Not provided element		
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		(no)
		No	x	
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)				(no)
		No	x	
If Yes:	What?			
	How should they be arranged?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes		(no)
		No	x	
If Yes:	What?			
	How should they be specified?			

Final remarks

The overall proposal:

Spatial Planning Metadata:

Dataset Metadata:

Spatial Service Metadata:

Expert User / Stakeholder

Title:	
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Date:	01.04.11

Questionnaire

Please, fill in the following questionnaire.

Spatial Planning Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	<input checked="" type="checkbox"/>	
		No	<input type="checkbox"/>	
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	<input checked="" type="checkbox"/>	
		No	<input type="checkbox"/>	
If No:	How should it be modified?			
Are there unnecessary elements?		Yes	<input checked="" type="checkbox"/>	
		No	<input type="checkbox"/>	
If Yes:	What elements are not useful?			
	Why?	Unnecessary	<input type="checkbox"/>	
	There are no needs for two geographic bounding boxes (geography bounding box and geography boundary polygon)	Redundant	<input type="checkbox"/>	
		Unclear	<input type="checkbox"/>	
		Unsuitable multiplicity	<input type="checkbox"/>	
		Unsuitable type	<input type="checkbox"/>	
		Other	<input type="checkbox"/>	
Is there information that couldn't be specified?		Yes	<input type="checkbox"/>	
		No	<input checked="" type="checkbox"/>	
If Yes:	What information wasn't specified?			
	Why?	Not provided element	<input type="checkbox"/>	
		Unsuitable multiplicity	<input type="checkbox"/>	
		Other	<input type="checkbox"/>	
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes	<input type="checkbox"/>	
		No	<input checked="" type="checkbox"/>	
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)		Yes	<input type="checkbox"/>	
		No	<input checked="" type="checkbox"/>	
If Yes:	What?			
	How should they be arranged?			

Are there codelists to extend?		Yes	X	
		No		
If Yes:	What?			
	How?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes	X	
		No		
If Yes:	What?			
	How should they be specified?			
Are there codelists to be deleted?		Yes	X	
		No		
If Yes:	What?			
	Why?			

Dataset Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	X	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	X	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes	X	
		No		
If Yes:	What elements are not useful?	Resource title, resource language, keyword, geographic bounding box, date, date, temporal extend lineage, spatial resolution, conformity, conditions for access and use, Limitations on public access, Responsible organization, Metadata: point of contact, date, language, file finder, standart name, standart version;		
	Why?	Unnecessary		They all are specified in Spatial Plan metadata
		Redundant	X	
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes	X	
		No		
If Yes:	What information wasn't specified?	Wasn't specified textual part of spatial plan, only graphical as spatial data (vector data, image).		
	Why?	Not provided element	X	
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		No comments.
		No		
If Yes:	What?			
	How?			

Are there unnecessary compound elements? (union of element components)		Yes		No comments
		No		
If Yes:	What?			
	How should they be arranged?			
Are there codelists to extend?		Yes		No comments. There isn't a code list for dataset metadata specified
		No		
If Yes:	What?			
	How?			
Are there elements to be modified in codelist? (specification of new codelist)		Yes		No comments
		No		
If Yes:	What?			
	How should they be specified?			

Spatial Service Metadata

Question		Answer		Comment
Are the elements and their description understandable?		Yes	X	
		No		
If No:	What elements are not understandable?			
Is the order by which the elements are specified useful?		Yes	X	
		No		
If No:	How should it be modified?			
Are there unnecessary elements?		Yes	X	
		No		
If Yes:	What elements are not useful?	Date, temporal extend, temporal reference, conformity,		They all are specified in Spatial Plan metadata
	Why?	Unnecessary		
		Redundant	X	
		Unclear		
		Unsuitable multiplicity		
		Unsuitable type		
		Other		
Is there any information that couldn't be specified?		Yes	X	
		No		
If Yes:	What information wasn't specified?	Should create a link between cited spatial plan and spatial service		
Why?		Not provided element	X	
		Unsuitable multiplicity		
		Other		
Are there atomic elements which should be further decomposed? (specification of other compound elements)		Yes		No comments
		No		
If Yes:	What?			
	How?			
Are there unnecessary compound elements? (union of element components)				No comments
		No		
If Yes:	What?			
	How should they be arranged?			
Are there elements to be		Yes		No comments

modified in codelist? (specification of new codelist)	No		
If Yes:	What?		
	How should they be specified?		

Final remarks

The overall proposal:

Good job is done

Spatial Planning Metadata:

Includes all specific information about described spatial plan

Dataset Metadata:

Doesn't specify all in "spatial planing metadata" described spatial plan parts.

Spatial Service Metadata:

In common view all are ok

Annex V. Questionnaires from stakeholders about Themes

This section contains the feedback provided by the partners and stakeholders for validating the Plan4all theme models. For each theme model two or more feedback have been received.

Land Cover

Feedback from

DipSU (Flavio Camerata)

Specific comments about the attributes and related enumerations/code lists

- Source (class: LandCoverArea). No value for this attribute was found at data level; indeed, this information can be found in the metadata. Maybe it should be set to voidable.
- BeginLifeSpanVersion (class: LandCoverStandardisedArea). This attribute should not be voidable: the information about the date of the survey is very important. But still, in our dataset this information can be found only in the metadata.
- ClassificationLink (class: LandCoverOriginalArea). No information about this in our dataset. It should be set to voidable. Also, the difference between this attribute and “source” (of the class LandCoverArea) is not very clear.

Specific comments about the associations

- The association between LandCoverStandardisedArea and LandCoverOriginalArea is described as “isRelatedTo”, but the association is drawn as an aggregation. If LandCoverOriginalArea is a more detailed specification of LandCoverStandardisedArea (which means that an area described by the former is necessarily a sub-area of the latter), the description “isRelatedTo” doesn’t sound very correct: a simple aggregation would be better.
- The multiplicity of the LandCoverOriginalArea class is [1..*]. It should be changed to [0..*], because there might not be information concerning this class.

Land Cover

Feedback from

Università di Roma (Laura Facioni)

Specific comments about the attributes and related enumerations/code lists

- Geometry (class: LandCoverArea). There could be the possibility for the land cover dataset to contain also point information, in case there is the need to include information connected, for instance, to a validated scientific paper, or photographs of the landscape (bearing also a temporal reference). Experience tells us that land cover information can be collected from many sources, not only of a cartographic kind. In this case, the “geometry” attribute should be able to support also point information, and a third subclass regarding non-geographical information could be added (and it should have at least one temporal attribute).
- BeginLifeSpanVersion and EndLifeSpanVersion (class: LandCoverStandardisedArea). The relationship between these two attributes is not very clear. The former is about (according to the feature catalogue) “date and time at which this version of the spatial object was inserted or changed in the spatial dataset”, the latter is about “date and time at which this version of the spatial object was superseded or retired in the spatial data set”. What is the difference between “changed and “superseded”? If we want to have two separate attributes, the former could only be about the date of creation and change of the object, the latter about the date it has been retired; in this case, the multiplicity of the former should be [1..*], rather than [1], because the possible changes can be infinite.

Land Cover

Feedback from

Neustadt / Umweltbundesamt Wien (Roland Grillmayer, Christoph Perger, Gebhard Banko)

Institution: FH Wiener Neustadt / Umweltbundesamt Wien (University of Applied Research Wr. Neustadt / Environmental Agency Austria)

Validators: Roland Grillmayer, Christoph Perger, Gebhard Banko

It seems that national LC-classifications can be related to international standardised LC-Classifications. Therefore, single LC-objects can be allocated to one or none LC object of the international LC dataset.

Does multiplicity of the aggregation „isRelatedTo“ from 0..1 makes sense? This would mean that there are objects of LandCoverOriginalArea that have no allocation in LandCoverStandardisedArea.

This way of modeling might lead to “wholes” or gaps in the INSPIRE LC Theme dataset, and that it does not correspond to coverage.

Anyway, in case that this approach of modeling will be continued, there should be best possible mapping of the landCoverOriginalArea objects to the LandCoverStandardisedArea objects. Further, the multiplicity of the aggregation “isRelatedTo” should be 1 then.

In this data model Corine LC nomenclature is an example for the attribute „standardClassification“ of the class LandCoverStandardisedArea. It seems the data model assumes that the geometry of one CLC object (e.g. Corine Class 2.1) is derived from several national LC geometry objects. This derivation of the Corine geometry is limited.

E.g. when there are 3 forest areas that are smaller than 25 ha, but have a distance of max. 100 meters to each other, there will be a NEW forest area. > the geometry of this forest area needs to be derived from the 3 LC objects, and influences other LC geometries.

CLC nomenclature does not fully fit in this case, because LC datasets which need to be transformed will probably have a totally different scale and different MMUs. (e.g. LISA-MMU 25 m² / Corine 25 ha!).

Therefore, there will be problems with generalisation of geometry and semantic transformation. These problems are in general still not solved. A lot of current research projects deal with this issue.

In this context CLC needs to be seen critically, because there is a mix of LC and LU. But for the data specifications of INSPIRE a strict and clear separation between these two seems is required.

The attribute „StandardClassification“ needs to have more detailed specification. The CLC nomenclature example, that is used in the data model, is not fully adequate and in this context not useful for better understanding.

One goal of the data specification for LC needs to be the definition of the attribute “standardClassification”. This description should be based on ISO19144 – LC Meta Language. Based on this there should be a clear semantic description of the LC objects, and their aggregations in adequate LC classes.

The data model is in terms of feature-geometry-model an object-oriented (and not a hierarchic) data model. Therefore, the term “land cover classification” should only be used, when it is absolutely necessary for better understanding, because usually this term (land use classification) is only used in relation to hierarchic data models.

This use of terminology might lead to misunderstandings. Therefore, the attribute “standardClassification” should be named differently. In terms of ISO feature-geometry-model this is rather a description of single LC features, that might need to be generalised into major LC objects. E.g. the term „LandcoverElementDescription“ would be more conform with the feature-geometry-model.

Further, aspects of minimum mapping unit need to be respected in the data model.

It seems that the present model has too many semantic degrees of freedom. Therefore it is not fully appropriate for harmonization of national LC data on a European level.

Land Use

**Feedback from
MAC (John O'Flaherty)**

1. Part one. Class Attributes.

Class	Attribute	Case study instance	Have you used the attribute? If not, why?	Is the attribute redundant? If so, why?	Is the meaning of the attribute clear? If not, why?	Is the type the attribute appropriate? If not, why?	Is the attribute sufficient to express what you have to express? If not, why?	Is the multiplicity of the attributes appropriate?	Is the type of the attribute clear? If not, why?
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AdministrativeInformation	organisationName	Limerick County Council	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	hierarchyLevelName	spatialPlan.Local	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	planType	BindingLandUsePlan	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	processStepGeneral	LegalForce	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	processStepSpecific	MunicipalStatute	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	ordinanceRef	Limerick County, & all of it DEEs, Wards & Townlands.	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	ordinanceDate	2010	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	temporalExtentFrom	2010	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	temporalExtentTo	2016	Yes	No	Yes	Yes	Yes	Yes	Yes
AdministrativeInformation	planDescription	Limerick County Development Plan 2010 - 2016	Yes	No	Yes	Yes	Yes	Yes	Yes

ConditionsAndConstraints	protectedSite	In ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
ConditionsAndConstraints	naturalRiskSafetyArea	In ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes

ConditionsAndConstraints	restrictionZone	In ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
ConditionsAndConstraints	easementType	Instance for each specific sub-local planning application location (If applicable)	Yes	No	Yes	Yes	Yes	Yes	Yes
ConditionsAndConstraints	constraintName	Instance for each specific sub-local planning application (If applicable)	Yes	No	Yes	Yes	Yes	Yes	Yes
ConditionsAndConstraints	constraintDescription	Instance for each specific sub-local planning application decision (If applicable)	Yes	No	Yes	Yes	Yes	Yes	Yes
ConditionsAndConstraints	interventionType	Instance for each specific sub-local planning application decision (If applicable)	Yes	No	Yes	Yes	Yes	Yes	Yes

ConstructionIndications	typeOfBuilding	In ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
ConstructionIndications	roofShape	In ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes

ConstructionIndications	otherConstructionIndications	In ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
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DevelopmentApplication	id_Application	Each Planning Application ID in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
DevelopmentApplication	applicantName	Applicants name in ePlan PAPCONTA.	Yes	No	Yes	Yes	Yes	Yes	Yes
DevelopmentApplication	applicationType	application_type In ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
DevelopmentApplication	descriptionOfDevelopment	Development_descri in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
DevelopmentApplication	applicationStatus	application_status in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
DevelopmentApplication	associatedDocumentName	Each Planning Applications documents in ePlan PALETTRS, PAFINFOM, PALLETTRS, PAIMAGES etc	Yes	No	Yes	Yes	Yes	Yes	Yes
DevelopmentApplication	associatedDocumentURL	Each Planning Application's path to its files in ePlan PADOCDOC	Yes	No	Yes	Yes	Yes	Yes	Yes

DimensioningIndications	indexes	Instance for each specific sub-local planning application decision	Yes	No	Yes	Yes	Yes	Yes	Yes
DimensioningIndications	volumeIndications	Derived from data in ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
DimensioningIndications	surfaceIndications	Floor_area in ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
DimensioningIndications	heightIndications	Derived from data in ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
DimensioningIndications	unitIndications	Number_of_floors in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
DimensioningIndications	otherDimensioningIndications	Further data such as Site_area in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes

FunctionIndications	property	Private, as in ePlan PALOWNER	Yes	No	Yes	Yes	Yes	Yes	Yes
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FunctionIndications	LUCAS_Code	Normally "LUE" for Services & Residential	Yes	No	No, LUCAS needs to be briefly explained. This is not mentioned in the Land Use Metadata Profile. It should be.	Yes	Yes	Yes	No, LUCAS needs to be briefly explained. This is not mentioned in the Land Use Metadata Profile. It should be.
FunctionIndications	macroClassificationOfLand	Further data such as Site_area in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
FunctionIndications	generalLandUseType	Derived from Functional_area in ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
FunctionIndications	specificLandUseType	Land_use_code in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
FunctionIndications	otherTerritorialClassification	Derived from data in ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
FunctionIndications	interventionType	Derived from data in ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes
FunctionIndications	indirectExecution	Derived from data in ePlan PAAPLIC data structure	Yes	No	Yes	Yes	Yes	Yes	Yes

GraphicalInformation	inspireId	Generated by system, possibly based on file_num &/or file_number in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
GraphicalInformation	title	ePlan PAIMAGES, PALETTRS etc	Yes	No	Yes	Yes	Yes	Yes	Yes
GraphicalInformation	language	eng	Yes	No	Yes	Yes	Yes	Yes	Yes

IndirectExecution	title	Based on data in ePlans PAPREAPS of related applications.	Yes	No	Yes	Yes	Yes	Yes	Yes
IndirectExecution	processStepGeneral	Normally LegalForce based on application_status in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
IndirectExecution	ordinanceRef	application_status in PAAPLIC of the related application linked through PAPREAPS	Yes	No	Yes	Yes	Yes	Yes	Yes

IndirectExecution	ordinanceDate	Date from PAAPLIC of the related application linked through PAPREAPS	Yes	No	Yes	Yes	Yes	Yes	Yes
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PlanFeature (abstract)	inspireId	Generated by system, possibly based on file_num &/or file_number in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanFeature (abstract)	status	Planned	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanFeature (abstract)	regulationNature	GenerallyBinding	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanFeature (abstract)	regulationReference	Derived from Land_use_code in the ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanFeature (abstract)	isOverlayArea	None	Not included in the ePlan database.	No	Yes	Yes	Yes	Yes	Yes
PlanFeature (abstract)	geometry	Derived from Description in the ePlan PAIMAGES	Yes	No	Yes	Yes	Yes	Yes	Yes

PlanObject	inspireId	Generated by system, possibly based on file_num &/or file_number in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanObject	title	Extracted from ePlan PAAPLIC, PALETTRS, PAFINFOM, PALLETTRS, PAIMAGES as appropriate.	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanObject	geometry	Derived from Description in the ePlan PAIMAGES	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanObject	legislationReference	Planning and Development Acts, 2000 - 2010	Yes	No	Yes	Yes	Yes	Yes	Yes
PlanObject	country	IE	Yes	No	Yes	Yes	Yes	Yes	Yes

Raster	inspireId	Generated by system, possibly based on file_num &/or file_number in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
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Raster	title	From ePlan PAIMAGES data structure.	Yes	No	Yes	Yes	Yes	Yes	Yes
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TextualInformation	inspireId	Generated by system, possibly based on file_num &/or file_number in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
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TextualInformation	title	Each Planning Applications documents in ePlan PAOBECT, PAPPEALS, PALETTRS, PAFINFOM, PALLETRRS, PAIMAGES.	Yes	No	Yes	Yes	Yes	Yes	Yes
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TextualInformation	language	eng	Yes	No	Yes	Yes	Yes	Yes	Yes
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TextualRegulation	inspireId	Generated by system, possibly based on file_num &/or file_number in ePlan PAAPLIC	Yes	No	Yes	Yes	Yes	Yes	Yes
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TextualRegulation	title	Limerick County Council Planning and Development Acts, 2000 - 2010 Notice of having made Limerick County Development Plan 2010 -2016,	Yes	No	Yes	Yes	Yes	Yes	Yes
TextualRegulation	language	eng	Yes	No	Yes	Yes	Yes	Yes	Yes

2. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
ApplicationStatus	NOTE States if the application has been received, approved,	received	Development application having been received by the responsible authority

Enumeration	Description	Value	Notes
	rejected, etc., by the responsible authority	approved	Development application having been approved by the responsible authority
		rejected	Development application having been rejected by the responsible authority

CommentMaybe add “Under Appeal” - Development application having been rejected by the responsible authority but is now under appeal by the Applicant. Otherwise the Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
EasementType	Classification of the type of easement connected to the protection of areas around public utilities or to the public use of certain resources. SOURCE Plan4all “Area management/restriction/regulation zones and reporting units” data model	ConiferousForestRights	
		GrazingRights	
		FishingRights	
		DeciduousForestRights	
		HayingRights	
		MountainFarmRights	
		RightOfWay	
		BuildingBan	

Enumeration	Description	Value	Notes
		LeasedOutArea	
		CommonArea	
		BreakWaterPropertyRights	
		Mooring	
		RightToLight	
		AviationRight	
		RailroadEasement	
		UtilityEasement	
		SidewalkEasement	
		ViewEasement	
		DrivewayEasement	
		BeachAccessProperty	
		DeadEndEasement	
		RecreationalEasement	
		HistoricPreservationEasement	

Comment ... Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
GeneralLandUseType	General indication on the land use of an area.	Residential	
		IndustrialCommercial	
		ServicesOfGeneralInterest	All services; comprises tourism services.
		Green	Public parks
		AreasOfNaturalInterest	Comprises woods
		Agriculture	
		Water	
		RoadTrafficInfrastructure	Comprises both networks and nodes.
		RailwayTrafficInfrastructure	Comprises both networks and nodes.
		OtherTrafficInfrastructure	NOTE Comprises both networks and nodes. EXAMPLE Parking lots, airports, cycle tracks, intermodal nodes.
		SpecialDevelopmentZone	Area for special use or special function. EXAMPLE Malls, hotels, stadiums for sport, convention centres, energy extraction.
		Mining	Area for mining purposes.
		Quarrying	Area for quarrying purposes
TechnicalInfrastructure	EXAMPLE Energy and waste supply and disposal, energy networks		
Other	Other functions		

Comment Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
HierarchyLevelName	Territorial hierarchy of plan	SpatialPlan.country	Plan at country (NUTS 0) level.
		SpatialPlan.state	Plan at federal state (NUTS I) level
		SpatialPlan.regional	Plan at regional (NUTS II) level
		SpatialPlan.subRegional	Plan at sub-regional (NUTS III) level.
		SpatialPlan.supraLocal	Plan at supra-municipal (LAU 1) level
		SpatialPlan.local	Plan at municipal (LAU 2) level.
		SpatialPlan.subLocal	Plan at sub-municipal level.
		SpatialPlan.other	Other type of spatial plan

Comment Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
MacroClassificationOfL and	Division of the planned area into macro-zones	Urbanised	Land already urbanised. NOTE Allowed interventions usually are renovation or regeneration of the existing buildings and districts
	NOTE The macro-zones are non-	ToBeUrbanised	Free land that can be urbanised NOTE Part of the territory,

Enumeration	Description	Value	Notes
	overlapping partitions of the total plan area and cover the entire plan area. They are used in some countries usually for municipal plans		usually rural, where the new developments are allowed
		Rural	Rural part of the territory that cannot be urbanised. NOTE Allowed interventions usually comprise only transformations aimed at improving or developing agricultural activities
		Natural	Natural part of the territory that cannot be urbanised. EXAMPLE Can comprise woods, forests, meadows and other natural or semi-natural areas
		Other	Other types of macro-zones

Comment Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
NaturalRiskSafetyArea	Classification of natural risks threatening human settlements. SOURCE Plan4all “Natural risk zones” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.	InundatedRiskZone	A tract periodically covered by flood water. SOURCE INSPIRE Data Specification on Hydrography
		StormRiskZone	Area at risk of storms. SOURCE Plan4all “Natural risk zones” data model
		DroughtRiskZone	Area at risk of storms SOURCE According to the proposal for a Directive of the European Parliament and of the Council establishing a framework for the protection of soil and amending Directive 2004/35/EC
		AvalanchesRiskZone	Area at risk of avalanches. SOURCE Plan4all “Natural risk zones” data model.
		VolcanicActivityRiskZone	Area at risk of volcanic activities . SOURCE Plan4all “Natural risk zones” data model.

Enumeration	Description	Value	Notes
		EarthMovesRiskZone	Area at risk of earthmoves SOURCE Plan4all “Natural risk zones” data model.
		OtherHazardsRiskZone	Area at risk of other hazards.SOURCE Plan4all “Natural risk zones” data model.

Comment..... Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
ProtectedSitesSimple::ProtectionClassificationValue	The protected site classification based on the purpose of protection SOURCE INSPIRE Data Specification on Protected Sites.	NatureConservation	The Protected Site is protected for the maintenance of biological diversity
		Archaeological	The Protected Site is protected for the maintenance of archaeological heritage
		Cultural	The Protected Site is protected for the maintenance of cultural heritage
		Ecological	The Protected Site is protected for the maintenance of ecological stability
		Landscape	The Protected Site is protected for the maintenance of landscape characteristics
		Environment	The Protected Site is protected for the maintenance of environmental stability
		Geological	The Protected Site is protected for the maintenance of geological characteristics.

Comment Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
	Legal nature of the land use indication	GenerallyBinding	The land use indication is binding for everybody

Enumeration	Description	Value	Notes
RegulationNature	NOTE Indicates whether the land use indication is legally binding or not.	BindingForDevelopers	The land use indication is binding only for developers.
		BindingOnlyForAuthorities	The land use indication is binding only for certain authorities.
		NonBinding	The land use indication is not binding

Comment Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
RestrictionZone	Classification of areas managed, regulated or used for reporting at international, European, national, regional and local levels. Plan4all “Area management/restriction/regulation zones and reporting units” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.	DumpingSites	
		NoiseRestrictionZones	
		ProspectingAndMiningPermitAreas	
		RiverBasinDistricts	
		CoastalZoneManagementAreas	
		AreasForTheDumpingOfWasteAtSea	
		RegulatedFairwaysAtSeaOrLargeInlandWaters	
		NitrateVulnerableZones	
		DrinkingWaterSource	

Comment Maybe add Special Protected Areas under the Habitats Directive/Birds Directive/Natura 2000. Otherwise the enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
ProcessStepGeneral	General indication of the step of the planning process that the plan is undergoing NOTE This enumeration contains values that are common to most planning systems	Elaboration	Plan under elaboration
		Adoption	Plan in the process of being legally adopted
		LegalForce	Plan already adopted and being legally binding or active
		Obsolete	Plan having been substituted by another plan, or not being any longer in force

Comment Enumeration seems complete, and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
Property	Property of the plot of land that the land use indication applies to.	Public	Public land.
		Private	Private land.
		PrivateWithSpecialPublicRights	Private land having special public rights. EXAMPLE The railway companies in Austria follow this principle
		PrivateOrganisedButPublicHeld	Privately organised land being publicly held. EXAMPLE The federal forests in Austria belong to a company, but are held by the Ministry of Forests
		Unknown	Unknown owner.

Comment Maybe expand "Private" to "Private Corporate"(Private land owned by a company) and "Private Individual" (Private land owned by an individual). Otherwise Enumeration seems complete, and the meaning of each value is clear and appropriate

b. codelists provided by the designer.

Please, for the filled codelists provide a comment for each codelist by specifying whether

- the codelist is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

For the empty codelists, please provide values and descriptions. Since the possible dimensioning indications are numerous, value types and measuring units have to respect the given rules.

Index	
Definition:	Indications concerning any ratio to be respected by the developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Site occupancy index.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

HeightIndication	
Definition:	Indications concerning the height of developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Gutter height.
Stereotypes:	«codeList»
Value: ... (free text) (m) : Float	

SurfaceIndication	
Definition:	Indications concerning the surface of developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Floor space.
Stereotypes:	«codeList»

Value: ... (free text) (m²) : Float

UnitIndication	
Definition:	Indications concerning the number of units to be respected.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE 1 Maximum number of storeys. EXAMPLE 2 Minimum number of companies.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

VolumeIndication	
Definition:	Indications concerning the volume of developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Cubic capacity.
Stereotypes:	«codeList»
Value: ... (free text) (m³) : Float	

OtherDimensioningIndications	
Definition:	All possible further dimensioning indications.
Description:	NOTE Free attributes can be inserted in this code list.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

Codelist	Description	Value	Notes
	Type of application	Request for a new building permit.	
	EXAMPLE	Request to extend an existing	

Codelist	Description	Value	Notes
ApplicationType	Request of building permit.	building.	
		Request to redefine the use of an existing building.	
		Request to demolish an existing building.	

Comment ...Some suggested Codelist values are shown above. Others are probably required.

Codelist	Description	Value	Notes
InterventionCategory	Type of intervention allowed.	OrdinaryMaintenance	Ordinary maintenance of buildings. EXAMPLE Renovation of the plaster of a façade.
		ExtraordinaryMaintenance	Extraordinary maintenance of buildings. EXAMPLE Installation of photovoltaic panels on the roof.
		RestorationConservation	Conservation a historic building, and/or restoration respecting its traditional features. Conservation of a natural environment, and/or restoration respecting its natural features. EXAMPLE 1 Restoration of cornices of a historic building. EXAMPLE 2 Reconstruction of a sand dune in a compromised coastal environment.
		Renovation	Renovation of a building, also with changes of function, shape and volume. EXAMPLE Transformation of a villa into a hotel.
		Enlargement	Addition of new volumes to a building
		NewBuilding	Construction of a new building
		NatureEnhancement	Improvement of the status of a natural environment. EXAMPLE Strengthening of an ecological network
		CompensationMeasures	Measures for compensating the negative outcomes of an intervention. NOTE Compensations can be executed also in other areas of the concerned territory. EXAMPLE Plantation of a wood in order to compensate a quarrying permit

Codelist	Description	Value	Notes
		SoilConsolidation	Measures for consolidating soils in areas with hydro-geological instabilities. EXAMPLE Consolidation of slopes by means of bioengineering techniques

Comment ... Codelists seem to be complete and the meaning of each value is clear and appropriate

Codelist	Description	Value	Notes
OtherConstructionIndication	Specifies other indications about the allowed manner of construction.	Concrete	
		Timber Framed	
		Insulating Concrete Formwork	
		Structural Insulated Pannels	
		Brick Construction	
		Steel Framed Homes	
		Log Houses	
		Straw Bale Buildings	
		Cob Construction	
Adobe Construction			

Comment Some Codelist values (as used in Ireland) are included above.

Codelist	Description	Value	Notes
OtherTerritorialClassification	Division of the planned area into functional homogeneous macro-areas.	Residential	
		Industry / Enterprise	
		Commercial / Retail / Town or	

Codelist	Description	Value	Notes
	EXAMPLE Can be areas with homogeneous functional characteristics, which overlap to the general and specific indications of land use.	District or Neighbourhood Centre	
		Community / Services Infrastructure / Utilities	
		Open Space / Amenity / Conservation / Recreation	
		Agriculture / Aquaculture / Forestry / Rural	
		Mixed Use	
		Other.	

Comment The Codelist above repeats the Generic Zone Types (GZT) being proposed by the Irish Government's Department of Environment, Heritage and Local Government for SpecificLandUseType (see below)..

Codelist	Description	Value	Notes
PlanFeatureStatus	Status of the land use indication of the plan feature (existing or planned). NOTE Land use can indicate both the current and the future function of territory. SOURCE INSPIRE D2.3 "Definition of Annex Themes and scope" v3.0.	Existing	The land use is already existing at the time of the plan.
		Planned	The land use is planned by the plan
		Removal	The land use indication refers to an existing settlement or infrastructure that has to be removed in the future

Comment Codelists seem to be complete and the meaning of each value is clear and appropriate

Codelist	Description	Value	Notes
PlanType	Specific type of plan.	BindingLandUsePlan	
		PreparatoryLandUsePlan	
		StateDevelopmentPlan	
		StructureVisionPlan	
		ZoningPlan	
		MunicipalStructurePlan	Plan containing the general, middle-long term strategic decisions regarding the development and the protection of the municipal territory. NOTE Classifies the territory into homogeneous geographical/functional/landscape areas, defines the necessary facilities, sets the general conditions influencing the development.
		MunicipalOperationalPlan	Plan defining the rules of land transformation and protection for the short term. NOTE Contains defined regulations about quantity and density, infrastructures and utilities, conditions and constraints
		ExecutiveDevelopmentPlan	Plan defining in detail the type of land transformation. NOTE Often being the last step of the planning process, this plan contains the direct provisions to be applied to the land parcel in terms of quantities, density, utilities.
		LandscapePlan	Plan defining the landscape features and the means for protecting them.

Comment ... Codelists seem to be complete and the meaning of each value is clear and appropriate.

Codelist	Description	Value	Notes
ProcessStepSpecific	Specific indication of the step of the planning process that the plan is undergoing.	PlanPreparationDecision	
		Draft	
		EarlyInvolvementPublicAuthorities	

Codelist	Description	Value	Notes
	NOTE The code list is extendible in order to be adaptable to all legal frameworks and planning systems	EarlyPublicParticipation	
		InvolvementPublicAuthorities	
		Adopted	Plan having been adopted by the responsible authority but not yet approved by the controlling authority
		PublicObservations	Plan having been published after adoption for receiving observations from stakeholders
		CounterDeductions	Process of preparation of the responses by the responsible authority to the observations by the stakeholders
		Approved	Plan having been approved by the controlling authority and being legally in force
		MunicipalStatute	

Comment Codelists seem to be complete and the meaning of each value is clear and appropriate.

Codelist	Description	Value	Notes
RasterFileType	Type of raster file of image	pdf	
		tiff	
		bitmap	
		jpg	
		png	
		ecw	
		geotiff	

Comment ... Codelists seem to be complete in that they can accommodate any local requirement and the meaning of each value is clear and appropriate.

Codelist	Description	Value	Notes
RoofShape	Specifies the allowed roof shape.	FlatRoof	
		ShedRoof	
		MansardRoof	

CommentCodelist appears to be much too limited and misses the main RoofShapes, which could include, Gabled (classified by the straight slope falling from ridge to eave, creating a peak or triangle on the side or front facade. Can be subdivided into Side-gabled, Front-gabled or Cross-gabled), Hipped (have an even roof to wall junction all the way around the building and eaves on all sides. Can be subdivided into Simple, Pyramidal or Cross-hipped), Dormers (Rise up out of the roof and are often separate from the roof-to-wall junction) and Gables (roof sections that face in a different direction from the main roof (i.e. cross gables). Others (including Gambrel, Saltbox, Hip, Mansard, Shed, Valley, Flat)

Codelist	Description	Value	Notes
SpecificLandUseType	Specific indication on the land use of an area	Residential	
		Industry / Enterprise	
		Commercial / Retail / Town or District or Neighbourhood Centre	
		Community / Services Infrastructure / Utilities	
		Open Space / Amenity / Conservation / Recreation	
		Agriculture / Aquaculture / Forestry / Rural	
		Mixed Use	
		Other.	

Comment The Codelist above is the Generic Zone Types (GZT) being proposed by the Irish Government’s Department of Environment, Heritage and Local Government in line with the INSPIRE Land Use theme.

Codelist	Description	Value	Notes
TypeOfBuilding	Specifies the allowed building type	DetachedHouse	
		SemiDetachedHouse	
		TerracedHouse	

Comment This codelist seems much too limited in that there are very many types of buildings, even types of houses from the 3 listed (for instance “One-off house” should be added. For TypeOfBuilding, maybe use Agricultural buildings, Commercial buildings , Residential Buildings , Educational buildings , Government buildings, Industrial buildings, Military buildings, Parking and storage, Religious buildings, Transit stations, Other (from http://en.wikipedia.org/wiki/List_of_building_types).

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

1. What general concepts of the specific theme do not map into the model?

PlanFeature (abstract) - isOverlayArea

2. Are there data/information of the case study that do not fit ?

Utility Services required for the specific planned land use, e.g. Waste Collection, Sewerage type, Water, Electricity, Gas, Telecommunications, Roads, etc. These are particularly relevant to the Local Authorities, who are the Planning Authorities in Ireland.

3. Are there redundant parts?

No, all is useful if not always relevant or used.

4. General comments about the model

Perhaps some codelists are too specific as indicated in the comments above.

Land Use

Feedback from

Innova Puglia (Caroppo)

Abbiamo svolto un'analisi complessiva a partire dalla chiave di lettura fornita dagli articoli ASITA e lo schema UML fornito, presupponendo di analizzare uno specifico piano comunale, nell'ottica di interesse della Regione Puglia e di quanto indicato da questa ai Comuni per l'informatizzazione di tale tipologia di piano. Tuttavia, alcune note evidenziate nel seguito fanno anche riferimento a considerazioni generali poiché ci si è sforzati di ragionare in una prospettiva di applicazione più ampia.

Relativamente agli eventuali dubbi emersi nell'analisi del modello, riportiamo le seguenti osservazioni di carattere generale:

- E' necessaria la presenza di una accurata traduzione in italiano dei valori riportati nelle enumeration e CodeList, oltre ad una descrizione esplicativa eventualmente accompagnata da esempi; ciò in quanto nel campo della pianificazione territoriale gli stessi termini possono assumere interpretazioni e connotazioni differenti a seconda degli ambiti di applicazione, soprattutto in relazione a specificità locali in termini anche di normative.
- La presenza del valore "altro" nelle Enumeration e nelle CodeList espone al rischio di abuso eventualmente privo di fondamenti: una esemplificazione significativa di supporto potrebbe ovviare a questo pericolo. Si consiglia di tener presente la possibilità di aggiungere un ulteriore campo di note da far avvalorare in caso o di utilizzo del valore "altro" o dell'integrazione di una codelist, così da indurlo ad esplicitarne i significati concreti (in questa maniera si garantirebbe la comprensione anche di eventuali acronimi utilizzati correntemente nel contesto locale).
- Probabilmente sarebbe opportuno seguire una modalità operativa di aggiornamento del modello che preveda l'intervento di tutti gli enti coinvolti nei piani da documentare, almeno a livello nazionale e regionale, per aggiungere valori nelle CodeList in maniera coerente e condivisa, senza inutili ridondanze e ambiguità; ad esempio, una Regione con molta probabilità sarebbe in grado di individuare tutte o quasi le voci definitive per un dominio codificato al punto da trasformare una codelist in una enumeration, anche per conto dei Comuni.
- Non è chiaro se l'applicazione del modello va fatta ad un singolo piano o a sue componenti (previsione a lungo termine o a breve termine) o a singoli elementi territoriali definiti/normati dal piano stesso; tale questione emerge ogni qual volta le informazioni richieste si differenziano sulla base della componente oggetto di indagine (per questo motivo, in alcuni attributi non sono appropriate le cardinalità singole espresse nel modello proposto).
- Alcune informazioni generali relative a strumenti di pianificazione con riferimento a normative locali potrebbero essere inserite da utenti diversi in modo diverso nonostante rappresentino lo stesso concetto; per esempio, il titolo del campo, impostato a "P.U.G." poteva essere scritto in forma completa (Piano Urbanistico Generale) o con un acronimo senza punti (PUG o Pug) o addirittura in forma mista (PUG – Piano Urbanistico Generale), con eventuale specifica ulteriore del Comune annessa. Stesso discorso si potrebbe fare per i riferimenti legislativi; per questo occorrerebbe la chiusura di alcuni elenchi di voci prima di passarli agli enti preposti per la corretta compilazione.

- Sarebbe il caso di valutare l'opportunità di documentare piani in itinere (vedi attributi tipo ProcessStepSpecific che fanno riferimento a fasi intermedie in cui i piani sono a stadio embrionale/schematico e non vengono distribuiti nei formati originali nemmeno nelle fasi di confronto previste). Si ricorda, a tal proposito, che la pianificazione tratta alcuni dati sensibili che i politici locali tendono a diffondere solo nelle versioni più stabili e definitive (esempio: valore dei suoli).
- Mancano informazioni relative ai responsabili dei dati di piano.
- Non è chiaro che cosa si intende per GraphicalInformation, TextualInformation e TextualRegulation:
 - o Un piano è costituito, in genere e a maggior ragione nel caso di piani regionali e comunali, da diversi elaborati grafici; questa caratteristica è tanto più evidente quanto più il piano è complesso in quanto articolato in più componenti, inoltre spesso gli stessi oggetti sono rappresentati in elaborati distinti con finalità diverse per cui ritorna la problematica di cosa si sta esaminando in dettaglio;
 - o Per TextualInformation abbiamo inteso le relazioni allegate al piano; in genere, tali documenti testuali sono più di uno, alcuni possono essere correlati al piano nella sua totalità, altri fanno riferimento ad alcune specifiche componenti mentre altri ancora ad alcuni approfondimenti di settore connessi a determinate tavole: ciò richiede l'eventuale possibilità di relazionare i documenti testuali al piano o alle sue parti.
 - o Per TextualRegulation abbiamo inteso le norme tecniche di attuazione; si fa presente che alcune norme o indicazioni sono presenti già nelle relazioni che noi crediamo (forse erroneamente) afferiscano alla categoria TextualInformation, come spiegato nel punto precedente. Anche in questo caso una esemplificazione di dettaglio sarebbe di notevole aiuto.
- Relativamente ai Raster, nell'articolo ASITA si fa riferimento a "eventuali file raster facenti riferimento a vecchi piani in forma cartacea"; facciamo presente che, per quanto alcune componenti del piano possano essere prodotte in formato digitale vettoriale e restituite in tale formato, è importante conservarne la lettura di insieme sottoformato di tavole che andrebbero allegate necessariamente in formato raster/pdf. Inoltre, diversi elementi dei piani possono essere creati mediante strumenti diversi in varia combinazione tra loro, tra cui strumenti specifici per la grafica, molti dei quali non hanno a che vedere col concetto di settorializzazione.
- A cosa va riferita l'espressione "PlanFeature"? Non è chiaro se al piano o a suoi componenti o ad ogni singola zonizzazione prevista dal singolo piano o dalle varie tavole che lo strutturano; in tal senso, per quale entità si parla di "stato" (attributo "PlanFeatureStatus"): per la singola zonizzazione o, a livello macroscopico, per una tavola (insieme di zonizzazioni) o per gli strati informativi. Le voci previste per l'attributo PlanFeatureStatus sono tra di loro in qualche modo equivalenti: è naturale che se una determinata area viene pianificata subisce una trasformazione, con una conseguente rimozione di elementi territoriali (la pianificazione di un'area di nuova edificazione presuppone che vengano rimosse le aree agricole o incolte o già costruite preesistenti).
- Dato l'alto livello di incertezza circa l'oggetto di applicazione del modello, non riusciamo a comprendere anche i seguenti elementi:
 - o rispetto a cosa introdurre riferimenti a norme e regolamenti (URL di singole norme testuali);
 - o rispetto a cosa distinguere tra aree prive di sovrapposizioni e aree che possono ammettere parti sovrapposte;
 - o rispetto a cosa valutare la tipologia geometrica.
- Avvalorare l'attributo "generalLandUseType", facente capo alla categoria delle indicazioni funzionali, comporterebbe pesanti forzature visto che la normativa regionale riferita alla

pianificazione comunale prevede delle voci di dominio non rapportabili a quelle previste dal modello.

- In linea di massime, le categorie incluse nella CodeList “InterventionCategory” possono ritenersi piuttosto soddisfacenti sotto il profilo della completezza per quanto riguarda l’edificato/urbanizzato, ma non altrettanto si può dire per il territorio agricolo/naturale. Per alcuni piani settoriali, l’utilizzo di tali categorie sarebbe molto complesso oltre che forzato.
- Gli attributi relativi alla sezione “DimensioningIndications” risultano piuttosto generici e, pertanto, di difficoltosa applicazione; pur essendo prevista una cardinalità 0:molti per ciascuna area acquisita nel piano, è indispensabile poter aggiungere ad ogni valore inserito una descrizione che ne espliciti la valenza e gli obiettivi (esempio: la superficie può fare riferimento a superficie fondiaria, superficie occupata, superficie per servizi previsti, superficie per servizi esistenti, superficie edificata, etc. così come vale per la volumetria e il resto).
- I nostri piani non sempre arrivano al livello di definizione delle tipologie di costruzione; in ogni caso, le categorie previste non si adattano alla realtà regionale/nazionale.
- In riferimento alla sezione “ConditionsAndConstraints” suscita perplessità quanto riportato nell’articolo ASITA, secondo cui questi “comprendono sia i vincoli generati dal piano stesso sia quelli provenienti da altri piani o da leggi o provvedimenti di diverso tipo”: qual è il rapporto tra tali norme proveniente da altro rispetto al piano e il piano stesso? Inoltre, con specifico riferimento ai vincoli definiti dal piano stesso, questi vengono a volte definitivi in tavole/elaborati/strati informativi ad hoc, altre volte sono relativi ad oggetti inseriti in tavole con altre finalità (ad esempio i vincoli relativi ad aree agricole di pregio sono negli stessi elaborati in cui figurano altre zonizzazioni di diversa natura): a cosa vanno correlate gli attributi previsti da questa sezione? I domini proposti potrebbero essere adattati alle nostre esigenze con un medio sforzo, una volta compreso il termine di riferimento a cui applicarli.
- Per quanto riguarda la gestione delle autorizzazioni e permessi, non è chiaro il rapporto tra questi e il piano in sé.
- Si evince che il modello è fortemente indirizzato all’archiviazione di dati relativi a piani a carattere fortemente urbanistico; le informazioni relative a componenti/aspetti agricoli e naturali risultano penalizzati sia se presenti all’interno di un piano a carattere più ampio sia se riferiti a piani settoriali; per esempio, un piano di un parco risulterebbe piuttosto menomato dal punto di vista informativo rispetto alle categorie proposte.

Infine, per quanto riguarda la completezza delle Enumeration, riportiamo, a parte le osservazioni sopra sintetizzate, una nota di carattere puntuale relativamente all’ Enumeration

HierarchyLevelName:

tra le voci presenti manca una voce che faccia riferimento a piani speciali (vedi piani di bacino, piani di gestione dei parchi) la cui giurisdizione non può essere ricondotta in maniera chiara ai livelli di scala indicati nel dominio

Classe	Attributo	Valore del caso di studio	attributo utilizzato? Se no, perche?	significato attributo chiaro? Se no, perche?	tipo dell'attributo chiaro? Se no, perche?	È appropriato il tipo dell'attributo? Se no, perché?	è stato sufficiente ad esprimere ciò che si voleva rappresentare? Se no, perché?	È corretta la molteplicità dell'attributo? Se no, perché?	
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AdministrativeInformation	organisationName	Comune di Monopoli							
AdministrativeInformation	hierarchyLevelName	Comunale (SpatialPlan.Local)					oltre il caso di studio sussistono situazioni in cui nessuna delle voci sarebbe appropriata salvaguardando un minimo dettaglio dell'informazione		in Italia non si ha il concetto di "federazione" di entità politiche
AdministrativeInformation	planType	MunicipalStructurePlan / OperationalStructurePlan						no in quanto con il dominio previsto emerge la necessità di usare più di un valore	
AdministrativeInformation	processStepGeneral	LegalForce	no perché si considera come informazione aggiuntiva da avvalorare da parte dell' Ente che riceve il piano per valutarne la compatibilità ed archivarlo dopo approvazione definitiva						

AdministrativeInformation	processStepSpecific	Approved	no perché i piani distribuiti nella loro completezza sono sicuramente nelle fasi finali dell'iter procedurale di adozione/approvazione						
AdministrativeInformation	ordinanceRef	Delibera di G.C. del ...; Delibera di C.C.del ...;						si ammesso di generare un modello logico di database in cui ad ogni documento ufficiale corrisponda la relativa data di pubblicazione (con accesso al documento stesso in formato digitale); inoltre sia possibile risalire al piano a cui queste informazioni si riferiscono.	
AdministrativeInformation	ordinanceDate	G.C. gg/mm/aaaa;C.C. gg/mm/aaaa							
AdministrativeInformation	temporalExtentFrom	gg/mm/aaaa							
AdministrativeInformation	temporalExtentTo	?????	no perché il piano in esame è composto da due parti di cui solo una ha una scadenza indicativa più o meno						

ConstructionIndications	typeOfBuilding	non usato							
ConstructionIndications	roofShape	non usato							
ConstructionIndications	otherConstructionIndications	non usato							
DevelopmentApplication	id_Application	non usato	la gestione delle autorizzazioni non è considerata pertinente al piano in sé						
DevelopmentApplication	applicantName	non usato	la gestione delle autorizzazioni non è considerata pertinente al piano in sé						
DevelopmentApplication	applicationType	non usato	la gestione delle autorizzazioni non è considerata pertinente al piano in sé						
DevelopmentApplication	descriptionOfDevelopment	non usato	la gestione delle autorizzazioni non è considerata pertinente al piano in sé						
DevelopmentApplication	applicationStatus	non usato	la gestione delle autorizzazioni non è considerata pertinente al piano in sé						
DevelopmentApplication	associatedDocumentName	non usato	la gestione delle autorizzazioni non è considerata pertinente al piano in sé						

DevelopmentApplication	associatedDocumentURL	non usato	la gestione delle autorizzazioni non è considerata pertinente al piano in sé						
DimensioningIndications	indexes	(vedi osservazioni)	(vedi osservazioni)						
DimensioningIndications	volumeIndications	(vedi osservazioni)	(vedi osservazioni)						
DimensioningIndications	surfaceIndications	(vedi osservazioni)	(vedi osservazioni)						
DimensioningIndications	heightIndications	(vedi osservazioni)	(vedi osservazioni)						
DimensioningIndications	unitIndications	???????	no e non sapremmo dire perché in quanto non riusciamo a capirne il significato						
DimensioningIndications	otherDimensioningIndications	???????	no e non sapremmo dire perché in quanto non riusciamo a capirne il significato						
FunctionIndications	property	non usato	il valore non viene usato ma potrebbe essere identificato con cardinalità singola per un singolo oggetto territoriale acquisito						

FunctionIndications	LUCAS_Code	???????	no e non sapremmo dire perché in quanto non riusciamo a capirne il significato	no perché è stato difficile trovare in rete informazioni sullo standard citato						
FunctionIndications	macroClassificationOfLand	usato (vengono usati solo i valori urbanised e rural)								
FunctionIndications	generalLandUseType	usato ma non diciture specifiche della normativa regionale pugliese che hanno poco in comune con quelle proposte dal modello								
FunctionIndications	specificLandUseType	usato senza domini di valori								
FunctionIndications	otherTerritorialClassification	???????	non usato perché non si comprende rispetto a quale termine di confronto va valutata la diversità							
FunctionIndications	interventionType	non utilizzato	tali informazioni sono presenti nelle corrispondenti norme attuative							
FunctionIndications	indirectExecution	non utilizzato								
GraphicalInformation	inspireId		no e non sapremmo dire perché in quanto non riusciamo a capirne il significato	NO. Bisogna capire se l' ID fa riferimento al piano intero o a singoli strati e con quali regole viene determinato						

GraphicalInformation	title		no e non sapremmo dire perché in quanto non riusciamo a capirne il significato						
GraphicalInformation	language		no e non sapremmo dire perché in quanto non riusciamo a capirne il significato	no perché è stato difficile trovare in rete informazioni sullo standard ISO citato					
IndirectExecution	title	non usato	nel caso specifico i sottopiani, qualora esistenti, non sono di particolare interesse della Regione Puglia; le note riportate per l'intero piano continuano a valere anche in questo caso						
IndirectExecution	processStepGeneral	non usato	nel caso specifico i sottopiani, qualora esistenti, non sono di particolare interesse della Regione Puglia; le note riportate per l'intero piano continuano a valere anche in questo caso						

IndirectExecution	ordinanceRef	non usato	nel caso specifico i sottopiani, qualora esistenti, non sono di particolare interesse della Regione Puglia; le note riportate per l'intero piano continuano a valere anche in questo caso						
IndirectExecution	ordinanceDate	non usato	nel caso specifico i sottopiani, qualora esistenti, non sono di particolare interesse della Regione Puglia; le note riportate per l'intero piano continuano a valere anche in questo caso						
PlanFeature (abstract)	inspireId	??????	no (si utilizzano regole interne per identificare univocamente ogni strato informativo di piano per ciascun Comune)	NO. Bisogna capire se l' ID fa riferimento al piano intero o a singoli strati e con quali regole viene determinato					
PlanFeature (abstract)	status	??????							

PlanFeature (abstract)	regulationNature	?????	non è chiaro in quanto non è chiaro l'oggetto di applicazione del modello; in linea di massima le norme hanno validità legale ed ufficiale per chiunque salvo deroghe dovute a pubbliche utilità e altre particolari condizioni.						
PlanFeature (abstract)	regulationReference								
PlanFeature (abstract)	isOverlayArea								
PlanFeature (abstract)	geometry								
PlanObject	inspireId	?????	no (si utilizzano regole interne per identificare univocamente ogni strato informativo di piano per ciascun Comune)	NO. Bisogna capire se l' ID fa riferimento al piano intero o a singoli strati e con quali regole viene determinato			Dipende da cosa è oggetto di documentazione tramite il modello	Dipende da cosa è oggetto di documentazione tramite il modello	
PlanObject	title	P.U.G.					Dipende da cosa è oggetto di documentazione tramite il modello	Dipende da cosa è oggetto di documentazione tramite il modello	

TextualInformation	inspireId	?????	(vedi osservazioni)	NO. Bisogna capire se l' ID fa riferimento al piano intero o a singoli strati e con quali regole viene determinato					
TextualInformation	title	?????	(vedi osservazioni)	(vedi osservazioni)					
TextualInformation	language	?????	(vedi osservazioni)	no perché è stato difficile trovare in rete informazioni sullo standard ISO citato					
TextualRegulation	inspireId	?????	(vedi osservazioni)	NO. Bisogna capire se l' ID fa riferimento al piano intero o a singoli strati e con quali regole viene determinato					
TextualRegulation	title	?????	(vedi osservazioni)	(vedi osservazioni)					
TextualRegulation	language	?????	(vedi osservazioni)	no perché è stato difficile trovare in rete informazioni sullo standard ISO citato					

Land Use

Feedback from

Partners involved in validation:

- AMFM (Franco Vico)
- DipSU (Flavio Camerata)

External experts involved:

- Alessandra Benvenuti (Insiel S.p.A., IT company) and Mauro Pascoli (Region of Friuli-Venezia Giulia). *For the specific comments provided by these experts, please refer to the attached Land Use feature catalogue, where they have instantiated the attributes using a municipal land use plan and written their comments.*
- Massimo Pancaldi (Po River Basin Authority).

General comments

- Given the fact that a land use database such as the one proposed by Plan4all doesn't have the purpose of managing administrative processes related to land use plans, but only of describing the plan, the parts concerning the administrative information (AdministrativeInformation) and the development applications (DevelopmentApplication) should be omitted.
- If the model is to be used for inter-institutional and cross-border purposes, it should maybe bear more concise and less detailed information. A more thorough study should be made in order to "isolate" the essential information to be used for these purposes.
- The data model is more representative of a municipal plan, it is more difficult to see it as a model of data regarding supra-municipal plans.
- It would be important to add a class concerning the territorial assets exposed to a certain risk: e.g., in the case of a river basin plan, what kinds of assets are exposed to the flood risk (agricultural areas, stables, residential buildings, etc.).
- Many of the attributes having a [0..*] multiplicity should instead be voidable and rather have a [1..*] multiplicity, because many plans don't bear the related information. For example:
 - o class FunctionIndications: macroClassificationOfLand, specificLandUseType, otherTerritorialClassification, interventionType;
 - o class ConditionsAndConstraints: protectedSite, naturalRiskSafetyArea, RestrictionZone, EasementType;
 - o class ConstructionIndications: typeOfBuilding, roofShape, otherConstructionIndications;
 - o class DimensioningIndications: indexes, volumeIndications, surfaceIndications, heightIndications, unitIndications, otherDimensioningIndications.

Specific comments about the attributes and related enumerations/code lists

- HierarchyLevelName (class: AdministrativeInformation). The value "SpatialPlan.district" should be added to the enumeration (it can be the case of a plan concerning a river basin district).
- PlanType (class: AdministrativeInformation). Some types of plan (for example the old municipal General Spatial Plans in Italy, so called PRG) would be classified with more values at the same time, e.g. MunicipalStructurePlan and ZoningPlan.

- ProcessStepGeneral and ProcessStepSpecific (class: AdministrativeInformation). The values LegalForce and Obsolete have been considered to be the only usable and univocally understandable ones.
- Property (class: FunctionIndications). The specification concerning the property can be related to a single land parcel, but not to a Plan Feature, because the latter is often related to more than one land parcel at the same time. If some of the land parcels comprised in a single plan feature are public, and the rest of them are private, the value of this attribute cannot be univocal. Moreover, in the case of a river basin plan or other higher level plans, this attribute doesn't make sense.
- The attributes of the class DimensioningIndications might not have only numeric values, but there could be also text descriptions. For example, for surfaceIndications: *coverage ratio max 60% - min plot area 2,000 sqm.*
- EasementType (class: ConditionsAndConstraints). The meaning of this attribute is not very clear.
- InterventionType (class: ConditionsAndConstraints). This attribute is more adequate to the class FunctionIndications.

Land Use

Feedback from

Insiel S.p.A. and Region of Friuli-Venezia Giulia

Spatial object types

AdministrativeInformation	
Subtype of:	PlanObject
Definition:	Information on the legal and administrative status of the plan and on the planning process.
Stereotypes:	«featureType»
Attribute: organisationName	Comune di Sacile
Value type:	String
Definition:	Name of the authority responsible for the plan.
Multiplicity:	1
Attribute: hierarchyLevelName	Local
Value type:	HierarchyLevelName
Definition:	Administrative level of plan.
Multiplicity:	1
Attribute: planType	Municipal Operational Plan/Municipal Structure Plan/Zoning Plan?
Value type:	PlanType
Definition:	Type of plan in specific terms.
Description:	NOTE The possible values are country-specific and are provided in an extendible code list.
Multiplicity:	1 La classificazione non è immediata in quanto il Piano contiene indicazioni relative a tutte e tre le tipologie indicate.
Attribute: processStepGeneral	LegalForce
Value type:	ProcessStepGeneral
Definition:	Information on the steps of the planning process in generic terms.
Description:	NOTE The enumeration provides four values intended to be common to most planning systems.
Multiplicity:	1 I valori significativi ai fini dell'utilizzo a regime sono a nostro avviso "LegalForce" e "Obsolete"
Attribute: processStepSpecific	Approved
Value type:	ProcessStepSpecific
Definition:	Detailed information on the steps of the planning process.
Description:	NOTE The possible values are country-specific and are provided in an extendible code list.
Multiplicity:	1

Abbiamo scelto lo stato “approvato”. Segnaliamo che “approvato” non significa automaticamente “efficace”. Per l’efficacia infatti è necessaria la pubblicazione sul BUR.

Non ci era inoltre chiaro il significato di “municipale statute”.

Come per il campo ProcessStepGeneral, ci sembra ridondante e di difficile gestione tenere traccia di tutti questi passaggi nell’iter di approvazione.

Attribute: ordinanceRef *Approvato con Decreto 0202/Pres. 15/07/2009*

Value type: String
Definition: Reference to relevant administrative ordinance.
Description: NOTE This attribute is multiple because, independently from the current legal status of the plan, there can be references to more than one ordinance, in relation to the different steps that the planning process has already undergone (e.g. ordinance for the preparation of a new plan, ordinance of adoption, ordinance of approval, etc.).
Multiplicity: 1..*

Attribute: ordinanceDate *15/07/2009*

Value type: DateTime
Definition: Date of the relevant administrative ordinance.
Description: NOTE This attribute is multiple because, independently from the current legal status of the plan, there can be references to the dates of more than one ordinance, in relation to the different steps that the planning process has already undergone (e.g. ordinance for the preparation of a new plan, ordinance of adoption, ordinance of approval, etc.).
Multiplicity: 1..*

Attribute: temporalExtentFrom *15/07/2009*

Value type: DateTime
Definition: Starting date of legal validity of the plan.
Multiplicity: 1

Attribute: temporalExtentTo *???*

Value type: DateTime
Definition: End of legal validity of the plan.
Multiplicity: 0..1
Il Piano ha durata illimitata. I vincoli preordinati all’esproprio hanno una durata di 5 anni. Come gestire questa informazione?

Attribute: planDescription *Piano Regolatore Generale comunale*

Value type: String
Definition: Description of the plan.
Description: NOTE Any additional explanation on the plan in free text form.
Multiplicity: 1
Stereotypes: «voidable»

ConditionsAndConstraints

Subtype of: [PlanFeature](#) **Caso 1: Ambito del Parco fluviale del Livenza**

Definition:	Conditions and constraints acting on urban development, both coming from outside the plan and generated by the plan itself.
Description:	EXAMPLE 1 A constraint for visually protecting a landscape (example of constraint coming from another plan, in this case a regional landscape plan). EXAMPLE 2 A constraint for protecting a building of historic importance (example of a constraint deriving from a law or an official list of historic building protected by a Ministry or Superintendence). EXAMPLE 3 A public utility easement along a waste water treatment plant (example of constraint generated by the same plan that decides where to locate such a plant).
Stereotypes:	<<featureType>>
Attribute: protectedSite Nature conservation	
Value type:	ProtectedSitesSimple::ProtectionClassificationValue
Definition:	Type of constraint related to the protection of specific sites.
Description:	SOURCE INSPIRE Data Specification on Protected Sites.
Multiplicity:	0..*
Attribute: naturalRiskSafetyArea InundateRiskZone	
Value type:	NaturalRiskSafetyArea
Definition:	Constraint deriving from the protection of human settlement from natural risks.
Description:	SOURCE Plan4all “Natural risk zones” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.
Multiplicity:	0..*
Attribute: restrictionZone	
Value type:	RestrictionZone Non applicabile
Definition:	Constraint deriving from specific restrictions related to areas managed, regulated or used for reporting at international, European, national, regional and local levels.
Description:	SOURCE Plan4all “Area management/restriction/regulation zones and reporting units” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.
Multiplicity:	0..* Non troviamo un valore adeguato nella code list, dal momento che in questo caso il vincolo deriva da una previsione di un piano sovraordinato (regionale)
Attribute: easementType ????	
Value type:	EasementType
Definition:	Constraint deriving from the protection of areas around public utilities or for the public use of certain resources.
Description:	SOURCE Plan4all “Area management/restriction/regulation zones and reporting units” data model.
Multiplicity:	0..* Il significato di questo campo non ci è del tutto chiaro...
Attribute: constraintName Parco fluviale del Livenza	
Value type:	String
Definition:	Name of the constraint, given by the responsible authority.

Multiplicity:	1
Stereotypes:	«voidable»
Attribute: constraint	Description Nella zona è fatto divieto di: nuova edificazione, case mobili, campeggio, estensione zone agrarie, abbandono rifiuti, recinzioni, fuochi, interventi su corsi d'acqua etc. Per ulteriori dettagli vedasi Art. 20 NTA.
Value type:	String
Definition:	Description of the constraint.
Description:	Can include a description of what cannot be done in the area according to the constraint.
Multiplicity:	1
Stereotypes:	«voidable» Un rimando agli articoli delle Norme Tecniche è sempre opportuno per completezza.
Attribute: interventionType	
Value type:	InterventionCategory ???
Definition:	Type of intervention allowed.
Description:	The attribute is multiple, as there can be more than one type of intervention allowed.
Multiplicity:	1..*
Stereotypes:	«voidable» Questo campo ci pare più adatto alla descrizione della FeatureType "FunctionalIndications" che alla descrizione dei vincoli

ConditionsAndConstraints	
Subtype of:	PlanFeature Caso 2: Aree di rispetto Cimiteriale
Definition:	Conditions and constraints acting on urban development, both coming from outside the plan and generated by the plan itself.
Description:	EXAMPLE 1 A constraint for visually protecting a landscape (example of constraint coming from another plan, in this case a regional landscape plan). EXAMPLE 2 A constraint for protecting a building of historic importance (example of a constraint deriving from a law or an official list of historic building protected by a Ministry or Superintendence). EXAMPLE 3 A public utility easement along a waste water treatment plant (example of constraint generated by the same plan that decides where to locate such a plant).
Stereotypes:	«featureType»
Attribute: protectedSite	
Value type:	ProtectedSitesSimple::ProtectionClassificationValue
Definition:	Type of constraint related to the protection of specific sites.
Description:	SOURCE INSPIRE Data Specification on Protected Sites.
Multiplicity:	0..* Non applicabile
Attribute: naturalRiskSafetyArea	
Value type:	NaturalRiskSafetyArea

<p>Definition: Constraint deriving from the protection of human settlement from natural risks.</p> <p>Description: SOURCE Plan4all “Natural risk zones” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.</p> <p>Multiplicity: 0..* Non applicabile</p>
<p>Attribute: restrictionZone Pur essendoci un vincolo derivante da una legge nazionale (Testo unico norme sanitarie) non troviamo un valore corrispondente a questo tipo di vincolo nella lista.</p> <p>Value type: RestrictionZone</p> <p>Definition: Constraint deriving from specific restrictions related to areas managed, regulated or used for reporting at international, European, national, regional and local levels.</p> <p>Description: SOURCE Plan4all “Area management/restriction/regulation zones and reporting units” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.</p> <p>Multiplicity: 0..*</p>
<p>Attribute: easementType ????</p> <p>Value type: EasementType</p> <p>Definition: Constraint deriving from the protection of areas around public utilities or for the public use of certain resources.</p> <p>Description: SOURCE Plan4all “Area management/restriction/regulation zones and reporting units” data model.</p> <p>Multiplicity: 0..* Il significato di questo campo non ci è del tutto chiaro...</p>
<p>Attribute: constraintName Vincolo Cimiteriale</p> <p>Value type: String</p> <p>Definition: Name of the constraint, given by the responsible authority.</p> <p>Multiplicity: 1</p> <p>Stereotypes: «voidable»</p>
<p>Attribute: constraintDescription Non è ammessa l’edificazione né altri interventi e attività indicati dal Testo Unico delle Norme sanitarie RD 27 luglio 1934 n1265. Articolo n. 40 delle NTA.</p> <p>Value type: String</p> <p>Definition: Description of the constraint.</p> <p>Description: Can include a description of what cannot be done in the area according to the constraint.</p> <p>Multiplicity: 1</p> <p>Stereotypes: «voidable» Opportuno rimando agli articoli delle Norme Tecniche</p>
<p>Attribute: interventionType</p> <p>Value type: InterventionCategory ???</p> <p>Definition: Type of intervention allowed.</p> <p>Description: The attribute is multiple, as there can be more than one type of intervention</p>

allowed.
Multiplicity: 1..*
Stereotypes: «voidable»

Questo campo ci pare più adatto alla descrizione della FeatureType “FunctionalIndications” che alla descrizione dei vincoli

ConstructionIndications

Subtype of: [PlanFeature](#) **Caso 1. Zone Omogenee B0.2 – Immobili storici trasformati**
Definition: Specifications about the manners of construction of the urban developments.
Description:
Stereotypes: «featureType»

Attribute: typeOfBuilding ???

Value type: [TypeOfBuilding](#)
Definition: Type of building allowed.
Description: The attribute is multiple, as there can be more than one manner of construction allowed.
Multiplicity: 0..*
Nelle zone B0.2, trattandosi di zone di completamento, ci sono tipologie di edifici diverse e non riconducibili alle categorie indicate nella attuale lista valori. Integrare la lista valori e aggiungere una voce “altro”....

Attribute: roofShape

Value type: [RoofShape](#)
Definition: Type of roof allowed.
Description: The attribute is multiple, as there can be more than one roof shape allowed.
Multiplicity: 0..*
Non ci sono indicazioni di Piano relative alle coperture

Attribute: otherConstructionIndications ???

Value type: [OtherConstructionIndications](#)
Definition: All possible further construction indications.
Multiplicity: 0..*
Manca la lista valori. In ogni caso, vista l’eterogeneità delle possibili indicazioni, è opportuno fare riferimento agli articoli delle Norme Tecniche di Attuazione.

ConstructionIndications

Subtype of: [PlanFeature](#) **Caso 2. Zone Omogenee B2 – Residenziale mista di tipo semintensivo**
Definition: Specifications about the manners of construction of the urban developments.
Description:
Stereotypes: «featureType»

Attribute: typeOfBuilding

Value type: [TypeOfBuilding](#)

<p>Definition: Type of building allowed.</p> <p>Description: The attribute is multiple, as there can be more than one manner of construction allowed.</p> <p>Multiplicity: 0..*</p> <p>Tessuto eterogeneo di varie tipologie edilizie, non riconducibili alle categorie indicate nella attuale lista valori. Integrare la lista valori e aggiungere una voce “altro”</p>
<p>Attribute: roofShape</p> <p>Value type: RoofShape</p> <p>Definition: Type of roof allowed.</p> <p>Description: The attribute is multiple, as there can be more than one roof shape allowed.</p> <p>Multiplicity: 0..*</p> <p>Non ci sono indicazioni di Piano a questo riguardo</p>
<p>Attribute: otherConstructionIndications ???</p> <p>Value type: OtherConstructionIndications</p> <p>Definition: All possible further construction indications.</p> <p>Multiplicity: 0..*</p> <p>Manca la lista valori. In ogni caso, vista l'eterogeneità delle possibili indicazioni, è opportuno fare riferimento agli articoli delle Norme Tecniche di Attuazione.</p>

<p>ConstructionIndications</p> <p>Subtype of: PlanFeature Caso 3. Zone Omogenee D2.2 – Zone Industriali e artigianali di interesse locale</p> <p>Definition: Specifications about the manners of construction of the urban developments.</p> <p>Description:</p> <p>Stereotypes: <<featureType>></p>
<p>Attribute: typeOfBuilding ???</p> <p>Value type: TypeOfBuilding</p> <p>Definition: Type of building allowed.</p> <p>Description: The attribute is multiple, as there can be more than one manner of construction allowed.</p> <p>Multiplicity: 0..*</p> <p>Non ci sono indicazioni di Piano a questo riguardo</p>
<p>Attribute: roofShape</p> <p>Value type: RoofShape</p> <p>Definition: Type of roof allowed.</p> <p>Description: The attribute is multiple, as there can be more than one roof shape allowed.</p> <p>Multiplicity: 0..*</p> <p>Non ci sono indicazioni di Piano a questo riguardo</p>
<p>Attribute: otherConstructionIndications ???</p> <p>Value type: OtherConstructionIndications</p> <p>Definition: All possible further construction indications.</p> <p>Multiplicity: 0..*</p>

Manca la lista valori.

DevelopmentApplication	
Subtype of:	PlanFeature Questi dati non riguardano il Piano - fanno riferimento alle concessioni edilizie ed alla relativa istruttoria- quindi non sono stati considerati
Definition:	Administrative information on the development applications.
Description:	NOTE All the information needed to track a development application. EXAMPLE An application for obtaining a building permit, by a private owner who wants to build on his plot and starts the necessary legal/administrative procedure.
Stereotypes:	«featureType»
Attribute: id_Application	
Value type:	String
Definition:	Identification code of the legal procedure, given by the responsible authority.
Multiplicity:	1
Attribute: applicantName	
Value type:	String
Definition:	Name of the applicant.
Multiplicity:	1
Attribute: applicationType	
Value type:	ApplicationType Chyba! Nenalezen zdroj odkazů.
Definition:	Type of application.
Description:	EXAMPLE Request of a building permit.
Multiplicity:	1
Attribute: descriptionOfDevelopment	
Value type:	String
Definition:	Description of the development.
Description:	Free text describing the intended transformation of the plot of land.
Multiplicity:	1
Attribute: applicationStatus	
Value type:	ApplicationStatus
Definition:	Status of the application.
Description:	NOTE States if the application has been received, approved, rejected, etc., by the responsible authority.
Multiplicity:	1
Attribute: associatedDocumentName	
Value type:	String
Definition:	Name of any document attached to the development application.
Description:	Any document containing technical reports, maps, a technical drawings, etc.
Multiplicity:	1..*
Attribute: associatedDocumentURL	
Value type:	String

Definition: URL of any document attached to the development application, saved as a file.
Multiplicity: 1..*

DimensioningIndications
<p>Subtype of: PlanFeature Caso 1. Zone Omogenee B0.2 – Immobili storici trasformati</p> <p>Definition: Specifications about the dimensioning of the urban developments.</p> <p>Stereotypes: «featureType»</p>
<p>Attribute: indexes Non superiore all'Indice esistente negli interventi di conservazione. Nel completamento If 2,50 mc/mq</p> <p>Value type: Index</p> <p>Definition: Indications concerning any ratio to be respected by the developments.</p> <p>Description: EXAMPLE Site occupancy index.</p> <p>Multiplicity: 0..*</p>
<p>Attribute: volumeIndications</p> <p>Value type: VolumeIndication</p> <p>Definition: Indications concerning the volume of developments.</p> <p>Description: EXAMPLE Cubic capacity.</p> <p>Multiplicity: 0..*</p> <p>Non ci sono indicazioni di Piano. Dato desumibile dagli altri indici</p>
<p>Attribute: surfaceIndications</p> <p>Value type: SurfaceIndication</p> <p>Definition: Indications concerning the surface of developments.</p> <p>Description: EXAMPLE Floor space.</p> <p>Multiplicity: 0..*</p> <p>Non ci sono indicazioni di Piano</p>
<p>Attribute: heightIndications Non superiore a quella esistente negli interventi conservativi. Negli altri casi 9,50m.</p> <p>Value type: HeightIndication</p> <p>Definition: Indications concerning the height of developments.</p> <p>Description: EXAMPLE Gutter height.</p> <p>Multiplicity: 0..*</p>
<p>Attribute: unitIndications</p> <p>Value type: UnitIndication</p> <p>Definition: Indications concerning the number of units to be respected.</p> <p>Description: EXAMPLE 1 Maximum number of storeys. EXAMPLE 2 Minimum number of companies.</p> <p>Multiplicity: 0..*</p> <p>Non ci sono indicazioni di Piano</p>
<p>Attribute: otherDimensioningIndications Fare riferimento articolo 8 NTA.</p> <p>Value type: OtherDimensioningIndication</p> <p>Definition: All possible further dimensioning indications.</p> <p>Multiplicity: 0..*</p>

DimensioningIndications	
Subtype of:	PlanFeature Caso 2. Zone Omogenee B2 – Residenziale mista di tipo semintensivo
Definition:	Specifications about the dimensioning of the urban developments.
Stereotypes:	«featureType»
Attribute: indexes If 2,50 mc/mq	
Value type:	Index
Definition:	Indications concerning any ratio to be respected by the developments.
Description:	EXAMPLE Site occupancy index.
Multiplicity:	0..*
Attribute: volumeIndications	
Value type:	VolumeIndication
Definition:	Indications concerning the volume of developments.
Description:	EXAMPLE Cubic capacity.
Multiplicity:	0..* Non ci sono indicazioni di Piano. Dato desumibile dagli altri indici
Attribute: surfaceIndications Rapporto di copertura max. 50%	
Value type:	SurfaceIndication
Definition:	Indications concerning the surface of developments.
Description:	EXAMPLE Floor space.
Multiplicity:	0..*
Attribute: heightIndications max 12,50m	
Value type:	HeightIndication
Definition:	Indications concerning the height of developments.
Description:	EXAMPLE Gutter height.
Multiplicity:	0..*
Attribute: unitIndications	
Value type:	UnitIndication
Definition:	Indications concerning the number of units to be respected.
Description:	EXAMPLE 1 Maximum number of storeys. EXAMPLE 2 Minimum number of companies.
Multiplicity:	0..* Non ci sono indicazioni di Piano
Attribute: otherDimensioningIndications Fare riferimento articolo 10 NTA.	
Value type:	OtherDimensioningIndication
Definition:	All possible further dimensioning indications.
Multiplicity:	0..*

DimensioningIndications

Subtype of: PlanFeature Caso 3. Zone Omogenee D2.2 – Zone Industriali e artigianali di interesse locale Definition: Specifications about the dimensioning of the urban developments. Stereotypes: «featureType»
Attribute: indexes Value type: Index Definition: Indications concerning any ratio to be respected by the developments. Description: EXAMPLE Site occupancy index. Multiplicity: 0..* Non ci sono indicazioni di Piano. Dato desumibile dagli altri indici
Attribute: volumeIndications Value type: VolumeIndication Definition: Indications concerning the volume of developments. Description: EXAMPLE Cubic capacity. Multiplicity: 0..* Non ci sono indicazioni di Piano. Dato desumibile dagli altri indici
Attribute: surfaceIndications Rapporto di copertura max. 60%. Lotto minimo 2000mq Value type: SurfaceIndication Definition: Indications concerning the surface of developments. Description: EXAMPLE Floor space. Multiplicity: 0..* Rapporto di copertura max. 60%
Attribute: heightIndications max 10m Value type: HeightIndication Definition: Indications concerning the height of developments. Description: EXAMPLE Gutter height. Multiplicity: 0..*
Attribute: unitIndications Value type: UnitIndication Definition: Indications concerning the number of units to be respected. Description: EXAMPLE 1 Maximum number of storeys. EXAMPLE 2 Minimum number of companies. Multiplicity: 0..* Non ci sono indicazioni di Piano
Attribute: otherDimensioningIndications Fare riferimento articolo 16 NTA. Value type: OtherDimensioningIndication Definition: All possible further dimensioning indications. Multiplicity: 0..*

FunctionIndications
Subtype of: PlanFeature Caso 1. Zone Omogenee B0.2 – Immobili storici trasformati Definition: Indications on the classification of the land use.

<p>Description: NOTE From the most general classification of the land (such as urbanised/to be urbanised/rural) to the detailed function (such as industrial area or railroad).</p> <p>Stereotypes: <featureType></p>
<p>Attribute: property</p> <p>Value type: Property</p> <p>Definition: Property of the land plot.</p> <p>Multiplicity: 1</p> <p>Non è possibile indicare la proprietà in quanto questo è un dato associate alla particella catastale e non alla zona.</p>
<p>Attribute: LUCAS_Code ???</p> <p>Value type: String</p> <p>Definition: Code of the land use.</p> <p>Description: SOURCE LUCAS classification.</p> <p>Multiplicity: 0..1</p> <p>Non abbiamo trovato la Legenda</p>
<p>Attribute: macroClassificationOfLand Urbanised</p> <p>Value type: MacroClassificationOfLand</p> <p>Definition: Division of the planned area into macro-zones.</p> <p>Description: EXAMPLE urbanised, to be urbanised, rural.</p> <p>Multiplicity: 0..1</p>
<p>Attribute: generalLandUseType Residential</p> <p>Value type: GeneralLandUseType</p> <p>Definition: General indication on the land use of an area.</p> <p>Multiplicity: 1..*</p>
<p>Attribute: specificLandUseType</p> <p>Value type: SpecificLandUseType</p> <p>Definition: Specific indication on the land use of an area.</p> <p>Multiplicity: 0..*</p> <p>Manca la lista valori</p>
<p>Attribute: otherTerritorialClassification</p> <p>Value type: OtherTerritorialClassification</p> <p>Definition: Division of the planned area into functional homogeneous macro-areas.</p> <p>Description: EXAMPLE Can be areas with homogeneous functional characteristics, which overlap to the general and specific indications of land use.</p> <p>Multiplicity: 0..*</p> <p>Manca la lista valori</p>
<p>Attribute: interventionType Conservation, Ordinary Maintenance, Extraordinary maintenance, RestorationConservation, DemolitionRebuilding, NewBuilding, Enlargement</p> <p>Value type: InterventionCategory</p> <p>Definition: Type of intervention allowed.</p> <p>Multiplicity: 0..*</p> <p>Le voci sono indicative e non corrispondono perfettamente alle categorie di intervento effettive</p>
<p>Attribute: indirectExecution Si</p>

Value type:	Boolean
Definition:	Development executable only following a further specific detailed plan, programme or agreement.
Description:	EXAMPLE 1 When a developer cannot start a development application according only to the general zoning plan, but has to make an executive plan first and get it approved. EXAMPLE 2 When an upper level plan (such as a regional landscape plan) doesn't give exact determinations about the land use, but is acknowledged and/or further defined by a municipal plan.
Multiplicity:	1 In alcuni casi è previsto un progetto planivolumetrico unitario esteso all'intero ambito.

FunctionIndications	
Subtype of:	PlanFeature Caso 2. Zone Omogenee B2 – Residenziale mista di tipo semintensivo
Definition:	Indications on the classification of the land use.
Description:	NOTE From the most general classification of the land (such as urbanised/to be urbanised/rural) to the detailed function (such as industrial area or railroad).
Stereotypes:	<featureType>
Attribute: property	
Value type:	Property
Definition:	Property of the land plot.
Multiplicity:	1 Non è possibile indicare la proprietà in quanto questo è un dato associato alla particella catastale e non alla zona.
Attribute: LUCAS_Code ???	
Value type:	String
Definition:	Code of the land use.
Description:	SOURCE LUCAS classification.
Multiplicity:	0..1 Non abbiamo trovato la Legenda
Attribute: macroClassificationOfLand Urbanised	
Value type:	MacroClassificationOfLand
Definition:	Division of the planned area into macro-zones.
Description:	EXAMPLE urbanised, to be urbanised, rural.
Multiplicity:	0..1
Attribute: generalLandUseType Residential	
Value type:	GeneralLandUseType
Definition:	General indication on the land use of an area.
Multiplicity:	1..*
Attribute: specificLandUseType	
Value type:	SpecificLandUseType
Definition:	Specific indication on the land use of an area.

Multiplicity: 0..*	Manca la lista valori
Attribute: otherTerritorialClassification	
Value type: OtherTerritorialClassification	
Definition: Division of the planned area into functional homogeneous macro-areas.	
Description: EXAMPLE Can be areas with homogeneous functional characteristics, which overlap to the general and specific indications of land use.	
Multiplicity: 0..*	Manca la lista valori
Attribute: interventionType Conservation, Ordinary Maintenance, Extraordinary maintenance, RestorationConservation, DemolitionRebuilding, NewBuilding, Enlargement	
Value type: InterventionCategory	
Definition: Type of intervention allowed.	
Multiplicity: 0..*	Le voci sono indicative e non corrispondono perfettamente alle categorie di intervento effettive
Attribute: indirectExecution No	
Value type: Boolean	
Definition: Development executable only following a further specific detailed plan, programme or agreement.	
Description: EXAMPLE 1 When a developer cannot start a development application according only to the general zoning plan, but has to make an executive plan first and get it approved. EXAMPLE 2 When an upper level plan (such as a regional landscape plan) doesn't give exact determinations about the land use, but is acknowledged and/or further defined by a municipal plan.	
Multiplicity: 1	

FunctionIndications	
Subtype of: PlanFeature Caso 3. Zone Omogenee D2.2 – Zone Industriali e artigianali di interesse locale	
Definition: Indications on the classification of the land use.	
Description: NOTE From the most general classification of the land (such as urbanised/to be urbanised/rural) to the detailed function (such as industrial area or railroad).	
Stereotypes: <featureType>	
Attribute: property	
Value type: Property	
Definition: Property of the land plot.	
Multiplicity: 1	Non è possibile indicare la proprietà in quanto questo è un dato associato alla particella catastale e non alla zona.
Attribute: LUCAS_Code ???	
Value type: String	

<p>Definition: Code of the land use.</p> <p>Description: SOURCE LUCAS classification.</p> <p>Multiplicity: 0..1</p> <p style="color: red;">Non abbiamo trovato la Legenda</p>
<p>Attribute: macroClassificationOfLand Urbanised</p> <p>Value type: MacroClassificationOfLand</p> <p>Definition: Division of the planned area into macro-zones.</p> <p>Description: EXAMPLE urbanised, to be urbanised, rural.</p> <p>Multiplicity: 0..1</p>
<p>Attribute: generalLandUseType IndustrialCommercial</p> <p>Value type: GeneralLandUseType</p> <p>Definition: General indication on the land use of an area.</p> <p>Multiplicity: 1..*</p>
<p>Attribute: specificLandUseType</p> <p>Value type: SpecificLandUseType</p> <p>Definition: Specific indication on the land use of an area.</p> <p>Multiplicity: 0..*</p> <p style="color: red;">Manca la lista valori</p>
<p>Attribute: otherTerritorialClassification</p> <p>Value type: OtherTerritorialClassification</p> <p>Definition: Division of the planned area into functional homogeneous macro-areas.</p> <p>Description: EXAMPLE Can be areas with homogeneous functional characteristics, which overlap to the general and specific indications of land use.</p> <p>Multiplicity: 0..*</p> <p style="color: red;">Manca la lista valori</p>
<p>Attribute: interventionType Conservation, Ordinary Maintenance, Extraordinary maintenance, RestorationConservation, DemolitionRebuilding, NewBuilding, Enlargement</p> <p>Value type: InterventionCategory</p> <p>Definition: Type of intervention allowed.</p> <p>Multiplicity: 0..*</p> <p style="color: red;">Le voci sono indicative e non corrispondono perfettamente alle categorie di intervento effettive</p>
<p>Attribute: indirectExecution Si</p> <p>Value type: Boolean</p> <p>Definition: Development executable only following a further specific detailed plan, programme or agreement.</p> <p>Description: EXAMPLE 1 When a developer cannot start a development application according only to the general zoning plan, but has to make an executive plan first and get it approved. EXAMPLE 2 When an upper level plan (such as a regional landscape plan) doesn't give exact determinations about the land use, but is acknowledged and/or further defined by a municipal plan.</p> <p>Multiplicity: 1</p>

GraphicalInformation	
Definition:	Information complementing the spatial planning for paper-based graphical outputs.
Description:	EXAMPLE The information can concern standards for colours, line widths, etc.
Stereotypes:	«featureType»
Attribute: inspireId	
Value type:	Identifier
Multiplicity:	1
Attribute: title	
Value type:	String
Definition:	Name of the document containing the graphical information.
Multiplicity:	1
	Se si fa riferimento a specifiche tecniche per la rappresentazione grafica l'informazione non è disponibile
Attribute: language	
Value type:	LanguageCode
Definition:	Language of the document.
Description:	SOURCE ISO 00639.
Multiplicity:	1

IndirectExecution	
Subtype of:	<p>Questa PlanFeature sembra coincidere con un PlanObject di tipo Strumento attuativo (infatti ci sono solo dati identificativi generali). Ci pare quindi superflua. Lo Strumento attuativo può poi articolarsi a propria volta in elementi specifici</p> <p>PlanFeature</p>
Definition:	Information about a further plan, programme or agreement that is necessary for implementing the land use indications given in the plan.
Description:	<p>NOTE This class gives information about the name of the further plan and its legal status.</p> <p>EXAMPLE 1 When a developer cannot start a development application according only to the general zoning plan, but has to make an executive plan first and get it approved.</p> <p>EXAMPLE 2 When an upper level plan (such as a regional landscape plan) doesn't give exact determinations about the land use, but is acknowledged and/or further defined by a municipal plan.</p>
Stereotypes:	«featureType»
Attribute: title	
Value type:	String
Definition:	Name of plan.
Attribute: processStepGeneral	
Value type:	ProcessStepGeneral
Definition:	Information on the status of implementation of the plan.

Description:	NOTE The enumeration provides four values intended to be common to most planning systems.
Multiplicity:	1
Attribute: ordinanceRef	
Value type:	String
Definition:	Reference to relevant administrative ordinance, if any.
Description:	NOTE This attribute is multiple because, independently from the current legal status of the plan, there can be references to more than one ordinance, in relation to the different steps that the planning process has already undergone (e.g. ordinance for the preparation of a new plan, ordinance of adoption, ordinance of approval, etc.).
Multiplicity:	1..*
Stereotypes:	«voidable»
Attribute: ordinanceDate	
Value type:	DateTime
Definition:	Date of the relevant administrative ordinance, if any.
Description:	NOTE This attribute is multiple because, independently from the current legal status of the plan, there can be references to the dates of more than one ordinance, in relation to the different steps that the planning process has already undergone (e.g. ordinance for the preparation of a new plan, ordinance of adoption, ordinance of approval, etc.).
Multiplicity:	1..*
Stereotypes:	«voidable»

PlanFeature (abstract) Abbiamo compilato un unico prospetto per tutti i casi considerati	
Definition:	Spatial object representing the land use indications.
Description:	NOTE This class is a generalisation of the classes containing all the information on land use.
Stereotypes:	«featureType»
Attribute: inspireId	
Value type:	Identifier
Multiplicity:	1
	Da definire
Attribute: status Planned	
Value type:	PlanFeatureStatus
Definition:	Status of the land use indication.
Description:	NOTE Indicates whether the land use is existing or planned.
Multiplicity:	1
Attribute: regulationNature GenerallyBinding	
Value type:	RegulationNature
Definition:	Legal nature of the land use indication.
Description:	NOTE Indicates whether the land use indication is legally binding or not.
Multiplicity:	1

Attribute: regulationReference <i>ok</i>	
Value type:	String
Definition:	Textual norm of the land use indication.
Description:	EXAMPLE Can be the URL of the single norm saved in text or pdf format.
Multiplicity:	1..*
Attribute: isOverlayArea	
	<i>Nei casi delle Zone B0.2, B2 e D2.2 il valore è: no Nei casi dei vincoli il valore è: sì</i>
Value type:	Boolean
Definition:	Indicates whether the land use indication is a non-overlapping partition of the total area of the plan, or is an overlay area.
Description:	NOTE A single plan can contain multiple (and overlapping) land use indications. It has to be specified if the indication can overlap to other indications, or if it is a non-overlapping partition of the total area of the plan.
Multiplicity:	1
Attribute: geometry <i>Area</i>	
Value type:	GM_Aggregate
Definition:	Type of geometry of the land use indication.
Description:	NOTE The ISO type “GM_Aggregate” gives the possibility to deal with multi-points, multi-curves and multi-surfaces.
Multiplicity:	1

PlanObject	
Definition:	Spatial object representing the plan.
Description:	NOTE Name and geographic extension of plan, programme, strategic vision, etc. at any territorial level EXAMPLE National transport plan, regional landscape plan, municipal strategic vision, municipal zoning plan, sub-municipal development plan).
Stereotypes:	«featureType»
Attribute: inspireId	
Value type:	Identifier
Multiplicity:	1
Attribute: title <i>Piano Regolatore Comunale del Comune di Sacile</i>	
Value type:	String
Definition:	Name of plan.
Multiplicity:	1
Attribute: geometry <i>area</i>	
Value type:	GM_Aggregate
Definition:	Type of geometry of the plan.
Description:	NOTE The ISO type “GM_Aggregate” gives the possibility to deal also with multi-surfaces, in the case that the plan covers more than one area.
Multiplicity:	1

Attribute: legislation <i>Legge Regionale n.5/2007 della Regione Autonoma Friuli Venezia Giulia</i>
Value type: string
Definition: Reference to the law on which the plan is based.
Multiplicity: 1
Attribute: country
Value type: CountryCode
Definition: Country in which the plan is released and legally in force.
Description: SOURCE INSPIRE Base Types.
Multiplicity: 1

Raster
Definition: Scanned raster files of old plans.
Description:
Stereotypes: <featureType>
Attribute: inspireId
Value type: Identifier
Multiplicity: 1
Attribute: fileType
Value type: RasterFileType
Definition: Type of file of the raster image.
Multiplicity: 1
<i>Non ci sono immagini raster</i>

TextualInformation
Definition: Textual document describing the planning intention (not binding).
Description:
Stereotypes: <featureType>
Attribute: inspireId
Value type: Identifier
Multiplicity: 1
Attribute: title <i>Relazione del Piano</i>
Value type: String
Definition: Name of the document containing the textual information.
Multiplicity: 1
Attribute: language
Value type: LanguageCode: <i>Italiano</i>
Definition: Language of the document.
Description: SOURCE ISO 00639.
Multiplicity: 1
<i>Non conosciamo il codice</i>

TextualRegulation	
Definition:	Textual document that regulates the right to build and is opposable to third parties.
Description:	NOTE Text accompanying the graphical part of the plan and explaining in detail all land use regulations.
Stereotypes:	«featureType»
Attribute: inspireId	
Value type:	Identifier
Multiplicity:	1
Attribute: title Norme Tecniche di Attuazione	
Value type:	String
Definition:	Name of the document containing the textual regulation.
Multiplicity:	1
Attribute: language Italiano	
Value type:	LanguageCode
Definition:	Language of the document.
Description:	SOURCE ISO 00639.
Multiplicity:	1
	Non conosciamo il codice
TextualRegulation	
Definition:	Textual document that regulates the right to build and is opposable to third parties.
Description:	NOTE Text accompanying the graphical part of the plan and explaining in detail all land use regulations.
Stereotypes:	«featureType»
Attribute: inspireId	
Value type:	Identifier
Multiplicity:	1
Attribute: title Schede Normative	
Value type:	String
Definition:	Name of the document containing the textual regulation.
Multiplicity:	1
Attribute: language Italiano	
Value type:	LanguageCode
Definition:	Language of the document.
Description:	SOURCE ISO 00639.
Multiplicity:	1
	Non conosciamo il codice

Enumerations and code lists

ApplicationType	
Definition:	Type of application.
Description:	EXAMPLE Request of building permit.
Stereotypes:	«codeList»

ApplicationStatus	
Definition:	Status of the application.
Description:	NOTE States if the application has been received, approved, rejected, etc., by the responsible authority.
Stereotypes:	«enumeration»
Value: Received	
Definition:	Development application having been received by the responsible authority.
Value: Approved	
Definition:	Development application having been approved by the responsible authority.
Value: Rejected	
Definition:	Development application having been rejected by the responsible authority.

EasementType	
Definition:	Classification of the type of easement connected to the protection of areas around public utilities or to the public use of certain resources.
Description:	SOURCE Plan4all “Area management/restriction/regulation zones and reporting units” data model.
Stereotypes:	«enumeration»
Value: ConiferousForestRights	
Value: GrazingRights	
Value: FishingRights	
Value: DeciduousForestRights	
Value: HayingRights	
Value: MountainFarmRights	
Value: RightOfWay	
Value: BuildingBan	
Value: LeasedOutArea	
Value: CommonArea	
Value: BreakWaterPropertyRights	
Value: Mooring	
Value: RightToLight	
Value: AviationRight	
Value: RailroadEasement	

Value: UtilityEasement
Value: SidewalkEasement
Value: ViewEasement
Value: DrivewayEasement
Value: BeachAccessProperty
Value: DeadEndEasement
Value: RecreationalEasement
Value: HistoricPreservationEasement

GeneralLandUseType
Definition: General indication on the land use of an area. Stereotypes: «enumeration»
Value: Residential
Value: IndustrialCommercial
Value: ServicesOfGeneralInterest Description: NOTE All services; comprises tourism services.
Value: Green Definition: Public parks.
Value: AreasOfNaturalInterest Description: Comprises woods.
Value: Agriculture
Value: Water
Value: RoadTrafficInfrastructure Description: Comprises both networks and nodes.
Value: RailwayTrafficInfrastructure Description: Comprises both networks and nodes.
Value: OtherTrafficInfrastructure Description: NOTE Comprises both networks and nodes. EXAMPLE Parking lots, airports, cycle tracks, intermodal nodes.
Value: SpecialDevelopmentZone Definition: Area for special use or special function. Description: EXAMPLE Malls, hotels, stadiums for sport, convention centres, energy extraction.
Value: Mining Definition: Area for mining purposes.
Value: Quarrying Definition: Area for quarrying purposes.
Value: TechnicalInfrastructure Description: EXAMPLE Energy and waste supply and disposal, energy networks.
Value: Other Definition: Other functions.

HierarchyLevelName
Definition: Territorial hierarchy of plan. Stereotypes: «enumeration»
Value: SpatialPlan.country
Definition: Plan at country (NUTS 0) level.
Value: SpatialPlan.state
Definition: Plan at federal state (NUTS I) level.
Value: SpatialPlan.regional
Definition: Plan at regional (NUTS II) level.
Value: SpatialPlan.subRegional
Definition: Plan at sub-regional (NUTS III) level.
Value: SpatialPlan.supraLocal
Definition: Plan at supra-municipal (LAU 1) level.
Value: SpatialPlan.local
Definition: Plan at municipal (LAU 2) level.
Value: SpatialPlan.subLocal
Definition: Plan at sub-municipal level.
Value: SpatialPlan.other
Definition: Other type of spatial plan.

InterventionCategory
Definition: Type of intervention allowed. Stereotypes: «codeList»
Value: OrdinaryMaintenance
Definition: Ordinary maintenance of buildings. Description: EXAMPLE Renovation of the plaster of a façade.
Value: ExtraordinaryMaintenance
Definition: Extraordinary maintenance of buildings. Description: EXAMPLE Installation of photovoltaic panels on the roof.
Value: RestorationConservation
Definition: Conservation a historic building, and/or restoration respecting its traditional features. Conservation of a natural environment, and/or restoration respecting its natural features. Description: EXAMPLE 1 Restoration of cornices of a historic building. EXAMPLE 2 Reconstruction of a sand dune in a compromised coastal environment.
Value: Renovation
Definition: Renovation of a building, also with changes of function, shape and volume. Description: EXAMPLE Transformation of a villa into a hotel.
Value: Enlargement

Definition:	Addition of new volumes to a building.
Value: NewBuilding	
Definition:	Construction of a new building.
Value: NatureEnhancement	
Definition:	Improvement of the status of a natural environment.
Description:	EXAMPLE Strengthening of an ecological network.
Value: CompensationMeasures	
Definition:	Measures for compensating the negative outcomes of an intervention.
Description:	NOTE Compensations can be executed also in other areas of the concerned territory. EXAMPLE Plantation of a wood in order to compensate a quarrying permit.
Value: SoilConsolidation	
Definition:	Measures for consolidating soils in areas with hydro-geological instabilities.
Description:	EXAMPLE Consolidation of slopes by means of bioengineering techniques.

MacroClassificationOfLand	
Definition:	Division of the planned area into macro-zones.
Description:	NOTE The macro-zones are non-overlapping partitions of the total plan area and cover the entire plan area. They are used in some countries usually for municipal plans.
Stereotypes:	«enumeration»
Value: Urbanised	
Definition:	Land already urbanised.
Description:	NOTE Allowed interventions usually are renovation or regeneration of the existing buildings and districts.
Value: ToBeUrbanised	
Definition:	Free land that can be urbanised.
Description:	NOTE Part of the territory, usually rural, where the new developments are allowed.
Value: Rural	
Definition:	Rural part of the territory that cannot be urbanised.
Description:	NOTE Allowed interventions usually comprise only transformations aimed at improving or developing agricultural activities.
Value: Natural	
Definition:	Natural part of the territory that cannot be urbanised.
Description:	EXAMPLE Can comprise woods, forests, meadows and other natural or semi-natural areas.
Value: Other	
Definition:	Other types of macro-zones.

NaturalRiskSafetyArea	
Definition:	Classification of natural risks threatening human settlements.

<p>Description: SOURCE Plan4all “Natural risk zones” data model. NOTE the attribute values correspond to the class names of the above mentioned data model.</p> <p>Stereotypes: «enumeration»</p>
<p>Value: InundatedRiskZone</p> <p>Definition: A tract periodically covered by flood water.</p> <p>Description: SOURCE INSPIRE Data Specification on Hydrography.</p>
<p>Value: StormRiskZone</p> <p>Definition: Area at risk of storms.</p> <p>Description: SOURCE Plan4all “Natural risk zones” data model.</p>
<p>Value: DroughtRiskZone</p> <p>Definition: Area at risk of storms.</p> <p>Description: SOURCE According to the proposal for a Directive of the European Parliament and of the Council establishing a framework for the protection of soil and amending Directive 2004/35/EC.</p>
<p>Value: AvalanchesRiskZone</p> <p>Definition: Area at risk of avalanches.</p> <p>Description: SOURCE Plan4all “Natural risk zones” data model.</p>
<p>Value: VolcanicActivityRiskZone</p> <p>Definition: Area at risk of volcanic activities.</p> <p>Description: SOURCE Plan4all “Natural risk zones” data model.</p>
<p>Value: EarthMovesRiskZone</p> <p>Definition: Area at risk of earthmoves.</p> <p>Description: SOURCE Plan4all “Natural risk zones” data model.</p>
<p>Value: OtherHazardsRiskZone</p> <p>Definition: Area at risk of other hazards.</p> <p>Description: SOURCE Plan4all “Natural risk zones” data model.</p>

<p>OtherConstructionIndication</p>
<p>Definition: Specifies other indications about the allowed manner of construction..</p> <p>Description:</p> <p>Stereotypes: «codeList»</p>

<p>OtherTerritorialClassification</p>
<p>Definition: Division of the planned area into functional homogeneous macro-areas.</p> <p>Description: EXAMPLE Can be areas with homogeneous functional characteristics, which overlap to the general and specific indications of land use.</p> <p>Stereotypes: «codeList»</p>

<p>PlanFeatureStatus</p>
<p>Definition: Status of the land use indication of the plan feature (existing or planned).</p>

Description:	NOTE Land use can indicate both the current and the future function of territory. SOURCE INSPIRE D2.3 “Definition of Annex Themes and scope” v3.0.
Stereotypes:	«codeList»
Value: Existing	
Definition:	The land use is already existing at the time of the plan.
Value: Planned	
Definition:	The land use is planned by the plan.
Value: Removal	
Definition:	The land use indication refers to an existing settlement or infrastructure that has to be removed in the future.

PlanType	
Definition:	Specific type of plan.
Stereotypes:	«codeList»
Value: BindingLandUsePlan	
Definition:	
Value: PreparatoryLandUsePlan	
Definition:	
Value: StateDevelopmentPlan	
Definition:	
Value: StructureVisionPlan	
Definition:	
Value: ZoningPlan	
Definition:	
Value: MunicipalStructurePlan	
Definition:	Plan containing the general, middle-long term strategic decisions regarding the development and the protection of the municipal territory.
Description:	NOTE Classifies the territory into homogeneous geographical/functional/landscape areas, defines the necessary facilities, sets the general conditions influencing the development.
Value: MunicipalOperationalPlan	
Definition:	Plan defining the rules of land transformation and protection for the short term.
Description:	NOTE Contains defined regulations about quantity and density, infrastructures and utilities, conditions and constraints.
Value: ExecutiveDevelopmentPlan	
Definition:	Plan defining in detail the type of land transformation.
Description:	NOTE Often being the last step of the planning process, this plan contains the direct provisions to be applied to the land parcel in terms of quantities, density, utilities.
Value: LandscapePlan	
Definition:	Plan defining the landscape features and the means for protecting them.

ProcessStepGeneral	
Definition:	General indication of the step of the planning process that the plan is undergoing.
Description:	NOTE This enumeration contains values that are common to most planning systems.
Stereotypes:	«enumeration»
Value: Elaboration	
Definition:	Plan under elaboration.
Value: Adoption	
Definition:	Plan in the process of being legally adopted.
Value: LegalForce	
Definition:	Plan already adopted and being legally binding or active.
Value: Obsolete	
Definition:	Plan having been substituted by another plan, or not being any longer in force.

ProcessStepSpecific	
Definition:	Specific indication of the step of the planning process that the plan is undergoing.
Description:	NOTE The code list is extendible in order to be adaptable to all legal frameworks and planning systems.
Stereotypes:	«codeList»
Value: PlanPreparationDecision	
Value: Draft	
Value: EarlyInvolvementPublicAuthorities	
Value: EarlyPublicParticipation	
Value: InvolvementPublicAuthorities	
Value: Adopted	
Definition:	Plan having been adopted by the responsible authority but not yet approved by the controlling authority.
Value: PublicObservations	
Definition:	Plan having been published after adoption for receiving observations from stakeholders.
Value: CounterDeductions	
Definition:	Process of preparation of the responses by the responsible authority to the observations by the stakeholders.
Value: Approved	
Definition:	Plan having been approved by the controlling authority and being legally in force.
Value: MunicipalStatute	

Property riferibile alle particelle catastali,	
Definition:	Property of the plot of land that the land use indication applies to.

Stereotypes:	«enumeration»
Value: Public	
Definition:	Public land.
Value: Private	
Definition:	Private land.
Value: PrivateWithSpecialPublicRights	
Definition:	Private land having special public rights.
Description:	EXAMPLE The railway companies in Austria follow this principle.
Value: PrivateOrganisedButPublicHeld	
Definition:	Privately organised land being publicly held.
Description:	EXAMPLE The federal forests in Austria belong to a company, but are held by the Ministry of Forests.
Value: Unknown	
Definition:	Unknown owner.

ProtectedSitesSimple::ProtectionClassificationValue	
Definition:	The protected site classification based on the purpose of protection.
Description:	SOURCE INSPIRE Data Specification on Protected Sites.
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.

RasterFileType	
Definition:	Type of raster file of image.
Stereotypes:	«codeList»
Value: pdf	
Value: tiff	
Value: bitmap	

Value: jpg
Value: png
Value: ecw
Value: geotiff

RegulationNature
Definition: Legal nature of the land use indication. Description: NOTE Indicates whether the land use indication is legally binding or not. Stereotypes: «enumeration»
Value: GenerallyBinding
Definition: The land use indication is binding for everybody.
Value: BindingForDevelopers
Definition: The land use indication is binding only for developers.
Value: BindingOnlyForAuthorities
Definition: The land use indication is binding only for certain authorities.
Value: NonBinding
Definition: The land use indication is not binding.

RestrictionZone
Definition: Classification of areas managed, regulated or used for reporting at international, European, national, regional and local levels. Description: Plan4all “Area management/restriction/regulation zones and reporting units” data model. NOTE the attribute values correspond to the class names of the above mentioned data model. Stereotypes: «enumeration»
Value: DumpingSites
Value: NoiseRestrictionZones
Value: ProspectingAndMiningPermitAreas
Value: RiverBasinDistricts
Value: CoastalZoneManagementAreas
Value: AreasForTheDumpingOfWasteAtSea
Value: RegulatedFairwaysAtSeaOrLargeInlandWaters
Value: NitrateVulnerableZones
Value: DrinkingWaterSource

RoofShape
Definition: Specifies the allowed roof shape. Stereotypes: «codeList»
Value: FlatRoof

Value: ShedRoof
Value: MansardRoof

SpecificLandUseType
Definition: Specific indication on the land use of an area.
Stereotypes: «codeList»

TypeOfBuilding
Definition: Specifies the allowed building type
Stereotypes: «codeList»
Value: DetachedHouse
Value: SemiDetachedHouse
Value: TerracedHouse

Note: for the following code lists, since the possible dimensioning indications are very numerous, attributes can be freely entered in the field of the attribute name; value types and measuring units have to respect the given rules.

Index
Definition: Indications concerning any ratio to be respected by the developments.
Description: NOTE Free attributes can be inserted in this code list. EXAMPLE Site occupancy index.
Stereotypes: «codeList»
Value: ... (free text) : Float

HeightIndication
Definition: Indications concerning the height of developments.
Description: NOTE Free attributes can be inserted in this code list. EXAMPLE Gutter height.
Stereotypes: «codeList»
Value: ... (free text) (m) : Float

SurfaceIndication
Definition: Indications concerning the surface of developments.
Description: NOTE Free attributes can be inserted in this code list. EXAMPLE Floor space.
Stereotypes: «codeList»
Value: ... (free text) (m²) : Float

UnitIndication	
Definition:	Indications concerning the number of units to be respected.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE 1 Maximum number of storeys. EXAMPLE 2 Minimum number of companies.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

VolumeIndication	
Definition:	Indications concerning the volume of developments.
Description:	NOTE Free attributes can be inserted in this code list. EXAMPLE Cubic capacity.
Stereotypes:	«codeList»
Value: ... (free text) (m³) : Float	

OtherDimensioningIndications	
Definition:	All possible further dimensioning indications.
Description:	NOTE Free attributes can be inserted in this code list.
Stereotypes:	«codeList»
Value: ... (free text) : Float	

Utility and Government Services

Feedback from

DIPSU (Flavio Camerata)

General comments

- The data model provides a description of only a small part of the INSPIRE theme “Utilities and Government Services”; the part regarding energy and water supply, administrative and social government services, and environmental protection facilities, is missing.
- Even if the validation is to be focused only on the “Waste Management” part, it has to be noticed that only a part of the sub-theme has been modelled, in particular (following the INSPIRE definition):
 - o controlled waste treatment sites for non-hazardous waste at land;
 - o controlled waste treatment facilities for hazardous waste at land;
 - o sewage/wastewater treatment sites.
- Therefore, the following issues are missing from the model (it has to be said, though, that the INSPIRE description is not very clear):
 - o regulated areas for dumping of waste at sea;
 - o illegal or non-controlled dumping of waste – sea and land;
 - o mining waste;
 - o sewage sludge: generation, sewage pipelines networks and sewage treatment facilities (only “sewage treatment facilities” is modelled as “WasteWaterTreatmentFacilities”, the “generation” part and the “sewage pipelines networks” are missing).
- Considering the parts that have been modelled, only the “polygonal” facilities are described. All the networks, and the point information, are missing: sewage networks (geometries and information about the type and the dimensions of the pipes) and the information concerning the waste collection (for example, the routes of the trucks collecting the urban waste and the position of the garbage bins).

Specific comments about the associations

- The [1] to [0..*] multiplicity of the association between the classes “ControlledWasteTreatmentFacility” and “WasteTreatmentAuthorised” is not clear: if the waste treatment facility is “controlled”, then it should be necessarily “authorised”, so the multiplicity value should be [1..*].

Specific comments about the attributes

- Geometry (ControlledWasteTreatmentFacility). The geometry is not necessarily a polygon. In our database we have also points for indicating plants, septic tanks, sewage lift stations.

Specific comments about the enumerations

- WasteWaterTreatmentFacilityType. In the case of “stand-alone” septic tanks (e.g. tanks not connected to the main sewage pipes, like Imhoff tanks), it is not clear if they can be described by the literal “Agricultural or zootechnical wastewater treatment plant”. Single definitions for each literal should be provided for clarity. Also, a literal referring for the constructed wetlands for the natural treatment of wastewater is missing.

Utility and Government Services

Feedback from

Ayto GIJON (Agustin Lanero)

1. Part one. Class Attributes.

Class	Attribute	Have you used the attribute? If not, why?	Is the attribute redundant? If so, why?	Is the meaning of the attribute clear? If not, why?	Is the type the attribute appropriate? If not, why?	Is the attribute sufficient to express what you have to express? If not, why?	Is the multiplicity of the attributes appropriate?	Is the type of the attribute clear? If not, why?
ControlledWasteTreatmentFacility	idWasteTreatmentFacility:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	facilityName:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	address:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	geometry:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	validFrom:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	validTo:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	mainKindOfWaste:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	collectionArea:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	annualHandlingNonHazardousWastesMas	s:	NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	annualHandlingNonHazardousWastesVolu	me:	NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	storageCapacityNonHazardousWastesMas	s:	NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	storageCapacityNonHazardousWastesVolu	me:	NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	annualHandlingHazardousWastesMass:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	annualHandlingHazardousWastesVolume:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	storageCapacityHazardousWastesMass:		NO	YES	YES	YES	YES	YES
ControlledWasteTreatmentFacility	storageCapacityHazardousWastesVolume:		NO	YES	YES	YES	YES	YES

WasteTreatmentAuthorized	idAuthorizedTreatment		NO	YES	YES	YES	YES	YES
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WasteTreatmentAuthorized	validFrom:		NO	YES	YES	YES	YES	YES
WasteTreatmentAuthorized	validTo:		NO	YES	YES	YES	YES	YES
WasteTreatmentAuthorized	authorizedQuantityMass		NO	YES	YES	YES	YES	YES
WasteTreatmentAuthorized	authorizedQuantityVolume		NO	YES	YES	YES	YES	YES

Waste	Code		NO	YES	YES	YES	YES	YES
Waste	Description		NO	YES	YES	YES	YES	YES

RecoveryOperation	Code		NO	YES	YES	YES	YES	YES
RecoveryOperation	Description		NO	YES	YES	YES	YES	YES

DisposalOperation	Code		NO	YES	YES	YES	YES	YES
DisposalOperation	Description		NO	YES	YES	YES	YES	YES

Used/DismissedSubstance	Substance_InspireId		NO	YES	YES	YES	YES	YES
Used/DismissedSubstance	totalAmount		NO	YES	YES	YES	YES	YES

Landfill	kindOfLandfillFacility:		NO	YES	YES	YES	YES	YES
Landfill	maxStorageVolume:		NO	YES	YES	YES	YES	YES
Landfill	totalSurface:		NO	YES	YES	YES	YES	YES
Landfill	disposalSurface:		NO	YES	YES	YES	YES	YES

Incinerator			NO	YES	YES	YES	YES	YES
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Incinerator			NO	YES	YES	YES	YES	YES
Incinerator			NO	YES	YES	YES	YES	YES
Incinerator			NO	YES	YES	YES	YES	YES
Incinerator			NO	YES	YES	YES	YES	YES
Incinerator			NO	YES	YES	YES	YES	YES

RefuseMaterialsStorageAndRecoveryFacility	kindOfMRF		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	storageSurface		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	storageVolume		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualTreatmentCapacity		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualRDFProduction		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualGlassRecovery		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualFerrousMaterialRecovery		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualPaperRecovery		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualStabilizedOrganicMaterialRecovery		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualBiogasProduction		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualEnergyProduction		NO	YES	YES	YES	YES	YES
RefuseMaterialsStorageAndRecoveryFacility	ratedAnnualRefuseMaterialProduction		NO	YES	YES	YES	YES	YES

WastewaterTreatmentFacility	kindOfWastewaterTreatmentFacility		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	ratedTreatmentCapacity		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	ratedEquivalentPersonsCapacity		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	averageInfluentFlow		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	averageBOD5in		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	averageBOD5out		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	nutrientsRemoval		NO	YES	YES	YES	YES	YES

WastewaterTreatmentFacility	processFlowDescription		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	ratedAnnualSludgeProduction		NO	YES	YES	YES	YES	YES
WastewaterTreatmentFacility	ratedAnnualBiogasProduction		NO	YES	YES	YES	YES	YES

2. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
WasteType	Waste types	Hazardous waste	
		Non hazardous waste	
		Radioactive waste	

Comment It's complete, clear and appropriate

Enumeration	Description	Value	Notes
AreaType	Collection area types	National	
		International	
		Regional	
		Interregional	
		Municipal	
		Intermunicipal	

Comment It's complete, clear and appropriate

Enumeration	Description	Value	Notes
LandFillType	LandFillType	Landfill for hazardous waste	
		Landfill for non hazardous waste	
		Landfill for inert waste	

Comment It's complete, clear and appropriate

Enumeration	Description	Value	Notes
EnergyRecoveryType	Forms of energy recovered.	Electric energy	
		Thermal energy	
		Electric and thermal energy (cogeneration)	

Comment It's complete, clear and appropriate

Enumeration	Description	Value	Notes
WastewaterTreatmentFacilityType	Wastewater treatment facility types.	Hazardous liquid wastes treatment plant	
		Sewage treatment plant	
		Industrial wastewaters treatment plant	
		Agricultural or zootechnical wastewaters treatment plant	

Enumeration	Description	Value	Notes
		Radioactive wastewater treatment plant	

Comment It's complete, clear and appropriate

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

1. What general concepts of the specific theme do not map into the model?

no one we know.

2. Are there data/information of the case study that do not fit ?

All our data fit.

3. Are there redundant parts?

No, there aren't

4. General comments about the model

It's more than enough for our needs.

Production and industrial facilities

Feedback from

Provincia di Roma (Monica Rizzo)

1. Part one. Class Attributes.

Class	Attribute	Have you used the attribute? If not, why?	Is the attribute redundant? If so, why?	Is the meaning of the attribute clear? If not, why?	Is the type the attribute appropriate? If not, why?	Is the attribute sufficient to express what you have to express? If not, why?	Is the multiplicity of the attributes appropriate?	Is the type of the attribute clear? If not, why?
Industrial Area	inspireId	No	No	Yes	Yes	Yes	Yes	Yes
Industrial Area	country	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
Industrial Area	Status	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
Industrial Area	location	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
Industrial Area	geometry	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
Industrial Area	validFrom	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
Industrial Area	validTo	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes

FacilitySite	inspireId	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
FacilitySite	headGroupCompany	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
FacilitySite	facilityName	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
FacilitySite	address	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
FacilitySite	geometry	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
FacilitySite	Status	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
FacilitySite	validFrom	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
FacilitySite	validTo	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes

Installation	inspireId	Yes	No	Yes	Yes	Yes	Yes	Yes
Installation	geometry	No, we have a point	No	Yes	Yes	Yes	Yes	Yes
Installation	InstallationName	Yes	No	Yes	Yes	Yes	Yes	Yes

Release	accidentalReleaseMeans	Yes	No	Yes	Yes	Yes	Yes	Yes
Release	accidentalQuantity	Yes	No	Yes	Yes	Yes	Yes	Yes

Activity	inspireId	Yes	No	Yes	Yes	Yes	Yes	Yes
Activity	NACE_Code_Rev2	Yes	No	Yes	Yes	Yes	Yes	Yes

ActivityCodification	NACE_Code_Rev2	Yes	No	Yes	Yes	Yes	Yes	Yes
ActivityCodification	activityDescription	Yes	No	Yes	Yes	Yes	Yes	Yes

DismissedProduct	calculationType	Yes	No	Yes	Yes	Yes	Yes	Yes
DismissedProduct	totalAmount	Yes	No	Yes	Yes	Yes	Yes	Yes

DismissedSubstance	calculationType	Yes	No	Yes	Yes	Yes	Yes	Yes
DismissedSubstance	totalAmount	Yes	No	Yes	Yes	Yes	Yes	Yes

Used/DismissedSubstance	Substance_InspireId	Yes	No	Yes	Yes	Yes	Yes	Yes
Used/DismissedSubstance	totalAmount	Yes	No	Yes	Yes	Yes	Yes	Yes

HazardousSubstance	id_hazard	Yes	No	Yes	Yes	Yes	Yes	Yes
HazardousSubstance	substanceName	Yes	No	Yes	Yes	Yes	Yes	Yes
HazardousSubstance	EC_number	Yes	No	Yes	Yes	Yes	Yes	Yes
HazardousSubstance	hazardClassCategoryCode	Yes	No	Yes	Yes	Yes	Yes	Yes

OffsiteTransferProduct	transferType	Yes	No	Yes	Yes	Yes	Yes	Yes
OffsiteTransferProduct	transferMeans	Yes	No	Yes	Yes	Yes	Yes	Yes

OffsiteTransferSubstance	transferType	Yes	No	Yes	Yes	Yes	Yes	Yes
OffsiteTransferSubstance	transferMeans	Yes	No	Yes	Yes	Yes	Yes	Yes

Product	CPA_Code	Yes	No	Yes	Yes	Yes	Yes	Yes
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ProductCodification	CPA_Code	Yes	No	Yes	Yes	Yes	Yes	Yes
ProductCodification	productDescription	Yes	No	Yes	Yes	Yes	Yes	Yes

Substance	Substance_inspireId	Yes	No	Yes	Yes	Yes	Yes	Yes
Substance	SubstanceName	Yes	No	Yes	Yes	Yes	Yes	Yes
Substance	CAS_Number	Yes	No	Yes	Yes	Yes	Yes	Yes

Pollutant	E_PRTR_number	Yes	No	Yes	Yes	Yes	Yes	Yes
Pollutant	airReleaseThreshold	Yes	No	Yes	Yes	Yes	Yes	Yes
Pollutant	waterReleaseThreshold	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
Pollutant	landReleaseThreshold	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes

WasteProduct	disposalQuantity	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
WasteProduct	SiteAddress	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
WasteProduct	recoveryQuantity	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes

WasteSubstance	disposalQuantity	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
WasteSubstance	SiteAddress	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes
WasteSubstance	recoveryQuantity	No,there is not in the case study	No	Yes	Yes	Yes	Yes	Yes

2. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),

- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
CalculationType	Type of calculation for dismissed products and substances..	Measured	
		Calculated	
		Estimated	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
TransferType	Tipo di spostamento di rifiuti: oltre i confini di un complesso produttivo di rifiuti, all'interno dello stesso	InsideTheCountry	
		OutsideTheCountry	

Comment

The enumeration value is wrong the meaning is right :

- InsideTheFacility
- OutsideTheFacility.

Enumeration	Description	Value	Notes
TransferMeans	Spostamento oltre i confini di un complesso produttivo di rifiuti destinati al recupero o allo smaltimento e di sostanze inquinanti contenute in acque reflue destinate al trattamento	Waste	
		WasteWater	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
ReleaseMeans	Indicates into which means the release of a product or substance takes place.	Land	
		Air	
		Water	

Comment

The codelist is complete and the meaning of each value is clear and appropriate.

Codelist	Description	Value	Notes
StatusValue	Indicates whether a facility site is operating or planned.	Operating	
		Planned	

Comment

The codelist is not complete. We suggests to add the following values:

- **Idle**: facility site temporarily not operational.
- **Dismissed**: facility site has relevant environmental impact even if no more operational.

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions:

What general concepts of the specific theme do not map into the model?

None.

Are there data/information of the case study that do not fit ?

- Owner's of installation Name and Surname.
- Fiscal Code and VAT Code of installation.
- Company registered office.
- Authorization Number and Date.
- Installation geometry is a point and not surface.

Are there redundant parts?

None.

General comments about the model

- The model do not highlight the industrial activities regulated by the IPPC directive (2008/1/EC).
- We suggests to add to class “ProductionIndustrialFacilities.Installation” the attributes “statusValue”, “validFrom” and “validTo” as in the class “ProductionIndustrialFacilities.Facility Site”, because they can be useful to describe a different status and/or time evolution for different installations.

Production and industrial facilities

Feedback from

Sogn og Fjordane County Municipality (Jo Tore Kristoffersen)

1. Part one. Class Attributes.

Class	Attribute	Have you used the attribute? If not, why?	Is the attribute redundant? If so, why?	Is the meaning of the attribute clear? If not, why?	Is the type the attribute appropriate? If not, why?	Is the attribute sufficient to express what you have to express? If not, why?	Is the multiplicity of the attributes appropriate?	Is the type of the attribute clear? If not, why?
Industrial Area	inspireId	Have only used local identifier - where is this ID born? At the time of upload to national INSPIRE repository?	Not redundant once used in international context	Clear	Appropriate	Sufficient	Appropriate	Clear
Industrial Area	country	Have not used, because all our data are national	Not redundant once used in international context	Clear	Appropriate	Sufficient	Appropriate	Clear
Industrial Area	Status	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
Industrial Area	location	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
Industrial Area	geometry	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
Industrial Area	validFrom	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
Industrial Area	validTo	Have not used. Not kept in plan	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

FacilitySite	inspireId	As above	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
FacilitySite	headGroupComapny	Have only used company information	Not redundant	Clear	Appropriate	Sufficient, maybe consider name for clarity	Appropriate	Clear
FacilitySite	facilityName	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
FacilitySite	address	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
FacilitySite	geometry	Have used, some time volumes (3D)	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
FacilitySite	Status	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
FacilitySite	validFrom	As above						
FacilitySite	validTo	As above						

Installation	inspireId	As above						
Installation	geometry	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
Installation	InstallationName	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

Release	accidentalReleaseMeans	Have not used, have no data	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
Release	accidentalQuantity	Have not used, have no data	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

Activity	inspireId	As above						
Activity	NACE_Code_Rev2	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

ActivityCodification	NACE_Code_Rev2	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
ActivityCodification	activityDescription	Have not used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

DismissedProduct	calculationType	Have not used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
DismissedProduct	totalAmount	Have used, string	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

DismissedSubstance	calculationType	Have not used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
DismissedSubstance	totalAmount	Have used, string	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

Used/DismissedSubstance	Substance_InspireId	As above						
Used/DismissedSubstance	totalAmount	Have used, string	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

HazardousSubstance	id_hazard	Is this also an INSPIRE-wide ID?	Not redundant					
HazardousSubstance	substanceName	Have not used, have local classification	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
HazardousSubstance	EC_number	Have not used, have local classification	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
HazardousSubstance	hazardClassCategoryCode	Have not used, have local classification	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

OffsiteTransferProduct	transferType	Have used						
OffsiteTransferProduct	transferMeans	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

OffsiteTransferSubstance	transferType	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
OffsiteTransferSubstance	transferMeans	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

Product	CPA_Code	Have used, but only as textual reference	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
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ProductCodification	CPA_Code	Have used, but only as textual reference	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
ProductCodification	productDescription	Have used, but only as textual reference	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

Substance	Substance_inspireId	As above						
Substance	SubstanceName	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
Substance	CAS_Number	Have not used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear

Pollutant	E_PRTR_number	Have not used	Not redundant, but may be difficult to enforce on local level	Clear	Appropriate	Sufficient	Appropriate	Clear
Pollutant	airReleaseThreshold	Have not used	Not redundant, but may be difficult to enforce on local level	Clear	Appropriate	Sufficient	Appropriate	Clear
Pollutant	waterReleaseThreshold	Have not used	Not redundant, but may be difficult to enforce on local level	Clear	Appropriate	Sufficient	Appropriate	Clear
Pollutant	landReleaseThreshold	Have not used	Not redundant, but may be difficult to enforce on local level	Clear	Appropriate	Sufficient	Appropriate	Clear

WasteProduct	disposalQuantity	Have used, but as string with unit	Not redundant	Clear	Appropriate	Needs unit	Appropriate	Clear
WasteProduct	SiteAddress	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
WasteProduct	recoveryQuantity	Have used, but as string with unit	Not redundant	Clear	Appropriate	Needs unit	Appropriate	Clear

WasteSubstance	disposalQuantity	Have used, but as string with unit	Not redundant	Clear	Appropriate	Needs unit	Appropriate	Clear
WasteSubstance	SiteAddress	Have used	Not redundant	Clear	Appropriate	Sufficient	Appropriate	Clear
WasteSubstance	recoveryQuantity	Have used, but as string with unit	Not redundant	Clear	Appropriate	Needs unit	Appropriate	Clear

2. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
CalculationType	Type of calculation for dismissed products and substances..	Measured	Appropriate
		Calculated	Appropriate
		Estimated	Appropriate

Comment: How about unknown values?

Enumeration	Description	Value	Notes
		InsideTheCountry	Maybe domestic

Enumeration	Description	Value	Notes
TransferType		OutsideTheCountry	Maybe international

Comment : Complete

Enumeration	Description	Value	Notes
TransferMeans		Waste	Maybe SolidWaste
		WasteWater	Appropriate

Comment : Complete

b. codelists provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the codelist is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
ReleaseMeans	Indicates into which means the release of a product or substance takes place.	Land	Appropriate
		Air	Appropriate
		Water	Appropriate

Comment : Complete

Codelist	Description	Value	Notes
StatusValue	Indicates whether a facility site is operating or planned.	Operating	Appropriate
		Planned	Appropriate

Comment : How about expired, seized to operate

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

1. What general concepts of the specific theme do not map into the model?

We have no objects which will not be possible to encode in the proposed data model for “Production and industrial facilities”.

2. Are there data/information of the case study that do not fit ?

No, nothing that does not fit – but some information is missing in real-world data sets due to some attributes being implicit due to the context in which they are used (country, administrative unit etc.)

3. Are there redundant parts?

The specification seems complete and comprehensive – and while all parts are justified – it is likely that all will not be used on a local/provincial/national level for the same reason as given in item 2.

4. General comments about the model

The model is impressive in its coverage and complexity.

Agricultural and aquaculture facilities

Feedback from

Partners involved in validation:

- AMFM (Franco Vico);
- DipSU (Flavio Camerata).

External experts involved:

- Ezio Bellatorre, Marco Cavagnoli, Emilio De Palma and Mauro Vasone, (CSI Piemonte, Consortium of public authorities for the Information System of the Region of Piedmont).

Notes:

- The validators are experts in the field of Agriculture, rather than Aquaculture, so the validation has been carried out only on the Agriculture part of the data model.

General comments

- At a first glance, one important missing element is the cultivated fields with their different kinds of cultivations. This should be added as an essential spatial element. A standard classification of the agricultural fields can be found in the Commission Regulation 1200/2009/EC, also mentioned in the proposed data model for what concerns the typologies of agricultural installations and water sources.
- A link with the theme Land Cover should be established.
- Geometries of the classes should be polygons rather than surfaces. Surfaces are characterised by the fact that each point has an assigned value.
- As regards facility sites and installations, not all agricultural holdings necessarily have such assets; for example, there are holdings which rent the land and hire third parties for working on it. This means that the multiplicity of the associations between AgricultureAquacultureHolding and FacilitySite, and between FacilitySite and Installation should be [1] to [0..*], rather than [1] to [1..*].
- A holding might have its legal headquarters in a municipality and its facility site in another one. The attributes “location” in AgricultureAquacultureHolding and “address” in FacilitySite should be more carefully rethought.
- As regards the certification, in some Italian Regions it refers to the holding, in other Regions to the facility site. In the proposed model, this information is associated only with the holding.

Specific comments about the classes

- IrrigationUnit. The information concerning the irrigation unit (i.e., a surface irrigated from the same water source) is not applicable: in the current databases, the information is managed at cadastral parcel level (but for only 3% of the cadastral parcels in Piedmont).

Specific comments about the attributes and related enumerations/code lists

- Geometry (FacilitySite). In Piedmont, the class FacilitySite would correspond to the “Technical Economic Unit”, i.e. the active centre of the holding (where the agricultural

activities are carried out). However, there is no data concerning the geometry for this unit. The only piece of information concerning the location of the unit is the address. This attribute should therefore be voidable.

- AgriculturalInstallationType (class: AgriculturalInstallation). Among the values of the enumeration AgriculturalInstallationType and concerning the buildings for the animal waste, only DungStorageOpen and ManureTank are supported by the current databases. Moreover, there is no geometry for these elements, which have to be related to the address of the Facility Site; therefore, the “geometry” attribute of the class “Installation” should be set to voidable.
- AgriculturalInstallationType (class: AgriculturalInstallation). Among the values of the enumeration AgriculturalInstallationType and concerning the animal shelters, only AnimalHousing_LayingHens, AnimalHousing_Pigs, AnimalHousing_Cattle, and AnimalHousing_Other are applicable. Moreover, in the current databases, the cattle housing is actually divided into two categories: milk cattle and other cattle; and a value for the sheep shelters could be added. There is no geometry for these elements, which have to be related to the address of the Facility Site; therefore, the “geometry” attribute of the class “Installation” should be set to voidable.
- AgriculturalInstallationType (class: AgriculturalInstallation). As regards the values of the enumeration AgriculturalInstallationType, the current databases do not support any information concerning the energy production facilities.
- WaterSourceType (class: WaterSource). Among the values of the enumeration “WaterSourceType”, only OnFarmGroundWater and OffFarmWaterSupplyNetwork are applicable.
- IrrigationMethod (class: IrrigationUnit). Not applicable information in the current datasets. The attribute should therefore be set to voidable.

EasementType (class: Easement). No applicable information in the current datasets. The attribute should therefore be set to voidable

Agricultural and aquaculture facilities

Feedback from

Ayto. De GIJON (Augustin Lanero)

1. Part one. Class Attributes.

Class	Attribute	Have you used the attribute? If not, why?	Is the attribute redundant? If so, why?	Is the meaning of the attribute clear? If not, why?	Is the type the attribute appropriate? If not, why?	Is the attribute sufficient to express what you have to express? If not, why?	Is the multiplicity of the attributes appropriate?	Is the type of the attribute clear? If not, why?
AgriculturalAquacultureHolding	inspireId		NO	YES	YES	YES	YES	YES
AgriculturalAquacultureHolding	country		NO	YES	YES	YES	YES	YES
AgriculturalAquacultureHolding	location		NO	YES	YES	YES	YES	YES
AgriculturalAquacultureHolding	geometry		NO	YES	YES	YES	YES	YES
AgriculturalAquacultureHolding	validFrom		NO	YES	YES	YES	YES	YES
AgriculturalAquacultureHolding	validTo		NO	YES	YES	YES	YES	YES

AgriculturalHolding	typeOfFarming		NO	YES	YES	YES	YES	YES
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AgriculturalInstallation	agriculturalInstallationtype		NO	YES	YES	YES	YES	YES
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AquacultureInstallation	AquaCultureInstallationtype		NO	YES	YES	YES	YES	YES
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AquacultureHolding	aquaSpecies		NO	YES	YES	YES	YES	YES
Certification	inspireId		NO	YES	YES	YES	YES	YES
Certification	certificationCode		NO	YES	YES	YES	YES	YES
Certification	certificationType		NO	YES	YES	YES	YES	YES
Certification	certificationAgency		NO	YES	YES	YES	YES	YES
Certification	validityStartDate		NO	YES	YES	YES	YES	YES
Certification	validityEndDate		NO	YES	YES	YES	YES	YES

FacilitySite	inspireId		NO	YES	YES	YES	YES	YES
FacilitySite	facilityName		NO	YES	YES	YES	YES	YES
FacilitySite	address		NO	YES	YES	YES	YES	YES
FacilitySite	geometry		NO	YES	YES	YES	YES	YES
FacilitySite	Status		NO	YES	YES	YES	YES	YES
FacilitySite	validFrom		NO	YES	YES	YES	YES	YES
FacilitySite	validTo		NO	YES	YES	YES	YES	YES

Installation	inspireId		NO	YES	YES	YES	YES	YES
Installation	geometry		NO	YES	YES	YES	YES	YES
Installation	InstallationName		NO	YES	YES	YES	YES	YES

WaterSource	inspireId		NO	YES	YES	YES	YES	YES
WaterSource	geometry		NO	YES	YES	YES	YES	YES
WaterSource	waterQuantity		NO	YES	YES	YES	YES	YES
WaterSource	waterSourceType		NO	YES	YES	YES	YES	YES

IrrigationUnit	inspireId		NO	YES	YES	YES	YES	YES
IrrigationUnit	geometry		NO	YES	YES	YES	YES	YES
IrrigationUnit	IrrigationMethod		NO	YES	YES	YES	YES	YES

IrrigationElement	inspireId		NO	YES	YES	YES	YES	YES
IrrigationElement	geometry		NO	YES	YES	YES	YES	YES
IrrigationElement	IrrigationnElementType		NO	YES	YES	YES	YES	YES

Easement	inspireId		NO	YES	YES	YES	YES	YES
Easement	geometry		NO	YES	YES	YES	YES	YES

Easement	EasementType		NO	YES	YES			
						YES	YES	YES

AccidentalRelease	accidentalReleaseMeans		NO	YES	YES			
						YES	YES	YES
AccidentalRelease	accidentalReleaseQuantity		NO	YES	YES	YES	YES	YES

Activity	inspireId		NO	YES	YES	YES	YES	YES
Activity	NACE_Code_Rev2		NO	YES	YES			
						YES	YES	YES

ActivityCodification	NACE_Code_Rev2		NO	YES	YES			
						YES	YES	YES
ActivityCodification	activityDescription		NO	YES	YES			
						YES	YES	YES

DismissedProduct (Abstract)	calculationType		NO	YES	YES	YES	YES	YES
DismissedProduct (Abstract)	totalAmount		NO	YES	YES	YES	YES	YES
DismissedProduct (Abstract)	reUse		NO	YES	YES			
						YES	YES	YES

DismissedSubstance (Abstract)	calculationType		NO	YES	YES	YES	YES	YES
DismissedSubstance (Abstract)	totalAmount		NO	YES	YES	YES	YES	YES

DismissedSubstance (Abstract)	reUse		NO	YES	YES	YES	YES	YES
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HazardousSubstance	indexNumber		NO	YES	YES	YES	YES	YES
HazardousSubstance	hazardClassCategoryCode		NO	YES	YES	YES	YES	YES

OffsiteTransferredProduct	transferQuantity		NO	YES	YES	YES	YES	YES
OffsiteTransferredProduct	siteAddress		NO	YES	YES	YES	YES	YES

OffsiteTransferredSubstance	transferQuantity		NO	YES	YES	YES	YES	YES
OffsiteTransferredSubstance	siteAddress		NO	YES	YES	YES	YES	YES

Pollutant	E-PRTR_Number		NO	YES	YES	YES	YES	YES
Pollutant	landReleaseThreshold		NO	YES	YES	YES	YES	YES

Pollutant	airReleaseThreshold		NO	YES	YES	YES	YES	YES
Pollutant	waterReleaseThreshold		NO	YES	YES	YES	YES	YES

Product	inspireId		NO	YES	YES	YES	YES	YES
Product	CPA_Code		NO	YES	YES	YES	YES	YES

ProductCodification	CPA_Code		NO	YES	YES	YES	YES	YES
ProductCodification	productDescription		NO	YES	YES	YES	YES	YES

Substance	inspireId		NO	YES	YES	YES	YES	YES
Substance	CAS_Number		NO	YES	YES	YES	YES	YES

SubstanceCodification	CAS_Number		NO	YES	YES	YES	YES	YES
SubstanceCodification	SubstanceName		NO	YES	YES	YES	YES	YES

TypeOfFarming	classificationCode		NO	YES	YES	YES	YES	YES
TypeOfFarming	particularTypeOfFarming		NO	YES	YES	YES	YES	YES

WasteProduct	disposalOperation		NO	YES	YES	YES	YES	YES
WasteProduct	disposalQuantity		NO	YES	YES	YES	YES	YES
WasteProduct	recoveryOperation		NO	YES	YES	YES	YES	YES
WasteProduct	recoveryQuantity		NO	YES	YES	YES	YES	YES
WasteProduct	hazardousWaste		NO	YES	YES	YES	YES	YES

WasteSubstance	disposalOperation		NO	YES	YES	YES	YES	YES
WasteSubstance	disposalQuantity		NO	YES	YES	YES	YES	YES
WasteSubstance	recoveryOperation		NO	YES	YES	YES	YES	YES
WasteSubstance	recoveryQuantity		NO	YES	YES	YES	YES	YES
WasteSubstance	hazardousWaste		NO	YES	YES	YES	YES	YES

2. Part two. Enumerations and codelists

a. Enumerations provided by the designer.

Enumeration	Description	Value	Notes
AccidentalReleaseMeans	Indicates into which means the accidental release of a product or substance takes place.	Land	
		Air	
		Water	

CommentCorrect, all OK.....

Enumeration	Description	Value	Notes
AgriculturalInstalla	Type of agricultural installation, according to	ManureTank_Covered	

Enumeration	Description	Value	Notes
tionType	Regulation (EC) n. 1200/2009.	DungStorage_Covered	
		SlurryStorage_Covered	
		ManureTank_Open	
		DungStorage_Open	
		SlurryStorage_Open	
		AnimalHousing_Cattle	
		AnimalHousing_Pigs	
		AnimalHousing_LayingHens	
		AnimalHousing_Other	
		EnergyProductionFacility_Wind	
		EnergyProductionFacility_Biomass	
		EnergyProductionFacility_Solar	
		EnergyProductionFacility_Hydro	
		EnergyProductionFacility_Other	
Other			

Comment Correct, all OK

Enumeration	Description	Value	Notes
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Enumeration	Description	Value	Notes
CalculationType	Type of calculation for dismissed products and substances..	Measured	
		Calculated	
		Estimated	

Comment Correct, all OK

Enumeration	Description	Value	Notes
EasementType	Classification of the type of easement connected to the protection of areas around public utilities or to the public use of certain resources.	UtilityEasement	Easement attached to an irrigation element. EXAMPLE Easement attached to water canals allowing for their maintenance.
		RightOfWay	Right of way for the exploitation of a water source or an irrigation element. NOTE If the water source or the irrigation element is outside the holding, the right of way will allow the owner to have access to it. If the water source or the irrigation element is inside the holding, other owners will be allowed to have access in order to exploit it.

Comment Correct, all OK

Enumeration	Description	Value	Notes
IrrigationMethod	Method of irrigation, according to FAO. SOURCE FAO Corporate Document Repository.	FurrowIrrigation	
		BasinIrrigation	
		SprinklerIrrigation	
		DripIrrigation	
		BorderIrrigation	

Comment Correct, all OK

Enumeration	Description	Value	Notes
StatusValue	Indicates whether a facility site is operating or planned.	Operating	
		Planned	

Comment Correct, all OK

Enumeration	Description	Value	Notes
WaterSourceType	Type of water source, according to Regulation (EC) n. 1200/2009.	OnFarmGroundWater	
		OnFarmPondDam	
		OffFarmLakeRiverWaterCourse	
		OffFarmWaterSupplyNetwork	
		Other	

Comment Correct, all OK

b. codelists provided by the designer.

Codelist	Description	Value	Notes
AquacultureInstallationType	Type of aquaculture installation. SOURCE SOSI Norwegian standard.	LandBasedFishFarm	
		FloatingFishFarm	
		BuoySuspensionFishFarm	

Comment Correct, all OK

Codelist	Description	Value	Notes
AquaSpecies	Species bred in the aquaculture installation . SOURCE: SOSI Norwegian standard.	Perch	
		Goldsinny	
		Mussels	
		AnglerFish	
		Sprat	
		Natural/FlatOyster	
		Northern/SpottedWolfFish	
		NorthernPike	
		Seawolf/AtlanticWolfFish	

Codelist	Description	Value	Notes
		IcelandScallop	
		QueenScallop	
		Grayling	
		SeaBass	
		HeartClam/SpinyCockle	
		Lobster	
		Haddock	
		Scallops	
		KingCrab	
		Crab	
		Crawfish	
		SeaUrchin	
		OceanQuahog	
		Halibut	
		Burbot/Eelpout	
		Salmonid	
		Wrasse	

Codelist	Description	Value	Notes
		Hake	
		Mackerel	
		Marine	
		ClamMussel	
		HorseMussel	
		Turbot	
		Shrimp	
		Lumpfish	
		Plaice	
		Char	
		Pollock/Saithe	
		Herring	
		Shells	
		Flounder	
		Snail	
		WolfFish	
		Tench	

Codelist	Description	Value	Notes
		Cod	
		Sole	
		Eel	
		Trout	
		Oysters	
		Flounder	

Comment Correct, all OK

Codelist	Description	Value	Notes
	Type of irrigation device.	UndergroundWaterPipe	

Codelist	Description	Value	Notes
IrrigationElementType		Canal	
		WaterPump	

Comment Correct, all OK

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

5. What general concepts of the specific theme do not map into the model?

None

6. Are there data/information of the case study that do not fit ?

No there aren't

7. Are there redundant parts?

No

8. General comments about the model

The model is correct.

Area management/restriction/regulation zones and reporting units

Feedback from

Ministry of Environment and Regional Development (Mr. Edvins Kapostins)

1. Part one. Class Attributes.

Class	Attribute	Case study instance	Have you used the attribute? If not, why?	Is the attribute redundant? If so, why?	Is the meaning of the attribute clear? If not, why?	Is the type the attribute appropriate? If not, why?	Is the attribute sufficient to express what you have to express? If not, why?	Is the multiplicity of the attributes appropriate?	Is the type of the attribute clear? If not, why?
AreaManagementAbstractClass		Riga International Airport	Yes	No	No, it is not clear what information should be included in this cell (ID or name of object)	Both (ID and text should be indicated)	No, it is not enough. It is needed more detailed textual information (for example impact of environment and housing areas)	Yes	Yes, it is clear
AreaManagementAbstractClass	country	LV	Yes	No	Yes	Yes	Yes	Yes	Yes

AreaManagementAbstractClass	sector	Ministry of Traffic, Ministry of Environment and Regional Planning	Yes	No	No, it is no clear what kind of informati on should be indicated in this cell. Please clarify question or give an example	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	subsector	Spatial planning	Yes	No	No, it is no clear what kind of informati on should be indicated in this cell. Please clarify question or give an example	yes	Yes	Yes	Yes
AreaManagementAbstractClass	geometry	IT is not defined where	No, it is no defined where to find this ISO Type						
AreaManagementAbstractClass	validFrom	2002							
AreaManagementAbstractClass	validTo	2014							
AreaManagementAbstractClass	managementActivityType	transportation							

AreaManagementAbstractClass	yearOfVerification	in average 4 years	Yes	No	Yes	In accordance to request submitted in relevant municipality teritorial plan should be updated.	Yes	Yes	Yes
AreaManagementAbstractClass	generalLandUseType	otherTrafficInfrastructure	Yes	No	Yes	Yes	Yes	No, at least two should be defined	Yes

ResponsibleOrganization	organisationName	Ministry of Traffic, local municipality	Yes	No	Yes	yes	Yes	No, there are two responsible authorities for that case study	Yes
ResponsibleOrganization	organisationAddress	Gogola iela 1, Riga, LV-1050;	Yes	No	Yes	Yes	Yes	Yes	Yes
dumpingSites	dumpingSiteAddress	Marupes county	Yes	No	Yes	Yes	Yes	Yes	Yes
dumpingSites	disposalQuantityUnit	not defined							
dumpingSites	recoveryQuantityUnit	not defined							
DumpingSiteforInertWaste	substanceName	No, to that case it is not applicable							
DumpingSiteforInertWaste	disposalQuantity	No, to that case it is not applicable							

DumpingSiteforInertWaste	recoveryQuantity	No, to that case it is not aplicable							
dumpingSitesForHazardousWaste	EWC_number	No, to that case it is not aplicable							
dumpingSitesForHazardousWaste	EWC_substanceName	No, to that case it is not aplicable							
dumpingSitesForHazardousWaste	disposalQuantity	No, to that case it is not aplicable							
dumpingSitesForHazardousWaste	recoveryQuantity	No, to that case it is not aplicable							
dumpingSitesForNonHazardousWaste	substanceName	No, to that case it is not aplicable							
dumpingSitesForNonHazardousWaste	disposalQuantity	No, to that case it is not aplicable							
dumpingSitesForNonHazardousWaste	recoveryQuantity	No, to that case it is not aplicable							
legalReference	country	LV	Yes	No	Yes	Yes	Yes	Yes	Yes
legalReference	levelOfCompetence	from national level to local level	Yes	No	Yes	Yes	Yes	No, the number of atributes is not appropriate. At least two must be for description all levels of competences	Yes
legalReference	legalFoundationDate	23.09.2009	Yes	No	Yes	Yes	Yes	Yes	Yes

prospectingAndMiningPermitAreas	Mineral	No, to that case it is not applicable							
prospectingAndMiningPermitAreas	DeadMaterialPercentage	No, to that case it is not applicable							
prospectingAndMiningPermitAreas	ExcavationMeans	No, to that case it is not applicable							
prospectingAndMiningPermitAreas	foreseenQuantity	No, to that case it is not applicable							
prospectingAndMiningPermitAreas	foreseenQuantityUnit	No, to that case it is not applicable							
noiseRestrictionZones	noiseType	airportNoise	Yes	No	Yes	Yes	Yes	Yes	Yes
noiseRestrictionZones	maximumAllowedSoundLevel_dB	not defined							
restrictionTime	weekDay	not defined							
restrictionTime	StartTime	not defined							
restrictionTime	EndTime	not defined							

otherManagementRegulationRestrictionAreas	regulatedArea	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	restriction	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	quantityMIN	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	quantityMAX	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	quantityUnit	No, to that case it is not applicable							

otherManagementRegulationRestrictionAreas	siteName	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	legalDocument	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	country	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	levelOfCompetence	No, to that case it is not applicable							
otherManagementRegulationRestrictionAreas	legalFoudationDate	No, to that case it is not applicable							

2. Part two. Enumerations

Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
QuantityUnit		Meter	Clear
		Km	Clear
		squaremeter	Clear
		gram	Clear

Enumeration	Description	Value	Notes
		percentage	Clear
		dezibel	Clear
		Km/h	Clear
		liter	Clear
		Kg	Clear

Comment: Ok

Enumeration	Description	Value	Notes
GeneralLandUseType	Import from Plan4all Land Use Data Model General indication on the land use of an area.	Residential	
		IndustrialCommercial	
		ServicesOfGeneralInterest	All services; comprises tourism services.
		Green	Public parks
		AreasOfNaturalInterest	Comprises woods
		Agriculture	
		Water	
		RoadTrafficInfrastructure	Comprises both networks and nodes.

Enumeration	Description	Value	Notes
		RailwayTrafficInfrastructure	Comprises both networks and nodes.
		OtherTrafficInfrastructure	NOTE Comprises both networks and nodes. EXAMPLE Parking lots, airports, cycle tracks, intermodal nodes.
		SpecialDevelopmentZone	Area for special use or special function. EXAMPLE Malls, hotels, stadiums for sport, convention centres, energy extraction.
		Mining	Area for mining purposes.
		Quarrying	Area for quarrying purposes
		TechnicalInfrastructure	EXAMPLE Energy and waste supply and disposal, energy networks
		Other	Other functions

Comment OK

Enumeration	Description	Value	Notes
drinkingWaterExtraction		Pump	
		Pipe	
		otherExtraction	

Comment: it should be necessary to clarify (extend) meaning otherExtraction

Enumeration	Description	Value	Notes
levelOfCompetence		nationalLevel	
		stateLevel	
		regionalLevel	
		provincialLevel	
		localLevel	

Comment: ok

Enumeration	Description	Value	Notes
drinkingWaterSourceType		fountain	
		springWater	
		surfaceWater	
		Cistern	

Comment: ok

Enumeration	Description	Value	Notes
restrictionZoneType	Types of restriction zones (Area)	fountainProtectionZone	
		springWaterProtectionZone	
		extractingZone	
		protectionZone	
		sanctuary	
		60DaysStreamToExtractingZone	
		1DayStreamToExtractingZone	
		otherRestrictionZoneType	

Comment:ok

Enumeration	Description	Value	Notes
RestrictedImpact	Types of restrictions (Activities)	dangerousImpactOfAllKind	
		pathogenSeedCrystals	

Enumeration	Description	Value	Notes
		viruses	
		chemicalContamination	
		persistentChemicalSubstances	
		other	

Comment: ok

Enumeration	Description	Value	Notes
zoneType	Types of zones	designatedZones	
		zonesDraftedByMemberStates	
		potentialVulnerableZones	

Comment: ok

Enumeration	Description	Value	Notes
waterwayInformation		motorVesselAndBarges	
		pushedConvoys	
		safteyClearensBetweenVesselsAndBridges	

Enumeration	Description	Value	Notes
		dimensionOfLocks	
		waterLevel	
		trafficSigns	
		other	

Comment: ok

Enumeration	Description	Value	Notes
Material		dregdedMaterial_soilAndRock	
		inertMaterial	
		fishWaste	
		liquidIndustrialWaste	
		solidIndustrialWaste	
		sewageSludge	
		shipsWithMetalHulls	

Enumeration	Description	Value	Notes
		otherShips	
		ammunition	
		otherMaterial	

Comment: ok

Enumeration	Description	Value	Notes
NavigationAidType		GPS	
		Man	
		Lighthouse	
		Other	

Comment: ok

Enumeration	Description	Value	Notes
fisheryProtection		limitedFishingRights	
		otherLimitedRights	

Comment: ok

Enumeration	Description	Value	Notes
humanConstruction		bridge	
		canal	
		dam	
		barrage	
		lock	
		boatlift	
		HydroElectricPowerPlant	
		otherHumanConstruction	

Comment: ok

Enumeration	Description	Value	Notes
excavationMeans		surfaceMining	
		subSurfaceMining	
		Pumping	

Enumeration	Description	Value	Notes
		Other	

Comment: ok

Enumeration	Description	Value	Notes
noiseType		airportNoise	
		streetNoise	
		railwayNoise	
		industryNoise	
		sportNoise	
		leisureNoise	
		neighborhoodNoise	
		otherNoise	

Comment: ok

Enumeration	Description	Value	Notes
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Enumeration	Description	Value	Notes
weekDay		Monday	
		Tuesday	
		Wednesday	
		Thursday	
		Friday	
		Saturday	
		Sunday	

Comment: should be necessary specify working days, holidays, weekends

Enumeration	Description	Value	Notes
regulatedArea		schoolDistricts	
		healthCareManagementRegions	
		defenceEnrolementRegions	
		fireFighterManagementRegions	
		policeResponsibilityRegions	

Enumeration	Description	Value	Notes
		rescueOperationRegions	
		militaryArea	
		sanctuaryForSilenceAndNature	
		retreatArea	
		otherArea	

Comment: ok

Enumeration	Description	Value	Notes
categoryOfDumpingGround		general dumping ground	
		chemical waste dumping ground	
		nuclear waste dumping ground	
		explosives dumping ground	
		spoil ground	
		shipwreck Vessel dumping ground	
		oil installations	
		ballast water	

Enumeration	Description	Value	Notes
		otherDumpingGround	

Comment: ok

Enumeration	Description	Value	Notes
restriction		anchoringRestricted	
		fishingForbidden	
		fishingRestricted	
		trawlingForbidden	
		trawlingRestricted	
		accessForbidden	
		accessRestricted	
		seaFloorScrapingForbidden	
		divingProhibited	
		divingRestricted	
		areaToAvoid	
		constructionProhibited	

Enumeration	Description	Value	Notes
		reducedSpeed	
		motorizedVehiclesProhibited	
		reducedNoise	
		otherRestriction	

Comment: ok

Enumeration	Description	Value	Notes
easementType		Coniferous forest rights	
		Grazing rights	
		Fishing rights	
		Deciduous forest rights	
		Haying rights	
		Mountain farm rights	
		Right of way	
		Building ban	
		Leased-out area	
		Common area	
		Breakwater property rights	

Enumeration	Description	Value	Notes
		Mooring	
		Right to illuminate	
		Aviation right	
		Railroad easement	
		Utility easement	
		Sidewalk easement	
		View easement	
		Driveway easement	
		Beach access property	
		Dead end easement	
		Recreational easement	
		Historic preservation easement.	

Comment: ok

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

1. What general concepts of the specific theme do not map into the model?

ok

2. Are there data/information of the case study that do not fit?

ok

3. Are there redundant parts?

There are no redundant parts.

4. General comments about the model

All information is much generalized.

Area management/restriction/regulation zones and reporting units

Feedback from

Provincia di Roma (Anna Maria Eremitaggio)

1. Part one. Class Attributes.

Class	Attribute	Have you used the attribute ? If not, why?	Is the attribute redundant ? If so, why?	Is the meaning of the attribute clear? If not, why?	Is the type the attribute appropriate? If not, why?	Is the attribute sufficient to express what you have to express ? If not, why?	Is the multiplicity of the attributes appropriate?	Is the type of the attribute clear? If not, why?
AreaManagementAbstractClass	id_object	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	country	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	sector	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	subsector	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	geometry	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	validFrom	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	validTo	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	managementActivityType	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	yearOfVerification	Yes	No	Yes	Yes	Yes	Yes	Yes
AreaManagementAbstractClass	generalLandUseType	Yes	No	Yes	Yes	Yes	Yes	Yes

ResponsibleOrganization	organisationName	Yes	No	Yes	Yes	Yes	Yes	Yes
ResponsibleOrganization	organisationAddress	Yes	No	Yes	Yes	Yes	Yes	Yes

dumpingSites	dumpingSiteAddress	Yes	No	Yes	Yes	Yes	Yes	Yes
dumpingSites	disposalQuantityUnit	Yes	No	Yes	Yes	Yes	Yes	Yes
dumpingSites	recoveryQuantityUnit	Yes	No	Yes	Yes	Yes	Yes	Yes

DumpingSiteforInertWaste	substanceName	Yes	No	Yes	Yes	Yes	Yes	Yes
DumpingSiteforInertWaste	disposalQuantity	No. Redundant.	Yes. The same attribute is inherited from dumpingSites class.					
DumpingSiteforInertWaste	recoveryQuantity	No. Redundant.	Yes. The same attribute is inherited from dumpingSites class.					

dumpingSitesForHazardousWaste	EWC_number	Yes	No	Yes	Yes	Yes	Yes	Yes
dumpingSitesForHazardousWaste	EWC_substanceName	Yes	No	Yes	Yes	Yes	Yes	Yes
dumpingSitesForHazardousWaste	disposalQuantity	No. Redundant.	Yes. The same attribute is inherited from dumpingSites class.					
dumpingSitesForHazardousWaste	recoveryQuantity	No. Redundant.	Yes. The same attribute is inherited from dumpingSites class.					

			es class.					
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dumpingSitesForNonHazardousWaste	substanceName	Yes	No	Yes	Yes	Yes	Yes	Yes
dumpingSitesForNonHazardousWaste	disposalQuantity	No. Redundant.	Yes. The same attribute is inherited from dumpingSites class.					
dumpingSitesForNonHazardousWaste	recoveryQuantity	No. Redundant.	Yes. The same attribute is inherited from dumpingSites class.					

legalReference	country	Yes	No	Yes	Yes	Yes	Yes	Yes
legalReference	levelOfCompetence	Yes	No	Yes	Yes	Yes	Yes	Yes
legalReference	legalFoundationDate	Yes	No	Yes	Yes	Yes	Yes	Yes
legalReference	legalDocuemtn	Yes	No	Yes	Yes	Yes	Yes	Yes

drinkingWaterSource	drinkingWaterSourceType			Yes				Yes
drinkingWaterSource	drinkingWaterQuantitySummerMIN			Yes				Yes
drinkingWaterSource	drinkingWaterQuantitySummerMAX			Yes				Yes

drinkingWaterSource	drinkingWaterQuantityWinterMIN			Yes				Yes
drinkingWaterSource	drinkingWaterQuantityWinterMAX			Yes				Yes
drinkingWaterSource	drinkingWaterQuantityUnit			Yes				Yes
drinkingWaterSource	drinkingWaterTemperature_CelsiusDegrees			Yes				Yes
drinkingWaterSource	drinkingWaterExtraction			Yes				Yes

restrictionZone	restrictionZoneType			Yes				Yes
restrictionZone	restrictedImpact			Yes				Yes

restrictedAreaAroundDrinkingWaterSources	name			Yes				Yes
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nitrateVulnerableZones	waterBodiesWithNitrate	Yes	No	Yes	Yes	Yes	Yes	Yes
nitrateVulnerableZones	nitratePercentage	Yes	No	Yes	Yes	Yes	Yes	Yes
nitrateVulnerableZones	surfaceWatersLastMonitoring	Yes	No	Yes	Yes	Yes	Yes	Yes
nitrateVulnerableZones	LastMonitoring	Yes	No	Yes	Yes	Yes	Yes	Yes
nitrateVulnerableZones	pollutedWatersLastInventory	Yes	No	Yes	Yes	Yes	Yes	Yes
nitrateVulnerableZones	pollutionRiskWatersLastInventory	Yes	No	Yes	Yes	Yes	Yes	Yes
nitrateVulnerableZones	goodAgriculturalPracticeIntroduction	Yes	No	Yes	Yes	Yes	Yes	Yes
nitrateVulnerableZones	zoneType	Yes	No	Yes	Yes	Yes	Yes	Yes

regulatedFairwaysAtSeaOrLargeInlandWater s	Waterway			Yes				Yes
regulatedFairwaysAtSeaOrLargeInlandWater s	waterwayInformation			Yes				Yes

regulatedFairwaysAtSeaOrLargeInlandWater s	waterTransportNetworks			Yes				Yes
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areasForTheDumpingOfWasteAtSea	Material			Yes				Yes
areasForTheDumpingOfWasteAtSea	disposalQuantityUnit			Yes				Yes
areasForTheDumpingOfWasteAtSea	disposalQuantity			Yes				Yes
areasForTheDumpingOfWasteAtSea	categoryOfDumpingGround			Yes				Yes
areasForTheDumpingOfWasteAtSea	Restriction			Yes				Yes

AreasWithRightToUsePropertyWithoutPosses sment	easementType			Yes				Yes
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CostalZoneManagementAreas	areaName			Yes				Yes
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harbourDistrict	navigationAidType			Yes				Yes
harbourDistrict	portIdentification			Yes				Yes
harbourDistrict	harbourStatus			Yes				Yes
harbourDistrict	portDistrictAdministration			Yes				Yes

BoundaryBetweenNationsSea	leftcountryCode			Yes				Yes
BoundaryBetweenNationsSea	rightcountryCode			Yes				Yes

fisheryZone	fisheryQuantity			Yes				Yes
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fisheryZone	fisheryQuantityUnit			Yes				Yes
fisheryZone	fisheryProtection			Yes				Yes

riverBasinDistricts	HumanConstructions			Yes				Yes
riverBasinDistricts	precipitationQuantity			Yes				Yes
riverBasinDistricts	precipitationQuantityUnit			Yes				Yes
riverBasinDistricts	TranspirationQuantity			Yes				Yes
riverBasinDistricts	TranspirationQuantityUnit			Yes				Yes
riverBasinDistricts	BedrockQuantity			Yes				Yes
riverBasinDistricts	pBedrockQuantityUnit			Yes				Yes
riverBasinDistricts	physicalWaters			Yes				Yes

waterBodies	waterBodyName			Yes				Yes
waterBodies	tributaries			Yes				Yes
waterBodies	estuary			Yes				Yes

prospectingAndMiningPermitAreas	Mineral			Yes				Yes
prospectingAndMiningPermitAreas	DeadMaterialPercentage			Yes				Yes
prospectingAndMiningPermitAreas	ExcavationMeans			Yes				Yes
prospectingAndMiningPermitAreas	foreseenQuantity			Yes				Yes
prospectingAndMiningPermitAreas	foreseenQuantityUnit			Yes				Yes

noiseRestrictionZones	noiseType			Yes				Yes
noiseRestrictionZones	maximumAllowedSoundLevel_dB			Yes				Yes

restrictionTime	weekDay			Yes				Yes
restrictionTime	StartTime			Yes				Yes
restrictionTime	EndTime			Yes				Yes

otherManagementRegulationRestrictionAreas	regulatedArea			Yes				Yes
otherManagementRegulationRestrictionAreas	restriction			Yes				Yes
otherManagementRegulationRestrictionAreas	quantityMIN			Yes				Yes
otherManagementRegulationRestrictionAreas	quantityMAX			Yes				Yes
otherManagementRegulationRestrictionAreas	quantityUnit			Yes				Yes
otherManagementRegulationRestrictionAreas	siteName			Yes				Yes
otherManagementRegulationRestrictionAreas	legalDocument			Yes				Yes
otherManagementRegulationRestrictionAreas	country			Yes				Yes
otherManagementRegulationRestrictionAreas	levelOfCompetence			Yes				Yes
otherManagementRegulationRestrictionAreas	legalFoudationDate			Yes				Yes

2. Part two. Enumerations

Enumerations provided by the designer.

Please, provide a comment for each Enumeration by specifying whether

- the Enumeration is complete,
- there are missing values (what?),
- the meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes
QuantityUnit		Meter	
		Km	
		squaremeter	
		gram	
		percentage	
		dezibel	
		Km/h	
		liter	
		Kg	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
GeneralLandUseType	Import from Plan4all Land Use Data Model General indication on the land use of an area.	Residential	
		IndustrialCommercial	
		ServicesOfGeneralInterest	All services; comprises tourism services.
		Green	Public parks

Enumeration	Description	Value	Notes
Comment		AreasOfNaturalInterest	Comprises woods
		Agriculture	
		Water	
		RoadTrafficInfrastructure	Comprises both networks and nodes.
		RailwayTrafficInfrastructure	Comprises both networks and nodes.
		OtherTrafficInfrastructure	NOTE Comprises both networks and nodes. EXAMPLE Parking lots, airports, cycle tracks, intermodal nodes.
		SpecialDevelopmentZone	Area for special use or special function. EXAMPLE Malls, hotels, stadiums for sport, convention centres, energy extraction.
		Mining	Area for mining purposes.
		Quarrying	Area for quarrying purposes
		TechnicalInfrastructure	EXAMPLE Energy and waste supply and disposal, energy networks
		Other	Other functions

Comment

The enumeration is complete complete having introduced the value "Other". The meaning of each value is clear and appropriate.

Enumeration	Description	Value	Notes

Enumeration	Description	Value	Notes
drinkingWaterExtraction		Pump	
		Pipe	
		otherExtraction	

Comment

The enumeration is complete having introduced the value “otherExtraction”. The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
levelOfCompetence		nationalLevel	
		stateLevel	
		regionalLevel	
		provincialLevel	
		localLevel	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
drinkingWaterSourceType		fountain	
		springWater	
		surfaceWater	
		Cistern	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
restrictionZoneType	Types of restriction zones (Area)	fountainProtectionZone	
		springWaterProtectionZone	
		extractingZone	
		protectionZone	
		sanctuary	

Enumeration	Description	Value	Notes
		60DaysStreamToExtractingZone	
		1DayStreamToExtractingZone	
		otherRestrictionZoneType	

Comment

The enumeration is complete having introduced the value “otherRestrictionZoneType”. The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
RestrictedImpact	Types of restrictions (Activities)	dangerousImpactOfAllKind	
		pathogenSeedCrystals	
		viruses	
		chemicalContamination	
		persistentChemicalSubstances	
		other	

Comment

The enumeration is complete having introduced the value "other". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
zoneType	Types of zones	designatedZones	
		zonesDraftedByMemberStates	
		potentialVulnerableZones	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
waterwayInformation		motorVesselAndBarges	
		pushedConvoys	
		safteyClearensBetweenVesselsAndBridges	
		dimensionOfLocks	
		waterLevel	
		trafficSigns	
		other	

Comment

The enumeration is complete having introduced the value "other". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
Material		dregdedMaterial_soilAndRock	
		inertMaterial	
		fishWaste	
		liquidIndustrialWaste	

Enumeration	Description	Value	Notes
		solidIndustrialWaste	
		sewageSludge	
		shipsWithMetalHulls	
		otherShips	
		ammunition	
		otherMaterial	

Comment

The enumeration is complete having introduced the value "otherMaterial". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
NavigationAidType		GPS	
		Man	
		Lighthouse	
		Other	

Comment

The enumeration is complete having introduced the value "Other". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
fisheryProtection		limitedFishingRights	
		otherLimitedRights	

Comment

The enumeration is complete having introduced the value "otherLimitedRights". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
humanConstruction		bridge	
		canal	
		dam	
		barrage	
		lock	
		boatlift	
		HydroElectricPowerPlant	
		otherHumanConstruction	

Comment

The enumeration is complete having introduced the value "otherHumanConstruction". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
excavationMeans		surfaceMining	
		subSurfaceMining	
		Pumping	
		Other	

Comment

The enumeration is complete having introduced the value "Other". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
noiseType		airportNoise	
		streetNoise	
		railwayNoise	
		industryNoise	
		sportNoise	
		leisureNoise	
		neighborhoodNoise	
		otherNoise	

Comment

The enumeration is complete having introduced the value "otherNoise". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
weekDay		Monday	
		Tuesday	
		Wednesday	
		Thursday	
		Friday	
		Saturday	
		Sunday	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
regulatedArea		schoolDistricts	
		healthCareManagementRegions	
		defenceEnrolementRegions	
		fireFighterManagementRegions	
		policeResponsibilityRegions	
		rescueOperationRegions	
		militaryArea	
		sanctuaryForSilenceAndNature	
		retreatArea	
		otherArea	

Comment

The enumeration is complete having introduced the value "otherArea". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
categoryOfDumpingGround		general dumping ground	

Enumeration	Description	Value	Notes
		chemical waste dumping ground	
		nuclear waste dumping ground	
		explosives dumping ground	
		spoil ground	
		shipwreck Vessel dumping ground	
		oil installations	
		ballast water	
		otherDumpingGround	

Comment

The enumeration is complete having introduced the value "otherDumpingGround". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
restriction		anchoringRestricted	
		fishingForbidden	
		fishingRestricted	
		trawlingForbidden	
		trawlingRestricted	

Enumeration	Description	Value	Notes
		accessForbidden	
		accessRestricted	
		seaFloorScrapingForbidden	
		divingProhibited	
		divingRestricted	
		areaToAvoid	
		constructionProhibited	
		reducedSpeed	
		motorizedVehiclesProhibited	
		reducedNoise	
		otherRestriction	

Comment

The enumeration is complete having introduced the value "otherRestriction". The meaning of each value is clear and appropriate

Enumeration	Description	Value	Notes
easementType		Coniferous forest rights	

Enumeration	Description	Value	Notes
		Grazing rights	
		Fishing rights	
		Deciduous forest rights	
		Haying rights	
		Mountain farm rights	
		Right of way	
		Building ban	
		Leased-out area	
		Common area	
		Breakwater property rights	
		Mooring	
		Right to illuminate	
		Aviation right	
		Railroad easement	
		Utility easement	
		Sidewalk easement	
		View easement	
		Driveway easement	

Enumeration	Description	Value	Notes
		Beach access property	
		Dead end easement	
		Recreational easement	
		Historic preservation easement.	

Comment

The enumeration is complete and the meaning of each value is clear and appropriate.

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

5. What general concepts of the specific theme do not map into the model?

None

6. Are there data/information of the case study that do not fit ?

None

7. Are there redundant parts?

None

8. General comments about the model

The model groups well (Areas managed, regulated or used for reporting at international, European, national, regional and local levels) areas managed, regulated or used for data communication at international, European, National, Regional and local levels as listed in Annex III of INSPIRE directive.

Point out that not having specific knowledge or real data we are unable to say whether all the circumstances are properly managed.

Natural risk zones

Feedback from

Latvia's Geospatial Information Agency

(Arvids Ozols)

RiskZone	duration	short appearance (usually every spring due to melting snow and ice in rivers), in cases of heavy raining.							
RiskZone	economicActivityOfArea	costruction/building/planning							
RiskZone	frequency	Floods With A High Probability	yes	no	yes	yes	Yes	Yes	Yes
RiskZone	geometry	Only preliminary marked in the maps, each case (object is individual)	yes	no	yes	yes	yes	yes	yes
RiskZone	legalFoundationDate	25.08.2009	yes	no	yes	yes	yes	yes	yes
RiskZone	legalFoundationDocument	http://www.adazi.lv/page.php?id=483	yes	no	yes	yes	yes	yes	yes
RiskZone	phenomena	Sequential	yes	no	yes	yes	yes	yes	yes

RiskZone	popultaionDensity	60/sq.km	yes	no	yes	yes	yes	yes	yes
RiskZone	productionIndustrialFacilitie s	there is no offical information about infdustrial/commercial facilities affected, only facility should be affected by flood is fighway located close to river	yes	no	yes	yes	yes	yes	yes
RiskZone	siteArea								
RiskZone									
RiskZone	validFrom	25.08.2009	yes	no	yes	yes	yes	yes	yes
RiskZone	validTo	31.12.2012	yes	no	yes	yes	yes	yes	yes
RiskZone	returnPeriod	1	yes	no	yes	yes	yes	yes	yes
RiskZone	levelOfRisk	high							
InundatedRiskZon	flowVelocity	It is no applicable							

e									
InundatedRiskZone	probabiliyOfFloodRisk	It is no applicable							
e									
InundatedRiskZone	differentProbabilityOfFloodRisk								
e									
InundatedRiskZone	waterLevel								
e									
InundatedRiskZone	relevantWaterFlow								
e									
InundatedRiskZone	inundationType								
e									

InundatedRiskZone e	hydroId								
InundatedRiskZone e	waterDepths	It is no applicable							
StormRiskZone	zoneDesignation								

DroughtRiskZone	zoneDesignation								
DroughtRiskZone	slopeGradient								

DroughtRiskZone	soilTypologicalUnit								

DroughtRiskZone	soilOrganicCarbon								

DroughtRiskZone	topsoilAndSubsoilTexture								
DroughtRiskZone	topsoilAndSubsoilBulkDe nsity								

DroughtRiskZone	soilOrganicMatter								
DroughtRiskZone	soilHydraulicProperties								

AvalanchesRiskZone	zoneDesignation								
AvalanchesRiskZone	slopeGradient								
AvalanchesRiskZone	slopeLength								

AvalanchesRiskZone	soilTypologicalUnit								
AvalanchesRiskZone	bedrock								

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2. Part two. Enumerations

a. Enumerations provided by the designer.

Enumeration	Value	Notes
LevelOfRisk	High	high risk
	Medium	medium risk
	Low	low risk

Comment : OK

Enumeration	Value	Notes
Frequency_Of_Hazard	Slow	according to "Data Specifications" – deliverable D2.3: Definition of Annex Themes and Scope, 7.12 Natural risk zones
	Unnoticed	according to "Data Specifications" – deliverable D2.3: Definition of Annex Themes and Scope, 7.12 Natural risk zones
	Permanent	according to "Data Specifications" – deliverable D2.3: Definition of Annex Themes and Scope, 7.12 Natural risk zones

Comment : OK

Enumeration	Value	Notes
Duration_Of_Hazard	ShortAppearance	
	LongTimeAppearance	
	PermanentlyAppearance	

Comment : OK

Enumeration	Value	Notes
Phenomena_Of_Hazard	Single	
	Sequential	
	CombinedWithOther	

Comment : OK

Enumeration	Value	Notes

Enumeration	Value	Notes
ProbabilityOfInundationRisk	FloodsWithALowProbability	floods with a low probability, or extreme event scenarios
	FloodsWithAMediumProbability_=_100Years	floods with a medium probability (likely return period = 100 years)
	FloodsWithAHighProbability	floods with a high probability, where appropriate

Comment

Enumeration	Value	Notes
DesignationAvalanchesRiskZone	Rockslides	
	RockFalls	
	LandSlides	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (f), landslides brought about by the down-slope, moderately rapid to rapid movement of masses of soil and rock material
	DebrisAvalanches	
	IceAvalanches	
	SnowAvalanches	
	MudFloods	

Comment : OK

Enumeration	Value	Notes
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Enumeration	Value	Notes
DesignationDroughtRiskZone	Desertification	Desertification is the degradation of land in arid and dry sub-humid areas
	OrganicMatterDecline	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (b), organic matter decline brought about by a steady downward trend in the organic fraction of the soil, excluding undecayed plant and animal residues, their partial decomposition products, and the soil biomass
	Salinisation	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (d), salinisation through the accumulation in soil of soluble salts
	Compaction	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (c), compaction through an increase in bulk density and a decrease in soil porosity
	ErosionByWater	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (a), erosion by water
	ErosionByWind	according to the proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a framework for the protection of soil and amending Directive 2004/35/EC, SECTION ONE IDENTIFICATION OF RISK AREAS, Article 6, No 1 (a), erosion by wind

Comment : OK

Enumeration	Value	Notes
DesignationEarthmovestRiskZone	Tectonic	
	Earthquakes	
	GeologicalFault	

Comment : OK

Enumeration	Value	Notes
DesignationOtherRiskZone	WildlandFires	
	Permafrost	
	TemperatureExtremes	

Comment : OK

Enumeration	Value	Notes
DesignationStormRiskZone	Blizzard	
	Thunder	
	TropicalCyclones	
	StormSurges	
	DustStorm	
	SandStorm	
	HailStorm	
	RainStorm	
	WindStorm	
	OtherStorm	

Comment : OK

Enumeration	Value	Notes
DesignationVolcanicActivityRiskZone	VolcanicEmissions	
	VolcanicAcitivity	

Comment : OK

Enumeration	Value	Notes
InundationValue	Debris	
	SpringTide	
	SeaLevelRise	
	InlandFlooding	
	Tsunamis	

Comment : OK

b. Enumerations filled by expert users / stakeholders

Enumeration	Value	Notes
DifferentProbabilityOfInundationRisk	high	Risk is permanent, with seasonal character
	medium	Risk is permanent, risk depends from weather conditions
	low	There is the risk that inundation is possible at least once per 100 years

Enumeration	Value	Notes
SoilTexture		No comment

Enumeration	Value	Notes
SoilDensity		No comment

Enumeration	Value	Notes
SoilTypologicalUnit		No comment

Enumeration	Value	Notes

Enumeration	Value	Notes
SoilOrganicCarbon		No comment

Enumeration	Value	Notes
TopsoilAndSubsoilTexture		No comment

Enumeration	Value	Notes
TopsoilAndSubsoilBulkDensity		No comment

Enumeration	Value	Notes
Bedrock		No comment

Enumeration	Value	Notes
SoilHydraulicProperties		No comment

Enumeration	Value	Notes
		No comment

Enumeration	Value	Notes
SoilOrganicMatter		

3. Part three. Final remarks

Once the case study has been instantiated, please answer the following questions.

9. What general concepts of the specific theme do not map into the model?

Good, seems all important information is included

10. Are there data/information of the case study that do not fit ?

Everything is fine

11. Are there redundant parts?

No

12. General comments about the model

The model is good, no comments