Session 1 – Steps needed for data transformation

Data Specifications

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EMODnet-INSPIRE technical workshop

7-8 December 2015, Brussels

Research and Technology to enhance excellence in maritime development under an Ecosystem approach

UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA

CAMPUS ATLÁNTICO TRICONTINENTAL CANARIAS 2010/2015

Parque Científico Tecnológico

Grupo de Investigación en Acuicultura

Bioges

Designing of the transformation process
theoretical mapping

Step 1 – Find the Target Application Schema

Step 2 – Find the Target INSPIRE Feature type to use

Step 3 – Analyze the attributes of the INSPIRE FEATURETYPE

Step 4 – Find the useful source data attributes for the mapping

Step 5 – Map the source and target attributes

Step 6 – Map the source and INSPIRE code list/enumeration values

Step 1 – Find the Target Application Schema

INSPIRE Thematic Scope – which themes could be relevent ?

Annex I

1. Coordinate reference systems
2. Geographical grid systems
3. Geographical names
4. Administrative units
5. Addresses
6. Cadastral parcels
7. Transport networks
8. Hydrography
9. Protected sites

Annex II

1. Elevation
2. Land cover
3. Ortho-imagery
4. Geology

Annex III

1. Statistical units
2. Buildings
3. Soil
4. Land use
5. Human health and safety
6. Utility and governmental services
7. Environmental monitoring facilities
8. Production and industrial facilities
9. Agricultural and aquaculture facilities
10. Population distribution – demography
11. Area management/ restriction/regulation zones & reporting units
12. Natural risk zones
13. Atmospheric conditions
14. Meteorological geographical features
15. Oceanographic geographical features
16. Sea regions
17. Bio-geographical regions
18. Habitats and biotopes
19. Species distribution
20. Energy Resources
21. Mineral resources

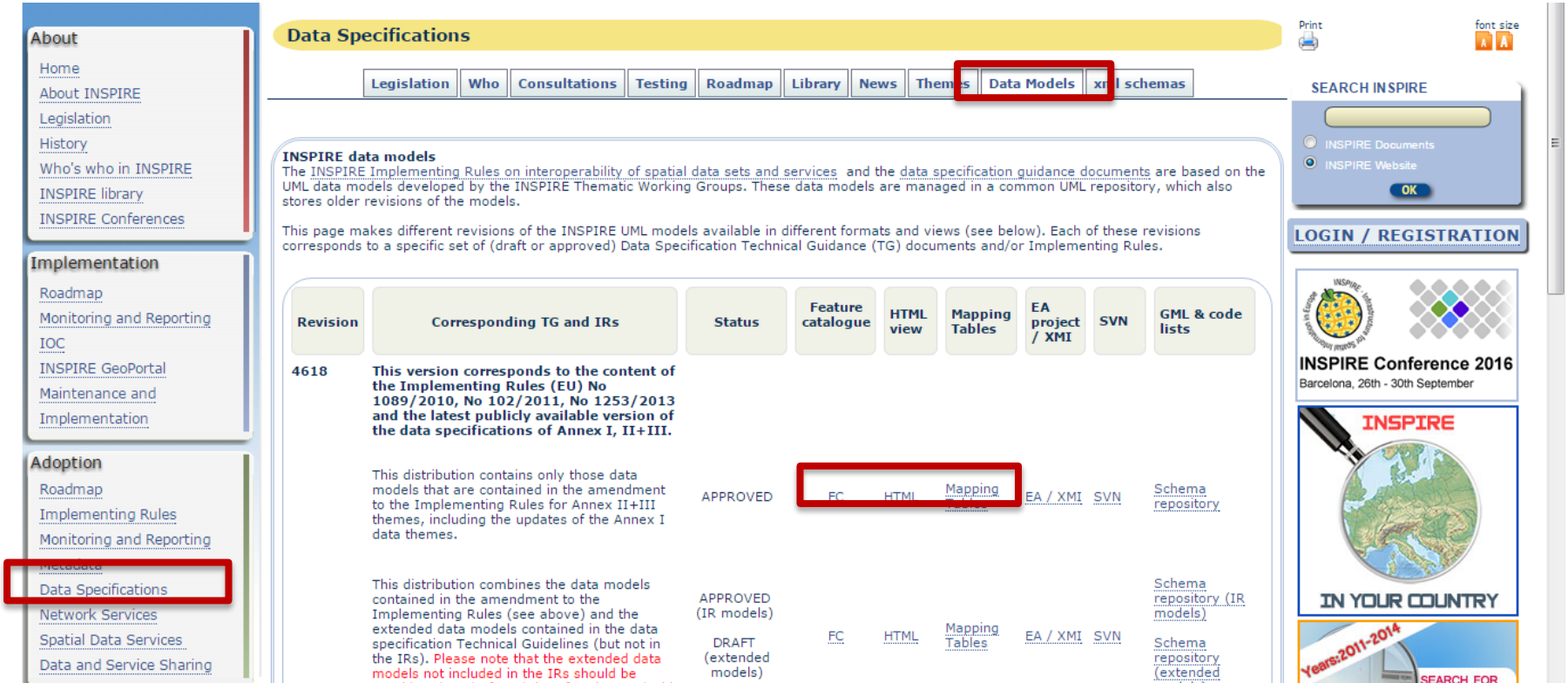
Step 1 – Find the Target Application Schema

1.1 Identify INSPIRE theme

- Description of themes at INSPIRE “data spec. corner”
- Read the executive summery
- Compare Technical guidance with Interactive data specification app.
- Download identified Technical Guidance form INSPIRE website (and read it!)
- Identify the application schemas related to the INSPIRE theme
- Understand identified application schemas to identify appropriate one for the source data

Step 1 – Find the Target Application Schema

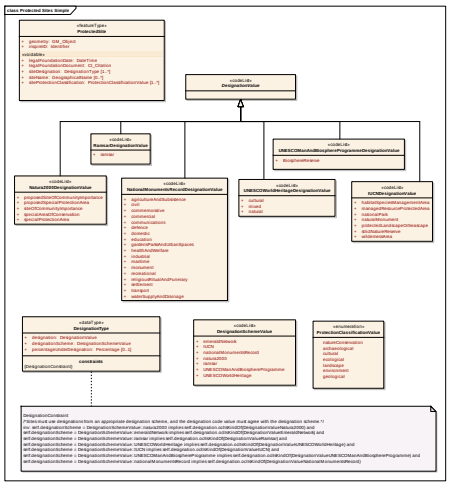
- Understand UML models, Feature catalogues, Matching tables to identify the one that is most applicable to source data set
- Use only Technical guidance
- Use “data spec corner” part of the models

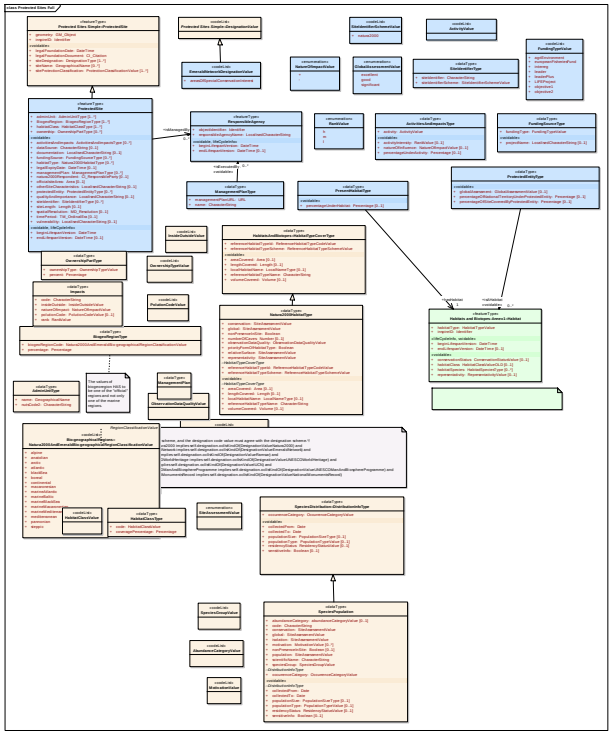


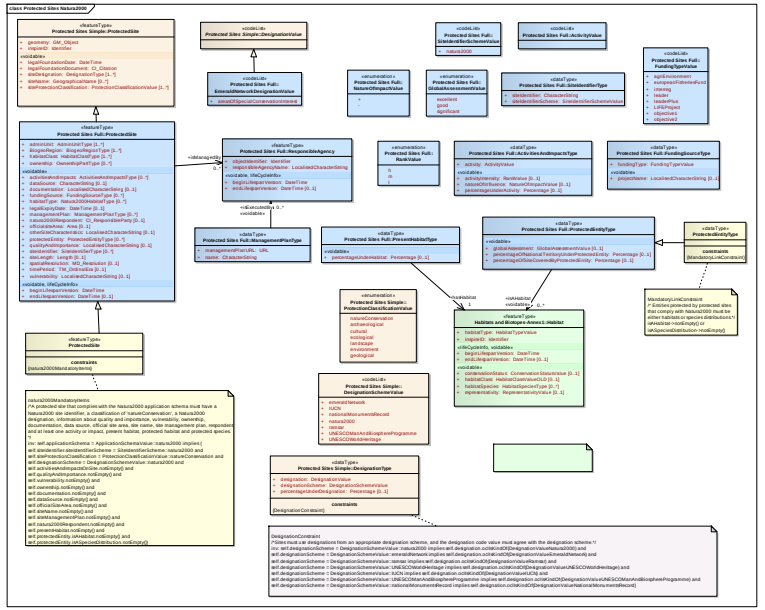
Step 1 – Find the Target Application Schema

- INSPIRE Application Schemas available for Protected sites theme:

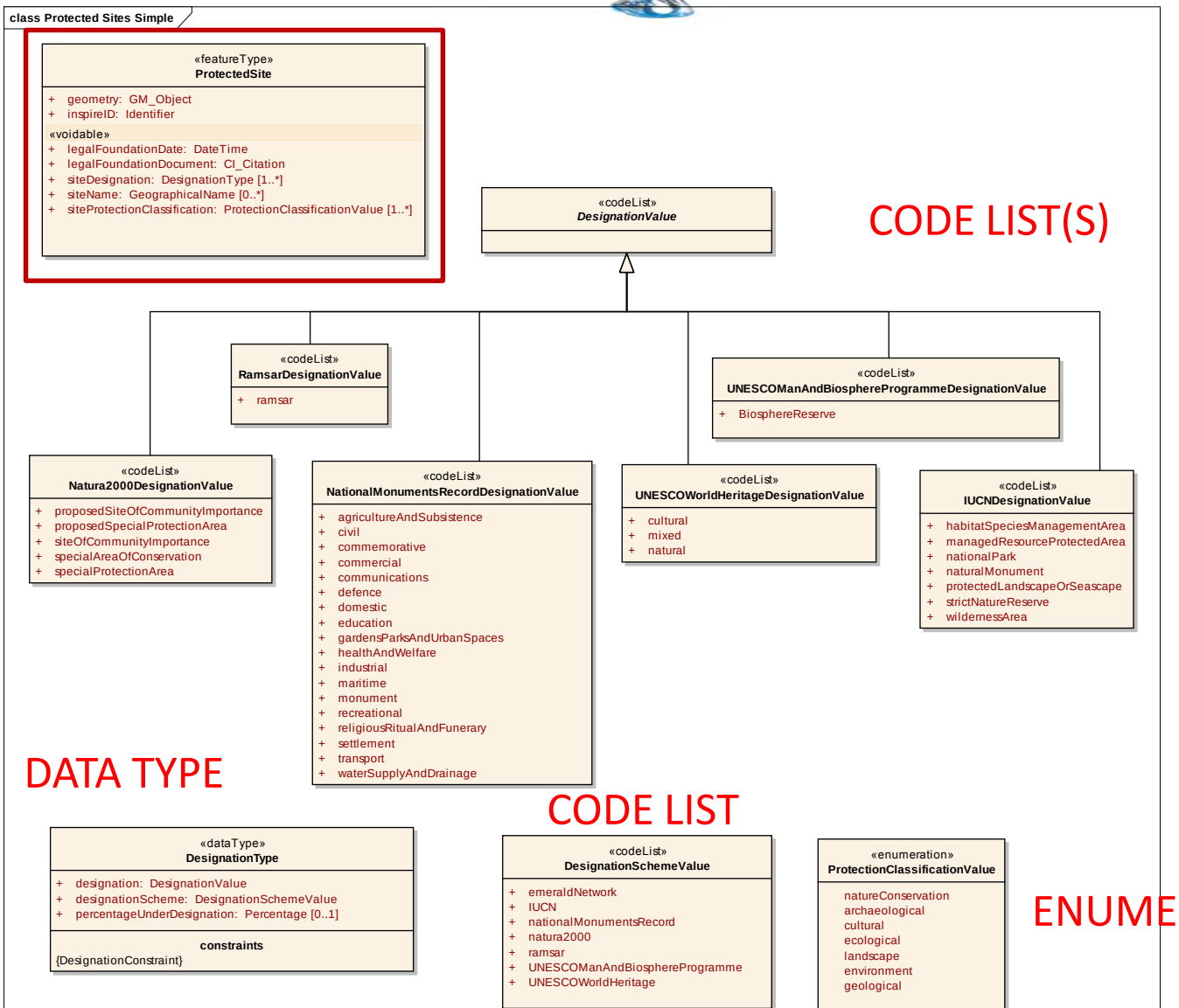
Protected Sites Simple
Protected Sites Full
Protected Sites Natura 2000







Step 2 – Find the Target INSPIRE Feature type to use



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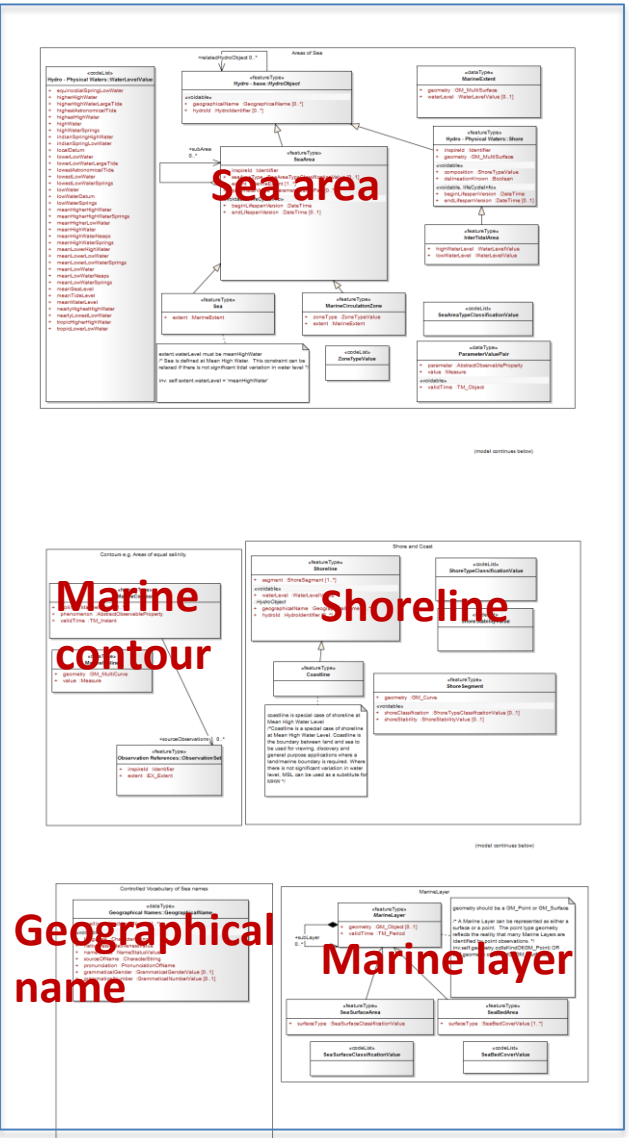
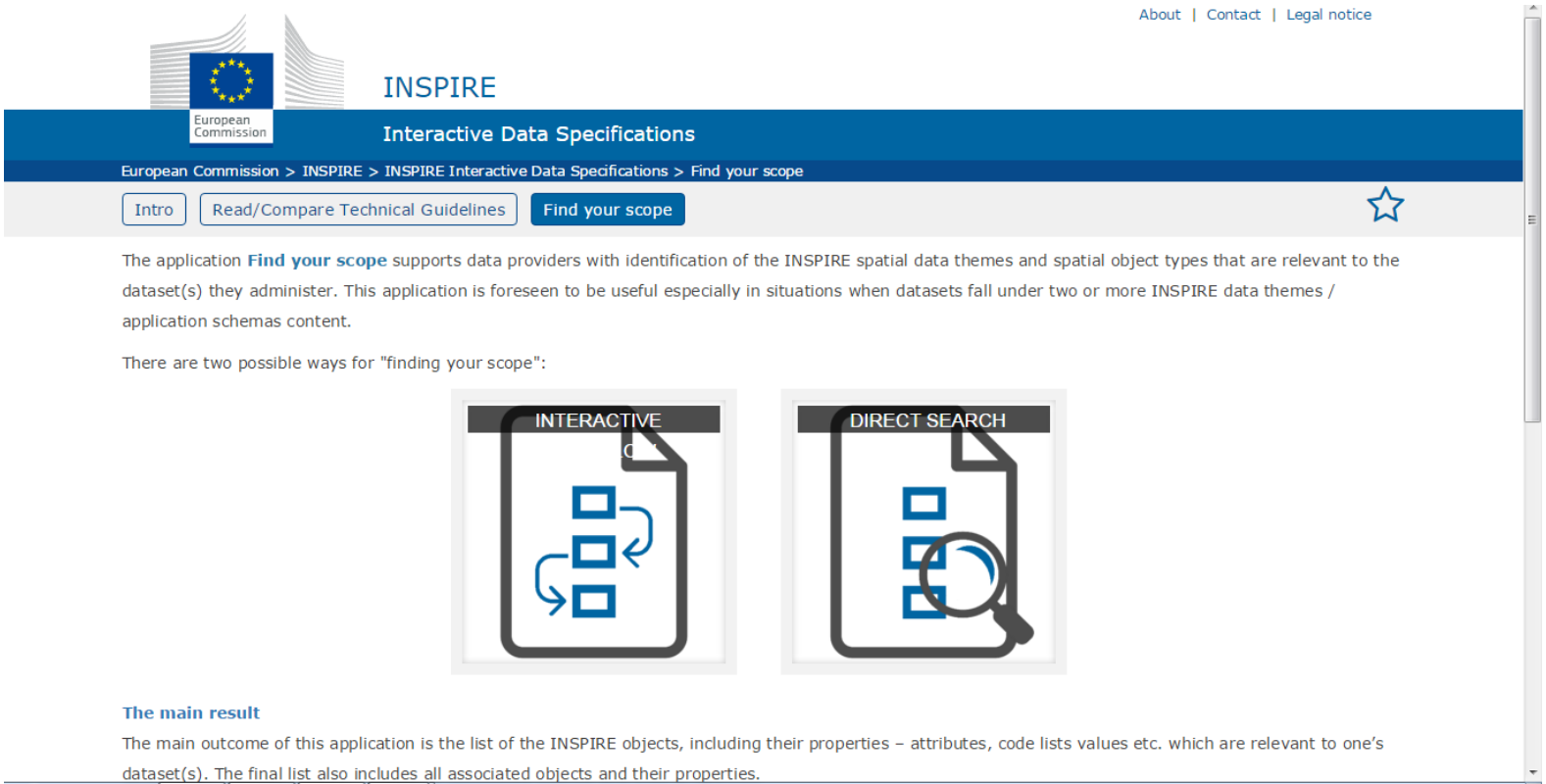


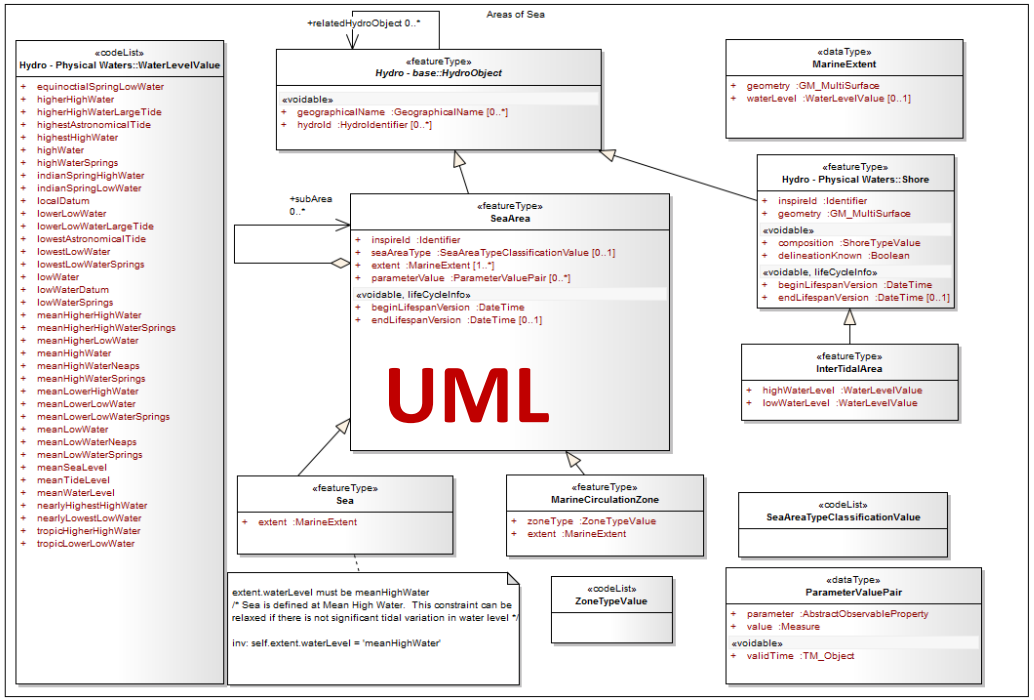
- Feature types need to be analyzed to identify one which is adjusted to source data set
- Analyze attributes of the feature, code lists, enumerations…

Alternatively can be used INSPIRE Interactive Data Specification

- Offers INSPIRE data providers two applications to support them in the implementation of the INSPIRE data specifications
- Identifying appropriate INSPIRE theme/application schema/spatial object
- Essential tool for mapping your (EMODnet) data products into INSPIRE data model

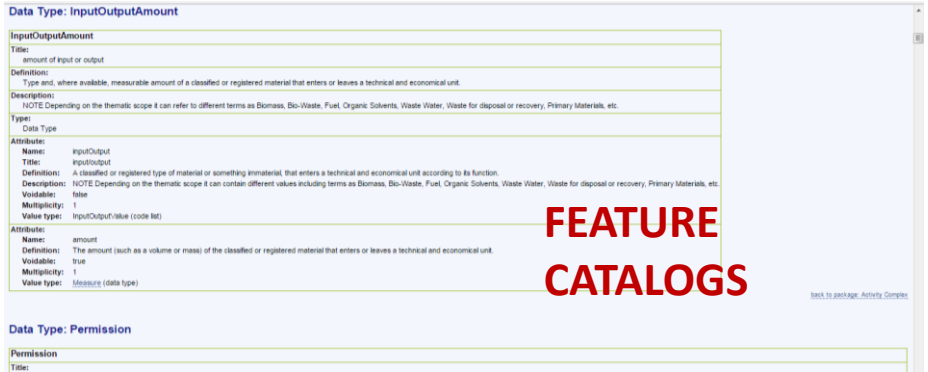


Step 3 – Analyze the attributes of the INSPIRE FEATURETYPE



Type	Documentation	Attribute Association role Constraint	Attribute Association role Constraint documentation	Vaues/ Enumerations	Multiplicity	Voidable/ Non-voidable
Sea Area Subtype of: HydroObject Supertype of: SeaArea	-- Definition -- An area of sea defined according to its physical and chemical characteristics. It may have multiple geometries (extent) to represent different tidal states. -- Description -- A SeaArea is a type of HydroObject as described in the A ex1 theme Hydrography. It has geometry described by one or more GM_MultiSurfaces. Multiple geometries are allowed to enable a SeaArea to be described according to different tidal states. Typically however, specialisations of SeaArea will restrict the geometry to a particular tidal state or set of tidal states. SeaAreas include named seas such as ◆Baltic Sea◆ and also un-named areas of sea that have particular chemical and physical characteristics. SeaAreas are 2D objects and carry no explicit information about the depth of the sea, this is specified in the INSPIRE Elevation Theme.	**inspire Id**	"External object identifier of the spatial object.".	Identifier	1	
		sea Area Type	Type of the sea area according to the classifications in the SeaAreaTypeClassificationValue codelist. e.g. Estuary	SeaAreaTypeClassification Value	0...1	
		extent	The extent of the Sea Area at a particular tidal state.	MarineExtent	1...*	
		parameter Value	A value of some parameter assigned to the SeaArea. E.g. A ual Mean Sea Surface Temperature = 12 degrees Celsius	ParameterValuePair	0...*	
		begin Lifespan Version	Date and time at which this version of the spatial object was inserted or changed in the spatial data set.	DateTime	1	voidable
		end Lifespan Version	Date and time at which this version of the spatial object was superseded or retired in the spatial data set.	DateTime	0...1	voidable
		geographical Name - HydroObject	A geographical name that is used to identify a hydrographic object in the real world. It provides a 'key' for implicitly associating different representations of the object.	GeographicalName	0...*	voidable
		hydro Id - HydroObject	An identifier that is used to identify a hydrographic object in the real world. It provides a 'key' for implicitly associating different representations of the object.	HydroIdentifier	0...*	voidable
		related Hydro Object - from Hydro Object	-- Definition -- An identity base for hydrographic (including man-made) objects in the real world. -- Description -- NOTE Derived "views" of real-world hydrographic objects are represented through specialisations in other application schemas; all representations of the same real-world object share a common geographic name or hydrographic identifier.	**Hydro Object (See Annex)**	0..*	
		sub Area - from Sea Area	-- Definition -- An area of sea defined according to its physical and chemical characteristics. It may have multiple geometries (extent) to represent different tidal states. -- Description -- A SeaArea is a type of HydroObject as described in the A ex1 theme Hydrography. It has geometry described by one or more GM_MultiSurfaces. Multiple geometries are allowed to enable a SeaArea to be described according to different tidal states. Typically however, specialisations of SeaArea will restrict the geometry to a particular tidal state or set of tidal states. SeaAreas include named seas such as ◆Baltic Sea◆ and also un-named areas of sea that have particular chemical and physical characteristics. SeaAreas are 2D objects and carry no explicit information about the depth of the sea, this is specified in the INSPIRE Elevation Theme.	**Sea Area (See Annex)**	0..*	

MATCHING TABLES



FEATURE CATALOGS

Step 4 – Find the useful source data attributes for the mapping
Step 5 – Map the source and target attributes

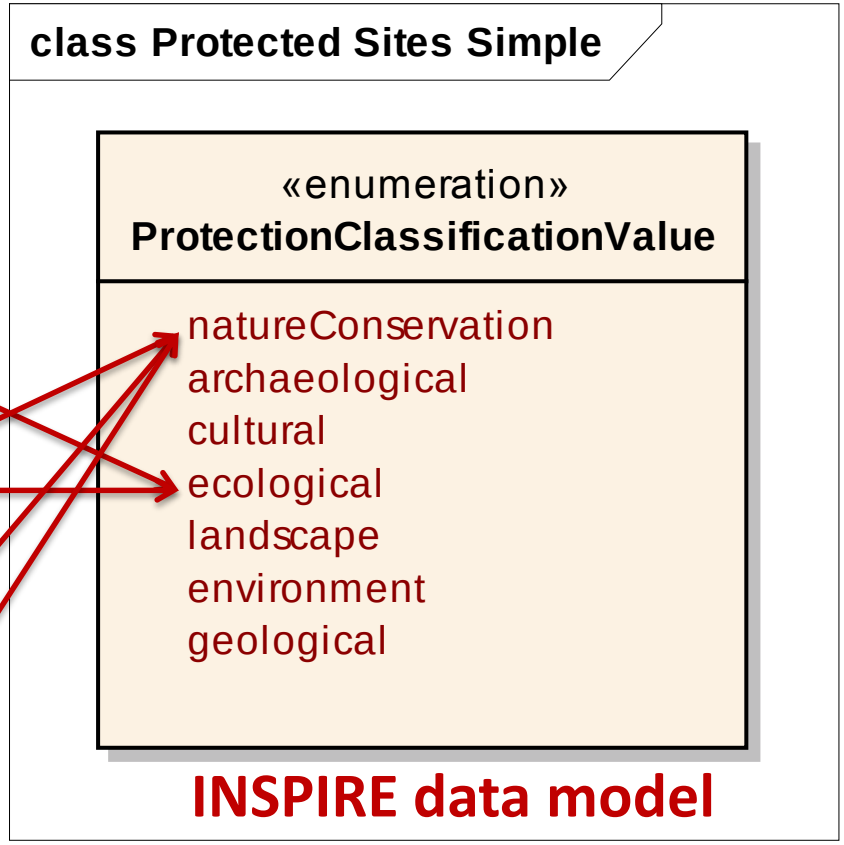
Application Schema 'HabitatsAndBiotopes' (version 3.0)							Application Schema <provide name of source schema>								
Type	Documentation	Attribute Association role Constraint	Attribute / Association role / Constraint	Values / Enumerations	Multiplicity	Voidable / Non-Voidable	Type	Documentation	Attribute Association role Constraint	Attribute / Association role / Constraint	Values / Enumerations	Multiplicity	Voidable / Non-Voidable	Status	Remarks
HabitatTypeCoverType	-- Name -- habitat type cover type Habitat type according to an international, national or local habitat classifications scheme.Includes additional information on covered area, covered length, or containing volume.														
		referenceHabitatTypeId	-- Name -- reference habitat type id	ReferenceHabitatTypeCodeValue	1		HabitatTypeCoverType	code list provided with source data set aligned	Level4		code list http://inspire.ec.europa				If Level4 is not populated include Level3
		referenceHabitatTypeSchem	-- Name -- reference habitat type scheme	ReferenceHabitatTypeSchemeValue* eunis*	1		HabitatTypeCoverType	Eunis (http://inspire.ec.europa.e	no asociation with source data set						
		referenceHabitatTypeName	-- Name -- reference habitat type name	CharacterString	1	voidable	HabitatTypeCoverType		Level4_des						
		localHabitatName	-- Name -- local habitat name - Habitat type	LocalNameType	0..1	voidable	HabitatTypeCoverType	A simplified classification a	Grouped						
		areaCovered	-- Name -- area covered - The area covered	Area	0..1	voidable									
		lengthCovered	-- Name -- length covered - The length	Length	0..1	voidable									
		volumeCovered	-- Name -- volume covered - The	Volume	0..1	voidable									
HabitatSpeciesType	-- Name -- habitat species type Species which occurs in a certain habitat at the time of mapping.														
		referenceSpeciesId	-- Name -- reference species id - Identifier	ReferenceSpeciesCodeValue	1		habitatSpeciesType								
		referenceSpeciesScheme	-- Name -- reference species scheme	ReferenceSpeciesSchemeValue* eunomen*	1		habitatSpeciesType								
		localSpeciesName	-- Name -- local species name - Scientific	LocalNameType	0..1	voidable	habitatSpeciesType								
Habitat	-- Name -- habitat Geographical areas characterised by specific ecological conditions, processes, structure, and functions that physically support the organisms that live there.Includes terrestrial and aquatic areas distinguished by														
		inspireId	-- Name -- inspire id External object identifier	Identifier	0..1		20110209_EUSeaMap_W - Mediterranean_Habitats	Numerical code assigned b	AllCode			1	non-voidable		
		geometry	-- Name -- geometry The extent of the habitat	GM_Object	1		20110209_EUSeaMap_W Mediterranean_Habitats		the_geom						
		habitat	-- Name -- habitat type The identifier for a	HabitatTypeCoverType	1..*		HabitatTypeCoverType		complex feature						
		habitatSpecies	-- Name -- habitat species - List of	HabitatSpeciesType	0..*	voidable	habitatSpeciesType	no values provided							
		habitatVegetation	-- Name -- habitat vegetation - List of	HabitatVegetationType	0..*	voidable	HabitatVegetationtype	no values provided							
HabitatVegetationType	-- Name -- habitat vegetation type Vegetation type which														
		localVegetationName	-- Name -- local vegetation name	LocalNameType	1										
LocalNameType	-- Name -- local name type Name according to a local classification scheme.														
		localScheme	-- Name -- local scheme - Uniform	CharacterString	1										
		localNameCode	-- Name -- local name code - Natural	LocalNameCodeValue	1										
		localName	-- Name -- local name - Name according to a	CharacterString	1	voidable									
		qualifierLocalName	-- Name -- qualifier local name - The relation	QualifierLocalNameValue	1	voidable									

- Mapping the attributes that can be included into INSPIRE Feature
- Using the Matching table for documenting the mapping of source/target data model

Step 6 – Map the source and INSPIRE code lists/enumeration values

Source code list

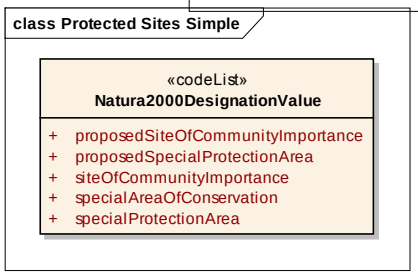
Designation
Biotope Protection Order
Corsican Nature Reserve
Forest Biological Reserve
Land acquired by Conservatoire du Littoral (national seaside and lakeside conservancy)
Regional Nature Park

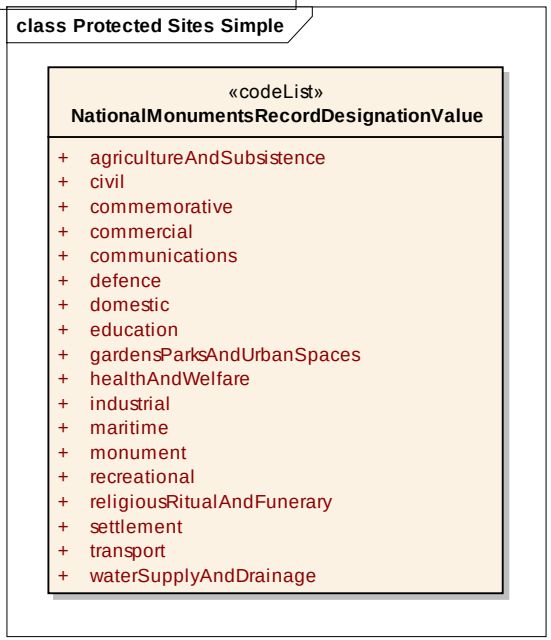


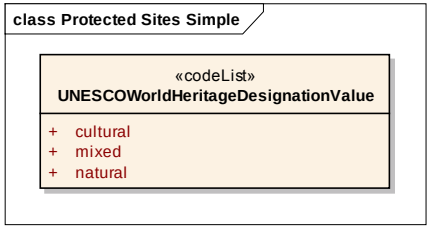
INSPIRE data model target code list

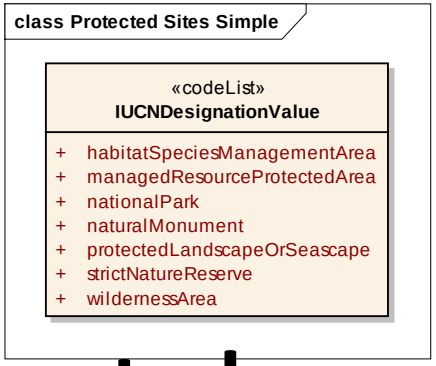
Not always simple...

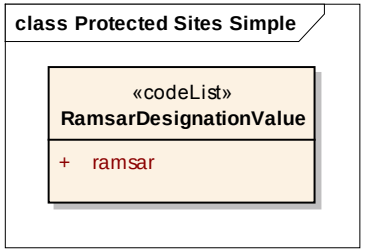
DESIGNATE	
old	**new**
Nature Monument (Category II IUCN)	Nature Monument (Category III IUCN)
National Park	Strict Nature Reserve
Regional Natural Park or Nature Park	Special Nature Reserve
Natural Reserve or Nature Reserve	National Park
Natural Monument	Regional Park and Nature Park
Recreational Area	Natural Monument
Sanctuary of Landscape or Recreational Importance	Protected habitat
Memorial Monument	Landscape with special features
Ornate Natural Monument or Horticultural Garden	Protected species of plants, animals and fungi - strictly protected and protected wild species
Historical Sanctuary	Protected geological and paleontological objects
National Nature Reserve; fifth level of protection	National Nature Reserve
Nature Reserve / Private Nature Reserve; fifth level of protection	Nature Reserve / Private Nature Reserve
National Nature Monument; fifth level of protection	National Nature Monument
Nature Monument / Private Nature Monument; fifth level of protection	Nature Monument / Private Nature Monument
Protected Site / Private Protected Site; fourth level of protection	Protected Site / Private Protected Site
Buffer Zone of a Protected Site; third level of protection	Buffer Zone of a Protected Site











need to be documented

Thank you for your attention

….and patience

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