

GUIDE FOR THE EMODNET MARINE SPATIAL PLANNING DATA MODEL



WORKING PAPER

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1. Introduction

This guide describes the data model proposed by the EMODnet Human Activities team for presenting an EU-wide dataset on Marine Spatial Planning. The data set represents the marine spatial plans adopted by the Member States following the Directive 2014/89/EU.

Building on previous initiatives and research projects across Europe (HELCOM-VASAB, MSP INSPIRE Data Model and SIM projects) as well as on the findings from the Commission Technical Expert Group on MSP Data, an INSPIRE compliant data model has been designed. The model aims to ensure harmonization and usability by all potential marine data users: policy-makers, scientists, private companies and the public. Therefore, the specific attributes of the MSPs across EU countries were also taken into account for their representation on the EMODnet geoportal.

This approach allows presenting both the original MSP of each Member State and the standardized MSP using the data model. Three criteria have guided the data model development:

- The balance between the simplicity of the model and the inclusion of relevant information, noting that this last one differs according to the users' profile.
- The definition of nomenclature for potential marine uses compatible with the one used in the MSP directive, the Inspire land themes and the most consolidated MSP platforms and initiatives.
- A visualization that optimizes the harmonization effort for the benefit of potential users and applications.

The guide is structure as follows:

- Section 2 introduces the data model, defining and describing the main features.

- Section 3 presents the table of correspondences between the nomenclature of marine uses defined by EMODnet and the ones used in the main MSP references at EU level.
- Section 4 implements the table of correspondence, testing the compatibility and functionality with the official marine spatial plans approved by four member states: Germany, Belgium, Latvia and the Netherlands.

2. EMODnet Data model for the Maritime Spatial Planning dataset

The data model proposed is based on the models created by MSP INSPIRE Data Model and HELCOM. Both were used to synthesize in a single model that provides information fit for purpose considering the multiple uses and uses of the EMODnet platform. The trade-offs in the design of the model have been explored with the TEG on MSP data (Workshop 28 May 2020), in particular how to set a manageable number of attributes while retaining critical information, avoiding overlap and delivering a comprehensive and accessible visualization.

The MSP output data represents the maritime spatial plan with additional attributes describing: the type, level and status of the plan; the scale, area of the plan, responsible institution, the validity of the plan; and other maritime information or previous spatial plans in a particular area if any. In the process, the attributes that were considered most relevant to display were chosen. Noteworthy, within the framework of the MSP Directive the plans presented by Member State has particularities in terms of both the nomenclature that they use for the marine uses and the categories in which they are aggregated. Therefore the synthesis and harmonization process addresses the plurality, integrating it within the **MSP EMODnet** model.

The model is made up of 4 Feature Types, following the INSPIRE model of Planned Land Use conceptual data model:

1. MSP Spatial Planning: the main spatial element. It establishes the policies, priorities, programs and land allocations that implement the strategic direction of a given geographic area and influences the distribution of people and activities in spaces of various scales. It is a spatial feature.
2. MSP Zoning Element: all the spatial objects included in the spatial plan, defining activities and specific land uses in certain areas. To define land use, in addition to the HILUCS (Hierarchical Land Use Classification System) attribute of the INSPIRE conceptual model and the HILUCS MSP attribute of MSP INSPIRE data model, other attributes have been included:
 - SeaUseName, where the land use is defined according to the list of codes of uses of the land defined by EMODnet Human Activities Platform, ensuring the dialogue between the MSP and other datasets available at the portal.
 - SeaUseFunction, to classify which uses are allowed, reserved, potential, among others, in a certain area.
 - SeaUseDescription, to describe the situation related to the uses of the sea in a certain area.
 - OriginalUseName and OriginalUseNameEn, which reflects the official uses of the sea described by the countries in a certain area. It will be translated in English too.
3. MSP Supplementary Regulation: documentation, defined mainly in regulations, reporting on existing limitations in the use of land in a given area. Consequently, it is a non-mandatory spatial feature.
4. MSP Official Documentation: all the documentation, included in the regulation or other official sources, that defines the 3 previous feature types. This is a non-spatial feature, and therefore will not be represented graphically in the EMODnet geoportal.

The model design has a “vertical” distribution, to address the peculiarities of the uses of the sea and the marine ecosystem (Attribute Vertical distribution). This attribute was designed by MSP INSPIRE data model, included to adapt land planning for maritime spatial planning. Other components are considered, as multi-use and co-use in the same

space element (MSP Zoning element). Hence, the cardinality property is applied in the attributes that define uses in a spatial element (hilucsLandUse, hilucsMSP, SeaUse, etc.), as well as for the Vertical distribution attribute aforementioned.

2.1. Data Model Proposal

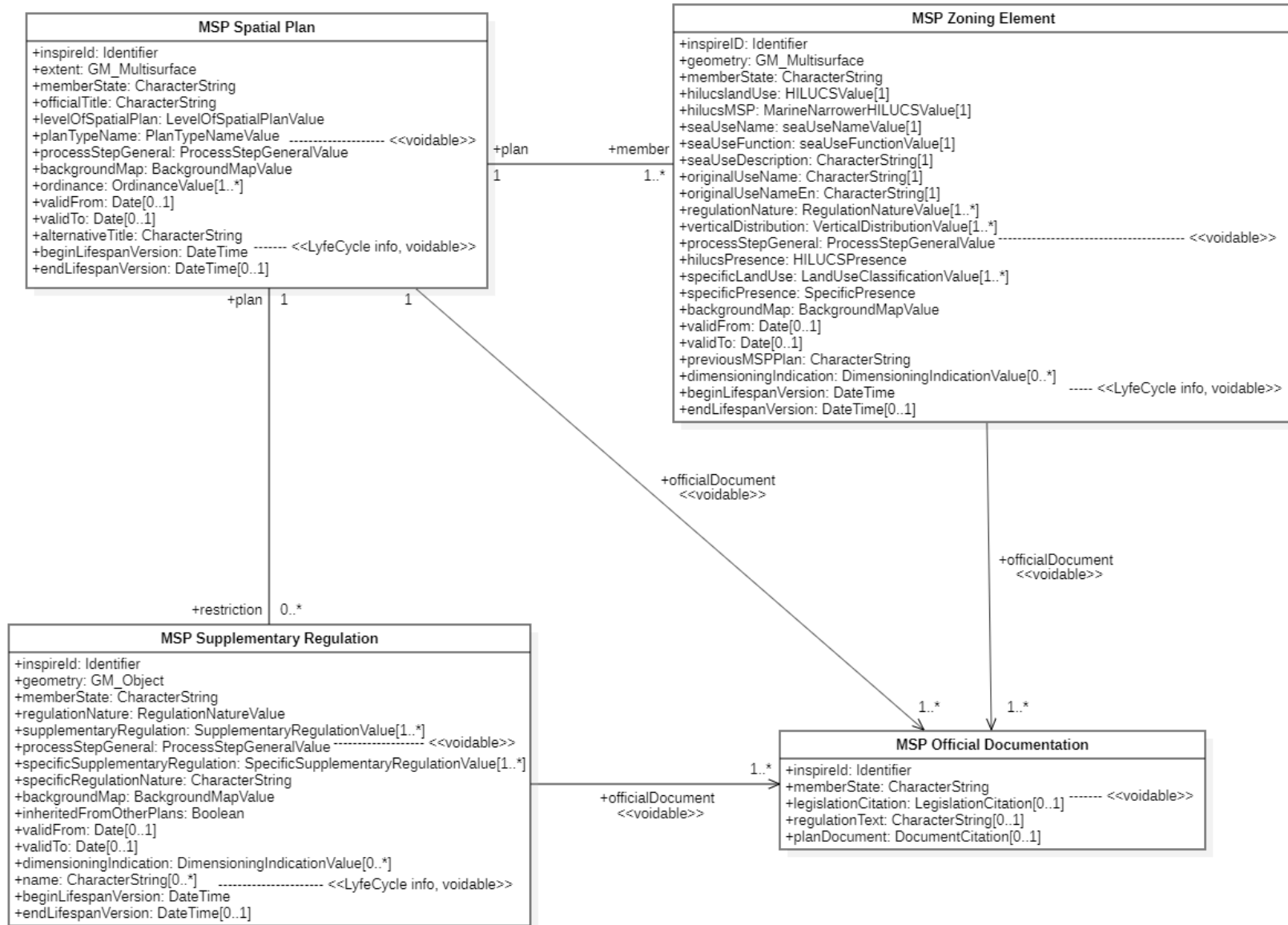


Figure 1 EMODnet Data model

2.2. Data specification

Feature type: MSP Spatial Plan

MSP Spatial Plan
+inspireId: Identifier
+extent: GM_Multisurface
+memberState: CharacterString
+officialTitle: CharacterString
+levelOfSpatialPlan: LevelOfSpatialPlanValue
+planTypeName: PlanTypeNameValue <<voidable>>
+processStepGeneral: ProcessStepGeneralValue
+backgroundMap: BackgroundMapValue
+ordinance: OrdinanceValue[1..*]
+validFrom: Date[0..1]
+validTo: Date[0..1]
+alternativeTitle: CharacterString
+beginLifespanVersion: DateTime <<LyfeCycle info, voidable>>
+endLifespanVersion: DateTime[0..1]

Figure 2 Data specification. Feature Type: MSP Spatial Plan

The attributes for the feature type MSP Spatial plan are described in the table below:

- In **BLUE** are the new attributes added (mainly from a literature review and HELCOM)
- In **GREEN** are the modifications from the original model developed in MSP INSPIRE data model
- The attributes with a **THICK BORDER** are mandatory
- The attributes with a THIN BORDER are voidable
- The attributes without “Attributes name .shp” will not be represented in the EMODnet’s Geoportal

Table 1. Feature Type: MSP Spatial Planning. Attributes and description

Feature type: MSP Spatial Plan			
Attributes: MSP INSPIRE data model	Attributes: EMODnet MSP dataset	Attributes name.shp	Description
LocalID	LocalID	LocalID	A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
VersionID	VersionID	VersionID	A version of ID, not compulsory. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
Namespace	OfficialSource	OffSource	Source URL's of the descriptive information about the MSP. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
extent	extent		Geometry of the feature
	MemberState	MS	Member State
officialTitle	OfficialTitle	OffTitle	Official title of the Spatial plan
levelOfSpatialPlan	LevelofSpatialPlan	LevelSpPla	Status of the plan, if applicable
planTypeName	PlanTypeName	PlanTyNam	Type name, if applicable
ProcessStepGeneral	ProcessStepGeneral		Step in the planning process
BackgroundMap	BackgroundMap		Background map that has been used for constructing the plan
Ordinance	Ordinance		Ordinance/s in relation to the steps of the planning process
validFrom	ValidFrom	ValidFrom	Date from the plan is valid
validTo	ValidTo	ValidTo	Date to the plan is valid
AlternativeTitle	AlternativeTitle		Unofficial title of the plan
BeginLifespanVersion	BeginLifespanVersion		Date and time at which this version of the spatial object was inserted or changed in the spatial data set
EndLifespanVersion	EndLifespanVersion		Date and time at which this version of the spatial object was superseded or retired in the spatial data set
officialDocument	officialDocument		Field that chains with the Official Documentation feature
	CoastDistM	CoastDistM	Coastal distance (in metres) to the closest coastal line point
	AreaKm2	AreaKm2	MSP Area (in km2)

Data specification – Feature type: MSP Zoning Element

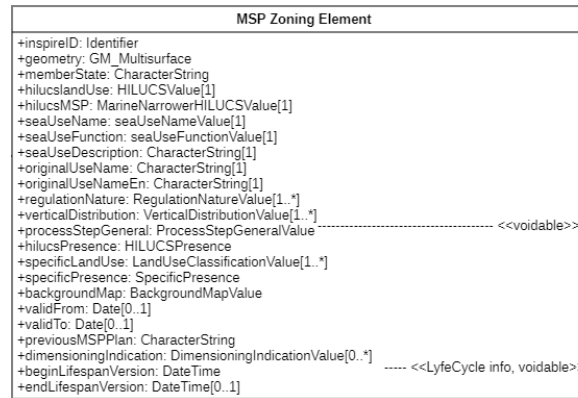


Figure 3 Data specification. Feature Type: MSP Zoning Element

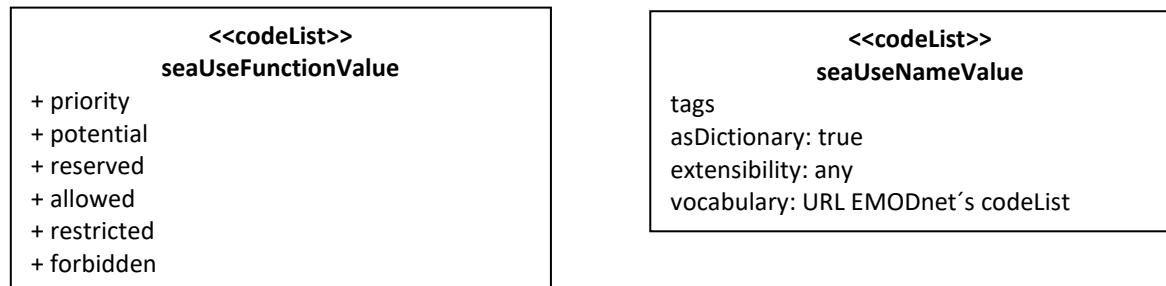


Figure 4 Data specification. SeaUseName and SeaUseFunction attributes

The attributes for the feature type MSP Zoning element are described in the table below:

- In **BLUE** are the new attributes added (mainly from a literature review and HELCOM)
- In **GREEN** are the modifications from the original model developed in MSP INSPIRE data model
- The attributes with a **THICK BORDER** are mandatory
- The attributes with a THIN BORDER are voidable
- The attributes without “Attributes name .shp” will not be represented in the EMODnet’s Geoportal

Table 2. Feature Type: MSP Zoning Element. Attributes and description

Feature type: MSP Zoning Element			
Attribute includes in the MSP INSPIRE data model	Proposed attributes for the EMODnet MSP dataset	Attributes name .shp	Description
LocalID	LocalID	LocalID	A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
VersionID	VersionID	VersionID	A version of ID, not compulsory. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
Namespace	OfficialSource	OffSource	Source URL's of the descriptive information about the MSP. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
Geometry	Geometry		Geometry of the feature
	MemberState	MS	Member State
hilucsLandUse	HilucsLandUse	HilucLU	HILUCS values included in the INSPIRE code list
hilucsMSP	hilucsMSP	hilucsMSP	Specific HILUCS developed for MSP by MSP INSPIRE data model. It will use the same code list as MSP INSPIRE data model.
	SeaUseName	SeaUseName	Specific uses of the marine area according to the EMODnet Themes
	SeaUseFunction	SeaUseFct	Priority, reserved, allowed, restricted, forbidden or potential use of the sea
	SeaUseDescription	SeaUseDsc	Description of the uses
	OriginalUseName	OriginUN	Official use in the original language
	OriginalUseNameEn	OriginUNEn	Official use in English
regulationNature	RegulationNature	RegNature	Type of regulation (e.g. Decree, Order, Law...)
verticalDirtribution	VerticalDistribution	VertDistr	A specific MSP data model attribute, describes where activities take place in vertical axis of marine space, including sea surface, water column, seabed and subsoil. It will use the same code list as MSP INSPIRE data model.
ProcessStepGeneral	ProcessStepGeneral		Step in the planning process
hilucsPresence	hilucsPresence		Number of land use HILUCS category in the spatial object

Feature type: MSP Zoning Element			
Attribute includes in the MSP INSPIRE data model	Proposed attributes for the EMODnet MSP dataset	Attributes name .shp	Description
specificLandUse	specificLandUse		Land use category according to the nomenclature specific to this data set
specificPresence	specificPresence	SpecPres	The presence of one or several land use classification values
backgroundMap	backgroundMap		Background map that has been used for constructing the plan
validFrom	validFrom	ValidFrom	Date from the plan is valid
validTo	validTo	ValidTo	Date to the plan is valid
	PreviousMSPPlan	PrevMSPPlan	A reference to the previous plan, if applicable
BeginLifespanVersion	BeginLifespanVersion		Date and time at which this version of the spatial object was inserted or changed in the spatial data set
EndLifespanVersion	EndLifespanVersion		Date and time at which this version of the spatial object was superseded or retired in the spatial data set
DimensioningIndication	DimensioningIndication		Specifications about the dimensioning of maritime developments
spatialPlanID	spatialPlanID	SPID	Field that chains with the Spatial Plan feature
officialDocument	officialDocument		Field that chains with the Official Documentation feature
	CoastDistM	CoastDistM	Coastal distance (in metres) to the closest coastal line point
	AreaKm2	AreaKm2	MSP Area (in km2)

Table 3. Example of MSP Zoning Element Feature functionality.

Identified geometry	MemberState	HilucsLandUse	HilucsMSP	SeaUseName	SeaUseFunction	SeaUseDescription	OriginalUseName	OriginalUseNameEN
xxx	xxx	1_4_2 Professional fishing	1_4_2 Professional fishing	Fishing areas	Allowed	Area important and reserved for navigations. Area suitable for sea fishing bottom trawling.	Pesca de arrastre	Fishing bottom trawling
		4_1_4 Water transport	4_1_6 Marine traffic lanes	Maritime Traffic flows	Reserved	Area important and reserved for navigations. Area suitable for sea fishing bottom trawling.	Navegación	Navigation
		4_1_4 Water transport	4_1_6 Marine traffic lanes	Maritime Traffic flows	Allowed	Area important and reserved for sea fishing bottom trawling. Area suitable for navigations.	Navegación	Navigation
		1_4_2 Professional fishing	1_4_2 Professional fishing	Fishing areas	Reserved	Area important and reserved for sea fishing bottom trawling. Area suitable for navigations.	Pesca de arrastre	Fishing bottom trawling

Geographic elements or areas could be destined to different sea uses and functionalities. Indeed, those geographic elements destined to the same sea use may have different functionality. Therefore, to solve these two challenges, SeaUseName, SeaUseFunction and SeaUseDescription attributes are included in MSP Zoning Element feature. For each use and for each function, a geographic element will be developed. With this methodology, our objective is to represent all MSP's uses in EMODnet's geoportal by category/name of the use, function or/and country. However, in the case that the functionality of a use is not defined in official MSP documentation, it will be described as "allowed". Finally, SeaUseDescription attribute is added to describe and clarify the uses and conditions of a specific geographic element.

Data specification – Feature type: MSP Supplementary Regulation

MSP Supplementary Regulation
+inspireId: Identifier
+geometry: GM_Object
+memberState: CharacterString
+regulationNature: RegulationNatureValue
+supplementaryRegulation: SupplementaryRegulationValue[1..*]
+processStepGeneral: ProcessStepGeneralValue <<voidable>>
+specificSupplementaryRegulation: SpecificSupplementaryRegulationValue[1..*]
+specificRegulationNature: CharacterString
+backgroundMap: BackgroundMapValue
+inheritedFromOtherPlans: Boolean
+validFrom: Date[0..1]
+validTo: Date[0..1]
+dimensioningIndication: DimensioningIndicationValue[0..*]
+name: CharacterString[0..*] <<LifeCycle info, voidable>>
+beginLifespanVersion: DateTime
+endLifespanVersion: DateTime[0..1]

Figure 5 Data specification. Feature Type: MSP Supplementary Regulation

The attributes for the feature type MSP Supplementary Regulation are described in the table below:

- In **BLUE** are the new attributes added (mainly from a literature review and HELCOM)
- In **GREEN** are the modifications from the original model developed in MSP INSPIRE data model
- The attributes with a **THICK BORDER** are mandatory
- The attributes with a THIN BORDER are voidable
- The attributes without “Attributes name .shp” will not be represented in the EMODnet’s Geoportal

Table 4. Feature Type: MSP Supplementary Regulation. Attributes and description

Feature type: MSP Supplementary Regulation			
Attribute includes in the MSP INSPIRE data model	Proposed attributes for the EMODnet MSP dataset	Attributes name .shp	Description
LocalID	LocalID	LocalID	A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
VersionID	VersionID	VersionID	A version of ID, not compulsory. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
Namespace	OfficialSource	OffSource	Source URL's of the descriptive information about the MSP. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
Geometry	Geometry		Geometry of the feature
	MemberState	MS	Member State
regulationNature	regulationNature		Type of regulation (e.g. Decree, Order, Law...)
supplementaryRegulation	supplementaryRegulation		Code of the supplementary regulation
ProcessStepGeneral	ProcessStepGeneral		Step in the planning process
specificSupplementaryRegulation	specificSupplementaryRegulation		Category of supplementary regulation
specificRegulationNature	specificRegulationNature		Regulation from a national perspective
backgroundMap	backgroundMap		Background map that has been used for constructing the plan
inheritedFromOtherPlans	inheritedFromOtherPlans		Supplementary regulation is/isn't inherited from other spatial plans
validFrom	validFrom		Date from the plan is valid
validTo	validTo		Date to the plan is valid
beginLifespanVersion	beginLifespanVersion		Date and time at which this version of the spatial object was inserted or changed in the spatial data set
endLifespanVersion	endLifespanVersion		Date and time at which this version of the spatial object was superseded or retired in the spatial data set
DimensioningIndication	DimensioningIndication		Specifications about the dimensioning of maritime developments
SpatialPlanID	SpatialPlanID	SPID	Field that chains with the Spatial Plan feature
officialDocument	officialDocument		Field that chains with the Official Documentation feature

Data specification – Feature type: MSP Official Documentation

MSP Official Documentation
+inspireId: Identifier
+memberState: CharacterString
+legislationCitation: LegislationCitation[0..1] ----- <<voidable>>
+regulationText: CharacterString[0..1]
+planDocument: DocumentCitation[0..1]

Figure 6 Data specification. Feature Type: MSP Official Documentation

The attributes for the feature type MSP Official Documentation are described in the table below:

- In **BLUE** are the new attributes added (mainly from a literature review and HELCOM)
- In **GREEN** are the modifications from the original model developed in MSP INSPIRE data model
- The attributes with a **THICK BORDER** are mandatory
- The attributes with a THIN BORDER are voidable
- The attributes without “Attributes name .shp” will not be represented in the EMODnet’s Geoportal


Table 5. Feature Type: MSP Official Documentation. Attributes and description


Feature type: MSP Official Documentation			
Attribute includes in the MSP INSPIRE data model	Proposed attributes for the EMODnet MSP dataset	Attributes name .shp	Description
LocalID	LocalID		A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
VersionID	VersionID		A version of ID, not compulsory. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
Namespace	OfficialSource		Source URL’s of the descriptive information about the MSP. A local identifier, assigned by the data provider. This is one of the three fields that composed InspireID
	MemberState	MS	Member State
legislationCitation	legislationCitation		Link to the text of the regulation
RegulationText	RegulationText		Text of the regulation
PlanDocument	PlanDocument		Citation of scanned plans and structural drawings


3. Table of correspondences: nomenclature of potential marine uses (EMODnet) and most relevant MSP references


This table summarizes the compatibility between the nomenclature selected by EMODNET and the marine uses described in the MSP directive and other initiatives. On one hand, a script shows those uses in which there is no compatibility between the **MSP EMODnet themes** with the uses of the other projects and directives under study. On the other, for those uses in which there are compatibilities, the most compatible marine use is reflected in the corresponding project or directive to its equivalent in **MSP EMODnet themes**.

Table 6. Table of correspondences of the EMODnet nomenclature: MSP Directive, MSFD Directive, INSPIRE land use themes, HELCOM and MSP INSPIRE Data Model.

MSP EMODNET THEMES 	MSP DIRECTIVE THEMES 2014/89/EU Art.8.2 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0089	MSFD DIRECTIVE THEMES 2017/845/EU ANNEX III https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1495097018132&uri=CELEX:32017L0845	INSPIRE LAND USE THEMES https://inspire.ec.europa.eu/codelist/HILUCSValue	HELCOM https://vasab.org/wp-content/uploads/2019/04/Guidelines-on-transboundary-MSP-output-data-structure-ADOPTEDbyVASAB_HELCOM.pdf (Annex 2)	MSP INSPIRE DATA MODEL THEMES http://www.geoportal.ulpgc.es/registro/plannedLandUse/HilucsExt/
Boundaries	-	-	6_1 Transitional Areas	-	6_1 Transitional Areas
Aquaculture (include algae)	Aquaculture areas	Cultivation of living resources	1_4_1 Aquaculture	Aquaculture	1_4_1_1 Aquaculture sea Water
Fishing areas	Fishing areas	Extraction of living resources	1_4_2 Professional fishing	Fishing	1_4_2 Professional fishing
Ports	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and	Transport	4_1_4 Water transport	Transport-ports	4_1_4_1_Harbours 4_1_4_1_1_Port 4_1_4_1_2_FishPort 4_1_4_1_3_Commercial Port

MSP EMODNET THEMES 	MSP DIRECTIVE THEMES 2014/89/EU Art.8.2 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0089	MSFD DIRECTIVE THEMES 2017/845/EU ANNEX III https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1495097018132&uri=CELEX:32017L0845	INSPIRE LAND USE THEMES https://inspire.ec.europa.eu/codelist/HILUCSValue	HELCOM https://vasab.org/wp-content/uploads/2019/04/Guidelines-on-transboundary-MSP-output-data-structure-ADOPTEDbyVASAB_HELCOM.pdf (Annex 2)	MSP INSPIRE DATA MODEL THEMES http://www.geoportal.ulpgc.es/registro/plannedLandUse/HilucsExt/
	aggregates, and for the production of energy from renewable sources				4_1_4_1_4_Cruises Ferries Port 4_1_4_1_5_Recreational Port
Ocean Energy Facilities	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Production of energy	2_4_4 Renewable energy production	Installations	2_4_4_Renewable Energy Production
Wind Farms	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Production of energy	2_4_4 Renewable energy production	Installation infrastructures-owf	2_4_4_1 Renewable energy production wind

MSP EMODNET THEMES 	MSP DIRECTIVE THEMES 2014/89/EU Art.8.2 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0089	MSFD DIRECTIVE THEMES 2017/845/EU ANNEX III https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1495097018132&uri=CELEX:32017L0845	INSPIRE LAND USE THEMES https://inspire.ec.europa.eu/codelist/HILUCSValue	HELCOM https://vasab.org/wp-content/uploads/2019/04/Guidelines-on-transboundary-MSP-output-data-structure-ADOPTEDbyVASAB_HELCOM.pdf (Annex 2)	MSP INSPIRE DATA MODEL THEMES http://www.geoportal.ulpgc.es/registro/plannedLandUse/HilucsExt/
Maritime Traffic flows	Maritime transport routes and traffic flows	Transport	4_1_4 Water transport	Transport-flow	4_1_6 Marine traffic lanes
Military areas	Military training areas	Security/defense	3_3_1 Public administration defense and social security services	Military areas	6_8_Militar Area
Nature Protection Conservation	Nature and species conservation sites and protected areas	-	6_3 Natural areas not in other economic use	Nature	6_7_1_Marine Protected Area
Raw material extraction	Raw material extraction areas	Extraction of non-living resources	1_3_2 Mining of metal ores 1_3_1 Mining of energy producing materials	Extraction	1_3 Mining and quarrying
Oil and Gas	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Extraction of non-living resources	2_4_2 Fossil fuel based energy production	Installations Extraction	1_3_1_Mining Of Energy Producing Materials








MSP EMODNET THEMES 	MSP DIRECTIVE THEMES 2014/89/EU Art.8.2 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0089	MSFD DIRECTIVE THEMES 2017/845/EU ANNEX III https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1495097018132&uri=CELEX:32017L0845	INSPIRE LAND USE THEMES https://inspire.ec.europa.eu/codelist/HILUCSValue	HELCOM https://vasab.org/wp-content/uploads/2019/04/Guidelines-on-transboundary-MSP-output-data-structure-ADOPTEDbyVASAB_HELCOM.pdf (Annex 2)	MSP INSPIRE DATA MODEL THEMES http://www.geoportal.ulpgc.es/registro/plannedLandUse/HilucsExt/
Scientific research	Scientific research	Education and research	3_2_2 Professional technical and scientific Services	Research	3_2_2 Professional technical and scientific services
Cables	Submarine cable and pipeline routes	Production of energy	4_3_1 Electricity gas and thermal power distribution services	Line-electricity	4_3_5 Submarine cables
Pipelines	Submarine cable and pipeline routes	Extraction of non-living resources	4_3_1 Electricity gas and thermal power distribution services	Line-pipeline	4_3_1 Electricity gas and thermal power distribution services
Tourism and recreation	Tourism	Tourism and leisure	3_4_4 Open air recreation areas	Tourism	3_4_6_3_Coastal Tourism
Cultural heritage	Underwater cultural heritage	-	3_4_1 Cultural services	Heritage	3_4_7 Underwater cultural heritage
Disposal areas	-	Urban and industrial uses	4_3_3 Waste treatment	Other-dumping	4_3_3 Waste treatment
Other/miscellaneous	-	-	6 Other uses	Other	6 Other uses

4. The EMODnet nomenclature in practice: implementation using the official MSPs of four Member States.

The MSP already approved by Belgium, Germany and Latvia have been used to test the validity and applicability of the EMODnet nomenclature, as well as the capability of the correspondence table to keep track of how a given use in EMODnet is defined in the other main MSP initiatives.








In addition, a similar exercise was carried out using The Netherlands MSP, remarking that this one is a policy document and not an official MSP according to the MSP Directive.








Table 7. EMODnet nomenclature: practical application to the MSP of Belgium, Germany (Federal and Territorial seas) and Latvia








 MSP EMODNET THEMES	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP ¹ Territorial Sea 	Germany: SH ² Territorial Sea 	Latvia 
Boundaries	-	-	6_1 Transitional Areas	-	6_1 Transitional Areas	Not included in the plan	Boundaries - Territorial sea - EEZ - International borders Planning Area	Boundaries - Territorial sea - EEZ - International borders (Planning Area)	Not included in the plan	Frontiers	Not included in the plan








¹ Mecklenburg – Vorpommern








² Schleswig – Holstein








 <p>MSP EMODNET THEMES</p>	<p>MSP DIRECTIVE THEMES 2014/89/E U Art.8.2</p>	<p>MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III</p>	<p>INSPIRE LAND USE THEMES</p>	<p>HELCOM</p>	<p>MSP INSPIRE DATA MODEL THEMES</p>	<p>Belgium </p>	<p>Germany Federal MSP BALTIC EEZ </p>	<p>Germany Federal MSP NORTH SEA EEZ </p>	<p>Germany: LMVP¹ Territorial Sea </p>	<p>Germany: SH² Territorial Sea </p>	<p>Latvia </p>
							<ul style="list-style-type: none"> - Boundaries of Planning Area - Northern Approach Seaports of Swinünde and Stefin. (Conflict with Poland) 	<ul style="list-style-type: none"> - Boundaries of Planning Area 			
<p>Aquaculture (include algae)</p>	<p>Aquaculture areas</p>	<p>Cultivation of living resources</p>	<p>1_4_1 Aquaculture</p>	<p>Aquaculture</p>	<p>1_4_1_1 Aquaculture sea Water</p>	<p>Zones delimited for sustainable aquaculture</p>	<p>Not included in the plan</p>	<p>Not included in the plan</p>	<p>Not included in the plan</p>	<p>Not included in the plan</p>	<p>Mussel-aquaculture pilot-farm area</p>


 <p>MSP EMODNET THEMES</p>	<p>MSP DIRECTIVE THEMES 2014/89/E U Art.8.2</p>	<p>MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III</p>	<p>INSPIRE LAND USE THEMES</p>	<p>HELCOM</p>	<p>MSP INSPIRE DATA MODEL THEMES</p>	<p>Belgium</p> 	<p>Germany Federal MSP BALTIC EEZ</p> 	<p>Germany Federal MSP NORTH SEA EEZ</p> 	<p>Germany: LMVP¹ Territorial Sea</p> 	<p>Germany: SH² Territorial Sea</p> 	<p>Latvia</p> 
<p>Fishing areas</p>	<p>Fishing areas</p>	<p>Extraction of living resources</p>	<p>1_4_2 Professiona l fishing</p>	<p>Fishing</p>	<p>1_4_2 Professiona l fishing</p>	<p>Fishery manageme nt - Normal regime</p> <p>Fishery manageme nt Zones 1- 5</p>	<p>Not included in the plan</p>	<p>Not included in the plan</p>	<p>Areas for fisheries</p>	<p>Not included in the plan</p>	<p>Not included in the plan</p>








	MSP DIRECTIVE THEMES 2014/89/EU Art.8.2	MSFD DIRECTIVE THEMES 2017/845/EU ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP¹ Territorial Sea 	Germany: SH² Territorial Sea 	Latvia 
Ports	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Transport	4_1_4 Water transport	Transport-ports	4_1_4_1_Harbours 4_1_4_1_1_Port 4_1_4_1_2_FishPort 4_1_4_1_3_Commercial Port 4_1_4_1_4_Cruises Ferries Port 4_1_4_1_5_Recreational Port	Zone designated for the potential expansion of Ostend's seaport Zone designated for the potential expansion of the seaport of Zeebrugge	Not included in the plan	Not included in the plan	Ports	Ports	Port roadstead Port area Port Fishing landing site
Ocean Energy Facilities	Installations and infrastructures for the exploration,	Production of energy	2_4_4 Renewable energy production	Installations	2_4_4_Renewable Energy Production	Zone for different forms of renewable energy.	Not included in the plan	Not included in the plan	Not included in the plan	Not included in the plan	Not included in the plan








 <p>MSP EMODNET THEMES</p>	<p>MSP DIRECTIVE THEMES 2014/89/E U Art.8.2</p>	<p>MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III</p>	<p>INSPIRE LAND USE THEMES</p>	<p>HELCOM</p>	<p>MSP INSPIRE DATA MODEL THEMES</p>	<p>Belgium </p>	<p>Germany Federal MSP BALTIC EEZ </p>	<p>Germany Federal MSP NORTH SEA EEZ </p>	<p>Germany: LMVP¹ Territorial Sea </p>	<p>Germany: SH² Territorial Sea </p>	<p>Latvia </p>
	<p>exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources</p>					<p>Energy atoll 1 Energy atoll 2</p>					
<p>Wind Farms</p>	<p>Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other</p>	<p>Production of energy</p>	<p>2_4_4 Renewable energy production</p>	<p>Installation infrastructures-owf</p>	<p>2_4_4_1 Renewable energy production wind</p>	<p>Zone for different forms of renewable energy. Wind energy</p>	<p>Energy: - Priority area for Offshore Wind energy - Approved</p>	<p>Energy: - Priority area for Offshore Wind energy - Approved wind farms</p>	<p>Areas for wind energy facilities</p>	<p>Energy and raw material: - Offshore wind farms</p>	<p>Not included in the plan</p>








 <p>MSP EMODNET THEMES</p>	<p>MSP DIRECTIVE THEMES 2014/89/E U Art.8.2</p>	<p>MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III</p>	<p>INSPIRE LAND USE THEMES</p>	<p>HELCOM</p>	<p>MSP INSPIRE DATA MODEL THEMES</p>	<p>Belgium </p>	<p>Germany Federal MSP BALTIC EEZ </p>	<p>Germany Federal MSP NORTH SEA EEZ </p>	<p>Germany: LMVP¹ Territorial Sea </p>	<p>Germany: SH² Territorial Sea </p>	<p>Latvia </p>
	<p>energy resources, of minerals and aggregates, and for the production of energy from renewable sources</p>						<p>windfarms</p>	<p>- Reference Area Offshore Wind Energy</p>			
<p>Maritime Traffic flows</p>	<p>Maritime transport routes and traffic flows</p>	<p>Transport</p>	<p>4_1_4 Water transport</p>	<p>Transport-flow</p>	<p>4_1_6 Marine traffic lanes</p>	<p>Normal regime for shipping Shipping routes (Northhinder South, Noordhinder junctie, Westhinder) Shipping precautions</p>	<p>Shipping routes: - Priority areas for shipping - Reservation areas for shipping</p>	<p>Shipping routes: - Priority areas for shipping - Reservation areas for shipping</p>	<p>Areas for navigation</p>	<p>Not included in the plan</p>	<p>Navigation line Recommended shipping route Traffic separation scheme Deep water way</p>








 <p>MSP EMODNET THEMES</p>	<p>MSP DIRECTIVE THEMES 2014/89/E U Art.8.2</p>	<p>MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III</p>	<p>INSPIRE LAND USE THEMES</p>	<p>HELCOM</p>	<p>MSP INSPIRE DATA MODEL THEMES</p>	<p>Belgium </p>	<p>Germany Federal MSP BALTIC EEZ </p>	<p>Germany Federal MSP NORTH SEA EEZ </p>	<p>Germany: LMVP¹ Territorial Sea </p>	<p>Germany: SH² Territorial Sea </p>	<p>Latvia </p>
						<p>ry area Westhinder</p> <p>Shipping deep water route approach Westersche Ide</p> <p>Shipping to avoid area Westhinder</p> <p>Anchor area</p>	<p>For informatio n only Shipping</p> <p>Traffic separation scheme</p> <p>Deep Water Route</p> <p>Precautiona ry Area</p>	<p>For informatio n only Shipping</p> <p>Traffic separation scheme</p> <p>Deep Water Route</p> <p>Precautiona ry Area</p> <p>Anchoring Area</p>			<p>Anchorage area</p> <p>Obstruction for navigation</p> <p>Obstruction for navigation</p> <p>Main shipping direction</p> <p>Buffer zone around technical means of navigation- range of light</p> <p>Former mined areas,</p>








MSP EMODNET THEMES  EMODnet <small>European Marine Observation and Data Network</small>	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP¹ Territorial Sea 	Germany: SH² Territorial Sea 	Latvia 
											opened for navigation Former mined areas, closed for navigation








 MSP EMODNET THEMES	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP ¹ Territorial Sea 	Germany: SH ² Territorial Sea 	Latvia 
Military areas	Military training areas	Security/defence	3_3_1 Public administration defence and social security services	Military areas	6_8_Military Area	Zone for target practice from land to sea Zone for exercises on laying, detecting and sweeping mines Shooting exercises at sea to floating targets Zone for detonation exercises and assignments	Military Use: military exercise area	Military Use: military exercise area	Not included in the plan	Not included in the plan	Buffer zone of military aviation training area Military training area Buffer zone of surveillance tower (2): - Buffer zone - For state protection purposes








	MSP DIRECTIVE THEMES 2014/89/EU Art.8.2	MSFD DIRECTIVE THEMES 2017/845/EU ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP¹ Territorial Sea 	Germany: SH² Territorial Sea 	Latvia 
Nature Protection Conservation	Nature and species conservation sites and protected areas	-	6_3 Natural areas not in other economic use	Nature	6_7_1_Marine Protected Area	Special zones for nature conservation Vlaamse Banken Trapegeer stroombank Special protection zones for birds Targeted marine reserve Bay of Heist	Nature conservation: - Natura 2000-SAC Habitat Directive - Natura 2000-SPA Bird Directive	Nature conservation: - Natura 2000-SAC Habitat Directive - Natura 2000-SPA Bird Directive	Areas for coastal protection and raw materials Areas for landscape conservation and management	Natural Parks/National Parks Landscape reserves Biotopes	Marine protected area (3): - Without functional zone - Nature reserve zone - Neutral zone Biosphere Reserve landscape protection zone Nature reserve if it does not have functional zoning








 MSP EMODNET THEMES	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP ¹ Territorial Sea 	Germany: SH ² Territorial Sea 	Latvia 
Raw material extraction	Raw material extraction areas	Extraction of non-living resources	1_3_2 Mining of metal ores 1_3_1 Mining of energy producing materials	Extraction	1_3 Mining and quarrying	Sand and gravel extraction sectors Zones delimited for dumping dredging sludge Reservation zone for the dumping of dredging sludge	Exploitation of Natural Resources - sand and gravel exploitation (prod. License)	Exploitation of Natural Resources - sand-gravel (plan approved) - sand-gravel (project in approval procedure) - sand-gravel (license)	Areas for coastal protection and raw materials	Energy and raw material: - Raw material extraction - Sediments extraction	Sediment deposition area
Oil and Gas	Installations and infrastructures for the exploration, exploitation and extraction	Extraction of non-living resources	2_4_2 Fossil fuel based energy production	Installations Extraction	1_3_1_Mining Of Energy Producing Materials	Not included in the plan	Not included in the plan	Exploitation of Natural Resources natural gas (license)	Not included in the plan	Energy and raw material: Oil extraction	LICENSING AREAS Licensing area for search of hydrocarbons








 MSP EMODNET THEMES European Marine Observation and Data Network	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP ¹ Territorial Sea 	Germany: SH ² Territorial Sea 	Latvia 
	of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources										Licensing area for exploration and extraction of hydrocarbo ns Licensing field for exploration and extraction of hydrocarbo ns
Scientific research	Scientific research	Education and research	3_2_2 Professiona l technical and scientific Services	Research	3_2_2 Professiona l technical and scientific services	Research Reference area for monitoring the impact on the environmen t of sand	Research (reservation area)	Research (reservation area)	Not included in the plan	Not included in the plan	Not included in the plan

 MSP EMODNET THEMES	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP ¹ Territorial Sea 	Germany: SH ² Territorial Sea 	Latvia 
						extraction and wind farms Zone demarcated for testing new methods of seawall Industrial research, experiments in realistic conditions					
Cables	Submarine cable and pipeline routes	Production of energy	4_3_1 Electricity gas and thermal power distribution services	Line-electricity	4_3_5 Submarine cables	Corridor for cables and pipelines	Submarine cables Submarine cables High voltage cable (in use)	Submarine cables Submarine cables High voltage cable (in use)	Maritime cable corridor Areas for line technical infrastructure	Not included in the plan	Buffer zone of communication cable (in the sea) Underwater electronic

 <p>MSP EMODNET THEMES</p>	<p>MSP DIRECTIVE THEMES 2014/89/E U Art.8.2</p>	<p>MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III</p>	<p>INSPIRE LAND USE THEMES</p>	<p>HELCOM</p>	<p>MSP INSPIRE DATA MODEL THEMES</p>	<p>Belgium </p>	<p>Germany Federal MSP BALTIC EEZ </p>	<p>Germany Federal MSP NORTH SEA EEZ </p>	<p>Germany: LMVP¹ Territorial Sea </p>	<p>Germany: SH² Territorial Sea </p>	<p>Latvia </p>
							<p>High voltage cable (approved)</p> <p>Data cable (in use)</p> <p>Data cable (approved)</p>	<p>High voltage cable (approved)</p> <p>Data cable (in use)</p> <p>Data cable (approved)</p>			<p>communications</p> <p>330 Kw electric line on land</p>
<p>Pipelines</p>	<p>Submarine cable and pipeline routes</p>	<p>Extraction of non-living resources</p>	<p>4_3_1 Electricity gas and thermal power distribution services</p>	<p>Line-pipeline</p>	<p>4_3_1 Electricity gas and thermal power distribution services</p>	<p>Corridor for cables and pipelines</p>	<p>Pipelines; - reservation area for pipelines</p> <p>Pipelines: natural gas (planned)</p>	<p>Pipelines: - Reservation Area pipelines - Priority areas pipelines</p> <p>Pipelines: natural gas (in use)</p>	<p>Not included in the plan</p>	<p>Not included in the plan</p>	<p>Not included in the plan</p>

 MSP EMODNET THEMES	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP ¹ Territorial Sea 	Germany: SH ² Territorial Sea 	Latvia 
Tourism and recreation	Tourism	Tourism and leisure	3_4_4 Open air recreation areas	Tourism	3_4_6_3_C coastal Tourism	Recreational activities	Not included in the plan	Not included in the plan	Areas for tourism	Areas for tourism and recreation: Central area/Area for develop- ment	Forbidden area for diving Restricted area for diving
Cultural heritage	Underwater cultural heritage	-	3_4_1 Cultural services	Heritage	3_4_7 Underwater cultural heritage	Not included in the plan	Not included in the plan	Not included in the plan	Not included in the plan	Not included in the plan	Cultural monument Buffer zone of cultural monument

 <p>MSP EMODNET THEMES</p>	<p>MSP DIRECTIVE THEMES 2014/89/E U Art.8.2</p>	<p>MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III</p>	<p>INSPIRE LAND USE THEMES</p>	<p>HELCOM</p>	<p>MSP INSPIRE DATA MODEL THEMES</p>	<p>Belgium </p>	<p>Germany Federal MSP BALTIC EEZ </p>	<p>Germany Federal MSP NORTH SEA EEZ </p>	<p>Germany: LMVP¹ Territorial Sea </p>	<p>Germany: SH² Territorial Sea </p>	<p>Latvia </p>
											<p>WRECKS (6 subgroups): danger for navigation, not dangerous for navigation, remains of a wreck, wreck showing any portion of hull, with important cultural heritage and with important cultural heritage outside the areas</p>

 MSP EMODNET THEMES	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP ¹ Territorial Sea 	Germany: SH ² Territorial Sea 	Latvia 
											forbidden for diving
Disposal areas	-	Urban and industrial uses	4_3_3 Waste treatment	Other-dumping	4_3_3 Waste treatment	Outlet at sea	Not included in the plan	Not included in the plan	Not included in the plan	Not included in the plan	Sewage pipe
Other/miscellaneous	-	-	6 Other uses	Other	6 Other uses	Zone demarcated for the protection of the closed ammunition dump Oostdyck	Miscellaneous: - Area of potential Fehman Belt link - Measurement/Convert	Miscellaneous: - Previous ammunition area - Measurement/Convert	8 final layers	Not included in the plan	Coastal erosion risk area Explosives dumping site Explosives dumping ground










MSP EMODNET THEMES  EMODnet <small>European Marine Observation and Data Network</small>	MSP DIRECTIVE THEMES 2014/89/E U Art.8.2	MSFD DIRECTIVE THEMES 2017/845/E U ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Belgium 	Germany Federal MSP BALTIC EEZ 	Germany Federal MSP NORTH SEA EEZ 	Germany: LMVP¹ Territorial Sea 	Germany: SH² Territorial Sea 	Latvia 
						Westhinder Radars and masts	er Platfor m	er Platfor m			Lighthouse Surveillance towers

Table 8. EMODnet nomenclature: practical application to the MSP Policy document of The Netherlands.

MSP EMODNET THEMES 	MSP DIRECTIVE THEMES 2014/89/EU Art.8.2	MSFD DIRECTIVE THEMES 2017/845/EU ANNEX III	INSPIRE LAND USE THEMES	HELCOM	MSP INSPIRE DATA MODEL THEMES	Netherlands (Policy Document NOT Plan) 
Boundaries	-	-	6_1 Transitional Areas	-	6_1 Transitional Areas	Not included in the plan
Aquaculture (include algae)	Aquaculture areas	Cultivation of living resources	1_4_1 Aquaculture	Aquaculture	1_4_1_1 Aquaculture sea Water	Aquaculture
Fishing areas	Fishing areas	Extraction of living resources	1_4_2 Professional fishing	Fishing	1_4_2 Professional fishing	Fishing
Ports	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Transport	4_1_4 Water transport	Transport-ports	4_1_4_1_Harbours 4_1_4_1_1_Port 4_1_4_1_2_FishPort 4_1_4_1_3_Commercial Port 4_1_4_1_4_Cruises Ferries Port 4_1_4_1_5_Recreational Port	Not included in the plan

Ocean Energy Facilities	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Production of energy	2_4_4 Renewable energy production	Installations	2_4_4_Renewable Energy Production	Offshore renewable energy production
Wind Farms	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Production of energy	2_4_4 Renewable energy production	Installation infrastructures-owf	2_4_4_1 Renewable energy production wind	Offshore renewable energy production
Maritime Traffic flows	Maritime transport routes and traffic flows	Transport	4_1_4 Water transport	Transport-flow	4_1_6 Marine traffic lanes	Shipping
Military areas	Military training areas	Security/defence	3_3_1 Public administration defence and social security services	Military areas	6_8_Militar Area	Military

Nature Protection Conservation	Nature and species conservation sites and protected areas	-	6_3 Natural areas not in other economic use	Nature	6_7_1_Marine Protected Area	Nature protection
Raw material extraction	Raw material extraction areas	Extraction of non-living resources	1_3_2 Mining of metal ores 1_3_1 Mining of energy producing materials	Extraction	1_3 Mining and quarrying	Mineral extraction
Oil and Gas	Installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources	Extraction of non-living resources	2_4_2 Fossil fuel based energy production	Installations Extraction	1_3_1_Mining Of Energy Producing Materials	Oil and gas exploitation
Scientific research	Scientific research	Education and research	3_2_2 Professional technical and scientific Services	Research	3_2_2 Professional technical and scientific services	Not included in the plan
Cables	Submarine cable and pipeline routes	Production of energy	4_3_1 Electricity gas and thermal power distribution services	Line-electricity	4_3_5 Submarine cables	Submarine cables and pipelines
Pipelines	Submarine cable and pipeline routes	Extraction of non-living resources	4_3_1 Electricity gas and thermal power distribution services	Line-pipeline	4_3_1 Electricity gas and thermal power distribution services	Submarine cables and pipelines
Tourism and recreation	Tourism	Tourism and leisure	3_4_4 Open air recreation areas	Tourism	3_4_6_3_Coastal Tourism	Tourism (incl. recreation and sports)

Cultural heritage	Underwater cultural heritage	-	3_4_1 Cultural services	Heritage	3_4_7 Underwater cultural heritage	Under water cultural heritage
Disposal areas	-	Urban and industrial uses	4_3_3 Waste treatment	Other-dumping	4_3_3 Waste treatment	Not included in the plan
Other/miscellaneous	-	-	6 Other uses	Other	6 Other uses	Not included in the plan