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Deliverable D.T3.1.1 Guidelines for identifying and sharing relevant spatial data in MSP

Cross-border case

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CONTENTS

BACKGROUND

Spatial information forms the basis of spatial planning. It is present in the pre-planning stage, in the mapping of the current state of the planning area, analysing the interactions between interests and evaluating and communicating planning options. Compared to land-based spatial planning, Marine Spatial Planning (MSP) faces many additional challenges, including cross-border and data availability issues and the addition of the vertical dimension.

This guide aims at presenting a step-by-step approach to utilising spatial data in cross-border MSP. It seeks to complement existing MSP guides in a concise and practice-oriented way, instead of forming a comprehensive manual. Particularly, the guide refers to UNESCO IOC's guide "Marine Spatial Planning – A step-by-step approach to ecosystem-based management" (Ehler & Douvere 2009). This guide introduces each step of the MSP spatial data process in a general way and includes practical tips, arising from experiences of an MSP pilot project (Plan4Blue in the Gulf of Finland). It is prepared in four steps, conforming to the workflow of an ordinary MSP process:

- Guidelines for identifying and sharing relevant spatial data in MSP (ready in April 2017)
- Guidelines for harmonising, producing and managing cross-border spatial data (July 2017)
- Guidelines for spatial modelling and analysis to produce data and identify interactions of interests (January 2019)
- Guidelines for visualising spatial MSP information effectively on maps (June 2019)

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FREQUENTLY USED TERMS

Data collection plan – A preliminary plan of which phenomena should be presented on maps, aimed at guiding data inventory and collection

Map plan – A preliminary plan of the map outputs and other products based on spatial data, aimed at guiding the data collection plan and creating a time table

MSP – Maritime/Marine spatial planning

GUIDELINES FOR IDENTIFYING AND SHARING RELEVANT SPATIAL DATA IN MSP

Step 1. Identify plan area and time

(Related to “Step 3” in Ehler & Douvere 2009)

1.1 Determine plan area on map

Practical tips

- Involving MSP officials and experts, determine (and negotiate) borders for the MSP in spatial data format.
- Unless the plan area is dictated from above, prefer borders for the MSP that conform to established administrative borders, such as the exclusive economic zone, territorial sea, counties and municipalities. You may also consider clear, established physical borders, such as sub-basins.
- Negotiate the amount of terrestrial areas included in the MSP area: it may be useful to formally incorporate the coastal zone and its processes, although they can be taken into account without extending the plan area on the land.
- Consider relevant scale. Often cross-border MSP examines processes at a coarser spatial scale than other spatial planning processes. Therefore, the borders of the planning area may follow e.g. generalised administrative borders (e.g. conforming to spatial datasets at a scale of 1:1 Million instead of 1:10 000).
- Note that MSP analysis boundaries do not have to coincide with boundaries for management (and should not if major ecosystems/activities have a different distribution). Thus, the plan area may be larger than management boundaries.

1.2 Determine base year and target year

Practical tips

- Before identifying data and analysis needs, the base year (or base period) and target year (or target period) should be clear.
- The target year (or period) is usually dictated from above, and conforms to other spatial planning processes. The target year may have a large influence on the selection of relevant processes and analyses.
- The base year may be less regulated but highly relevant for spatial data acquisition. It should be selected to correspond to the beginning of the process or earlier. The base year determines the “current” conditions that will be used for mapping the current status of the plan area. Usually the most recent data sources are preferred in despite the base year. However, sometimes the MSP process may last several years making the base year a relevant decision (process 2015-2020, base year 2015).

Step 2. Identify needs

2.1 Create a data collection plan

Practical tips

- Involving subject experts, identify MSP-relevant environmental and socio-economic properties (distribution of activities, plans and current conflict areas) that have a spatial distribution (2D or 3D; and temporal)

- Unless specifically required, do not aim at a comprehensive inventory of phenomena: everything is at least remotely linked to the use of marine space and has some spatial properties. Moreover, there is an increasing and already excessive amount of spatial data available.

- Instead of going through available data, it may be useful to start the identification process from outlining the desirable outputs (e.g. maps) that will be used for communicating and negotiating MSP: the current marine status, future scenarios and planning options. In other words, make a preliminary plan of which phenomena should be presented on maps ("**data collection plan**") to optimally communicate and negotiate MSP in each step of the process. The data collection plan should then guide the data acquisition process.

- When involving experts, make them understand the relevant scale and generality of the MSP process in question. Often cross-border MSP covers larger geographical areas and examines processes at a distinctly coarser spatial scale than other spatial planning processes. These characteristics should guide the selection of phenomena and the level of detail relevant for the process.

- Start the expert involvement from MSP officials and MSP experts across administrative borders: they will most likely have the best understanding of the most MSP-relevant properties and can help in delineating the data needs. Maintain balance between administrative units, since they may have different circumstances and views.

- After that, involve selected experts from different sectors, first introducing your overall data collection plan and then asking for their comments and suggestions. While keeping the overall plan in mind, allow the subject experts to influence the precise selection of environmental or socio-economic properties related to their sector. Maintain balance between administrative units and sectors. Keep the number of consulted experts to a minimum and prefer those with background with MSP.

- Don't let available data guide the discussions at this point.

- Evaluate the data collection plan keeping time constraints and balance between sectors in mind.

- For further inspiration, see available inventories on MSP data needs and availability, for example that of Cahill *et al.* (2016).

2.2 Identify spatial analysis needs

Practical tips

- It may be useful to start discussing spatial analysis needs already at this point, since it can take some time to develop the ideas. Analysis needs may also guide the data identification process (Step 3). However, mapping of the current status of the plan area often brings up further analysis ideas at a later stage.

- Subject experts may be new to spatial analysis and need some examples of spatial analysis possibilities to trigger their imagination. The examples could showcase e.g. neighbourhood analysis (buffering), overlay analysis, trend surface analysis, spatial interpolation and spatial modelling. Best examples use real marine data and issues that could arise from the MSP context. For example, overlay analysis could be demonstrated with data of different types of restrictions and the analysis would determine the overlapping restrictions and restriction-free area. Determining caution zones (of different radiuses) around fairways (of different categories) and then calculating the amount of current fish catch inside the caution areas would be a practical example of neighbourhood analysis.

2.3 Create a map plan

Practical tips

- Identify maps and other spatial data products that are needed in the MSP process.
- A preliminary plan of the map outputs ("**map plan**") and other products based on spatial data may have been developed already at Step 2.1, as suggested. If not, creating (or updating) one now will be a good tool in planning the time table and guiding data collection and analysis efficiently.
- Utilise the map plan to edit the data collection plan created in Step 2.1.
- The guide of Ehler & Douvere (2009) gives an overview of the MSP process and each phase where maps are needed: Defining MSP boundaries ("Step 3 Task 3"), mapping current conditions ("Step 5"), mapping future conditions ("Step 6"), approving and communicating the plan ("Step 7") and possibly beyond. This guide may help to identify the number and content of maps and other products.
- The map plan should be reviewed by the coordinating group of the MSP process and people responsible for the processes' stakeholder involvement and communication. For example, they have the updated knowledge of the planned stakeholder meetings and their nature, the stages when the progress of the process is being published to the wide audience etc. This will ultimately determine the type of maps needed (e.g. large workshop posters, digital images, online spatial data visualisations, board games, communication material or official zoning maps).
- Table 1 presents an example of a list of maps and their target audience. They are maps of the current conditions of the Gulf of Finland (in project Plan4Blue).

Table 1. Example of a list of maps and their target audience. They are maps of the current conditions of the Gulf of Finland (in project Plan4Blue)

Map	Project management	Delphi panel	Workshop	Web pages, communication
Project area options	x			
Basemap	x	x	x	x
Restricted areas		x	x	
Overlapping restrictions		x	x	
Marine traffic		x	x	
Population and human pressure		x	x	
Blue business		x	x	
Nature values		x	x	
Environmental risk profile			x	
Coastal municipalities	x			

2.4 Construct a timetable

Practical tips

- Construct a timetable for data identification, collection, management, analysis and visualisation. A time table will help to proceed efficiently and evaluate the progression.
- Gather all information of the size of workforce, time constraints and the amount of data to be gathered, analyses to be done and maps to be made. Important and fixed dates, such as the publication dates of workshop material, current marine status reports, first scenario drafts and MSP options form the basis of the time table.
- Include main stages of the spatial data utilisation in the time table: data identification, data management, spatial analysis and modelling and cartographic visualisation.
- Apart from the fixed dates, the time table should be allowed to be flexible since new ideas will be adopted along the way and others abandoned.

Step 3. Identify data

(Related to “Step 5” in Ehler & Douvere 2009)

3.1 Identify data providers

Practical tips

- Utilising subject experts and using the data collection plan developed in Step 2.1, collect a list of relevant and reliable data providers. International marine organisations are often the best sources of seamless data with international coverage. However, the resolution of their datasets may not be adequate for some smaller scale MSP processes. In the case of the Gulf of Finland and the Plan4Blue project, HELCOM (Baltic Marine Environment Protection Commission – Helsinki Commission) was identified as the main data provider. Other important sources in Europe include IMO (International Maritime Organization) and EMODnet (The European Marine Observation and Data Network).
- Identify spatial data portals specifically designed to serve MSP. For example, Finnish MSP data will be mainly found from two portals (situation in April 2017):
    - HELCOM Baltic Sea data and map service, already running and distributing data for a larger geographical area: http://maps.helcom.fi/website/mapservice/index.html
    - Meritieto, an upcoming portal for Finnish MSP data: https://www.luke.fi/en/projects/meritieto/
- Subject experts are likely to know best the data providers of different sectors. When working across borders, utilising the expertise of local actors is vital. The public and private organisations providing spatial data may be very different across national borders, in particular.
- Example of a data provider inventory is given in Appendix 1. The example presents data providers that were utilised in the mapping of the current conditions of the Gulf of Finland in project Plan4Blue (April 2017).

3.2 Identify data

Practical tips

- Determine relevant scale. Often cross-border MSP examines processes at a coarser spatial scale than other spatial planning processes. Therefore, in case there are several versions of the same data with different resolutions, spatial datasets of scale 1:1 Million may be more suitable than of scale 1:10 000. For example, there are several versions of the Finnish coastline data but data of the finest resolutions is unnecessarily heavy for MSP of the entire Gulf of Finland. Moreover, some data providers supply fine-resolution data only in tiles.

- When working across borders, utilising the expertise of local actors is vital. First, they will have the best knowledge of local open data services. Second, national open data services have been increasingly translated into English, but it is not always the case. Third, very often the data can be browsed in English but the actual data files, metadata or attribute tables are only available in local languages.

- Decide a principle for the selection of datasets when several are available. Consider for example generality and precision, coverage and the selection of provider.

- Prefer spatial data layers. However, some important data are in non-spatial format, such as tables, but may still contain information that enables locating the data on a map. For example, some economic sector organisations or agencies store their registries in Excel files or non-spatial databases. The data may include full addresses or postal codes of each company and the addresses can be utilised to determine spatial coordinates for the companies (i.e. geocoding).

- Document the data inventory well, collecting all important metadata at ones. These information include e.g. credits, provider, spatial coverage, year, format and the coordinate reference system.

- Example of a data inventory is given in Appendix 2. The example presents spatial data that were utilised in the mapping of the current conditions of the Gulf of Finland in project Plan4Blue (April 2017).

3.3 Evaluate data gaps, overlap and discrepancies across borders

Practical tips

- Before proceeding to obtain and harmonise data, discrepancies in the content of data products should be carefully evaluated and, later, not hidden with harmonisation tricks. As an example, species distribution data may contain large differences in the number of observations from different parts of the area. If there are 21 observation from Finland and 2530 observations from Estonia, it will be inappropriate to summarise the results in a way that masks the spatial imbalance in original data. If for example data from two sides of an administrative border originate from different decades, treating the datasets as equal would be misleading.

- Although MSP often relies solely on existing data, it is possible to collect a limited amount of new data. Moreover, for example spatial modelling can be utilised to cost-efficiently construct new datasets based on limited observations.

- Documenting all gaps and discrepancies in the data facilitates planning of the next steps and updating the time table.

- The gaps may include: missing spatial datasets for the entire project area, missing datasets from specific parts of the area and limitations in the density of observations, resolution, quality or relevant metadata. For example, there is often a gap in high-resolution data outside territorial waters.

- Overlap in datasets is usually a positive problem, but must be dealt with. It becomes important when merging individual datasets of different origin into seamless data layers. Criteria, such as described in relation to Step 3.2, are needed to solve data overlap issues. For example, if two states and one international organisation have data of the same phenomenon and same area, which of the three data are used for the overlapping area? The one with the highest resolution or the one with largest coverage? In the Plan4Blue case, data of the international provider (HELCOM) with largest coverage was preferred (but evaluated against national data at a later stage).

- At this point, possible discrepancies across borders should be documented and principles for dealing with them decided. The discrepancies become most evident when neighbouring administrative areas share a shoreline and there is a sharp change in spatial data at the border. Examples of the discrepancies could be differences in spatial resolution, measuring scales, variables and classification.

REFERENCES

Cahill, B, Schulz Zehden, A, Gee, K, Miguez, BM, Calewaert, JB, Ramiere, E (2016). MSP data study executive summary. Technical study under the assistance mechanism for the implementation of Maritime Spatial Planning.

Ehler, C, Douvere, F (2009). Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. UNESCO, Paris.

APPENDICES

Appendix 1. Example of a data provider inventory. The example presents data providers that were utilised in the mapping of the current conditions of the Gulf of Finland in project Plan4Blue (April 2017)

Provider	Coverage	Database	Web page
IMO - International Maritime Organization	International	GISIS - Global Integrated Shipping Information System	https://gisis.imo.org/Public/Default.aspx
HELCOM - Baltic Marine Environment Protection Commission - Helsinki Commission	International	Baltic Sea data and map service	http://maps.helcom.fi/website/mapservice/index.html
EMODnet - The European Marine Observation and Data Network	International	EMODnet Data Portals	http://www.emodnet.eu/portals
Bureau van Dijk	International	Orbis	https://www.bvdinfo.com/en-gb/our-products/company-information/international-products/orbis
Estonian Land Board	Estonia	Estonian Geoportaal	http://inspire.maaamet.ee/home
Estonian Maritime Administration	Estonia	Estonian Geoportaal	http://inspire.maaamet.ee/home
Estonian Environment Agency	Estonia	Estonian Geoportaal	http://inspire.maaamet.ee/home
Statistics Estonia	Estonia	Statistical database	http://www.stat.ee/database
Estonian Environment Agency	Estonia	EELIS - Estonian Nature Information System - Estonian Environmental Register	http://loodus.keskkonnainfo.ee/eelis/default.aspx?state=1;-164545161;est;eelisand;;&lang=eng
Finnish Transport Agency	Finland	View & Download service of the Finnish Transport Agency	https://extranet.liikennevirasto.fi/extranet/web/public/latauspalvelu#
National Land Survey of Finland	Finland	NLS File service of open data	https://tiedostopalvelu.maanmittauslaitos.fi/tp/kartta?lang=en
Statistics Finland	Finland	Statistics Finland, open data and interfaces	http://tilastokeskus.fi/tup/tilastotietokannat/index_en.html

Appendix 2. Example of a data inventory. The example presents spatial data that were utilised in the mapping of the current conditions of the Gulf of Finland in project Plan4Blue (April 2017). CRS = Coordinate reference system (continuing on the next page)

Layer	Coverage	Type	Original producer	Distributer	Dataset	Format	CRS	Projection
Boundaries								
COMBINE Baltic Sea subbasins	International	Polygon	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Exclusive economic zone	International	Polyline	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Territorial waters	International	Polyline	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Counties	Estonia	Polygon	Estonian Land Board	Estonian Land Board	Land Register	SHP	Estonian Coordinate System 1997 (EPSG 3301)	Lambert conformal conic
Municipalities	Estonia	Polygon	Estonian Land Board	Estonian Land Board	Land Register	SHP	Estonian Coordinate System 1997 (EPSG 3301)	Lambert conformal conic
State border line	Estonia	Polyline	Estonian Land Board	Estonian Land Board	Generalized Estonian topographic data	SHP	Estonian Coordinate System 1997 (EPSG 3301)	Lambert conformal conic
Seaward limit of territorial sea	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Territorial sea	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Internal waters	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
(Territorial sea) baseline	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Exclusive economic zone	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
International maritime boundary	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Administrative area borders	Finland	Polyline	National Land Survey of Finland	National Land Survey of Finland	General map 1:1 M	MIF	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Administrative areas	Finland	Polygon	National Land Survey of Finland	National Land Survey of Finland	General map 1:1 M	MIF	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Municipalities	Finland	Polygon	National Land Survey of Finland	National Land Survey of Finland	Administrative borders, for thematic maps, no sea	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Counties	Finland	Polygon	National Land Survey of Finland	National Land Survey of Finland	Administrative borders, for thematic maps, no sea	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Environment								
Depth contours	International	Polyline	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Bathymetric model	International	Raster	Baltic Sea Hydrographic Commission	HELCOM	HELCOM Baltic Sea data and map service	TIF	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Marine area	International	Polygon	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Major river network	Estonia	Polyline	Estonian Land Board	Estonian Land Board	Generalized Estonian topographic data	SHP	Estonian Coordinate System 1997 (EPSG 3301)	Lambert conformal conic
Water bodies	Finland	Polygon	National Land Survey of Finland	National Land Survey of Finland	General map 1:1 M	MIF	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Water lines	Finland	Polyline	National Land Survey of Finland	National Land Survey of Finland	General map 1:1 M	MIF	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Human activities								
Private companies	International	Non-spatial	Bureau van Dijk	Bureau van Dijk	Orbis	XLSX		
Natura 2000 sites	International	Polygon	European Environment Agency	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
UNESCO sites	International	Polygon	UNESCO, European Commission, HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Bathing sites	International	Point	HELCOM, European Environment Agency	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Illegal oil discharges	International	Point	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Cables and pipelines	International	Polyline	HELCOM, EWEA, Noridc Energy Link, Nord Stream	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Deep water navigation lines	International	Polyline	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Deep water navigation areas	International	Polygon	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Nuclear facilities	International	Point	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Oil terminals over 3 Mt	International	Point	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
IMO ships routing guide	International	Polygon	IMO, HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Offshore wind farms	International	Polygon	HELCOM, EWEA	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Total commercial fisheries	International	Polygon	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Baltic Sea Pressure Index	International	Polygon	HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Coastal traffic density	International	Point	HELCOM, AIS	HELCOM	HELCOM Baltic Sea data and map service	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
AIS shipping density 2011	International	Raster	FMI, HELCOM	HELCOM	HELCOM Baltic Sea data and map service	SDE raster	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Ports	International	Point	EMODnet, Eurostat	EMODnet	Human Activities	GDB	WGS 84 (EPSG 4326)	(geographic)
Lighthouses	International	Point	EMODnet, Amateur Radio Lighthouse Society	EMODnet	Human Activities	GDB	WGS 84 (EPSG 4326)	(geographic)
Nationally designated areas	International	Polygon	EMODnet, European Environmental Agency	EMODnet	Human Activities	SHP	WGS 84 (EPSG 4326)	(geographic)
Land-use	Estonia	Polygon	Estonian Land Board	Estonian Land Board	Generalized Estonian topographic data	SHP	Estonian Coordinate System 1997 (EPSG 3301)	Lambert conformal conic
Major railroad network	Estonia	Polyline	Estonian Land Board	Estonian Land Board	Generalized Estonian topographic data	SHP	Estonian Coordinate System 1997 (EPSG 3301)	Lambert conformal conic
Dumping ground	Estonia	Polygon	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Fairway	Estonia	Polygon	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Ports	Estonia	Polyline	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Pipelines	Estonia	Polyline	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
RECTRC	Estonia	Polyline	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Ferry routes	Estonia	Polyline	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Navigation line	Estonia	Polyline	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Inshore traffic zone	Estonia	Polygon	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Recommended traffic lane	Estonia	Polygon	Estonian Maritime Administration	Estonian Maritime Administration	Estonian water transport network	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Protected sites (nature)	Estonia	Point	Estonian Environment Agency	Estonian Environment Agency	EELIS - Estonian Nature Information System	SHP	ETRS89 / ETRS-LAEA (EPSG 3035)	Lambert azimuthal equal-area
Population	Estonia	Non-spatial	Statistics Estonia	Statistics Estonia		XLS		

(Appendix 2. Continued from the previous page)

Layer	Coverage	Type	Original producer	Distributer	Dataset	Format	CRS	Projection
Human activities (continued)								
Cables and pipelines	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Lights	Finland	Point	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Disposal area	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Aids to navigation	Finland	Point	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Navigation line	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Daymark	Finland	Point	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Restricted areas	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Shoreline constructions	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Traffic Separation Scheme Crossing	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Inspire - Traffic networks	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Traffic Separation Scheme Lane	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Inspire - Traffic networks	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Traffic Separation Scheme Roundabout	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Inspire - Traffic networks	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Dredging area	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Locks and canals	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Locks and canals	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Leading line	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Racon	Finland	Point	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Light sectors	Finland	Point	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Waterway sign	Finland	Point	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Fairway area	Finland	Polygon	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Fairway	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Marine transport	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Ports	Finland	Point	Finnish Transport Agency	Finnish Transport Agency	Inspire - Traffic networks	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Railroads	Finland	Polyline	Finnish Transport Agency	Finnish Transport Agency	Inspire - Traffic networks	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Military buffer zones	Finland	Polygon	National Land Survey of Finland	National Land Survey of Finland	General map 1:1 M	MIF	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Conservation areas	Finland	Polygon	Finnish Environment Institute	National Land Survey of Finland	General map 1:1 M	MIF	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Post code areas, population, demography	Finland	Polygon	Statistics Finland	Statistics Finland	Paavo	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator
Production and industrial facilities	Finland	Point	Statistics Finland	Statistics Finland	Production and industrial facilities	SHP	ETRS89 / ETRS-TM35FIN (EPSG 3067)	Transverse Mercator

European Union

European Regional Development Fund

Interreg Central Baltic

SYKE

Turun yliopisto
University of Turku

UNIVERSITY OF TARTU

Helsinki-Uusimaa Regional Council

VARSINAIS-SUOMEN LIITTO
EGENTLIGA FINLANDS FÖRBUND
REGIONAL COUNCIL OF SOUTHWEST FINLAND

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