

## Spatial Data

Spatial data means any data with a direct or indirect reference to a specific location or geographical area<sup>1)</sup>. Spatial data can be displayed, manipulated and analysed by means of a spatial attribute that denotes a location on or near the surface of the earth<sup>2)</sup>. Geographic Information Systems (GIS), for their functioning, needs these data in specific formats and data models. The main models used are raster and vector.

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Raster: rasters are created on the base of grids. Raster grids are conceptually simple structures, comprising square cells with numeric values or classes attached to each cell<sup>3)</sup>.

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Vector: whereas feature in the raster grids are identified simply by the row and column position of cells, vector data comprise explicit spatial coordinates of the features that make up objects. Vector data comprise points, lines and area polygons<sup>4)</sup>.

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Spatial datasets are often described with Metadata. Metadata means information describing spatial data sets and spatial data services and making it possible to discover, inventory and use them<sup>5)</sup>. In the EU framework some legislative actions have been made to establish an Infrastructure for Spatial Information in the European community (INSPIRE)<sup>6)</sup>.

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## AlpES Spatial Datasets

The AlpES project make use of different transnational spatial datasets for the calculation of the ecosystem services indicators. Where possible, these indicators are recalculated for the test regions with national, regional or local datasets with a better spatial resolution.

Some of the sources of the AlpES datasets are:

- European environment Agency
- Copernicus European Union Programme
- Joint Research Center of the European Union
- Open Street Maps
- ...

The spatial data results of the project are made available with the use of the AlpES WebGIS.

<sup>1)</sup>

Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).

<sup>2)</sup>

Yeung A.K.W., Hall G.B. (2007) Spatial Data and Spatial Database Systems. The GeoJournal Library, vol 87. Springer, Dordrecht.

<sup>3)</sup>

Lloyd, C., (2010) Spatial Data Analysis: An Introduction for GIS Users. Oxford University Press.

<sup>4)</sup>

Cfr supra footnote 3.

<sup>5)</sup>

Cfr supra footnote 1.

<sup>6)</sup>

<http://inspire.ec.europa.eu/>

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