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6 Annex II Themes

6.1 *Elevation*

Definition:

(INSPIRE, 2007) Digital elevation models for land, ice and ocean surfaces. Includes terrestrial elevation, bathymetry and shoreline.

Description:

The theme includes:

- Terrestrial elevation, generally represented as
 - the terrain data, ground surface topography, called Digital Terrain Model describing the threedimensional shape of the Earth's surface
 - the surface data, named Digital Elevation Model, including the three dimensional shape of every feature placed on the soil (buildings, bridges, trees, ...).
- Bathymetry, e.g. a gridded bottom model

The height will be according to a common vertical coordinate reference system. The current one is European Vertical Reference System 2000 (EVRS),) but EVRS 2007 is under development and might be taken into account or mentioned (cf. resolutions of the EUREF Symposium in London, 06-09 June 2007)

Scope, use examples:

- Modelling of land slides and avalanches, flooding vulnerability, risk to erosion, flow of water and pollutants, spread of air pollution, fires, noise, and biodiversity.
- Environmental applications
- Water supply
- Energy sector
- Agricultural and forestry
- Safety at sea,
- Location of valuable biodiversity sites in shallow waters,
- Location of sea resources and valuable sites for fish farming
- Understanding of flow pattern and chemical composition in water
- Assessment of location of pipelines at sea
- Production of orthoimagery.

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Important feature types and attributes:

Core data :

DEM and/or DTM as regular grid, in different resolutions, for land and sea bottom.
TIN (Triangular Irregular Network)

Additional data:

Contour line and depth contour:

- altitude

Breakline

- category (crest, thalweg, other)

Spot height

- altitude
- category (summit, mountain pass, ...)
- name

Sounding

- altitude

High and low water line

Links and overlaps with other themes:

The main relations with other themes are:

- Administrative boundaries: some boundaries may be defined as crests.
- Geographical Names: names of spot heights, e.g. mountain tops
- Hydrography: there is overlap for some features (coastline) and consistencies rules between the two themes, for instance: a river must flow in the thalwegs, a lake or a sea must have the same elevation for all surface points of the water body.
- Buildings, for 3-D models of urban areas

Reference documents:

EuroGeographics: EURODEM

Reference 3D; http://www.spotimage.fr/html/_54_743_773_.php

Several SDICs/LMOs from EU Member States or Regions have submitted data specifications for topographic datasets that include data on elevation. See categorized list of reference material, compiled by JRC, March 2007