

Applications of 3D Geographic Information System of the North Sea and the Scheldt Estuary

Wauters Frederic, Eurosense Belfotop NV, Nerviërslaan 54, 1780 Wemmel, Belgium

E-mail: frederik.wauters@esribelux.com

At present the multitude of remote sensing techniques that are used in the marine environment are very broad. These techniques vary from photogrammetric data, topographic lidar, bathymetric lidar, multibeam, ...

One general aspect that at present is a constant factor when working with these kind of data-sets is the multitude (as well in kind of data and in Mbytes) of data that is obtained and needs to be filtered and managed. This alone already demands specific tools and methods to handle the multitude of data.

The experience present within EUROSENSE and ESRI BeLux combines as well the way in which the data itself is handled to prepare it in a useful form and the tools available to analyse these data in an efficient way.

The ESRI software (ArcGIS, Arc SDE, ...) are developed to create a general concept for visualisation and analysis of 3-dimensional data. Within this system 3D data can easily be presented as surfaces (DTM, DHM, terrain data) but also 3D cross-sections can be made based on queries.

This creates the possibility to combine different data-sets and perform multi-criteria analysis on as well the points, the TIN's as the surfaces.

The applications of this software are unlimited : presentation of sediment surfaces and volumes, 3D temperature analysis.

The implementation of a 4th dimension (e.g. time-series) can also be analysed and implemented. This could be the example for : algae dynamics, fish densities, current analysis or the presentation of Marine morphology.