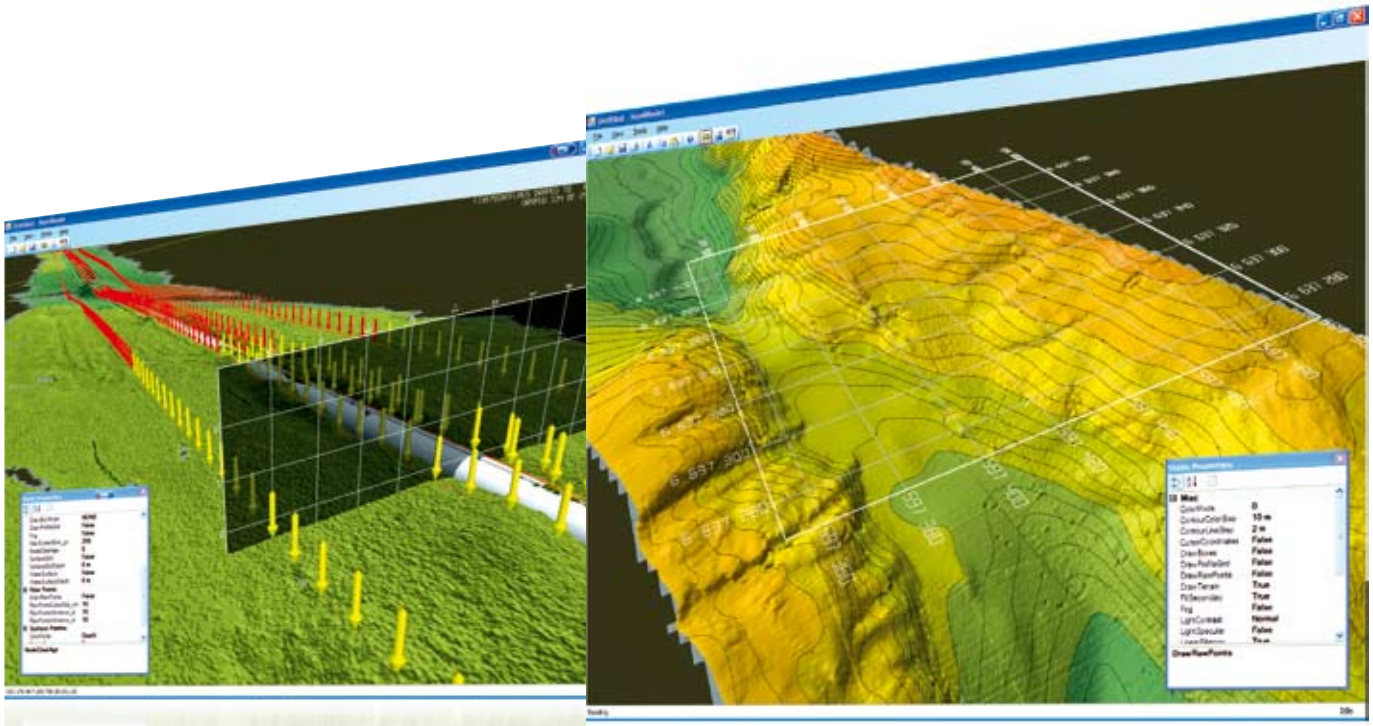
NaviModel

DIGITAL TERRAIN MODELING

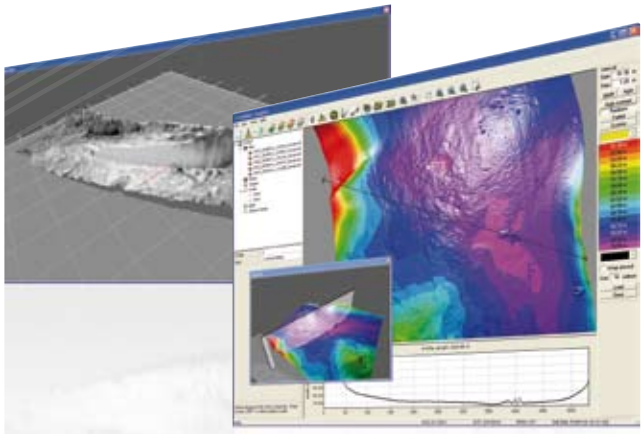
EIVA
MARINE SURVEY SOLUTIONS

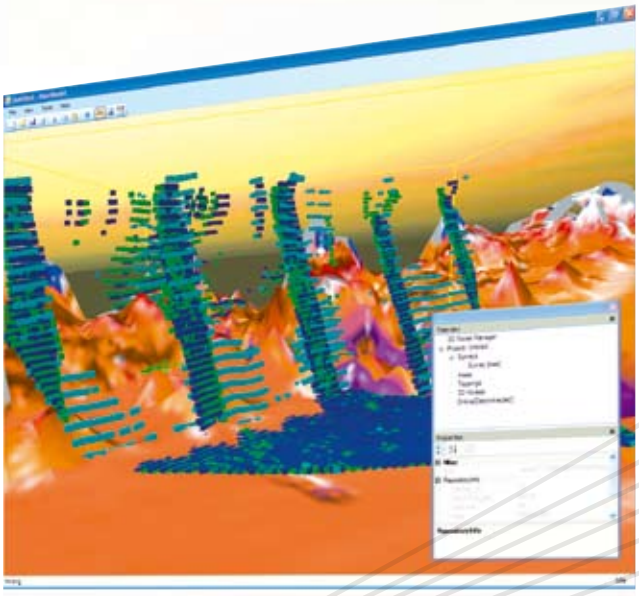


SOFTWARE FOR GENERATION OF DIGITAL TERRAIN MODELS FOR ALL YOUR MARINE SURVEYS – PAR EXCELLENCE

- **Import of raw or cleaned survey data**
- **Unlimited model data size**
- **Data reduction**
- **Manual & automatic data cleaning**
- **Application of model algebra**
- **Data quality control**
- **Generation of side scan mosaic**
- **Integrated 3D pipeline inspection tool**

NaviModel provides advanced tools for generation of Digital Terrain Models (DTM) as Triangular Regular Network models (TRN) or Triangular Irregular Network (TIN) models.





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PROCESSING
Cleaned survey data is imported into NaviModel for processing from the EIVA NaviEdit survey data editing software (SQL database or exported), ASCII XYZ, run-line and profiles or raw NaviScan or NaviPac survey files. Data is internally handled in a quad tree which guarantees fast data access independent of data volume.

The data displays comprise 2D and 3D color-coded views and provide capabilities like appliance of sun illuminated for shadow casting for fast QC. The software utilizes multiple levels-of-detail for presentation; so areas close to the viewpoint are more detailed than areas far away. This method gives the best and the fastest presentation independent of data volume and the amount of RAM available.

Models of a survey area are created by defining the model parameters, the desired cell type and the size and type of acquisition data (minimum, maximum, average, last value, standard deviation and density).

During the model definition phase NaviModel provides facilities for data reduction by setting tolerances for depth variations and allowable shrinkage of model borders.

NaviModel features additional cleaning of models either manually profile by profile in true 3D or automatically utilizing a mathematical model allowing handling of data overlap. Large model data sets can be divided into more files for easier data handling.

The software also provides capabilities for generation of derived models, substitution of one model for another model (e.g. insertion of a theoretical model in a data model), merging of models, etc. NaviModel furthermore comprises features for analysis of actual versus theoretical models, model manipulations and volume/area computations, etc.

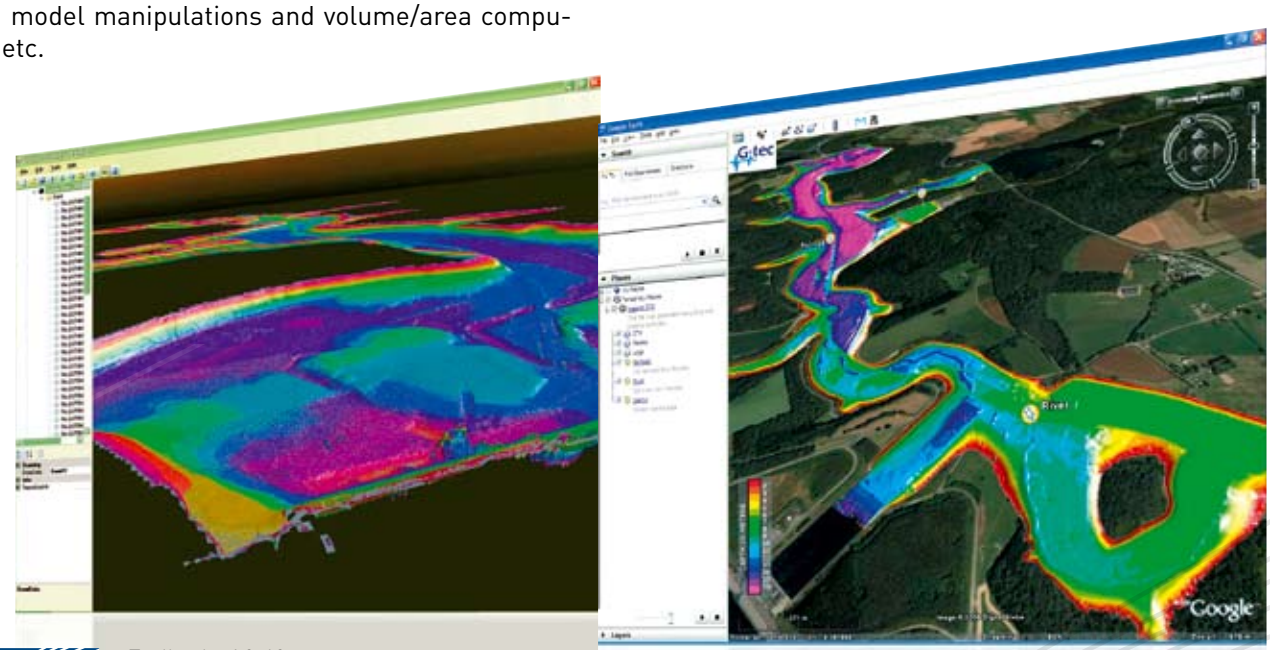
Geo-tiff images of datasets are easily generated as well as geo-referenced multibeam echosounder and side scan sonar mosaic. Further features include dynamic light source with real-time shadow tracing, fast terrain profile analysis and 3D window with dynamic camera target.

Access to progress information and reporting is available at any time during the generation of models.

PIPELINE INSPECTION
NaviModel utilizes a full 3D pipeline inspection toolkit in cooperation with the EIVA NaviEdit survey data editing software. This allows determination of optimal pipe location based on Kalman filter, raw pipe tracker data and visual digitalized video. Based on pipe route or run-line the system allows creation of cross profiles and pipe flags with automatic surface draping. Moreover NaviModel provides export of models for direct overlay in Google Earth.

OUTPUT
NaviModel provides data output as DTM, contour curves, longitudinal and cross profiles, bathy plots, cleaned or rejected data and screen prints. Available formats comprise raw ASCII XYZ and format for the EIVA NaviPlot fairsheet charting software.

NAVIMODEL LITE
NaviModel Lite is an affordable entry-level software package providing digital terrain modeling of survey data pertaining to singlebeam echosounder surveys. An update to NaviModel full version software can be made at any time.



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