

Triton SeaClass™

Automated Seabed Segmentation Software

Triton SeaClass is an advanced seabed segmentation/classification module that automatically characterizes bottom types based on statistical properties of mosaicked sidescan or multibeam backscatter data. SeaClass is available as an optional module to both of Triton's mosaicking and mapping software packages, Triton Map™ or the new Triton Perspective™.

SeaClass is based on a multi-layer perceptron supervised neural network. The classification procedure consists of two stages: a learning stage and a classification stage. Training is accomplished by the operator selecting areas in the mosaic of differing bottom type (e.g. sand, rock, mud, etc.). Training of the classifier neural network then proceeds through an automated statistical analysis of the selected samples and a characterization of each type. The following classification stage is a completely automated process where the entire mosaic image is segmented into the different classes. Results of the classification are displayed overlain on the mosaic image with each area colored or optionally with vector/line boundaries around each area. Output from SeaClass can be the DXF boundary vectors or a GeoTIFF mosaic image with the displayed color-coded areas.

Technology

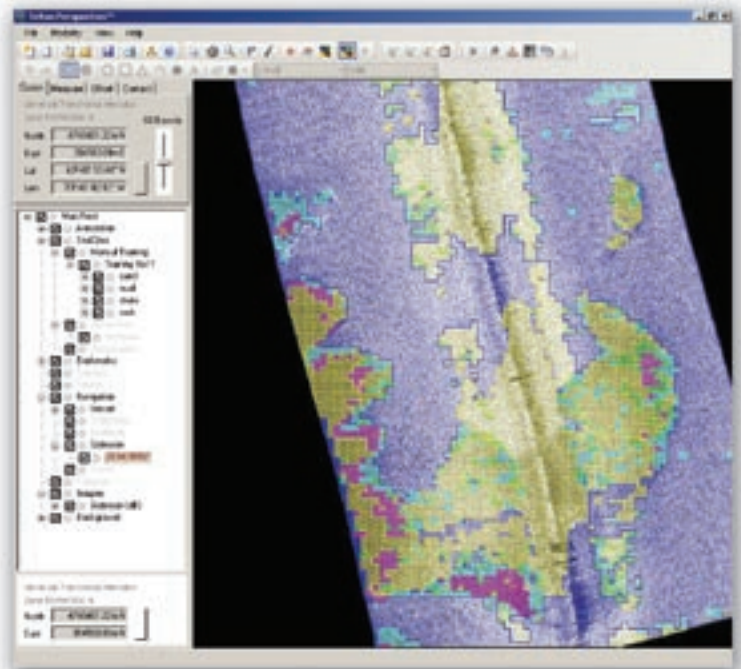
- Multi-layer perceptron supervised neural network
- Image segmentation based on statistical characteristics of mosaic image texture
- Training via operator selection of representative areas of each seabed class
- Automated segmentation of entire mosaic image into the trained classes

Applications

- Habitat Mapping
- Mine Countermeasures (REA)
- Marine Geology/Geophysics

Input/Output

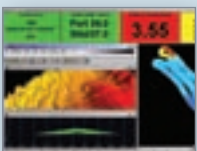
- Sidescan or multibeam backscatter mosaic image
- Import of training samples from existing seabed database
- Import of existing classification parameters for application to a new mosaic image
- Output of geo-coded vector boundaries of classified areas (DXF)
- Output of GeoTIFF mosaic image with color-coded areas



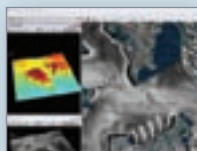
Options

- Point classification mode (available with Triton Perspective only)
- S-57 background image
- Triton MosaicOne™ advanced mosaicking module with dB-based imagery (Perspective only)

multibeam



sidescan



seismic



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