

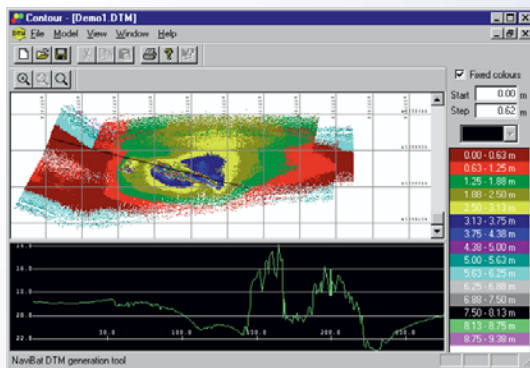
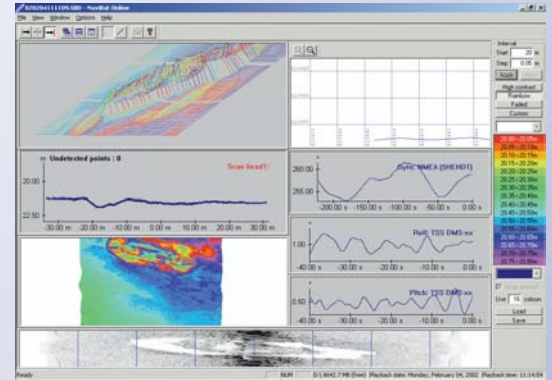
NaviScan

Multibeam Survey Software



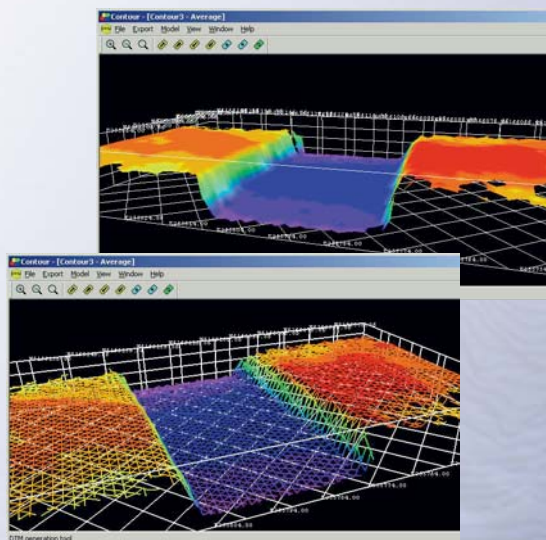
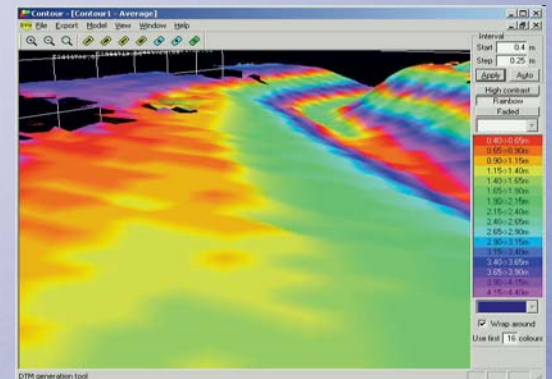
APPLICATIONS – The NaviScan software, designed for vessel and ROV/AUV based marine surveys, provides real-time collection and display of data from multibeam echosounders, scanning and profiling sonars, pipe-trackers etc.

DEVICE I/O DRIVERS – NaviScan comprises device I/O drivers for interface of multibeam echosounders, multibeam side scan backscatter imagery, pipe trackers, scanning and profiling sonars etc. Data are interfaced through TCP/IP or any Windows NT/2000/XP supported I/O board. NaviScan allows interfacing of multiple or redundant secondary sensors, which during data editing allows for operator selected substitution of sensor data in case of noise or drop-outs in sensor data. If NaviScan is used with NaviPac software start-of-line, stop-of-line and file naming are controlled automatically on signal from NaviPac.



DATA ACQUISITION AND PROCESSING – NaviScan performs data collection, time tagging, logging, data processing and display of data in real-time environment. The data is processed for motion, refraction and tides on-the-fly prior to displaying the data on monitor. Dedicated post-processing of data can be performed using the NaviEdit software. Modelling and charting of the edited survey data can be performed by use of NaviModel and NaviChart, respectively.

DISPLAY – NaviScan provides full graphical sensor displays in scaleable windows comprising a/o raw data from Gyro, RPH sensor, Bathy, Doppler Log and Position. 3D graphical presentation of multibeam echosounder scans is available as well as a graphical presentation of the filtered positions. All graphical windows can be printed on any Windows NT/2000/XP supported printer or plotter.



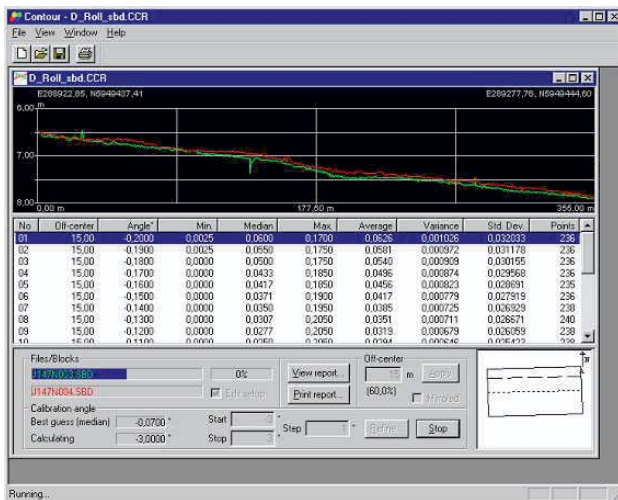
HIGH-LEVEL APPLICATIONS – NaviScan features series of high-level easy-to-use applications, which are specially designed for complex survey environment. Set-up is a program in which the system administrator sets up and maintains NaviScan by specifying the various sensors, communication interfaces, vessel or ROV offsets and C-O values. Extract is a simple data extractor, which allows export of data to spreadsheet, e.g. MS Excel. Extract supports generation of ASCII files with center depth and attitude data, position track (raw and filtered), Doppler data and pipetracker data with raw and edited positions. Graphical dump allows for all graphical windows to be printed on supported printer or plotter.

EXPORT – NaviScan provides correction for offsets, heading, HRP, C-O, etc. All low-quality data is filtered out during data processing, where tide tables and sound velocity profiles can also be applied. Windows filtering routines can be specified for removal of outer and/or specific beams. During this process, the system creates a conversion log, which gives the amount of discarded data. The collected data can be exported in various standard formats, which allow access to the collected data through use of 3rd party software.

SIDE SCAN OPTION – If the multibeam echosounder supports side scan sonar imagery (backscatter), NaviScan provides logging, correction and presentation the data. Data is presented as colour-coded waterfall backscatter display. The system includes correction for slant range and speed. During data collection and playback, targets in the side scan image can be marked and stored in special target image files for analysing during playback.

CONTOUR OPTION – Allows real-time generation of digital terrain models during data collection. Presentation of colour-coded coverage plots provides monitoring of overlay between actual and previous data as well as non-coverage areas. Besides the average depth information Contour features graphical displays of min/max depth, data density, and standard deviation. Contour also provides display of contour curves specified by profiles (cross or longitudinal) defined by mouse click and drag. 3D view of the data features facilities for sun illumination, zoom & pan, perspective view setting, rotation and move around with close real-time feeling.

PATCH TEST OPTION – Provides sophisticated patch tests based on Contour DTM for calibration of errors caused by roll, pitch, heading and time (position delay). The patch test comprises features for calibration of Doppler Log, which based on one or more data sets, compares raw positional track with Doppler/gyro track for calculation of scale factor and rotation angle.



PRODUCT SUITE – The EIVA software product suite comprises software for all aspects of marine surveying, from integrated navigation and data acquisition to post-processing and final charting. Full continuity is provided between the individual software packages. Through a flexible interface the individual software packages also allow for use with 3rd party software. The EIVA software product suite is written for Microsoft Windows NT, Windows 2000 and Windows XP, and the user interface adheres to The Microsoft Interface Guidelines. All EIVA software products are made according to ISO9001 principles for system design.

Technical Specifications

Hardware (recommended)

- Pentium processor
- RS232 serial multi-port interface card
- Optional multi-screen card (dual graphics card)

Operating System

- Windows NT, Windows 2000 or Windows XP

Interfaces

- Navigation
 - NMEA
 - NaviPac
 - Norcom
 - QPS
 - User defined
- Attitude
 - MDL Trimcube
 - Seatex MRU
 - TSS DMS/POS-MV
 - Seapath
 - Octans
 - User Defined
- Echosounder
 - Benthos SIS 3000
 - Odom Echoscan
 - Reson SeaBat
 - Tritech SeaKing/ST1000
 - Simrad Mesotech SM2000
 - Simrad EM Compact
 - Hyspec
 - L3 ELAC SeaBeam
 - Atlas FanSweep 15/20
 - Others available upon request
- Bathy Unit
 - Digiquartz
 - RTK Height
 - UK 90/94
 - Benthos/Datasonics SIS3000
 - Tritech SCU
 - Hyspec
 - User defined
- Pipetracker
 - Innovatum
 - TSS
- Sidescan
 - SeaBat 81xx
 - SeaBat Snippets
 - Atlas FanSweep
 - XTF
 - EM 3000
 - Benthos

- Speed Log
 - EDO Doppler Log
 - RDI Doppler log
 - Hyspec
- Gyro
 - NMEA
 - Anschutz
 - KVH 1000
 - MDL Trimcube
 - OceanTools
 - Robertson
 - SG Brown
 - Seapath
 - Octans
 - Sperry
 - TSS POS/MV
 - User defined
- Others
 - GPS PPS
 - Output centre depth on TCP/IP
 - Output of filtered position
 - Output of UTC time
 - Theoretical profile
 - SeaBat Side Scan
 - Run-line control
 - On-line sound velocity correction

Log data

- All data are logged, raw and calculated, to allow data processing and re-calculation

Displays

- QC and warning messages including audible alarms
- Screen text, font size, graphics, colours and windows layout fully configurable
- Fully user designable screen layout
- Storage of operator preferred screen layout and setting