Survey Software

August 2007

Sensor Data:
GPS
Gyro
RPH
PPS
+++

PPS

TimeBox

Sensor Data:
MBE
Gyro
RPH
PPS
+++

Online | Navigation | Data-acquisition

NaviPac

*.NPD

ASCII-data

2D/3D Helmsman

Navigation

Position

Online | Multibeam Data-acquisition

NaviScan

*.SBD

Binary data

Generation of DTMs | MB Calibration

Contour

Editing of Data | Exporting of Data

NaviEdit

SQL Database

*.XYZ
*.NED

ASCII data
Binary data

Cleaning of Data | DTM manipulation

NaviModel

Contours
Profiles

Charting | Export of Digital Plots

NaviPlot

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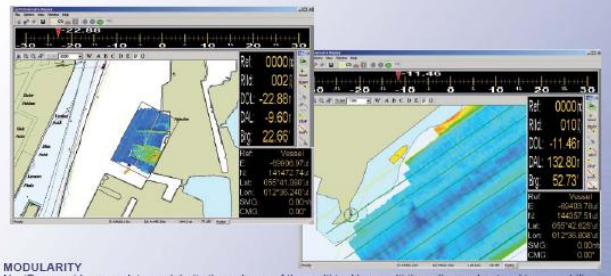
EIVA A/S Software - NaviPac

NaviPac

Integrated Navigation Software

APPLICATIONS
The NaviPac software utilises integrated navigation and data acquisition software suited for all marine navigation and survey applications.



MODULARITY
NaviPac provides complete modularity through use of the multi tasking, multi threading and networking capabilities of the Windows 2000/XP operating system. The software is highly flexible and user configurable and the user interface adhere to the Microsoft Interface Guidelines making it very intuitive and easy to operate.

NAVIGATION SET-UP
The NaviPac set-up module provides easy selection of geodetic parameters, navigation systems, devices, offsets and port settings.

DEVICE I/O DRIVERS
A vast number of field-tested device I/O drivers are provided as standard and generic I/O drivers allow user definition of device I/O drivers. Data is interfaced via RS232, LAN/WLAN or via digital I/O interface. Device I/O drivers for multibeam echosounders, multibeam side scan backscatters, pipe- trackers, scanning and profiling sonars, etc. are provided in the NaviScan software.

TIME SYNCHRONIZATION
Time stamping of sensor data, incoming as well as outgoing, can be done in two ways, either by the internal computer clock or by the PPS output available from most GPS receivers. Using the PPS output data are synchronized relative to the GPS/UTC time frame resulting in an accuracy of a few milliseconds.

DISTRIBUTED TIMETAGGING
Using the special designed TimeBox NaviPac (and NaviScan) utilises distributed time tagging based on one or more Linux based RT collection boxes that handles interfaces and deliver timed data to any LAN connected clients.

SURVEY PLANNING
Survey planning is done by defining the survey area and the survey lines. A variety of methods for creation of survey lines is provided, e.g. by click-and-drag (of mouse/trackball), input of survey line coordinates, offset (parallel) survey lines, cross lines, circles, arcs, barge-lines, star patterns etc. Survey lines can easily be adapted to fit a defined survey area. Creation of templates allows input of other data formats.

DISPLAYS
The Navigation Display graphically presents the real-time absolute and relative positions of selected survey objects and cartographic features. The Helmsman Display provides off-track and along-track information, planned and actual fix locations, in a fully configurable graphic format. Total scenario management is available through the use of job and project files.

ELECTRONIC CHARTS
Vessel positions, survey lines (on DXF, DWG and ASCII formats) and objects may be displayed superimposed on C-Map or S57 based electronic chart displays. Coverage of depth information from singlebeam and/or multibeam echosounder as well as DTM's generated on-the-fly can be presented on the Navigation Display through interface with the NaviScan software.

DATA HANDLING
NaviPac provides a systemised way of managing and storing survey data. Records are saved to a project directory allowing you to set up new surveys or to quickly switch to an existing survey. During data logging records can be limited in time or file size defined by the user.

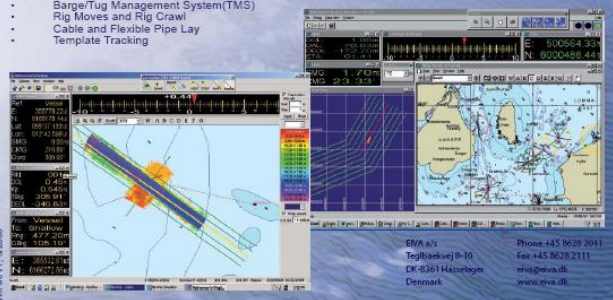
CLIENT/SERVER SYSTEM
NaviPac builds on a client/server solution, which allows execution of all software modules (including a/o Helmsman's display, LogData and several graphical QC displays) on any Personal Computer on the network.

WINDOWS DISPLAYS
Full system flexibility allows designing and configuration of surveys and preferred display settings and layouts. An unlimited number of displays can be opened, one of each type or several of the same type. Displays can be freely distributed to monitors working as slaves or to intelligent workstations for individual windows set-up and interactive use.

NAVIPAC LITE
Provides an affordable entry-level software package for on-line navigation. NaviPac Lite features same functionality as the NaviPac full version, except that the Lite version is limited in the numbers of device I/O drivers. Additional device I/O drivers can be added for gradual update to a partial or full version of the NaviPac software.

OPTIONAL MODULES
Optional software modules are available for NaviPac comprising a/o:

- Barge/Tug Management System(TMS)
- Rig Moves and Rig Crawl
- Cable and Flexible Pipe Lay
- Template Tracking



EIVA a/s
Teglbaekvej 8-10
DK-8361 Hasselager
Denmark

Phone +45 8628 2011
Fax +45 8628 2111
eiva@eiva.dk
www.eiva.dk

NaviPac v1. 3/2006

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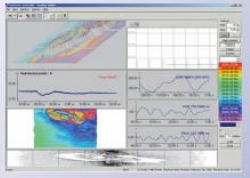
EIVA A/S Software - NaviScan

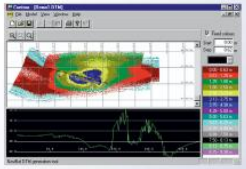
NaviScan

Multibeam Survey Software

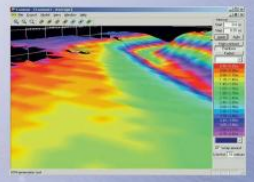
APPLICATIONS – The NaviScan software, designed for vessel and ROV/AUV based marine surveys, provides real-time collection and display of data from multibeam echosounders, scanning and profiling sonars, pipe-trackers etc.



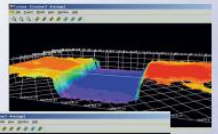
DEVICE I/O DRIVERS – NaviScan comprises device I/O drivers for interface of multibeam echosounders, multibeam side scan backscatter imagery, pipe trackers, scanning and profiling sonars etc. Data are interfaced through TCP/IP or any Windows NT/2000/XP supported I/O board. NaviScan allows interfacing 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.

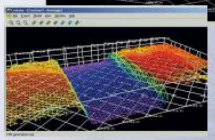


DATA ACQUISITION AND PROCESSING – NaviScan performs data collection, time tagging, logging, data processing and display of data in real-time environment. The data is processed for motion, refraction and tides on-the-fly prior to displaying the data on monitor. Dedicated post-processing of data can be 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.





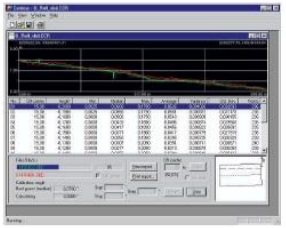
HIGH-LEVEL APPLICATIONS – NaviScan features series of high-level easy-to-use applications, which are specially designed for complex survey environment. Set-up is a program in which the system administrator sets up and maintains NaviScan by specifying the various sensors, communication interfaces, vessel 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
  - Anschütz
  - 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

EIVA a/s
Tegtbaekvej 8-10
DK-8361 Hasselager
Denmark

EIVA a/s
Oldenvej 43
DK-3490 Kvistgaard
Denmark

Tel. Int. +45 8628 2011
Fax Int. +45 8628 2111
eiva@eiva.dk
www.eiva.dk

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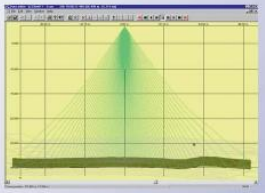
EIVA A/S Software - NaviEdit

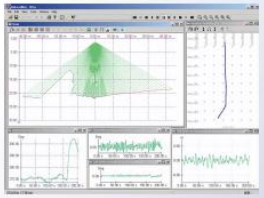
NaviEdit

Survey Data Editing Software

APPLICATIONS – The NaviEdit survey data editing software is designed specifically for editing of marine survey data from singlebeam and multibeam echosounders, scanning sonars, pipe-trackers as well as all survey related secondary sensors like GPS, Gyro, Doppler Log, RPH sensor, etc.

JOBPLANNER – Manages import, interpretation and export of survey data. The JobPlanner allows all editing routines to be applied to one or more blocks of survey data.



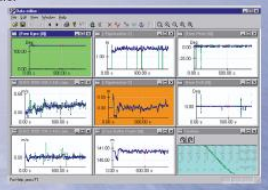


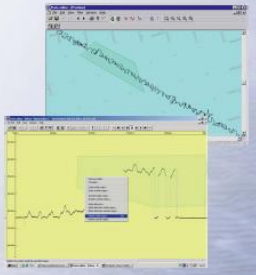
IMPORT AND INTERPRETATION – Raw survey data are imported and interpreted to proprietary format from a/o multibeam files, singlebeam files, ASCII files, tide files, sound velocity files, run-lines, XYZ files and multibeam manufacturers proprietary format. NaviEdit provides facilities for managing the SQL database, allowing several NaviEdit users to access the same SQL database simultaneously.

HEADER DATA EDITOR – Allows change of overall survey parameters to correct erroneous data during import and interpretation. It also allows for update of calibration values, appliance of time delay, C-O and sensor offset as well as appliance of datum shift using pre- or user-defined parameters.

SURVEY DATA EDITOR – Provides graphical tools for editing of all available survey sensor data. Editing tools comprise a/o automatic de-spiking, advanced spline filters, user-defined tolerance windows and advanced zoom and region marking by use of tool bar and mouse.

EXPORT – NaviEdit allows for export of edited survey data for presentation using NaviModel and NaviChart software for modelling and charting, respectively. Alternatively, NaviEdit provides export formats for 3rd party software.

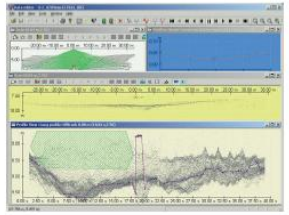




OPTION – Features include processing of survey data to generate data pertaining to pipeline inspection. A pipeline filter provides adjustment of track based on pipe-tracker data and data from previous survey. Automatic reporting facilities allow for extraction and export of 5-point files during pipeline inspection surveys.

NAVIEDIT LITE – provides an affordable entry-level software package for editing of survey data pertaining to single-beam surveys. An update to a full version of the NaviEdit software can be made at any time.

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

Operating System
- Windows NT, Windows 2000 or Windows XP
- MS SQL 2000

Displays
- Screen text, font size, graphics, colours and windows layout fully configurable
- Fully user designable screen layout
- Storage of operator preferred screen layout and settings

Header data editor
- Change of parameters to correct erroneous input during data interpretation
- Update of calibration values
- Datum shift using pre- or user-defined parameters
- Appliance of time delay, C-O and offset on any sensor

Data correction tools
- Creation and editing of tide table
- Creation of new tide table for a specific location from multiple tables
- Conversion of tide table for plotting
- Correction of data using one or multiple tide tables
- Graphical display of tide table
- Appliance of multiple sound velocity profiles

Sensor data editor
- Graphical editing of any sensor data type (singlebeam, pipe-tracker, bathy, tide, gyro, roll, pitch and heave, Doppler, sound velocity etc.)
- Generic view in the data editor allows editing of own imported data
- User-interactive functions comprise a/o zoom, undo, data-overlay etc.
- Provision for user specified settings of colours, Windows connections, auto zoom, auto scale, previous zoom etc.
- Editing of data from multiple or redundant secondary sensors allows for selected substitution of sensor data in case of noise or dropouts in sensor data

Scan editor
- Flexible presentation of data
- Visualization of impact of motion correction
- Auto-play feature to simulate survey
- Automatic de-spiking of data based on spline filter and tolerance window
- Smooth scans
- Visualization of applied sound velocity profile

XY data editing of plane data
- Navigation track and lines/curves can be edited through use of accelerator keys and mouse buttons
- Parts of or whole blocks of data can be deleted, translated, interpolated or smoothed

Export formats supported
- Export to original multibeam echosounder format (as defined by the manufacturer)
- Binary XYZ
  - NaviEdit depth files (*.ned)
  - FAU files (*.fau)
  - IRAP files (*.irap)
  - MBES (*.mbes)
- Ascii XYZ
  - Standard XYZ (*.xyz)
  - Standard XYZ + Angle and Quality (*.xyz)
  - DGI format (*.dgi)
  - IRAP format (*.irap)
  - PiSYS format (*.tpds)
  - NaviPac run-line (*.rln)
  - Pipeline data (*.nep)
- User-defined XYZ
- UKOOA (P1, P5/94)
- RIS (Pipeline data)
- SITRAS (Pipeline data)
- Filtered track to Triton-Elics
- PiSYS
- CODA

Utilities
- Recalculation of tide
- Creation of multiple tide tables
- Restoring of sensor data
- Multiple SVP/CTD tables

EIVA a/s
Tegltbaekvej 8-10
DK-8361 Hasselager
Denmark

EIVA a/s
Oldenvej 43
DK-3490 Kvistgaard
Denmark

Tel. Int. +45 8628 2011
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EIVA A/S Software - NaviModel

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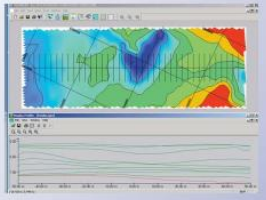
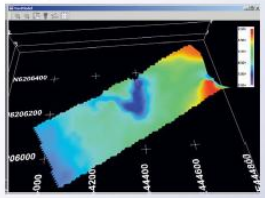
Survey Modelling Software



APPLICATIONS – The NaviModel software provides advanced tools for generation of Digital Terrain Models (DTM) based on either Triangular Regular Network (TRN) or Triangular Irregular Network (TIN) models. In the TRN models the survey area is divided into equally spaced triangular cells like in the EIVA Contour software, whereas in the TIN models triangles are created based on the raw data.

DATA INPUT – Data for modelling is imported as cleaned survey data from NaviEdit (NED), ASCII XYZ data, run-line and profiles or raw NaviScan and NaviPac survey files.

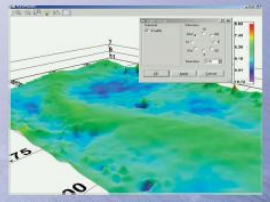
MODEL GENERATION – Models are created for a survey area by definition of model parameters, desired cell type and depth data type (minimum, maximum, average, last value, standard deviation and density).



DATA REDUCTION – During the model definition phase NaviChart provides facilities for data reduction by setting of tolerances for depth variations and allowable shrinkage of model boarders.

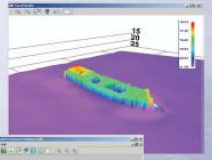
CLEANING – NaviModel features additional cleaning of models, either manually profile by profile in a pseudo 3D view or automatically through a spatial plane over the model allowing handling of data overlap.

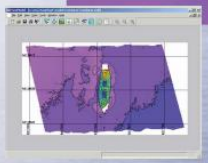
FLEXIBILITY – Optional addition of survey data after creation of a model provides the possibility of dividing large data sets into more files for easier data handling.



DERIVED MODELS – NaviModel provides for the generation of derived models, substitution of one model into another model (e.g. insertion of theoretical model into data model), merging of models, etc.

MODEL ANALYSIS – NaviModel features a/o analysis of actual versus theoretical models, model manipulations, and volume/area computations.





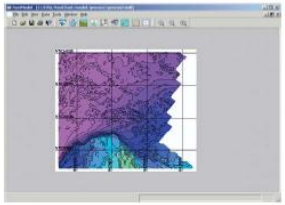
DATA VIEWS – Data displays comprise a/o 2D colour-coded views, ability to rotate sun illuminated 3D views with free-flight feature and presentation of data relative to different sea levels. Longitudinal and cross profiles are defined or loaded by use of a profile definition curve.

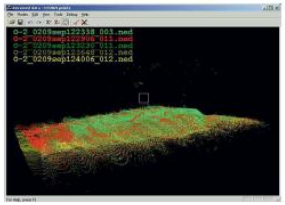
REPORTING – At any time during the generation of models access to progress information and reporting is available.

OUTPUT – NaviModel provides data output as DTM, Contour curves, longitudinal and cross profiles, cleaned or rejected data and screen prints. Formats comprise raw ASCII XYZ, DXF and NaviChart format.

WINDOWS DISPLAYS – Full system flexibility allows personnel design and configuration of windows for preferred display settings and layout.

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

Operating System
- Windows NT, Windows 2000 or Windows XP

Displays
- Screen text, font size, graphics, colours and windows layout fully configurable
- Fully user designable screen layout
- Storage of operator preferred screen layout and settings

Digital Terrain Model
- TRN (Triangular Regular Network)
- TIN (Triangular Irregular Network)

Data input
- Cleaned survey data from NaviEdit (*.ned)
- ASCII XYZ data
- Run-line and profiles
- Raw NaviScan filesRaw NaviPac files

Model generation
- Definition of name
- Definition of area
- Definition of cell type
  - TRI (regular grid)
  - TIN (irregular grid)
- Definition of data type
  - Minimum
  - Maximum
  - Average
  - Last value
  - Standard deviation
  - Density
- Model parameters
  - Cell size
  - Collar width

Data reduction
- Tolerances for increasing/decreasing depths
- Allowance for boarder shrinkage

Cleaning
- Manually profile by profile in pseudo 3D view
- Automatically in spatial plane
- 3D data cleaning

Derived models
- Substitution of model areas
- Merging of models
- Water levels

Model Analysis
- Actual versus theoretical models
- Model manipulations
- Volume computations
- Area computations
- Data vs. model statistics

Output
- DTM
- Contour curves
- Longitudinal profiles
- Cross profiles
- Cleaned or rejected data
- Screen prints

Output formats
- ASCII XYZ
- DXF
- NaviChart

EIVA a/s
Tegltbaekvej 8-10
DK-8361 Hasselager
Denmark

EIVA a/s
Oldenvej 43
DK-3490 Kvistgaard
Denmark

Tel. Int. +45 8628 2011
Fax Int. +45 8628 2111
eiva@eiva.dk
www.eiva.dk

Sensor Data:
GPS
Gyro
RPH
PPS
+++

PPS

TimeBox

Sensor Data:
MBE
Gyro
RPH
PPS
+++

Online | Navigation | Data-acquisition

NaviPac

*.NPD

ASCII-data

2D/3D Helmsman

Position

Navigation

Online | Multibeam Data-acquisition

NaviScan

*.SBD

Binary data

Generation of DTMs | MB Calibration

Contour

Editing of Data | Exporting of Data

NaviEdit

SQL Database

Cleaning of Data | DTM manipulation

NaviModel

*.XYZ
*.NED

ASCII data
Binary data

Contours
Profiles

Charting | Export of Digital Plots

NaviPlot

Export

AutoCad
Google Earth

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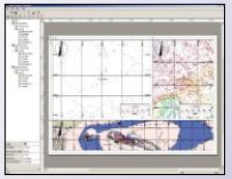
EIVA A/S Software - NaviPlot

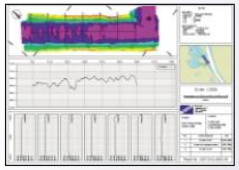
NaviPlot

Fair Sheet Production Software

APPLICATIONS – The NaviPlot software provides lay out of survey data on fair sheet for printing on any Windows enabled printer or plotter. The fair sheet comprises various elements and data types, and allows mixing of various mapping data in different frames for overlay with scale bar, colour palette, text, XY-grid and north arrow. NaviPlot features sorting of elements to allow more important elements stand out on top of less important.



FRAMES – The lay out is controlled by use of frames with the primary frame being the main frame around the whole paper. New frames are created either by mouse click-and-drag or by typing in frame values. Existing frames can freely be changed or deleted. The frames are organized in a tree structure, so that every frame, except the main frame, has a parent frame. For every frame it is possible to inherit properties from its parent frame and create own properties. Created frame layouts can be stored as default templates.



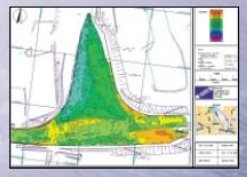
FRAME PROPERTIES – The properties of a frame comprise among others: scale, origo, projection & datum, size of frame, position of frame, pens used for drawing, name, width, height, background mode, and line style. The frame behind a new frame will automatically be selected as the parent frame.

MAP VIEW – A map view is a frame containing XY plots. This view allows display of various data types, e.g.: vector lines (display lines, runlines, dxf/dwg), contour lines with filling, bathy plot, geographical bitmaps (i.e. geotif), grid, long profiles, cross profiles, coverage, side scan mosaic. All map views are added as layers providing options like: stacking of layers, change of priority, delete layer, disable/enable display of layer. Coordinates are in XY or Latt/Long.

SCALEBAR – A scale bar is aligned to or centered within frame edges and has the following properties: size, text height, text label format and steps.

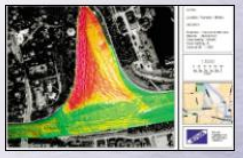
NORTH ARROW – A north arrow is aligned to frame corners and is selected from a variety of arrows available.

COLOUR PALETTE – A colour palette is required where coloured contours are part of the plot, thus marking the colours of depth ranges on the drawing.



GRID – An overlay grid shows the XY- or Lat/long lines for a frame. Each label can be hidden if they overlap other labels. The labels are aligned to the frame edges. It is possible to align label over, under or through grid line. The grid can be displayed as lines or cross.

IMPORT FILE TYPES – The most commonly used data formats are supported comprising a/o: contours (*.coa, *.cob), display/run lines (*.cur, *.dis, *.rln, *.rlx, *.rle, *.dxf, *.dwg), Geografic bitmaps (Geotif).



EXPORT FILE TYPES – The data formats supported comprise a/o: vector drawing (*.dwg, *.dxf).

PRINTING – Printing is controlled through standard Windows functions.

CALIBRATION OF PRINTER – As most printers do not provide the required accuracy to obtain true scale printing, NaviPlot features printing of a calibration page for determination of exact dpi value for a given printer.

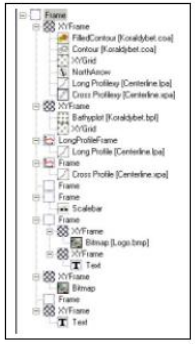
PRODUCT SUITE – The EIVA software product suite comprises software for all aspects of marine surveying, from integrated navigation and data acquisition to post-processing and final charting. Full continuity is provided between the individual software packages. Through a flexible interface the individual 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 4 processor
- 512 MB RAM
- 32 MB graphics RAM

Operating System
- Windows NT, Windows 2000 or Windows XP

Frame Properties
- Scale
- Origo
- Projection & datum
- Size of frame in [mm]
- Position of frame in [mm]
- Pens used for drawing
- Name
- Width
- Height
- Background Mode
- Line style



Map View Display Data
- Vector lines
  - Display lines
  - Runlines
  - dxf/dwg (AutoCad)
- Contour lines with filling
- Bathy plot
- Geographical bitmaps (i.e. geotif)
- Grid
- Long profiles
- Cross profiles
- Coverage
- Side Scan Mosaic

Import File Types
- Contours
  - *.coa
  - *.cob
- Display/run lines
  - *.cur
  - *.dis
  - *.rln
  - *.rlx
  - *.rle
  - *.dxf
  - *.dwg
- Geografical bitmaps
  - Geotif

Export File Types
- Vector drawing
  - *.dwg
  - *.dxf

EIVA a/s
Teglbaekvej 8-10
DK-8361 Hasselager
Denmark

Phone +45 8628 2011
Fax +45 8628 2111
eiva@eiva.dk
www.eiva.dk

Sensor Data:
GPS
Gyro
RPH
PPS
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PPS

TimeBox

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