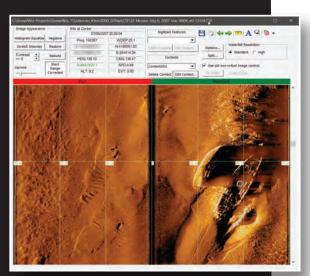


- Designed from the ground up to support towed surveying
- State of the art image processing algorithms
- Powerful contact management and reporting system

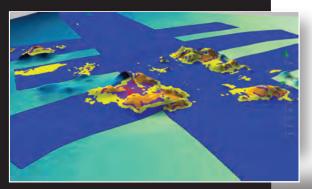
# SONARWIZ SIDESCAN



Powerful sidescan image processing features



Contact management designed to support commercial surveyors



Analyze image mosaics with the Seabed Characterization Tool

#### **CONTACT MANAGEMENT**

Extensive contact management & reporting capabilities designed to support large sidescan surveys. Pick contacts in the waterfall or plan view windows and markers will appear throughout the program. Search for contacts in other track lines or rationalize multiple contacts into a single improved target. Build database queries on 30+ automatic and user-defined data fields. Update contact data when survey navigation is modified in post-processing. Export contacts as georeferenced images, MS Office reports, or GIS layers.

#### **DATA ACQUISITION**

Lay out your lines and estimate survey timing with SonarWiz survey planning tools and send the plan to the remote helm display. Acquire sonar, navigation, fathometer data, payout meter and magnetometer data simultaneously. Configure the real time display options to display just the data you want, including sidescan and subbottom waterfalls, contact target strips, and fully processed, real-time mosaics

#### POST PROCESSING

Powerful tools for correcting the navigation of towed sensors include manual editing & filtering, post-process navigation injection, & map corrections to multibeam ground truth. Advanced gain & signal processing filters to enhance target detection or prepare a sidescan survey for habitat classification. The Seabed Characterization Tool can segment acoustic imagery into homogeneous regions for sediment classification. Export corrected data to XTF or one of many supported GeoReferenced Image, GIS and CAD formats

#### **LICENSING**

SonarWiz is modular and each component can be purchased separately, as an add-on, or as part of a Field or Office bundle. We offer dongle and dongle-free licensing (DFL) options. DFL licenses eliminate the risk of lost or stolen dongles and can be transferred between any two internet-connected PCs in seconds. Network and Academic options are also available.

#### SUPPORTED INTERFACES

Atlas NA-Marine Sonic Arc Explorer, HDS, SeaSca; Analog 16-bit Sidescans (with analog box); C-Max CM2; EdgeTech 4125/4200, 4600/6205; Falmouth Scientific HMS-624, Swordfish; GeoAcoustics PulSAR, GSF, GeoPulse Compact; Imagenex SportScan, Yellowfin; Jetasonic; Klein 3000, 3900, 4900, 5000, 5900, DeepSled, MA-X 600; PingDSP 3DSS; R2Sonic 202X series; SyQuest Aquascan; Teledyne-Odom 1624; Tritech Starfish, Seaking

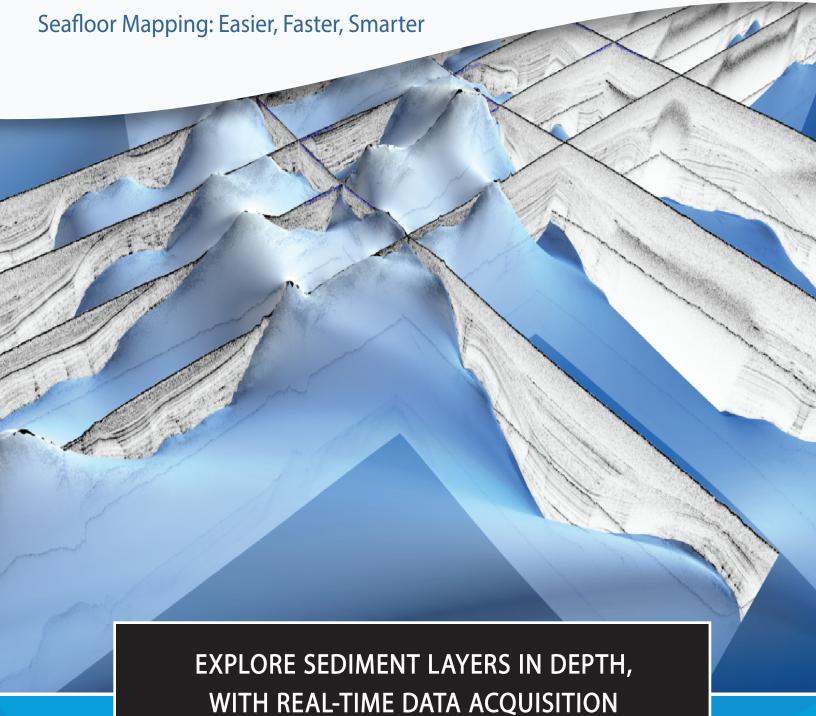
#### **FILE FORMATS**

81S, 83P, 872, ALL, CM2, COD, DAT, GCF, H5, HSX, JSF, KMALL, LOGDOC, MST, RAW, RDF, RFF, QPD+DB, SDF, SDS, SES3, SL2, SL3, SMB, SXR, SWF8, TIL, XSE, XTF

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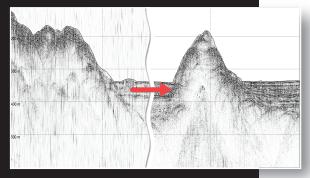


# SONARWIZ SUBBOTTOM

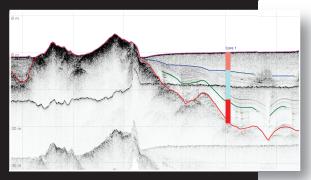


- Signal processing features designed specifically for marine survey data
- Apply laybacks, tides, heave filters and bathymetric alignment
- Easily visualize your data in two or three-dimensions
- Support for navigation, fathometer and magnetometer data

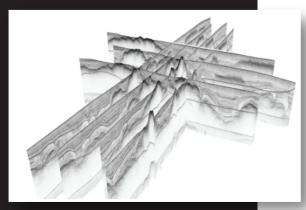
# SENARWIZ SUB-BOTTOM



Powerful gain and filtering options increase the information content of the data.



Bottom-track, filter and trace acoustic reflectors in the SonarWiz profile view.



Easily visualize and share SBP data in 3D.

#### DATA PROCESSING

Comprehensive signal processing and gain control options for sub-bottom profile data, including features designed specifically for marine surveys such as edit or inject navigation, make layback adjustments, apply tide corrections and remove heave from data. Easily apply gains and filters, correct vertical offsets and apply datum adjustments to the entire survey, then export the corrected profiles to new SEGY files or other formats for processing in 3rd party seismic or GIS software.

#### INTERPRETATION & VISUALIZATION

Quickly digitize acoustic horizons using smart reflector tracking. Distinguish horizons from multiples with the new multiple identification tool. Compare intersecting profiles directly in the digitizer or in quickly built 3D cross-profiles. Annotate your profiles with well logs to aid interpretation and perform isopach and volumetric computations on the layers you've identified. Easily create 3D fence plots. Generate customized reports of your work and export your corrected data to SEGY or one of the many supported GIS or CAD formats.

#### LICENSING

SonarWiz is modular and each component can be purchased separately, as an add-on, or as part of a Field or Office bundle. We oer dongle and dongle-free licensing (DFL) options. DFL licenses eliminate the risk of lost or stolen dongles and can be transferred between any two internet-connected PCs in seconds. Network and Academic options are also available.

#### SUPPORTED INTERFACES

Analog 16-bit or 24-bit systems (with Analog Box); EdgeTech 3100/3200; Falmouth Scientific ChirpCeiver; Geoacoustics GeoPulse; Innomar SES-2000; Klein 3000; Knudson SB; SyQwest Stratabox, Hydrobox, Bathy2010; Teledyne-Odom 1625, Chip III, Echotrack CVM, Echotrack E20.

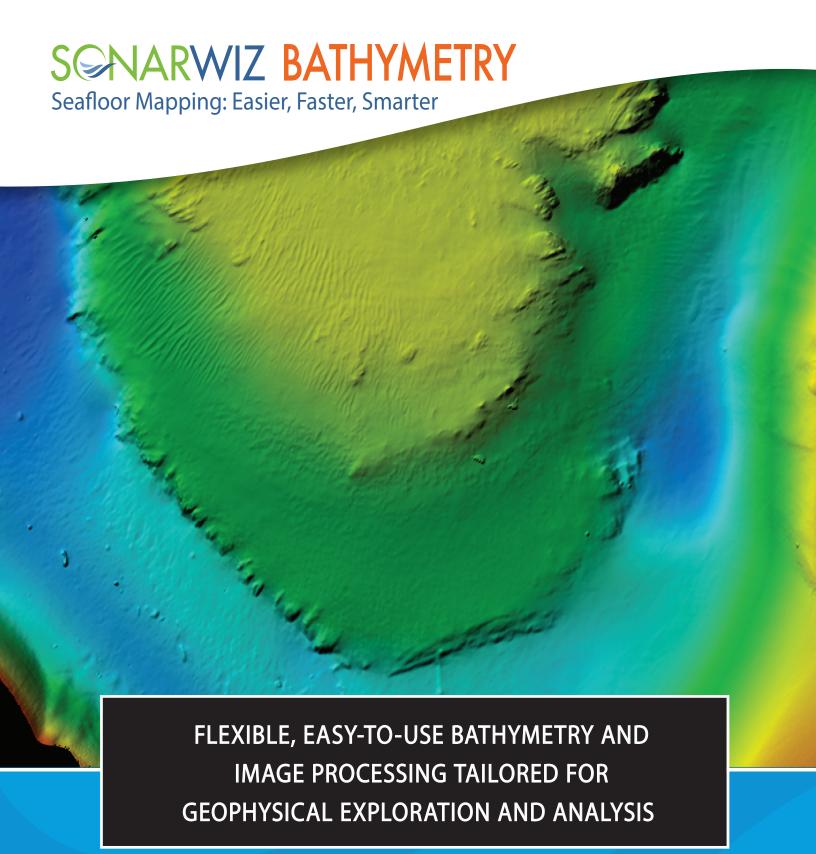
#### **FILE FORMATS**

ACF, ASD, BSS, COD, DAT, GSF, KEB, JSF, ODC, RAD, RAW, S7K, SDF, SEG, SES, SES3, SGY, SL2, SL3, TRA, V4log, XTF.

Recommended PC 64bit, Win 10, DirectX11+, 8GB, SSD, USB port.

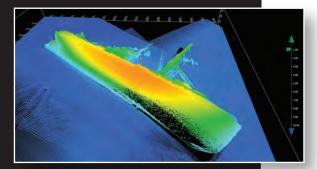
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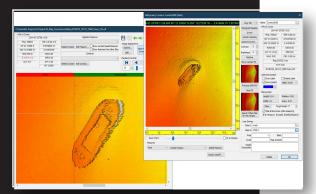


- Intuitive workflow saves time and reduces training costs
- Impressive image processing results for most sonars
- Comprehensive calibration, QA/QC and data export utilities
- Integrates with Sidescan and Subbottom modules for multisensor projects

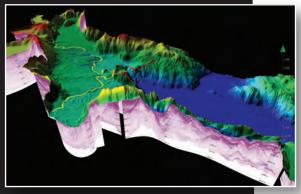
# SONARWIZ BATHYMETRY



Advanced 3D editing



Target picking and cataloging



Integrated data analysis environment

#### **BATHYMETRY**

SonarWiz Bathymetry contains all the tools you need to calibrate, edit, QC and render your bathymetric data, including support for AUV surveys with post-process navigation and attitude injection tools. SonarWiz has special support for geophysical and exploratory surveying offering 6 different gridding algorithms, volumetric and difference calculators, cross-check reports, vector contouring and more. Export raw and processed data to more than 20 supported GIS and CAD formats.

#### IMAGE PROCESSING, TARGETING

SonarWiz processes the acoustic backscatter simultaneously with the bathymetric soundings. This means that you can switch between rendering bathymetry or acoustic backscatter on the fly in any of the editors or displays. SonarWiz statistical normalization algorithms optimized your imagery for habitat classification and mosaic generation without degrading the image resolution. MBES Targets can be picked and cataloged using the same powerful contact utilities available for sidescan.

#### **VISUALIZATION**

SonarWiz contains interactive 3D visualization tools where bathymetry and acoustic backscatter can be easily combined with sidescan, sub-bottom prole (SBP) and magnetometer data to make impressive visualizations of your survey area.

#### **LICENSING**

SonarWiz is modular and each component can be purchased separately, as an add-on, or as part of a Field or Office bundle. We oer dongle and dongle-free licensing (DFL) options. DFL licenses eliminate the risk of lost or stolen dongles and can be transferred between any two internet-connected PCs in seconds. Network and Academic options are also available.

#### SUPPORTED INTERFACES

Edgetech 4600/6205; GeoAcoustics GeoSwath, Klein 5900; Marine Electronics Dolphin SeaView, Mesotech M3, NORBIT iWBMS, PingDSP 3DSS, R2Sonic 202X, Reson SeaBat, Velodyne VLP-16/VLP-32

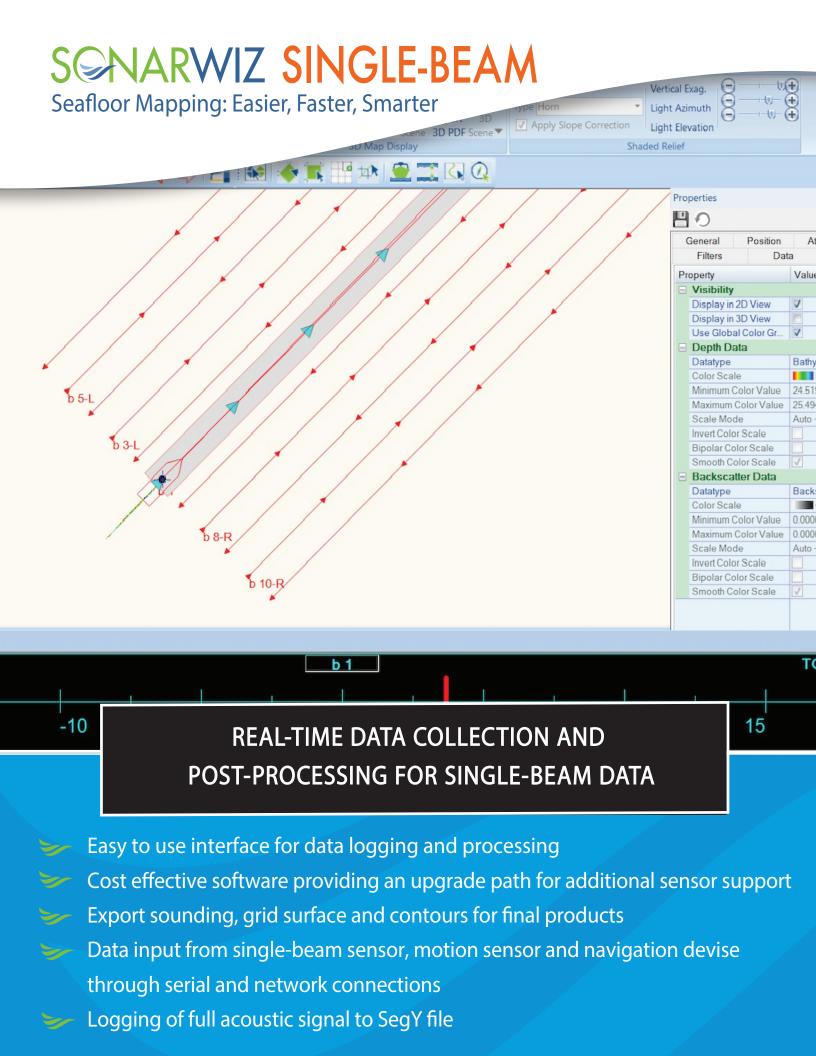
#### **FILE FORMATS**

83P, ALL, D1P, FBT, FLS, GSF, HS2x, HSX, JSF, KMALL, NWSF, RDF, RFF, S7K, SDF, SL3, SXI, SXP, TIL, WMBF, XSE, XTF

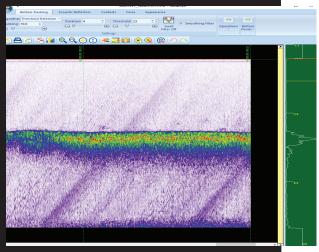
Recommended PC 64bit, Win 10, DirectX11+, 8GB, SSD, USB port.

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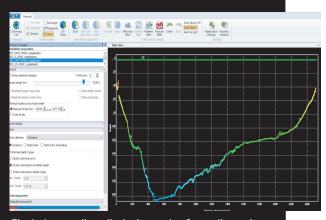




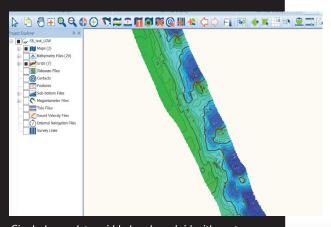
# SENARWIZ SINGLE-BEAM



Acoustic datagram collected and stored into SegY format



Single-beam editor, displaying prole of sounding points



Single-beam data gridded and overlaid with contours

#### **DATA COLLECTION**

Plan your survey with easy to use line planning tools, using the same interface and feature set that are built into the SonarWiz Suite. Geodesy tools for pre-defined and custom grids. Support for all NMEA-0183 single beam echo sounders and other sonar specific data types. On-line controls allow the operator to monitor the quality of the data.

#### POST-PROCESSING

The single beam editor allows for applying all correction to the data – tides, vessel offsets, and both manual and automatic editing sounding data. Data is stored as an XYZ as a final product, with tools in SonarWiz to generate grids, contours and multiple reports for export.

#### LICENSING

SonarWiz is modular and each component can be purchased separately, as an add-on, or as part of a Field or Office bundle. We offer dongle and dongle-free licensing (DFL) options. DFL licenses eliminate the risk of lost or stolen dongles and can be transferred between any two internet-connected PCs in seconds. Network and Academic options are also available.

#### SUPPORTED INTERFACES

Sensor data can be brought in through Serial or network (UDP, TCP/IP) Depth sensors: All NMEA-0183 supported devices along with sensor specific formats, continually adding new interfaces.

Motion sensors: TSS1, Applanix POS Position devices: NMEA-0183

#### **FILE FORMATS**

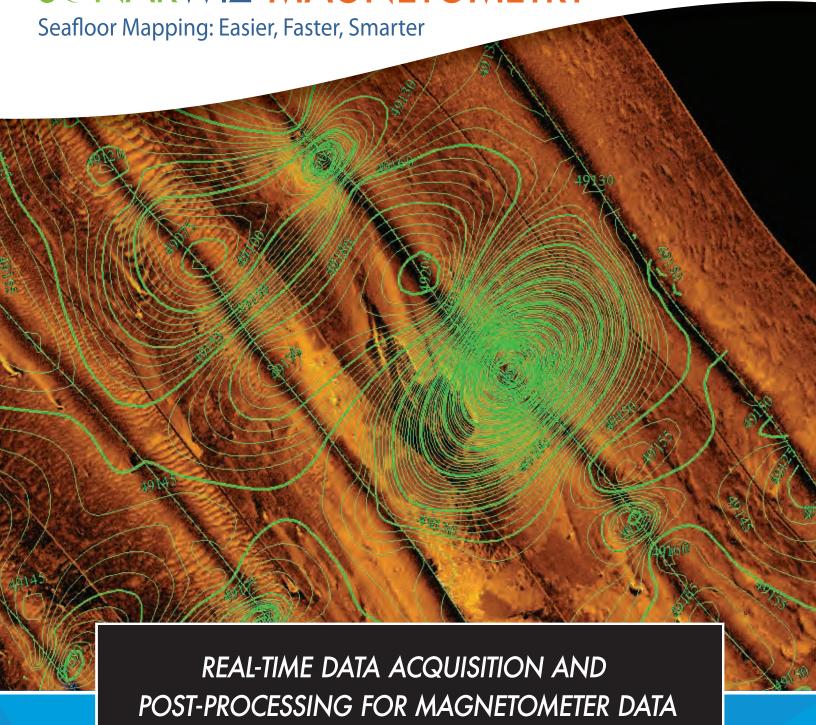
For data processing, SonarWiz single beam can import third party files collected. Supported formats are DEP-1, Hess-1, HYPACK single-beam, Keafott, Knudsen (KEA, KEB), MLG, NMEA0183, s7k and XY-Depth (TXT)

Recommended PC 64bit, Win 10, DirectX11+, 8GB, SSD, USB port.

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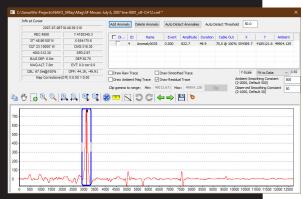


# S@NARWIZ MAGNETOMETRY

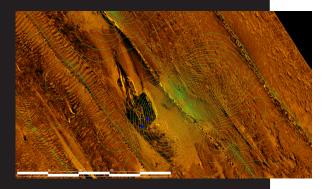


- Provides full range of navigation filtering and smoothing of magnetometry signals
- Automatically or manually mark magnetic anomalies
- Visualize your data in two or three-dimensions

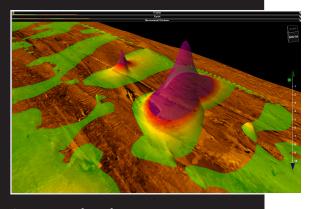
### SENARWIZ MAGNETOMETRY



Digitize magnetic anomalies and identify targets.



Grid and contour the magnetic field and display it on backscatter imagery.



Create 3D surfaces from your magnetic data to make powerful visualizations.

#### **DATA PROCESSING**

SonarWiz Magnetometry provides the full range of navigation, filtering, smoothing, and repair that SonarWiz offers for sidescan and subbottom post-processing. Anomaly positions can also be recentered on sidescan targets using the interactive map correction features in SonarWiz. Magnetometry (Mag) real time acquisition (RT) included with all SSS/SBP RT licenses. Mag sold as add-on module or in the full Office Post-Processing Suite.

#### **DIGITIZING**

SonarWiz can detect magnetic anomalies automatically or they can be placed manually in the profile view. Once identified, anomalies can be shown on the plan view map or nearby sidescan waterfalls to help aid in target identification. SonarWiz can also be configured to automatically assign attribute information to anomalies based on the location of known pipeline or other structures.

#### VISUALIZATION AND REPORTING

SonarWiz offers several useful magnetometer visualization and export options. In addition to individual anomaly markers, the entire magnetic trace can be displayed on the map as a color-coded stick plot. It is also easy to interpolate the magnetic data into a 3D surface for display with other SonarWiz sidescan and sub-bottom data.

#### **LICENSING**

SonarWiz is modular and each component can be purchased separately, as an add-on, or as part of a Field or Office bundle. We offer dongle and dongle-free licensing (DFL) options. DFL licenses eliminate the risk of lost or stolen dongles and can be transferred between any two internet-connected PCs in seconds. Network and Academic options are also available.

#### SUPPORTED INTERFACES

AquaScan AX2000, GEM 19M, 19T, Geometrics 881 & 882, Marine Magnetics Standard and with Depth, plus many more. Refer to the Magnetometry Reference PDF or contact CTI Technical Support for details.

#### FILE FORMATS

SonarWiz uses a template system for parsing magnetic formats. New templates added to the program as needed. Templates for the following are available out of the box: AquaScan, EdgeTech (JSF), GEM Systems (MagLog), Geometrics, Generic (CSV, TXT, XYZ), Hypack (RAW), Marine Magnetics, SonarWiz

Recommended PC 64bit, Win 10, DirectX11+, 8GB, SSD, USB port.

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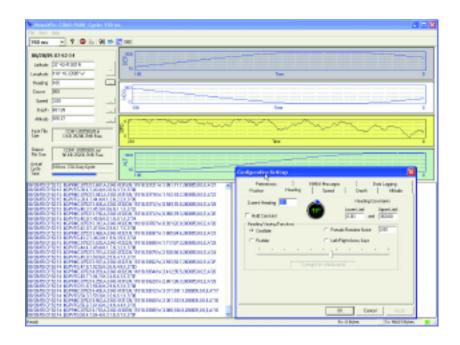
### NmeaWiz

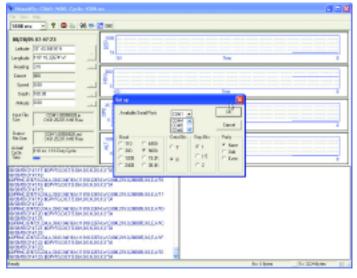
# NmeaWiz: Flexible navigation simulator

NmeaWiz is an NMEA-0183 real-time message generator and testing tool. NmeaWiz can emulate the real-time NMEA-0183 output of GPS receivers, echo sounders, gyros and compasses while providing the user complete control over variation of position, speed, heading and depth. Use NmeaWiz anywhere in any test application that requires dynamic GPS, heading or fathometer input. NmeaWiz facilitates testing of equator, map projection zone boundary and international dateline crossings.

Message output includes GGA, GLL, RMA, RMC, DBT, DPT, VHW, HDT, VTG, ZDA, MWD, MWV, DTM, GNS, SBP, DBS and others. Supports COM1-16.

Runs on Windows NT/95/98/2K/XP.
/VISTA/Windows7







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NmeaWiz: The software that turns your PC into a virtual GPS receiver, compass and fathometer.

### With NmeaWiz, you are in control...

Working like your own virtual GPS reciever, compass and fathometer all rolled into one, NmeaWiz generates the NMEA-0183 messages that allow you to stress test your navigation and data acquisition software. Find out now how your software responds to the effects of erratic speed, heading and depth, high or low data rates, UTM or other map zone boundary crossings, equator crossings, date line crossings. Do you need to test or evaluate NMEA software such as chart plotters, hydrographic, sidescan sonar, seismic reflection or any other NMEA based data

If you use the NMEA output, you need NmeaWiz.

collection software? Find out how your system responds to multiple simultaneous GPS sensors.

#### Simply the best

NMEA simulator.

#### Software Features...

- Intuitive easy-to-use Windows graphical user interface.
- Supports COM1-COM16 as well as logging to hard drive.
- Simulates the output of GPS receivers, fathometers and heading sensors.
- Runs under Windows NT/95/98/2000/XP/VISTA/Windows7
- Multi-instance feature allows you to configure one port as a GPS, another as compass and still another as a fathometer.
- Supports GGA, GLL, RMA, RMC, DBT, DPT, VHW, HDT, VTG, ZDA, MWD, MWV, DTM, GNS, SBP, DBS and other NMEA-0183. Records output from any RS-232 device and provides 'clocked' playback feature.
- Create NMEA test data files for driving demos—Great for trade shows!
- Supports the NMEA-0183 1.x and 2.x standards.
- Complete control over position, speed, heading and depth.
- Output rates from 50ms to 10s.
- Baud rates from 2400 to 38400

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sales@chesapeaketech.com www.chesapeaketech.com

phone: 650 967.2045



#### SonarWiz Interfaces

Real-time (R/T) sonar data acquisition interfaces supported; Magnetometry R/T acquisition is free with ANY sonar R/T license

#### SonarWiz can acquire and process data from the following sonar models:

Sidescan Sonar: (XTF file recorded) - GeoAcoustics SS Analog 16-bit: (examples) - Klein 595, 2000 SS - Edgetech 260/272

- C-MAX 800 series

C-MAX CM2 USB

- 4125(i) via Ethernet EdgeTech - 4200 via Ethernet

> - 4125(i) via USB/COM port 4600/6205 sidescan

Falmouth Scientific HMS-624, Swordfish SS Imagenex - Sportscan, Yellowfin

Jetasonic - SS arrays

Klein - 3000, 3900, 4900 - 5000, 5000V2

- 5900 w/gap-fill

- DeepSled UUV3500 sidescan

- MA-X View 600

Knudsen - 320

GeoAcoustics Ltd. - Digital SS Server

- GeoPulse Compact

- GeoSwath 4/Plus sidescan

- Pulsar SS (direct control, no need to use MS1000)

Marine Sonic - HDS and SeaScan

(now Atlas NA) - ARC Explorer

**PingDSP** - 3DSS-DX sidescan

R2Sonic - 202X series w/TruePix

SyQwest - Aquascan

Teledyne-Odom - 1624 SS

Tritech - Starfish 450/990, Seaking **Sub-bottom sonar:** (SEG file recorded) Analog SB: - Sparkers, Boomers,

(examples) - Bubble-guns, Pulsers

Edgetech 3000 (X-Star), 3100, 3200 FSSB (e.g. SB216, SB424)

HMS-622 ChirpCeiver Falmouth Scientific Kongsberg-Geopulse Analog SB GeoAcoustics Ltd Geopulse Plus Digital SB

SES-2000 SB Innomar Knudsen SyQwest Knudsen SB

Stratabox, Hydrobox Teledyne-Odom Bathy2010, Bathy2010PC

Chirp III, Echotrac CVM

Echotrack E20

Combined SS/SB: (XTF and SEG files recorded)

Edgetech - 2000 SS/SB HUGIN - AUV SS/SB - 3000 SS/SB Klein Teledyne-Odom - 1625 SS/SB

(XTF file recorded) **Bathymetry Sonar:** 

Edgetech - 4600/6205 SS/bathy

GeoAcoustics - GeoSwath 4/Plus SS/MBES Klein - 3500HC & 5900 SS/bathy LiDAR - Velodyne VLP-16, VLP-32

Marine Electronics - Dolphin SeaView

Mesotech NORBIT - iWBMS supported - 3DSS SS/bathy PingDSP - 202X single-headed R2Sonic - Seabat series S7K

Single-beam Sonar:

Various vendors e.g.

Impact Subsea InnerSpace ODOM

Senbon Denki

RESON

All NMEA-0183-compliant models, supporting DBT / DPT messages

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\$ISADA / \$ISADA packets

- 400-series (meters)

- ISA500 - SBT, E20 - PDR series

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#### **SonarWiz File Format Import**

All file formats in a category may be imported with the post-processing license of that category.

#### **Sidescan Import File Types:**

- C-MAX (\*.XTF, \*.CM2)
- CODA (\*.COD)
- EdgeTech (\*.JSF)
- eXtended Triton Format (\*.XTF)
- GeoAcoustics (\*.GCF, \*.RDF, \*.RFF, .XTF)
- Humminbird side-view (\*.DAT)
- HYPACK (\*.HSX)
- Imagenex: Sportscan (\*.81S); Yellowfin (\*.872);
- Imagenex Delta T Backscatter (\*.83P)
- Innomar SS (\*.SES3)
- Klein (\*.SDF, .XTF)
- Kongsberg EM backscatter (\*.ALL); (\*.KMALL)
- Kongsberg (Simrad) EA400/600 Backscatter (\*.RAW)
- Kongsberg Mesotech M3 FLS (\*.IMB)
- Kongsberg (ProSAS, HI SAS 1030) (\*.IMG, \*.XTF)
- Kongsberg PULSAR SS (\*.XTF,\*.SMB)
- KRAKEN (\*.TIL, .XTF)
- Lowrance (\*.XTF or \*.SL2 or \*.SL3) \*Note1
- Marine Sonic (\*.MST, \*.SDS)
- MCM Sensor HD (\*.H5)
- Proteus (\*.DAT)
- QMips (\*.DAT, \*.QMP)
- QPS (\*.QPD, \*.DB)
- R2Sonic (\*.R2S, \*.XTF); (\*.HSX\_R2S via Hypack)
- RESON w Snippets or backscatter (\*.S7K)
- Seabeam 2100 (\*.MB41)
- Sonardyne Solstice (\*.SWF8)
- SwathPlus Raw/Processed (\*.SXR, \*.SXP)
- Swedish Geo Survey (\*.SEG, \*.SGY)
- Tritech older Starfish (\*.V4Log, \*.LogDoc, \*.XTF)

#### Single-beam Import File Types:

- ISA500 M39 format recorded by HYPACK
- S7K Teledyne Odom Echotrac E20
- KEB Knudsen
- MLG EASYNAV variety
- RAW files recorded by HYPACK
- TXT recorded format saved by SonarWiz
- XTF SonarWiz format
- See the Single-beam Reference PDF for format details

#### **Magnetometry Import File Formats:**

Many sentence formats supported, using a template-based import design. See the Magnetometry Post-processing Reference PDF for details

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#### **Sub-bottom Import File Types:**

- Atlas Parasound (\*.ACF, \*.ASD)
- CODA (\*.COD)
- EdgeTech JSF (\*.JSF)
- eXtended Triton Format (\*.XTF)
- GeoAcoustics (\*.GCF); GeoPulse (\*.RAW)
- Humminbird (\*.DAT)
- Innomar SB (\*.SES, \*.SES3)
- Klein 3000 (\*.SDF, \*.XTF)
- Knudsen KEB (\*.KEB) incl. D0-D3 and B9 formats
- Kongsberg (\*.RAW) incl EA400, Topas 3
- Lowrance (\*.SL2, \*.SL3) \*Note1
- Mala GPR (\*.RAD)
- Proteus (\*.DAT)
- SEG-Y (\*.SEGV2, \*.SEG, \*.SGY, \*.TRA)
- Specialty Devices SDI (\*.BSS)
- SyQwest ODC (\*.ODC)
- Teledyne Odom (\*.S7K) Echograms
- Tritech (\*.V4Log)

#### **Bathymetric Import File Formats:**

- EdgeTech JSF (\*.JSF)
- ELAC Seabeam (\*.XSE)
- eXtended Triton Format (\*.XTF)
- Generic Sensor Format (\*.GSF)
- GeoAcoustics (\*.RDF, \*.RFF)
- Hydrosweep (\*.S7K)
- HYPACK bathy / backscatter (\*.HSX, \*.HS2, \*.HS2X)
- Imagenex Delta T (\*.83P) and DT 100 (\*.D1P)
- Klein (\*.SDF)
- Kongsberg (\*.ALL, \*.KMALL)
- KRAKEN (\*.TIL)
- Lowrance StructureScan (\*.SL3)
- Marine Electronics Dolphin Seaview (\*.FLS)
- MB-System (\*.FBT)
- NORBIT iWBMS (\*.XTF, \*.S7K; \*.HSX)
- R2Sonic w TruePix or Snippets (\*.XTF)
- R2Sonic (\*.HSX + \*.R2S via HYPACK)
- RESON with Backscatter or Snippets (\*.S7K)
- RESON (\*.HSX + \*.7K via HYPACK)
- BathySwath SWATHPLUS (\*.SXI, \*.SXP)
- Sonardyne Solstice (\*.SWF8)
- SonarWiz format (\*.XTF)
- Velodyne VLP-16 / VLP-32 LiDAR (\*.XTF);
- Velodyne VLP-16/ VLP-32 (\*.HSX)
- WASSP multibeam (\*.NWSF, \*.WMBF)
- XYZ format

\*Note1: SL2/SL3/DAT: Original formats import, newer ones may not.