Echoview 12 release notes

Echoview Software is committed to adding valuable new functionality and supporting the latest technologies in Echoview®.

Read on to discover how the newest upgrades to the benchmark software for hydroacoustic data analysis will empower you to streamline your workflow and extract the best results from your data.

Echoview 12 is available to all license holders with an up-to-date Maintenance and Technical Support (MATS) subscription. To find out if your MATS subscription is current, please contact info@echoview.com.
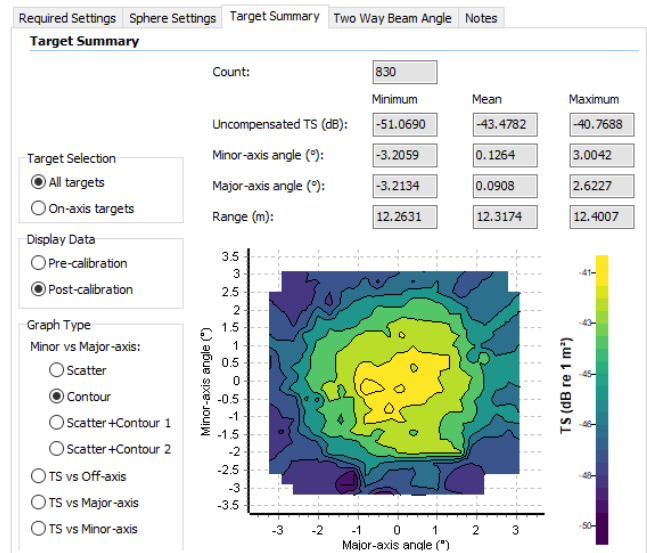
Calibration Assistant — broadened

Calibration is a vital step in any scientific data analysis, and you asked if calibration could be made easier, more accessible, and robust. And yes, it can — we deliver to you an understandable, well documented, and modern user interface to perform calibration calculations.

The Calibration Assistant facilitates the calculation of echosounder gain, the filter attenuation correction factor (e.g., Sa correction), and beam pattern characteristics for any single, split, or dual beam echosounder file format supported by Echoview, in an easy-to-use and transparent approach.

The updated Calibration Assistant has even more capabilities in Echoview 12, including:

- A built-in sphere calculator that automatically determines the expected TS for a range of standard spheres across typical frequencies, with the option to define frequency exclusion zones

- The calculation of frequency-dependent wideband (FM) calibration parameters for Simrad EK80 data

- An exportable calibration report containing a record of data and results

- The calculation of corrections in real time when live-viewing measurements of a calibration sphere

- Graphs to visualize input target data and calculated results, including:

    o Compensated and uncompensated TS vs off-axis, major-axis, or minor-axis angles

    o Scatter, contour, and combined scatter-contour plots for major- vs. minor-axis angles. On the scatter plot, points can be clicked to synchronize any visible echograms to the time of the selected target

- Filtering of on-axis targets based on the beam compensation level

- Access to all Calibration Assistant settings using COM, to aid automation of the calibration process

Contour graph for calibrated targets in the Calibration Assistant.

The Calibration Assistant is licensed with the Essentials module.

A more responsive and faster Echoview

Echoview's interface is now more responsive during heavy calculations, allowing you to interact and change settings, or to cancel analysis exports that are in progress.

Echoview 12 is also much faster. Match its latest built-in features with a powerful computer to experience a performance boost for:

- Reading data files and deriving raw variables

- Recalculations while adjusting settings related to calibration, platforms, transducers, or GPS data

- Use of the Reduce Pings (Method 2), Region Statistic, and GLCM Texture Feature virtual variables

- Use of all virtual lines, especially the Best Bottom Candidate Line Pick operator

- Exports to the ICES acoustic trawl survey database file format

- Panning in the Dataflow window when many objects are present

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More robust multibeam school detection

Echoview 12 showcases clear improvements when processing overlapping or intersecting pings (e.g., when a survey vessel is turning) when using the cruise scanning algorithm for multibeam school detection.

In older versions of Echoview, use of this algorithm may result in artefacts in the detected regions for fish or plankton aggregations, or gas plumes. Echoview 12 generates a significantly better result in this situation.
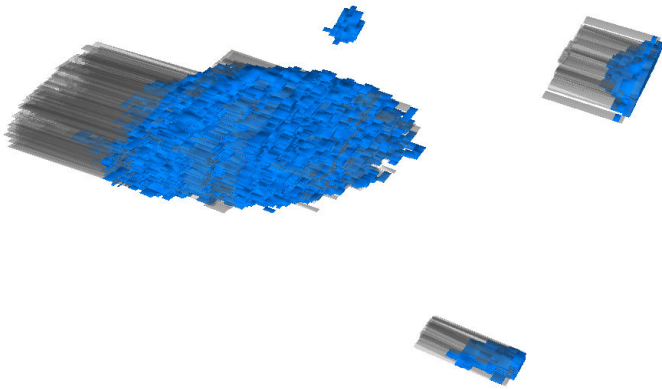
3D fish schools detected using Reson 7k data. Echoview 11.1's algorithm generated artefacts in the presence of overlapping pings (grey objects). Echoview 12's results are greatly improved (blue objects). Data kindly shared by the Monterey Bay Aquarium Research Institute.

To support these improvements, you can also double-click in the Regions window to synchronize multibeam echograms to the first ping in a 3D region.

Mouse pointer duplication

Would you like to compare and explore your data more easily? Echoview 12 can duplicate the mouse pointer across all visible echogram, graph, and cruise track windows, making it easy to inspect and cross-reference your data.

Enable this feature with ease using the toolbar icon or a keyboard shortcut (SHIFT+ CTRL+M).

As shown in the following image, the active mouse pointer can be duplicated across multibeam and single beam echograms, and a marker can be shown on graphs to highlight the same time and/or depth in the data that each window is currently displaying.
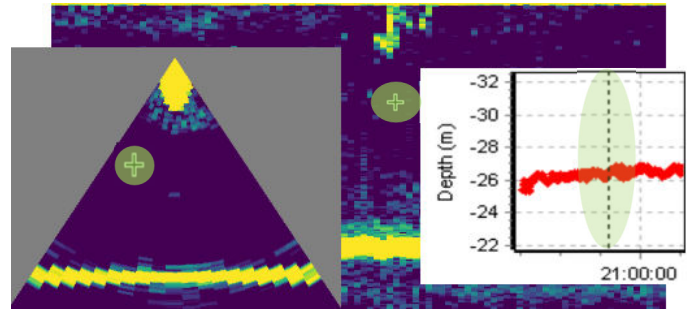

The mouse cursor's position can be duplicated across echograms, graphs, and other windows (highlighted in green), making it easy to understand your data.

Time-variable synchronization of ship acoustics and towed cameras

Echoview 12 can adjust the relative location of video and image datasets that were recorded on a towed body such as a trawl, so that they can be correctly synchronized with shipboard acoustics. This provides an easy way to compare echosounder and camera data from the same volume of water.

Options are available to set the camera at either a fixed trawl depth and tow line length from the vessel, or to input time-varying depths and lengths using text files for a more accurate comparison during trawl deployment and recovery activities.

Echoview uses the trawl camera depth, tow line length, and vessel speed to calculate the relative position of the trawl camera to the transducer. This can be synchronized in time and also visualized on echograms using a new virtual line operator called Towed Body Offset.
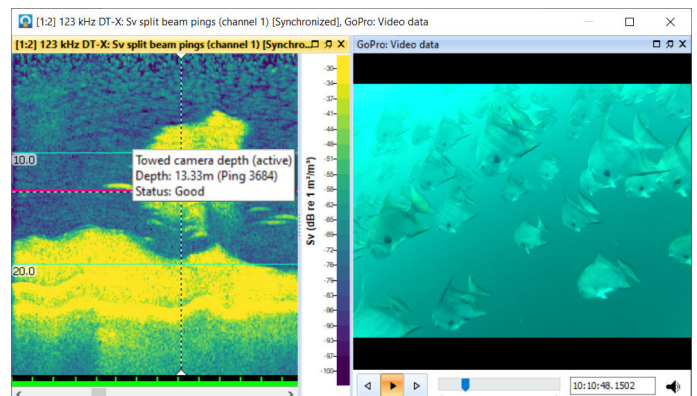
BioSonics DT-X data recorded from a vessel visualized alongside position-shifted and synchronized GoPro video data collected from a towed platform.

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Tools for graphing and synchronizing

A variety of graphing and synchronization tools have been added or improved, making it easy to explore multiple variables and data types simultaneously. Changes include:

- All time-based graphs (such as line, heading, pitch, and roll variables) can be auto-synchronized with echograms and other variables

- Ping and beam graphs can be more easily synchronized with echogram data

- Response times of the auto-synchronization tool indicator have been improved

- A graph properties dialog box (accessed by right-clicking in a graph window, or pressing the F8 key when a graph window is active) is available for all graphs and allows you to:

    o Set a custom graph title and axis labels

    o Customize the minimum and axis limits, which allows you to re-graph data whilst easily visually comparing the results

New options to customize what's shown in graphs, including graph labels and axis limits.

Compatibility with new systems

You can work with even more types of data using Echoview 12, as we've added support for:

- Narrowband and pulse compressed echosounder data recorded by Nortek Signature current profilers

- Split-beam data recorded by the Furuno FCV-38 fish finder using the SONAR-netCDF4 file format

- Split-beam data recorded by the Simrad EC150-3C transducer

- Simrad ME70 data recorded by ME70 software version 1.4.0

- Comment tuples recorded in BioSonics *.dt4 files

- $INVTG heading data in NMEA strings

We also added Echocheck support for Sonic .200 data files, and Echosim 80 support for Simrad ES80 data files.
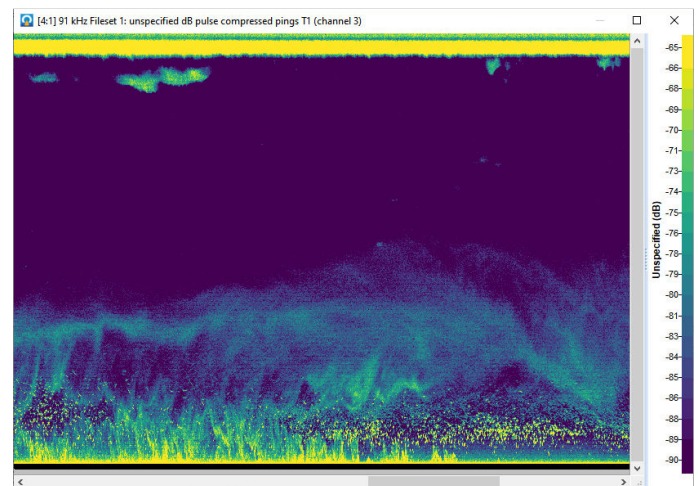
Nortek Signature 100 echosounder data recorded from a mooring. Data kindly shared by the Antarctic Ecosystem Research Division, NOAA.

Licensing changes

- The module required to use any virtual variable is now shown in the New Virtual Variable dialog box, as well as in operator descriptions in Variable Properties

- The Media module has been removed. The ability to synchronize video and images with acoustic data is now available to all license holders

- The Live Viewing module is now known as Survey Suite. Survey Suite allows you to view and annotate data in real time or after a survey. It includes licensed access to Echoexplore, Echoview Software's tool for cataloging and exploring hydroacoustic data files

- The Echoview Essentials module is now more simply renamed to the Essentials module. The Essentials module is the core component of the Analysis Suite, with additional modules available to suit a diverse range of applications

- A maximum of 500 measurements (such as pings) can be previewed in Echoview 12 without a license

- Annual subscription licenses are now available

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Other improvements and additions

- The New Virtual Variable dialog box allows you to filter operators based on the selected variable when the dialog box is launched
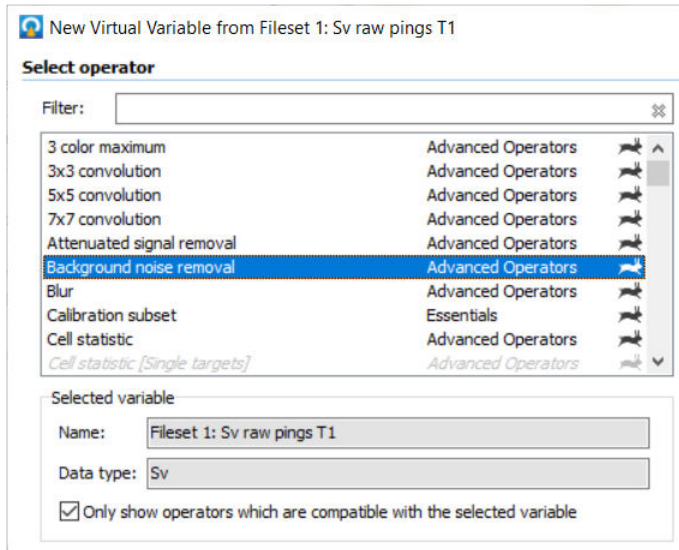
Added options and feedback when creating virtual variables.

- Water current speed measurements can be added to Echoview in a text file, then used to determine grid spacings or to calculate region and school distances (e.g., for data collected from moorings or other fixed platforms)

- Depth-varying sound speed calculation adjustments using CTD data are now also applied to:

    o Variables from BioSonics DT4 and Simrad EK80 wideband data (in addition to the previously supported Simrad EK60 and EK80 narrowband file formats)

    o TVG range correction and Sv sampled volume calculations in supported file formats

    o The Sv integration window used by the Calibration Assistant

- The Code operator now accepts complex data as input, allowing you to develop custom Python code to manipulate wideband data whilst maintaining full frequency spectrum information

- The Live Export operator, which can update CSV files with data received in real time, now allows smaller maximum file sizes to be created

- Calibration settings now allow multiple names, or aliases, with the preferred name updated for several settings. For example, EffectivePulseDuration is now the preferred name for EffectivePulseLength, but both names are accepted in ECS files

- An option to Synchronize to Target when viewing multibeam and single-beam equivalent echograms for multibeam target detection data

- Better visibility of grid labels and on-screen integration values

- The Span Gaps virtual line operator now includes a Maximum gap size option

- Details panel display of Simrad EK80 CW recording mode (complex, power/angle, or reduced sampling rate)

- New right-click option to define a region from a cell on an echogram
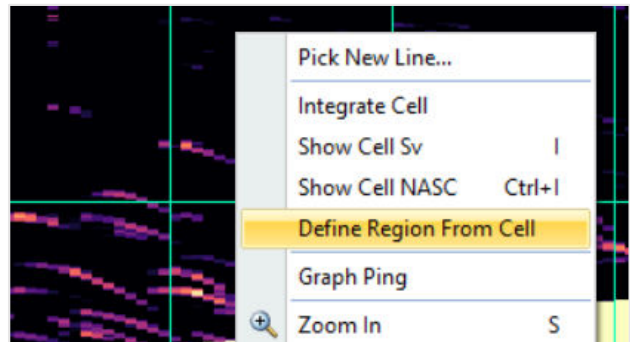
When grid lines are enabled on an echogram, the option to define a region from a cell is available.

System requirements

Echoview 12 is compatible with 64-bit Windows 8.1 and Windows 10 operating systems.

The Windows 7 operating system has reached end of life and Echoview 12 can no longer be installed on this operating system.

Getting Echoview 12

Echoview 12 can be downloaded from the Echoview website.

The full list of features can be found on the "New in Echoview 12" pages in the help file installed alongside Echoview 12.

Please contact info@echoview.com with any questions.