


Systems for Marine & Inlands Waters

# Bathyswath Training

## 01: Reading raw data files

1.01	17/03/20	New Graphic chart	63	FBY	
1.00	01/11/16	Initial document	61		
Version	Date	Modifications	Slides	Writer	Checker



START SWATH PROCESSOR &  
OPEN THE SESSION FILE &  
RAW DATA FILE



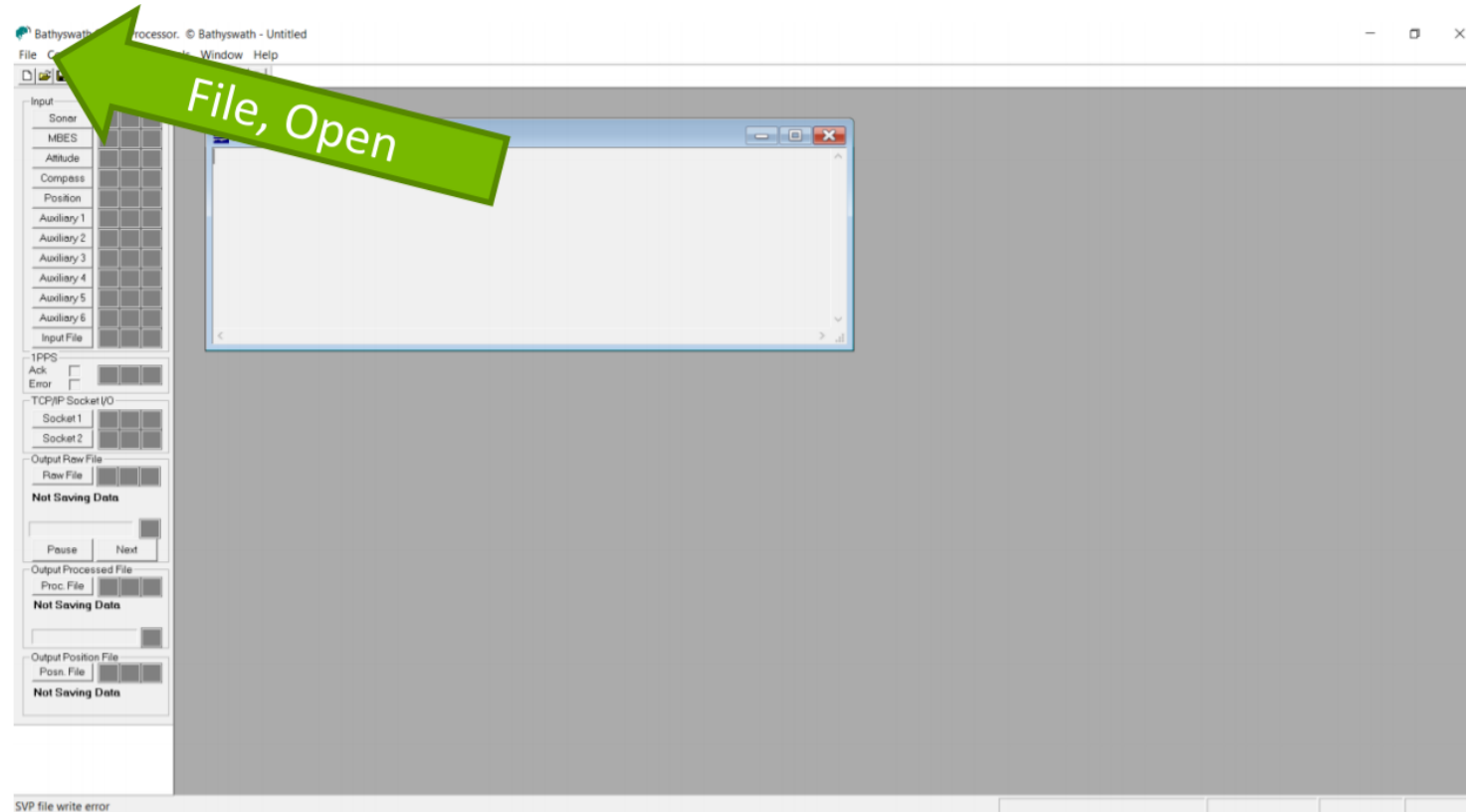
# OPEN THE SESSION FILE



Double-click the Swath Processor icon.



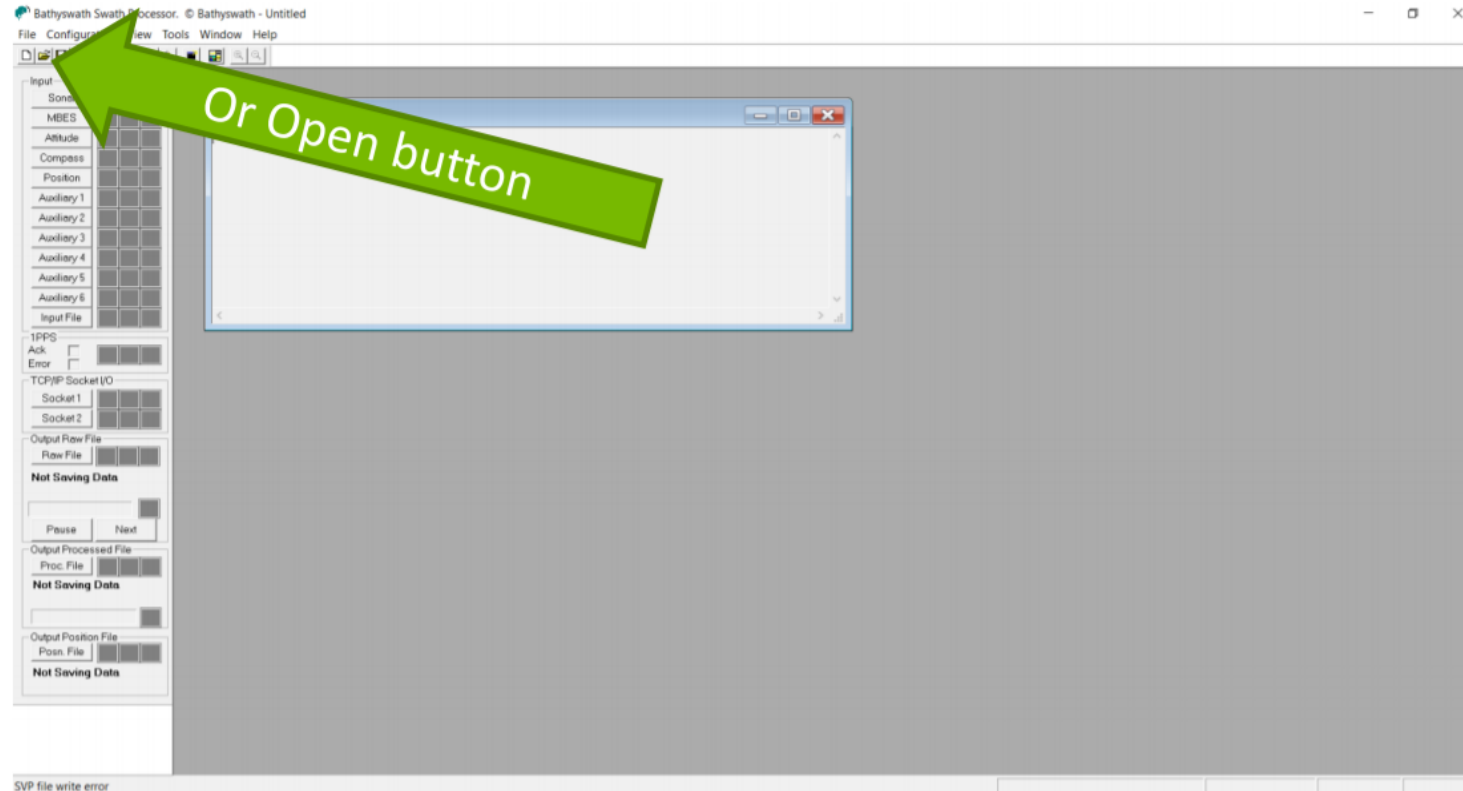
# OPEN THE SESSION FILE



Open a session (.sxs) file. You can use File, and Open from the menu bar ...



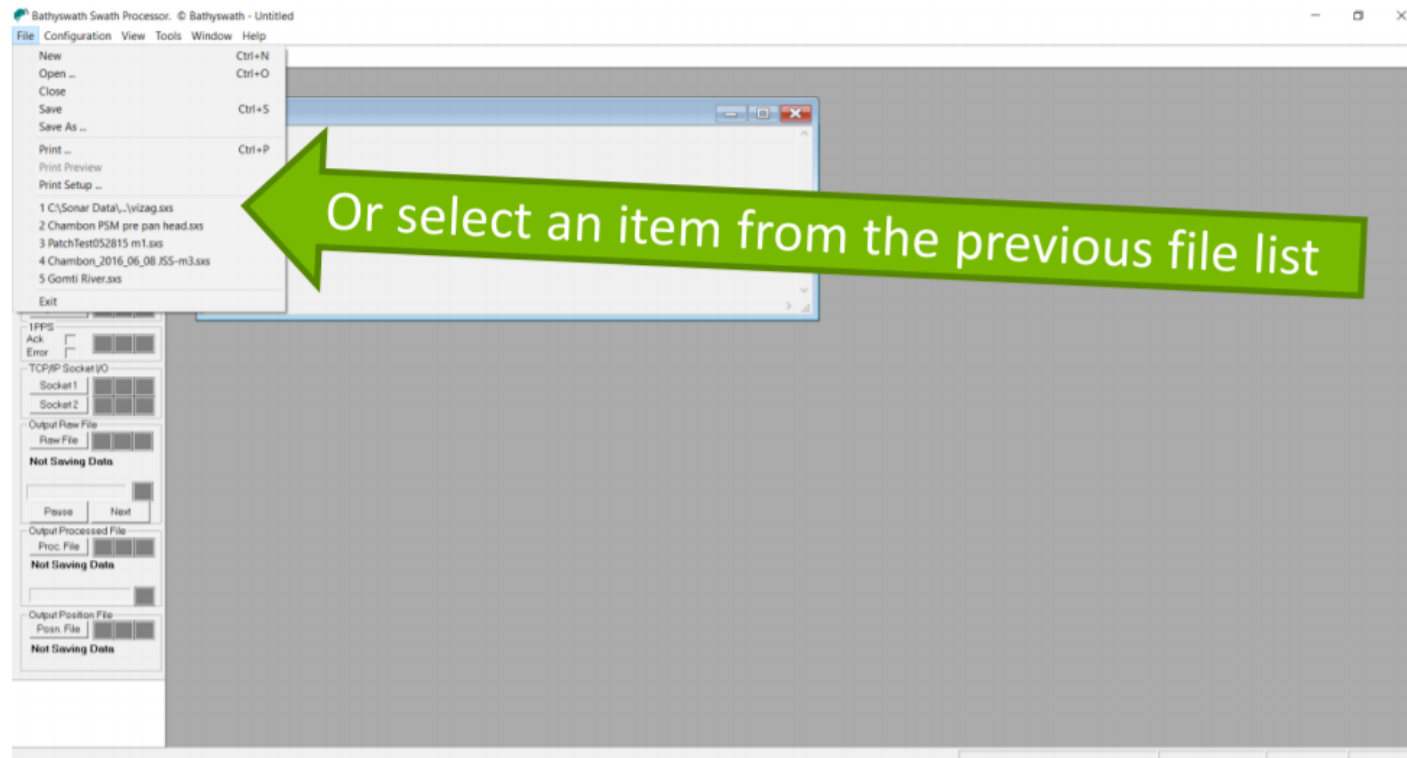
# OPEN THE SESSION FILE



... or use the Open button ...



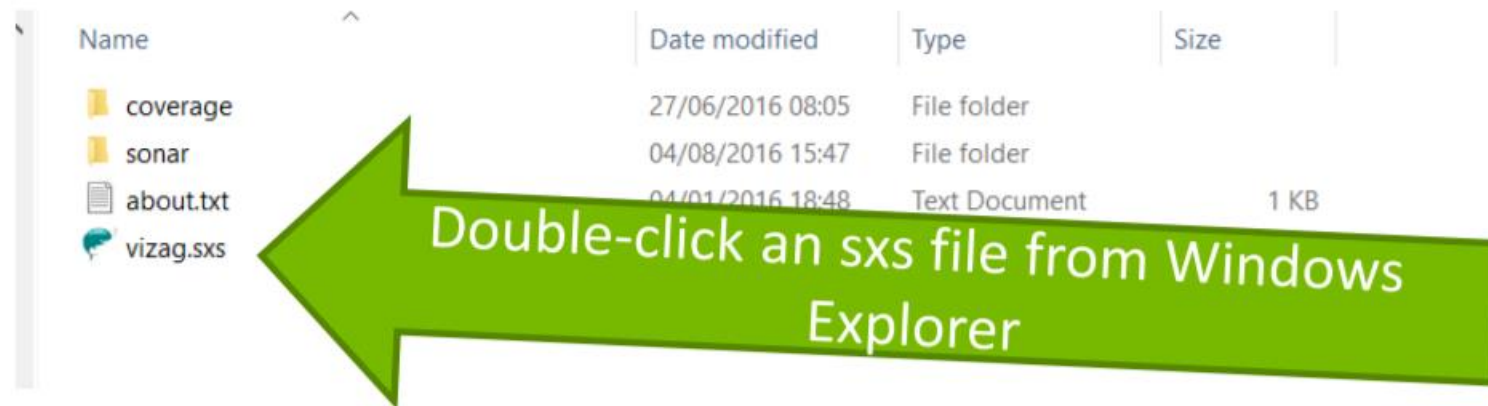
# OPEN THE SESSION FILE



... or choose an item from the Previous File list.



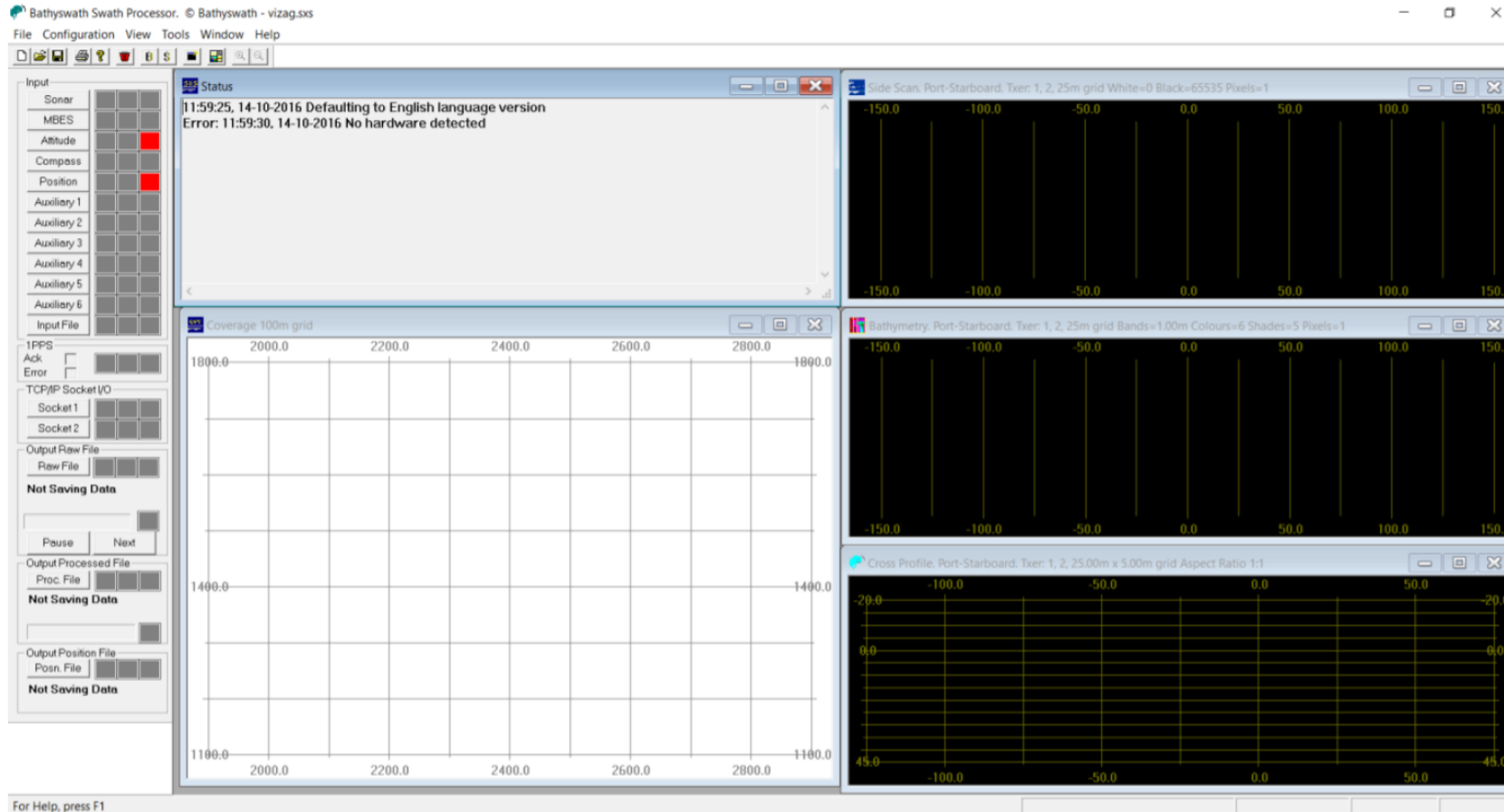
# OPEN THE SESSION FILE



... or you can start Swath Processor using a session file by double-clicking on the file you want in Windows Explorer.



# SWATH PROCESSOR



Swath processor starts, with the view windows that were saved in the session file.



# SWATH PROCESSOR CONTROLS



You control the program using: - The menu bar ...



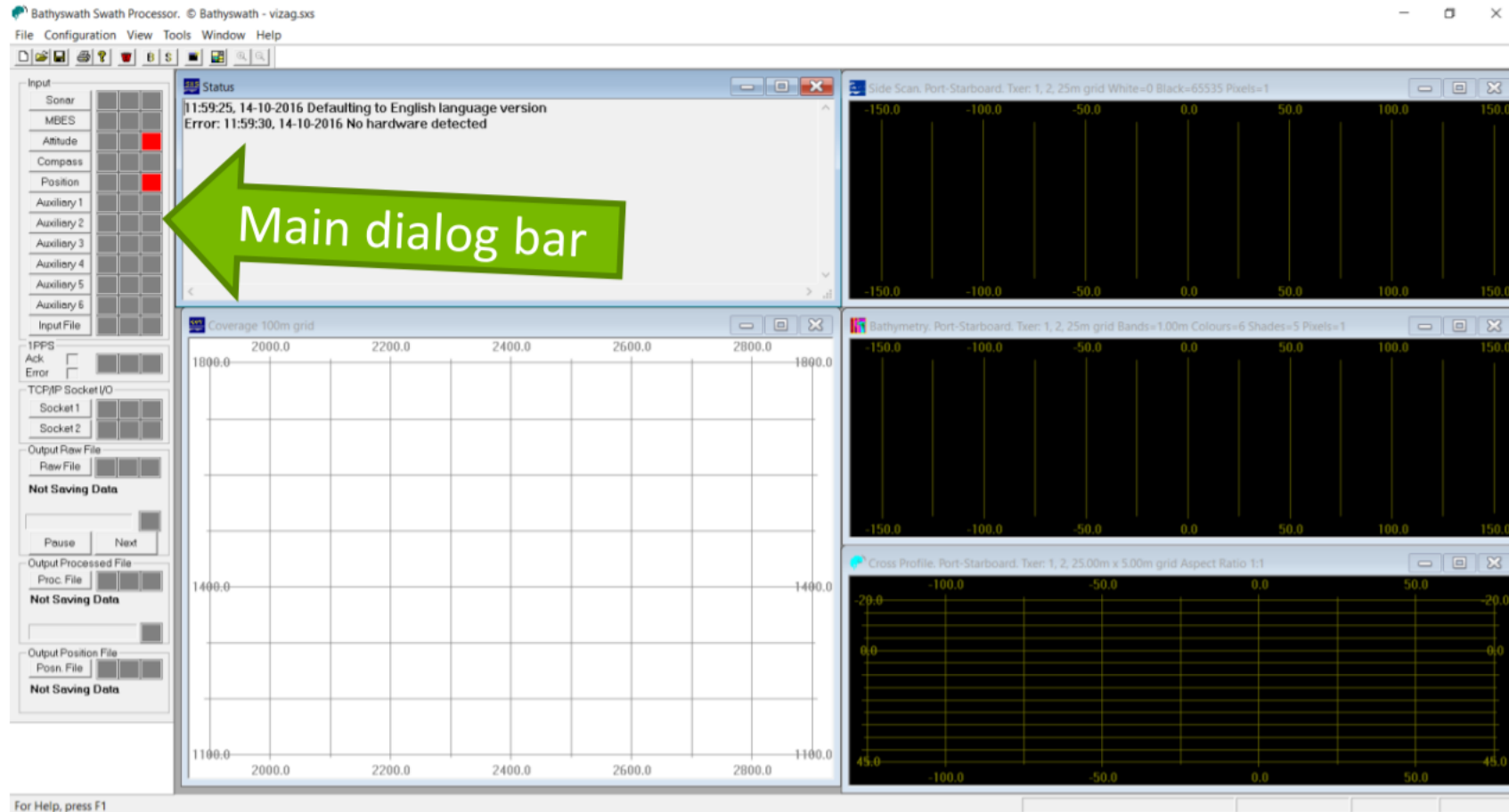
# SWATH PROCESSOR CONTROLS



You control the program using: - The tool bar ...



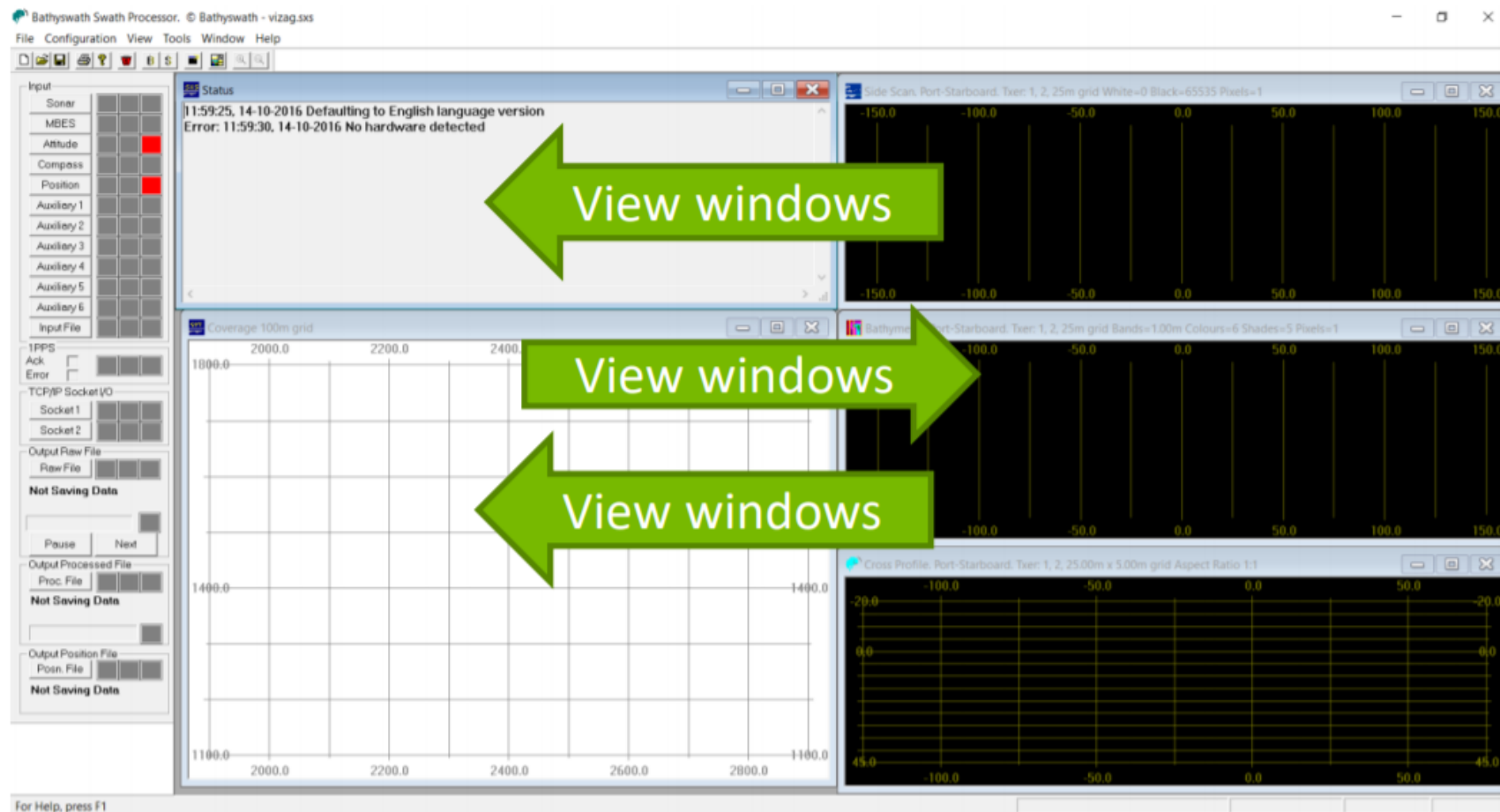
# SWATH PROCESSOR CONTROLS



You control the program using: - The main dialog bar ...



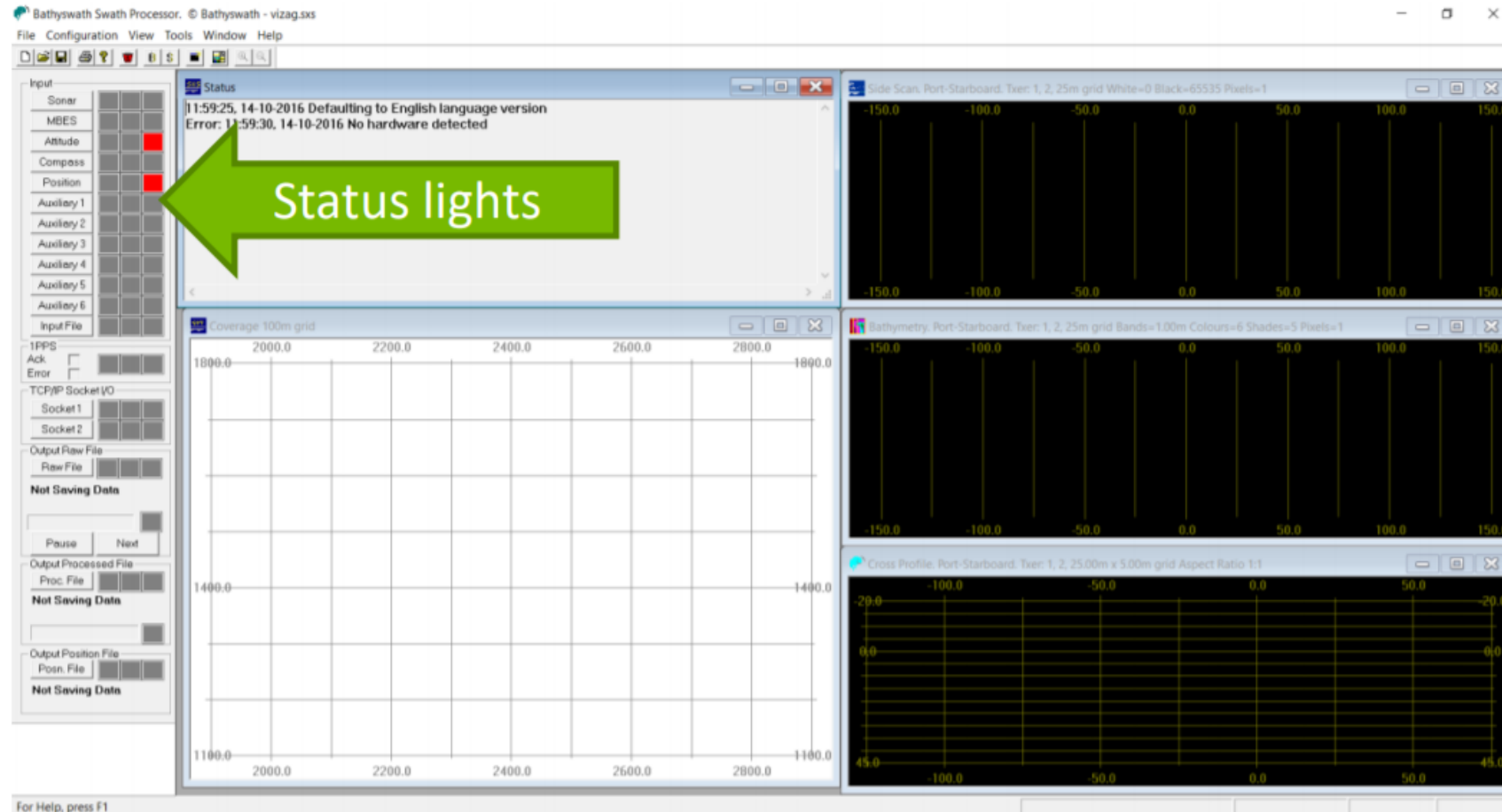
# SWATH PROCESSOR VIEWS



You can see information in: - The view windows ...



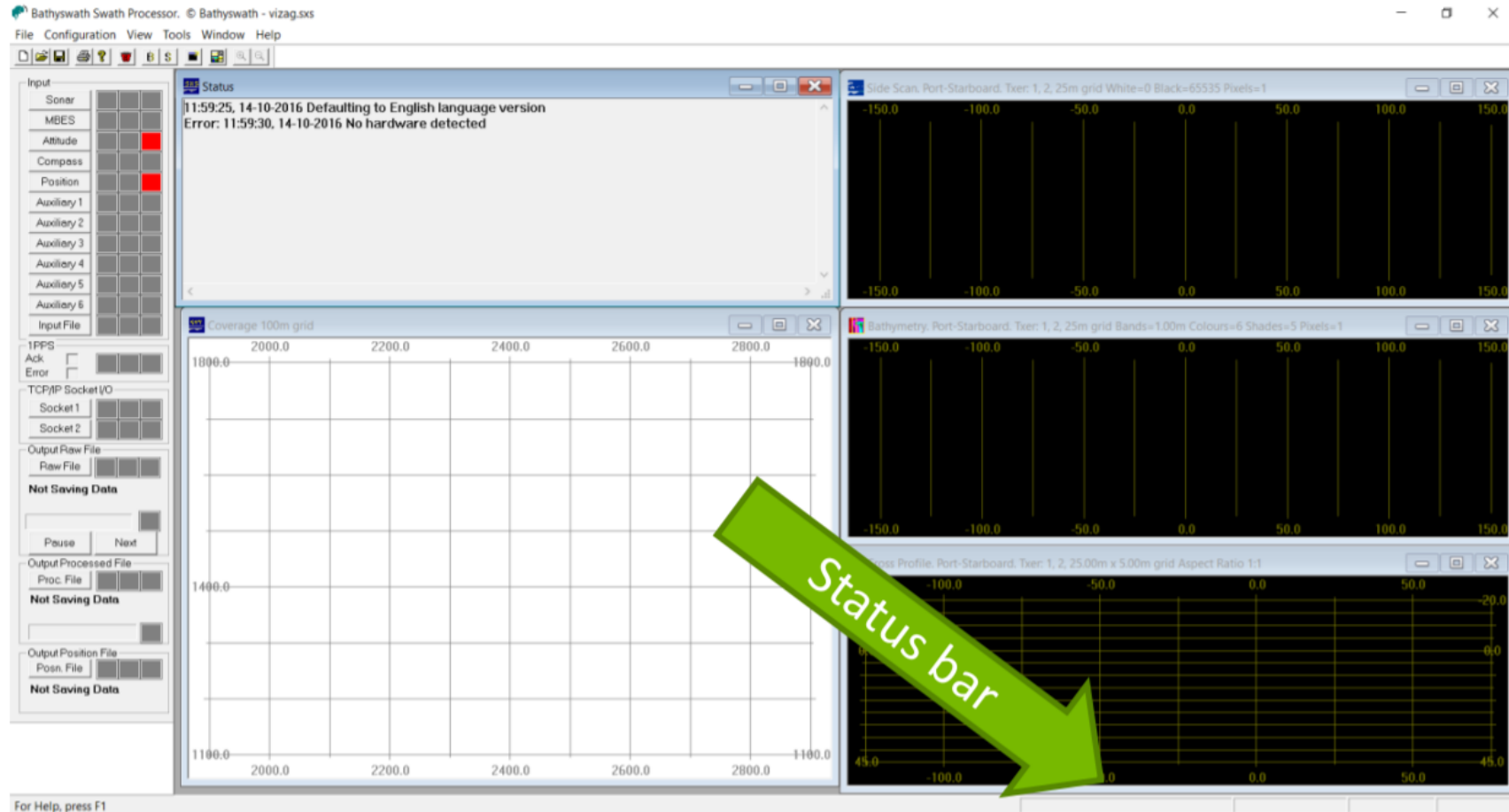
# SWATH PROCESSOR STATUS



You can see information in: - The status lights



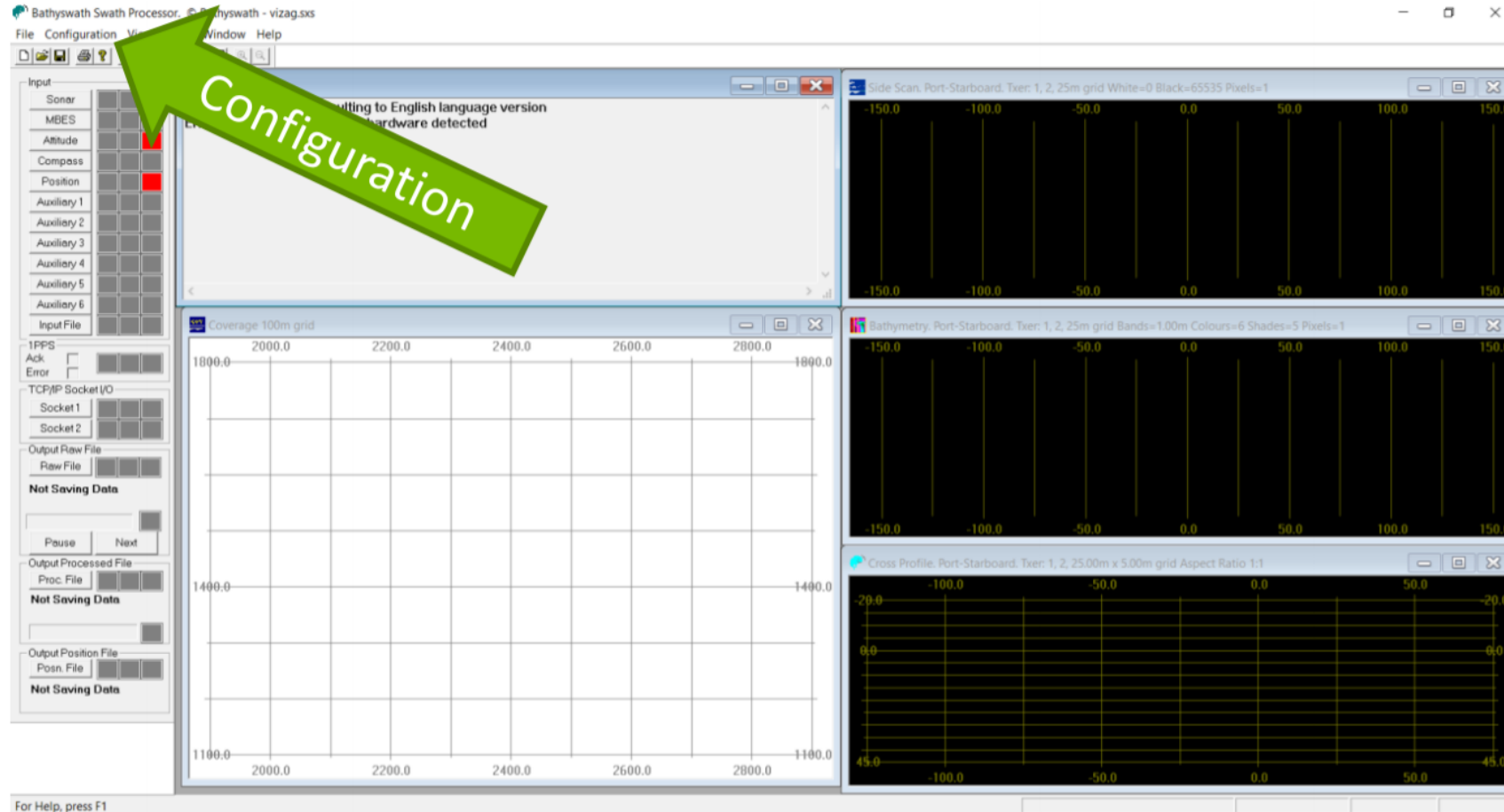
# SWATH PROCESSOR STATUS BAR



You can see information in: - The status bar



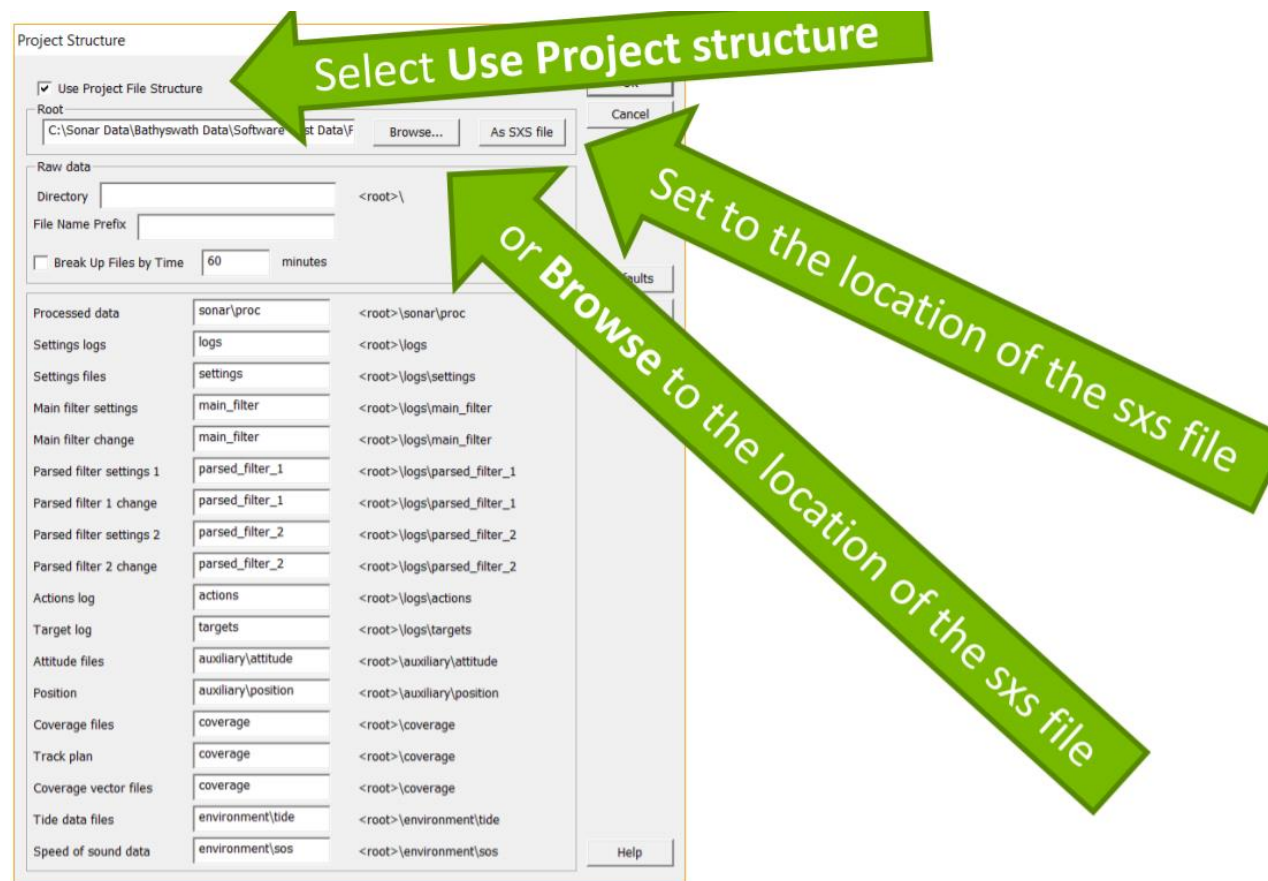
# PROJECT STRUCTURE



Set up the project structure to easily find stored data:  
**Click Configuration, then Project Structure.**



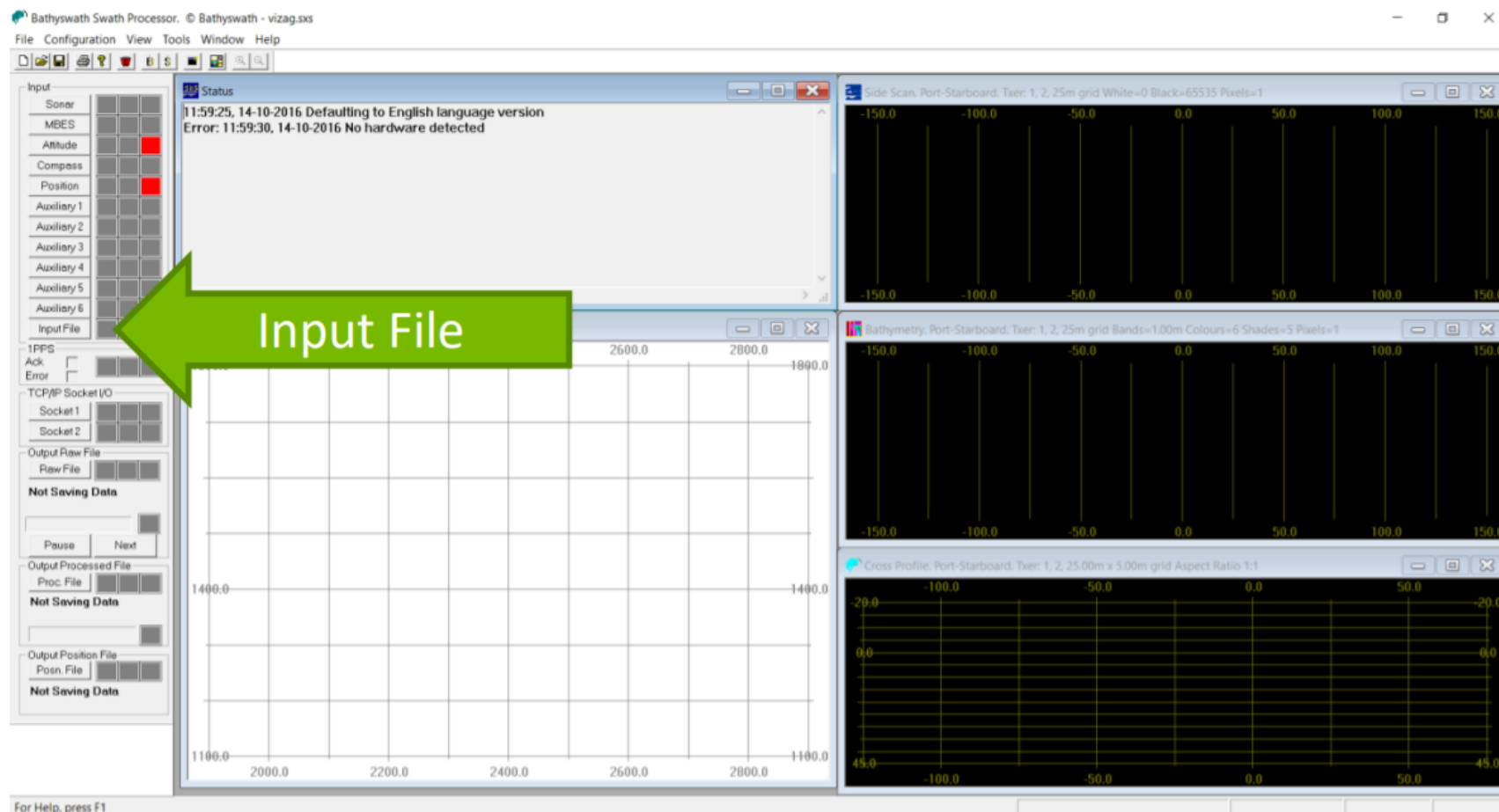
# PROJECT STRUCTURE



To make it easier to find the data files, select **Use Project Structure**, and then use **As SXS File**, or **Browse** to find the location of the sxs file.



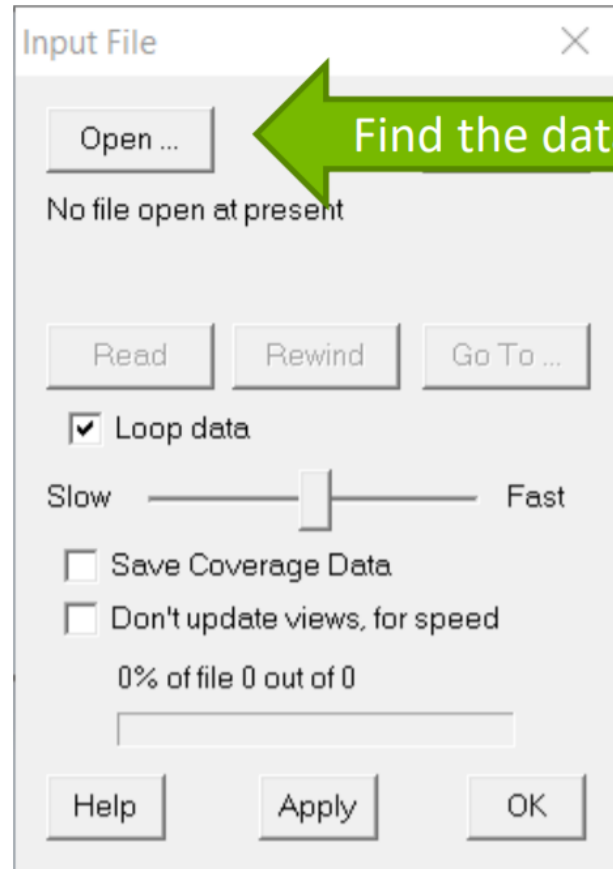
# OPEN A RAW DATA FILE



To open a raw data file, click **Input File**.



# OPEN A RAW DATA FILE

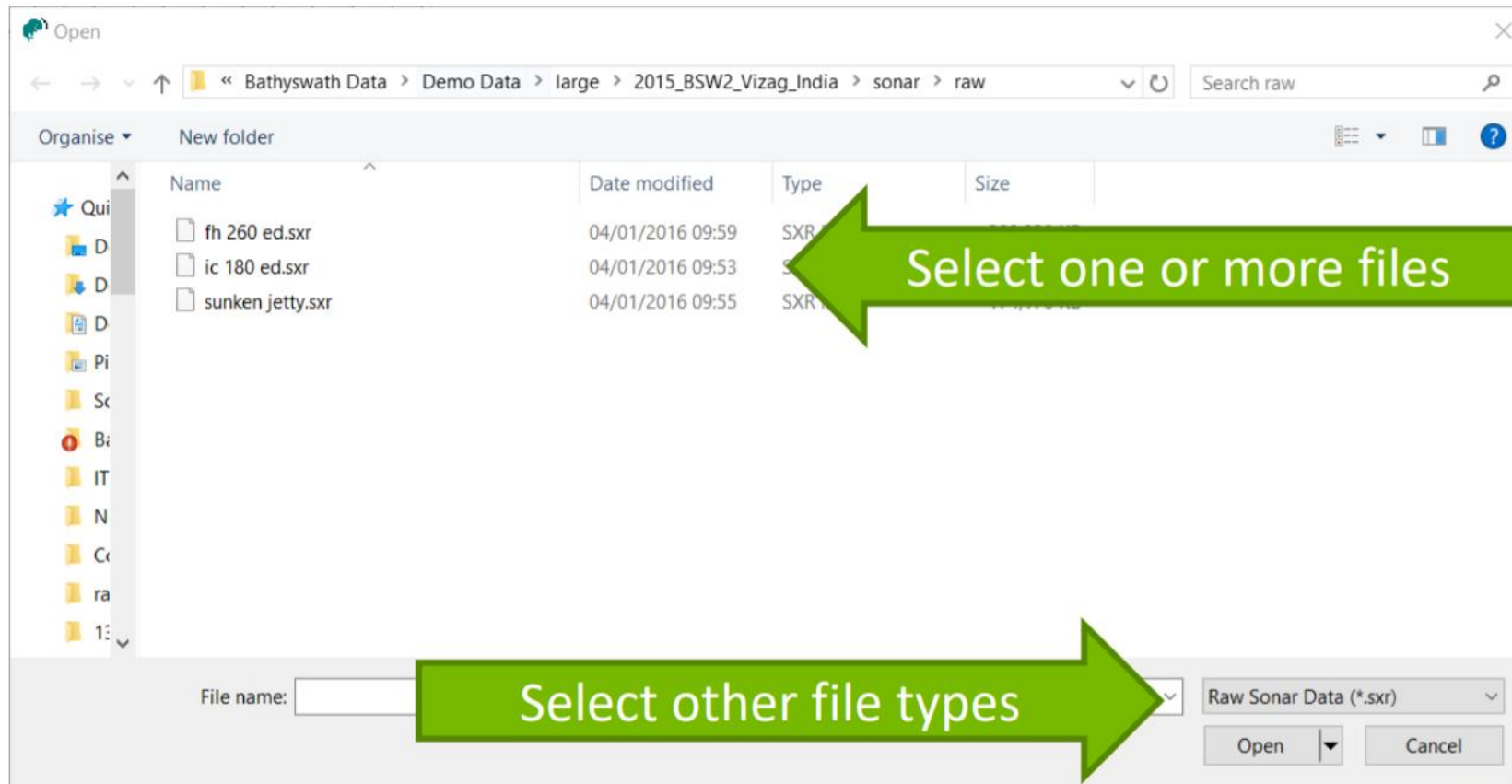


Find the data files

Use the **Open** button...



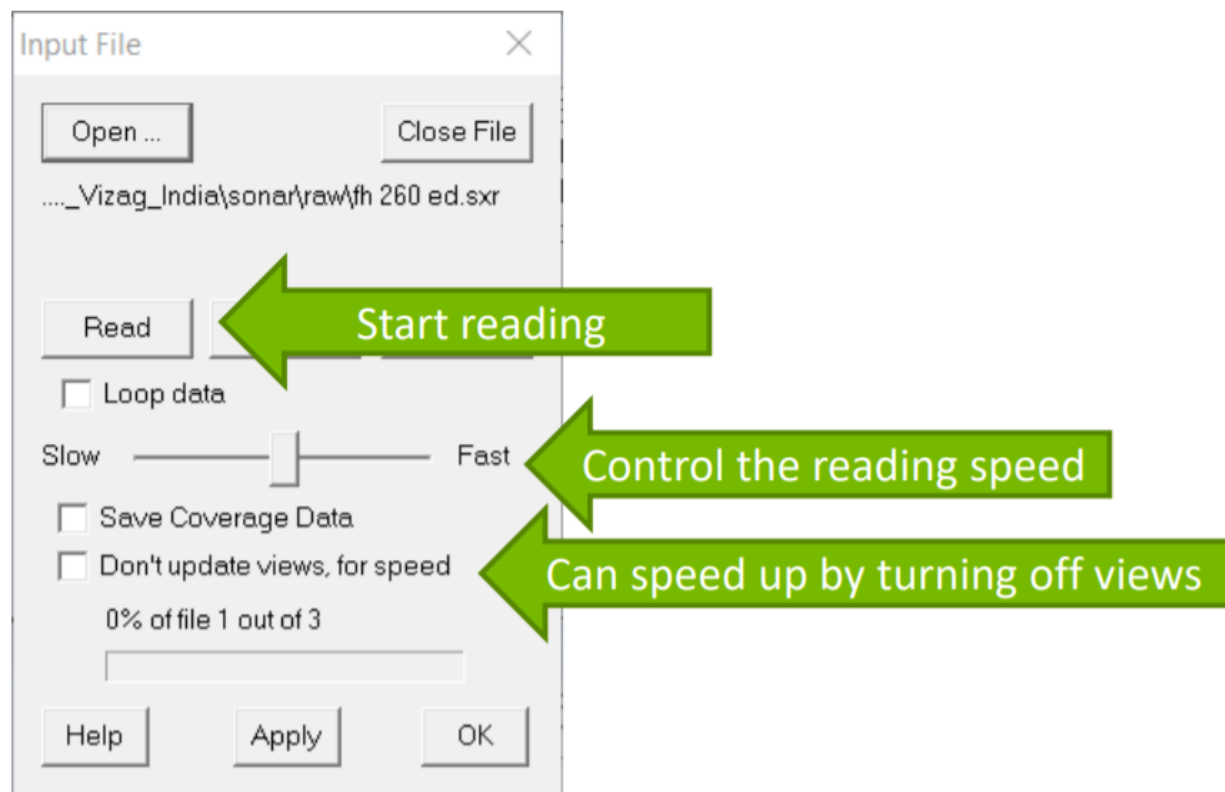
# OPEN A RAW DATA FILE



You can double-click one file, or click-and-drag over several files  
Defaults to .SXR (raw) files, but can also read .SXI (parsed) and .SXP  
(processed), using the dropdown list at the bottom-right.



# OPEN A RAW DATA FILE



Click **Read** to start reading the file.  
Slow down the read speed to inspect data.  
Or can process at maximum speed by disabling views.



## OPEN A RAW DATA FILE



Click **Rewind** to return to the beginning.  
Use **Loop data** to start again from the end.  
Use **Go To** to start from a given ping or time.



GETTING HELP



# ONLINE USER GUIDE

The screenshot shows the Bathyswath Swath Processor software interface. The title bar reads "Bathyswath Swath Processor. © Bathyswath - temp.sxs". The menu bar includes "File", "Configuration", "View", "Tools", "Window", and "Help". The "Help" menu is open, showing "Help Topics" and "About Swath Processor ...". A green arrow points from the text "Help > Help Topics" to the "Help Topics" menu item. The main window displays a status message: "08:34:11, 08-11-2016 Defaulting to English language version" and "Error: 08:46:09, 08-11-2016 No hardware detected". The left sidebar shows input options: Sonar, MBES, Attitude, Compass, Position, Auxiliary 1, Auxiliary 2, Auxiliary 3, Auxiliary 4, Auxiliary 5, Auxiliary 6, and Input File. The bottom status bar shows "Coverage 100m grid". The right pane displays the "Welcome to the Bathyswath Online User Guide" page, which includes the Bathyswath logo and text describing the user documentation.

Help > Help Topics

Welcome to the Bathyswath Online User Guide

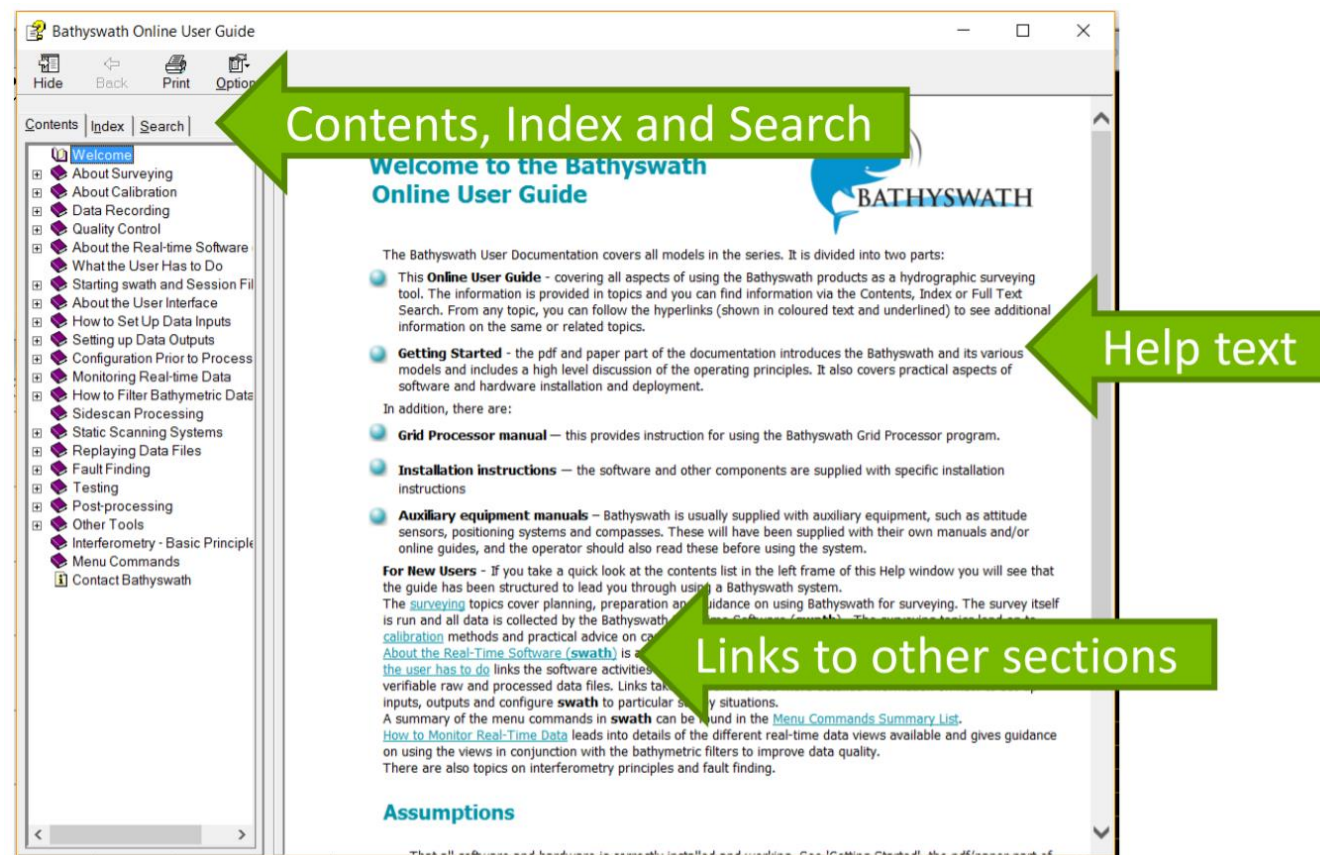
The Bathyswath User Documentation covers all models in the series. It is divided into two parts:

- This **Online User Guide** - covering all aspects of using the Bathyswath products as a hydrographic surveying tool. The information is provided in topics and you can find information via the Contents, Index or Full Text Search. From any topic, you can follow the hyperlinks (shown in coloured text and underlined) to see additional information on the same or related topics.
- Getting Started** - the pdf and paper part of the documentation introduces the Bathyswath and its various models and includes a high level discussion of the operating principles. It also covers practical aspects of software and hardware installation and deployment.

Use **Help > Help Topics** to open the Online User Guide.



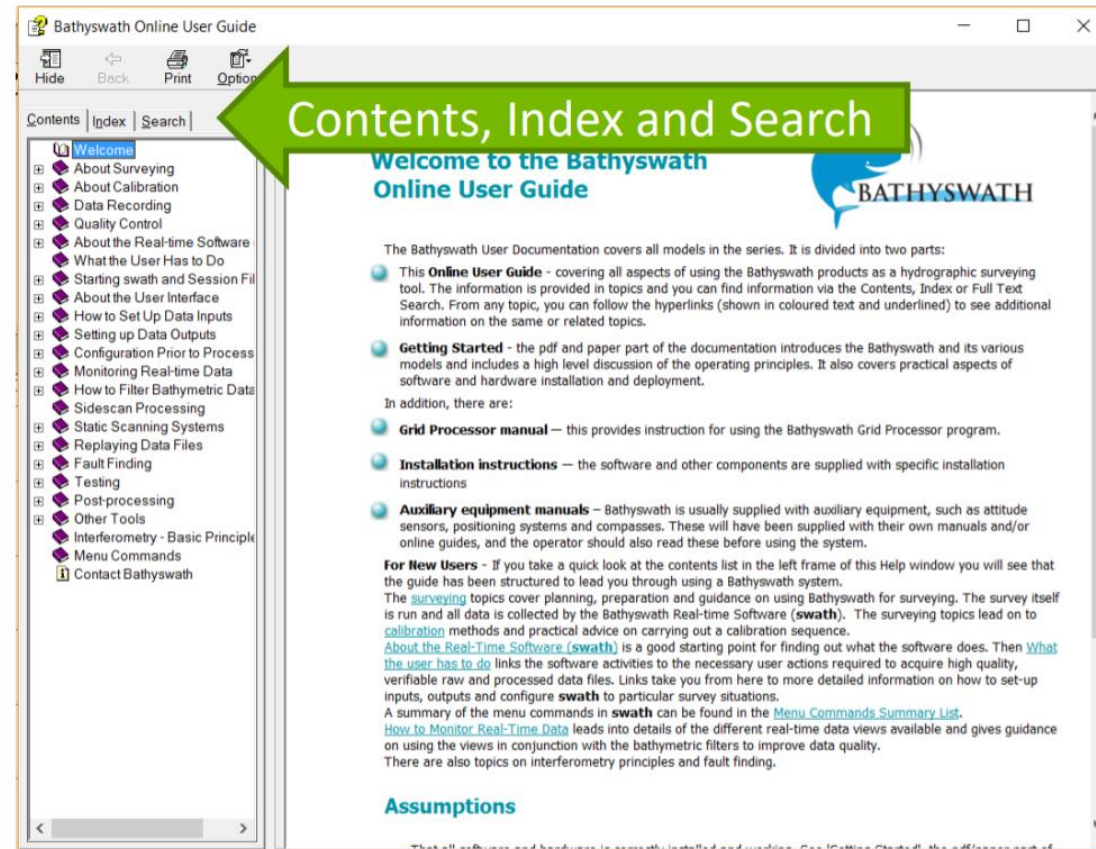
# ONLINE USER GUIDE



The panel on the left has:  
**Contents:** click on the symbol to expand sections.



# ONLINE USER GUIDE



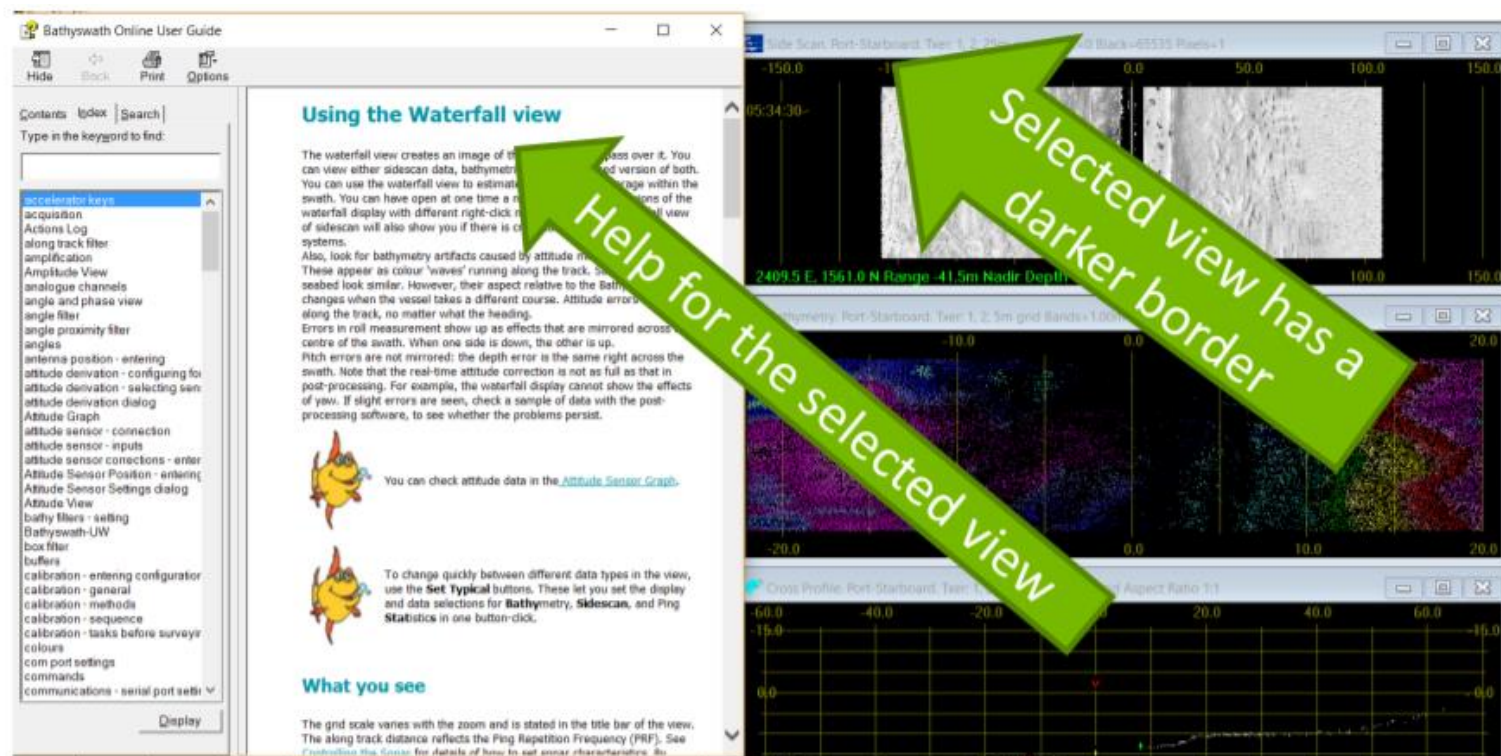
The panel on the left has:

**Index:** shows a list of keywords in alphabetical order,

**Search:** find pages that refer to a keyword.



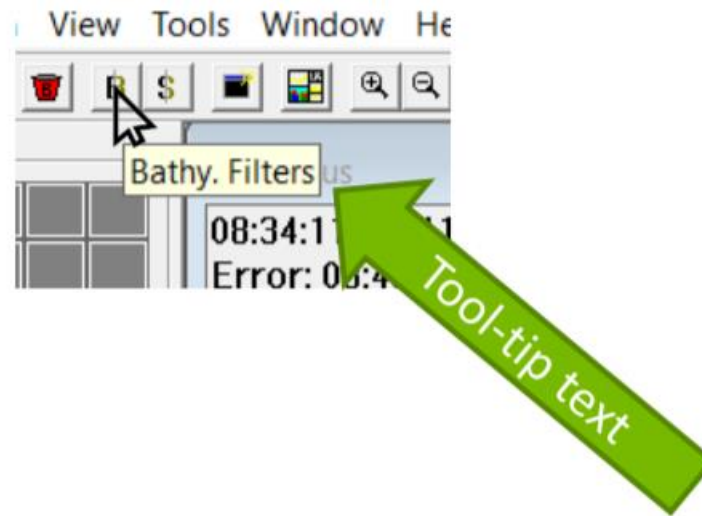
# CONTEXT-SENSITIVE HELP



To show information about a view or dialog:  
Click on the view to highlight it Press the **F1** key,  
Help appears at the page for that view.



# TOOL-TIPS



Hold the mouse pointer over a button for a few seconds,  
and a short text description appears.



# SHORTCUT KEYS

Ctrl + N	Open new session file
Ctrl + O	Open session file
Ctrl + S	Save session file
Ctrl + P	Print
Ctrl + Z	Undo
Ctrl + X	Cut
Ctrl + C	Copy
Ctrl + V	Paste
Ctrl + F6	Show next view
Ctrl + Shift + L	Log cursor position in Waterfall View

Ctrl + B	Clear all buffers
Ctrl + W	New data view (window)
Ctrl + F	Show Bathy filters dialog
Ctrl + T	Show Sidescan processing dialog
Page Up	Zoom in
Page Down	Zoom out
Left arrow	Pan left
Right arrow	Pan right
Up arrow	Pan up
Down arrow	Pan down

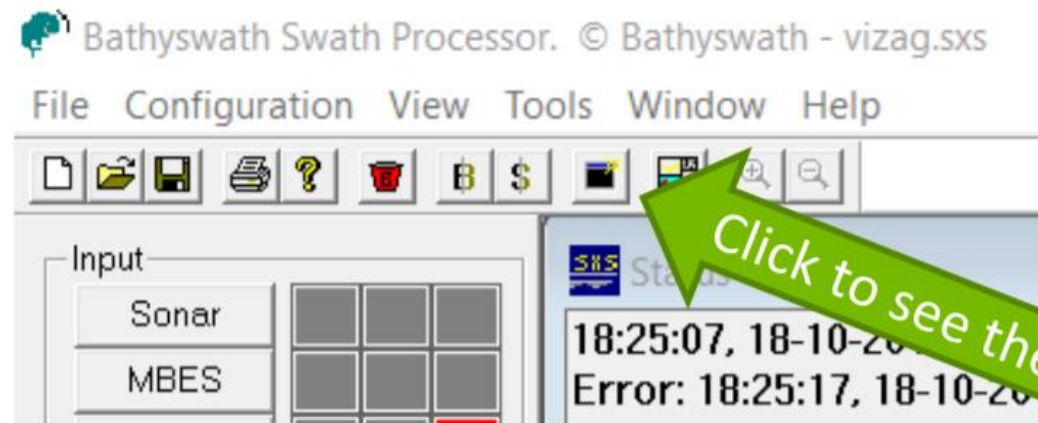
Use the computer keyboard for quick controls.



# USING THE VIEWS



# NEW WINDOW

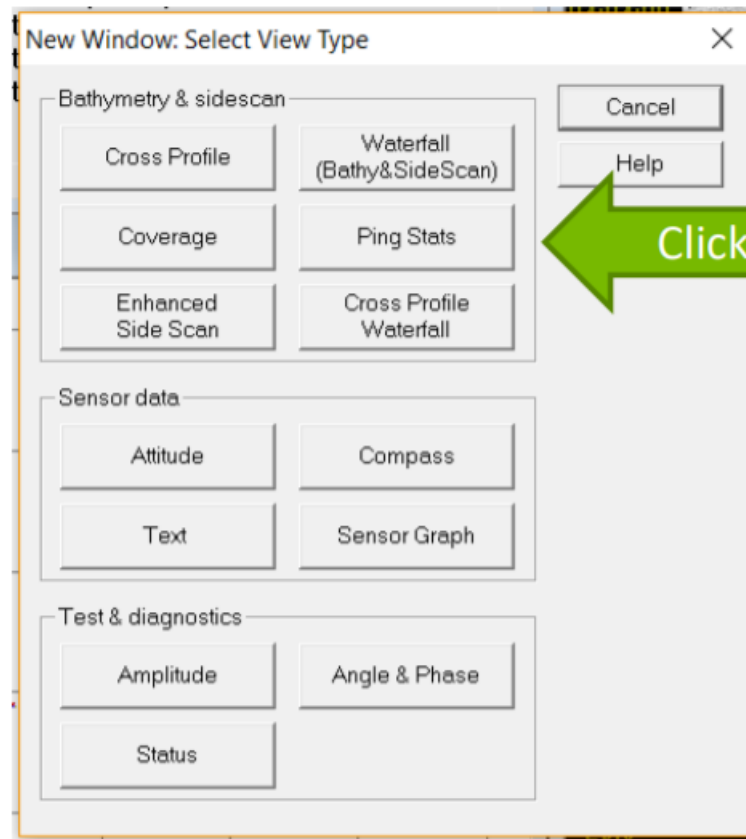


*Click to see the New Window dialog*

Use the **New Window** button or **Window > New Window** from the menu bar.



# NEW WINDOW

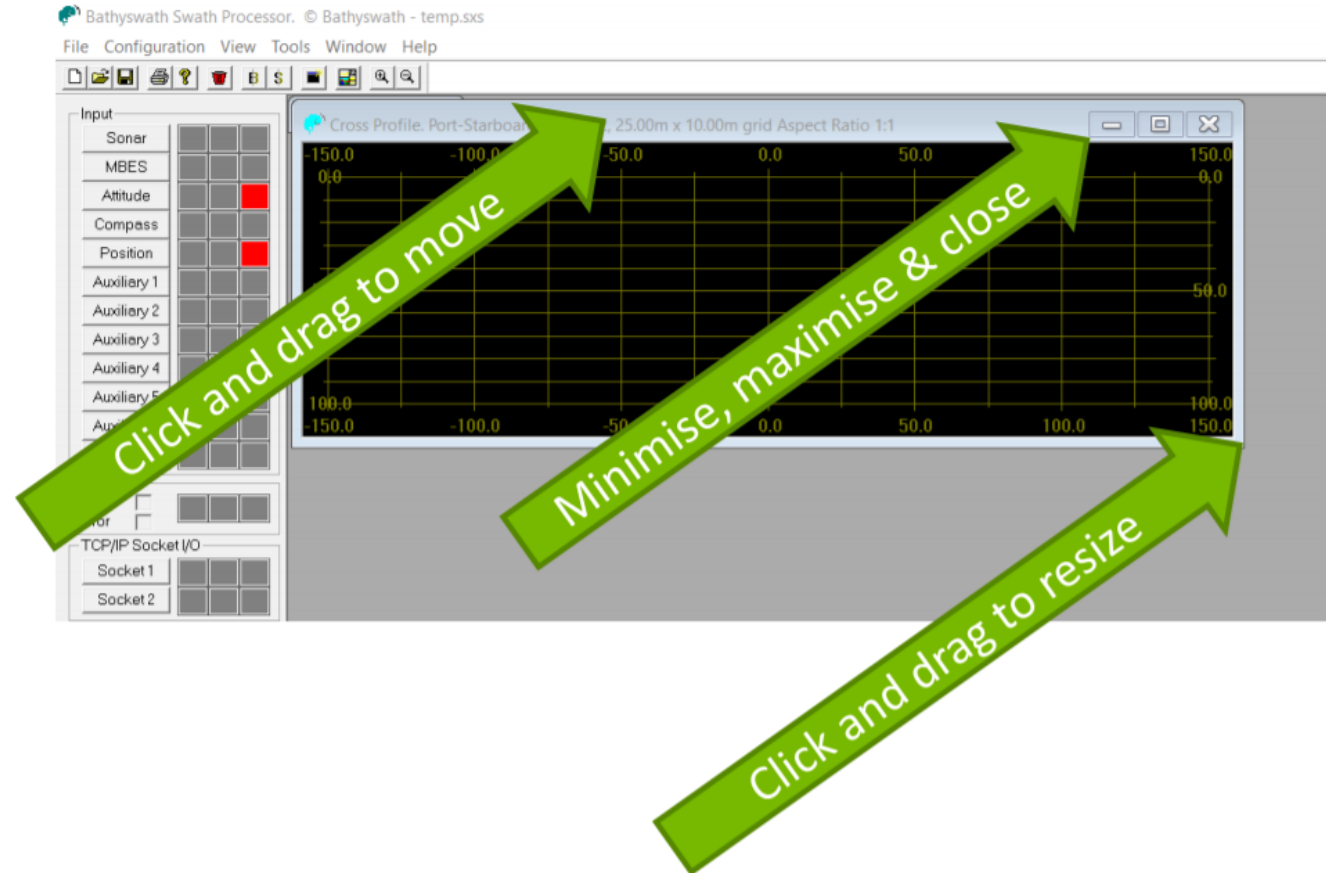


Click to select a Window

Click a button to select a window.



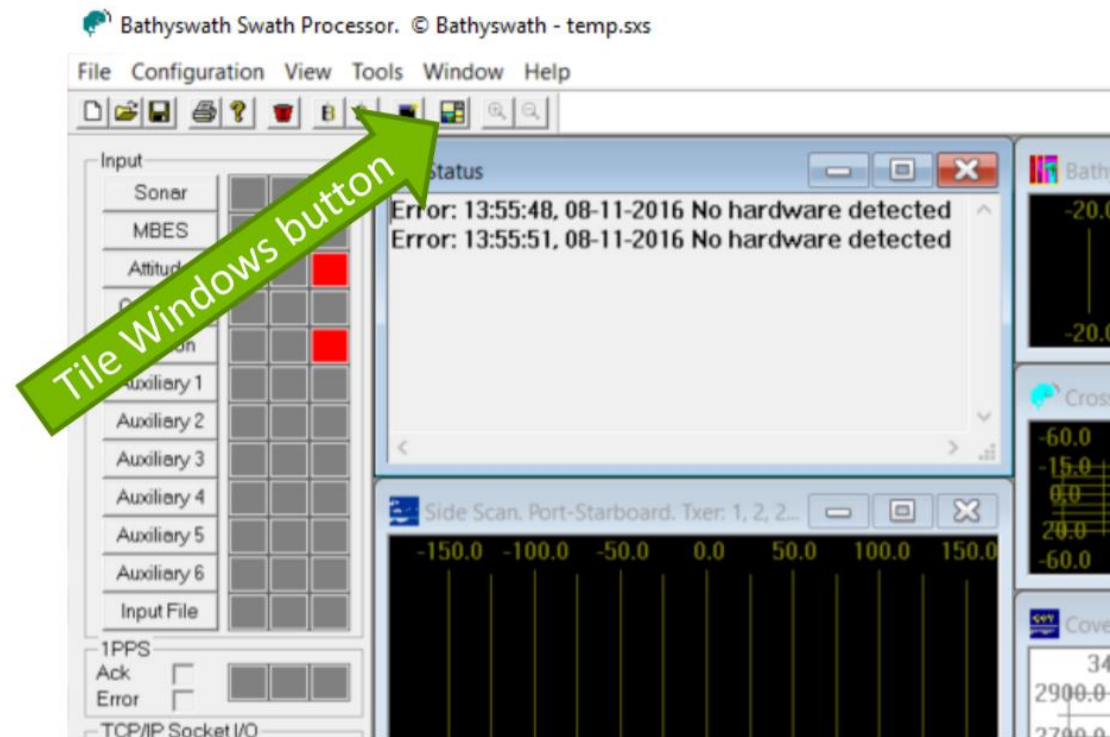
# MOVING AND RESIZING WINDOWS



When a window opens, you can move it, resize it, minimise it to an icon in the corner of the screen, make it fill the screen, or close it again.



# TILE WINDOWS



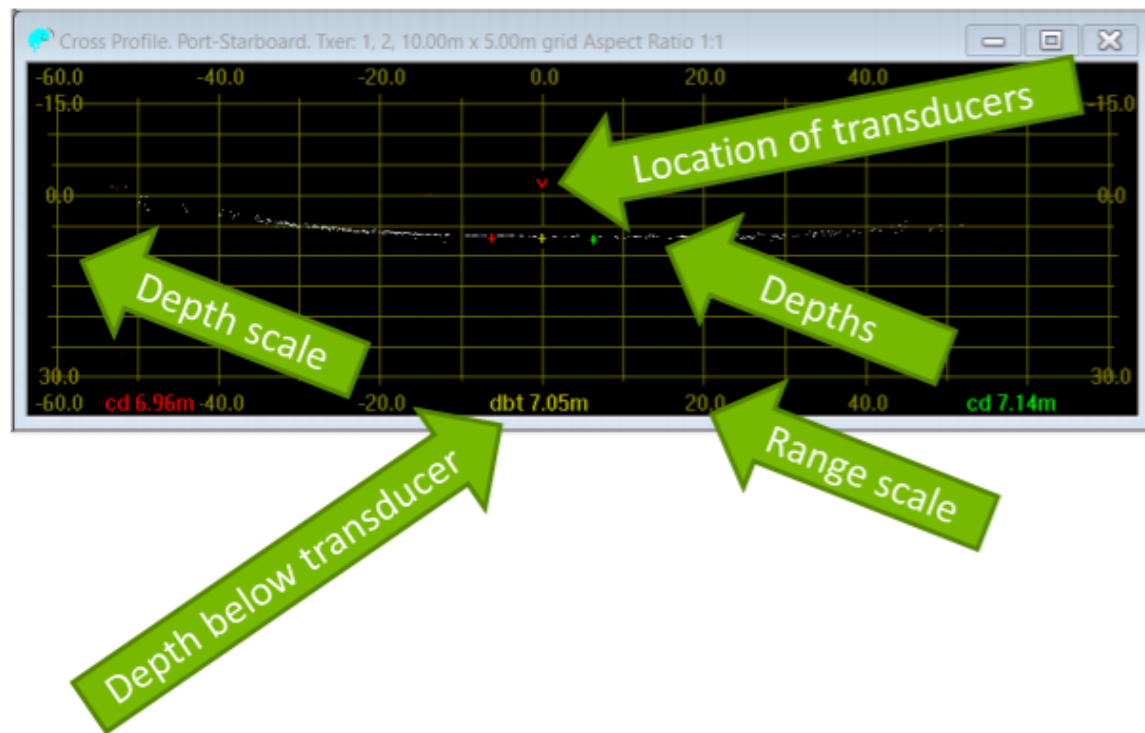
You can tile the windows, so that they are rearranged to fill the space available, using the **Tile Windows** button or **Windows > Tile**. Or, you can make your own arrangement, which is saved in the session file.



# DEPTH & SIDESCAN VIEWS



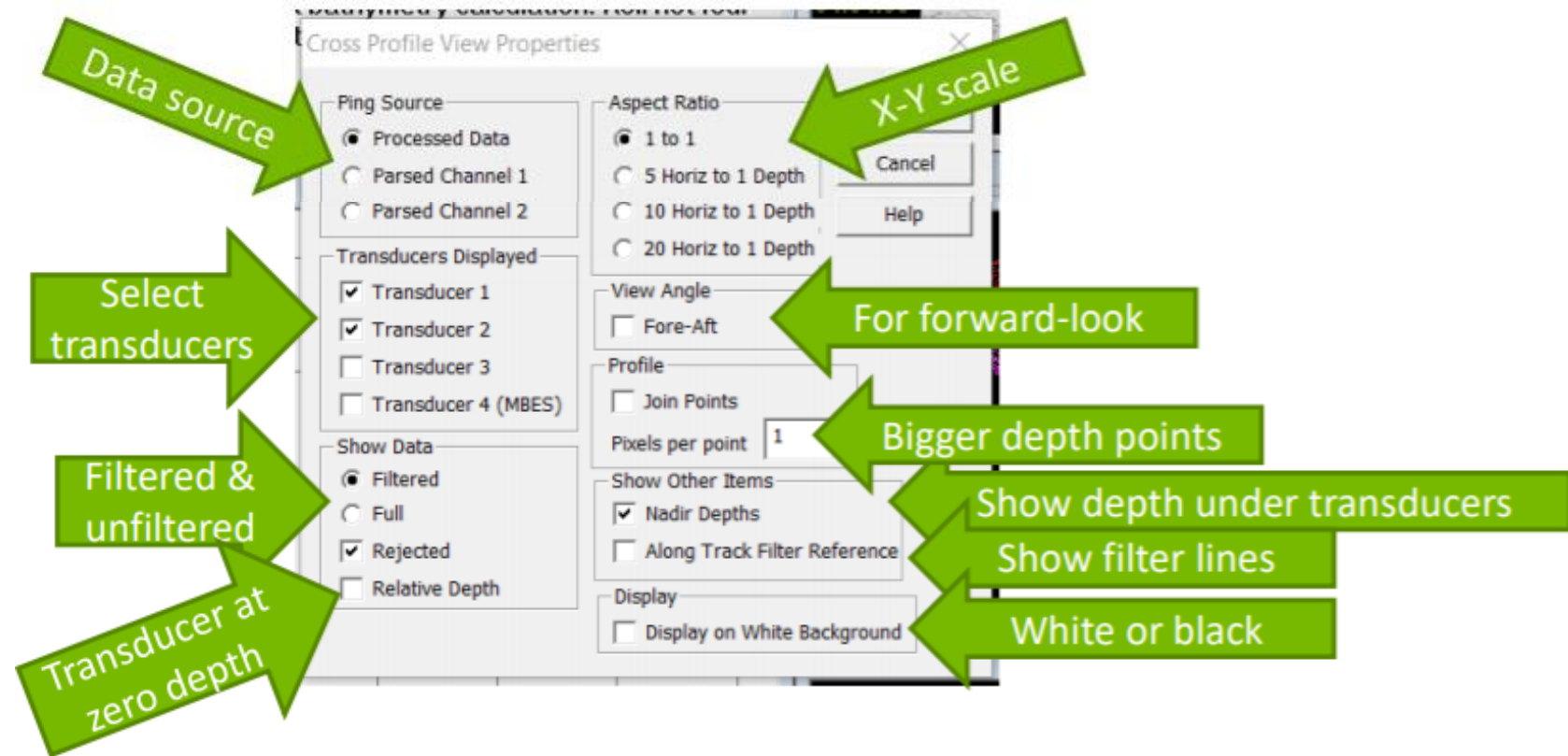
# CROSS-PROFILE VIEW



Can see depths, transducer, depth below transducers,  
Right-click and select **Properties** to set up the view.



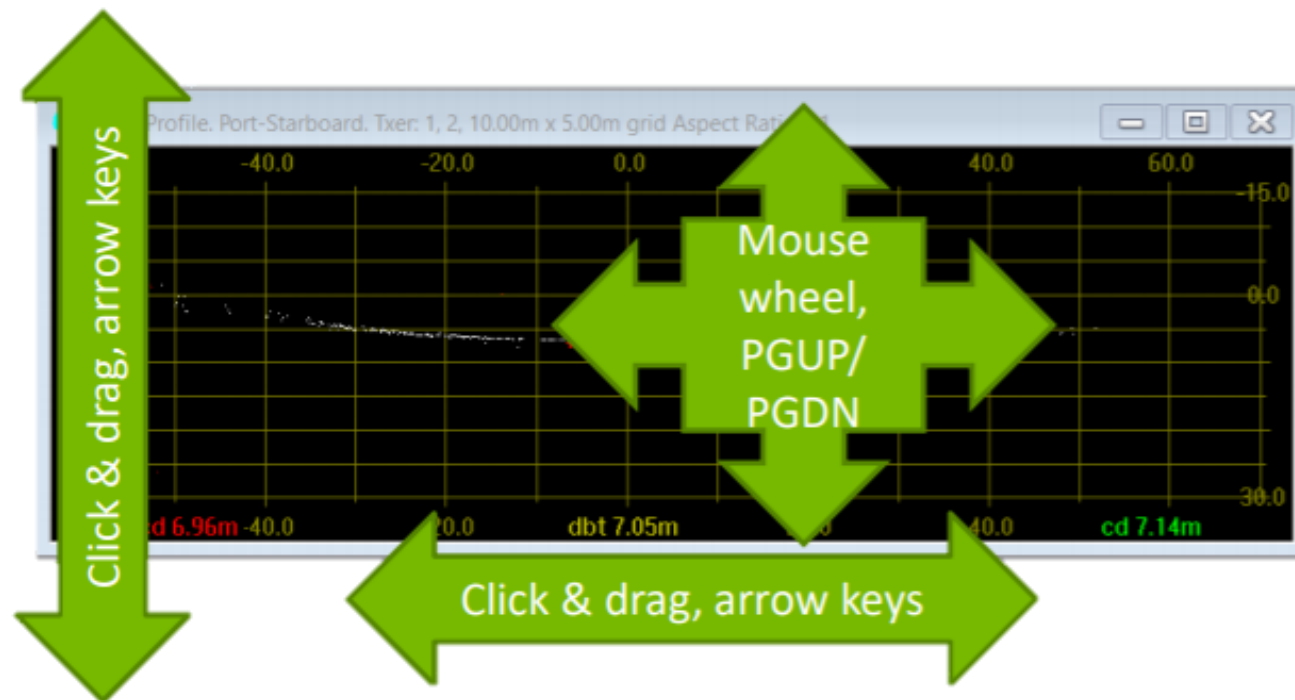
# CROSS-PROFILE VIEW



Select the items to see.



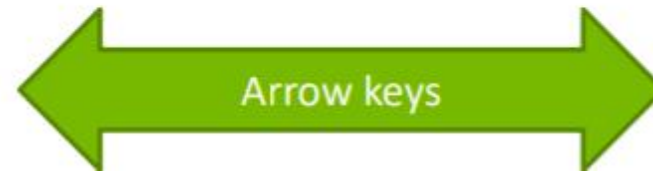
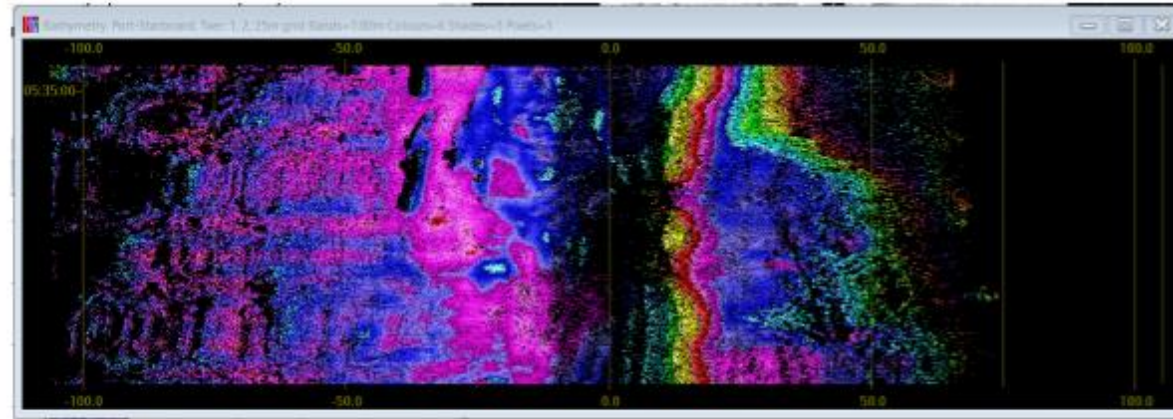
# CROSS-PROFILE VIEW



Pan left-right, up-down using click & drag or keyboard arrow keys Zoom in & out using mouse wheel or PGUP and PGDN keys.



# WATERFALL VIEW



Shows new pings at the top of the screen, and moves the others down one step.  
Pan left-right with keyboard arrow keys.

Can show:

- Depths
- Sidescan
- Depth quality



# WATERFALL VIEW



Right-click to see the menu.



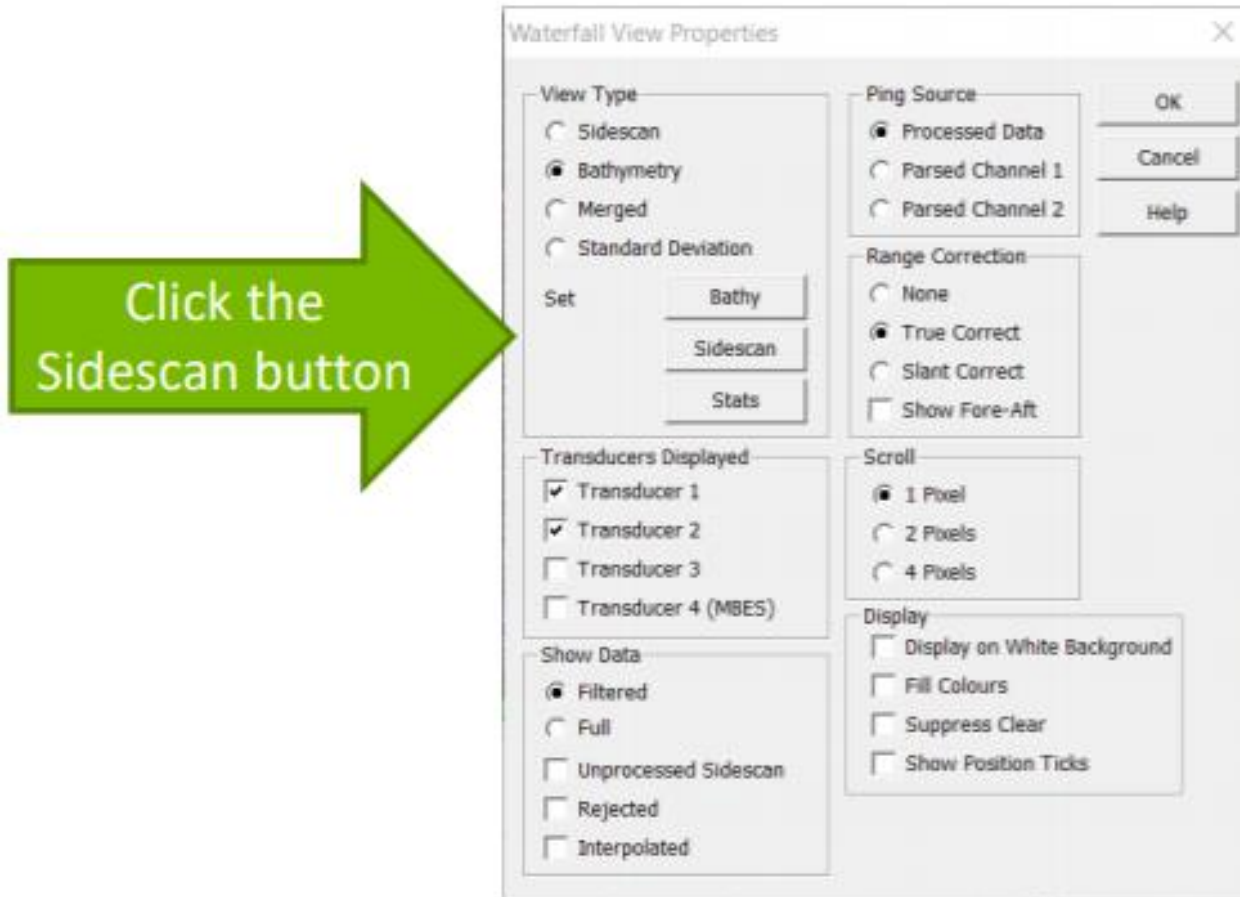
# WATERFALL VIEW PROPERTIES



Select display properties.



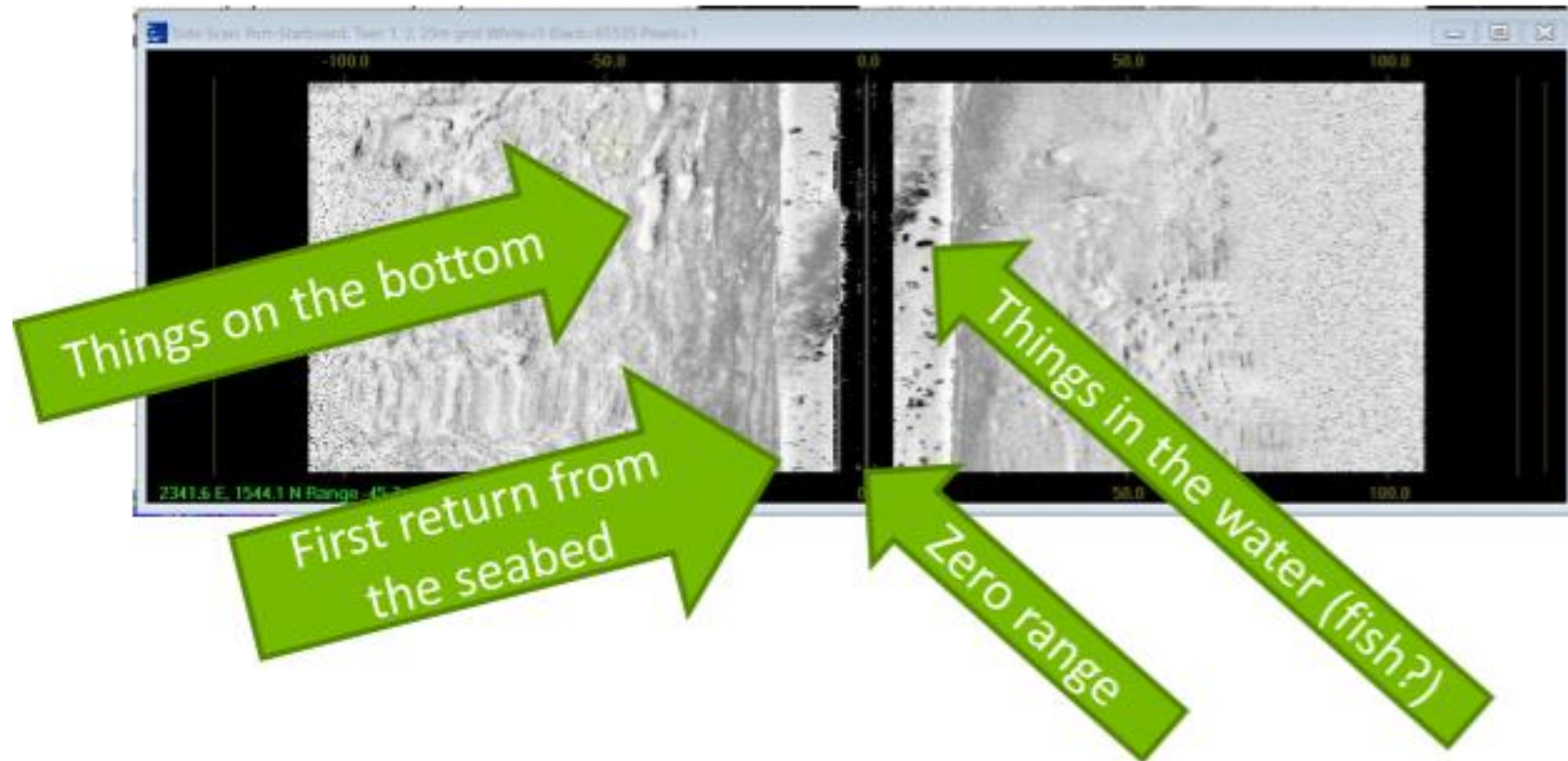
# WATERFALL VIEW SIDESCAN



Use the Sidescan button to set up the waterfall view for **sidescan**.



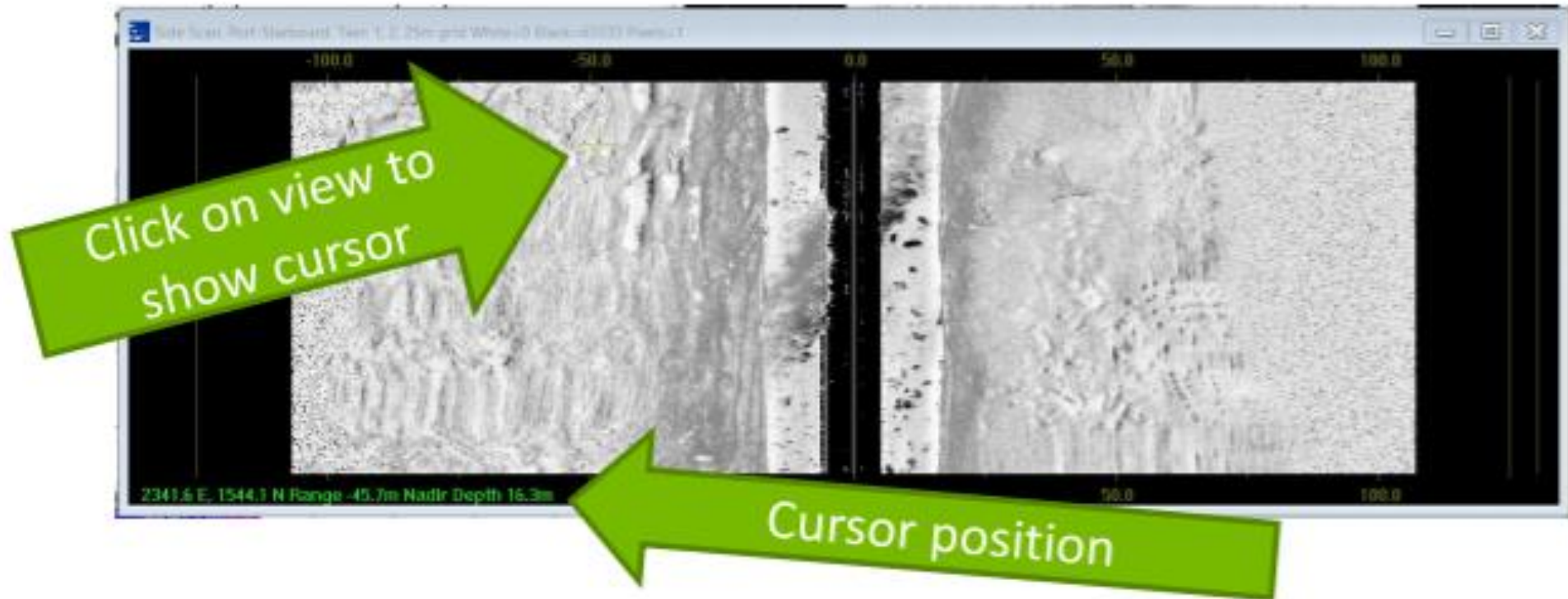
# WATERFALL VIEW SIDESCAN



Waterfall view can show sidescan data as well as depths. Strong returns are shown black, weak returns white.



# WATERFALL VIEW CURSOR



Click on the screen to place a cursor (shown as a cross on the screen)  
Position and depth is shown at the bottom of the view.



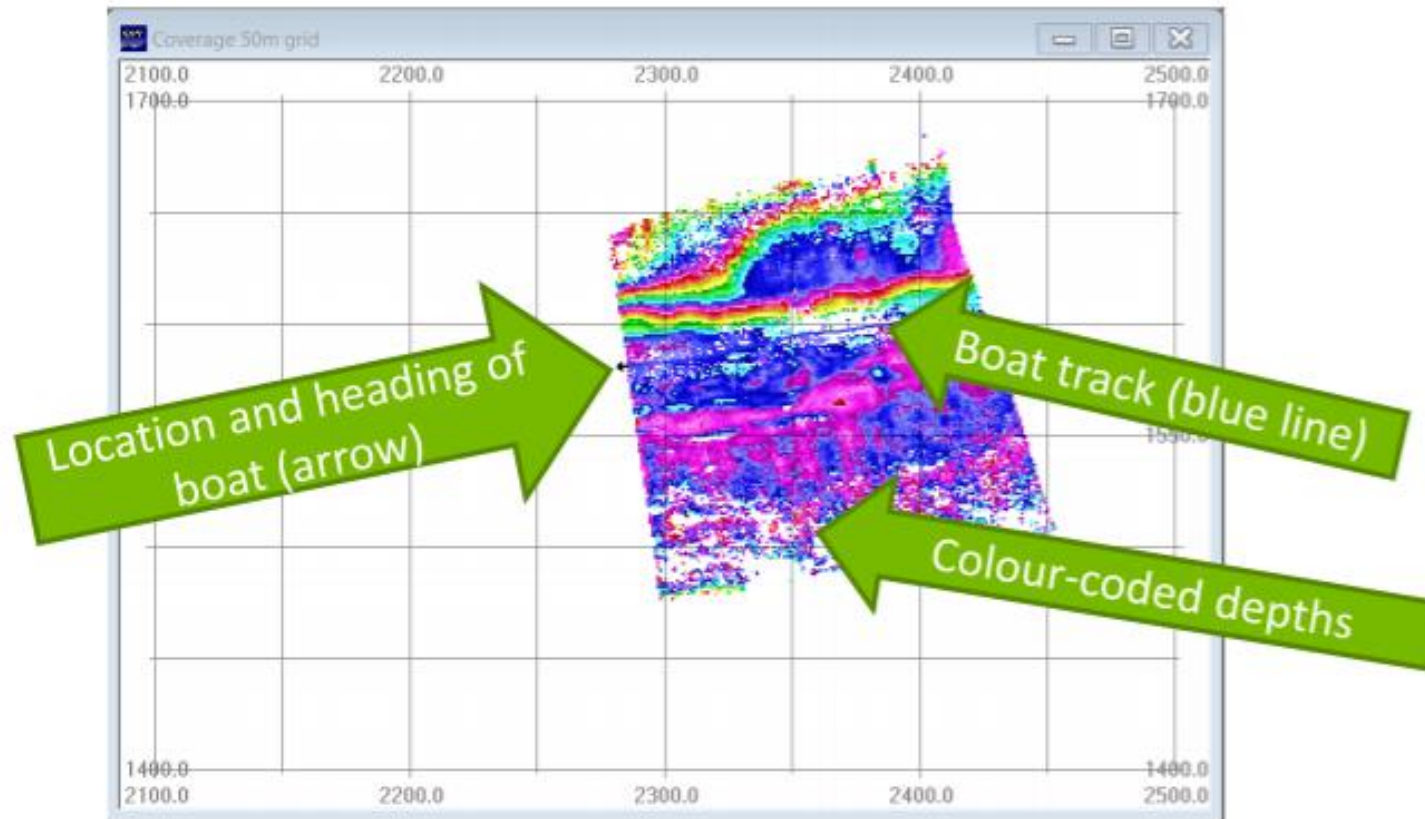
# WATERFALL VIEW CURSOR LOG



Right-click on view and select **Log Cursor Position** (or **Ctrl-Shift-L** keys) Use **Tools > Target Log** to see the log and save to a file.



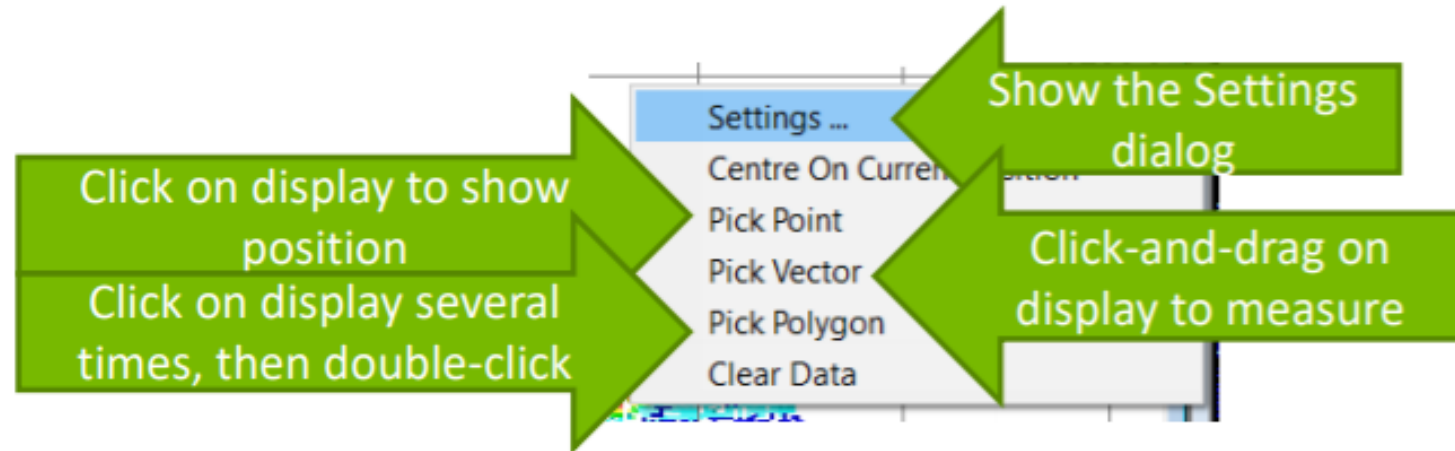
# COVERAGE VIEW



Coverage view shows depth or sidescan data in a plan-view map.



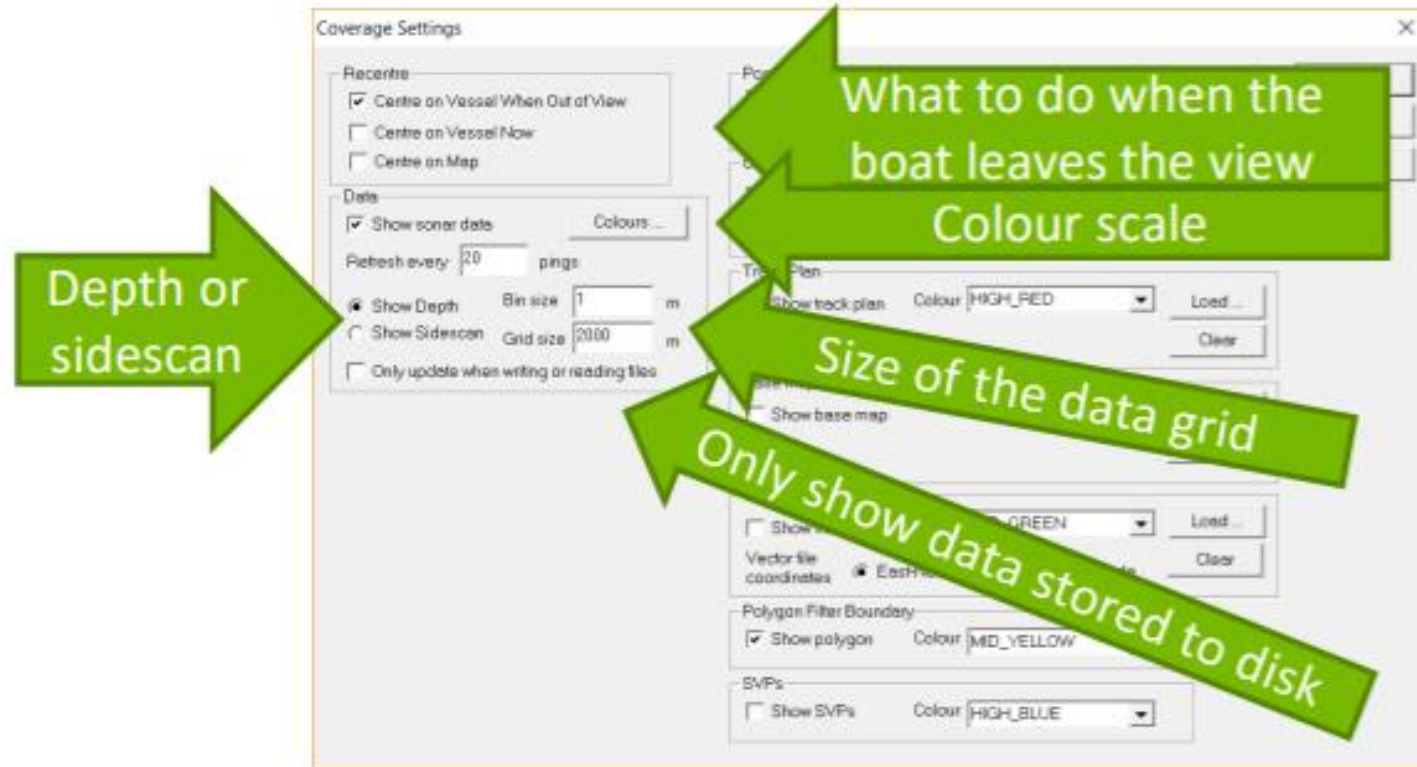
# COVERAGE VIEW MENU



Right-click to show the Coverage view menu.



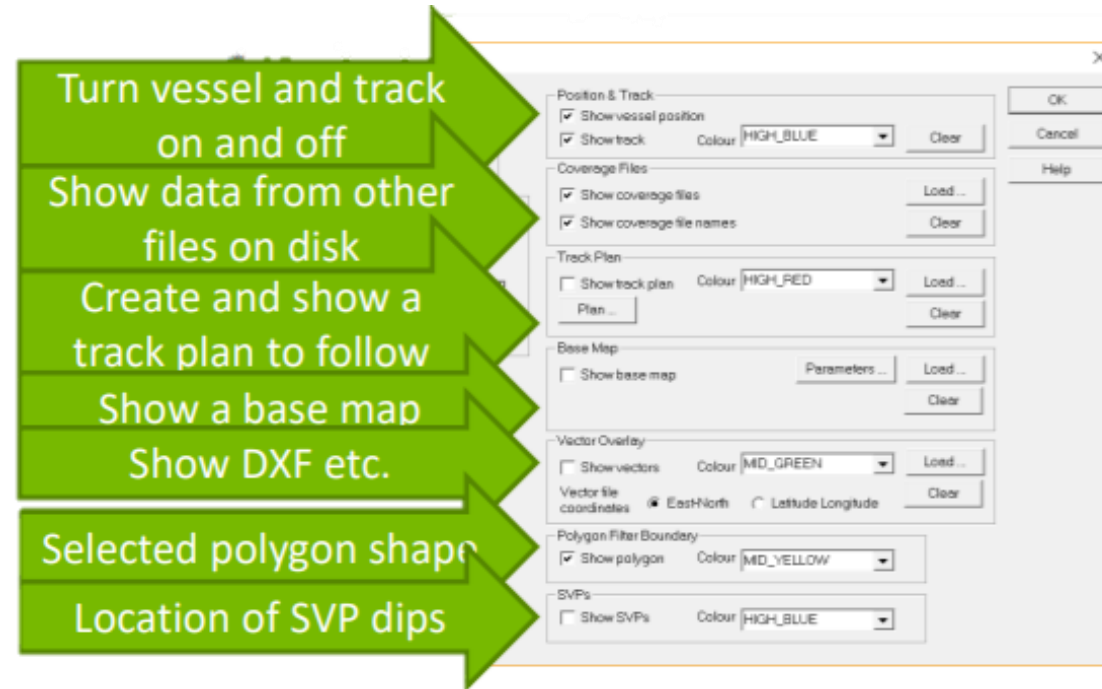
# COVERAGE VIEW SETTINGS



Choose **Settings** from the right-click menu  
Data is stored in a grid in memory; when boat leaves the stored grid area,  
a new one is made.



# COVERAGE VIEW SETTINGS



You can:

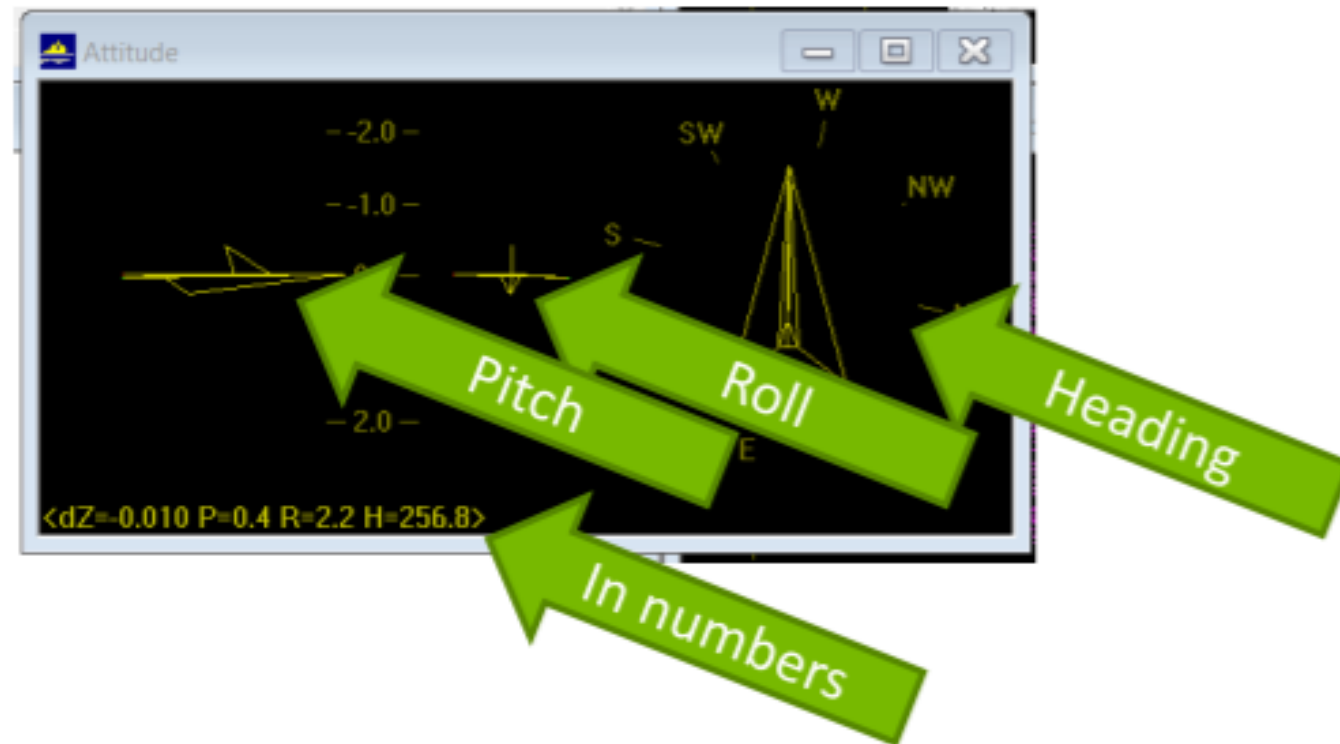
- Create and show a line plan to follow for a survey
  - Show a base map from Geotiff etc.
    - Overlay vectors (e.g. DXF)
    - Show location of SVP dips



CHECK SENSOR DATA



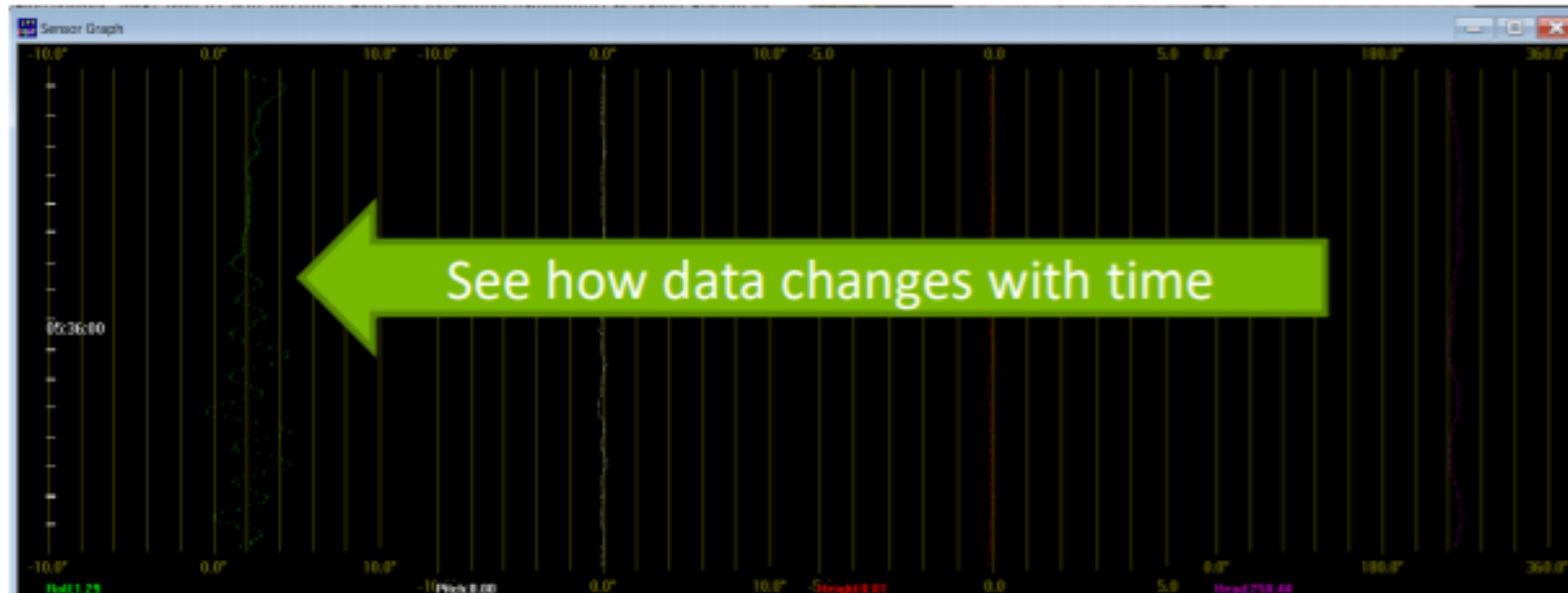
# ATTITUDE VIEW



See the Attitude sensor data at a glance.



# SENSOR GRAPH



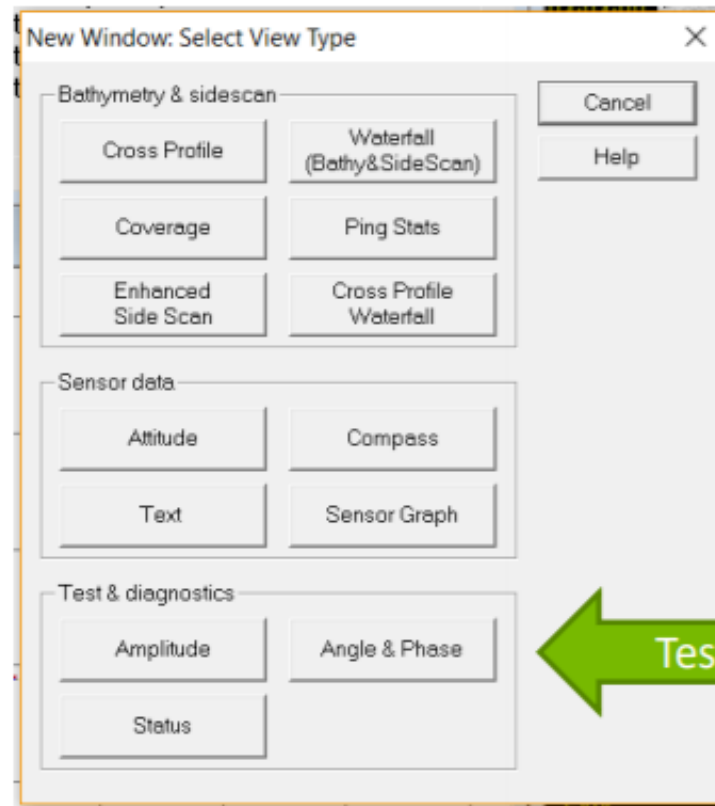
Show a scrolling graph or roll, pitch, height and heading.



# TEST & DIAGNOSTICS



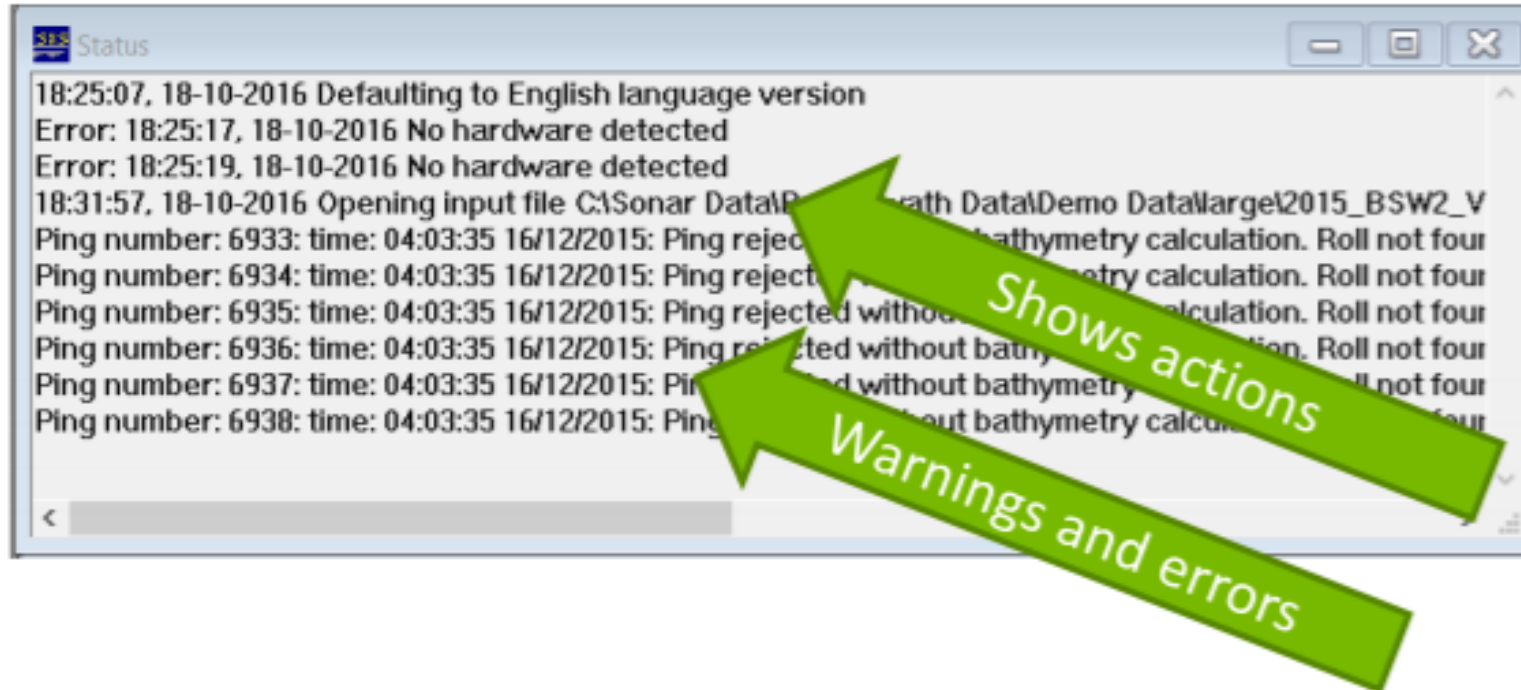
# TEST AND DIAGNOSTICS VIEWS



Test and diagnostics views are used to check that the sonar system is working well.



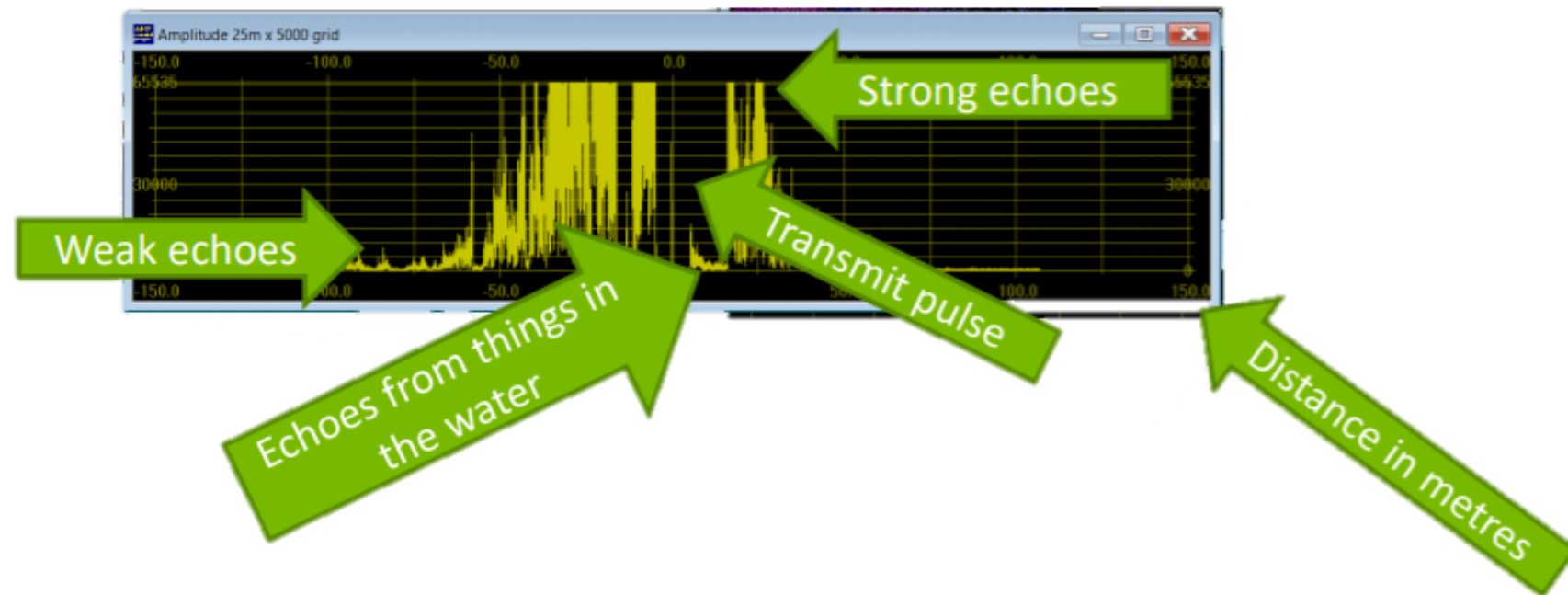
# STATUS VIEW



Leave **Status** visible: it shows useful warnings and errors.



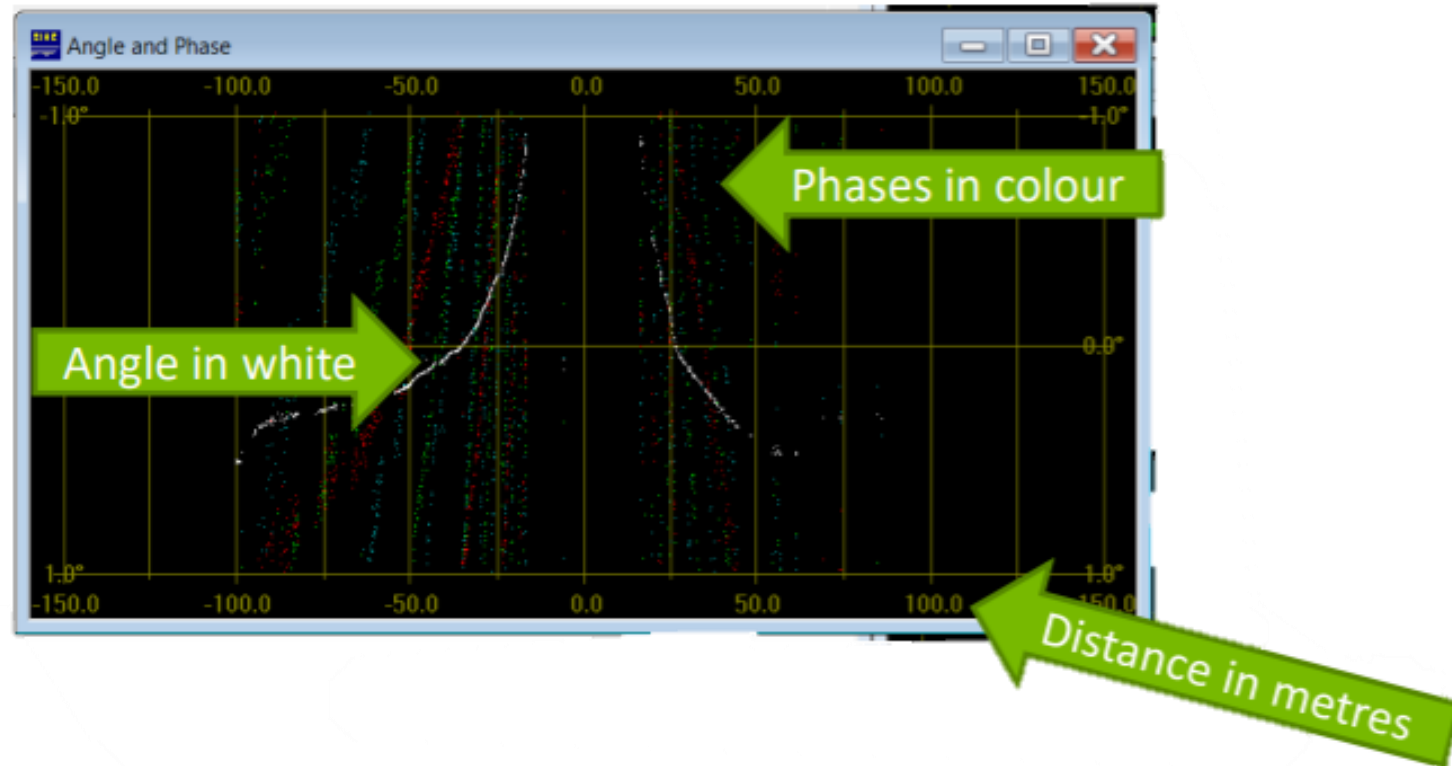
# AMPLITUDE VIEW



Shows the strength of return as a graph, against range (distance from the transducers).



# ANGLE AND PHASE VIEW



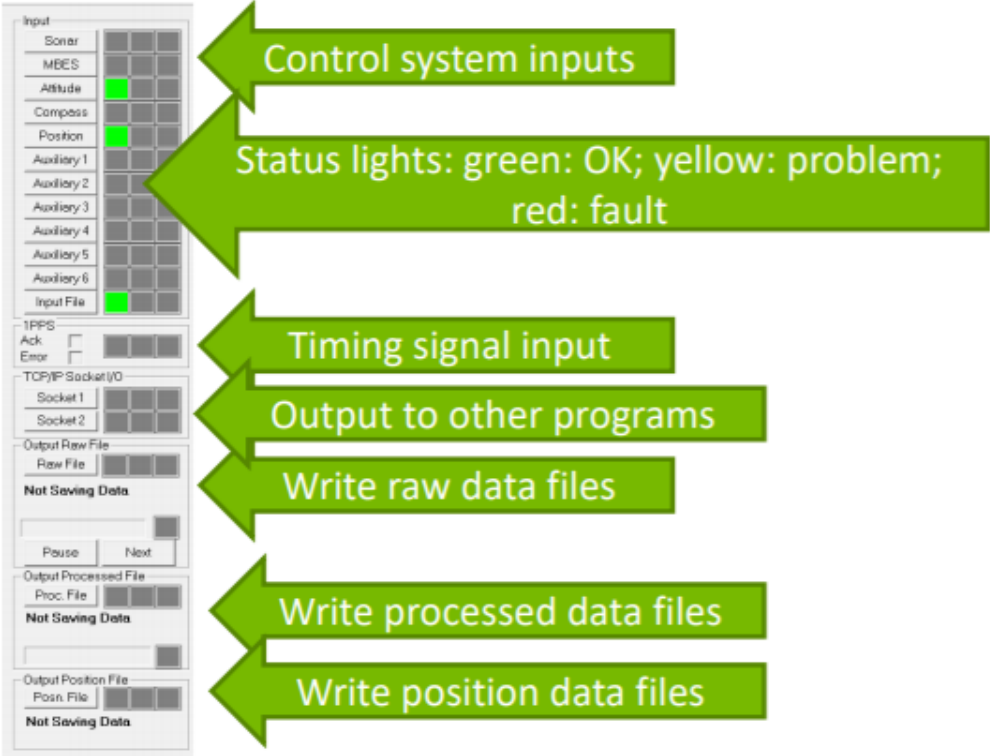
Shows the raw phase measurements from the sonar electronics,  
and the angle from the transducer.  
Used to check that the system is working correctly.



MAIN DIALOG BAR



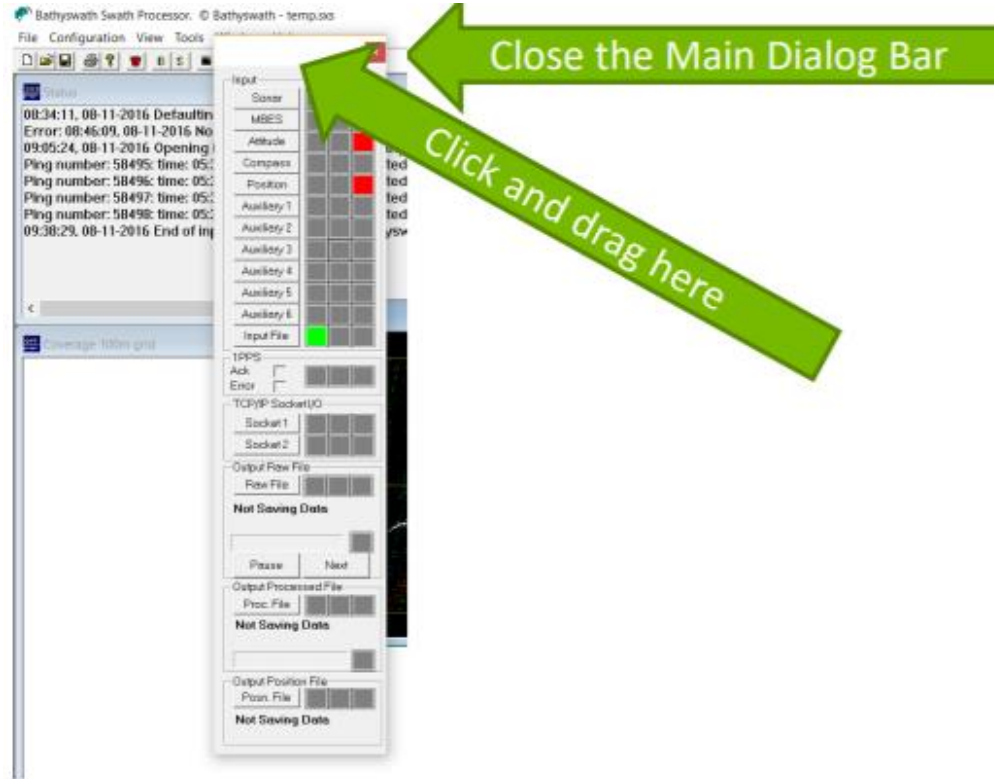
# MAIN DIALOG BAR



The Main Dialog Bar on the left of the screen lets you control the system and see its status.



# MAIN DIALOG BAR



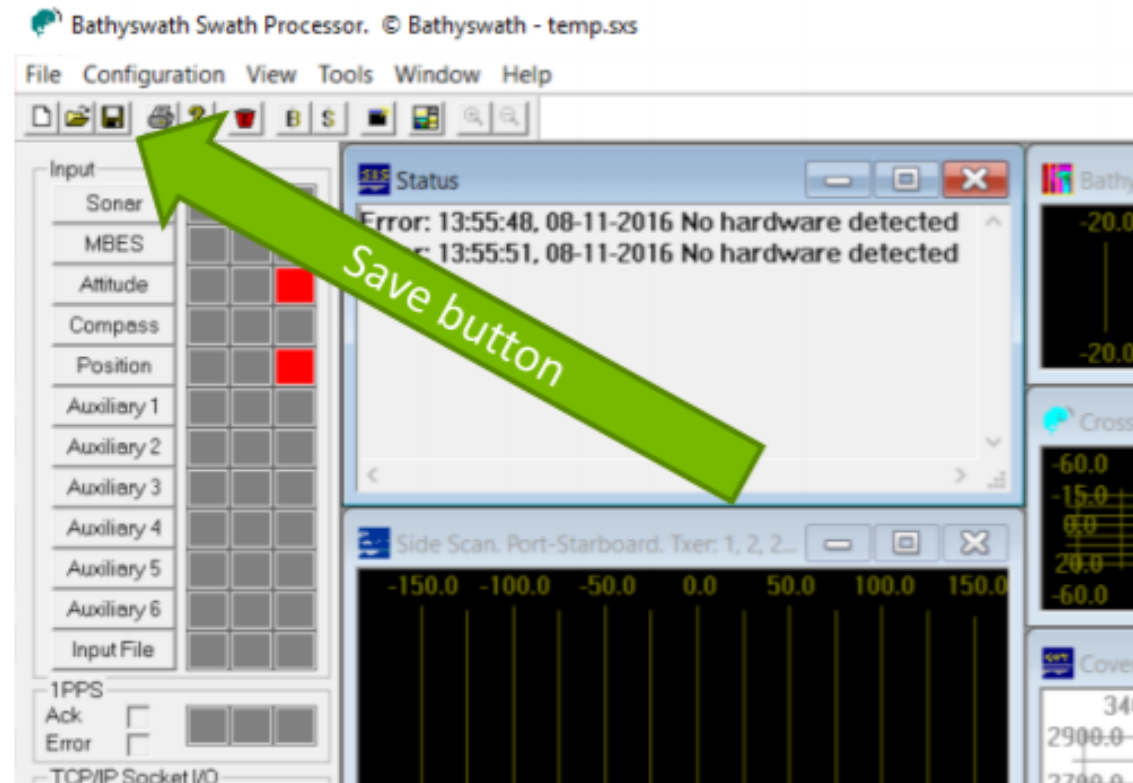
You can “undock” the Main Dialog Bar by clicking and dragging on its top border.  
You can close it (to save window space), and you can open it again  
from the **View** menu.



SAVING THE SESSION FILE



# SAVING THE SESSION FILE



When you are happy with the way that the windows and other selections have been set, use the **Save** button, **File > Save**, **File > Save As**, or **Ctrl-S** keys. The settings and views will be restored when you next **Open** the file.



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