Nobeltec TimeZero Catch v2.1.0

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Welcome

Thank you for purchasing Nobeltec TimeZero Catch . This User's Guide is written for an audience assumed to have a mid-level, pre-existing knowledge of computer usage and the principles of marine navigation. Do not use this document and software to replace actual navigation training and experience, but as a valuable navigational aid.

WARNING: Nautical navigation is a serious undertaking and should only be engaged in by persons trained and experienced persons in such navigation.

Getting Started

Home Planning Vs Navigation

Nobeltec TimeZero Catch can be used in two modes. Upon starting the software choose "Home Planning" or "Navigation" mode:

WEATHER INFORMATION WARNING: The weather information is subject to service interruptions and may contain errors or inaccuracies, and consequently should not be relied upon exclusively. The service is provided "as is". You are urged to check alternate weather information sources prior to making safety related decisions. You acknowledge and agree that you shall be solely responsible for use of the information and all decision taken in respect thereto. By using this service, you release and waive any claim against Nobeltec Inc. with regards to this service.

IF YOU DISAGREE, PRESS "QUIT"

IF YOU ARE CONNECTED TO A GPS (OR NAVNET) PRESS "NAVIGATION", OTHERWISE PRESS "HOME PLANNING"

Quit   Home Planning   Navigation

Home Planning

Choose the "Home Planning" mode when planning on shore.

In "Home Planning" mode, the vessel icon is not displayed on the chart, the alarms are disabled and routes cannot be activated. All other functions such as creating Marks, planning routes, or updating and viewing weather files are available.

The Status Bar (Title Bar) appears in yellow in the "Home Planning" mode.

Navigation

Choose the "Navigation" mode when the computer is physically connected to sensors and instruments (GPS, AIS, NavNet…)

In this mode, the sensor and instrument data is displayed, alarms are enabled, and a route can be activated.

Note: The "Home Planning" and "Navigation" start-up mode are independent from the *Work Spaces* (which can be used to plan a route while in the navigation mode). Make sure to review the Work Spaces chapter for more information about this important concept of TimeZero Catch .

Chart Compatibility

Nobeltec TimeZero Catch is compatible with Mapmedia ".mm3d" charts. Mapmedia .mm3d charts are available in Raster Chart format or in Vector Chart format. Mapmedia Raster Charts are scanned from official hydrographic office and select private sourced paper charts. Mapmedia Vector Charts are manufactured from official hydrographic office vector charts called S-57 or from privately furnished vector charts from Jeppesen (C-MAP) or Navionics.

Nobeltec TimeZero Catch is furnished in North America with the complete NOAA library of *Raster* charts (RNC), S-57 *Vector* charts (ENC) and 3D Bathymetry in the Mapmedia .mm3D chart format. This data is provided on six DVDs, two containing the Vector Charts (with 3D Data) and four containing the Raster Charts. Additionally, free USA High Resolution Satellite Photos are downloadable from the Mapmedia Catalog.
Click here to download the free USA High Resolution Satellite Photo

Outside North America, Mapmedia offers a complete range of nautical charts for purchase. Visit the Mapmedia Catalog to view various chart coverage.

Installing Charts

Chart Installation from DVD

If you have received the charts on DVD(s), insert the first "Chart" DVD into the computer's DVD drive:

- If Nobeltec TimeZero Catch does not start automatically, use Microsoft Windows Explorer to browse to the file "ClickMeToInstall.mm3d" on the DVD and double-click on it.

- The charts are then copied automatically from the DVD to the correct location on the computer's Hard Drive.

- Repeat the same process with every DVD provided

Charts Installation from files downloaded online:

Every Chart Pack can be downloaded online from the Mapmedia Catalog. The Charts consist of multiple files that are downloaded individually. Chart and data files are stored as .zip files.

Charts for the USA are free and can be downloaded and updated at any time without unlock code:

- Click here to download the latest revision of the NOAA Raster Charts

- Click here to download the latest revision of the NOAA Vector Charts

- Click here to download the free USA High Resolution Satellite Picture

Charts for outside the USA are licensed and require purchasing an unlock code.

If you download the charts from the same computer running Nobeltec TimeZero Catch , simply save the files in *My Documents | My Nobeltec | Downloaded Charts"*. The next time you open TimeZero Catch , it will scan this folder and prompt you if you want to install the charts (TimeZero Catch will automatically unzip the files then transfer them to the correct location).

If you download the charts from another computer, transfer the files using a USB jump drive (or other media) in *My Documents | My Nobeltec | Downloaded Charts"* then open the software.

Note: You can also manually unzip the chart files, and then double click on them to install the chart in TimeZero Catch .

Setting up Instruments

Nobeltec TimeZero Catch can utilize information from many different instruments on your boat. A GPS will be the most common type of instrument used, but depth sounders, speed sensors, wind vanes, and AIS receivers can also supply information to Nobeltec TimeZero Catch .

These instruments can be connected to the PC through an NMEA0183 interface, through the Network (if a Furuno NavNet MFD or Ethernet sensor is used) or through NMEA2000 (using the Nobeltec NMEA PC Gateway).

- Serial Port: In most cases, connecting an NMEA0183 instrument to a computer is straightforward, and is accomplished by simply connecting the serial cable supplied by the instrument manufacturer to the serial port on the PC. The serial port is a nine-pin male

port on the back of the computer often identified by an IO or COM symbol.

- Serial to USB adapter: Newer computers – especially laptops – may not include a serial port. One can be added by using a serial-to-USB adapter, which can be obtained from Nobeltec or computer stores. A serial-to-USB adapter will create a "virtual COM port" on your computer that can be viewed in the "COM and Ports" section of the Device Manager.

  IMPORTANT: Make sure to install the USB adapter drivers BEFORE connecting the USB cable of the adapter to the computer!

- Active USB GPS antenna (such as the "USB GPS 9P" sold by Nobeltec) is an easy way to provide the software with a vessel's position.

  IMPORTANT: Make sure to install the GPS USB drivers BEFORE connecting the USB cable of the GPS to the computer!

- Ethernet: If the boat is equipped with a NavNet series Furuno Chart Plotter (NavNet1, NavNetVx2, NavNet3D, NavNet TZtouch) or AIS (FA30, FA50), your computer can be connected to the NavNet network using a standard Ethernet Cable. Assign a fixed IP address to the computer connected to the NavNet network such as 172.31.3.150 with a subnet mask of 255.255.0.0.

  NMEA0183 to Ethernet gateway or NMEA0183 to WIFI can also be used (UDP or TCP connection).

Tips: For more information about installing Radar, Sounder and Camera please refer to the Installation chapter.

Automatic Instrument Configuration

Nobeltec TimeZero Catch can automatically locate most sensors and instruments connected to the computer. To use this feature, start TimeZero Catch in "Navigation" mode to enable sensor and instrument connections. Next, launch the Automatic Configuration Wizard:

- Click on the "Nobeltec" Button located on the top left of the screen
- Click on "Connection Wizard"
- Select the "Automatic Ports Configuration"; and then, click "Next"

- Follow the on screen instructions

Tips: For more information about connecting instruments, please refer to the Connection Wizard Chapter.

Note: The Connection Wizard option will not appear when the software is started in "Home Planning" mode

Using TimeZero

User Interface Overview:
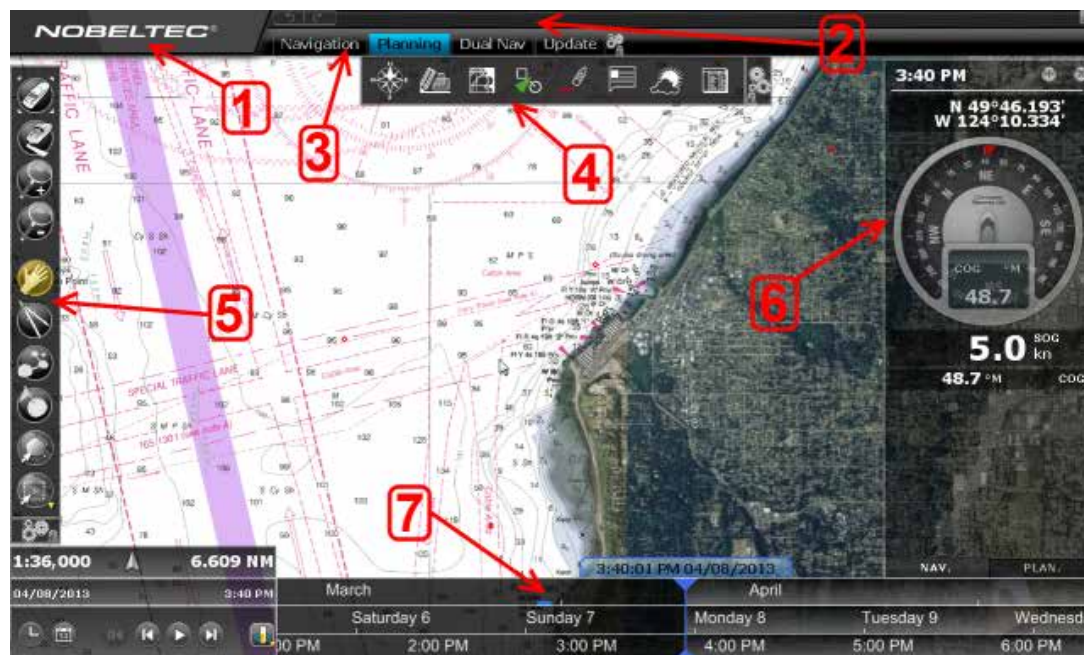
1. "Nobeltec" button: Click on this button to access the Menus and Options of Nobeltec TimeZero Catch and exit the software.

2. Status Bar: This area provides access to the "Undo/Redo" functions and displays the general status of the software; Gray for regular Navigation Mode, yellow when the software is running in Home Planning mode or displaying a notification, and red when an alarm is active. The minimize button (minus sign) can be found on the far right of the Status Bar.

3. Work Spaces: Click on any of the Work Spaces to select the one you want to display on your screen

Note: Your Work Spaces configuration might differ from the screenshot above according to your software configuration and optional Plus Pack.

4. Ribbons: The Ribbons display a series of buttons according to the selected window and Work Space. Left click on any button to open a menu offering various options

5. Toolbar: The Toolbar groups all of the tools that can be used with the selected window and Work Space. Once a Tool is selected, a cursor action is required on the chart, such as creating a Mark. The first button of the Toolbar centers the chart display over the vessel icon.

6. NavData: The NavData displays the data received from external instruments such as the GPS, wind sensor, depth sounder etc… It also displays the cursor position and the range

and bearing of the cursor from the vessel icon. Route information including Course to Steer, Range to Waypoint, ETA and other graphic data can also be displayed. To configure the NavData, right click on any of the items to select the value to display or to remove it. To add a new value, click on the "Plus" sign (+) located on the top of the NavData.

7. Virtual Time Control: The Virtual Time Control Box (only available in the Planning Work Space) allows you to play Weather & Tides animation. Click on the Calendar icon to select a Data & Time to view the Tide and/or Weather Forecast.

Tips: The Work Spaces, Toolbar and Ribbons can be customized by clicking on the Configure

Button:

Note: After customizing the user interface to your preference, you can save all the settings to a file. Click on the Nobeltec button and select "Save UI As...". To reset the user interface to your default settings, simply open Nobeltec TimeZero Catch by double clicking on the User Configuration file. Note that you can make multiple User Configuration files for multiple users or various uses of the software.

Toolbar & Ribbons:

Toolbar

The Active Tool (the tool currently selected) appears surrounded in yellow. In the example below, the Panning Tool (hand icon) is selected:

When you want to change tool, left click on it to select it.

When you see a tool icon with a little down arrow in its lower right corner, it means that you can right click on the tool to view additional options:

In this case, right clicking on the "Selection" tool allows you choose in between the regular selection method (square) or the free selection method:

Ribbons

To open a menu in a Ribbon, click on the corresponding button. Use your mouse to click on an item you want to enable or disable:
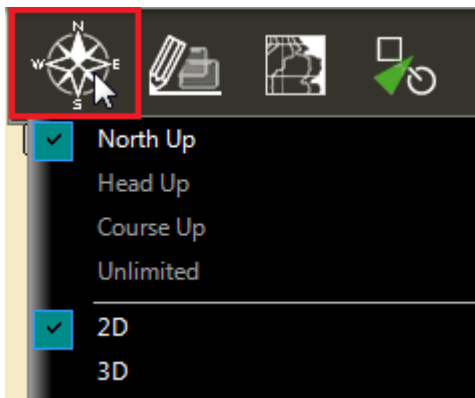
Some menus have drop down items with sliders. Click on the slider directly or use the mouse wheel (with the cursor over the slider) to adjust the value.
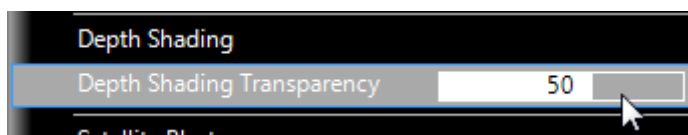
Work Spaces

Nobeltec TimeZero Catch is designed to perform multiple navigation tasks such as planning a voyage, navigating according to that plan, downloading weather information, and viewing and controlling a Radar. These activities require different tools and options. The Work Spaces are our way of separating and differentiating different activities that occur on a navigation system, so the user interface is not cluttered with unnecessary functions and buttons that are not useful to the primary task. Also, since the Work Space configuration are independent, users can keep their navigation mode 100% intact while they plan the next phase of their journey and instantly snap back to their desired navigation view without needing to undo or re-configure the software.

- "Navigation" Work Space: This Work Space is selected by default when TimeZero Catch is started in "Navigation" mode. This Work Space intentionally has limited functionality to simplify operation while underway. To access more advanced planning functions such as animation, route simulation or managing a list of object, select the Planning Work Space.

- "Planning" Work Space: The Planning Work Space is selected by default when TimeZero Catch is started in "Home Planning" mode. This Work Space allows to plan and simulate routes, display weather forecast, display tidal height and currents prediction. The Planning" Work Space has a time line at the bottom of the screen that allows to change the date/time to perform the various animations.
  TIPS: You can hide the Time Line by clicking on the button below:
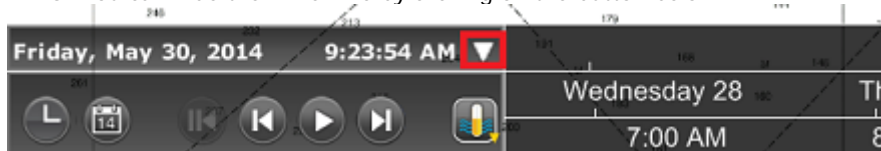
- 3D Work Space: The 3D Work Space offers a 3D view centered on your boat (live GPS position required). The bathymetry is always turned ON and automatically adjusted to provide the best view possible. It is possible to rotate the view around the boat by left clicking and dragging the mouse over the screen. As the boat moves and changes heading, the view stays locked providing the same camera angle relative to the bow of your vessel. Please refer to the 3D WorkSpace chapter for more information.

- 2D / 3D Work Space: The 2D / 3D Work Space splits the screen into a navigation plotter on the left (Navigation Work Space) and a 3D view on the right (3D Work Space).

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- · "Update" Work Space: The Update Work Space allows you to request and download Weather Forecasts. It also allows the user to update the ActiveCaptain database (when registered to the service). This Work Space has an "Update Area" tool in the Toolbar that defines the Weather Forecast area. The "Weather Update" button located in the Ribbons allows retrieval of the updated file.

- · "Camera" Work Space: The Camera Work Space allows you to display a full screen video stream.

Tips: A video stream can also be displayed in a small window using the "Camera" NavData

- · "Radar" Work Space: The Radar Work Space allows the user to display and control the Radar. This Work Space provides all the Radar tools and controls such as Gain, Sea Clutter and Rain Clutter. Note that this Work Space will only appear when the Radar Plus Pack has been unlocked and a Radar has been detected.

- · "Sounder" Work Space: The Sounder Work Space allows the user to display and control the Sounder. This Work Space provides all of the Sounder controls. Note that this Work Space will only appear when the Sounder Plus Pack has been unlocked.

Additional Split Screen Work Spaces are available when clicking on the "Work Space Configuration" button:

When the screen is split in two, the Toolbar and Ribbon selection applies to the active display which is surrounded by a yellow frame. For example, if your screen is split in two and if you want to change a property of the display located on the right, make sure to click on the right side (to make it the active display), then select the corresponding action from the Toolbar or Ribbon:
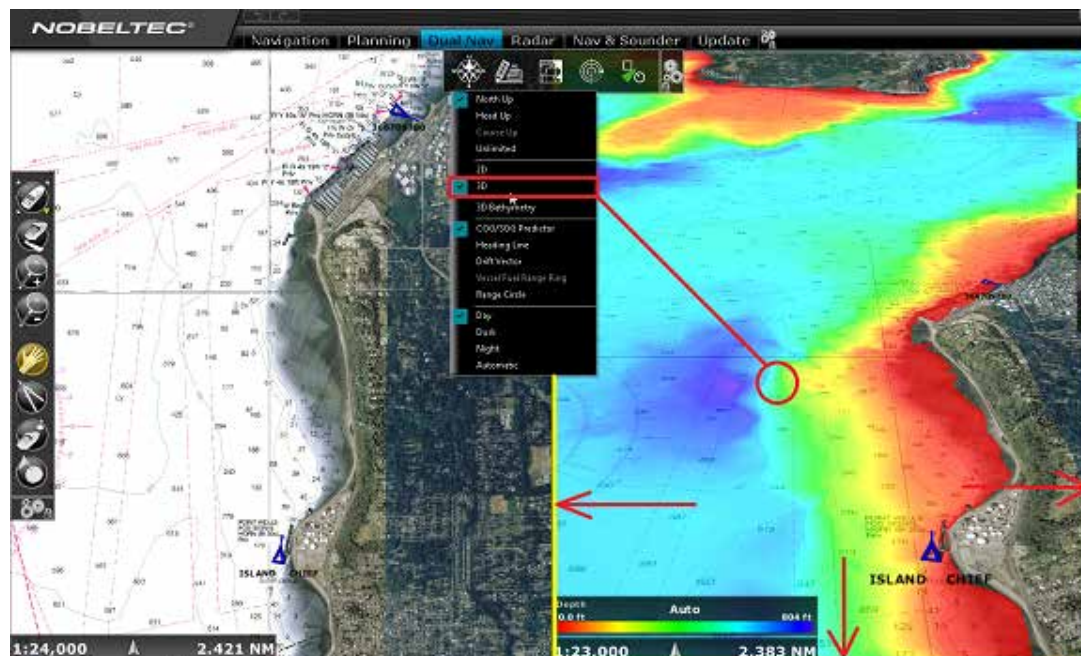
Working with Charts

Scrolling & Zooming

TimeZero Catch offers a new ultra-fast cartographic engine with unparalleled seamlessness and speed of zooming. Nobeltec TimeZero Catch will always select the best charts as you scroll around and zoom in and out. Because scrolling and zooming are so important, Nobeltec TimeZero Catch provides you with several ways of doing them using the mouse or keyboard.

Scrolling the Charts

Panning Tool:

The Panning Tool is the default tool of Nobeltec TimeZero. If it is not selected, click on the Panning tool (hand) located on the Toolbar and move the cursor over the chart to the center of the screen.

- Press and hold the left mouse button while moving the cursor to scroll or drag the chart around

- Double-click with the hand tool on a chart point to center automatically on that point

Note: The panning tool is automatically selected by default after every action. This feature can be disable from the "General" Options if you uncheck "Enable Auto Hand Tool Selection"

Using the Keyboard:

The Arrow Keys on the keyboard can also be used to scroll the chart. Holding down an Arrow Key moves the displayed chart area in the direction of the arrow.

Zooming the Charts

Nobeltec TimeZero Catch allows you to seamlessly zoom in or out to the exact magnification level you like without steps or limitations.

Using the Mouse Scroll Wheel:

If the mouse has a wheel, roll the wheel up and down to zoom in and out. By default, the chart will be zoomed at the location of the cursor. This can be changed to the center of the screen by enabling the option "Center on screen when Zooming" in the General Menu.

Note: Using the Scroll Wheel is the best practical method to change chart scale without having to change the active tool.

Using the Zoom +/- Buttons:

By default, the Zoom In and Zoom Out buttons are available in the Toolbar in every Work Space. Simply click on the corresponding button to Zoom In or Zoom Out by fixed increment.

Using the Zoom Tool:

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The Zoom Tool is hidden by default. Click on the "Configure" button (at the very end of the Toolbar) to add it to the Toolbar configuration. The Zoom Tool is very powerful to zoom and pan the chart at the same time (especially if your mouse has no scrolling wheel). Select the tool by clicking on it, move the cursor over the chart, then left click to Zoom In or right click to Zoom Out.

Using the keyboard:

Use the Page Up / Page Down key or +/- keys (extended keyboard only) to zoom in or out.

Note: When zooming with the Zoom +/- buttons or +/- keys, Nobeltec TimeZero Catch uses predefined chart scale that can be adjusted from the Plotter Display Options menu (using the "Chart Scales Selection" button).

Scale & Range value

The Scale and Range of the chart is displayed on the bottom left of your screen. When the chart display is *Overzoomed*, the scale is written in red.

The range indicates the real distance from the left side to the right side of the chart screen. On the example below the distance represented on the screen is 26.59 Nautical Miles.
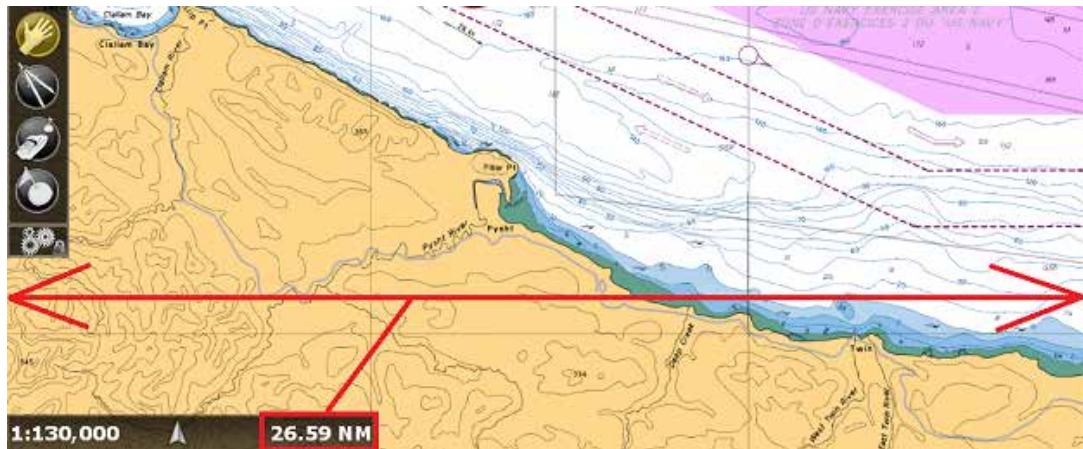
The chart scale is expressed as a ratio (1:130,000 in the example above), so the unit of measure does not matter. On a chart whose scale is 1:130,000, one inch the screen represents 130,000 inches in the real world.

The chart scale and range vary according the zoom level but also according to the latitude (because of the *Mercator* projection).

2D & 3D Chart Orientation

2D & 3D Mode:

Nobeltec TimeZero Catch operates in a fully rendered 3D environment. You can switch from the traditional 2D view to the impressive 3D perspective by choosing the 2D or 3D option in the Mode's drop-down menu:
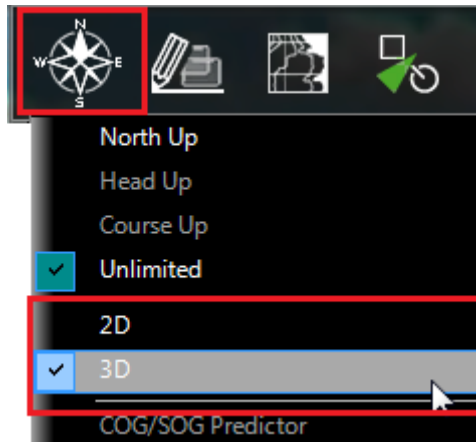
Chart Orientation

In 2D mode, the chart can be displayed in North Up, Head Up or Course Up:

- **North Up**: This mode displays the North at the top of the screen.

- **Head Up**: This mode orients the bow of the vessel to the top of the screen. The chart rotates as the vessel's bow is always pointed toward the top of the screen. In Head up mode, pay close attention to the Compass icon (on the bottom left). It provides information about the direction of North.
  Head Up mode is only available if a Heading sensor is connected OR if your speed is over 1Kn (GPS COG will be used in that case)

- **Course Up**: This mode is only available when a "Go To" or Route has been activated and when the boat is moving over 1Kn. When this mode is selected, the chart rotates and aligns vertically with the active leg. This mode provides a "stabilized" view (not moving with the own ship heading) toward your destination (or active Waypoint).

Tips: Click on the Compass icon (on the bottom left) to cycle in between the various mode

In 3D, the chart can be displayed in North up, Head Up, Course Up or in "Unlimited":

- **North Up**: In this mode, the azimuth is fixed pointing toward the North. The pitch or inclination is adjusted by holding the middle click button and moving the mouse. If the mouse does not have a middle button, press and hold the Alt (Option) key of the keyboard while moving the cursor.

- **Head Up**: In this mode, the azimuth is fixed pointing along the current Heading. The pitch or inclination is adjusted by holding the middle click button and moving the mouse. If the mouse does not have a middle button, press and hold the Alt (Option) key of the keyboard while moving the cursor.

- **Course Up**: In this mode, the azimuth is fixed pointing along the current destination. The pitch or inclination is adjusted by holding the middle click button and moving the mouse. If the mouse does not have a middle button, press and hold the Alt (Option) key of the keyboard while moving the cursor. This mode is only available when a Go To or Route has been activated.

- **Unlimited**: In this mode, the azimuth and pitch can be freely adjusted by holding the middle click button and moving the mouse. If the mouse does not have a middle button, press and hold the Alt (Option) key of the keyboard while moving the cursor.

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Tips: A "Pan Tilt" tool is available (hidden by default) and allows the user to adjust the azimuth and pitch by clicking and dragging the cursor over the charts. This is very useful if your mouse does not

have a middle click button and if the keyboard is not easily accessible:

3D Bathymetry

When "3D" is selected from the "Mode" button in the Ribbon, TimeZero Catch handles Altimetry (3D above Sea Level) and Bathymetry (3D below Sea Level) in two different ways:
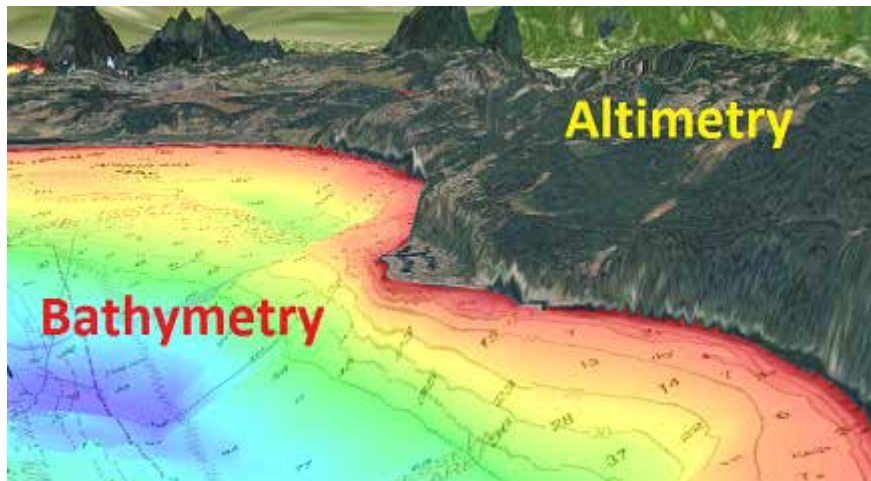
Altimetry (3D above water) is always activated and its exaggeration can be changed manually from the Plotter Display Options under the "3D Display" by adjusting the "3D Alti Exaggeration" slider.

Note: This setting is used to enhance the 3D image over land by over or under-exaggerating 3D data over land. Minor changes in elevation become visible in areas that might otherwise appear completely flat (or vice-versa). If you are in an area where the mountains appear too high, simply reduce the 3D Alti Exaggeration

Bathymetry (3D below water) is turned OFF by default. This means that, by default, the sea appears flat. This is to avoid parallax effect that can be disturbing to some users. If you want to enable the 3D underwater, simply select "3D Bathymetry" from the "Mode" button in the Ribbon.

In the screenshot below, the Bathymetry is OFF (default setting). You can see that it is very easy to locate the boat and AIS icon relative to the chart:
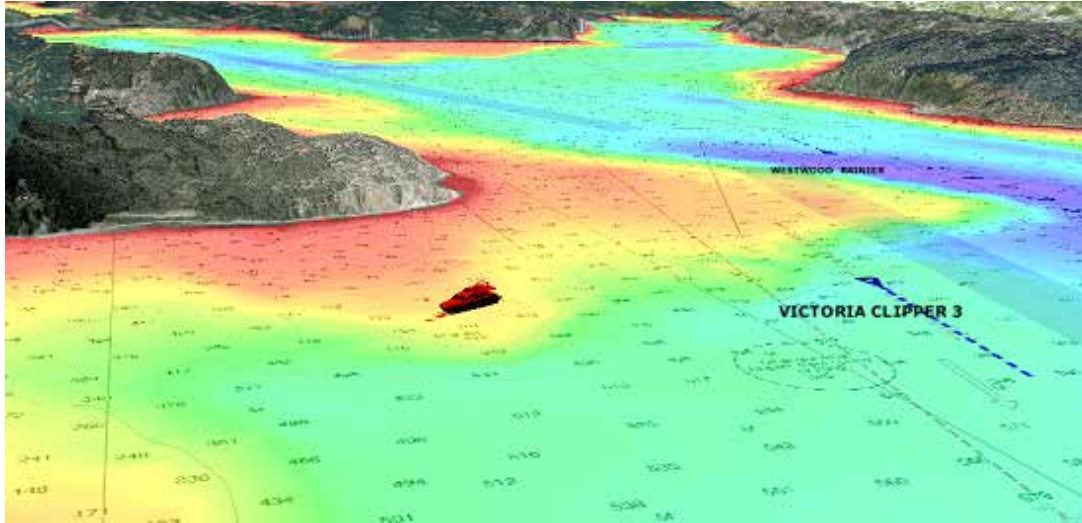
In the screenshot below, the Bathymetry is ON. This allows you to visualize in great detail the depth around your vessel. However, it might be difficult to place objects that appear at the surface (target, marks, etc…) at their proper location on the bottom even if TimeZero Catch display a "shadow" with a vertical line under the object:
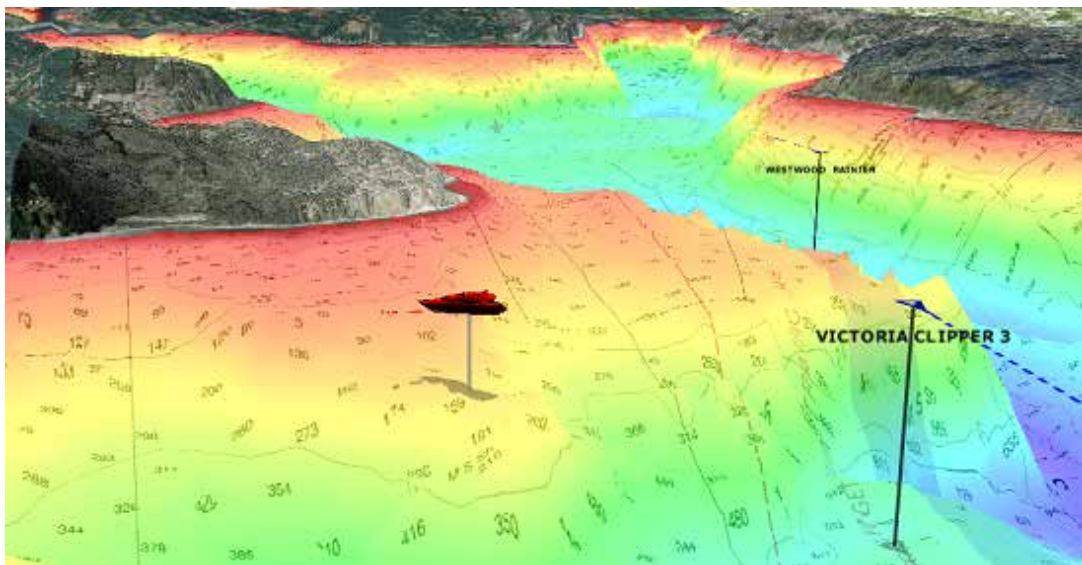
For that reason, the Bathymetry can be turned ON or OFF.

Note: The "3D Bathymetry" setting does not affect the Depth Shading, Contour Lines or the "3D" WorkSpace.

When the 3D Bathymetry is turned ON, the 3D exaggeration under water is automatic. TimeZero Catch adjusts the exaggeration automatically according to the zoom level and the Slope of the terrain.

Selecting Charts & Overlays

Nobeltec TimeZero Catch 's powerful graphics engine adds new chart presentation options to the conventional method of electronic chart plotting. TimeZero Catch can display vector and raster charts, and merge them with satellite pictures and depth shading. With 3D charts and our new Satellite PhotoFusion rendering, satellite imagery blends with critical chart data in an easy, useful

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way that greatly enhances situational awareness. These new presentation options help identify the exact position of the vessel while navigating near land, while displaying with information about the surrounding area.

Selecting Charts:

Click on the Chart button in the Ribbon to display and select the various options:
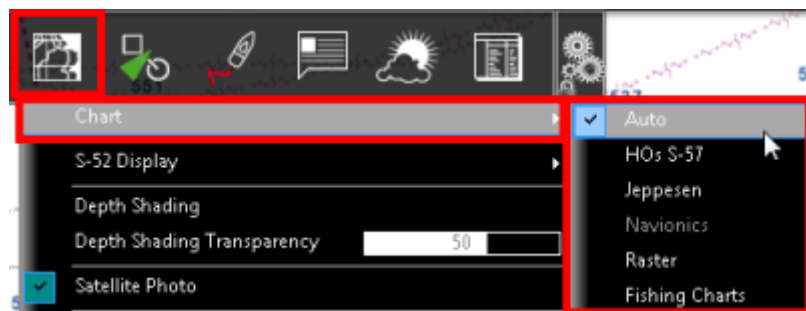
- **Auto**: Select this option if you want TimeZero Catch to automatically pick the best chart source according to the area

Note: By default, Nobeltec will try to use a Vector chart in Auto mode. However, if you have installed and prefer Raster charts, you can switch the "Chart Priority in Auto Mode" to "Raster" from the Plotter Display Options

- **HOs S-57**: Select this option to display Vector Charts from Hydrographic Offices (NOAA,…)

- **Jeppesen**: Select this option to display Mapmedia mm3d "C-Map by Jeppesen" Vector charts

- **Navionics**: Select this option to display Mapmedia mm3d "Datacore by Navionics" Vector charts

- **Raster**: Select this option to display Raster Charts from Hydrographic Offices (NOAA, SHOM, UKHO,…)

When a Vector Chart is selected (either "HOs S-57", "Jeppesen" or "Navionics"), the "*S-52* Display" allows you to choose from Various Preset display configurations (Base, Standard, Fishing, Others). When set to "Custom", use the "S-52 Display" Menu to customize the configuration.
Refer to the chapter Adjusting Vector Charts Display for more information.

Note: If a chart type is greyed out, it means that you have not installed that type of chart yet

Chart Property

Source, issue date, Unit (Raster Charts only) etc… can be displayed by right clicking on the chart and selecting "Chart Properties":

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Note: The Raster Chart depth unit may change according to the location. A Raster Chart Unit legend can be displayed on the screen at all time by selecting "Display Raster Chart Unit Legend" from the Plotter Display Options. Vector chart always uses the depth unit define in the Units Options.

Satellite Photos

Satellite pictures can now be fused with raster or any type of vector charts by a method called PhotoFusion. Land areas are completely opaque, so that these areas are displayed as high-resolution satellite photos on the chart. As the depth increases, the satellite photography becomes more transparent so that the shallows are displayed along with the chart information. As the deeper water begins, the satellite picture disappears, leaving the raster or vector chart. High-resolution satellite photography enables the user to easily identify the seabed classification as sand, rock, coral or other obstructions.

To enable the PhotoFusion overlay, select "Satellite Photo" from the Chart button.

Note: PhotoFusion automatically adjusts the transparency of the Satellite Photo, however, it is possible to manually offset the transparency (make it more or less transparent) using the "PhotoFusion Transparency Offset" setting available in the Plotter Display Menu.

Tips: When the "Chart Boundaries" option is selected from the Plotter Display menu, Green boundaries outlines are displayed where Satellite pictures are installed

Depth Shading

A depth color scale can be applied to raster or any type of vector charts. This unique feature allows you to view water depths at-a-glance with vibrant colors. To enable the Depth Shading overlay, select "Depth Shading" from the Chart button. The transparency levels can be adjusted from the same location so that the chart data is visible beneath the color shading.

By default the color scale is set automatically (Nobeltec TimeZero Catch scans for the deepest and shallowest point on the screen and automatically adjust the upper and lower boundary). You can disable the Automatic mode by clicking on "Auto".
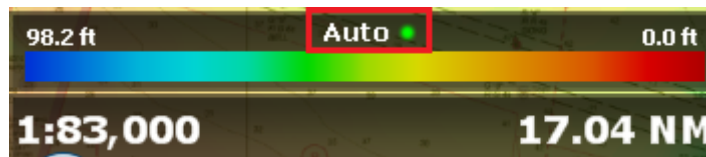
In Manual mode, you can adjust the lower and upper boundary by moving the cursor over one of the depth values and using the mouse wheel to change it. You can also double click on one of the depth value to open the Menu where you can input the numerical value using a keyboard.

Tips: If you put the cursor over the color scale and use the mouse wheel (in manual mode), it will change both the upper and lower boundary at the same time (span).

Discrete Depth Shading

The Depth Shading can be set to a user selectable discrete color palette allowing specific depths to be highlighted with specific colors. Click on the Depth Shading scale until "Discrete" appears:
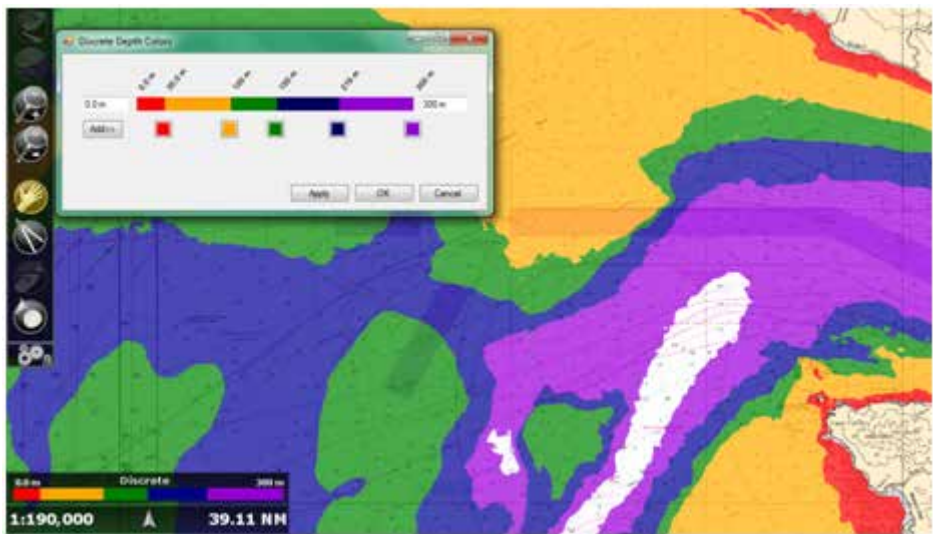
To customize the Discrete Color Scale, select the Plotter Display, make sure that the "Depth Shading Mode" is set for "Discrete" and then click on "Discrete Color Palette":
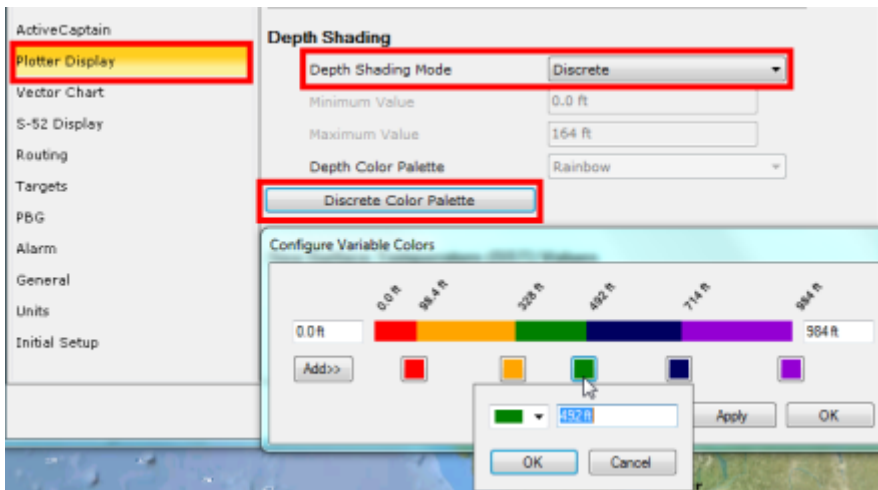
Start by adjusting the minimum and maximum depth value. Outside of these boundaries, no color will be displayed. Once the minimum and maximum values are adjusted click on the small color square to change the color and/or depth value.

To add a new color, simply click on the "Add>>" button. To remove a color, click and drag the color square all the way to the right side (a trash icon will appear), then release the mouse.

Depth Contour Lines

Depth Contour Lines generated using the 3D database can be displayed in Nobeltec TimeZero Catch from the "Chart" button located in the Ribbon. An innovative GPU algorithm allows a large number of contour lines to be drawn on the screen while maintaining the "TimeZero" performance (fast chart redraw in 2D or 3D).

The contour lines can be set in "Automatic" or "Manual" mode from the Plotter Display Options (under "Depth Contour line").

Automatic Mode

In automatic mode, TimeZero Catch adjusts automatically the contour line interval based upon your density selection, slope and chart scale. The contour line density can be adjusted from the Plotter Display Options or by clicking on the "+" or "-" icon on the depth color scale (if the depth shading is displayed):
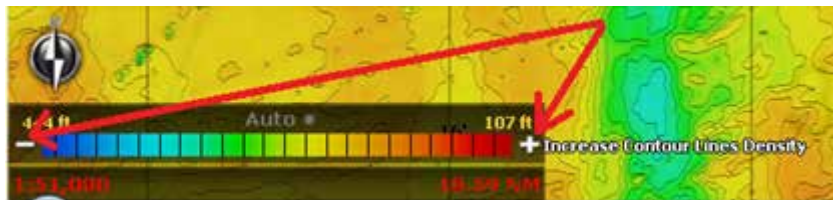
Manual Mode

In manual mode, the contour line interval is manually fixed from the Plotter Display Options. In addition a "highlight" can be setup to display a bold contour line at a fixed frequency. In the example below, the interval has been manually set to 15 feet with a highlight frequency of 5. There are 4 thin contour lines in between two bold contour line:
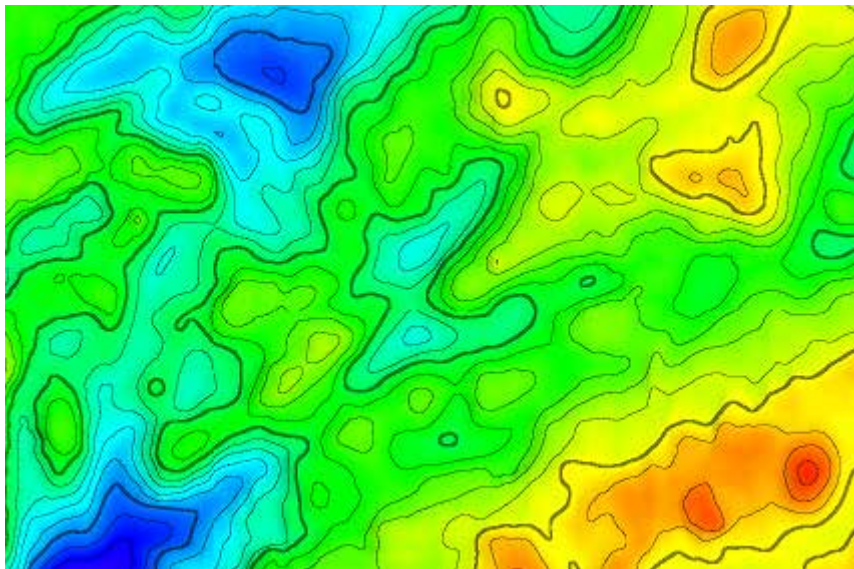
TIPS: You can select "Inverse Chart Palette in Day mode" to invert the chart color scale. In that case, the contour lines will be displayed in white on the screen:

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Contour Lines Color:

By default, the contour lines are displayed in black. It is possible to select "Use Depth Shading Color Palette" from the Plotter Display Options (under "Depth Contour line") if you want the contour lines to be drawn in color. When this option is checked, the contour lines will use the same color palette as the depth shading. Please note that the contour lines will only be displayed in color when the depth shading is NOT displayed on the chart.
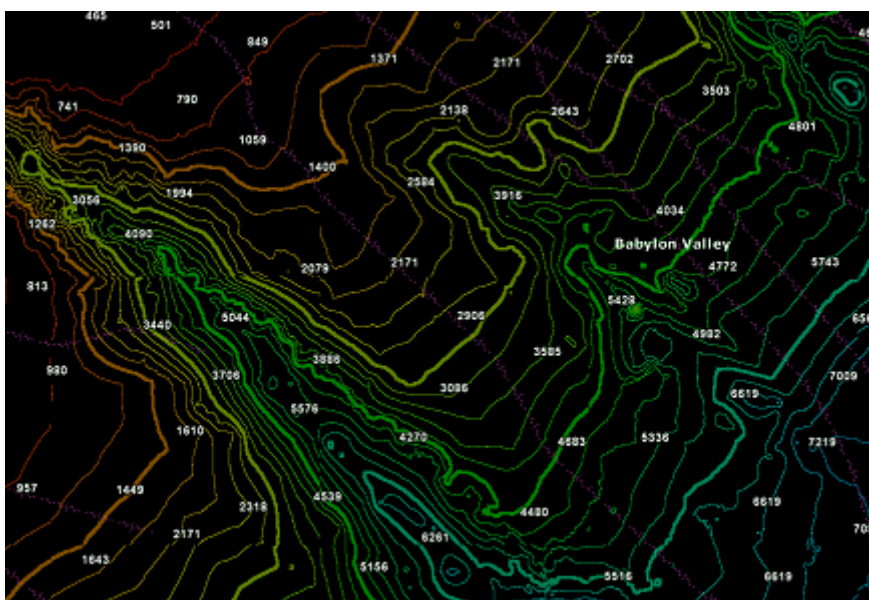
Note: The contour line will automatically revert to black when the depth shading is displayed, even if the option is checked. This prevents the contour lines to "disappear" by using the same color as its background.

Contour Line Tool

TimeZero Catch allows you to create two custom contour lines (a red and a green contour line) by using the cursor with the "Contour Line" tool selected. This can be useful to highlight on the chart shallow water or to mark a boundary in between two depth value.

Click on the "Configure Tools" button at the bottom of the ToolBar on the left side of the screen and make sure that the "Contour Line" tool is added to the Toolbar configuration:

When this tool is selected, a temporary yellow contour line is drawn under the cursor with a depth label. This allows you to move the cursor over the chart and position the contour line to the desired depth. Left click on the chart to drop the contour line:
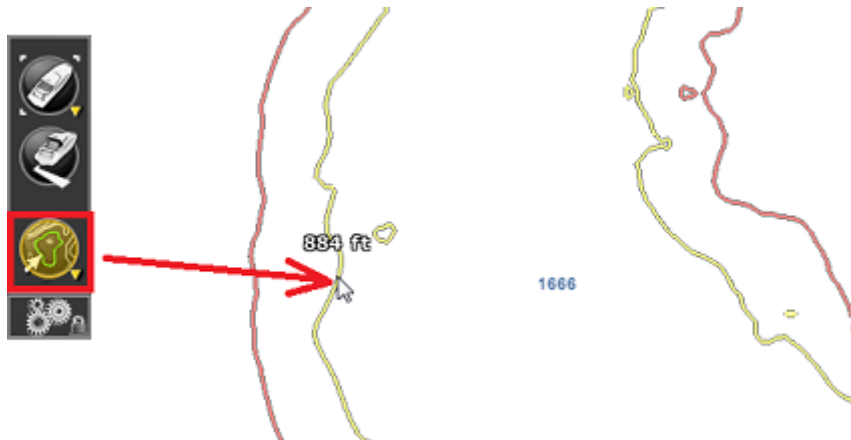
The contour line will be either drawn in green or in red according to the tool that has been selected. To change the tool from the red contour line to the green contour line, right click on the tool and select the corresponding color. Note that only two contour lines can be created with this tool. If you drop a second contour line of the same color, it will replace the previous one.

To delete the red and green contour line, just double click on the Contour Line tool icon in the ToolBar.

Note: The red and green contour lines that have been drawn with the Contour Line tool appear on the chart even if "Depth Contour Lines" is not selected from the "Chart" Ribbon.

Terrain Shading

The Terrain shading setting allows highlighting relief on the chart and is available under the "chart" button, located on the Ribbon. The shading level can be adjusted from the same location. This feature is especially useful in 3D mode when the charts are uniform (same color), making the 3D relief more visible:

Without Terrain Shading   *With Terrain Shading*
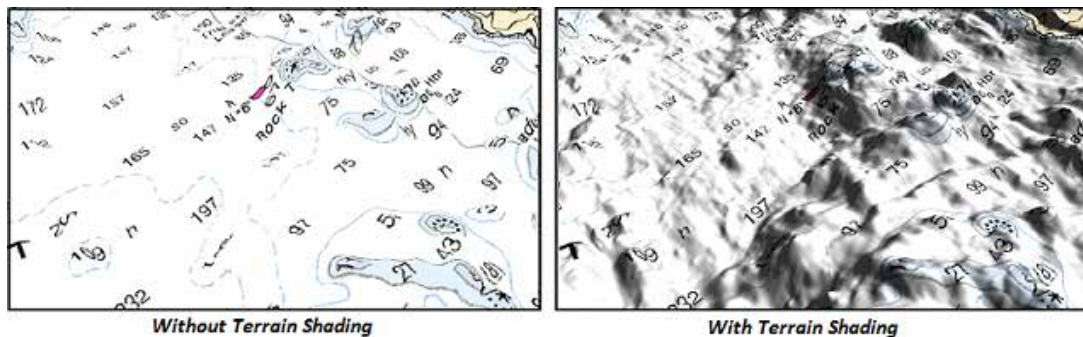
Bottom Hardness

A bottom hardness color scale can be applied to raster or any type of vector charts. This unique feature allows you to view bottom hardness at-a-glance with vibrant colors. To enable the Bottom Hardness overlay, select "Bottom Hardness" from the Chart button. The transparency levels can be adjusted from the same location so that the chart data is visible beneath the color shading. Please refer to the Bottom Hardness chapter for more information.

BackScatter

The "WASSP Plus Pack" needs to be unlocked to access this feature.

BackScatter data (hardness) can be displayed on the chart when connected to a WASSP multi-beam sounder. Please refer to the WASSP Chapter for more information.

Other Overlays

The Chart button in the Ribbons allows the user to display various additional overlays:

- Select "Tidal Height Stations" to display Tidal Gauge on the Charts (refer to Tides for more information).

- Select "Tidal Currents" to display Currents Arrows on the Charts (refer to Tidal Currents for more information).

- Select "Grid" to display a Lat/Lon or TD (loran) grid on the Charts.

Adjusting Vector Charts Display

Unlike *Raster* charts, *Vector* charts can provide control over the level of information displayed. Vector charts are made up of individual objects and data layers such as navigations aids, spot soundings and land features that can be displayed or hidden. These adjustments are made from the Vector Chart and S-52 Display Menu.

Vector Chart Menu

"Chart Object Size" is a slider that allows the user to change the size of the Vector Charts Depth Sounding and Objects (Buoys, Wrecks, Obstructions, etc...)

"Chart Color Palette" allows the user to change the colors (or "theme") of the Charts.

"Chart Symbol" allows the user to change the buoys icons to either a "S52" or "International" representation.

The Shallow/Safety/Deep Contour parameters are used to color the various depth areas on the Vector Chart. The transition between colors is based upon the depth contour lines of the vector chart. If no contour line (corresponding to the exact value you selected) is available on the vector charts, the color transition will happen at the next (deeper) contour line available.

In addition to these screen rendering parameters, the Vector Chart Menu allows you to turn ON or OFF the display of specific object (such as Buoys Name or Light Description).

S-52 Display Menu

This menu allows fine tuning of the vector chart objects that are displayed on the screen. The S52 Vector Chart Display Mode provides quick access to five different levels of detail for vector charts:

· "Base" shows the minimum set of objects necessary for planning.

· "Standard" adds other objects (such as restricted areas or channels) that are necessary for safe navigation

· "Other" display all of the objects available

· "Fishing" adds objects that are useful for fishing

· "Custom" uses the settings defined under the S-52 Custom menu (checked boxes)

Note: The five modes are directly available by clicking on the Chart Button in the Ribbon (under "S-52 Display")

Ship & Track

Ship Icon

When Nobeltec TimeZero Catch is started in Navigation mode and is receiving a valid position, a ship icon is displayed on the chart:
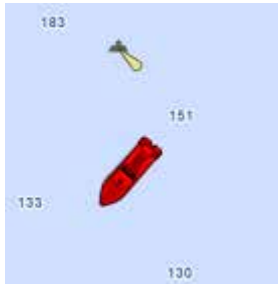
Note: If you cannot locate the ship icon on the chart, click on the "Center On" button in the Toolbar to center the charts on your ship's position

The icon in red represents the boat and indicates its position and heading (or course if heading data is not available). Note that it is possible to change the default red color to green or yellow from the Initial Setup Options.

If the position source is lost the ship icon is displayed in black and stays at the last known position value. A GPS Lost alarm is also triggered:

Note: The ship icon will turn black if no valid GPS data is received for more than 10 seconds. If you have intermittent GPS signal, it is recommended to try to relocate the GPS antenna position on your boat to improve reception. If you want to monitor the quality of GPS signal and number of satellite used, it is recommend to add the "GPS Status" NavData.

Icon Size

The size of the icon can be selected from the Initial Setup Options ("Size of Static Icon").

When sufficiently zoomed in on the chart, the ship icon will be displayed in real size according to the scale of the chart and the "Boat Length" parameter.

When the Plotter is displayed in 3D, a three dimensional model of the vessel icon is displayed. The model can be customized from the Initial Setup Options ("Boat Icon").

Course & heading Vector

The Heading line and/or Course vector can be displayed. To do so, right click on the Ship Icon (or select the "Mode" Ribbon Button) and enable or disable the corresponding option.
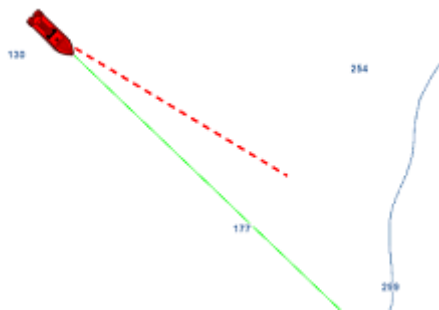
The COG vector (displayed in red dashes) is calculated by the GPS. It indicates the direction of movement relative to a ground position. The length of the COG vector can be setup by distance or time. When it is set to "Time", the length varies according to the speed of the boat and can be configured to show the predicted position in a specified amount of time. This setting is available in the Ship & Tracks Options ("COG/SOG Predictor")

The Heading Line (displayed as a green line) is sent by an Electronic Compass and shows the direction of the bow of boat.

The Drift Vector (displayed as a blue dashed line) can be received from a sensor or computed by TimeZero Catch when COG, SOG, STW and heading are received. This vector represents graphically the drift direction and speed.

Range Circle

A range circle can be displayed around your vessel. To do so, right click on the Ship Icon (or select the "Mode" Ribbon Button) and enable "Range Circle":

Range circle distance, color and thickness can be adjusted from the Ship & Tracks Options.

Centering on the boat

Click on the "Center On" button in the ToolBar to center the charts on own ship position:

Motion Mode:

When your boat is on the screen and the chart is scrolled or zoomed, a red circle appears in the middle of the screen. This is the "Relative Motion Circle", a new and intuitive way to control the Relative/True motion as well as the Shift and Look ahead mode.

When the Ship icon is inside the Relative Motion Circle, the chart will scroll on the screen and the Ship icon will always stay at the same relative position inside the circle (Relative motion mode). When the Ship icon is outside the Relative Motion Circle, the screen will not scroll (True motion mode).

To shift the position of the relative motion mode, scroll the charts using the Panning Tool or the Keyboard arrows until the Ship icon is at the desired location on the screen, making sure to keep the Ship icon inside the Relative Motion Circle.

You can adjust the size of the Motion Circle from the Ship & Tracks Options.

Note: When the chart orientation is set to "Head Up", the software automatically enters in "look ahead mode". If you click on the "Center On" button while being in "Head Up" mode, the boat will center in the bottom part of the screen giving more charts view in front of your boat.

Auto Shift mode ("Look Ahead"):

If you right click on the "Center On" button, you can select the "Auto Shift" mode.

When this mode is selected, the position of the boat will automatically be moved inside the motion circle based on your speed and your course (COG). The "Autoshift Maximum Speed" can be adjusted from the Ship & Tracks Options. This adjusts the speed at which the boat will be the most off centered on screen.

Note: The Autoshift function makes the most sense when the chart orientation is set to "North Up". However, the Autoshift function will also work in "Head Up" mode, and will just off center the boat on a vertical axis based upon its speed.

Note that if you manually pan the chart or use the arrow key on your keyboard, the AutoShift mode will automatically be turned OFF.

TIPS: You can adjust the size of the Motion Circle from the Ship & Tracks Options to increase or decrease the maximum Autoshift location on the screen. Make sure also to adjust the Autoshift Maximum speed according to your boat.

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Tracks

Enabling / Disabling Track Recording

To enable or disable the track recording, click on the "Track" Button in the ToolBar:

When the track is being recorded, the "Track" Button turns yellow:

Click on the button again to toggle OFF the track recording

Note: When tracking, the track point are recorded every second.

Track Coloring

You can change the default track colors from the Ship & Tracks Options by adjusting the "Track Color" setting. After adjusting this setting, all the new tracks will use that color by default. Note that you can change individually the color of any track by right clicking on a track and selecting a new color.

The Track can also be set to change its color automatically according to some parameters received in real time by your computer (Depth, Sea Surface Temperature, Speed and Bottom Discrimination)

Note: Bottom Discrimination requires the Furuno Sounder PlusPack and a Furuno Ethernet Sounder BBDS1 or DFF1-UHD with selected transducers.

To set the track color according to a parameter, open the Ship & Tracks Options, select "Variable" for "Track Color", then select the parameter you want to use to change the color such as SST (Sea Surface Temperature) for "Variable Color". Finally, click on the button "Variable Color Setup" to open the color configuration:
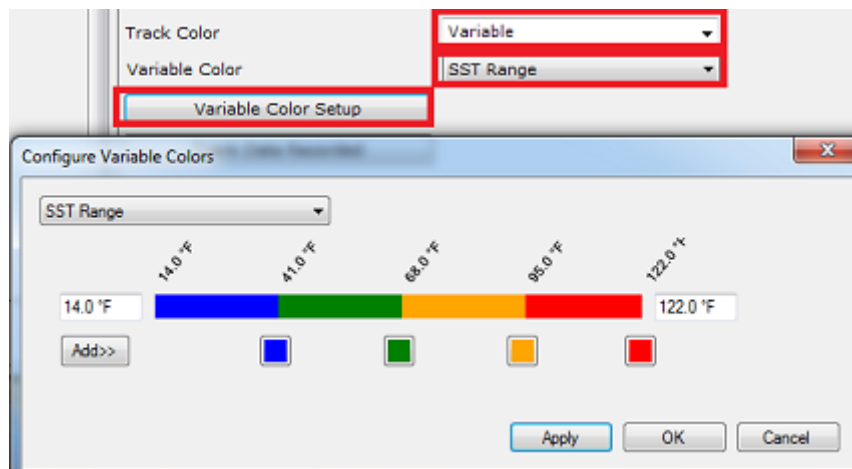
Start by adjusting the minimum and maximum parameter values. Outside of these boundaries, the track color will be set to the first and last color (blue and red on the example above). Once the minimum and maximum values are adjusted click on the small color square to change the color and/or parameter value.

To add a new color, simply click on the "Add>>" button. To remove a color, click and drag the color square all the way to the right side (a trash icon will appear), then release the mouse. Press "Apply" to confirm the change, then "OK" to close the window.

From now on, each time you select the track to be "Variable Color", this color scale and parameter will be used.

Note: The track variable color does not affect the data being recorded. It only affects the display. If you want to change the variable color of a specific track, start by adjusting the color scale (and parameter used) from the Options, then right click on the track you want to change the color and select "Variable Color" then choose the parameter. This will refresh the track color using the latest settings

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Recording Additional Data in the Track

By default, Speed, Sea Surface Temperature (SST) and Depth data are always recorded inside the track (provided that the corresponding sensor are connected and configured in TimeZero Catch). You can add other data from the Ship & Tracks Options by clicking on the "Track Data Recorded" button. The following data can be recorded inside the track:

- Course Over Ground (COG)

- Speed Over Ground (SOG)

- Heading

- Speed Through Water

- True Wind Direction

- True Wind Angle

- Apparent Wind Speed

- Atmospheric Pressure

- Air Temperature

- Sea Surface Temperature (SST)

To view the additional data recorded in the track, just rollover your cursor over a track. A Tooltip will appear:
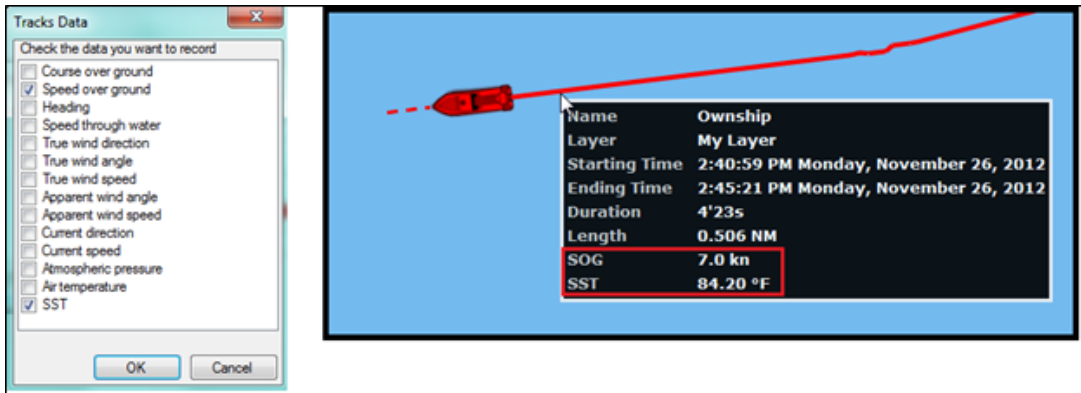
Note: You can only record a maximum of 10 additional pieces of data in the track. The depth and Bottom Discrimination (when connected to a BBDS1/DFF1-UHD) are always recorded and cannot be disabled.

Displaying the Track List:

To display the list of all the tracks, select the "Lists" button from the "Planning" Work Space Ribbon and click on "Track List":
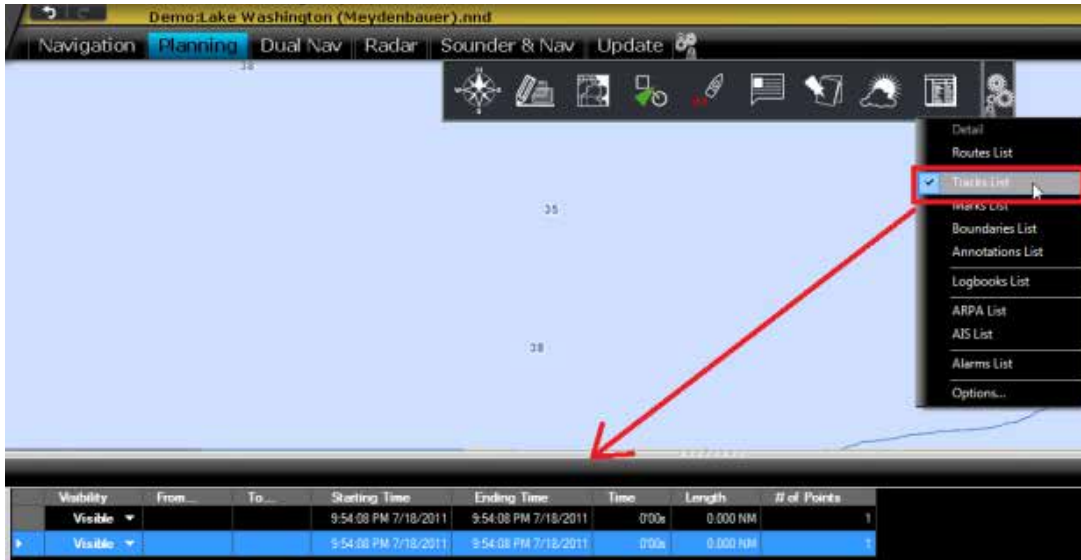
To select and center a track on the Chart, click on the first column corresponding to the track you want to display:

Please refer to the Marks and Objects List chapter for more information on the List.

Converting a Track into a Route

Right Click on a track (either on the Chart or from the Track list) and select "Follow Track". This will create a route that follows the track direction.

Note: If you right click on the track being recorded (the "active track"), select "Track Back" to convert the Track into a Route and automatically reverse it.

Recalling a Track

TimeZero Catch has an innovative feature that allows you to recall a track even if you have forgotten to activate the tracking at that time. Even when you are not actively tracking (if the "Track" button is turned OFF), TimeZero Catch keeps a log of your position allowing to create a track at a later date.

To recall a track, select "Recall Track" from the "Track" button in the Ribbons. A window with two calendar appears:

· Select the Start Date and time

· Select the End Date and time

The chart will move and zoom to display you on the screen the track segments located in between these two dates. At that point, you can either refine the date selection or press the "OK" button. When pressing the "OK" button, the track is recalled.
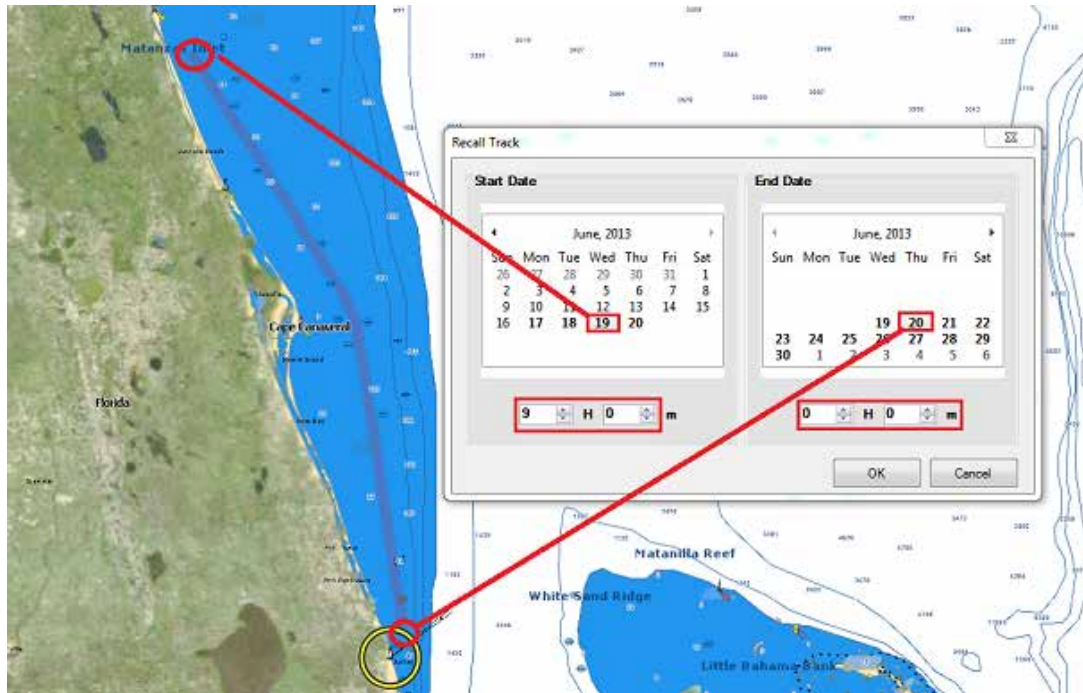
Note that the dates that contains track points (date when TimeZero Catch was ON with a GPS) are displayed in bold.

Man Over Board

The "Man Over Board" button is hidden by default. To make it available in the Toolbar, click on the "Configure" button and add it to the Work Space configuration.
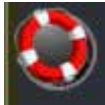
A simple click on the MOB button will drop a Mark under the boat (event with a MOB icon) and automatically zoom the chart.

Double-click on the MOB button to activate the full MOB function

When the MOB is activated:

- · An Instant Waypoint is created at the current ship position and the Route is activated

- · The Navigation Work Space is automatically selected

- · The chart is automatically zoomed and centered on the MOB location

- · The MOB alarm is activated in the status bar.

Note: When a MOB is triggered, the Waypoint Switching parameters are disabled and the MOB Waypoint remains active until manually cancelled

To return to Normal Mode:

Cancel the MOB by selecting "Cancel Navigation" from the "Route" button located in the Ribbon (or right click on the Active Route)

Routes

Route Introduction

TimeZero Catch allows for the creation of an unlimited number of routes, with only one activated at a time. An active route is displayed in red and has special priority in the navigation system. When a route is activated, the first Waypoint becomes active (surrounded in yellow) and the leg to reach that Waypoint displays the Cross Track Alarm (red and green dashed lines). If a pilot is connected to TimeZero Catch , the active Waypoint information (bearing and XTE) will be sent and can be used to automatically steer the boat.

On the picture below, the route on the left is activated (the route on the right in a Planning Route):
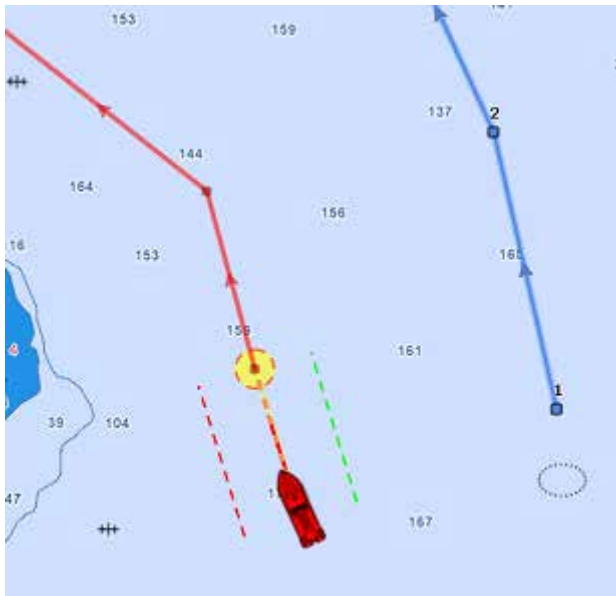
Hiding Routes

You can hide routes that belong to specific layers by selecting "Visible Layers" from the "Marks" Ribbon Button.
You can automatically hide all the routes when switching in 3D mode by deselecting "Display Routes & Waypoints in 3D" from the Plotter Display Options. This can be used to reduce clutter when switching in 3D mode.

Note: It is not possible to hide the Selected and Active Route. The selected and Active Route will always be displayed on the chart even if the route has been hidden.

Creating a Route

When creating or editing a route, it is recommended to use the Planning Work Space. This Work Space allows you to access advanced features such as displaying advanced route details or making simulations and animations.

To create a new Planning Route:

1. Click on the "Route" Tool located in the ToolBar

2. Place the cursor at the starting point and click on the chart; This sets the location of the first Waypoint

3. Move the cursor to the next desired destination and click on the chart. Continue with this procedure to add additional Waypoint

4. When all of the desired Waypoints are added, right click to create the last Waypoint and choose "End Route" or press the Esc key on the Keyboard. Alternatively, double click at the creation of the last Waypoint.

While in route creation mode, the mouse cursor will display a small plus sign to indicate that a Waypoint will be added when the mouse is clicked. After the creation of the first Waypoint, a dashed line will be drawn between the last Waypoint and the cursor. This line represents the leg-line that is about to be created. In addition, the distance and bearing of the leg-line from the previous Waypoint is also displayed near the mouse cursor:
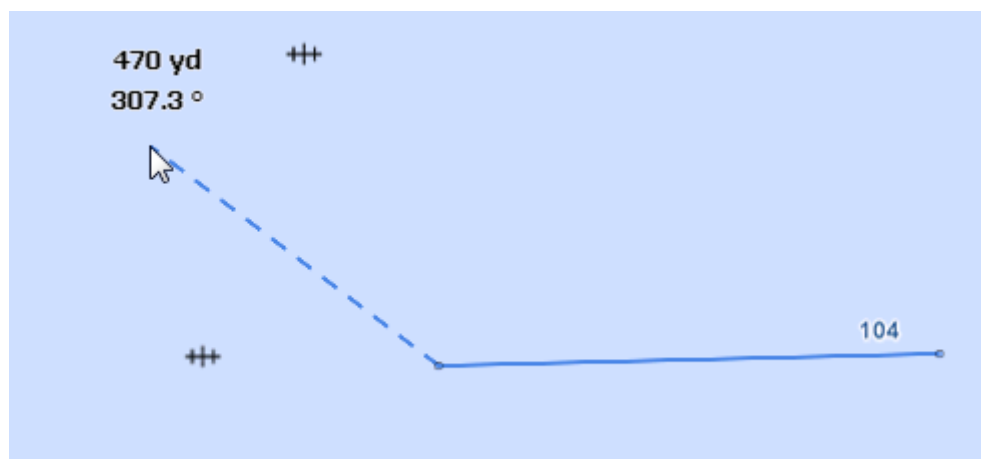
While creating a route the chart will moves automatically to follow the route. To move the chart manually, click and drag the chart. A Waypoint will only be created when you left click on the same position (without dragging the cursor). The arrow keys on the keyboard can also be used to scroll the chart while building a route.

When clicking on an existing Mark while creating a route, the route will use that Mark instead of creating a new Waypoint sharing it with any other routes that might be using it, too. Moving, deleting, and changing a shared Mark will affect all of the routes that share it.

Right click on the selected route and select "FlyOver" to move and follow the route on the chart.

Tips: To display the total length of the route while building it, you can rollover with your cursor on any segment of the route. A pop-up will appear with the route information.

TimeZero Catch can be setup to display the range and bearing of each leg (from the Routes Options):
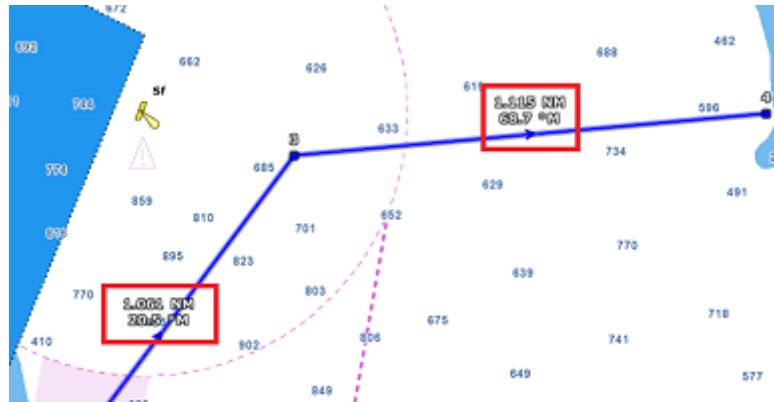
Great Circle Route:

TimeZero Catch is capable of displaying great circle or rhumb line routes. The great-circle route is the shortest path between two points on a sphere, like the Earth. A rhumb line route crosses all meridians of longitude at the same angle. Since the charts displayed by TimeZero Catch are Mercator projections, rhumb line routes appear as straight lines and great-circle routes appear as curved lines.

When the "Great Circle Navigation" option is enabled, TimeZero Catch divides the route into shorter rhumb line segments that follow the great circle path.

Editing Routes

To move a Waypoint, place the cursor on top of it, then click and drag the Waypoint to the new location. Most of the advanced route editing operations can be performed by right clicking directly on any leg of a route and selecting the appropriate option from the drop-down menu.

Note: TimeZero Catch offers a very powerful unlimited Undo/Redo function. Every editing operation can be Undone or Redone multiple times by clicking the arrows in the status bar. The corresponding keyboard shortcuts (CTRL-Z, CTRL-Y) can also be used

Extend a Route

To add Waypoints to the end of the route, right click on any leg of the route and choose "Extend Route". TimeZero will automatically center the display on the last Waypoint and enter into Route Building mode.

Insert a Waypoint

To insert a new Waypoint in the middle of a route (to avoid an obstacle, for example), right click on any leg of the route and choose "Insert Waypoint". Move the cursor to the new position desired to insert the Waypoint, and click.

Reverse Route

To reverse the direction of a route, right click on any leg of the route, and then, choose "Reverse Route".

Delete Route

To delete a Route, right click on any leg of the route and choose "Delete Route".

Note: An Active Route cannot be deleted; it must be deactivated first by selecting "Cancel navigation"

Split Route

To split a route into two parts, Right Click on any leg of the route; and then, choose "Split Route". This will turn the route into two routes by removing the leg-line that was right clicked on.

"Fork" Route

A route can be "forked" from any Waypoint. Simply right click on the Waypoint you want to fork the new route from and choose "Fork Route".

Rename Route

To rename a Route, right click on any leg of the route and choose "Rename Route".

Lock and Unlock Route

Right click anywhere on a leg or a Waypoint and choose "Lock Route" (or "Lock Waypoint" to lock a route or Waypoint). When a route or Waypoint is locked, you will not be able to move it or delete it (a dialog box will appear if you try to erase an object which is locked). Use the same process to unlock a Route or a Waypoint.

Route Detail & Simulation

The Route Detail displays the selected planning route in a tabular format together with information about the route as a whole. The Route Detail can also be used to calculate an *ETA* for each Waypoint along the route and will help you selecting the best departure or arrival possible. Nobeltec TimeZero Catch computes automatically the Speed over Ground (SOG) according to the Speed through Water (that you can customize) and local currents.

Opening and Closing the Route Detail

Note: Although you can display the Route Detail in the Navigation Work Space, it is highly recommended to work with the Route Detail in the Planning Work Space (that provides Virtual Time and Simulation functions).

Select the Planning Work Space, right click on a leg-line of the route you want to see and then select "Show Route Detail". Double-clicking on any leg-line of the route will also display the Route Detail.

To close the Route Detail, Click the "X" button at the top right of the route detail list.

Using the Route Detail

The top part of the Route Detail displays information about time of departure and ETA (Estimated Time of Arrival). The time of departure can be selected as the present time or another selected date. When a time of departure is selected, Nobeltec TimeZero Catch will calculate the ETA according to the parameters available in the table (speed, current,...).

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Nobeltec TimeZero Catch also allows the user to set a date of arrival rather than a date of departure. This is useful when you need to arrive at a specific time (because of tidal currents for example). In this case, Nobeltec TimeZero Catch will calculate the time of departure.

The information appearing in Bold in the table (such as "Name") can be edited by double clicking on the cell to be edited. After changing the value, press the ENTER key, or click outside the value to accept the new value, or press the ESC key to cancel the change.

Values that can be changed include: the waypoint name, the waypoint position, the speed (speed through water) and the layover time. The other values are calculated by Nobeltec TimeZero Catch , and cannot be changed directly:

- Leg To: Each line of the list gives you information about the leg that allows to reach a specific waypoint. The "Leg To" value is the number of that Waypoint.

- CTS: The "Course to Steer" is the direction (bearing) of the route leg as it would be on a paper charts.

- Speed: speed through water of the boat (or surface speed). This value can be edited individually for each leg or can be set globally (for all legs) using the Action menu.

- SOG: Speed over Ground being calculated based upon the surface speed and currents. The SOG will be different that the speed, because your boat can be "pushed" or "slow down" by the currents.

- HTS: Heading to Steer. This is the heading that you should follow to reach the next waypoint. This value is adjusted to take the currents into account. This value can be different from the CTS if currents are strong in the area.

- TTG: "Time to Go" is the time to navigate on that leg. The SOG and Distance are used to compute that value.

- Total TTG: is the cumulative time to go from the start of the route to that leg

- ETA: The Estimated Date of Arrival to that Waypoint taking account the currents (based on SOG).

- Layover: allows you to enter a pause in the route for a specific leg

- Distance: is the distance of that leg

- Total: is the cumulative distance from the start of the route to that leg

- Current D: is the current direction of the station closest to the middle of that leg (default) or the station that was manually assigned to that leg

- Current S: is the current speed of the station closest to the middle of that leg (default) or the station that was manually assigned to that leg

- Current Angle *(hidden by default)*: is the current angle (from the bow of the vessel) in which the current goes

- Tides *(hidden by default)*: is the tide height of the station closest to that waypoint.

- Tide Name *(hidden by default)*: is the name of the tide station closest to that waypoint

The Route Detail "Action" menu provides quick access to main functions and parameters. It can be found on the right side title bar of the list. It includes the following options:

- Activate Route: To activate the planned route and start navigating. Note that this option is not available when Nobeltec TimeZero Catch is started in Home Planning mode or when no position (GPS) is available.

- Reverse Route: To reverse the direction of the planning route

- Set Speed of all legs: To adjust the intended speed for all the legs of the planning route

- Optimized Departure Time: To compute the best departure time according to currents (see next paragraph for details)

- Arrive at High Tide: To compute the time you need to leave to arrive at your destination during high tide (see next paragraph for details)

- Configure List: To add or remove columns of the Route Detail table

- Copy to clipboard: To copy the list information as displayed on your screen. You can paste this information in a text editor or Excel for further editing

- Export list in text file format: To export the list information as displayed on your screen. Each field is separated by a Tab

Route Simulation

IMPORTANT: The Route Simulation features are only available in the Planning Work Space.

When a line of the Route Detail list is selected, or when you click on a waypoint from the chart, the virtual time will change to match the *ETA* at the selected Waypoint and a virtual boat (blue icon) will appear. This function is very useful when Weather Data or Tidal information is displayed because they will automatically adjust to the predicted time.

Note: If the blue boat does not appear, first select the route (by clicking on any leg) to adjust the time scale of the virtual time to the route, then click on a Waypoint.

To select a specific row (or line) of the Route Detail, click inside the first grey column in front of the specific line:
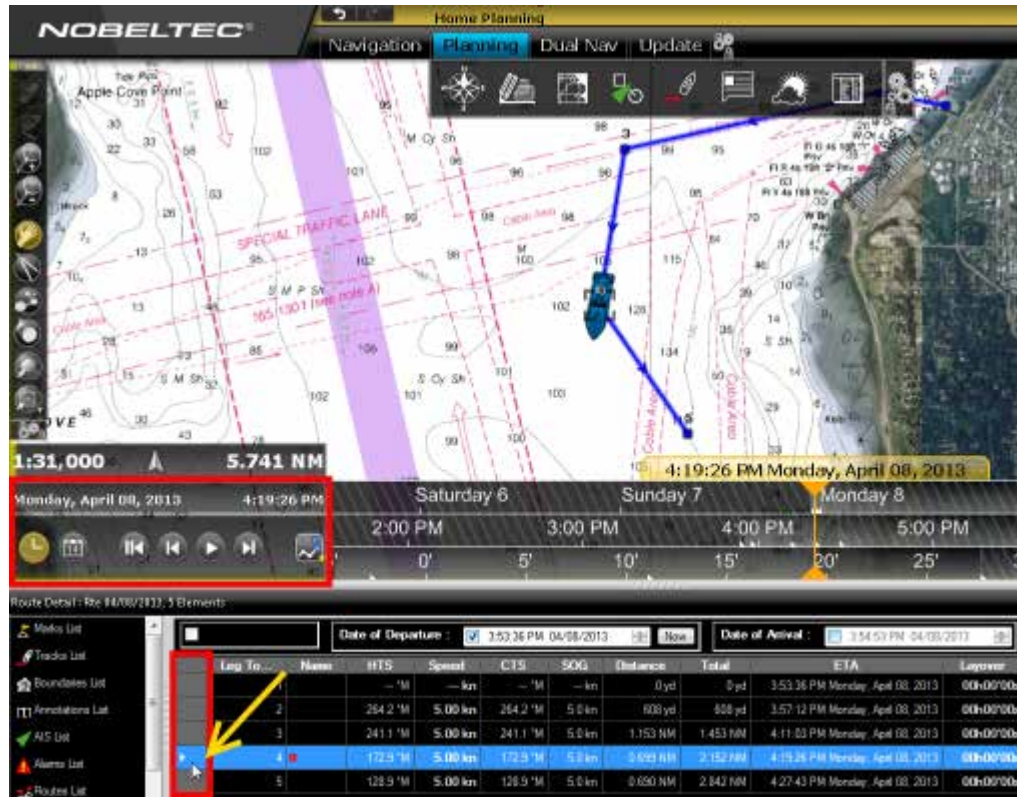
The chart will automatically center on that Waypoint and the Virtual Time Control will automatically adjust the Chart Time to that *ETA*. The Tides Gages, Currents arrows and Weather (if displayed on the chart) will automatically refresh to display the conditions at that waypoint.

As soon as you adjust the Departure (or Arrival) date or change the speed (either the speed of all legs or the speed of each leg individually) from the Route Detail list, Nobeltec TimeZero Catch will compute the simulation with the new parameters taking into account the currents (if available).

By default, Nobeltec TimeZero Catch uses the current which is closest to the middle of the leg (surrounded in red below). If you want to assign another current station for a specific leg, right click on the leg, select "Assign Tidal Current" then click on the new current stations.
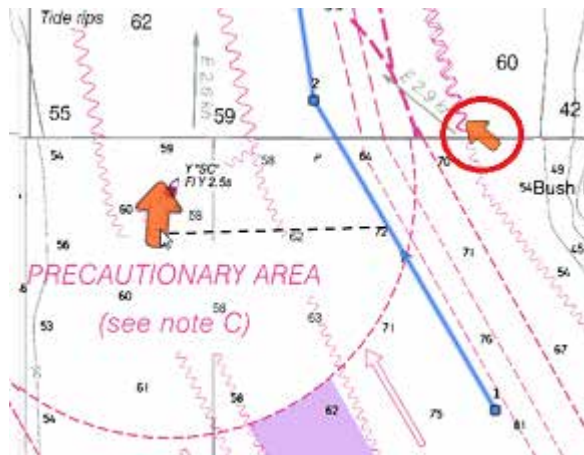
Currents that have been assigned manually to a leg will not display "Auto" in the Tidal Current name column.

Current D	Current S	Tidal Current Name
--- °M	-- kn	
163.1 °M	2.8 kn	Admiralty Inlet, Washington Current
124.1 °M	3.1 kn	Auto(Bush Point Light, 0.5 mile NW of)

Route Optimization

To determine the best time of departure:

- Open the Route Detail

- Enter the route departure or arrival time desired (TimeZero Catch will search for the best time around this date):
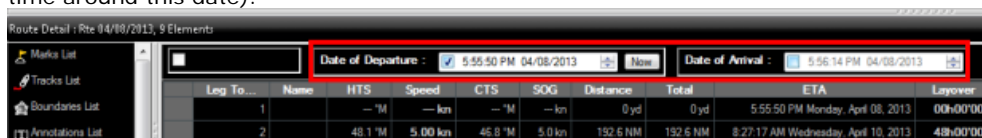
- Select the "Action" menu and select "Optimized Departure Date" or "Arrive at High Tide"
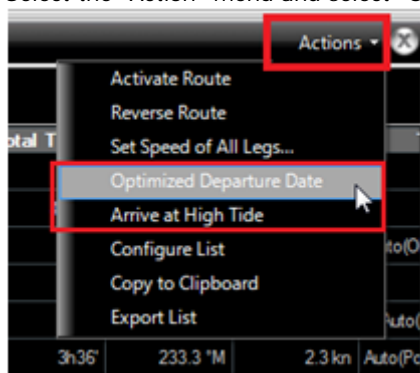
- If you select "Optimized Departure Date", TimeZero Catch will compute the best time of departure to minimize your travel time based on current forecasts along the route

Note: Tidal currents need to be assigned automatically or manually along the route for this function to work.

- If you select "Arrive at High Tide", TimeZero Catch will compute the departure time that allows you to reach your destination at high tide

Note: A tide station needs to be near the last point of the route for this function to work.

Navigating a Route

Activating a Route

Once a route is created and checked for obstacles and other hazards, the route can be activated for navigation. This section describes the process and tools Nobeltec TimeZero Catch provides to do this.

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First, select the "Navigation" workspace. Right click on the desired route to navigate; then choose "Activate Route". A route can also be activated by right clicking on a Waypoint or even the middle of a leg and choosing "Activate Route from this Point". This automatically skips all previous Waypoints from activation.

The "Go To" tool may also be used to activate a specific route. Select this tool from the Toolbar and click on the route to activate for navigation. If a Waypoint is clicked on, this will activate the route from this point and automatically skips all the previous Waypoints.

When a Route is activated:
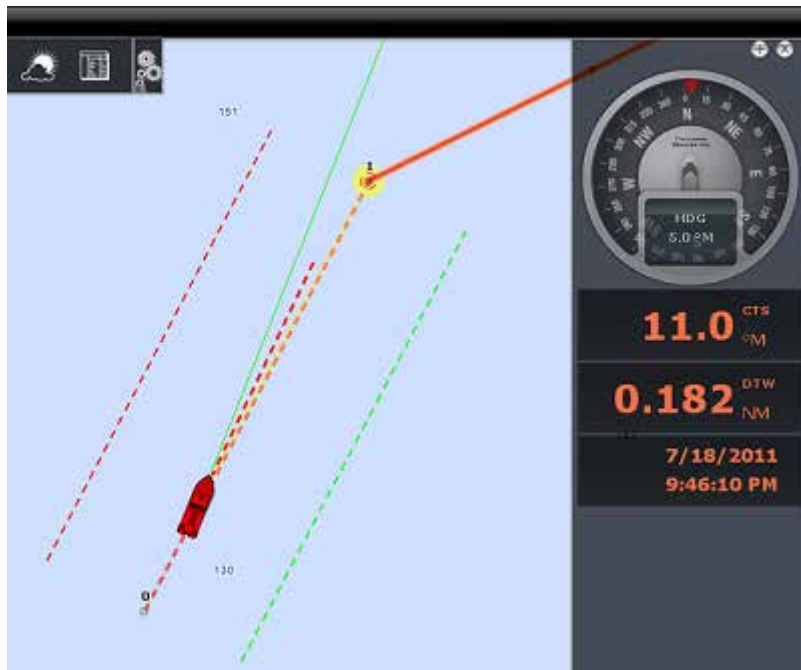
- The Active Route is displayed in red

- The Active Leg is drawn with dashed lines

- The Active Waypoint is surrounded by a glowing yellow circle

- When "Display XTE Alarm lines" is enabled from the Routes Options, the Cross Track Limit Area appears delimited with two colored dashed lines: green on the starboard of the Ship icon, red on the port of the Ship icon. This value can be adjusted from the Alarms Options ("XTE Alarm Value")

- The Active Route information such as Bearing, distance to next Waypoint, ETA, etc … are displayed in the NavData

Note: By default, the NavData is not setup to display any Route data. To add a NavData that can display Route information, click on the NavData "+" icon (top right), click on the "Route NavData" button and then select the Route Data you would like to display. You may repeat this operation multiple times to add multiple Route Data panel. For more information, please refer to the NavData Chapter.

- The Route Detail list use the real time speed and display the active leg in red

- The Waypoint Arrival Circle is drawn with a red dashed line. This value can be adjusted from the Routes Options ("Switching Circle Radius")

- The Active Waypoint Distance, Bearing and Cross Track Error information are transmitted to the Autopilot, if configured

To restart and manually switch Waypoint:

If the cross-track-error gets large enough to start causing alerts, select the "Restart" function from the "Route" button in the Ribbon (or right click on the route or on the boat), to realign the intended course and head directly to the active Waypoint without reverting to the original course.

If the vessel is off course (after avoiding an obstacle for example), the next Waypoint can be activated by selecting the "Skip Waypoint" function from the "Route" button in the Ribbon (or by right clicking on the active Waypoint).

To create an instant "Go To" Waypoint:

With the "Go To" Tool:

- Select the "Go To" tool from the Toolbar

- Click on the intended destination within the chart or on an existing Waypoint

Using the Right Click Contextual Menu:

- Right Click on the chart on the intended destination

- Select "Go To"

This will create an Instant Active Waypoint for navigation.

Tips: If you want to create an Instant Active Waypoint using coordinates, double click on the "Go To" tool. This will display a window where you can enter the coordinate.

Note: Any Instant Active Waypoint created with the Go To tool will be erased when the Active Route is canceled. To save the destination drop a Mark using the Mark Tool onto the Active Instant Waypoint.

Waypoint Switching Mode

Upon arrival at a Waypoint, the switching notification is triggered and the next Waypoint is activated automatically. Waypoint arrival parameters are determined by the "Waypoint Switching Mode" selected in the Routes Options:

Circle:

In this mode, the next Waypoint is automatically switched when your boat icon enters the active Waypoint's arrival circle. The value of the arrival circle is set from the Routes Options ("Switching Circle Radius"):
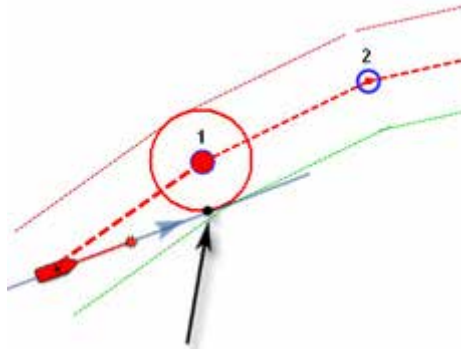
Cross Line (also known as "Perpendicular"):

In this mode, the next Waypoint is automatically switched when your boat crosses the line through the Waypoint that is perpendicular to the leg line.
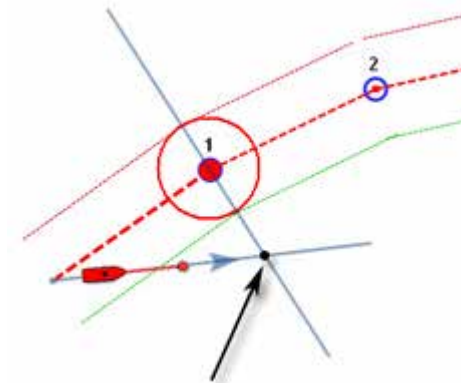
Circle and cross line:

This is the default selection. In this mode, the next Waypoint is automatically switched when the boat enters the active Waypoint's arrival circle or crosses the line through the Waypoint that is perpendicular to the leg line.

Note: Upon arrival at the last Waypoint, the route is automatically cancelled (de-activated).

Cancelling the Active Route

To deactivate or stop the navigation, select "Cancel Navigation" from the "Route" button in the Ribbon (or right click on the Active Route)".

When a Route is deactivated, it reverts to a Planning Route.

Note: An Active Route is automatically cancelled when reaching the last Waypoint of the route.

Importing & Exporting Route

Exporting

You can export all your Routes or only Routes belonging to a specific layers from the "Import/Export" button available under the Nobeltec button. Please refer to the Import & Export Data chapter for more information.

If you want to export only one route or a specific selection of routes, you can use the "Action" menu of the Route List:

· Open the "Routes List" by using the "List" button located in the ribbon

· Select one or multiple routes. To select multiple consecutive routes, select the first line, press and hold the SHIFT key then select the last line (this will select the range). To select individual routes, press and hold the CTRL key and click on the lines.

· Click on the "Action" button located on the upper right side of the list panel

· Select "Export Selected Route to GPS" or "Export Selected Route to KML"

· Give a name to the file that will hold your route(s) and save it
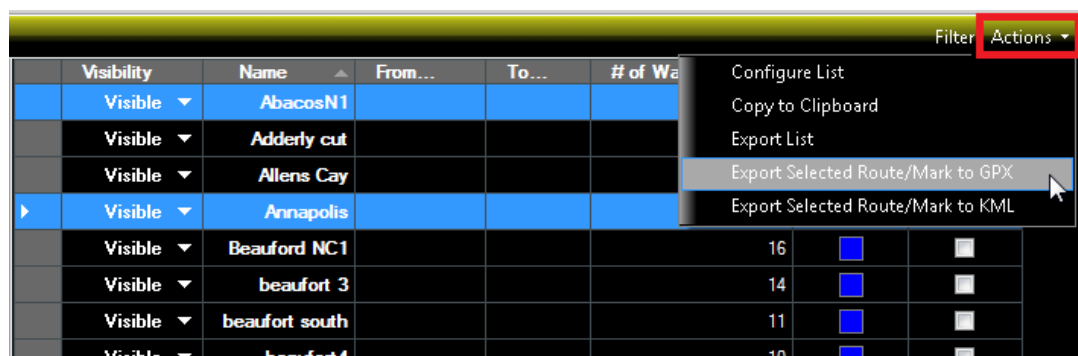
Note: If you want to export one or multiple routes to exchange them with another TimeZero user, it is recommended to use "GPX". If you want to export route to Google Earth, select "KML".

Importing

To import routes, select the "Import/Export" button available under the Nobeltec button. Please refer to the Import & Export Data chapter for more information.

Note: When you import routes from a file, they are added to your existing database

Bearing and Distance

Divider Tool

The Divider Tool can be used to display range and bearing in between two points or in between your own position and multiple points:

Bearing and distance between two points

To display the bearing and distance between two points, select the divider tool and move the cursor on the first location, click a first time to drop the first point on the chart, move the mouse over the second location and click a second time to drop the second point. A label with the range and bearing in between the two points will appear (near the second point):

Note: After dropping the first point, it is possible to move the chart by clicking and dragging on the screen. You can also zoom in/out using the scroll wheel or keyboard shortcut. Please refer to the Scrolling & Zooming chapter.

Multiple Bearing and distance from own ship position

Select the divider tool and double click on the chart. This will create a divider line between the location where you double clicked and own ship position.

You can create multiple divider lines by repeating this action (double click on other locations):
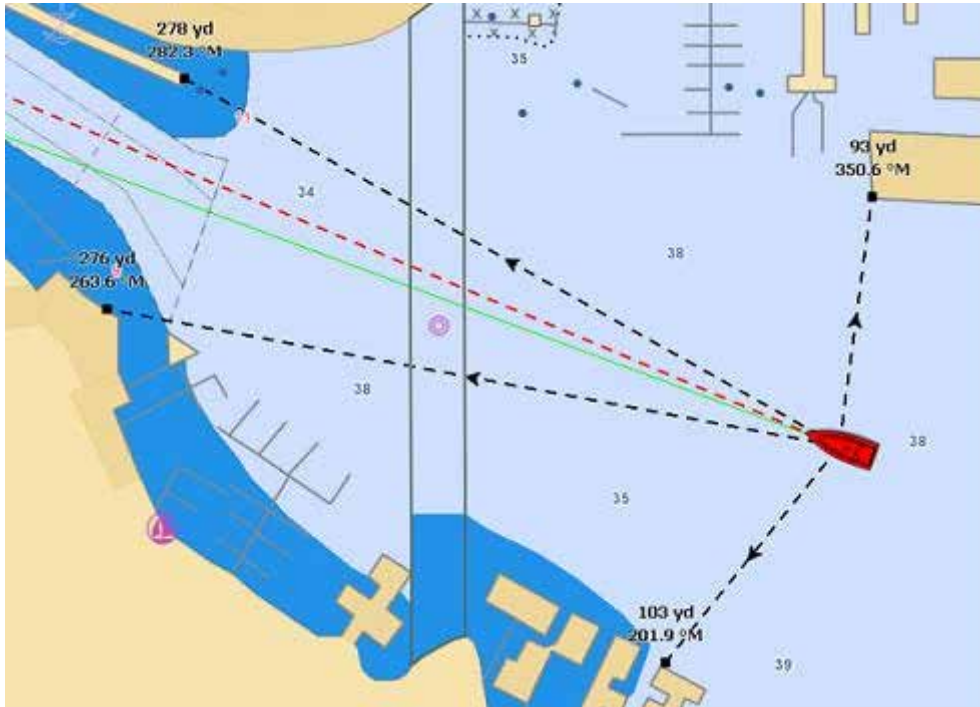
Note: The divider lines from own ship will update as the boat is moving

Editing and Deleting Divider line

Divider lines can be moved by clicking and dragging the point to a new position

You can right click on a Divider line to delete it or delete all Divider lines.

Tips: If you double click on the Divider tool, it will erase all Divider lines on screen

Cursor NavData

The cursor NavData is displayed by default under the "Planning" NavData Panel on the right side of the screen. If the cursor NavData is not displayed, click on the "+" button on the top of the NavData panel to add it:
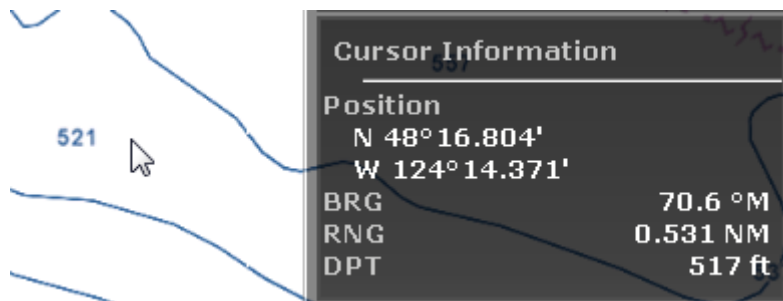
The Cursor NavData is very convenient to get quickly access to cursor position and range and bearing from own ship position .

If you right click on the NavData you can display additional information.

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Tips: If you set the Position Unit to Loran/TD, you can right click on the NavData to display a Lat/Lon cursor and thus display at the same time Lat/Lon and Loran/TD for cursor position.

EBL & VRM

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and radar configured to access this feature

The *EBL* / *VRM* tool is available in the Tool Bar of the Radar Work Space. You can right click on the tool to get access to two EBL and two VRM:

The *EBL* is used to display the relative or true bearing of a target on the radar display. After setting the EBL/VRM tool in EBL mode (either EBL1 or EBL2), a line is moved with the cursor, and the bearing is read from the EBL/VRM NavData. Note that one end is always anchored at the center of the radar. The EBL reference is set from the Radar Options. When set to "True", the EBL is referenced to the North. When set to relative, the EBL is referenced to the bow of your vessel.

The *VRM* is used to determine the distance to a particular target, such as the mouth of a river, a sea buoy marking a channel entrance or another vessel. The VRM is like a standard range ring, but can be adjusted manually by selecting the EBL/VRM tool in VRM mode (either VRM1 or VRM2). The range is read from the EBL/VRM NavData.

To adjust the EBL and VRM, you can click and drag them with your mouse, or put the cursor over the VRM or EBL value and use the scroll wheel. To delete an EBL or VRM, you can right click on it. If you want to delete all EBL/VRM from the screen, just double click on the EBL/VRM tool.

Tips: The EBL/VRM color can be adjusted if you right click on the EBL or VRM.

Marks and Objects

Creating & Editing Marks

Marks are used to plot specific locations such as fishing spots, harbors or preferred anchorages. All Marks are displayed in the Marks List. Marks can be created graphically by placing the cursor at the desired location on the chart and clicking the left mouse button or manually by entering the Latitude/Longitude.

Note: Waypoints (Marks created using the Route Building tool) will not appear in the Marks List. Only the Marks created with the Mark Tool will. The Waypoint list is available in the Route Detail list when the corresponding route is selected

Creating Marks graphically:

Click on the Mark Tool located in the Toolbar and click on the Chart to drop a Mark.

You can also right click anywhere on the Chart and choose "Create" -> "Mark".

The default color defined in the Marks & Boundaries options will be used.

Note: The software will automatically select back the Panning Tool (Hand) by default after a Mark is dropped. To add several Marks without having to select the Mark Tool each time, deselect "Enable Auto Hand Tool Selection" from the "General" options. When you are finished creating Marks, the Panning Tool must then be manually selected.

Creating Marks Manually:

To create a Mark by entering the Latitude/Longitude, double click on the Mark Tool located in the Toolbar. This will display a window to enter the Latitude/Longitude numerically. You may also click on the "Marks" Ribbon button and select "Create Mark by Lat/Long":
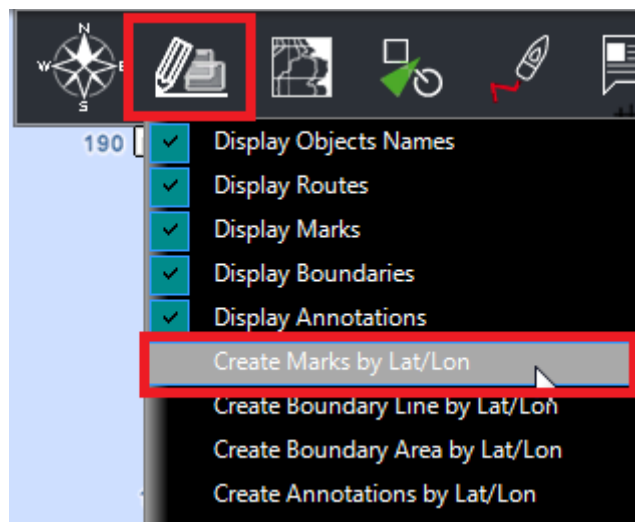
Moving a Mark:

When the option *"Allow Unselected Object to be Moved"* is enabled (enabled by default in the General Options), put the cursor over a mark then drag it (hold the left click mouse button and

move it) to its new position. When *"Allow Unselected Object to be Moved"* is disabled, you have to select the mark first (left click on it) then drag it.

Note: If you have lots of marks on your screen, and you move them by mistake when panning the charts, you may want to disable "Allow Unselected Object to be Moved" from the General Options.

If you want to enter new coordinates for a mark, double click on the mark (or right click and choose "Mark Properties") to display the Property window. Enter the new coordinates in the corresponding fields.

Changing Marks Icon and Color

Double click on a mark (or right click and choose "Mark Properties") to display the Property window. Change the color and/or icon from the corresponding fields.

Tips: If you want to assign the same color or icon to multiple marks, use the "Select" tool to select multiple marks then right click on one of the selected mark. You can right click on the "Mark" tool to select a color an icon before dropping a mark.

Adjusting Marks Size

The Marks Size is a global setting (found under the Marks & Boundaries Options) that will affect all marks displayed on the screen.

Add Photography to a Mark

Right click on a mark and choose "Add Photo". This displays a dialog that allows you to browse for a picture. When a picture has been added, move the cursor over the mark and the picture will be displayed on screen in the "Pop Up" window.

Delete or Rename Mark

Right click on a mark and choose the corresponding option (Rename Mark or Delete Mark) from the drop down menu.

Lock and Unlock Mark

Right click on a Mark and choose "Lock Mark" to lock a Mark. When a Mark is locked, you will not be able to move it or delete it (a dialog box will appear if you try to erase it). Use the same process to unlock a Mark.

Hiding Marks

You can hide marks that belong to specific layers by selecting "Visible Layers" from the "Marks" Ribbon Button.
You can automatically hide all the marks when switching in 3D mode by deselecting "Display Marks in 3D" from the "Plotter Display" Options. This can be used to reduce clutter when switching in 3D mode.

Creating & Editing Boundaries

Creating Boundaries graphically:

Lines, Areas and Circles can be created in TimeZero Catch using the corresponding tools in the Toolbar. If the Tools are not displayed, click on the "Configure Tools" button (at the lower end of the Toolbar) to add the tools you want to appear:
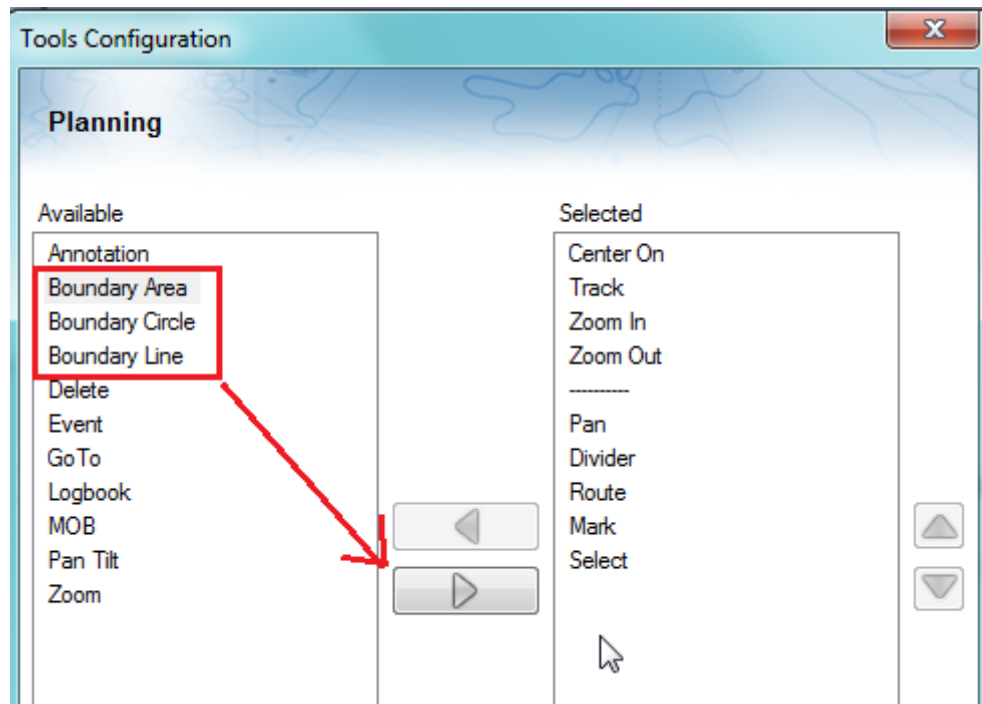
Click on the corresponding Boundary Tool (Area, Circle or Line) and click on the Chart to create the boundary. For areas and lines, double click on the last point to close the area or end the line.

You can also right click anywhere on the Chart and choose "Create" -> "Boundary".

The default color and transparency (for areas and circles) defined in the Marks & Boundaries options will be used.

Tips: You can right click on the Boundary Tools to select a color before creating the boundary on the chart.

Creating Boundaries Manually:

To create a Boundary by entering the Latitude/Longitude, double click on the corresponding Boundary Tool located in the Toolbar. This will display a window to enter the Latitude/Longitude numerically. You may also click on the "Marks" Ribbon button and select the corresponding option:

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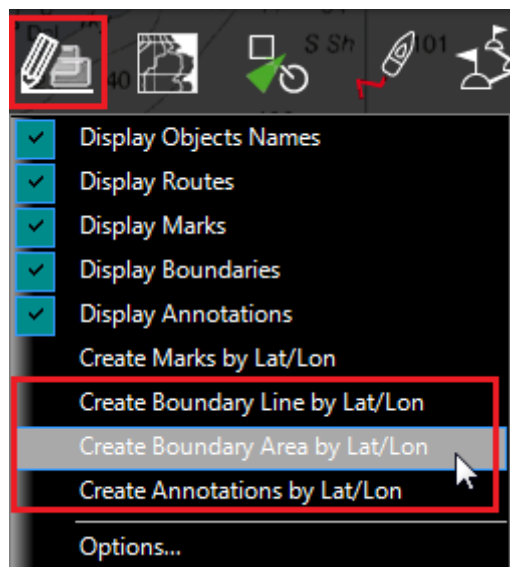
Delete or Rename Boundary

Right click on a boundary and choose the corresponding option (Rename Mark or Delete Mark) from the drop down menu.

Note: When right clicking on a boundary to display the corresponding contextual menu, make sure that the boundary is displayed entirely on the screen. If the boundary is partially displayed (because the screen is zoomed in), the right click menu will not show options for editing the boundary. In this case, zoom out until the boundary is displayed entirely on the screen then right click on it again.

Moving a Boundary:

When the option *"Allow Unselected Object to be Moved"* is enabled (enabled by default in the General Options), put the cursor over a boundary then drag it (click and hold while moving) to its new position. When *"Allow Unselected Object to be Moved"* is disabled, you have to select the boundary first (click on it) then drag it.

Note: When moving a boundary, make sure that the boundary is displayed entirely on the screen. If the boundary is partially displayed (because the screen is zoomed in), you will not be able to move it. In this case, zoom out until the boundary is displayed entirely on the screen then right click on it again.

Note: If you have lots of boundaries on your screen and move them by mistake when panning the charts, you may want to disable "Allow Unselected Object to be Moved" from the General Options.

If you want to enter new coordinates for a boundary point, double click on one of the points to open the point's property window. To move a circle by entering new coordinates, double click on its center.

Changing Boundaries Color and Contour

Double click on a boundary (or right click and choose "Boundary Properties") to display the Property window. Change the color and/or contour from the corresponding fields.

Tips: If you want to assign the same color to multiple boundaries, use the "Select" tool to select multiple boundaries then right click on one of the selected boundary.

Changing Boundary Area and Circle transparency

Double click on a circle or area (or right click and choose "Boundary Properties") to display the Property window. Change the transparency from the corresponding field.

Adjusting Boundary Contour Thickness

The Boundary Contour Thickness is a global setting (found under the Marks & Boundaries Options) that will affect all boundaries displayed on the screen.

Lock and Unlock Boundary

Right click on a boundary and choose "Lock Boundary" to lock a boundary. When a boundary is locked, you will not be able to move it or delete it (a dialog box will appear if you try to erase it). Use the same process to unlock a boundary.

Hiding Boundaries

You can hide boundaries that belong to specific layers by selecting "Visible Layers" from the "Marks" Ribbon Button. You can automatically hide all the boundaries when switching in 3D mode by deselecting "Display Boundaries in 3D" from the "Plotter Display" Options. This can be used to reduce clutter when switching in 3D mode.

Selecting Marks & Objects

Selecting Individual Object

To select a single object (mark, route, boundary, etc...), just click on it. Note that for Boundaries (Area or Circle), the entire object needs to be visible on the screen in order to be selected. Sometimes, you have to un-zoom first (to see the boundary on the chart), then click on it.

Once an object is selected, you can right click on it to change its properties, or drag it to move it on the chart.

Selecting Multiple Objects

The Selection tool can be used to select multiple objects at once. If you right click on the tool, you can set it in "Rectangle" mode or "Free" mode:

The rectangle mode allows to draw a rectangle on the screen (click and drag) and select all the objects inside that rectangle when the mouse is released. The free mode allows you to draw freely a selection area on the screen (click and drag) and is very powerful to exclude or include specific objects to the selection.

Note: It is not possible to use the Selection tool when too many objects are displayed on the screen (over 100). To minimize the number of object, zoom in and try the selection tool again.

If you don't want to use the Selection tool, you can also press and hold the CTRL key on your keyboard and click on multiple objects to manually select them.

Tips: If you press and hold the SHIFT key on your keyboard, this temporarily activates the Selection tool (in the last mode it was used). When you release the SHIFT key, the previous tool is selected automatically.

Apply a modification on Multiple Objects

Once multiple objects are selected, you can right click on the selection to delete or change properties common to all the objects (color, icon etc...)

Marks and Objects List

Lists are really useful to sort, filter and find specific objects. When you select a line from a list, the corresponding object gets selected on the chart and centered on the screen. To display a list of Marks, Boundaries or Annotations, click on the "List" button in the ribbon (displayed by default in the "Planning" Work Space).
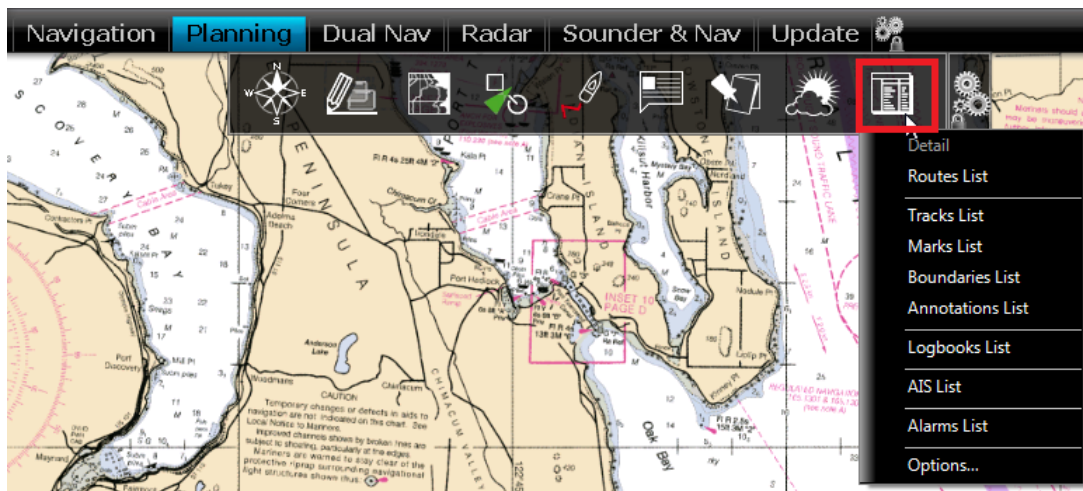
Once the list tab is open at the bottom of the screen, you can change list category from the left pane:
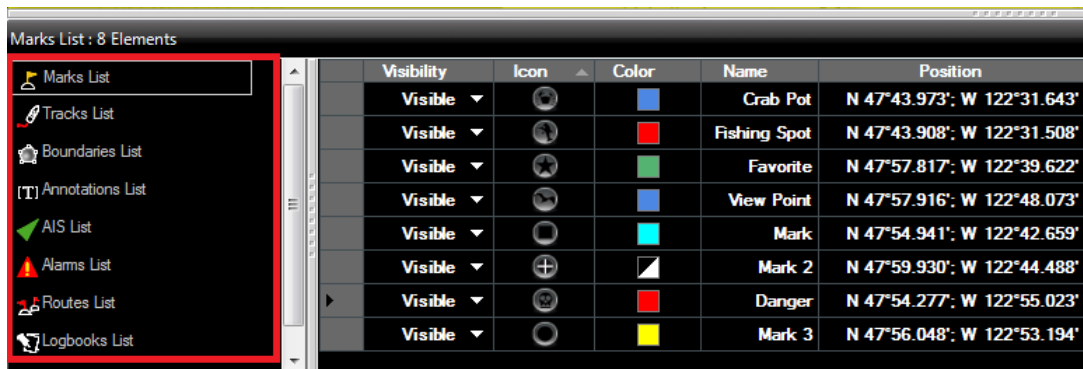
To select a specific row (or line), click inside the first grey column in front of the specific line:

When a line is selected, the chart will be centered on the corresponding object.

The information displayed in the table (rows) can be customized by clicking on "Action" (on the right side of the List Title Bar) and choosing "Configure List".

This information can be exported in a file (text format) or copied to the clipboard by clicking on the corresponding item under the "Action" menu. The fields in the text file are delimited using Tabs. We recommended using Windows Excel to open the file or paste the content of the clipboard (for proper formatting).

The "Filter" button (available on the right side of the List Title Bar) allows you to filter the Marks, Boundaries or Annotations displayed in the list using various criteria. Once the list is filtered, select an object to center the chart on it (this is particularly useful to retrieve Marks created at a specific date).

Note: The filters don't affect what is displayed on the chart (by default, they only affect what is displayed inside the list). You can apply the list filter(s) on the chart by selecting "Apply List Filter on Chart" under the "Visible Layer" option of the "Marks" Ribbon button. In that case the "visible" layer selection will be temporary disabled

Note that the lists can only display a maximum of 1000 objects. If you have more than 1000 objects, use the "Filter" function to reduce the number of object displayed inside the list.

Importing & Exporting Marks

Exporting

You can export all your Marks or only Marks belonging to a specific layers from the "Import/Export" button available under the Nobeltec button. Please refer to the Import & Export Data chapter for more information.

If you want to export only one Mark or a specific selection of Marks, you can use the "Action" menu of the Mark List:

- Open the "Marks List" by using the "List" button located in the ribbon

- Select one or multiple marks. To select multiple consecutive marks, select the first line, press and hold the SHIFT key then select the last line (this will select the range). To select individual marks, press and hold the CTRL key and click on the lines.

- Click on the "Action" button located on the upper right side of the list panel

- Select "Export Selected Mark to GPS" or "Export Selected Mark to KML"

- Give a name to the file that will hold your route(s) and save it

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Note: If you want to export one or multiple routes to exchange them with another TimeZero user, it is recommended to use "GPX". If you want to export route to Google Earth, select "KML".

Importing

To import marks, select the "Import/Export" button available under the Nobeltec button. Please refer to the Import & Export Data chapter for more information.

Note: When you import marks from a file, they are added to your existing database

Photos

Attach Photo & Notes to Objects

You can attach photos and rich text notes to any objects (Marks, Routes, Boundaries) and AIS targets. Right Click on the object or AIS and select "Properties" (on some object such as marks, you can just double click to open the Property window). Select the "Notes" tab of the Property window:
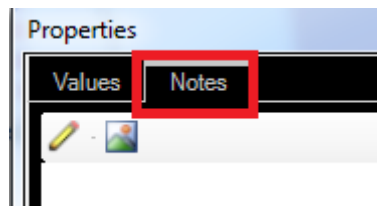
The Edit button (pencil icon) opens an editor that allows you to enter text. You can perform basic formatting (Bold, Italic, Color, Size), include hyperlinks and add pictures.

The Picture button allows you to quickly insert a picture stored on your computer.

Once a Note has been added to an object, the content will be available when you rollover on the object (the note appears in the tool tip).

Add a Photo on the Chart

You can place the photo directly on the chart. Just right click on the chart and select "Add Photo". This opens a window allowing you to select a photo on your computer. Once the photo has been selected, it appears as a little pictogram on the chart and the full picture is available when you rollover on the object (the picture appears in the tool tip).

You can also right click on a Panoramio picture (streamed from Internet) and save them in TimeZero Catch . Please refer to the Panoramio chapter for more information.

Import Photo

Photos stored on your computer can be imported and positioned automatically on the chart.

When importing photos from the Import Wizard, Nobeltec will look for any GPS tag information that are embedded in the EXIF metadata when using a Digital Camera with a GPS. If no GPS tag is available, Nobeltec will look at the date/time tag (available with most Digital Cameras) and try to cross reference it with the track information.

Please refer to the Import & Export Data chapter to learn how to import JPG photos.

Note: You can only import automatically photos that are in the JPEG format (*.jpeg or *.jpg extension)

Marks and Objects Management

Layer Introduction

Nobeltec TimeZero Catch allows you to create "layers" that can be used to categorize your data (Tracks, Marks, Boundaries, Routes, etc...). By setting only specific layers to be visible, you can filter and manage large quantity of information on your chart.

You can use the layers to organize your data the way you like. For example, you could create a layer to group all the fishing marks that resulted in a good catch, then create another layer to group all the hangs and hazards that you need to avoid. You could also create a layer by fish species or by trip. You can create as many layers as you want and give them custom names.

When you select a tool to create an object (Mark, Route, Annotation, Boundary,...) the "Active Layer" will be displayed on the top of the screen:

The "Active Layer" is the default layer assigned to any object created. Note that you can change the layer of a mark or object at any time by right clicking on the Mark and selecting "Assign Layer". This will display a contextual menu with the list of all the layers available:
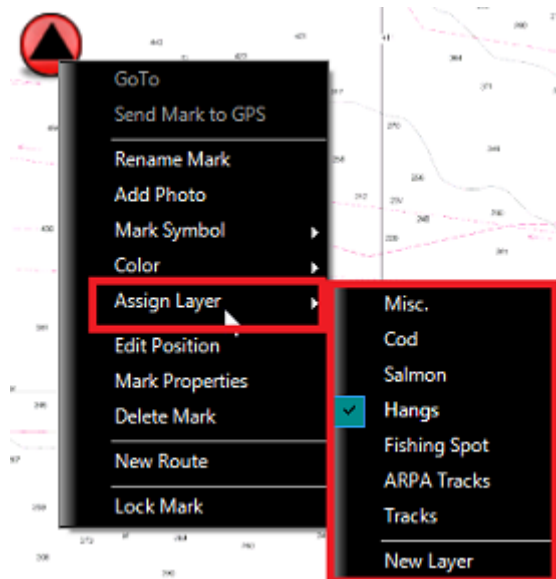
Note: You can only assign one layer per object

Once your object are categorized with layers, you can configure your screen to show specific group of objects by adjusting the "Visible Layers" from the "Marks" ribbon button:
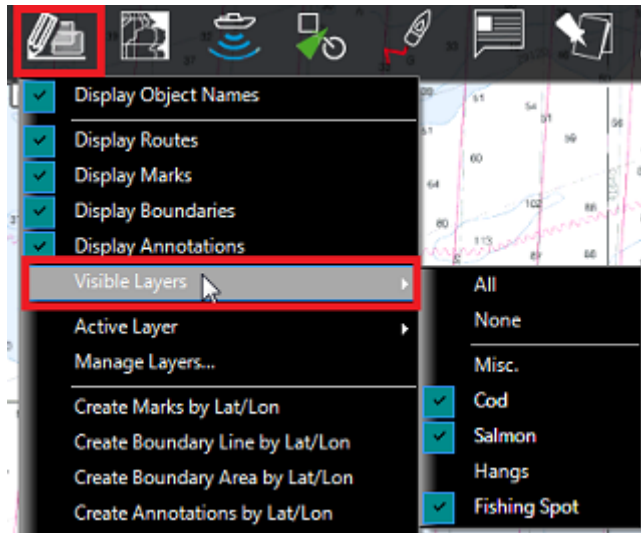
The "Visible Layer" selection is independent per WorkSpace. You could have one WorkSpace display a set of layers and have another WorkSpace display another set of layer or no layer at all.

Note: By default, all layers are set to invisible on the Radar WorkSpace.

Creating & Editing Layers

Select "Manage Layers…" from the "Marks" ribbon button. This opens a window that allows you to perform various actions on Layers.
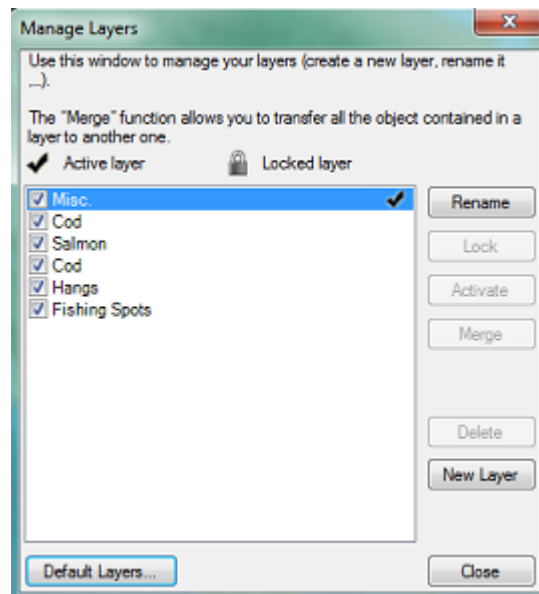
Managing Layers:

- **Rename:** Click on this buttons to rename the layer selected in the list

- **Lock/Unlock:** Click on this buttons to lock or unlock the layer selected in the list. Locking a layer prevents accidental change to any objects assigned to that layer

- **Activate:** Click on this button to set the layer selected in the list as the Active Layer. The "Active Layer" is the default layer on which the objects will be assigned to when they are created

- **Merge:** Click on this button to transfer all the objects assigned to the layer selected in the list over a new layer (a pop up window will appear allowing you to select the target layer)

- **Delete:** Click on this button to delete all the objects assigned to the layer selected in the list

- **New Layer:** Click on this button to create a new layer

Enabling/Disabling Layers:

If you have lots of layers and decide not to use some of them temporarily, you can disable them by deselecting the check box in front of the corresponding layer(s). When you disable a layer, the objects it contains will no longer be displayed on the chart and you will not be able to activate it or use it as a default layer.

Locking Layers:

If you want to prevent accidental changes to specific objects (for example boundary areas), group them on a layer(s) and lock that layer(s) by selecting the layer(s) in the list and pressing the "Lock" button.

Default Layers:

By default, all the Marks, Boundaries, Annotations and Tracks you create are assigned to the Active Layer. The "Default Layers" window allows you to force specific type of object to be assigned to different default layers when they are created:
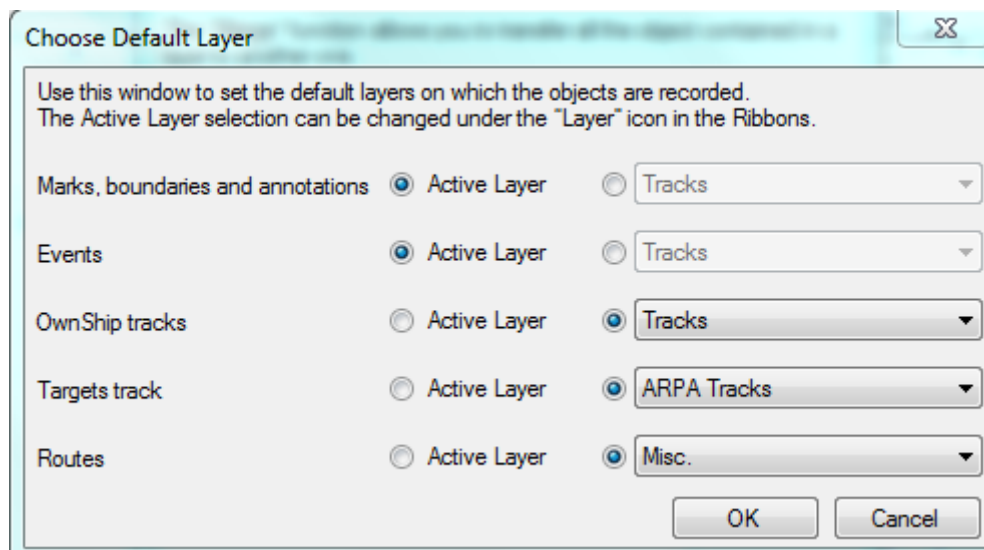
For example, you may want to create a dedicated layer for all the ARPA tracks and select it as a default layer (instead of the Active Layer). When you enable the Track Recording on an ARPA target, that track will be automatically assigned to the "ARPA Tracks" layer (regardless of the Active Layer selection).

Transform Objects

The Transform window allows you to select objects that match specific conditions and then apply a transformation. To open the Transform window, select "Transform…" from the "Marks" ribbon button:
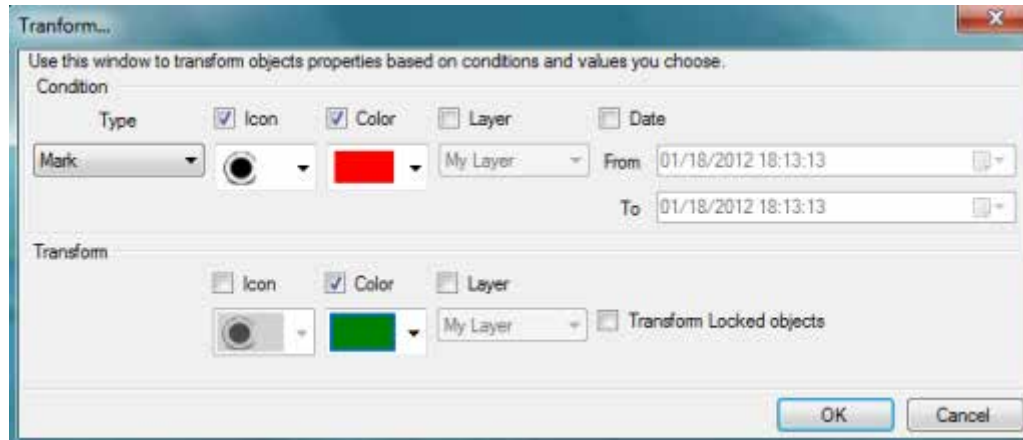
Select Conditions

The top part of the window is used to set the various conditions that an object needs to match in order to be transformed.

First select the type of object you want to transform from the drop down menu (marks, …). Then select the conditions you want to apply. For example, if you want to select objects that have a specific color, check "Color" and choose the color you want the object to match. If you don't want to restrict the selection with a specific condition, leave it unselected. For example, if you want to select objects belonging to any layers, leave the layer condition unselected.

Apply Transformation

The bottom part of the window allows you to select the type of transformation you want to apply on the objects that match the selection. If you don't want to transform a specific property, leave it unselected. For example if you only want to change the color property, just check "color" and select the color you want all the objects to have after the transformation.

Note: Objects belonging on a locked layer will not be transformed

Examples

Below are some commons transformation:

- Select all the red tracks and assign them to a specific layer ("Archived Tracks" in the example below)
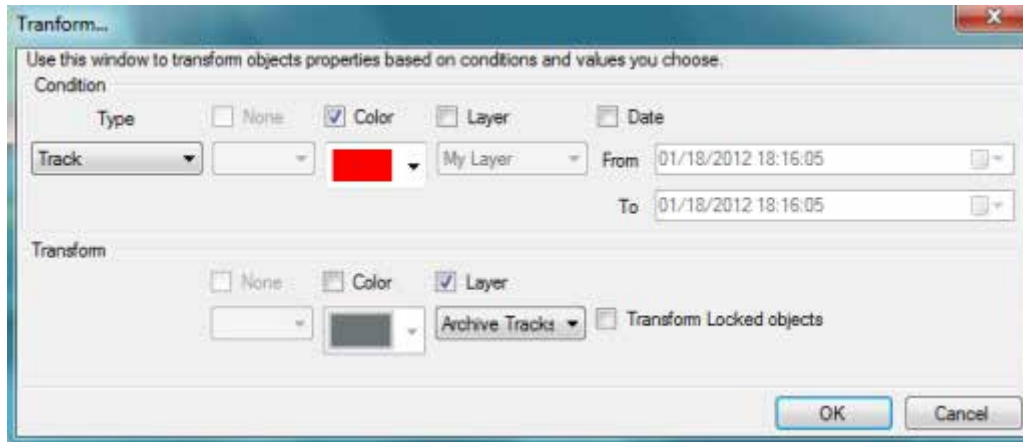
- Select all the marks that have a specific icon and assign them to a specific layer ("Hangs" in the example below)
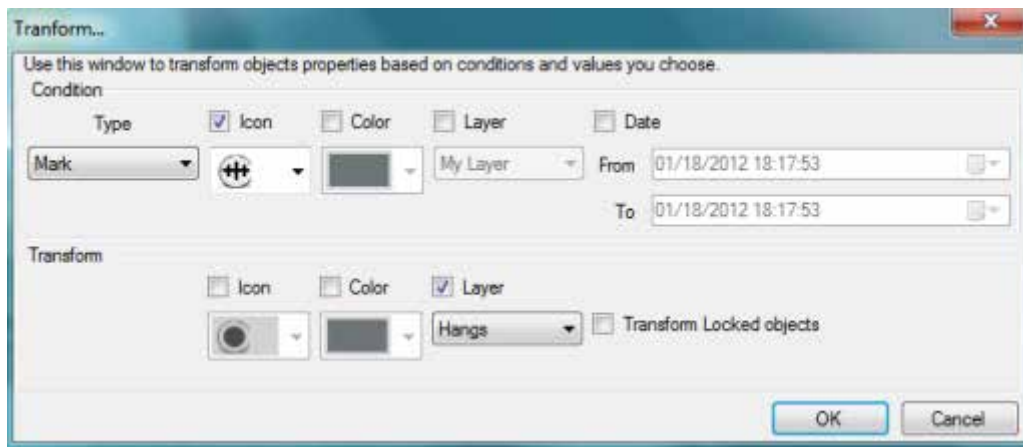
- Select all the tracks created in between a specific time interval that are assigned to the "Good Track" layer and change their color to red
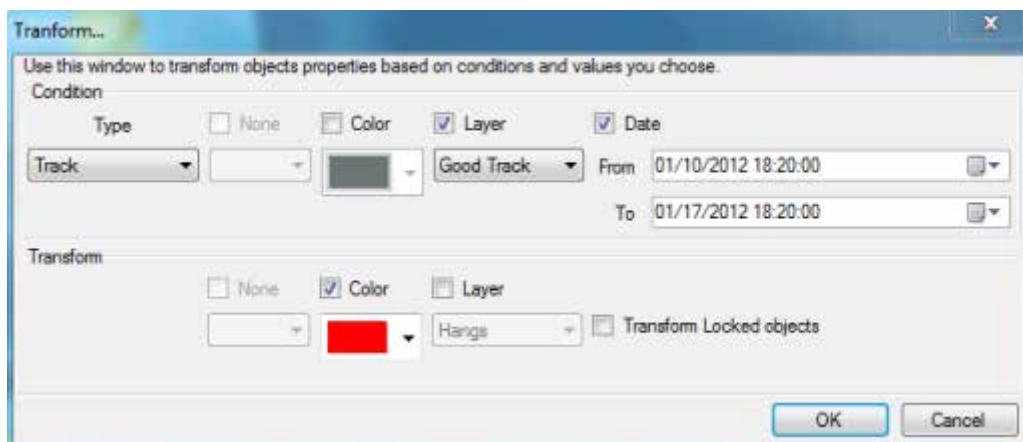
Deleting Objects

The Delete window allows you to select objects that match specific conditions (similar to the Transform window) and delete them all at once. To open the delete window, select "Delete..." from the "Marks" ribbon button:
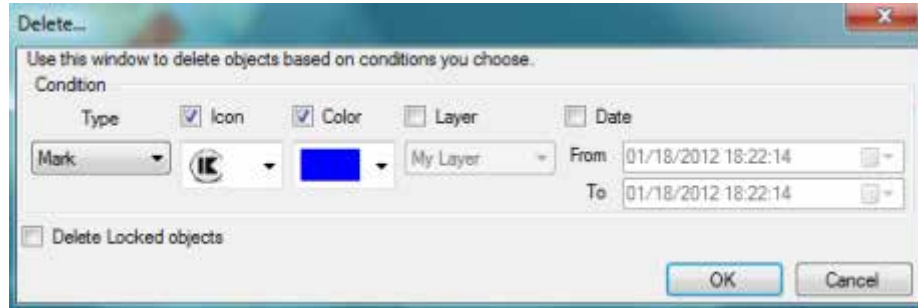
Select the type of object you want to delete from the drop down menu (marks, ...). Then select the conditions you want to apply. For example, if you want to select objects that have a specific color, check "Color" and choose the color you want the object to match. If you don't want to restrict the selection with a specific condition, leave it unselected. For example, if you want to delete objects belonging to any layers, leave the layer condition unselected.

Note: Objects individually locked from the chart (using the right click menu) will not be deleted unless you select "Delete Locked objects". Object belonging to a locked layer will never be deleted.

Events

Nobeltec TimeZero Catch offers various options to drop a mark at the boat position (GPS position). These special marks are called "event" in the software. Events are locked by default, preventing you to move the location of the event accidently. You can unlock an event by right clicking on it and remove "Lock Mark".

Note: It is possible to select multiple Events at the same time using the CTRL or Shift Key or by using the Select Tool in the ToolBar. Once selected, you can right click to perform various actions on all the events at the same time (unlock, Icon, Color, etc...)

Using the Event Tool

The "Event" tool in the Toolbar can be used to drop an event each time you click on it. Click on the "Configure Tools" button (at the lower end of the Toolbar) to add the tools to your Toolbar configuration if it is not displayed:

The default icon and color that will be used when dropping an Event can be changed from the Marks & Boundaries Options ("Event Mark Symbol" & "Event Mark Color"). You can also right click on the "Event" tool to quickly change the default icon and color parameters.

Using the ENTER key

You can also press the ENTER key on your keyboard to drop an event. The default icon and color that will be used when dropping an Event with the ENTER key are the same as the one used when dropping an event from the "Event" tool.

Using the numeric keys [0..9]

The numeric keys 1 through 9 can be used to drop events that have customized icon and color according to the key that is pressed. This feature can be used to quickly mark locations with specific meanings. For example, if you want to mark the location of good and bad fishing spots when getting your pots (crab, lobster, etc..) you could assign key "0" to a red color icon meaning "bad location". You could use "1" to drop an event with another color/icon and mean "average location", and so on. We realize that when fishing you may not have the time to right click and select icon and color to specific event. Pre configuring the event color and icon using the keypad allows you to quickly gather information in a split second by just pressing one key.

The numerical keys on your existing computer keyboard will work, but you could also consider an inexpensive dedicated USB keypad to drop the events:

Use the "Configure Events" window of the Marks & Boundaries Options to set up the events icons and colors that are associated with the 0 to 9 numeric keys.

Event Label

The depth value or a customized text prefix can be used to automatically label events. You can use the prefix and auto-numbering to easily keep track of individual pots on the same line. Before laying down a new line, set a prefix that will identify that specific line ("LineA" for example) and set the auto-numbering to "1" (to start the count at 1). Press the "ENTER" key or any numerical number on your keyboard to record an event each time you drop a pot. Each event will be automatically named "LineA 001", "LineA 002", etc... When you are ready to lay another line, rename the prefix ("LineB") and reset the count to "1".

Refer to the Marks & Boundaries Options to set up the events label.

Tides & Tidal Currents

Tides

Nobeltec TimeZero Catch can predict the tide level for thousands of tide stations around the world. Tides can be displayed directly on the chart or in a graph.

Displaying Tides on the Chart

Click on the "Chart" button located in the Ribbon and select "Tidal Heights Stations":
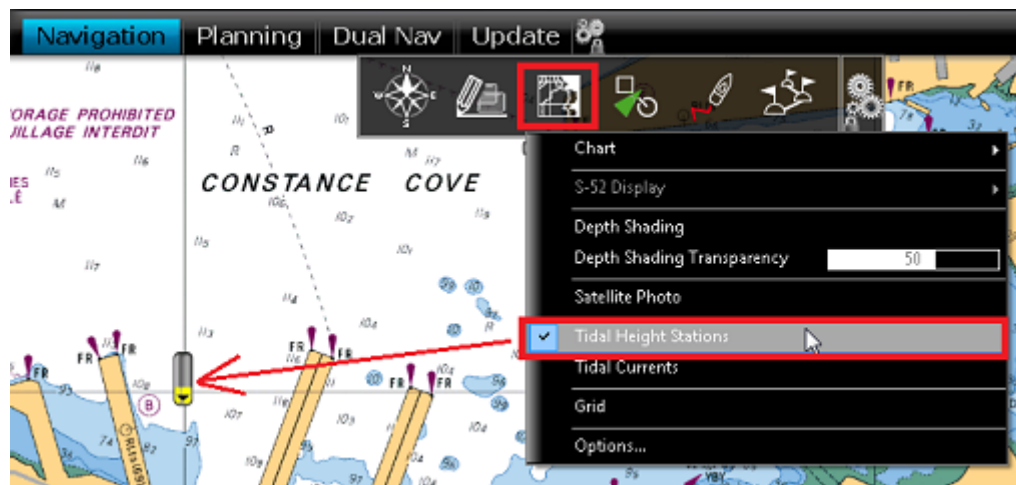
The tide icons displayed on the chart are dynamic and show you a preview of the water level:

Rising from low to high

Falling from low to high

At slack (low and high)

If you put your cursor over a tide icon or click on it, a tool tip indicating the Tide level will appear.

If you are in the Navigation Work Space, the tide level is displayed for the current time. If you are in the Planning Work Space, you can change the time using the Virtual Time Control (Time Bar) located at the bottom of the screen.

IMPORTANT: All tidal height prediction times in the Navigation Work Space are adjusted for the local time currently selected on your computer. Make sure that your computer is set at the correct time and that the local time zone is properly selected for your area. To change the computer's time zone or daylight savings time setting, use the "Date and Time" option in the Windows Control Panel.

Displaying the Tide Graph

To display a Tide Graph, right click on a Tide icon and select "Open Tide Graph" (or double click on the tide icon). You can also right click anywhere on the chart (in this case it will use the nearest Tide Station from cursor position). This opens a window displaying various tides related information (tide level, low/high tide time, moon phase, sunrise/sunset time):
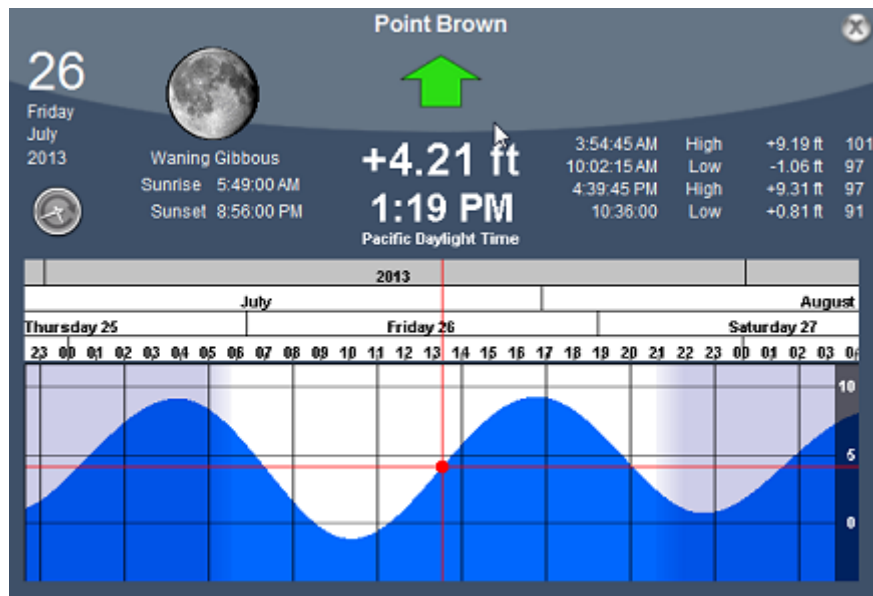
To change the time, you can drag the graph with your mouse, use the scroll wheel or use the right/left arrow of your keyboard.

Tips: To scroll the graph over a long time period, you can put your cursor over the day or month on the time bar and drag from this location. This will increase the scrolling speed.

To set the time of the graph back to the current time, click on the clock button:

Note: If you open the Tide Graph from the Planning Work Space, the time of the graph is initialized to the same time selected in the Virtual Time Control (Time Bar) of the Work Space.

1. Selected date

2. Moon and Sunrise/Sunset information

3. Tide level and Time (with Time Zone indication)

4. Time, Level and Coefficient for previous and next high/low

Tidal Currents

Nobeltec TimeZero Catch can predict tidal currents for thousands of current stations around North America. In Western Europe, High Resolution Tidal Currents are available for an additional fee. Please refer to the Mapmedia Catalog for coverage.

Tidal current can be displayed directly on the chart or in a graph.

Displaying Tides on the Chart

Click on the "Chart" button located in the Ribbon and select "Tidal Currents":
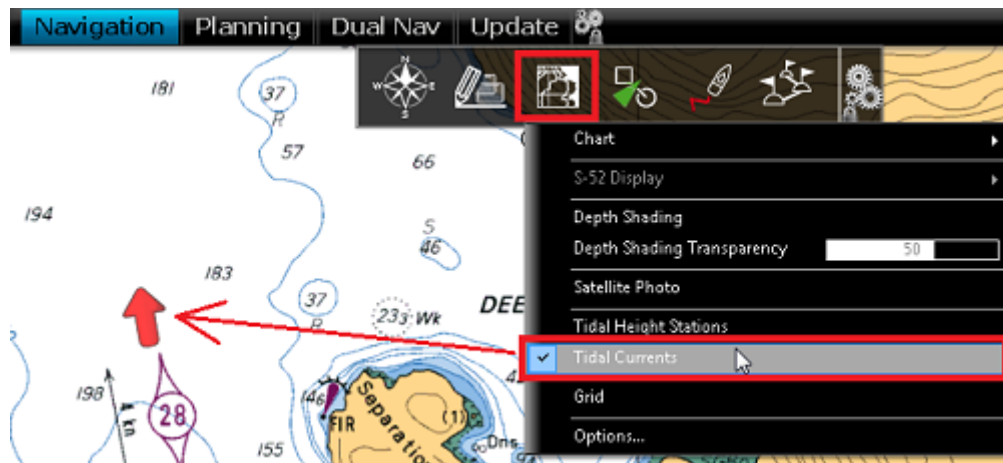
This will display arrows on the chart indicating the direction and overall speed of the current. Low current speeds are indicated in yellow. Orange or red colors indicate high speed currents.

IMPORTANT: Oceanic Currents (that are downloaded with Weather Forecast) are displayed in blue, while Tidal Currents (integrated in the software) are displayed in yellow-red. Oceanic Currents (blue arrow) can be turned ON or OFF from the Weather button located in the Ribbon. Please refer to Displaying Weather Data for more information.

If you put your cursor over a current icon or click on it, a tool tip indicating the Speed and Direction will appear.

IMPORTANT: All tidal current prediction times in the Navigation Work Space are adjusted for the local time currently selected on your computer. Make sure that your computer is set at the correct time and that the local time zone is properly selected for your area. To change the computer's time zone or daylight savings time setting, use the "Date and Time" option in the Windows Control Panel.

Displaying the Tidal Current Graph

To display a Tidal Current Graph, right click on a Tide icon and select "Open Current Graph" (or double click on the current icon):
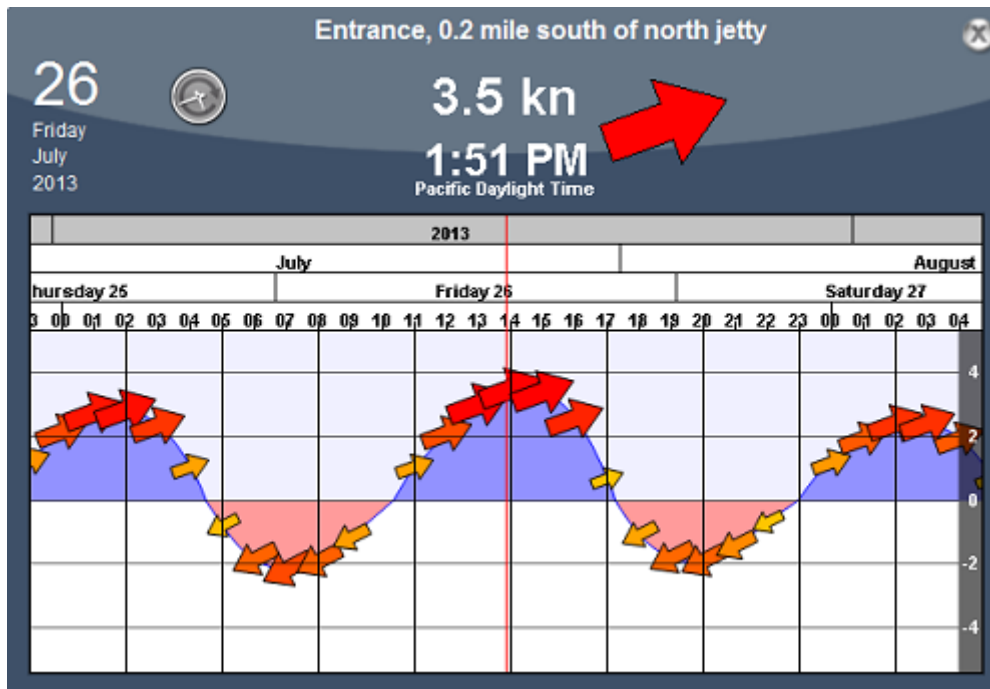
Nobeltec TimeZero Catch v2.1.0

To change the time, you can drag the graph with your mouse, use the scroll wheel or use the right/left arrow of your keyboard.

Tips: To scroll the graph over a long time period, you can put your cursor over the day or month on the time bar and drag from this location. This will increase the scrolling speed.

To set the time of the graph back to the current time, click on the clock button:

Note: If you open the Current Graph from the Planning Work Space, the time of the graph is initialized to the same time selected in the Virtual Time Control (Time Bar) of the Work Space.

Tides & Current NavData

When you have a GPS position, a Tides & Current NavData can be added to the NavData panel by clicking on the "+" icon. This NavData displays and updates in real time the nearest Tides and Currents information from your own ship position:

The maximum search distance for tide stations is 50NM and 4NM for Tidal Current Station. If there is no tide or current station within this distance, the NavData will display no information.

Note that it is possible to choose and fix the Tide Station being display in the NavData by selecting a Tide Station as a "Reference Station". Just right click on a Tide icon on the chart and select "Use as Reference Station". To release the reference station, you can right click on the NavData and select "Set Auto".

Note: It is not possible to fix a Tidal Current station. Currents are always automatically selected based on distance from own ship.

Tips: If you click on the little blue "i" (information) icon on the top right, this will open the corresponding Tide Graph.

NavData

NavData Introduction

The NavData panel is displayed on the right side of the screen. When the panel is closed, tabs allowing you to open the panel appear:
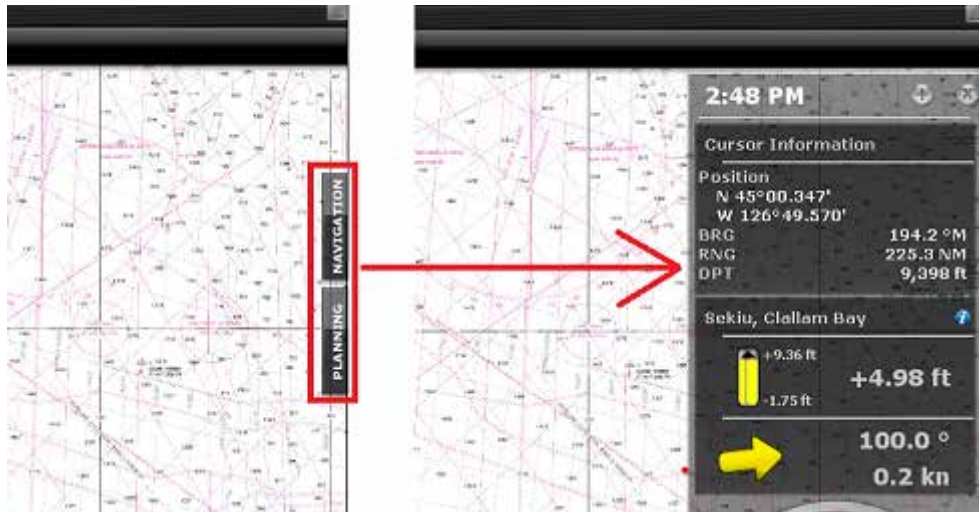
When the NavData panel is open, you can switch from various configurations by clicking on the tabs name located at the bottom of the panel:
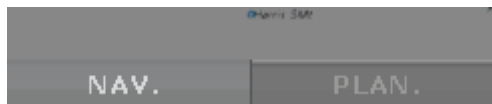
Nobeltec TimeZero Catch offers 2 panels by default (3 if you have a radar).

Note: The tabs name and configuration cannot be changed but can vary according to your software configuration and plus pack .

The content of each panel can be fully customized. To add a NavData, click on the "+" located at the top of the panel:
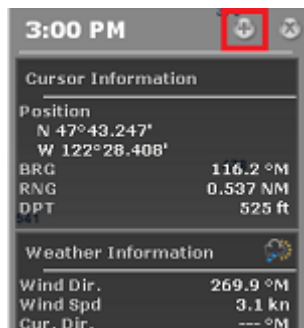
To close the entire NavData Panel, click on the "X" located next to the "+".

To remove a specific NavData, right click on it and select "Remove".

To change the position of the NavData inside the panel, just click and drag on a NavData.

You can edit most of the NavData (to change the information it displays) by right clicking on a NavData.

Note: When you add too many NavData or when the list are displayed at bottom of the screen, the NavData may eventually "overflow" and not be visible anymore. If you see the overflow icon at the bottom of the NavData panel, it is recommended to delete some NavData to free up space:
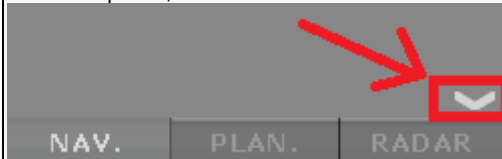
Note that the overflow icon is just an indication (you cannot click on it to scroll the NavData).

The NavData panel overall size and transparency can be adjusted from the General Options.

Note: The NavData Panel configuration is global to all the Work Spaces in the software. However, the panel can be displayed or hidden independently per Work Space.

NavData Types

Various types of NavData can be displayed in TimeZero Catch :

Sensors NavData:

Sensor NavData are used to display numerical values received from sensors connected to the computer. The font color is white for data that is received directly from the sensor and yellow when the data is being computed by TimeZero Catch from a sensor:

Note: In the example, above, Speed Over Ground (SOG) is displayed in white because it is directly received from the GPS. The True Wind Speed (TWS) is displayed in yellow because it is computed by TimeZero Catch from Apparent Wind (received from the sensor) and Speed.

The following Sensor NavData are available:

· Date/Time

· Boat Position

· COG - Course Over Ground

· SOG - Speed Over Ground

· DPT - Depth

Note: The Depth can be configured to display a value below the keel or below sea level using the "Depth Display" from the Initial Setup

· SST - Sea Surface Temperature

- HDG - Heading (can be computed by TimeZero Catch from SOG when the speed is over 1kn)

- STW - Speed Through Water (also known as Speed Over Water)

- Set - Current Speed (can be computed by TimeZero Catch from COG, STW, Heading and SOG)

- Drift - Current Direction (can be computed by TimeZero Catch from COG, STW, Heading and SOG)

- TWD - True Wind Direction. If True Wind Direction is not sent by the wind sensor, it can be computed by TimeZero Catch from Apparent Wind Angle with Heading/Speed through Water ("Surface" reference) or COG/SOG ("Ground" Reference). "Surface" or "Ground" can be selected from the Initial Setup Options ("True Wind and VMG Calculation")

- TWA - True Wind Angle. If True Wind Angle is not sent by the wind sensor, it can be computed by TimeZero Catch from Apparent Wind Angle with Heading/Speed through Water ("Surface" reference) or COG/SOG ("Ground" Reference). "Surface" or "Ground" can be selected from the Initial Setup Options ("True Wind and VMG Calculation")

- TWS - True Wind Speed. If True Wind Speed is not sent by the wind sensor, it can be computed by TimeZero Catch from Apparent Wind Speed and Speed through Water ("Surface" reference) or SOG ("Ground" Reference). "Surface" or "Ground" can be selected from the Initial Setup Options ("True Wind and VMG Calculation")

- AWA - Apparent Wind Angle

- AWS - Apparent Wind Speed

- VMG - Velocity Made Good. If VMG is not received, it can be computed by TimeZero Catch from True Wind Direction and Speed through Water ("Surface" reference) or SOG ("Ground" Reference). "Surface" or "Ground" can be selected from the Initial Setup Options ("True Wind and VMG Calculation").

- Atmospheric Pressure

- Air Temperature

- HDOP

- Fuel Time to Empty (computed by TimeZero Catch from Fuel Tank Level and Fuel Rate)

- Fuel Distance to Empty (computed by TimeZero Catch from Fuel Tank Level, Fuel Rate and Speed)

- Total Fuel Rate

- Fuel Rate #1

- Fuel Rate #2

- Fuel Rate #3

- Fuel Rate #4

To change the data displayed in a sensor NavData, just right click and select a new data from the contextual menu. The NavData will be immediately updated and display the selected data.

It is possible to configure one NavData to cycle through multiple data. Just right click on the NavData, select "Add" and choose the data you want to add. The NavData will begin to cycle between the two data. You can repeat this operation and add more data to cycle through. To stop the cycle, uncheck all data from the "add" contextual menu.

Note: The cycle speed can be changed from the General Options by adjusting the "NavData Multi Data Dwell Time" setting.

Route NavData

Route NavData are used to display numerical values linked to the Active Route computed by TimeZero Catch . If a route or Go To is not activated, the Route NavData will display dashes ("--"). The font color of the Route NavData is red:

The following Route NavData are available:

- CTS - Course to Steer: indicates the course to steer to reach the active Waypoint from own ship position. This values does not take into account any current and is simply the course as it would be plotted on a chart.

- HTS - Heading to Steer (real time): indicates the course to steer to reach the active Waypoint from own ship position taking into account the real time variations caused by wind and/or currents. The HTS (real time) is computed by TimeZero Catch from the CTS and the drift vector.

- HTS - Heading to Steer: indicates the course to steer to reach the active Waypoint from own ship position taking into account the Tidal Currents embedded in TimeZero Catch .

Note: The HTS will display the same value as CTS if there is no Tidal Currents near the Active Leg.

- NEXT - Next Course: indicates the CTS to follow after the next Waypoint. This is useful to see if a major course change is needed after passing the Active Waypoint.

- TTG - Time To Go (using VMC): indicates the time that it will take to reach the Active Waypoint. TimeZero Catch computes this value using the DTW and the VMC.

- DTW - Distance To Waypoint: indicates the distance remaining to reach the Active Waypoint from own ship position.

- XTE - Cross Track Error: indicates the distance the vessel is to one side of the straight line between the Active Waypoint and previous Waypoint (or position where the route was Activated if the Active Waypoint is the first of a route or a Go To).

- ETA - Estimated Time Arrival: indicates the arrival date and time taking into account the Tidal Currents along the route and the real time speed.

- TTA - Time To Arrival: indicates the time remaining to reach the end of the route taking into account the Tidal Currents along the route and the real time speed.

- DTA - Distance to Arrival: indicates the distance remaining to reach the end of the route.

- VMC - Velocity Made Good: indicates the speed made good towards the Active Waypoint. This is computed by TimeZero Catch from the component of SOG that is in the direction of

the Active Waypoint. In other words, the VMC is "the speed at which you approach the Active Waypoint".

To change the data displayed in a Route NavData, just right click and select a new data from the contextual menu. The NavData will be immediately updated and display the selected data.

It is possible to configure one NavData to cycle through multiple data. Just right click on the NavData, select "Add" and choose the data you want to add. The NavData will begin to cycle between the two data. You can repeat this operation and add more data to cycle through. To stop the cycle, uncheck all data from the "add" contextual menu.

Note: The cycle speed can be changed from the General Options by adjusting the "NavData Multi Data Dwell Time" setting.

Waypoint NavData

The Waypoint NavData displays information about the Active Waypoint. It combines in one screen a "highway" display (also known as "Helmsman" Display), and the XTE and CTS value.
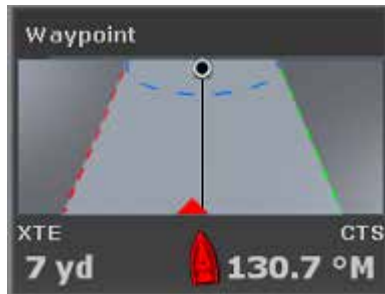
Gauge NavData

Gauge NavData are used to display values received from sensors connected to the computer in a graphic "gauge" type display. The font color is white for data that are received directly from the sensor and yellow when the data is being computed by TimeZero Catch from a sensor:

The following Gauge NavData are available:

- Date/Time

- Bearing To Cursor

- TWD - True Wind Direction. If True Wind Direction is not sent by the wind sensor, it can be computed by TimeZero Catch from Apparent Wind Angle with Heading/Speed through Water ("Surface" reference) or COG/SOG ("Ground" Reference). "Surface" or "Ground" can be selected from the Initial Setup Options ("True Wind and VMG Calculation")

- TWS - True Wind Speed. If True Wind Speed is not sent by the wind sensor, it can be computed by TimeZero Catch from Apparent Wind Speed and Speed through Water ("Surface" reference) or SOG ("Ground" Reference). "Surface" or "Ground" can be selected from the Initial Setup Options ("True Wind and VMG Calculation")

- Atmospheric Pressure

- Air Temperature

- COG - Course Over Ground

- SOG - Speed Over Ground

Note: The SOG graphic NavData range can be setup using the "Average Boat Speed" from the Initial Setup Options: 0-15Kn for Sailing Boat, 0-30Kn for Commercial Boat and 0-50Kn for Power Boat.

- DPT - Depth

Note: The Depth can be configured to display a value below the keel or below sea level using the "Depth Display" from the Initial Setup. The depth range can be setup using the "NavData Maximum Depth" from the Initial Setup Options: 0-30ft for Very Shallow, 0-50ft for Shallow, 0-500ft for Deep and 0-5000ft for Very Deep.

- SST - Sea Surface Temperature

- HDG - Heading (can be computed by TimeZero Catch from SOG when the speed is over 1kn)

- STW - Speed Through Water (also known as Speed Over Water)

Note: The STW graphic NavData range can be setup using the "Average Boat Speed" from the Initial Setup Options: 0-15Kn for Sailing Boat, 0-30Kn for Commercial Boat and 0-50Kn for Power Boat.

- TWA - True Wind Angle (can be computed by TimeZero Catch from Apparent Wind and STW or Apparent Wind and SOG)

- AWA - Apparent Wind Angle

- AWS - Apparent Wind Speed

- VMG - Velocity Made Good

- Total Fuel Rate

- Fuel Rate #1

- Fuel Rate #2

- Fuel Rate #3

- Fuel Rate #4

Note: The Fuel Rate graphic NavData range can be setup using the "Fuel Rate Display" from the Initial Setup Options.

Cursor NavData

The Cursor NavData displays various information related to the cursor position on the screen:
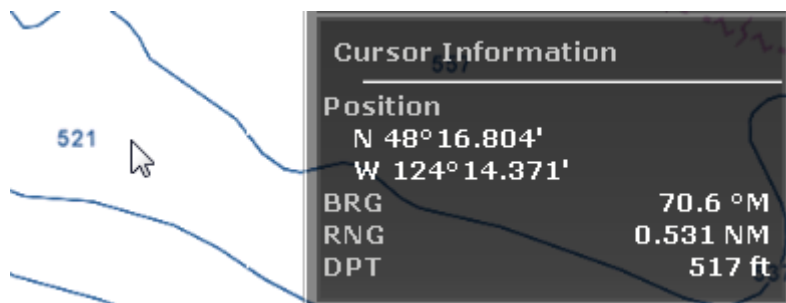
If you right click on the Cursor NavData you can configure what information you want to display.

The following data can be displayed inside the Cursor NavData:

- Position: indicates the position of the cursor on the screen using the position unit selected from the Units Options.

- Position Lat/Lon (hidden by default): indicates the position of the cursor on the screen using the Lat/Lon unit.

Tips: If you set the Position Unit to Loran/TD, this data allows you to display at the same time Lat/Lon and Loran/TD for cursor position.

- BRG: indicates the bearing from own ship

- RNG: indicates the range from own ship

- DPT: indicates the depth below cursor.

- Time to cursor (hidden by default): indicates the time it would take to reach the cursor position from own ship using the current speed.

Tide & Current NavData

This NavData displays and updates in real time the nearest Tides and Currents information from your own ship position:

The maximum search distance for Tide Stations is 50NM and 4NM for Tidal Current Station. If there is no tide or current station within this distance, the NavData will display no information.

Note that it is possible to choose and fix the Tide Station being display in the NavData by selecting a Tide Station as a "Reference Station". Just right click on a Tide icon on the chart and select "Use as Reference Station". To release the reference station, you can right click on the NavData and select "Set Auto".

Note: It is not possible to fix a Tidal Current station. Currents are always automatically selected based on distance from own ship.

Tips: If you click on the little blue "i" (information) icon on the top right, this will open the corresponding Tide Graph.

Weather NavData

The Weather NavData displays the weather forecast under the cursor using numerical value:

Weather Information	
Wind Dir.	301.6 °M
Wind Spd	10.7 kn
Cur. Dir.	167.3 °M
Cur. Spd.	0.5 kn
Wave Dir.	96.3 °M
Wave Height	+ 4.40 ft
Wave Period	0'08s
Pressure	1,021 hPa

In the "Planning" Work Space, the time of the forecast is set by the Virtual Time Control (Time Bar). In the "Navigation" Work Space, the time of the forecast is always set by computer current time.

You can right click on the NavData to add or remove specific weather data.

GPS Status NavData

The GPS Status NavData displays in large font "GPS OK" (in green) or "NO GPS" (in red):

GPS Status	
Status	**GPS OK**
Accuracy	**7.0 ft**
Satellites in View	**7**

It also displays the GPS accuracy (based on *HDOP*) and the number of satellites in view that are used to compute the position fix.

Note: Make sure that the GPS is set to output the NMEA0183 sentence GGA in order to display all the GPS Status information

Target Information NavData

The Target NavData displays detailed information about the selected target (AIS, ARPA or DSC). To select a target, just click on it. The target will become surrounded in yellow and the information will be displayed in the Target Information NavData:
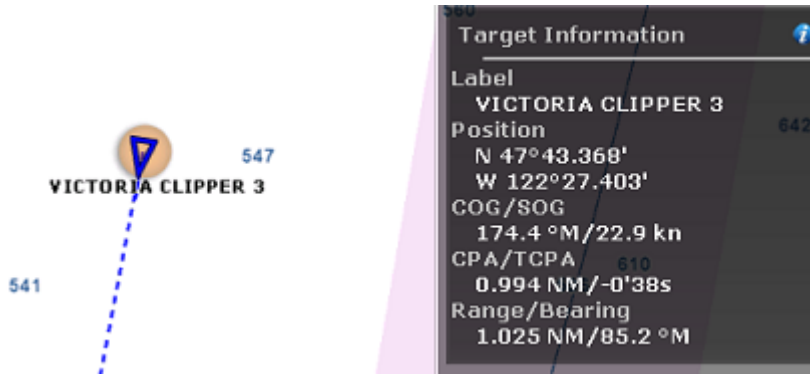
Note that once a target is selected (surrounded in yellow), you can select other objects (such as Marks or Boundaries) without affecting the target selection. Only selecting another target will change the target selection.

If you click on the "i" icon (blue icon on the top right), it will open the full target property window.

AIS and ARPA List NavData

The AIS and ARPA lists display a list of AIS or ARPA targets:

The list can be sorted by *MMSI* (or ID), Range, *CPA*, *TCPA* or SOG when you right click on the NavData. You can also select how many targets you want to display on the list (5 up to 20).

Note: At this time, it is NOT possible to select what is displayed in the list. The list will always display the name (or ID) of the target, its COG and speed no matter what the sorting parameter is set to.

Alarm Zone NavData

Any Boundary Area can be set as an alarm zone by right clicking on the area and selecting "Alarm". The Alarm Zone NavData is used to display the distance to the closest alarm boundary area. If "Alarm Zone" is set to "Progressive" from the Alarms Options, TimeZero Catch will start by raising a notification when approaching the Alarm zone (distance set by "Progressive Alarm Zone value" under the Alarms Options) then raise an alarm if the boat enters the alarm zone. The NavData will reflect the notification by displaying a yellow warning sign when the boat approaches the zone and red warning sign if the boat enters the alarm zone:
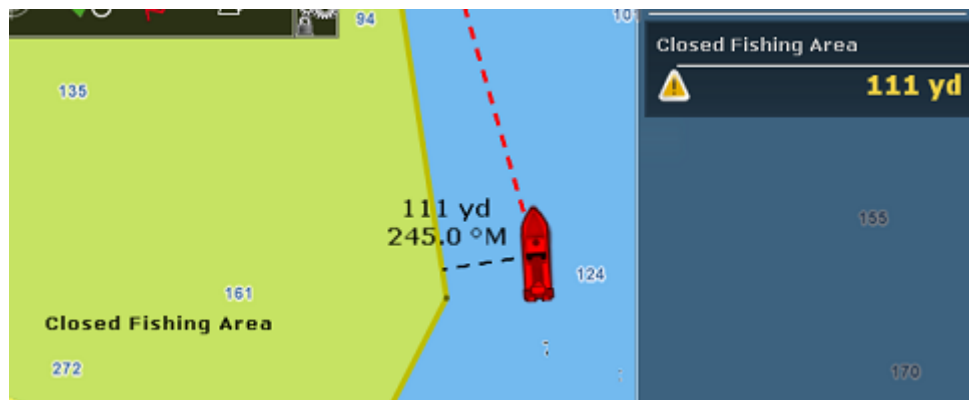
Note: When the distance to the alarm zone becomes smaller than the "Progressive Alarm Zone Value" (when the notification is raised), a divider line is automatically displayed from the boat icon to the closest point of the alarm zone.

Radar Control NavData

The Radar Control NavData gives quick access to the most used radar control: Gain, Sea (*STC*) & Rain (*FTC*):

Tips: Click on the "A" to switch from Manual to Automatic mode for the selected parameter.

The Radar Control NavData also display the "Tune" bar (read only).

You can customize the NavData by right clicking on it.

Advanced Radar Control NavData

The Advanced Radar Control NavData gives quick access to the more advanced radar filters. Click on the filter value to cycle through the various mode:
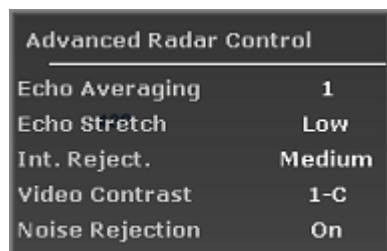
You can customize the NavData by right clicking on it.

Bottom Discrimination NavData

This NavData displays real time bottom discrimination information when TimeZero Catch with Furuno Sounder Plus Pack is connected to a Furuno BBDS1 or DFF1-UHD Ethernet Sounder:

Nobeltec TimeZero Catch v2.1.0
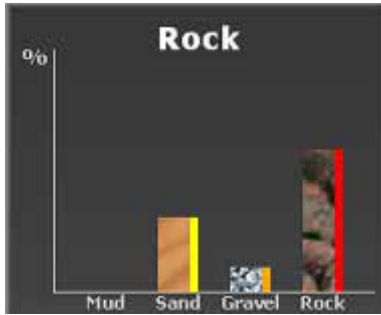
This NavData displays the real time bottom type of highest probability value at the top and a bar graph containing the four probabilities (Mud/Sand/Gravel/Rock) at the bottom. The colors located on the right side of each bar indicate the color of the corresponding type if the track color is set to variable according to bottom classification (from the Ship & Tracks Options).

Cursor Bottom Classification

This NavData displays the bottom classification under the cursor when TimeZero Catch with Furuno Sounder Plus Pack is connected to a Furuno BBDS1 or DFF-UHD Ethernet Sounder and when the cursor is over an area where data was previously recorded (with PBG):

Camera NavData

This NavData displays a video feed. If the camera has Pan, Tilt, and Zoom (PTZ) capabilities, a virtual joystick will appear when you roll your cursor over the NavData:
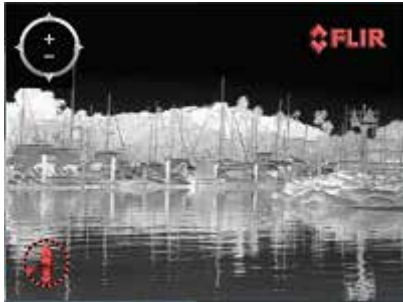
You can change the video source of the NavData by right clicking on it.

If the camera as additional features (such as the Flir M-Series), the right click contextual menu also gives access additional commands (Scan, Home, Scene, IR/Visible switch, etc…).

For more information, please refer to the Camera NavData Chapter.

Fuel Tank Level NavData

This NavData displays the Total Fuel Level:
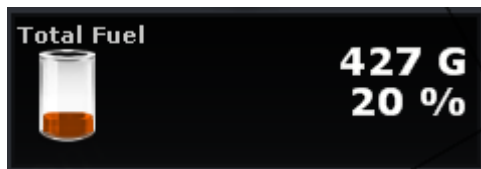
You can display individual tank level by right clicking on the NavData. The NickName of the Fuel Tank can be changed from the Initial Setup Options (under the "Fuel" Category).

Note: The Tank Level indicator can be used for other type of fluid than Fuel (for example grey water tank). If you are not using a specific tank for fuel, make sure to disable it from the Fuel computation in the Routes Options (uncheck "use fuel tank # in vessel computation")

Undocking NavData

When you add a NavData (by clicking on the "+" icon of the NavData Panel), it appears initially inside the NavData panel. You can move the NavData outside of the panel ("undock the NavData") and placing it anywhere on the screen by clicking on it and dragging your mouse outside of the panel:

If the "Hide Undocked NavData" setting from the General Options is unchecked, the undock NavData will stay displayed on screen even if the NavData Panel is closed.

Undocked NavData can be made bigger or smaller by right clicking on them and choosing Decrease or Increase Size.

Tips: If you want to "lock" the undocked NavData to prevent them from being accidentally moved after placing them on the screen, you can check the "Lock Undocked NavData" setting from the General Options.

To dock a NavData back into the NavData panel, just drag it back inside the panel.

Weather

Requesting a Weather File

IMPORTANT: In order to be able to request a weather file, you have to register your copy of Nobeltec at www.nobeltec.com.

You can request a Weather file from the "Update" Work Space. This Work Space offers dedicated buttons and tools that allow you to define an area and request a weather file. If you have a direct Internet connection, the Weather file can be downloaded directly from Nobeltec. If you are using a Satellite Phone or low-bandwidth connection, you can request the file by E-mail.

To request a weather file:

- Select the "Update" workspace then pan and zoom the chart to display roughly the area where you want to receive a weather forecast.

- Select the "Update Area" Tool from the Toolbar.

- Click and drag the cursor on the chart to draw an area.

- Click on the "Update" button in the Ribbon and select "Weather Update Wizard" to launch the Wizard. This will help you to configure and retrieve your weather file.

- Follow the on screen instructions to select the type of data you want to receive and the forecast length.

Note: Selecting "Accurate Data" will generate a weather file with the best forecast accuracy possible. Selecting "Normal Data" will generate a weather file with a lower forecast accuracy reducing its file size (and download time). "Accurate Data" uses the native forecast resolution (usually one forecast every 3 hours). "Normal Data" uses a forecast every 12 hours.

When you choose to retrieve the Weather file by e-mail or when subscribing to a request, you can select the type of compression used. Some e-mail providers will only allow you to transfer attachment files that are compressed or have a specific extension:

- No Compression: No compression will be used and the plain GRIB file (.grb) will be sent

- ZIP Compression: A ZIP compression will be used (.grbzip)

- BZ2: A BZ2 compression will be used (.grbzip)

Note that the e-mail containing the **weather file will be sent to the same e-mail address that was used to request the weather file**.

Note: When you choose to subscribe to a request, e-mails with an updated weather file will be sent automatically on a specific schedule that you can define. To cancel a subscription before the scheduled ending, log in to your account at www.nobeltec.com.

Tips: When requesting a Weather File by e-mail or when subscribing to a request, Nobeltec will use the default e-mail client. To change the default e-mail client of the computer, open Internet Explorer, select the TOOLS menu, INTERNET OPTIONS, PROGRAMS.

The weather information (Wind, Pressure, Air Temperature, Cloud Coverage and 500mb) is updated on our server every 6 hours (7H30, 13H30, 19H30 and 1H30 GMT). Oceanographic data (Sea Surface Temperature, Sea Height Anomalies and Sea Color) is updated once a day at various time.

Displaying Weather Data

Displaying Graphically

When you download a Weather File from the Update Work Space, Nobeltec automatically opens the file for you. You just have to select the "Planning" Work Space, click on the "Weather" button in the Ribbons and select "Display Weather":

Note: When receiving the GRIB file by e-mail or from a third party provider, you first need to open the GRIB file in Nobeltec. Please refer to the Opening a Weather File Chapter.

Once "Display Weather" is checked, you can choose from three display presets:

· **Navigation**: by default, the navigation preset displays wind, pressure (using contour lines) and Precipitation (in color)

· **Fishing:** by default, the fishing preset displays wind, oceanic currents (using arrow) and Sea Surface Temperature (in color)

· **Custom Weather Preset:** by default the custom weather preset displays wind, pressure (using contour lines) and Precipitation (in color)

All these presets can be customized by selecting the type of data you wish to display for each preset. Once you have adjusted your presets, it is very easy to switch from one to another by just left clicking on the preset name.

When the Wind is displayed in "Arrow" (Weather Feather), the icon and color give you an estimation of the wind direction and wind speed. The size and number of feather indicates wind speed (add 5Kn for a small feather and 10Kn for a big feather):

○	This icon and color is used if the wind is in between 0 and 2.5Kn
\	This icon and color is used if the wind is in between 2.5 and 7.5Kn (one small feather)
\	This icon and color is used if the wind is in between 7.5 and 12.5Kn (one big feather)
\	This icon and color is used if the wind is in between 12.5 and 17.5Kn (one big feather and a small feather)

When a weather data is displayed in color (Sea Surface Temperature or Wind Speed for example), a color scale is displayed on the lower left.

The Sea Surface Temperature color scale can be set to "Automatic" to emphasize temperature change at any zoom level or to "Manual" to only show specific temperature range. This setting is adjusted from the Plotter Display Options.

Note: If a specific data is not available inside the weather file, its selection will be greyed out from the preset selection. Request a new weather file containing the data you want to display.

Displaying Numerical Value

If you put your cursor over a wind feather (or wind barb), a tool tip will appear with the Wind Speed and direction:
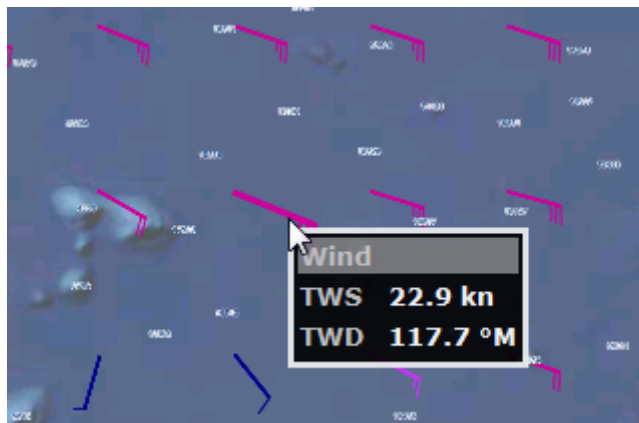
Note: The tool tip will appear slow or fast according to the "Display Tooltip over object" setting available in the General Options.

The Weather information can also be displayed in a NavData. It is displayed by default in the "Planning" NavData panel display on the right. This NavData displays weather condition under the cursor and is updated as you move the cursor over the weather data on the chart. If the "Weather Information" NavData is not displayed, click on the "+" icon on the top of the NavData panel and select "Weather Information".

You can customize the weather data displayed in the NavData by right clicking on it.

Weather Data Type and Coverage

The following Weather Data is available from the Nobeltec Weather Service:

- Wind: This data contains wind speed and wind direction forecast and is available globally (90°N/90°S/0°- 360°). The wind direction is given by the angle of "where the wind is coming from"

- Pressure: This data contains atmospheric pressure forecast at sea level and is available globally (90°N/90°S/0°- 360°)

- 500mb: This data contains the height of the 500mb pressure surface forecast above sea level. The 500mb forecast chart is an excellent tool for mariners to estimate where to anticipate the heaviest sea and swell conditions as well as a guide to the expected surface storm tracks and intensities. This data is available globally (90°N/90°S/0°- 360°).

- Air Temp: This data contains the Air Temperature forecast and is available globally (90°N/90°S/0°- 360°)

- Cloud: This data contains the Cloud Coverage forecast and is available globally (90°N/90°S/0°‐ 360°)

- Rain/Snow: This data contains the amount of precipitation per hour (rain or snow) forecast and is available globally (90°N/90°S/0°‐ 360°)

- Wave: This data contains Wave Height and Wave Direction forecast and is available only on open oceans (excluding Great Lakes and Mediterranean) in between 78°N and 78°S (0°‐ 360°). The wave direction is given by the angle of "where the wave is going to".

- Current: This data contains Oceanic Currents Speed and Direction at the time it was requested (one observation). This data has limited availability (47.04°N/78, 64°S & 0°‐ 360°). The current direction is given by the angle of "where the wave is going to".

- Sea Surface Temperature: This data contains the Sea Surface Temperature at the time it was requested (one observation). This data is available in between 65°N and 60°S (0°‐ 360°) when the "Worldwide" model is selected from the Wizard and between 60°N and 44°S & 180°W/40°W when the "USA" model is selected. The USA model offers slightly better resolution on the area it covers.

- Sea Height Anomaly: This data contains the Altimetry at the time it was requested (one observation). This data is the ocean height anomaly from average sea level. This data gives precious information about the water column:
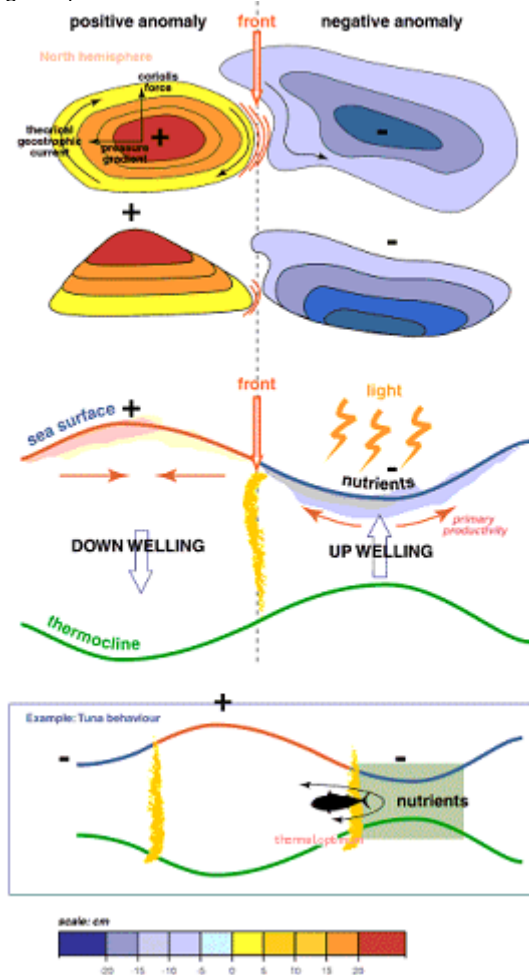
This data is available in between 60°N and 60°S (0°‐ 360°)

- Sea Color: This data contains the Chlorophyll concentration at the time it was requested (one observation). This data is experimental and only offers coverage during clear sky (there is no data on areas covered by clouds). This data is available in between 52°N and 50°S (0°- 360°)

Opening a Weather File

Nobeltec TimeZero Catch is compatible with GRIB file (GRIB 1 format only) downloaded from the Nobeltec weather service or third party service. To open a weather GRIB file in Nobeltec:

- Click on the Nobeltec Button and select "Open Weather File"

- Browse and select the GRIB file then click on "Open"

Tips: When receiving a weather file by e-mail, you can directly open the attachment and load it in Nobeltec by double clicking on it.

Note: The weather files that are automatically downloaded from the "Update" Work Space are stored in the "Weather" folder located in "My Nobeltec"

Animate Weather Forecast

The "Planning" Work Space allows you to play time-lapse movies of Weather Forecast thanks to the "Virtual Time Control"
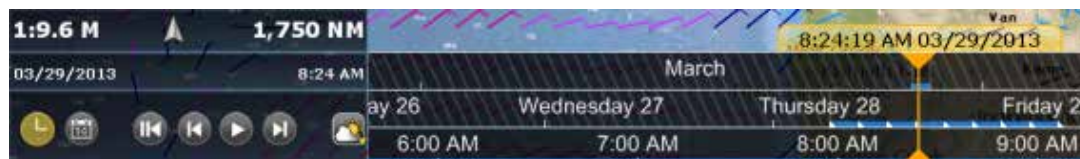
To make an animation:

- Display weather information on the chart (select "Display Weather" from the "Weather" button located in the Ribbon)

- Make sure that the Virtual Time Control is set for "Weather Mode":
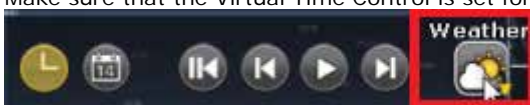
- Click on the "Rewind" ("File Start") button:

- Click on the "Play/Pause" button to start/pause the movie:

- To reset the virtual time back to the current time, click on the "Actual Time" button:

- To step forward and backward using the file forecast interval, click on the "Step Back/Forward" buttons:

- Change the start date of the animation by clicking on the "Calendar" button:

You can also scroll through time at various speeds by dragging your mouse over the 3 different areas of the time scale (hour, day or month):

Note: Whenever the Chart Time is different from the current computer local time, the Date/Time text is surrounded in yellow.

TIPS: You can hide the Time Line by clicking on the button below:

Bathy Recorder (PBG)

Bathy Recorder (PBG) Introduction

The Bathy Recorder (also known as "Personal Bathymetric Generator" or "PBG") enables you to record sea floor topographic information using your Sounder to incorporate that data into your 3D database. When you use PBG, the 3D data will constantly improve with repeat trips over the same areas, enabling you to have a perfect picture of important sea floor terrain, as well as your favorite fishing spots.
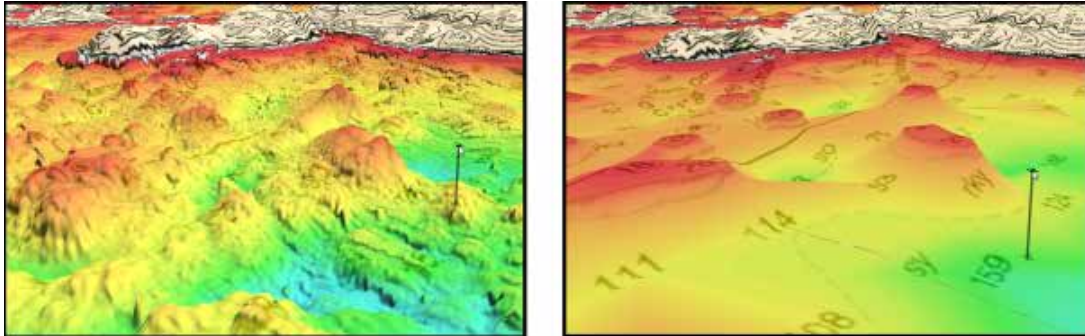
On the left: 3D data with PBG enabled (after multiple passes). On the right: Regular 3D data without PBG

In addition to rendering your data in 3D, Nobeltec TimeZero Catch allows you to display depth shading (color according to depth) and custom contour lines with complete control over the density.
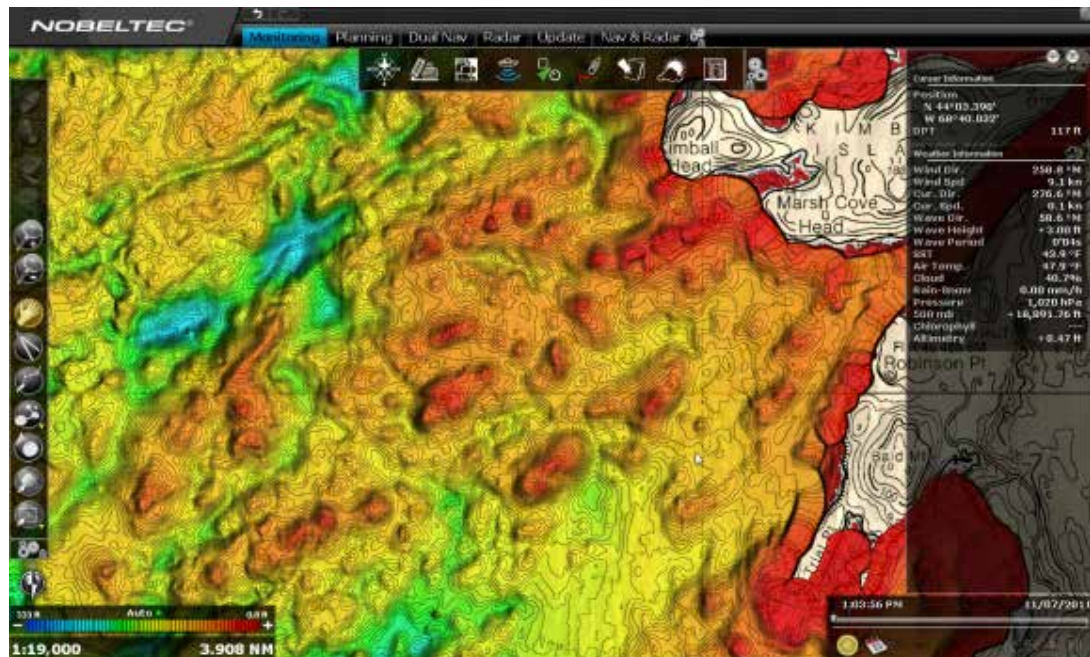
If you have a Sounder with the bottom discrimination feature (BBDS1 or DFF1-UHD), Nobeltec TimeZero Catch will also record this information at the same time as the depth and be able to display bottom hardness in color over the chart.

Configuring PBG

Adjusting the Draft Offset

When using PBG, the Transducer Offset settings must be configured before any recordings can be made:

- Click on the Nobeltec Button and select "Options"

- Select "Initial Setup" and enter your transducer draft

Depth Display	Depth Below Waterline ▼
Keel Draft	0.0 ft
Transducer Draft	6.0 ft

The value for "Transducer Draft" is always a positive value (enter the distance in between the water line and the position of the transducer).

The value for "Keel Draft" is also a positive value (enter the distance in between the water line and the bottom of the Keel).
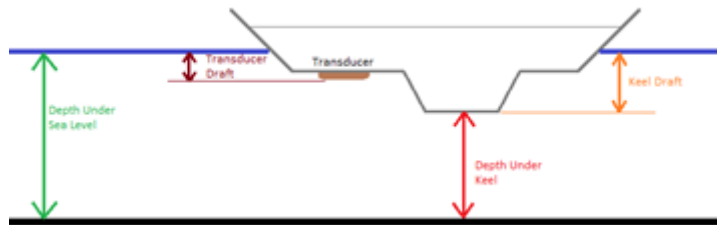
Note: The "Keel Draft" parameter is not used by PBG. It is only used when you select to display depth below keel in the NavData. PBG will always record depth data in relation to the Water Line.

IMPORTANT: By default, the Transducer Draft Source is set to "Automatic". If you already have setup the draft offset in your sounder and if that information is sent to the software (using the $DPT sentence for example), Nobeltec will use that value and ignore the one you entered in the menu (the draft offset sent by the sounder has priority over the one you enter in the software). If you set the Transducer Draft Source to "Manual", Nobeltec will use the value entered in the menu.

IMPORTANT: If you use a Furuno Ethernet Sounder such as the DFF1 or DFF3, you need to adjust the draft offset within the sounder using either a NavNet3D MFD or from the "Sounder" Options ("Transducer Offset" under the Initial Setup of the sounder)

Adjusting the Depth Filters

Nobeltec TimeZero Catch allows you to adjust filters that will prevent erroneous data to be recorded in the 3D database when the sounder loses the bottom or detects a false bottom (a fish school for example). For the best result, we highly recommend to adjust at minimum the "Depth Filter" and the "Speed Filter" (those are the most effective filters). Adjust the minimum and maximum depth filter according to your fishing location. For example, if you are fishing in between 50 and 200 feet, set the maximum depth filter to 250 feet. If you are usually fishing at 6Kn, adjust the speed filter to 10Kn (usually sounder performance and capability to detect a good bottom will drop at higher speed).

To open the PBG filters configuration, click on the Nobeltec Button and select "Options" then "PBG". Refer to the PBG (Bathy Recorder) options for an explanation of the various filters.

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Note: The Depth Filter are not available when connected to a [WASSP](#) system. To adjust filters on a WASSP system (such as Tide Offset), use the parameters of the WASSP Processor.

Displaying the bathymetry data on the charts

You can either display the bathymetry data in 2D using contour lines and depth shading or render it in 3D. The type of data used for the bathymetry is defined from the "PBG" ribbon button:
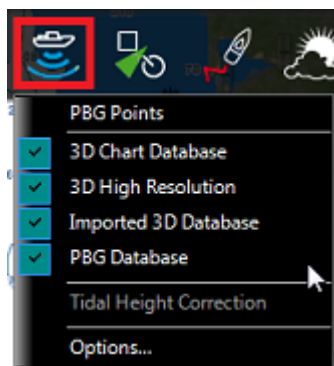
· **PBG Points**: When this item is selected, the depth points that have been recorded or imported appear on the chart as a light red dot. This option is useful to spot areas where you have been recorded data or to make sure that you are recording depth points (the software should drop a red dot behind the boat every second when PBG is enabled)
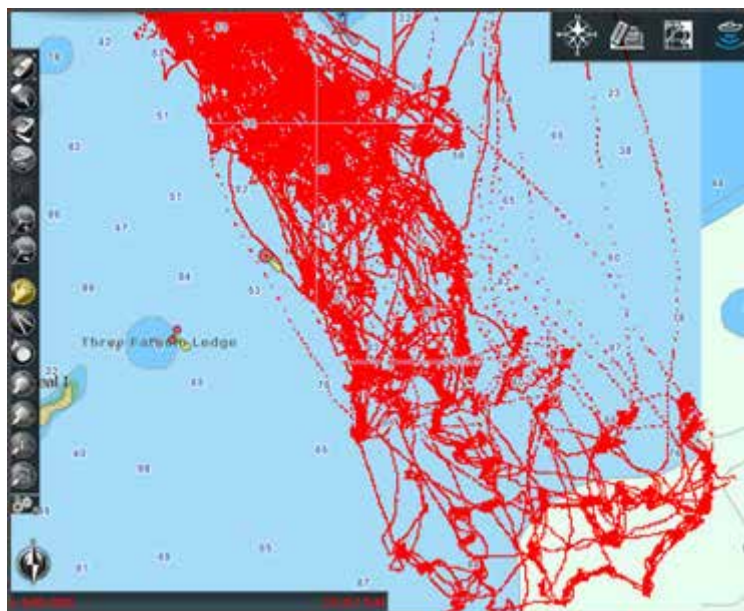
Note: PBG Points are not displaying with [WASSP](#) sounders.

· **3D Chart Database**: When this item is selected from the PBG ribbon, the 3D data from the charts will be displayed on the screen.

· **3D High Resolution**: When a High Resolution 3D database has been installed and this item is selected from the PBG ribbon, the High Resolution 3D data will be displayed on the screen (only available on selected areas).

- **Imported 3D Database**: When this item is selected from the PBG ribbon, the 3D data from files that have been imported will be displayed on the screen. Please refer to the Import & Export Data chapter for a list of supported 3D data that can be imported in Nobeltec TimeZero Catch .

- **PBG Database**: When this item is selected from the PBG ribbon, the 3D data that you have been recorded in the software will be displayed on the screen.

Each of these 3D databases can be activated or disabled independently. Nobeltec TimeZero Catch merge the 3D databases that are selected and render them on the screen in real time. Note that your depth sounding are recorded in a dedicated database (inside the "PBG Database"). At the beginning, when you have not recorded lots of data, it is recommended to enable the "3D Chart Database" (and "Imported Database" if you have imported 3D data) in addition to your PBG data. That way, Nobeltec TimeZero Catch will automatically "fill the holes". After logging lots of data, it might be interesting to disable the "3D Chart Database" (and the "Imported Database") to only display your 3D data (that is the most up to date data).

- **Tidal Height Correction**: Check this option to have Nobeltec TimeZero Catch correct in real time the depth recorded in the 3D database. By default, the nearest Tide Station (from GPS position) will be used as a reference. You can manually set a specific tide station by clicking on "Set Reference Station" from the "PBG" options.

Note: Tidal Height Correction is not available with WASSP sounders. Tide offset can be adjusted from the WASSP processor directly.

- **PBG Filters**: This option allows to enable or disable all the Depth Filters that are set up in the "PBG" Options

- **Reset consistency filter:** This options is only available when the "Consistency with previous Data" is configured and enabled (in the "PBG" options"). Use this option to force the filter to take the current data has a new point of comparison. This is useful when the filter "get stuck" when the terrain slope changes a lot. Refer to the PBG (Bathy Recorder) chapter for more information on the consistency depth filter.

Note: PBG filters are not available with WASSP sounders.

Using PBG

To enable or disable PBG (enable or disable the depth logging), click on the "PBG" button in the ToolBar:

When the depth data is being recorded, the "PBG" Button turns yellow:

To verify that depth points are being recorded, you can turn ON the "PBG Points" from the "PBG" button located in the ribbon at the top of your screen. When the boat is moving and when depth is being received from your depth sounder, you should see small red points or depth sounding (according to zoom level) that are dropped every second behind your boat. Note that in order to see the PBG points, you may have to zoom in on the chart:
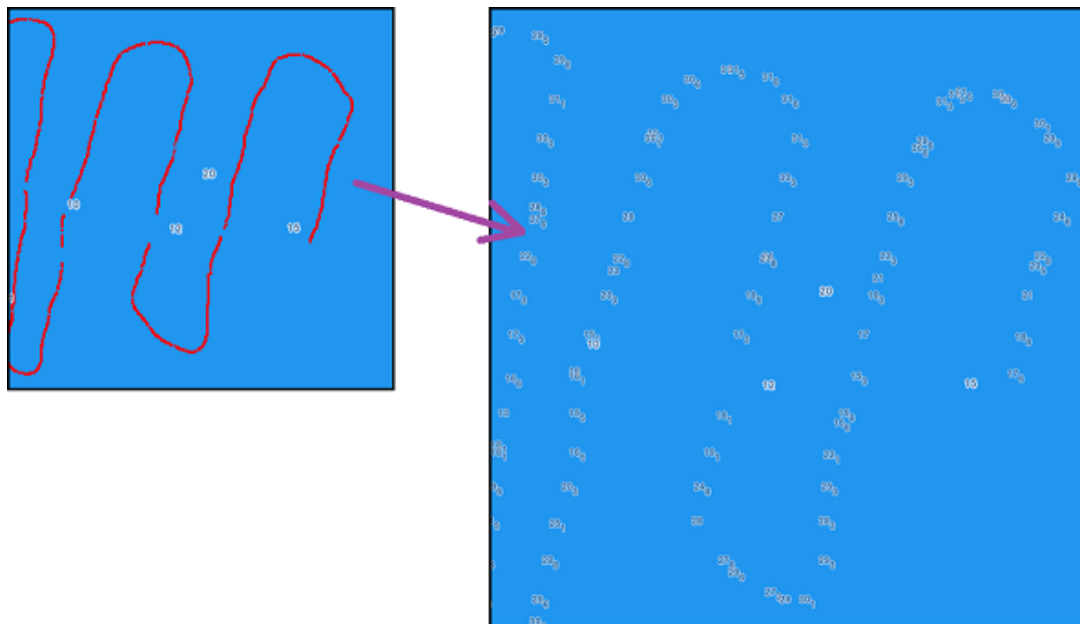
Note: PBG points can be displayed on either the User Data (PBG Database) or the Imported Data (Imported 3D Database). But, they cannot be displayed on both databases at the same time. If you have selected both "PBG Database" and "Imported Data", the PBG points will only be displayed on the PBG data. If you want to display PBG points on imported data, you must turn OFF "PBG Database" from the "PBG" button in the Ribbon.

Note: If PBG does not seem to work, make sure that the software receives a good position and depth. Double check also that the Status Bar does not display any message in yellow (at the very top of your screen) regarding a depth filter that could prevent the data to be recorded.

Once you have collected depth points, you can view this information in 3D, using the depth contour lines or using the depth shading.

Deleting erroneous depth points

Sometimes, your sounder will send erroneous depth value. If the depth filters are not able to reject the bad points (or if they are disabled), you can manually delete bad PBG points.

Note: You can only delete the points that you have been **recorded** with TimeZero Catch . You cannot delete or edit the 3D data that you have **imported** from another source.

To delete erroneous depth value:

- Select the "Navigation" Work Space

- Turn ON the "PBG Points" under the "PBG" button in the ribbon and the "Depth Shading" under the "Charts" button in the ribbon. This will help you locate the points with wrong depth value

- Zoom in on the chart to clearly see the bad points on your screen

· Select the "Delete PBG points" from the ToolBar
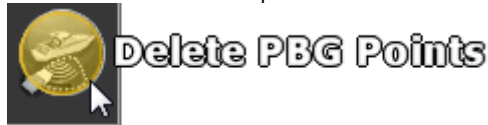
Note: If you don't see the "Delete PBG Points" in the ToolBar, add it to your configuration by clicking on the "Configure Tools" Button:

IMPORTANT: In order to be able to select the "Delete PBG Points", you must first disable the logging of the depth point (you must disable PBG)

· Click and drag with your cursor a closed area around the points you want to erase

· The points will be erased when you release your cursor

Note: If you made a mistake, you can always "Undo" by pressing the "Undo" button at the very top of the user interface

Bottom Hardness

This feature requires the Furuno Sounder Plus Pack and is only available with the BBDS1 and DFF1-UHD when paired with selected transducers. Contact your Furuno dealer for more information about transducer compatibility.

When the Bottom Classification feature of the Sounder is enabled from the Sounder Work Space under the "Sounder Display" button, TimeZero Catch will record depth but also the bottom hardness and its corresponding probability.

After collecting data, you can display "Bottom Hardness" in color over the charts by selecting the corresponding setting under the "Chart" button located in the Ribbon:

Bottom Hardness displayed in color using the "classic" color palette   Bottom Hardness displayed using the "Black and White" color palette
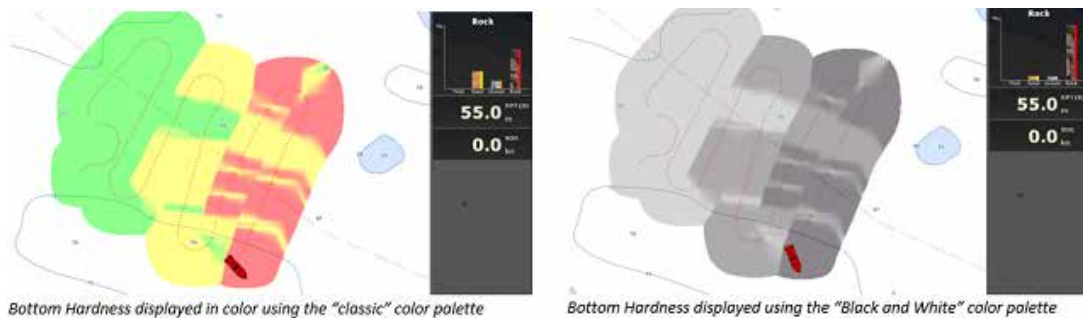
You can select the Bottom Hardness color palette from the Plotter Display Options by adjusting the "Bottom Hardness Color Palette" setting:

· **Classic**: blue - green - yellow - red colors are used respectively for softer to harder area

· **Black & White**: the darker, the harder the area

· **Black & White inverted**: the darker, the softer the area.

A unique feature of the BBDS1 and DFF1-UHD sounder is that they also send the probability of discrimination, allowing you to know how reliable the data is for particular areas. This probability can be used in conjunction with the Bottom Hardness color scale to show data only in areas where the probability is high (filtering out uncertain data):

"Unfiltered" Bottom Hardness

Bottom Hardness with points over 70% probability
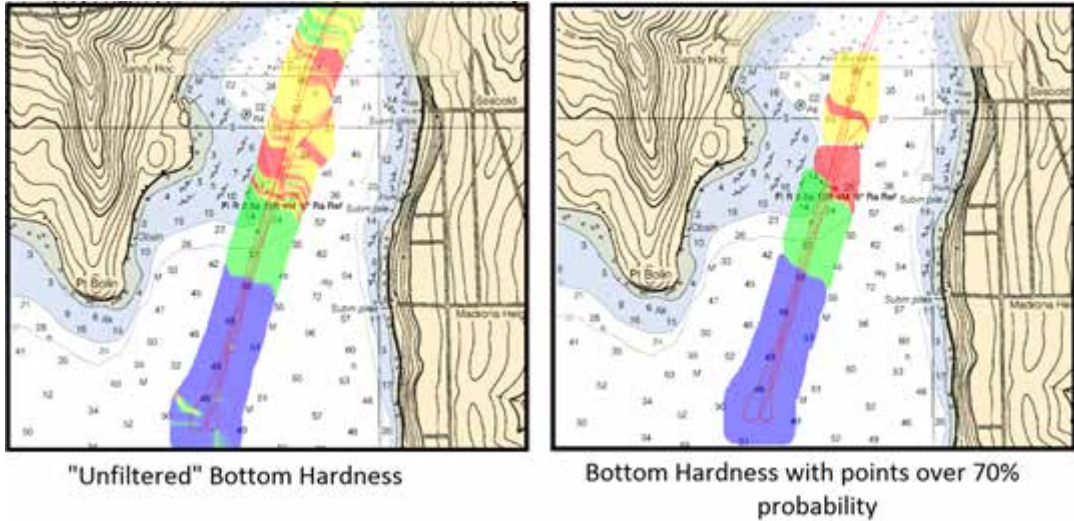
To enable the filter, press the "Set Bottom Classification Filter" under the PBG Options. Increase the filter value if you want to display on the chart only the points that have a very high probability.

Please note that changing the filter parameter causes the database to be refreshed and this operation can take a long time initially.

Note: The Bottom Discrimination Probability filter does not affect the recorded data. You can always remove the filter to display the full data on your chart.

You can also display the Cursor Bottom Classification in the NavData bar. This will give you the bottom type and probability under your cursor if you rollover an area containing bottom discrimination information:
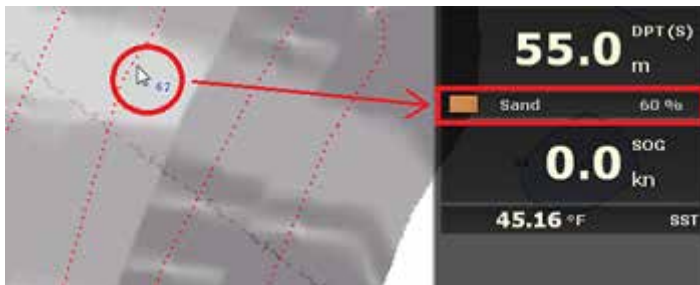
3D WorkSpace

The 3D Work Space offers a 3D view centered around your boat (live GPS position required). In this WorkSpace, the bathymetry is always turned ON and automatically adjusted to provide the best view possible:
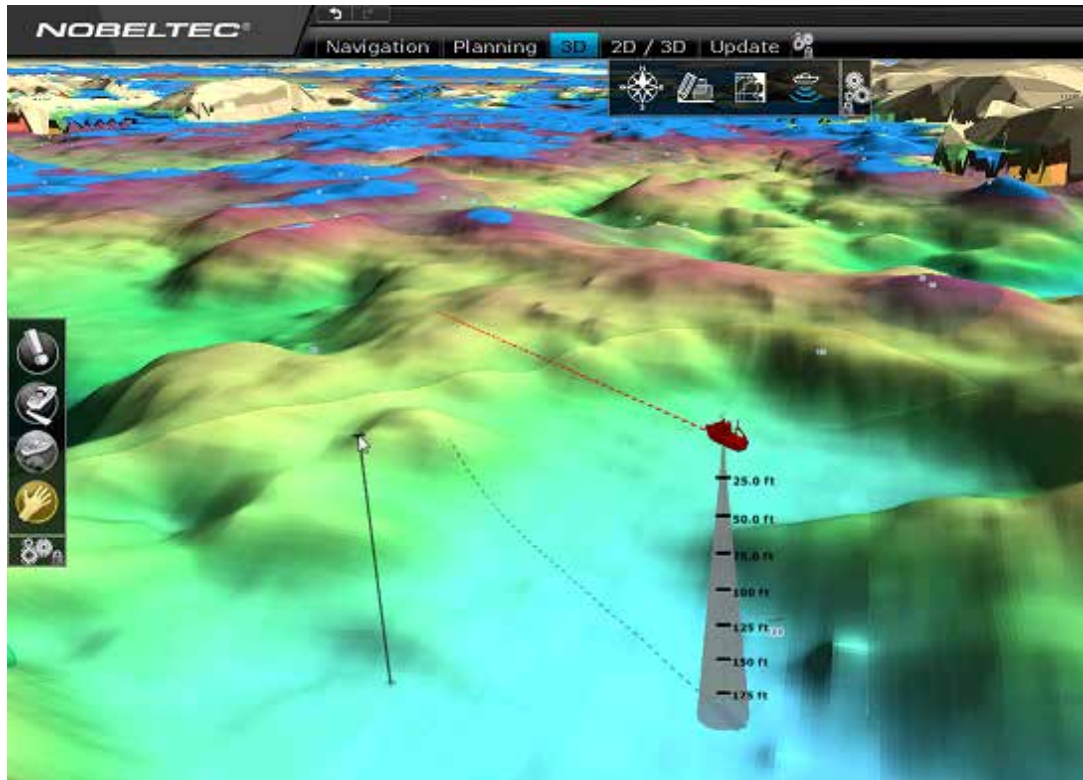
It is possible to rotate the view around the boat by left clicking and dragging the mouse over the screen. As the boat moves and changes heading, the view stays locked providing the same camera angle relative to the bow of your vessel. The mouse wheel allows to adjust the distance in between the boat and the view point (camera).

The "Mode" button of the 3D WorkSpace offers features that allow to set the camera angle to specific presets and also display or hide a depth scale and 3D cone:
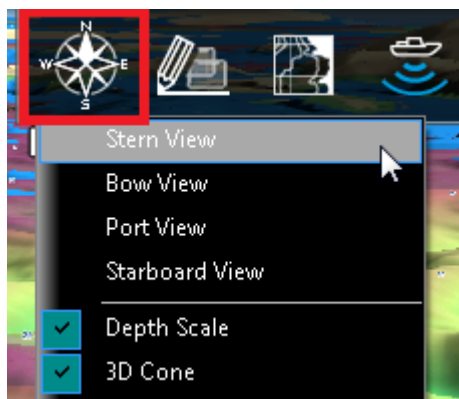
Note: Position and zoom presets can also be adjusted by right clicking on the chart

The 3D Cone Angle can be adjusted from the Initial Setup Options. The 3D cone origin point is defined using the "Transducer Position" offset from the same Options.

If you have a Furuno Ethernet Sounder connected to TimeZero Catch , it is possible to display the sounder A-Scope picture directly over the 3D cone by selecting "A-Scope" from the "Mode" button:

Nobeltec TimeZero Catch v2.1.0
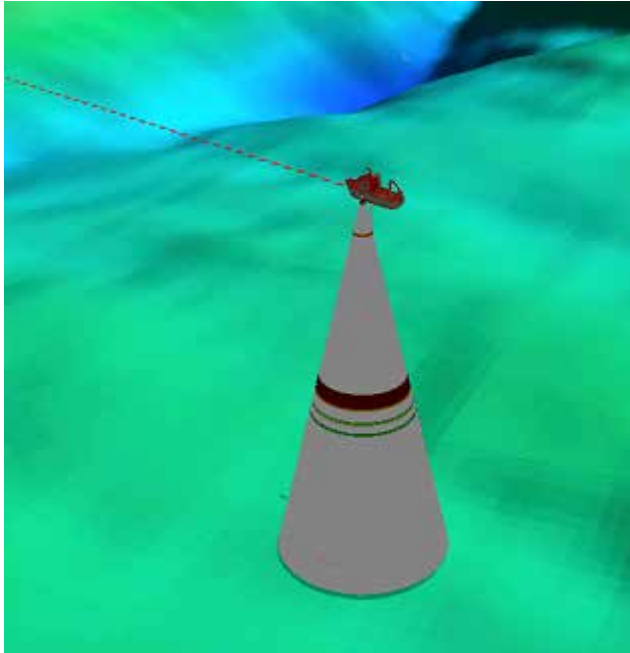
Note: By default, only strong echoes will be displayed in the 3D A-scope. This can be changed from the Sounder Options by adjusting the 3D A-Scope Threshold.

WASSP

The "WASSP Plus Pack" needs to be unlocked to access these features.

Introduction

WASSP is a multibeam sounder capable of transmitting 112 depth points (224 for the Survey version) on a wide 120° port-starboard swath of the seafloor in one ping. Nobeltec TimeZero Catch can take all these depth points and perform seabed profiling at up to 100 times the speed of conventional single-beam sounders with an accuracy is 20cm*20cm for the fishing version and 10cm*10cm for the Survey version.

In addition to depth points, WASSP is also transmitting "BackScatter" data (hardness) that can be displayed in TimeZero Catch using a Color Scale similar to the Depth Shading.

Using WASSP

Once the WASSP has been configured, click on the "PBG" button in the ToolBar:

When the depth data is being recorded, the "PBG" Button turns yellow:

Note: When the WASSP module is configured, TimeZero Catch will only record PBG data coming from the WASSP Processor. It is not possible to record PBG data coming from a regular Sounder (NMEA Depth Data or Furuno Sounder).

Once you have collected depth points, you can view this information in 3D, using the depth contour lines or using the depth shading.

Deleting WASSP Data

To delete WASSP recorded data, make sure that only the "PBG Database" is enabled from the PBG button in the ribbon. This will allow you to focus on the recorded data (not the 3D data from the chart, or the one that was imported).

Turn OFF the PBG recording, select the "Delete PBG Points" from the toolbar, draw around the area you want to delete and then release the mouse:
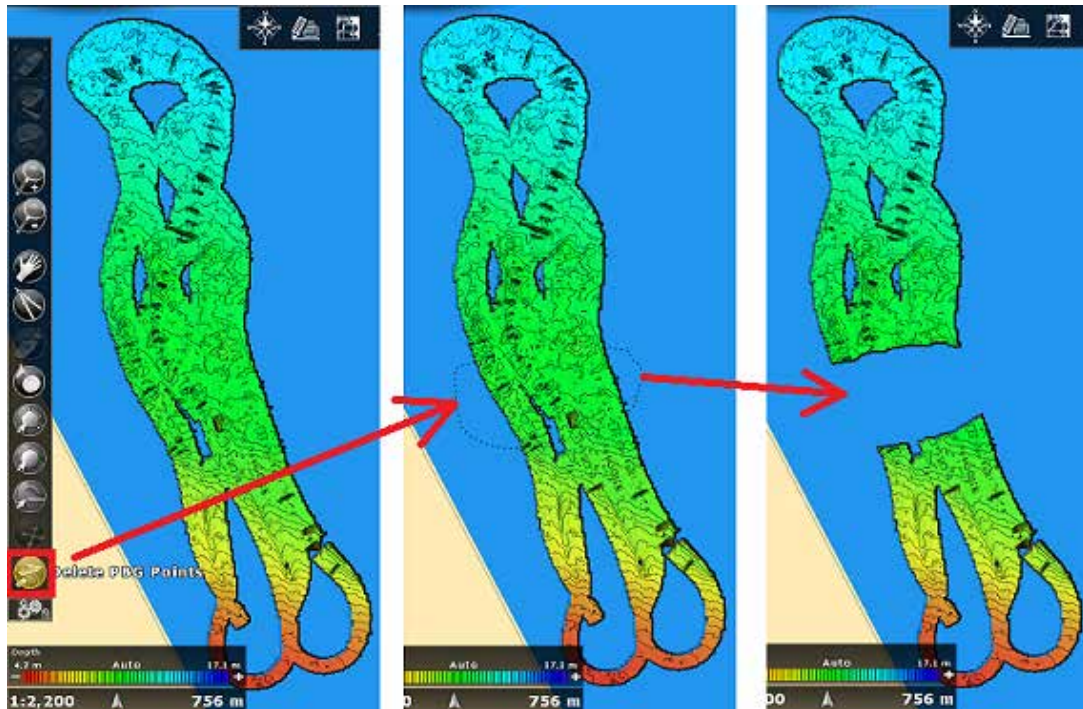
BackScatter

BackScatter data (hardness) can be displayed on the chart similar to the depth shading. Click on the "Chart" button located in the Ribbon and select "BackScatter":
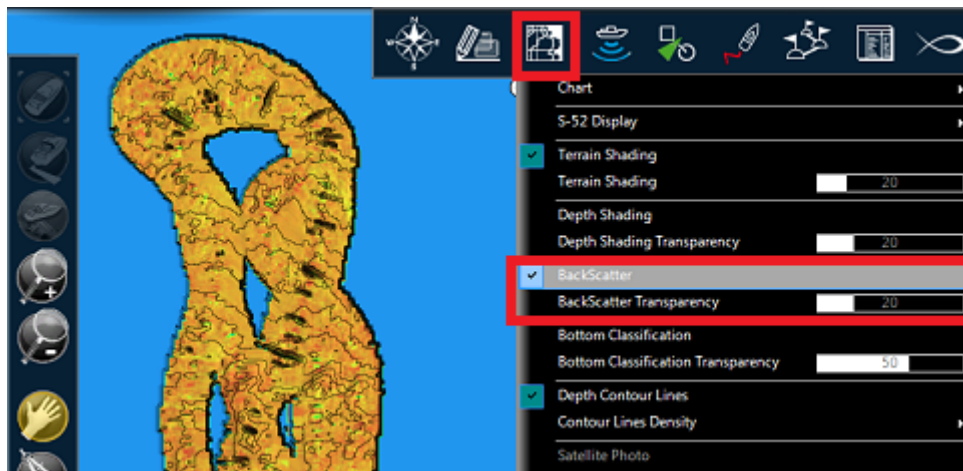
The color scale can be set to "Automatic" or "Manual". To change the mode, click on "Automatic" or "Manual". When set in manual mode, the min/max value can be adjusted by putting the cursor over the value and using the scroll wheel:

Note: You can also double click on the manual value to open the Options and enter the values using your keyboard.

The Backscatter data is a relative value from 0% to 100% (larger values indicating harder bottom). It is recommended to record Backscatter data where various bottom hardness is known. This will give you a benchmark for the classification of other areas by referring the Backscatter benchmark values.

Targets

Target Overview

Nobeltec TimeZero Catch can track multiple types of targets:

- ARPA and MARPA targets transmitted by your Radar

Note: A Heading Sensor is required to display ARPA or MARPA target in Nobeltec

- AIS targets transmitted by an AIS receiver

- DSC targets transmitted by a VHF with DSC functionality

- Fleet targets transmitted using text file

Targets can be displayed on the chart or on the radar screen by selecting the "Target" button in the Ribbon and selecting the corresponding target category:
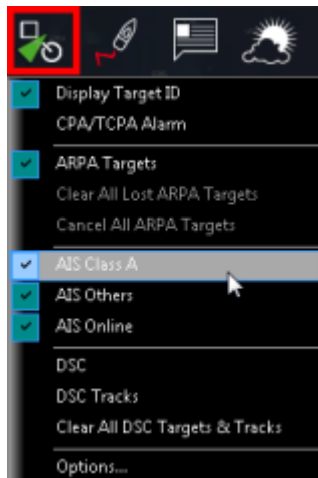
Target alarm (*CPA/TCPA* and AIS Proximity alarms) can be set from the Alarms Options. When a predicted CPA of any target becomes smaller than the CPA alarm and when its predicted TCPA becomes smaller than the TCPA alarm limit, the target becomes dangerous and its icon flash in red. If CPA/TCPA alarm is checked, the status bar will turn red and an audio sound will play (if "Alarm and Notification Sound" is checked).

AIS Target

Regular AIS Symbols are small triangles colored by default in blue for AIS Class A and green for AIS Class B:

Note: AIS Online are colored in yellow. Please refer to the AIS Online chapter for more information:

When Heading and Course Over Ground (COG) is sent by the AIS receiver, Nobeltec TimeZero Catch will use the heading information to align the AIS icon and will display a COG Vector in dashed line:

Note: The AIS target COG vector length use the same time parameter as your own ship setup in the Ship & Tracks Options

If the AIS target contains the vessel size information, TimeZero Catch will represent the shape of the vessel on the chart (in real size) when the chart is on a small range.

When an AIS SART (Search and Rescue Transponder) is received by TimeZero Catch , an alarm will be triggered automatically and the target icon will be displayed in red (cross circle).

AIS Target Icon

	AIS Icon with speed vector and Rate of Turn indicator. In this example, the AIS target is turning to port.
	AIS Lost Icon. An AIS gets lost if no information updating the target location is received after a period of time. The time that cause an AIS to get lost varies with the class of AIS (A or B), its speed and its status (moored, in navigation, etc...). A lost AIS icon will disappear from the screen after 30 seconds.
	AIS Icon with one (or multiple) important data missing preventing CPA and TCPA computation (missing COG and/or SOG)
	AIS Icon breaking (flashing) an alarm condition (either CPA/TCPA or proximity alarm)
	AIS Base Station Icon
	AIS Search and Rescue Aircraft

	AIS SART (Personal Man Over Board transponder)

AIS Color

The default color of AIS targets can be changed from the Targets Options. You can choose a different color for AIS Class A or AIS Class B. You can also set the color to "variable". In this case, the target type (Cargo, Fishing, Blue Force, etc...) will be used to color the symbol by default:

You can also change the color of any AIS target individually by right clicking on an AIS target and selecting a color or by adding an entry in the AIS directory.

Note: When you manually change the color of a specific AIS target, Nobeltec will remember this setting and will continue to represent that AIS target with the custom color even if the target is lost or the software restarted. Any color that has been manually changed or defined in the AIS directory has priority over the default color.

AIS Directory

It is possible to give a Nickname and set a predefined color from the "Directory" under the Targets Options. Simply click on the "Add" button, enter the MMSI number of the target, select a Nickname and color. The list can be saved (exported) for backup or to be imported on another TimeZero Catch .

AIS Activation

AIS Targets can be in "sleep" or "active" mode. When an AIS target is in "sleep" mode, its icon is smaller, its label (MMSI or Name), COG and Heading vector are not displayed. Sleeping AIS targets help de-cluttering the screen by minimizing the AIS targets that are not in proximity or immediate danger.

The automatic AIS activation range circle can be set from the Targets Options by adjusting the "Deactivate AIS Targets farther than..." parameter. Note that AIS target can be manually activated or deactivated (sleep) by right clicking on any AIS target and selecting the corresponding option.

In addition, all AIS targets can be activated at the same time from the "Target" Button located in the Ribbon.

Note: AIS Target that break alarm condition (CPA/TCPA or Proximity) are always and automatically activated.

ARPA Target

This feature requires your computer to be connected to a Heading Sensor and Radar

ARPA (automatic radar plotting aid) symbols are small circles colored by default in green: . The ARPA symbols are created and tracked using the radar picture.

Acquiring ARPA targets

To acquire manually an ARPA target, double click on the radar picture or right click and select "Acquire Target". Note that properly tuning and adjusting your radar in changing conditions is critical for ARPA target tracking.

ARPA Target Icon

	Just after acquiring a target, TimeZero Catch will process radar data for a few revolutions and display the target using a dashed circle.
	Once the target is fully acquired, TimeZero Catch displays the target using a plain circle with a speed vector (over 1kn).
	Lost ARPA target. This happens if the target becomes out of radar range or if the target does not appear on the radar echo anymore
	ARPA Icon (flashing) breaking an alarm condition (either CPA/TCPA or proximity alarm)

ARPA Color

The default color of ARPA targets can be changed from the Targets Options. You can change the color of any ARPA target individually by right clicking on an ARPA target and selecting a color.

DSC Targets

DSC equipped marine radios provide vessel tracking for both DSC polling and distress calls. When you poll another boater who is also equipped with DSC VHF for their position, TimeZero Catch will display their returned position. TimeZero Catch can be connected to a VHF using NMEA0183 through the Connection Wizard.

When DSC is configured, DSC targets can be displayed from the "Target" button located in the ribbon:

369258147	DSC target icon

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	DSC target icon under distress
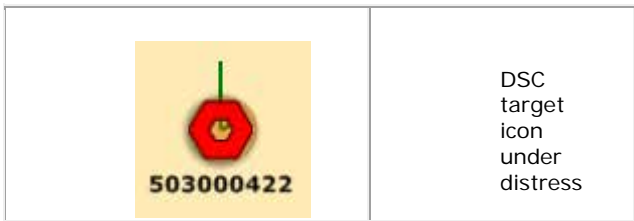
Note: DSC will not appear under the "Target" button until it has been configured in the Connection Wizard.

By default, DSC targets will display their MMSI number on screen. You can replace that number by a Nickname from the AIS/DSC Directory located in the Targets Options.

When a DSC distress call is received by TimeZero Catch , an alarm will be triggered and the DSC target icon will be displayed in red.

Target Information

Nobeltec TimeZero Catch can display target information in various ways:

Using the ARPA or AIS List:

Select ARPA or AIS List from the "List" ribbon button to display the list of targets at the bottom of the screen. This list can be sorted by double clicking on any column title.

It is possible to "Freeze" the update of the list (to prevent the selected line to be moved by the sorting process) and filter the list using various parameters. The "Actions" button offer various options such as searching by MMSI, Name, or configuring the list.

To select and center a target on the Chart, click on the first column corresponding to the target you want to display:

Using the Target Information NavData:

The "Target Information" NavData is set up by default under the "Target" NavData bar. If the NavData does not appear, simply click on the "+" icon to add the corresponding NavData to the NavData bar

The target information that will be displayed in the NavData is the last selected target (surrounded with an orange circle on the chart):
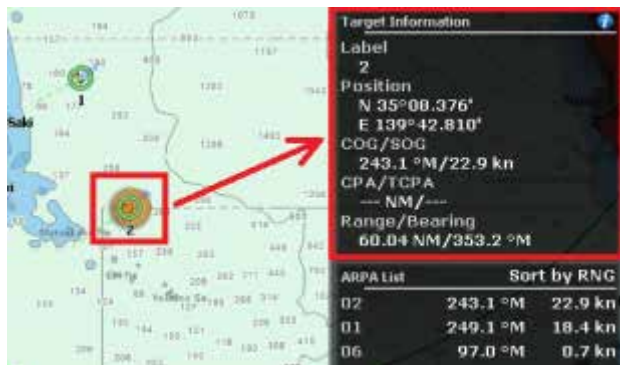
To display the full information of the target, click on the blue "i" icon located on the top right corner of the NavData

Tips: If you don't want to leave the NavData bar opened all the time but still want to see the target information, you can undock the Target NavData by dragging it outside of the NavData bar, then close the NavData bar and position the NavData in a corner. To "lock" the NavData and prevent to move it accidentally when dragging the charts, you can select "Lock Undocked NavData" from the General options.

Using the AIS and ARPA NavData list

An AIS and ARPA list NavData are set up by default under the "Target" NavData bar. These NavData can be sorted using various parameters by right clicking on them.

Note: Although you can select which parameters are used to sort the content of the NavData, the fields display in the List NavData itself are fixed (Target ID / Target COG / Target Speed)

Target Tracking

Target Track

Target Tracking can be enabled on AIS and ARPA targets by right clicking on a target and selecting "Target Tracking". From that moment, TimeZero Catch will start recording and displaying a line showing you the past position of the target.

Note: DSC Targets and Fleet Targets have their tracks automatically and always recorded. Select "DSC/Fleet target Tracks" from the "Target" button in the Ribbon to display them on screen.

The track line has the same color as the target (this can be changed by right clicking on the target or the track). The recording frequency varies according to the type of target:

- AIS Target: Each Time a new position report is received by TimeZero Catch

- ARPA Target: According to the "ARPA Targets track accuracy" setting available under the Targets Options

When the target disappears from the screen (when the target is lost), the track remains on the screen until manually deleted by the user (by right clicking on the Track line). In case of AIS target,

tracking can be automatically enabled as soon as the target re-appear if "Remember AIS tracking status" is set checked from the Targets Options.

Target Trail

Trails are similar to tracks, but only display a fix amount of past target positions (temporary tracks). The Target Trail Length is adjusted from the Targets Options. Note that TimeZero Catch keeps track of all target trails at all time. It is not necessary to turn the trail ON or OFF. By default, the trail is automatically displayed when selecting a target. It is possible to display trails on all targets by selecting the corresponding option from the Target Ribbon button.

Note that trails disappear automatically when targets are lost or when the software is shut down (unlike Tracks that stay recorded).

Note: Enabling tracking on a target immediately stops the trail. It is not possible to convert a trail into track.

Trail offers a very convenient and quick way of displaying the target overall movements without having to manually enabling track ON or OFF and without cluttering the display with hundreds of tracks.

Target Graphic CPA

Graphic representation of the target Closest Point of Approach (Graphic CPA) is available on the selected and active target displayed on the screen. This information is continuously updated and warns you about potential collisions by locating on the chart the location where you will meet a specific target.
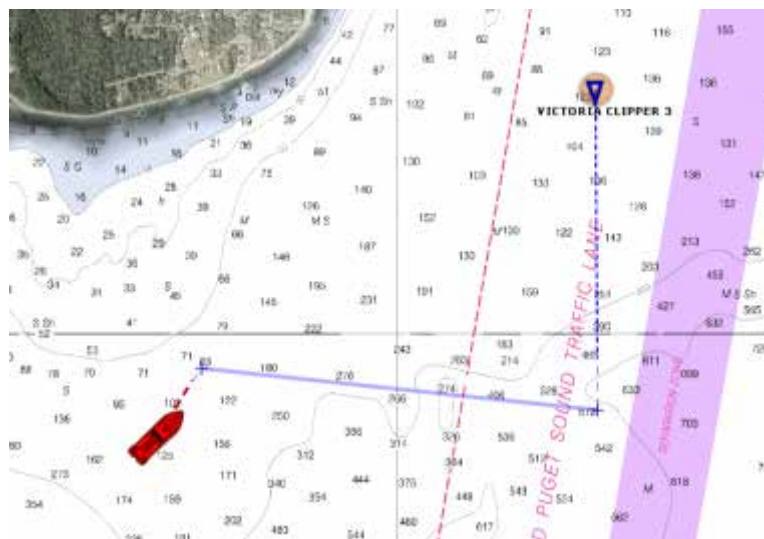
You can enable or disabled the graphic CPA for the selected target or all the active targets from the "Target" button located in the Ribbon.

Note: The graphic CPA will always be automatically displayed on targets that break alarm condition (dangerous target)

Fleet Tracking

Fleet Target Format & Exchange

TimeZero Catch can display fleet targets by using the POSREPORT format. The POSREPORT format consists of one or multiple text files located in a specific folder (setup from the Targets Options under "Vessel Tracking Data Location"). The text files contain information about other vessels (ID, Position, Date,...). The text files can be created manually, sent by email and then saved in the Vessel Tracking Data folder. As soon as a new text file is saved or updated, TimeZero Catch detects it, and displays the updated targets on screen.

The text file can also be created automatically by TimeZero. Make sure to enter the MMSI number of the vessel from the Initial Setup Options. This ID will be used by TimeZero when creating the file containing its own ship position information.

Note: if you don't have a MMSI number assigned to your vessel, you can use any ID such as "1", "2" as long as each ID is unique for the fleet.

Once the ID has been entered, you can adjust the position reporting interval from the Targets Options ("Update Vessel Position Every"). TimeZero will automatically create a file in the Vessel Tracking Data folder (named with the ID of the vessel) containing the position of the vessel. This file can then be sent manually to somebody else.

If the vessels have access to the internet, you can setup a shared Dropbox account on every vessel and point the Vessel Tracking Data folder to the same Dropbox folder on every vessel. Every vessel will automatically create their own file containing position (using their own MMSI and GPS) that will be shared and read automatically by any TimeZero that has access to the same Dropbox folder.

Note: even if the boat has partial Internet access (every 6 hours for example), the text file can contain up to 100 position reports that will be synchronized as soon as Internet connection becomes available (and as soon as Dropbox can synchronize the files). This allows TimeZero to display all the previous reported positions of the day even if an Internet access is not available at the time a position report is added to the list.

Show and Hide Fleet Targets

To display the fleet targets on screen, select "Display All Fleet Targets" from the "Targets" button located in the Ribbon:

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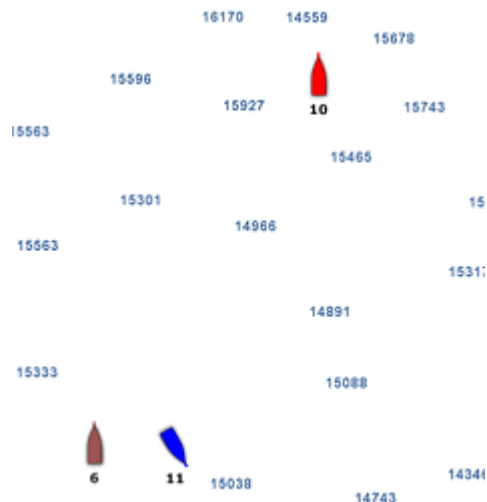
Fleet targets are displayed in color (color are automatically cycled according to the ID). You can customize the color by right clicking on the target or by adding an entry in the AIS/DSC Directory with matching ID.

The AIS/DSC directory (found under the Targets Options) also allows you to enter a Nickname for the target (that will be displayed on screen instead of the ID).

To hide all the fleet targets, just select "Hide All Fleets Targets" from the "Targets" button located in the Ribbon.

TIPS: You can also hide a specific Fleet Target by right clicking on it and deselecting "Visible"

Fleet Target Tracks

The Fleet Target tracks are automatically recorded and can be displayed by enabling "Fleet Targets Tracks" from the "Targets" button located in the Ribbon. Once the Fleet Target Tracks are displayed, you can hide a specific target track by right clicking on a target and deselecting "Display Track".

Note that the fleet target tracks are "linked" with their corresponding target. If you erase a target (using the right click) or erase all targets from the "Targets" button in the ribbon, the tracks will also be erased. However, it is possible to permanently save a fleet target track by right clicking on a target and selecting "Save Target Track". You will be able to select or create a layer on which the track will be saved.

Fleet Target List and detail

Select "Fleet Target List" from the "Lists" button located on the ribbon to display the list of fleet targets at the bottom of the screen. This list can be sorted by double clicking on any column title.

You can also display a list containing the position history of a specific target by double clicking on a Fleet Target Icon:

Leg to...	TTG	Total	Distance	COG	SOG	Date	Position
1	0'00s	0 yd	0 yd	— °M	— kn	3:44:05 PM Thursday, May 08, 2014	N 12°13.130'; W 26°37.470'
2	3'00s	0.978 NM	0.978 NM	282.5 °M	19.6 kn	3:47:05 PM Thursday, May 08, 2014	N 12°13.130'; W 26°38.470'
3	2'00s	1.077 NM	201 yd	12.5 °M	3.0 kn	3:49:05 PM Thursday, May 08, 2014	N 12°13.230'; W 26°38.470'

Note: Fleet Target Speed and Course is computed by TimeZero using the distance interval in between two reports and the time. Thus the speed is an average of the vessel speed in between two reports and not the exact speed of the vessel at the time of the report.

To reset and erase all Fleet Targets from the screen and TimeZero, select "Clear all Fleet Target and Track" from the "Targets" button located in the ribbon.

Radar

Radar Introduction

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and radar configured to access this feature

Radar is an acronym meaning RAdio Detecting And Ranging. It is a device which measures not only the time it takes for a pulsed signal to be reflected back from an object but also its bearing relative to your position. Radar mainly functions as an anti-collision aid. It also provides information about the whereabouts of neighboring vessels, coastal outlines, etc.

The Radar Scanner (or antenna) rotates 360 degrees on its vertical axis, using a special gear that allows the radar to know at any time in which direction it is pointing at with extreme accuracy. Radio pulses are emitted from the scanner in a certain direction. When the pulse strikes an object such as a ship or island some of the energy returns to the scanner ("radar echo"). The direction in which the scanner is pointing when the reflection is received is the direction of the target causing the reflection. Since radio waves travel at a near-constant speed, the time required for the reflected echo to return to the scanner is a measure of the range (distance) to the target.

Nobeltec TimeZero Catch is compatible with three types of radar:

- **Nobeltec InSight Radar:** Nobeltec TimeZero Catch is compatible with all MDS Ethernet InSight Radars (Koden radars with MDS5 or MDS6 control box). Since V2, TimeZero Catch is also compatible with the Ethernet 2KW Dome Radar (MDS1R and MDS8R Koden radars).

Note: TimeZero Catch is NOT compatible with the older serial based InSight radar or the IR2BB

- **Furuno NavNet DRS Radar:** Nobeltec TimeZero Catch can be connected to a Furuno NavNet3D or TZtouch "MFD" (Multi Function Display) and a "DRS" (Digital Radar Sensor) through an Ethernet connection.

Note: It is NOT possible to connect the DRS Antenna directly to the computer. At least one MFD (NavNet3D or TZtouch) needs to be present on the network.

- **Furuno 2XX7 Radar:** Nobeltec TimeZero Catch is compatible with all the FAR2xx7 Furuno commercial series radars.

To interpret the radar picture, an operator should be familiar with the radar video presentation caused by the wanted and unwanted effects. For instance, radar images (radar echo) produced by bridges, sand beaches, waves and even a boat's wake may all be represented differently than expected based on their visual appearance. For correct interpretation of the radar picture, it is highly recommended that you practice using the radar in good weather conditions.

The picture below shows an example of a typical radar picture compared against a sample real-world scenario. There are a number of things to learn from this image regarding how a radar works:

Actual circumstance — **Picture on radar screen**
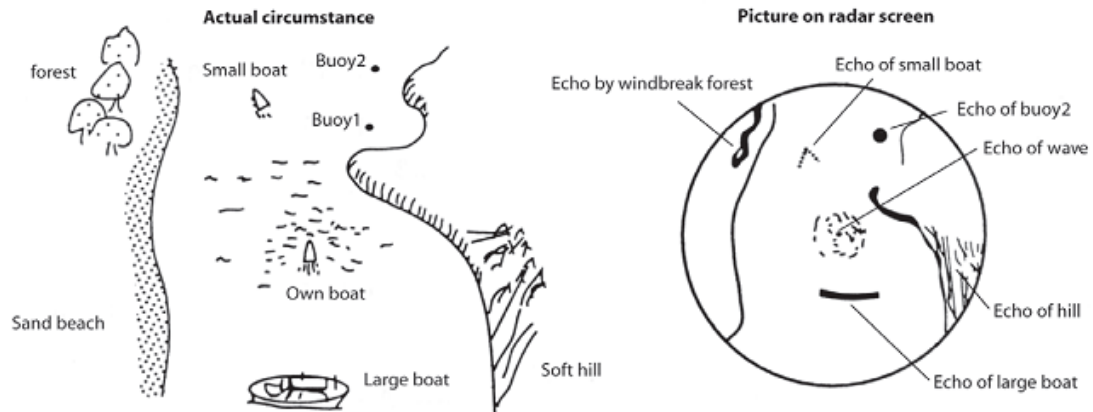
Here is a list of some important ones:

- Buoy #1 is being blocked by the cape or hill and is not visible in the radar display

- Due to its proximity and size, the large boat returns a strong radar return that is similar to its actual profile. On the other hand, the small boat is painted as a small dot, because its reflection area is smaller. Also notice that the smaller boat's wake returns a large reflection.

- The hill on the starboard side of the vessel, because of its dense forest and hilly nature, returns large echoes, while the sandy beach to the port returns a weak radar image. The exception to the port side return is the windbreak forest which returns strong echoes because of its profile differences.

- The waves around your boat are displayed on the radar by little "speckle" of noise (that can be suppressed by increasing the "Sea" control of the Radar)

Radar Work Space

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" need to be unlocked and radar configured to access this feature

Radar Overview

The Radar Work Space displays a traditional dedicated radar display:
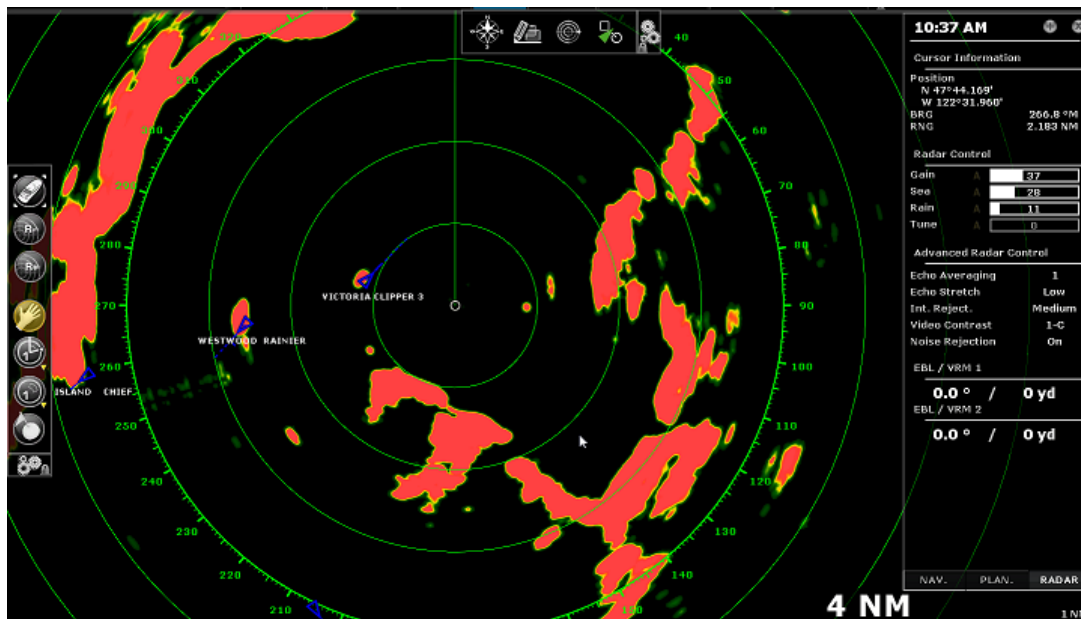
The Radar can be displayed full screen or split screen with another display (such as Plotter).

When using a DRS radar that is capable of dual range, the Radar WorkSpace will always display "Range 1" of the DRS (corresponding to the left side of the Dual Radar WorkSpace).

Transmit /Standby

When the Radar is powered on, you can view the radar image on screen by selecting the "Transmit" options from the "Radar" Ribbon button or by clicking on the "StdBy" located on the Radar Range Scale on the lower right of the screen. When Transmit is unchecked, the Radar is in "Standby". The Radar is still ON but does not rotate and does not send radio pulses. Usually a Radar is never turned completely off in navigation because it takes a while to warm-up (1 to 2 minutes).

Note: If the Transmit button is greyed out, make sure that the radar is powered and that a correct Radar Hostname is selected from the "Radar Source" under the "Radar" button.

Radar Range

Press the radar "Range +" or "Range -" buttons located in the Toolbar to increase or lower the radar range respectively:

  Click this button to reduce the Range of the radar. A smaller range provides greater detail of the radar echoes close to your position (by using shorter pulse length), and should be used as you approach coastlines, harbors or if you want to monitor other vessels in your close proximity.

  Click this button to increase the Range of the radar. A bigger range provides greater distance of detection, but decreases the resolution (because a longer pulse length is used by the radar).

You can also use the scroll wheel of your mouse on the Radar Work Space to change the range (similar to zooming in or out on the chart).

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When you change the radar range, the range rings are updated on the display. The range of the Radar and the range of Ring interval are displayed on the lower right of the screen:

8 NM
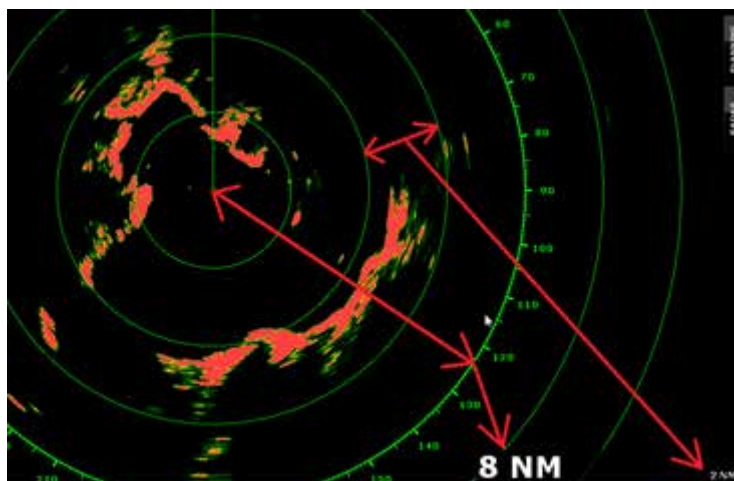
The interval rings can be shown or hidden from the "Radar" Ribbon button by selecting or deselecting the "Range Ring" option. You can setup the number of interval rings displayed on the radar from the Radar Options.

Note: When you set the radar to a specific range (3NM for example), the Radar will actually transmit and detects targets farther than this value. This is done to allow the user to offset the radar (shift the display) by panning the radar screen down.

Radar Orientation

· North Up: This mode displays the North at the top of the screen. In order to display the Radar in North Up mode on the Radar WorkSpace, a heading sensor is usually required. However, in some cases, it is not practicable to install a heading sensor or its value is not reliable. For these specific cases, it is possible to use Course over Ground (COG) instead of Heading if heading information is not configured in TimeZero Catch . Just select "Allow COG to be used for Radar Overlay" from the Radar Options.

· Head Up: This mode orients the bow of the vessel to the top of the screen. This is the default and traditional radar orientation display.

· Course Up: This mode is only available when a "Go To" or Route has been activated and when a heading sensor is connected to the computer. When this mode is selected, the radar screen rotates and aligns vertically with the active leg.

Bearing Scale

The Bearing Scale is displayed on the Range Ring and indicates bearing using graduations. The bearing scale can be setup in "True" or "Relative" from the Radar Options.

When set to "Relative", the bearing origin (0) is from the bow of the vessel. This means that in "Head Up" orientation mode, the bearing "0" is always at the top of the screen.

When set to "True" the bearing origin (0) is toward True North. This means that in "North Up" orientation mode, the bearing "0" is always at the top of the screen.

Note: When set to True, the bearing scale does not take into account the Magnetic Variation. It is always referenced to true North.

Range and Bearing to target

The range and bearing to a target can be measured inside TimeZero Catch by using the Cursor NavData displayed by default in the Radar NavData panel.

Variable Range Marker and Electronic Bearing line can also be used. Please refer to the EBL & VRM chapter for more information.

Radar Display

The Radar background and Radar echo color can be adjusted from the Radar Options.

The Radar display can be configured to not only show the radar picture but also other information such as AIS targets, Marks, Boundaries, Routes, etc...

To configure the Radar display, simply use the corresponding Ribbon buttons (Targets, Routes, Marks, etc) to enable or disable corresponding features.

Tips: If you want to temporarily and quickly remove all objects from the Radar display to only focus on the radar picture, you can press and hold the CTRL key and the Space Bar.

Radar Overlay

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and the radar configured to access this feature

The Radar Picture can be displayed over the charts if the computer is connected to a Heading sensor. The radar overlay helps you navigate the chart better and the chart brings context to what can often be a confusing display of radar blobs. To enable the radar overlay, select the "Navigation" Work Space, click on the "Radar" button located in the Ribbon and select "Radar Overlay". This will display the radar echo over the charts:
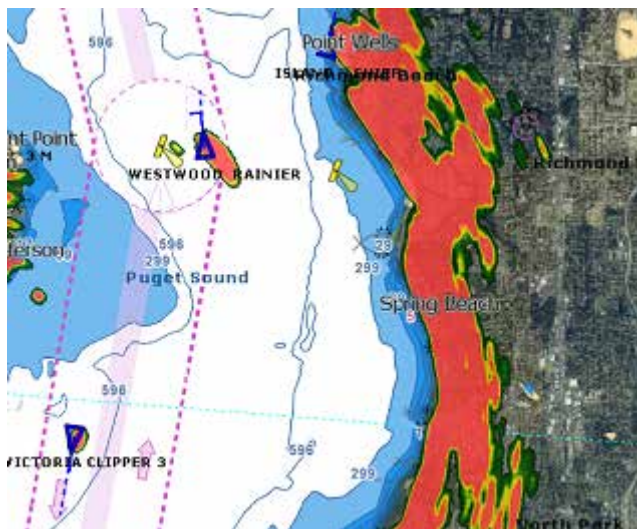
Note: In order to display the Radar Overlay on the chart, a heading sensor is usually required. However, in some cases, it is not practicable to install a heading sensor or its value is not reliable. For these specific cases, it is possible to use Course over Ground (COG) instead of Heading when heading information is not configured in TimeZero Catch . Just select "Allow COG to be used for Radar Overlay" from the Radar Options.

Note that the Radar can be adjusted from the "Navigation" Work Space by using the Radar NavData Panel and/or the Radar Ribbon button.

Tips: If you want to only display the radar picture temporarily, press and hold the CTRL key and the spacebar. This will get rid of everything except for the radar picture and ARPA targets.

The Radar Overlay transparency can be adjusted from the Radar Options.

Radar Controls

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and the radar configured to access this feature

Most of the Radar Controls can be found under the "Radar" Ribbon button or from one of the Radar NavData.

Radar Source

When having multiple radars on the network, "Radar Source" allows to select which Radar is being selected, displayed and controlled in TimeZero Catch .

IMPORTANT: When changing Radar Source, it takes approximately 10 seconds before the selected radar becomes fully operational.

Transmit /Standby

When the Radar is powered on, you can view radar image on screen by selecting the "Transmit" options from the "Radar" Ribbon button or by clicking on the "StdBy" located on the Radar Range Scale on the lower right of the screen. When Transmit is unchecked, the Radar is in "Standby". The Radar is still ON but does not rotate and does not send radio pulses. Usually a Radar is never turned completely off in navigation because it takes a while to warm-up (1 to 2 minutes).

Note: If the Transmit button is greyed out, make sure that the radar is powered and that a correct Radar Hostname is selected from the "Radar Source" under the "Radar" button.

Gain / Sea (STC) / Rain (FTC)

The Gain, Sea and Rain controls can be adjusted from the Radar Ribbon button or directly from the Radar Control NavData (displayed by default in the Radar NavData Panel):

Gain: This control adjusts the receiver sensitivity. Increase the gain to increase sensitivity and display radar echoes on the screen. Reduce the gain if you see too much noise on the screen and if the picture gets overly cluttered with random "speckles". The Gain can also be setup in "Auto" mode on some radar models by selecting the corresponding option in the Radar Ribbon button or by clicking on the "A" in the Radar Control NavData.

Sea: Sea control, also called STC (Sensitivity Time Constant), suppresses reflections from waves near your own ship, especially at short range. In rough seas the reflected echoes from wave crests are very strong, producing a mass of echoes which cover the central part of the display. This is called sea clutter. Any echoes within the clutter will be partially or totally obscured. Increase this control to reduce the clutter and distinguish echoes. The proper setting should be such that the clutter is suppressed and echoes become distinguishable. If the control is set too high, both sea clutter and echoes will disappear from the display. When there is no sea clutter visible on the display, decrease the value. The Sea can also be setup in "Auto" mode on some radar model by

selecting the corresponding option in the Radar Ribbon button or by clicking on the "A" in the Radar Control NavData.

Rain: The Rain control, also called FTC (Fast Time Constant), suppresses the reflected echoes from rain, hail and snow to clear the display. The echoes from legitimate contacts can become lost in the echoes from precipitation, called rain clutter. When rain clutter masks the display, increase this control to break up the clutter and distinguish echoes. Adjust the control so that the clutter just disappears; too much Rain action may shrink or erase the echoes from legitimate targets. If there is no precipitation, leave that setting to 0 (minimum). The Rain can also be setup in "Auto" mode on some radar models by selecting the corresponding option in the Radar Ribbon button or by clicking on the "A" in the Radar Control NavData.

How to adjust manually the Gain, Sea and Rain controls:

The Gain, Sea and Rain can be adjusted from the Radar Control NavData or from the Radar Ribbon button. If your Radar model is capable of "Auto" mode (from the Radar Ribbon), the auto features will work well for most situations. If you want to adjust the Radar manually try the following:

·   Transmit the Radar to a medium range (around 3NM)

·   Set the Sea and Rain control to the minimum (0)

Note: While initially adjusting the Gain/Sea/Rain, it is recommended to turn OFF all the radar filters (Echo Averaging, Echo Stretch etc…)

·   Set the Gain control to maximum (the screen should show mostly Radar noise)

·   Now decrease the gain control until the radar picture show a very small amount of noise (only a few noise spots on the screen) from 1.5NM to 3NM (it is alright to have noise near the center of the screen in between 0 and 1.5NM)

·   Without disturbing the gain control select the appropriate working range (1.5NM for example)

·   Increase the Sea control as desired until the noise that is present near the center on the screen disappears

·   Only increase the Rain control if there is precipitation.

The InSight Radar models with MDS Control Box have Gain, Sea and Rain "presets" available in the Radar Options (under "Radar Initial Setup"). For most situations, the various presets should be left to their default settings. However, if you find that the regular Gain, Sea and Rain control are not "strong" enough (don't affect the radar picture enough), you can raise the Preset value. Presets are like a master control that raises or lowers the overall effect of the control it adjusts.

Pulse Length

Pulse Length is the length of time of each transmission of radar waves by the transceiver. Typically a longer pulse length produces better long range target detection and a shorter pulse length is for better target range discrimination. The pulse lengths are pre-set for each range so you are not typically required to change this setting. However, if you are not satisfied with the current pulse length setting, it is possible to toggle between a shorter or longer pulse length from the "Radar" Ribbon button.

Note: The Pulse Length is not available on MDS1/8-R Radars

Echo Trail

This feature requires the computer to be connected to a Heading sensor.

This feature available from the Radar Ribbon button continuously shows the movements of other ships in afterglow. It is useful for assessing overall target movement. Echo trails show the movements of radar echo overtime relative or true to your vessel. The trails disappear overtime (according to the "Trail Length" parameter). When set to "True" mode, only objects that are moving in reference to the water (such as another ship) will show a trail on the screen. Fixed objects on the water (such as buoys or a rock) will not show a trail even if your own ship is moving. When set to "relative" mode, any objects that move relative to your boat will leave a trail on the screen. So if your own ship is moving toward a stationary target (buoys for example), the target will leave a trail (smearing):

(a) True target trails (No smearing of stationary targets)

(b) Relative target trails Targets moving relative to own ship

The following Trail options are available from the "Radar" Ribbon button or from the Radar Options:

·   Trail Shade: "Single" displays the trail with one color intensity. "Multi" decreases (fades) the trail color intensity over time

·   Trail Level: Adjusts the way the trail picture is merged with real time radar echo. The higher the number, the more emphasis there will be on the trail.

·   Trail Length: Adjust the trail length.

To clear (reset) the trail, use the "Clear Trail" option of the "Radar" Ribbon button.

It is possible to change the color of the trail from the Radar Options.

Note: If you want more precise information for a specific radar echo, you can right click on it and acquire it as an ARPA target. The radar will precisely look at the echo and extract Course and Speed.

Interference Rejection

This setting is available from the "Radar" Ribbon button or from the "Advanced Radar Control" NavData.

If intermittent "Streaks" or "spiral lines" show up on your Radar display, it is most likely Radar interference received from another Radar. The Interference Rejection reduces or eliminates interference received from another ship's Radar. Turn it off when no Radar interference exists.

Echo Stretch

This setting is available from the "Radar" Ribbon button or from the "Advanced Radar Control" NavData.

This function 'stretches' small echoes to make them easier to see. It stretches not only small echoes but also returns from sea, rain clutter and Radar interference. For this reason, make sure clutter and interference are sufficiently suppressed before using echo stretch.

Echo Averaging

This setting is available from the "Radar" Ribbon button or from the "Advanced Radar Control" NavData. Echo averaging requires the computer to be connected to a Heading sensor.

The echo averaging uses multiple consecutive radar pictures to create an "average picture". This filter is very effective at removing noise (that has a tendency to have random position in between two pictures). Note that a side effect of the echo averaging is that it makes target that are moving quickly weaker on screen.

Noise Rejection

This setting is available from the "Radar" Ribbon button or from the "Advanced Radar Control" NavData.

This function remove the "white noise" (random "speckles") that can sometimes spread over the entire radar picture.

Video Contrast

This setting is available from the "Radar" Ribbon button.

This advanced functions slightly alters the way the radar echoes are drawn on the screen. The settings from 1 to 4 adjusts a "gate" (1 = no gate, 4 = maximum gate).

The setting from A to C adjusts the dynamic curve. When set to "A", the mid-level in the curve is low, so this setting is suitable for reducing rain clutter. When set to "C" the mid-level in the curve is high, so this setting is suitable for detecting distant targets.

The graphics below plots the video intensity received by the radar on the X coordinate and the resulting echo intensity as seen on screen on the Y coordinate:

EBL & VRM

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and radar configured to access this feature

The *EBL* / *VRM* tool is available in the Tool Bar of the Radar Work Space. You can right click on the tool to get access to two EBL and two VRM:

The *EBL* is used to display the relative or true bearing of a target on the radar display. After setting the EBL/VRM tool in EBL mode (either EBL1 or EBL2), a line is moved with the cursor, and the bearing is read from the EBL/VRM NavData. Note that one end is always anchored at the center of the radar. The EBL reference is set from the Radar Options. When set to "True", the EBL is referenced to the North. When set to relative, the EBL is referenced to the bow of your vessel.

The *VRM* is used to determine the distance to a particular target, such as the mouth of a river, a sea buoy marking a channel entrance or another vessel. The VRM is like a standard range ring, but can be adjusted manually by selecting the EBL/VRM tool in VRM mode (either VRM1 or VRM2). The range is read from the EBL/VRM NavData.

To adjust the EBL and VRM, you can click and drag them with your mouse, or put the cursor over the VRM or EBL value and use the scroll wheel. To delete an EBL or VRM, you can right click on it. If you want to delete all EBL/VRM from the screen, just double click on the EBL/VRM tool.

Tips: The EBL/VRM color can be adjusted if you right click on the EBL or VRM.

Guard Zones

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and radar configured to access this feature

Guard Zones can be setup in TimeZero Catch from the Radar Work Space using the Guard Zone tool located in the Toolbar. Guard Zone are used to detect and warn you about radar echo that enter or exit a specific area. When a target (AIS or ARPA) or Radar Echo (picture) triggers the Guard Zone, a "Target Alarm" is raised and displayed in the Status Bar.

If you right click on the tool, you can select which Guard Zone to draw (either Guard Zone 1 or Guard Zone 2).

With the tool selected, click and drag on the screen to draw the Guard Zone. Note that the Guard Zone are always "fan" shaped and relative to the bow of your vessel (they move with vessel orientation). That way, a Guard Zone displayed at the top of the screen in Head Up mode will always stay in front of your vessel.

Once the Guard Zone has been drawn, you can right click on it to adjust its parameters:

- Hide: If you hide a Guard Zone, it is not active anymore and disappears from the screen. The only way to make it appear again is to select "Guard Zone -> Show" from the Radar Ribbon button or to create a new Guard Zone with the tool

- Sleep: When you sleep a guard zone, it remains displayed on the screen but is inactive.

- Work: After putting a guard zone to sleep, you can re-activate it by selecting "Work".

- Guard Zone Alarm Level: the highest the more sensitive the guard zone will be.

- Guard Zone Alarm In/Out: adjust if the guard zone is triggered when target enter or exit the zone.

Note: if a Guard Zone is working and displayed, you will get a notification if the Radar Range becomes smaller than the Guard Zone range. This is because the Radar will not be able to "see far enough" to monitor the Guard Zone area. To correct this problem, increase the Radar Range until the Guard Zone is covered by the radar range or sleep the Guard Zone to stop using it.

DRS Dual Range

The "Furuno Radar Plus Pack" needs to be unlocked and a Furuno **DRS** radar configured to access this feature.

Dual Radar WorkSpace

When connected to a Furuno DRS Radar, it is possible to add the "Dual Radar" WorkSpace to the configuration by clicking on the WorkSpace configuration button.

All Furuno DRS antennas, Dome and Open Arrays have "True" Dual Range radar capability which provides "simultaneous" transmission of both short and long pulse. This allows complete independent control of range, gain, sea clutter and rain clutter for two separate ranges.

The Dual Range WorkSpace allows you to visualize and control the two ranges of the DRS. The range displayed on the left side is referred to as "Range 1". The range displayed on the right side is referred to as "Range 2". To control a specific range, click on the corresponding side of the window to select "Range 1" or "Range 2". A yellow border will highlight the range that is currently selected and controlled from the "Radar" button located in the Ribbon and from the Radar NavData:
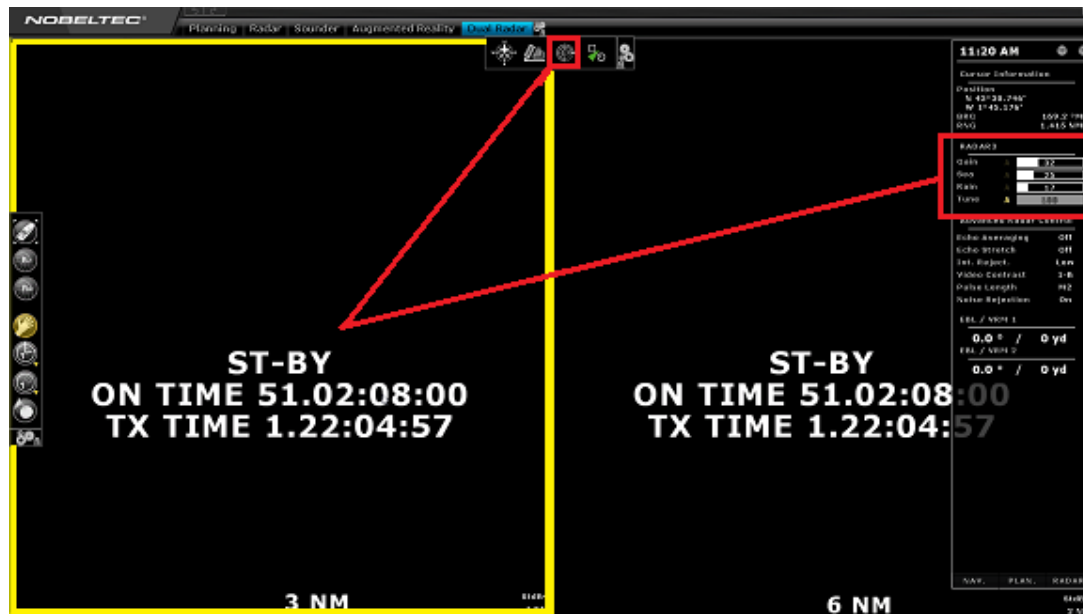
The two ranges can be transmitted and put in standby independently using the "Transmit" options from the "Radar" Ribbon button or by clicking on "StdBy" located on the Radar Range Scale on the lower right of the screen.

Note that when transmitting the two ranges of the DRS, the DRS will turn at 24RPM. If you want the DRS to turn at high speed (48RPM) you must only transmit "Range 1" (the picture on the left) and make sure that "Range 2" (the picture on the right) is in Standby.

Dual Radar Range on Chart Overlay

When using the Radar Overlay on the chart, you can either use "Range 1" or "Range 2" as a source of the Radar Overlay.

Use "Range 1" if you want the DRS to run at high speed and/or if you want the Radar WorkSpace to display and share the same settings as the Radar Overlay. Use "Range 2" if you want independent picture and control in between the Radar WorkSpace (that always uses Range 1) and the Radar Overlay. In this mode, the "Range 2" can be adjusted from the Radar Overlay using the Radar Control in the NavData panel.

Sounder

Sounder Introduction

The "Furuno Sounder Plus Pack" needs to be unlocked to access the sounder/fish finder features.
Note: *No Plus Pack is necessary to just display the Digital Depth from a NMEA0183 or NMEA2000 sounder. Please refer to the [Sensor NavData](#) chapter for more information.*

Echo sounders or "fish finder" determine the distance between its transducer and underwater objects such as fish or seabed and show the results on the screen. An ultrasonic wave transmitted through water travels at a nearly constant speed of 4800 feet (1500 meters) per second. When a sound wave strikes an underwater object such as fish or sea bottom, part of the sound is reflected back toward the source. The depth to the object can be determined by calculating the time difference between the transmission of a sound wave and the reception of the reflected sound. The sounder will then display this return ("ping") as one of up to 64 different colors depending on the strength of the returned signal. Sounder pings are represented over time, in a running display moving from right to left as the bottom appears beneath the transducer.
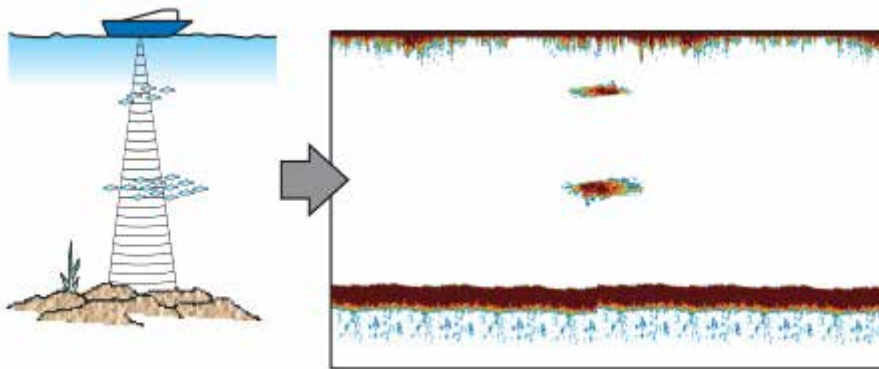
Most of the sounders on the market can operate at multiple frequencies (usually "Low" and "High"). The frequency of the sound waves created by the transducer impacts the type of reflected returns. Higher frequency sound waves, such as 200 kHz, do not penetrate the water deeply, but they return greater detail from the items they contact. For this reason, the Sounder in 200 kHz frequency is great for fish detection. However, transducers are rarely able to penetrate deeper than 600 feet in 200 kHz mode. Lower frequency sound waves behave in the opposite way. They offer much deeper depth penetration, but provide less detail from objects they contact.

Nobeltec TimeZero Catch is compatible with the following Furuno Ethernet sounder:

- **DFF1**: Black Box 600W/1kW Dual-frequency 50/200 kHz

- **DFF3**: Black Box 1kW/3kW Dual frequencies between 28 and 200 kHz

- **BBDS1**: Black Box 600W/1kW Dual-frequency 50/200 kHz with bottom discrimination (*)

- **DFF1-UHD**: Black Box 1kW Broadband "CHIRP" Dual frequencies (50 kHz +/- 20 kHz, 200 kHz +/- 25 kHz) with bottom discrimination (*)

- **FCV-1150**: Standalone 1kW/3kW Dual-frequency 28/200 kHz (selectable)

(*) The Bottom Discrimination is only available with selected transducer models. Make sure to contact your Furuno dealer for transducer compatibility.

Sounder Work Space

The "Furuno Sounder Plus Pack" needs to be unlocked to access the sounder/fish finder features.

Sounder Overview

The Sounder Work Space displays a traditional dedicated sounder display:
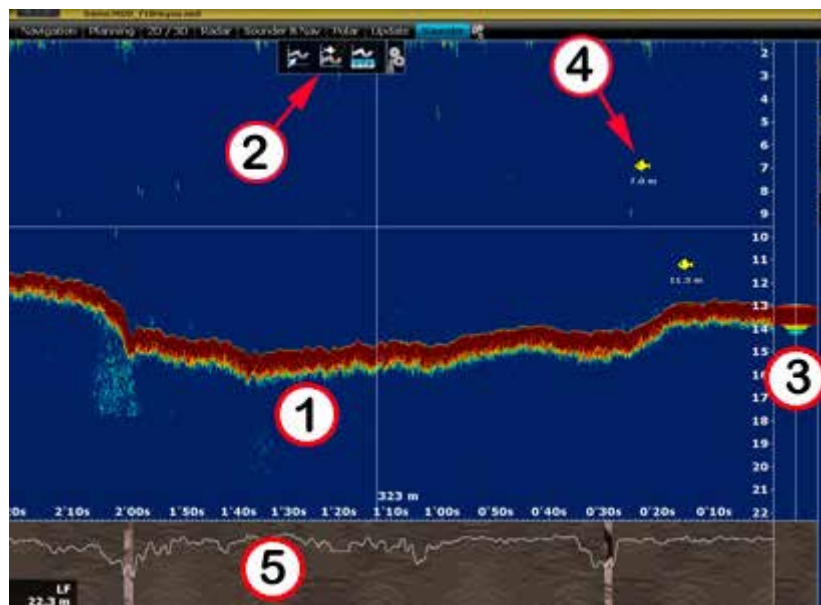
1: Sounder Echogram: The sounder picture moves from right to left. Echo on the far right represent "real time" return (what is picked up by the transducer under your boat).

2: Sounder Ribbon Buttons: Use these buttons to adjust the various mode of the sounder and adjust what is displayed on screen.

3: A-Scope Display: The A-Scope displays the enlarged, newest sounder echo returns. These magnified returns are also drawn in proportional scale, where strongest returns are also the widest.

4: ACCU-Fish Icon: The ACCU-Fish feature of the Sounder can be utilized to display individual fish icon when fish echoes are detected. It helps beginners to identify the fish targets on the display for a more fun fishing experience. Note that this feature is not available with the FCV1150.

5: Bottom Discrimination Display: Display the type of bottom when the Bottom Discrimination feature of the BBDS1 or DFF1-UHD is enabled.
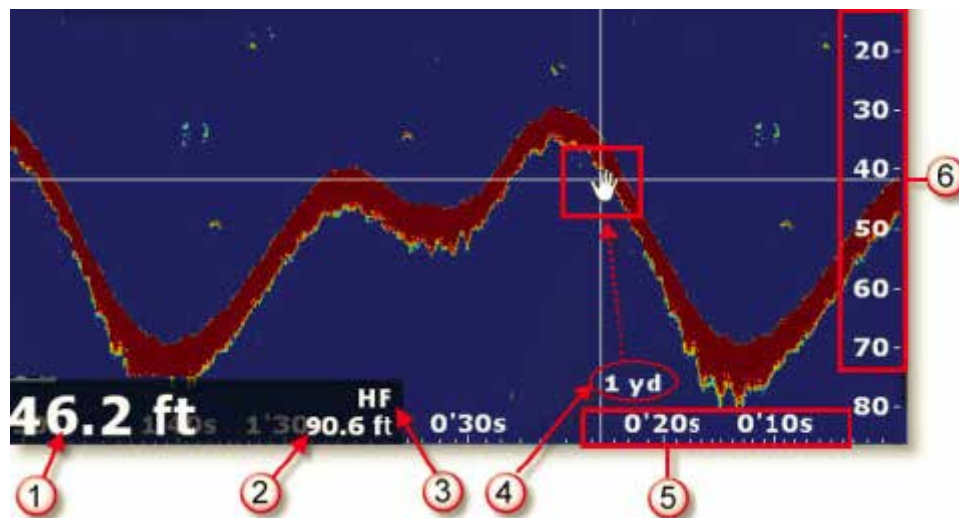
1: <u>Depth Indication:</u> Depth received by TimeZero Catch

2: <u>Range:</u> Sounder Range Scale (maximum depth detection of the sounder). Can be adjusted by using the "Range +/-" buttons on the Toolbar.

3: <u>Frequency:</u> Operating frequency of the sounder. "HF" for High Frequency, "LF" for Low Frequency, "HF/LF" for Dual Frequency.

4: <u>Distance Indicator:</u> Distance of the echo under the cursor from own ship position.

5: <u>Horizontal Scale:</u> Time Scale of past echoes.

6: <u>Vertical Scale:</u> Depth Scale

Sounder History

Nobeltec TimeZero Catch is able to record sounder history. To display sounder history, click and hold your mouse then drag the sounder picture to the right. You can also use the left/right key of your keyboard. The range of the sounder history will automatically scale to what is displayed on your screen.

Note: The sounder history length recorded by TimeZero Catch varies according to depth. In shallow water, TimeZero Catch can record approximately 1 hour. In deeper water, the sounder history can be up to 5 hours.

Note that, when displaying the sounder history, the sounder picture is not scrolling anymore. To go back to the real time sounder display (and have the picture scrolling again), drag the sounder picture all the way to the left or click on the "Center On" button located in the Toolbar.

The sounder history can also be displayed by rolling the cursor over the **active** track:
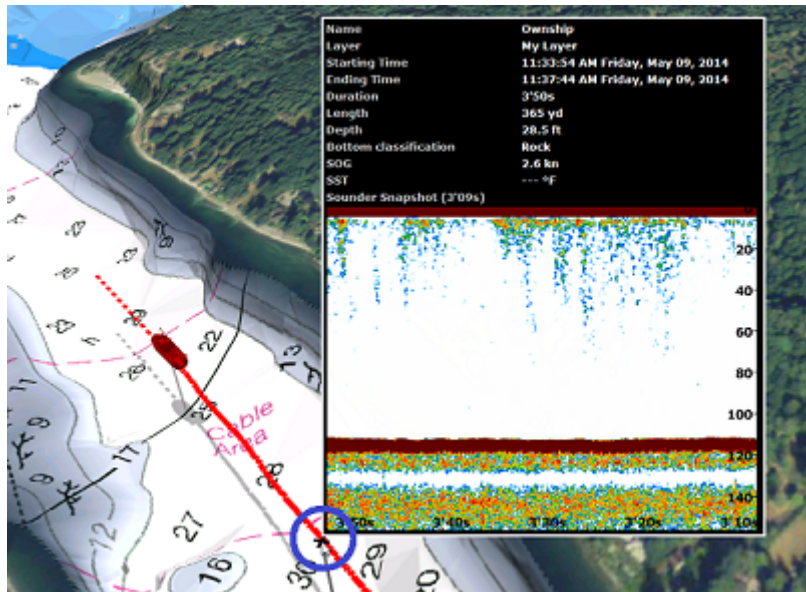
Note that the sounder history will only appear in the track tooltip for the track being actively recorded (the active track). If you stop tracking, it will lose the sounder reference.

Sounder Geolocation

Nobeltec TimeZero Catch is able to associate each sounder ping with a specific Lat/Lon. This feature allows you to pinpoint exactly where a specific sounder ping was acquired by rolling the mouse over the Sounder Display. A "ghost" (or duplicate) image of the cursor will appear on the chart plotter if your screen is split in between the Sounder and Navigation, indicating where the sounder ping was taken. You can also double click anywhere on the sounder picture to drop a mark:
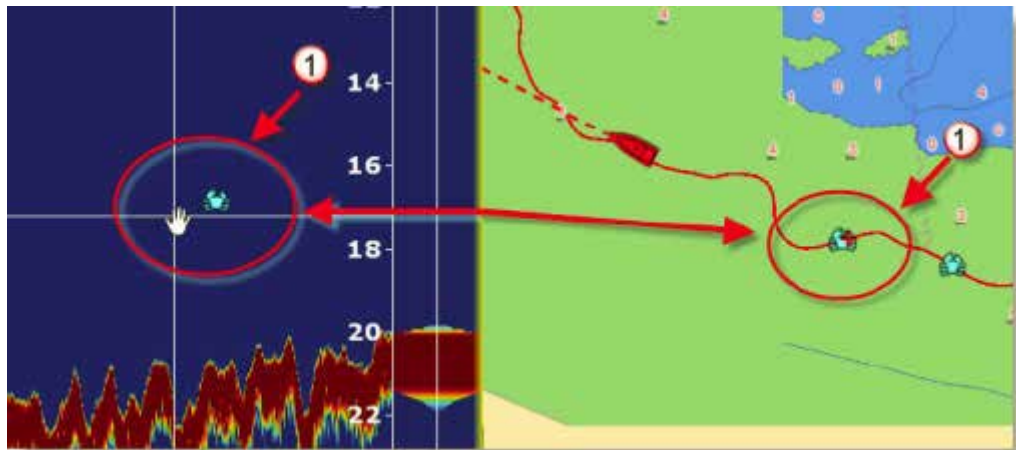
The mark will appear on the chart at that location and will contain the depth at which it was created.

A-Scope

The A-scope appears at the right of the screen when selected from the Ribbon. The A-Scope displays the enlarged, newest sounder echo returns. These magnified returns are also drawn in proportional scale, where strongest returns are also the widest:

	1: Weak reflection (Fish or noise)
	2: Strong reflection (Fish)
	3: Strong reflection (bottom)

Note: The "A-Scope Peak Hold" setting available in the Sounder Options allows to keep the peak of the A-Scope displayed for longer period of time.

The sounder A-Scope can also be displayed in the 3D WorkSpace wrapped around the 3D cone. Select "A-Scope" from the "Mode" button located in the Ribbons of the 3D WorkSpace:
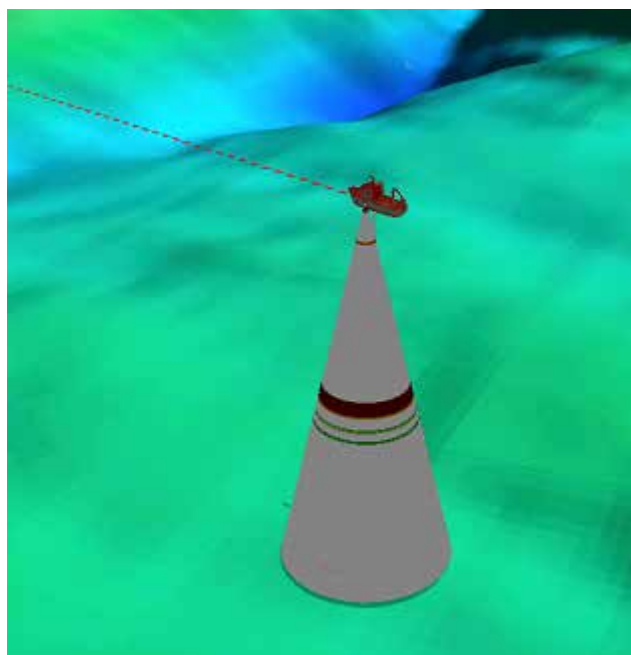
Sounder Display Mode

The "Furuno Sounder Plus Pack" needs to be unlocked to access the sounder/fish finder features.

The various sounder display modes can be selected from the "Sounder Mode" or "Sounder Display" buttons located in the Ribbon of a Sounder Work Space:

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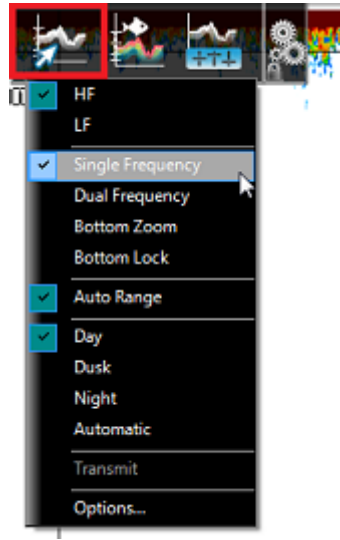
Single Frequency

The single frequency mode shows either the low-frequency or high-frequency picture on all the screen.

A low frequency gives a wide detection area and can reach deeper. Use the low frequency for general search and to find bottom conditions. A high frequency gives better resolution but cannot reach as far as low frequency. Use the high frequency to inspect a school of fish:
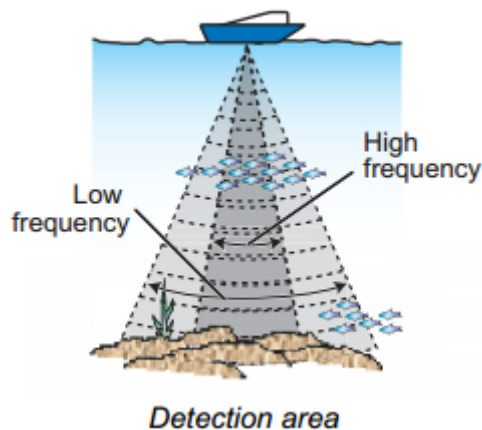
Tips: You can switch from Low to High frequency by clicking on the Sounder frequency indicator on the lower left of the screen:
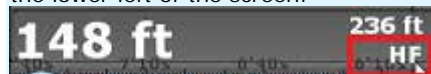
Dual Frequency

The dual frequency mode splits the sounder screen in two and provides both low and high frequency pictures at the same time. Use the dual frequency display to compare the same picture with two different sounding frequencies.

You can reverse the High and Low frequency side by inverting the frequency selection or by clicking on the Sounder Frequency indicator on the lower left.

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Bottom Zoom

With the Bottom Zoom selected, the Sounder Display is divided in half. The left side contains a Bottom Zoom display, while the right side continues to display the regular sounder data. Bottom Zoom causes the bottom, when it is found, to be drawn larger (1). Zoom reference lines are displayed on the right screen (2), allowing you to view the area of the echo that gets expanded:
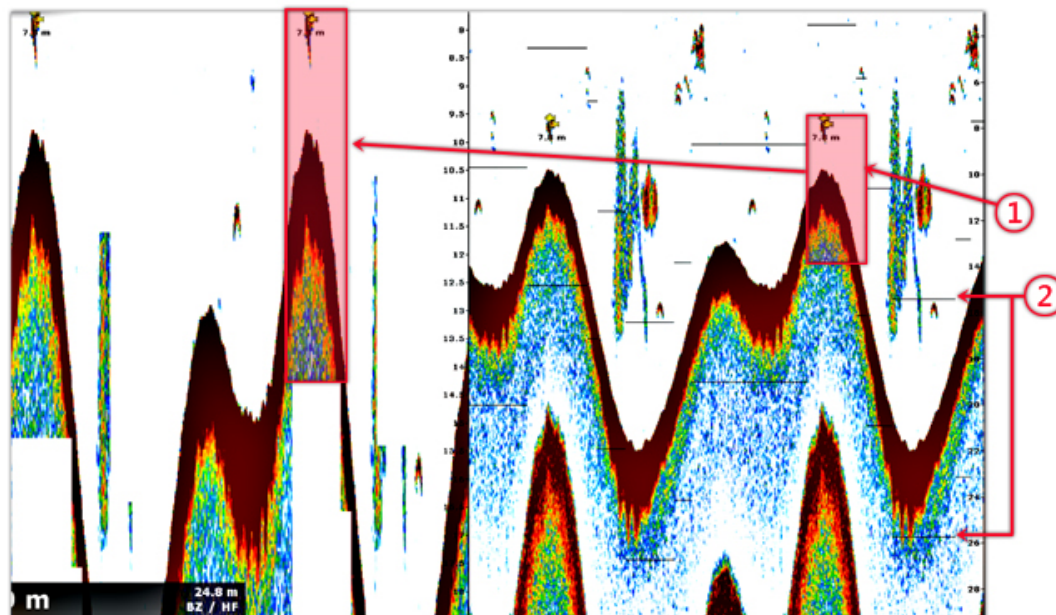
The zoom "window" size can be adjusted by using the "Zoom Range Span" setting available in the Sounder Options. The center of the "window" can be shifted around the bottom (depth) by using the "Bottom Range Shift Area" setting available in the Sounder Options.

The zoom can operate on the High or Low frequency picture.

This display mode is useful to focus on bottom fishing.

Bottom Lock

The Bottom Lock mode presents an interesting view of the sounder returns. The sea floor is flattened in this view, allowing easy comprehension of how far a fish or other return is above the sea floor:
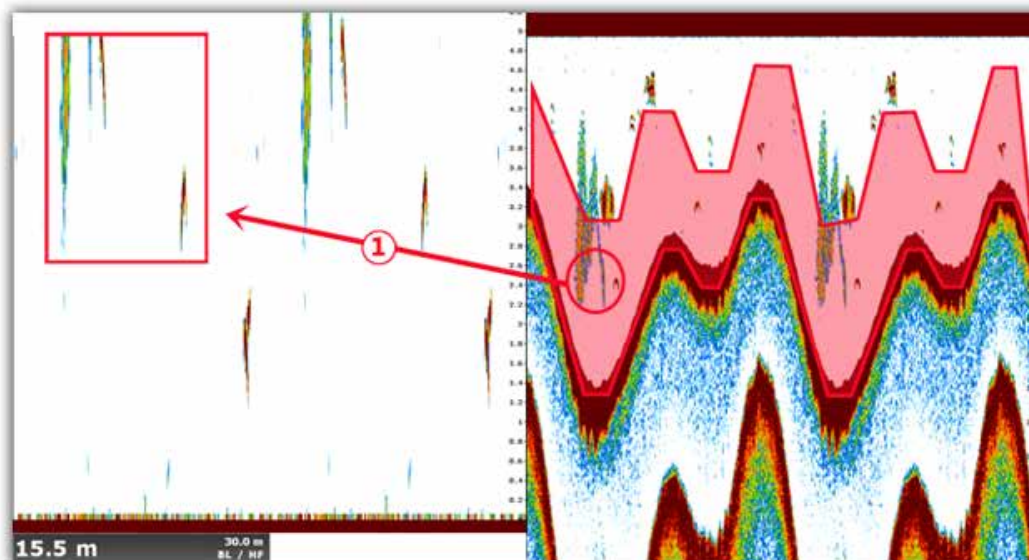
The zoom "window" size can be adjusted by using the "Bottom Lock Range Span" setting available in the Sounder Options.

Bottom Discrimination

This feature is only available with the BBDS1 and DFF1-UHD when paired with selected transducers. Contact your Furuno dealer for more information about transducer compatibility.

The BBDS1 and DFF1-UHD sounders have a bottom discrimination feature that determines the bottom structure and separates them into the following categories: mud, sand, gravel, and rock. This is achieved automatically by analyzing echo characteristics from the bottom components such as particle size and hardness.

To enable the bottom discrimination, select "Bottom Classification" under the "Sounder Display" button located in the Ribbon. The sounder will start analyzing the bottom and return its structures with probability of detection. Nobeltec TimeZero Catch can display this information in various ways.

Note: Enabling the Bottom Classification locks the sounder in Auto Range and Automatic Mode (you can no longer adjust the range or the gain manually). The sounder also goes into Dual Frequency (Low and High frequencies) to get more information about the bottom.

"Aquarium" Mode:

The "Aquarium" mode is automatically displayed at the bottom of the Sounder Echogram when the "Bottom Classification" is enabled from the "Sounder Display" button. A red line is also displayed indicating the probability of corresponding data (the higher the more confident the result is):
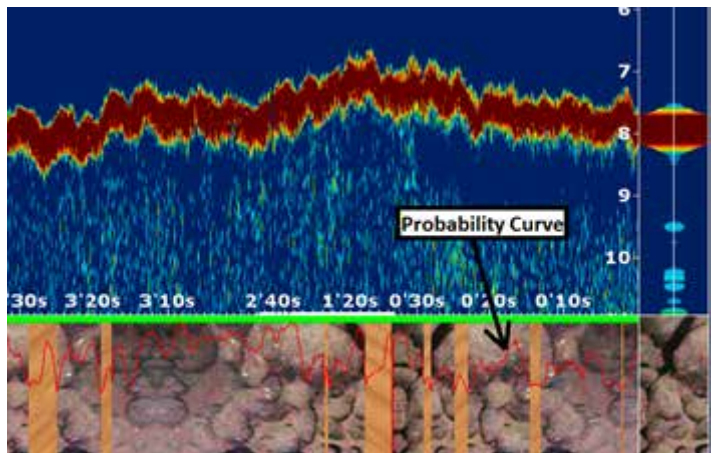
The various textures of the Aquarium mode are:

Bottom Classification NavData:

A real time Bottom Classification NavData can be displayed on the NavData Panel. This NavData displays in real time the probability of the four components and is very useful if the Sounder is not displayed on screen:
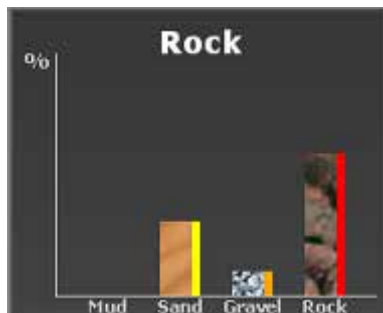
Please refer to the Bottom_Discrimination NavData Chapter for more information.

Track Color and Track Tooltip:

The track color can be adjusted to display the Bottom Classification from the Ship & Tracks Options. The color used for each bottom type can be customized and is displayed on the right side of each bar graph of the Bottom Classification NavData. Please refer to the Track_Coloring Chapter for more information.

Note that you can also access the bottom type on every track Tooltip by rollover your cursor over a track:

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Name	Ownship
Layer	My Layer
Starting Time	10:55:24 AM
Ending Time	10:56:21 AM
Duration	0'57s
Length	172 yd
Depth	149 ft
Bottom classification	Sand
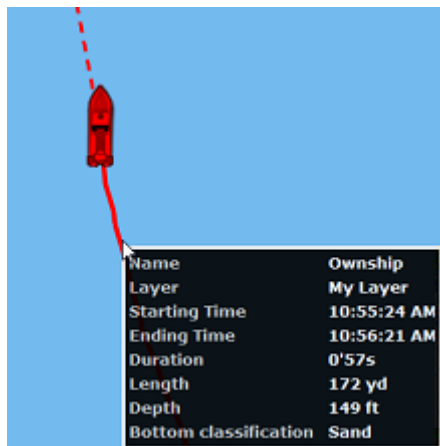
Bottom Hardness on the chart:

When enabling PBG (Bathy Recording), TimeZero Catch will record the depth data but also the bottom hardness. Bottom Hardness is computed from the Bottom Discrimination value sent by the sounder. Please refer to the PBG chapter for more information.

ACCU-Fish

The ACCU-Fish feature estimates the length of each fish and shows a fish symbol and depth value or fish length. This feature requires appropriate transducer and either the BBDS1 or DFF series sounder. ACCU-Fish helps beginners to identify the fish targets on the display for a more fun fishing experience.

When the ACCU-Fish function of the Sounder is enabled from the "Sounder Display" button in the Ribbon, fish icons will be displayed on the Sounder Echogram and on the chart. You can change the fish icons (dot, solid or striped) and label (depth or size of the fish) from the Sounder Options.

Fish size	Solid	Striped
Large fish symbol (more than 51 cm (20.08 inch))		
Small fish symbol (10 to 50 cm (3.9. to 19.69 inch))		

You can change the fish icons color from the "Sounder Display" button in the Ribbon.

Note that the ACCU-Fish icons are only temporary and disappear on the chart and sounder after two minutes. If you want to create a permanent mark, simply double click on the sounder echogram over the fish icon, or right click on the chart on a fish icon and select "Create Mark".

Note: Enabling the ACCU-Fish function force the sounder into Dual Frequency (Low and High frequencies).

Auto Range

When "Auto Range" is selected, the sounder range will automatically adjust according to the depth. Note that, if the sounder lose bottom, the range will automatically cycle through all the values until a good bottom (depth) is found again. In certain cases, (when the bottom disappear due to the boat moving at high speed), it is recommended to de-activate "Auto Range" to prevent the sounder from cycling through the various ranges.

Sounder Controls

The "Furuno Sounder Plus Pack" needs to be unlocked to access the sounder/fish finder features.

Automatic Mode:

There are two types of automatic fish finder modes: "Auto Fishing" and "Auto Cruising". These settings can be adjusted from the "Sounder Adjustments" button located in the Sounder Ribbon. "Auto Fishing" optimizes the sounder to display schools of fish, and "Auto Cruising" optimize the sounder to detect the bottom. "Auto Cruising" uses a higher clutter removal setting than "Auto Fishing". Do not use "Auto Cruising" when your purpose is to find fish, because the clutter removal circuit can erase weak echoes. The automatic fish finder function automatically adjusts the gain, clutter, TVG and echo offset:

- The sensitivity of the receiver (Gain) is adjusted to show the bottom echo in reddish-brown

- The Clutter Adjustment is set to automatically reduce low-level noise like plankton.

- The TVG function is automatically adjusted.

- The echo offset balances the gain on high and low frequencies.

There is an independent "Auto-Range" control (available from the "Sounder Display" button) that adjusts the range of the sounder automatically top track the bottom. Note that, if the sounder lose bottom, the range will automatically cycle through all the values until a good bottom (depth) is found again. In certain cases, (when the bottom disappear due to the boat moving at high speed), it is recommended to de-activate "Auto Range" to prevent the sounder from cycling through the various ranges.

Manual Mode:

When you select "Manual" from the "Sounder Adjustments" button located in the Sounder Ribbon, you can manually adjust the Low and High frequency Gain of the sounder.

Gain: The gain controls how echoes of different strengths are displayed on the screen. Set the gain to show a slight amount of noise on the screen. Increase the gain for greater depths and lower the gain for shallow waters:

Gain too high   Gain proper   Gain too low
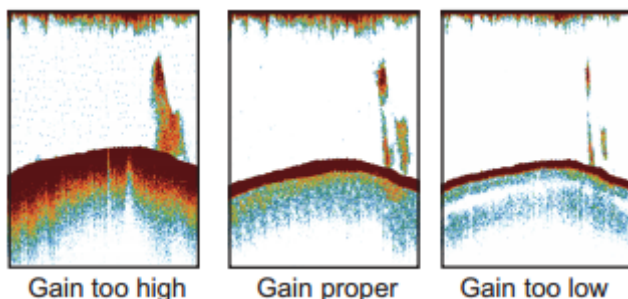
Range: When "Auto Range" is turned OFF from the "Sounder Mode" button in the Ribbon, you can manually adjust the range by clicking on the "Range +" or "Range -" buttons located on the Toolbar. You can enable or disable specific ranges value from the Sounder by clicking on "Sounder Ranges Selection". This allows you to only cycle through and limit the depth ranges that are useful for your application. You can also use the wheel of your mouse to change the range to any value (not restricted by the Sounder Range Selection).

Range Shift: You can "offset" or shift the range from the Sounder Options by entering a value in the "Range Shift" setting or by dragging the sounder picture downward.

Clutter: If low intensity "spots" of noise appear over most of the screen like in the illustration shown below (caused by sediment in the water or noise) you can increase the "Clutter" slider available in the Sounder Options.
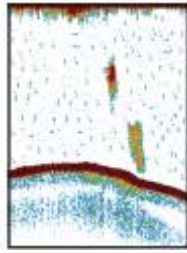
Picture Advanced: The "picture advance" setting available in the Sounder Options controls how quickly the vertical scan lines (pings) of the sounder move across the screen. A fast advance speed expands the size of a school of fish horizontally on the screen. A slow advance speed shortens the school of fish. Use a fast advance speed to see the hard bottom. Use a slow advance speed to see the smooth bottom.
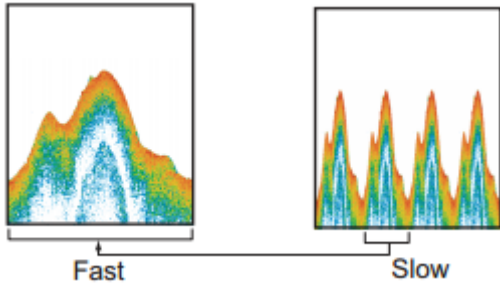
For most application, it is recommended to leave the picture advance to "1".

Interference Rejection: This setting available from the "Sounder Adjustments" button located in the Ribbon. Only use the Interference Rejection when noise appears on the screen due to other sounder around you or if you have interference from electrical equipment:
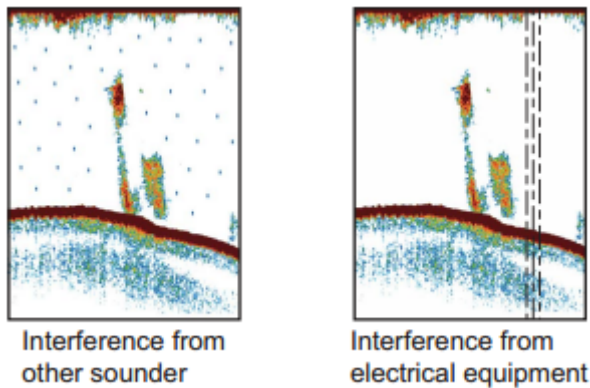
TVG: The TVG settings (HF and LF) available in the Sounder Options can be used to balance the echo strength along the water column. A school of fish at a depth deeper than a school of equal strength in shallow water appears in weaker colors. This condition is caused by the attenuation of the ultrasonic wave. To display the schools of fish in the same colors, use the TVG. The TVG automatically increases the gain with depth so that echoes of the same strength and different depths are shown in the same colors. In the illustration shown below, for example, the TVG is set for 300 ft and the TVG level is adjusted. Unnecessary echoes at a distance less than 300 ft are deleted and echoes at depths greater than 300 ft are not adjusted

Unwanted echoes

Unwanted echoes are erased.

0 ft

300 ft

0 ft

300 ft

Echoes of the same size are displayed in different sizes and colors depending on depth.

Echoes of the same size are displayed in same sizes and colors.
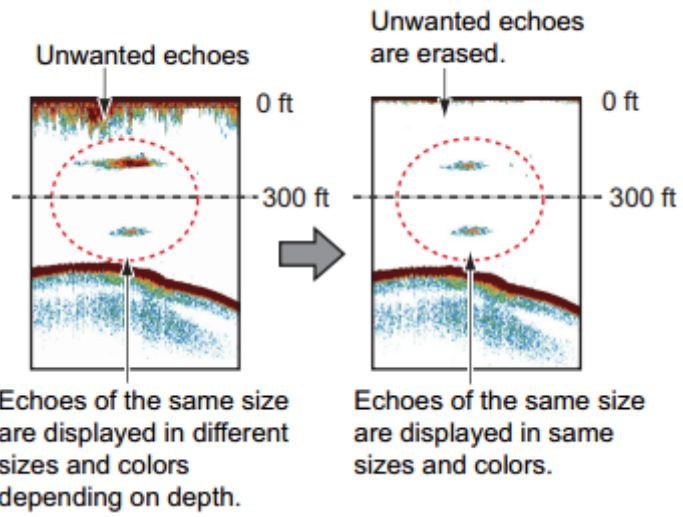
Camera

Camera Introduction

Up to 4 cameras can be configured in TimeZero Catch . Nobeltec is compatible with AXIS IP Camera, AXIS IP converter (single and quad), FLIR Camera and "Built-in" video source such as a WebCam. A Pan, Tilt and Zoom camera ("PTZ Camera") can be controlled directly from TimeZero Catch using the AXIS protocol or FLIR Nexus protocol.

PTZ cameras that are able to pan 360 degrees and send feedback to TimeZero Catch can be configured to be displayed on the chart (field of view) and used for tracking from the Camera configuration. Cameras that are configured to be "displayed on chart and use for tracking" can:

- Display a cone on the chart representing the field of view (FOV) of the camera

- Be controlled directly from the chart using the right click menu to move or lock the camera to a position or target

- Be controlled using a standard USB Joystick connected to the computer (USB joystick needs to be activated from the Camera Options)

- Be configured to automatically lock on a Man Over Board mark from the Camera Options

- Be configured to always lock on the Active Waypoint (when a Route is activated) from the "Mode" button located in the Ribbon or by right clicking on the Boat icon.

Note: In order for a camera to be displayed on the chart (and used for tracking), it needs to be able to pan 360 degrees and send feedback to TimeZero Catch . Tracking cannot be set on a PTZ "fish-eye" camera such as the AXIS 212PTZ

If a camera has PTZ functionality but is not configured for tracking, it will only be possible to control it from the NavData or from the Camera WorkSpace (the field of view, joystick control and right click menu are not available).

The following chapters will describe how to display and control a camera. Please refer to the Camera Installation Chapter for setup instructions.

Camera WorkSpace

The Camera WorkSpace is used to display a full screen video picture. This WorkSpace contains a "Camera" and "Camera Control" button located on the Ribbon.

The "Camera" button allows you to select the video source displayed in the WorkSpace.

The "Camera Control" button allows you to control specific features of the camera (Home Position, Color Palette, etc...) and to unlock the camera if it has been locked on a target or object. The features available under this button vary with the type of Camera.

Note: You can also right click directly on the video screen to change video source and access features of the camera.

If the camera has Pan/Tilt/Zoom function, it is possible to move the camera by:

- using the virtual joystick available on the upper left corner of the camera WorkSpace

- left clicking any point on the screen to center that point in the middle of the screen

- clicking and dragging the mouse to move the camera

- using the arrow keys on the keyboard

The camera Zoom can be adjusted by:

- clicking on the "-" / "+" buttons available in the virtual joystick

- using the mouse scroll wheel

- using the "Page Up" and "Page Down" buttons on the keyboard

Camera NavData

The camera image can be displayed in the NavData. This is useful when you don't want to dedicate a full or half screen to camera display. Multiple Cameras can be added to the NavData panel allowing you to keep an eye on multiple cameras at the same time.

To add a camera to the NavData configuration, click on the "+" button (at the top) and select "Camera":
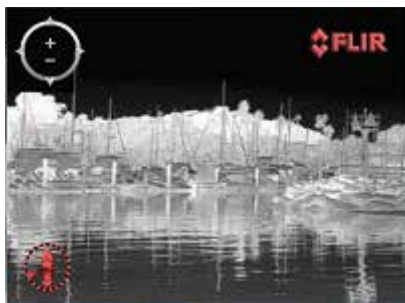
By default, the NavData will use the first video source configured in the software. If you have configured multiple cameras, right click on the NavData to change the video source.

If the selected camera has Pan Tilt Zoom capabilities, a virtual joystick will appear when you roll the cursor over the NavData. This allows you to adjust the camera position and zoom level.

If the camera offers additional controls (such as the Flir M-Series), right click on the NavData to access them (Scan, Home, Scene, IR/Visible switch, etc…).

When undocking the camera (dragging the camera image out of the NavData bar), you can resize the camera by right clicking on it and select "Increase" or "decrease".

Controlling & Tracking from the Chart

A camera that has been configured to be displayed on the chart in the Camera Options can be controlled from the chart and used for tracking. A cone representing the field of view of the camera is displayed when "Camera Field of View" is selected from the "Mode" button located in the ribbon:
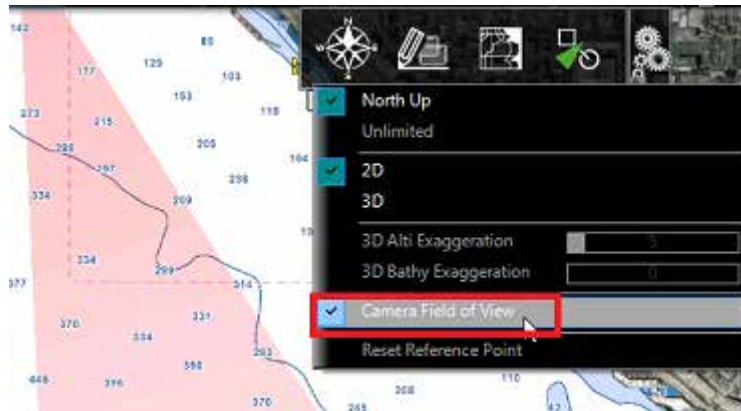
Note: The FOV color can be changed from the Camera Options

To control the camera, just right click on the chart, an object or a target and select "Move Camera Here". The camera will move in that direction one time, but TimeZero Catch will not update the camera position as the target moves or as the boat changes direction. If you want TimeZero Catch to continue tracking the position, object or target, right click and select "Lock Camera":
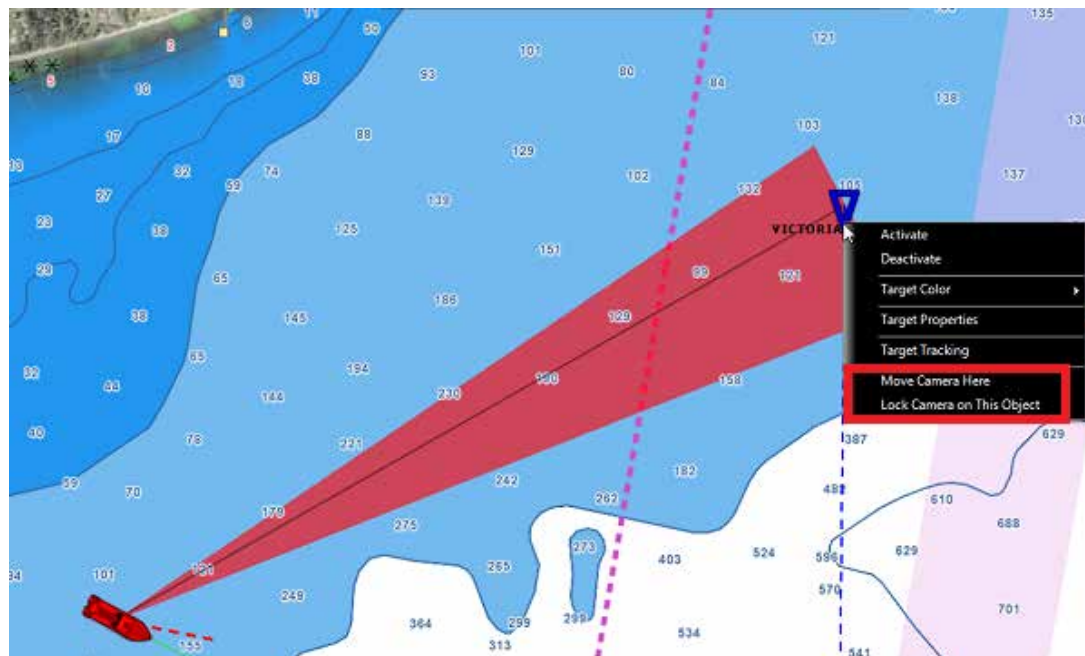
When a camera is locked, the cone (FOV) appears with a brighter color and a black line is displayed in between the boat and the object to track. To unlock a camera you can:

· Move the camera manually (by initiating a new "Move Camera Here" right click or using the Joystick)

· Use the "Camera Control" button and select "Unlock Camera"

· Right click on the boat and select "Unlock"

Important: The tracking is automatically disengaged as soon as you manually take control of the camera.

Online Services

ActiveCaptain

To understand the ActiveCaptain features one must first understand what Active Captain is and how the ActiveCaptain service is different from traditional Points of Interest (POI) or marina databases.

ActiveCaptain is what is called a "crowd sourced" data service whereby hundreds of thousands of users of a service participate in building and consuming the data. The ActiveCaptain Interactive Cruising Guidebook database is stored, maintained and synchronized inside TimeZero Catch directly. An Internet connection is not necessary to access any of the POI marina, anchorage, local knowledge, or hazard markers data. When Nobeltec is installed, the ActiveCaptain data (i.e. Location, Marina Names, Phone numbers, etc) will appear with the click of a mouse. When a customer registers for a free ActiveCaptain account, access to the full data set and reviews will automatically be activated. Registered ActiveCaptain users are also able to update the ActiveCaptain database directly from Nobeltec TimeZero Catch , giving them the very latest details up to the minute.

Register to be an "ActiveCaptain":

To register and for more information about the growing ActiveCaptain POI Database and its features, make sure to visit http://www.activecaptain.com.

Once you are registered, enter your login/password information under the ActiveCaptain Options. As soon as the account is validated in Nobeltec (Internet Connection required), you will have access to the full ActiveCaptain information as well as the Update feature.

Displaying ActiveCaptain Markers on the chart

To display the ActiveCaptain Markers on the chart, click on the "POI" button and select the corresponding ActiveCaptain data layer ("AC Marina", "AC Anchorages", "AC Local Knowledge", "AC Hazards").

Note: If the "POI" button is not available in the Ribbon, click on the "Configure Ribbons" icon to add it to the workspace configuration

Tips: It is possible to setup advanced filters for some markers (Marinas and Local Knowledge) from the ActiveCaptain Options.

To display basic marker information, rollover or click on any marker. To access the full marker information, double click on any marker. This will open the Marker Property window that contains multiple tabs (sorted by category).

Updating ActiveCaptain Markers

To update the ActiveCaptain database, select the "Update" Work Space and click on the "Update" button located in the Ribbon. This will open the ActiveCaptain Update Wizard that will guide you.

Note: The update area is not used for ActiveCaptain (only for the Weather). When you update ActiveCaptain, the entire worldwide database is updated.

Post a Marker Review

When the PC is connected to the Internet, you can post a review directly from Nobeltec TimeZero Catch . Just open the marker properties (double click on it), select the "Review" tab and click on "Rate it…"

AIS Online

IMPORTANT: **THE AIS ONLINE FEATURE SHOULD NOT BE USED IN NAVIGATION. THERE IS A SIGNIFICANT DELAY (5 MINUTES TO ONE HOUR) IN BETWEEN THE ONLINE REPORTS AND REAL TARGETS. THE AIS ONLINE IS SUBJECT TO SERVICE INTERRUPTIONS AND IS PROVIDED 'AS IS'.**

If the PC is connected to the Internet, Nobeltec TimeZero Catch can display AIS information from the MarineTraffic web site. It provides free near real-time information, about ship movements and ports, mainly across the coast-lines of Europe, Asia and North America.

By default, the AIS online layer is turned OFF in Nobeltec. To display it, select "AIS Online" from the "Targets" button in the Ribbon.

Note: After enabling the AIS online, it might take a couple of minutes for the information to appear on the screen

If you have started Nobeltec TimeZero Catch in "Home Planning" mode, the AIS online will appear everywhere. If you have started Nobeltec in "Navigation" mode, the AIS online will only appear around your boat.

AIS Online appears in orange ("real" AIS targets appear in blue for Class A and green for Class B).

To access AIS Online target information, rollover the AIS icon with your cursor or click on it. In addition to basic data (such as speed, course, ...), the AIS online displays a picture of the ship (when available):

Panoramio

Panoramio is a website that enables digital photographers to geolocate, store and organize their photographs. When the PC is connected to the Internet Nobeltec TimeZero Catch automatically downloads and displays the Panoramio pictures if the "Panoramio" layer is selected from the "POI" button in the ribbon. Rollover or click on a picture icon to display a bigger version:
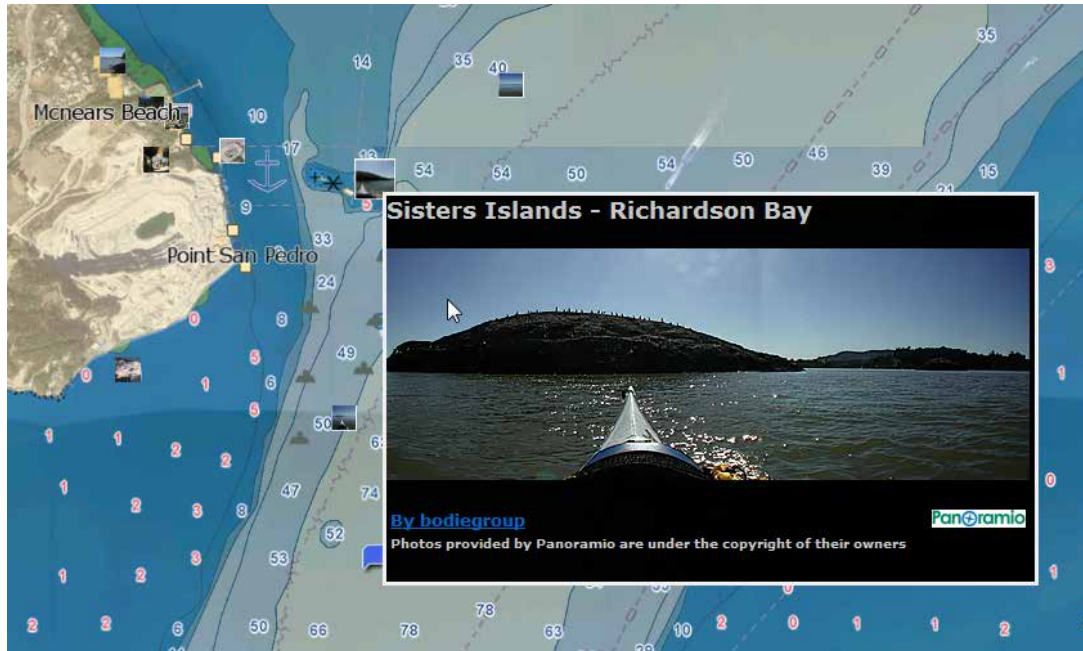
Note that you can right click on any Panoramio picture icons on the chart to save them in your "My Photo" database (allowing offline access later on).

Installation

Connection Wizard

Introduction

The Connection Wizard is used to configure instruments such as GPS, AIS, Heading and Wind Sensor. The Wizard is designed to intuitively recognize your hardware device and connect it to the software correctly. However, you must already have the device wired and transmitting data.

Note: The Connection Wizard is not used to configure Radar, Sounder or Camera. It is only used to configure NMEA0183, NMEA2000 and NavNet NMEA sensors.

The Connection Wizard is also used to output data (using a COM port) to a pilot or external display.

To open the Connection Wizard, make sure to start the software in "Navigation" mode, click on the Nobeltec button and select "Connection Wizard":
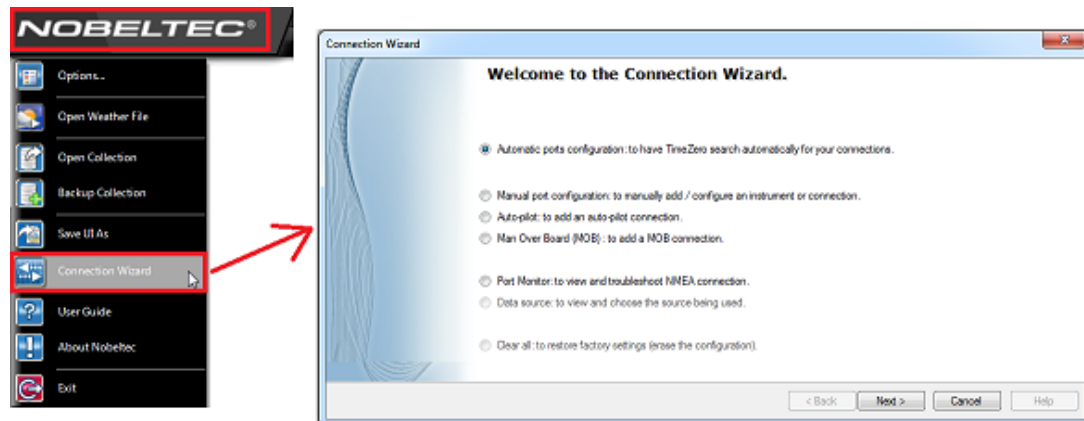
Automatic Port Configuration

The Automatic Port Configuration option of the wizard will scan your system automatically for the various sensors:

- NMEA0183 sensors (GPS, AIS, Heading, Wind Sensor, etc...) connected through a Serial COM port or USB to Serial Adapter (at 4800 and 38400 baud rate).

- NMEA200 sensors (GPS, AIS, Heading, Wind Sensor, Fuel Instruments, etc...) connected through the Actisense NGT1-USB or through the Nobeltec Gateway.

- NavNet Data (FA30, MFDs, etc...) connected through an Ethernet cable

Before launching the detection, make sure to connect and power all the sensors.

IMPORTANT: When you perform an Automatic Detection, it erases the previous input configuration.

Note: It is not possible for TimeZero Catch to automatically configure the outputs (to a pilot or external display for example). The Automatic Port Configuration only configures the inputs. You will have to manually configure the output by selecting "Data Output and Pilot".

After the detection, the wizard will display a page with the list of the ports that are receiving data on the left and the detail of the selected port on the right:
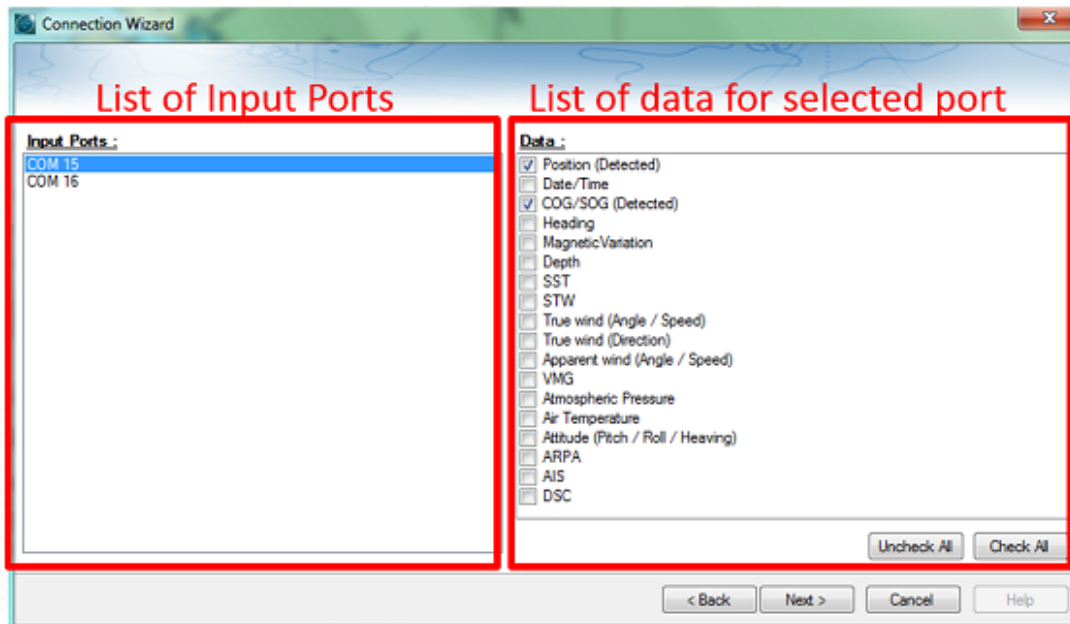
Every data type detected is automatically checked. Note that you can uncheck data type on specific port(s) if you don't want to use them. For example, it is not recommended to use position or heading from a port connected to an AIS sensor.

Click on "Next". This will display the Data Source page.

Note: If you feel you are missing a port or data type, check the wiring and use the port monitor to check that data is correctly flowing.

Manual Port Configuration

Choose "Manual Port Configuration" when you know what to configure or to edit an existing port configuration.

Add/Configure Serial Port (NMEA0183):

Select this option to manually configure a new or modify an existing Serial COM Port (or USB to Serial Adapter). The first screen will allow you to select a COM port and a Baudrate (default 4800 bauds):
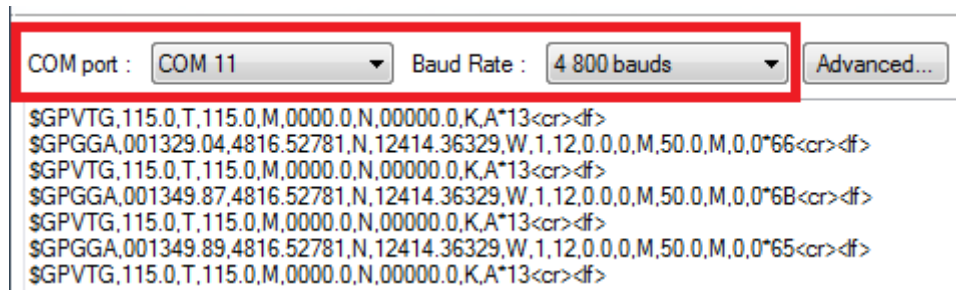
Note: The "Advanced" button is only reserved for Technical Support. Do not adjust any advanced settings yourself.

After selecting a COM port, you should see NMEA0183 sentences flowing in the window below. Valid NMEA sentences should:

- Start with "$" or "!"

- Followed by 5 characters:

    - The first 2 characters indicating the type of sensor sending the data (such as "GP" for GPS, "AI" for AIS, "EC" for Electronic Compass, "II" for multi-sensor, etc...)

    - The 3 remaining characters indicating the type of NMEA sentence (such as "GGA", "GLL" or "RMC" for position information; "VTG" for speed information; "DPT" or "DBT" for depth information, etc...)

- Followed by a series of data separated by ","

If you don't see any data, try another COM port or double check the wiring. If you see "garbage" data (random letters and characters), try another baudrate speed (such as 4800, 9600 or 38400) or make sure the wires are not inverted.

Tips: If the COM port does not appear in the list, make sure the USB to Serial adapter drivers are correctly installed from the Windows "Device Manager" control panel. If you feel that TimeZero Catch is not listing an existing COM port, press and hold the CTRL key and click on the COM port selection. This will display a window where you can manually enter a COM port.

The next page of the Wizard will display a list of the ports previously configured on the left with the port you just added/modified:
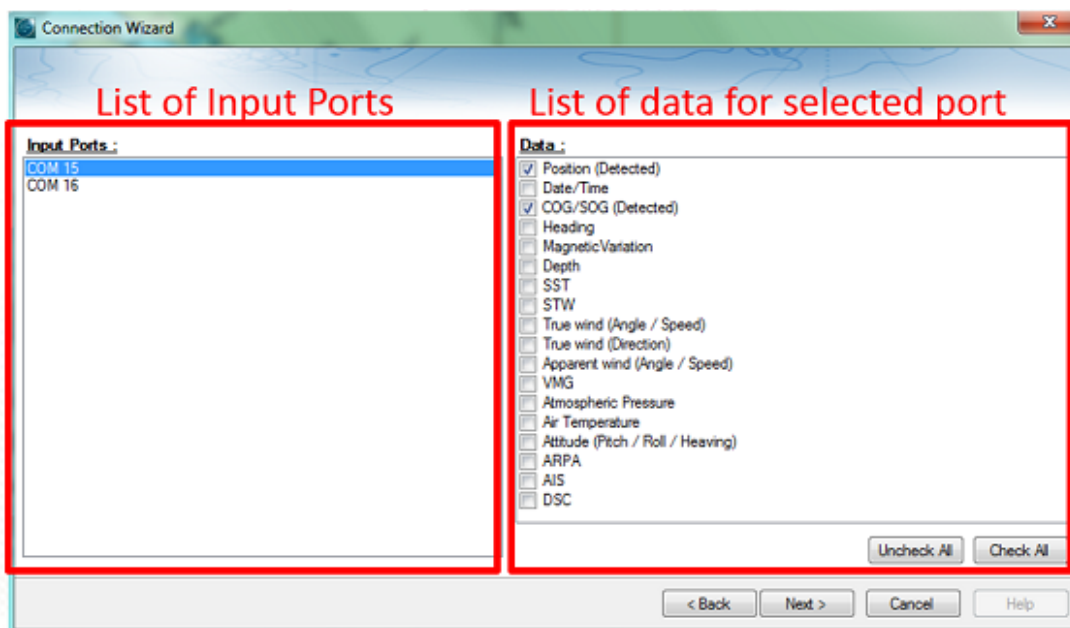
On the right, every data type detected is automatically checked. Note that you can uncheck data type on specific port(s) if you don't want to use them. For example, it is not recommended to use position or heading from a port connected to an AIS sensor.

Note: In some case, TimeZero Catch cannot automatically detect (and thus check) specific data types. This can happen with AIS receivers that may not send target data while TimeZero Catch is analyzing the data feed. If you are sure that the data should be present on that port (for example of you saw on the previous window NMEA "!AI" sentences corresponding to AIS), you can manually check a data type (AIS in that case).

Click on "Next". This will display the Data Source page.

Add/Configure NavNet Connection:
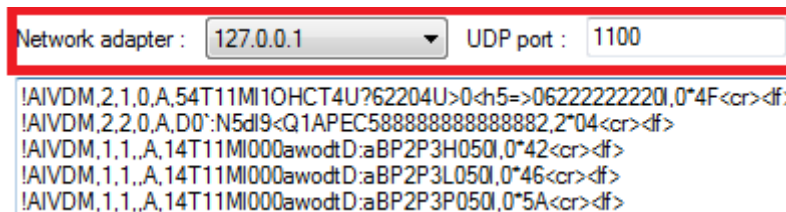
Select this option to configure or modify a NavNet connection when the computer is connected to the Furuno NavNet network through the Ethernet port.

- "NavNet NMEA" is used when the computer is connected to a Furuno NavNet MFD (Multi Function Display such as "NavNet 1", "NavNet Vx2", "NavNet 3D" or "NavNet TZtouch"), Furuno AIS (FA30, FA50) or Sounder (to get the depth, temperature and speed information from the transducer).

- "NavNet Fast Heading" is used when the NavNet network contains a DRS radar. In that case, a better faster heading is available from the DRS radar.

- "NavNet ARPA" is used when the NavNet network contains a DRS radar to get the ARPA data from the radar

After checking the corresponding options, click on "Next" and follow the same steps as when configuring a Serial COM port.

Add/Configure UDP connection (NMEA0183):

Select this option to configure a network UDP connection. This can be used with Serial to Ethernet converters that can broadcast the serial information (NMEA0183) on the Network using "UDP". Select the IP address of your computer connected to the corresponding Ethernet card and enter the UDP port number programmed inside the Serial to Ethernet converter:

Confirm that NMEA0183 data is flowing and press on "Next". Follow the same steps as when configuring a Serial COM port.

Add/Configure a Garmin USB connection (DEPRECATED):

This option has been deprecated and is not supported anymore (only compatible with old Garmin USB GPS units). It is recommended to use the Serial Output of the Garmin GPS instead (NMEA0183) or use a software like "GPSgate" that can translate the Garmin proprietary format to regular NMEA0183 sentence.

Add/Configure NMEA2000 connection:

This options is used with the Actisense NGT1-USB or Nobeltec Gateway. Press on "Next" to automatically detect the gateway and follow the same steps as when configuring a Serial COM port.

Note: If the gateway is not detected, make sure the drivers are correctly installed from the Windows "Device Manager" in your control panel and then try again.

Autopilot and External Output

Choose "Data Output" when you want to output NMEA0183 data from TimeZero Catch to an Autopilot or any External Display.

Each autopilot requires that certain, specific information be provided by TimeZero Catch . Most autopilots follow the same basic principles of course to steer and cross track error. Autopilot tries to maintain a heading to a mark while maintaining a minimum Cross Track Error. TimeZero Catch

contains a number of specific settings that have been created because not all autopilots work the same way. Consult your autopilot manual to verify what information the device needs.

Output Configuration

TimeZero Catch can output NMEA0183 data using a serial COM port or via an Ethernet network (using UDP or TCP). Select the appropriate option and click on Next.

Note: UDP is used when you want to broadcast the NMEA information to one or multiple computers located on the same local network (same broadcast domain). Use TCP if you need to route the NMEA0183 signal through the Internet or if the device or computer you are sending the data to only accepts TCP connection. Note that when TimeZero is set to output using TCP, it will create and open a TCP port and listen to incoming connection from a remote client (TimeZero becomes a TCP server). Just configure the client to connect to the server (TimeZero) IP address and to the port that is configured.

The top of the output configuration window will automatically adjust according to the output mode (Serial, UDP or TCP). In the example below, the serial output has been selected, allowing you to select a COM port and a baudrate (in case of UDP or TCP, you have to select a network adapter and an IP port):
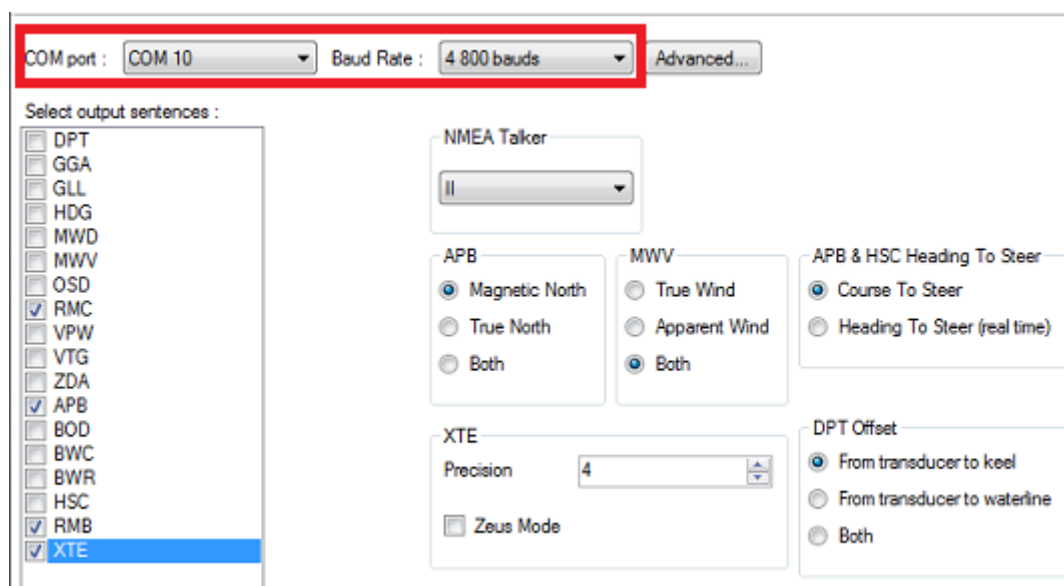
Note: If using a Serial COM port and if the selected Port is already configured as an Input, you cannot select the Baudrate (it will be locked to the same baudrate as the input). The "Advanced" button is only reserved for Technical Support. Do not adjust any advanced settings yourself.

From the left side of the screen, select the NMEA0183 sentences you want to output from TimeZero Catch to an External Device (including another TimeZero) or an Autopilot.

Most Autopilots only require "APB" and "XTE". If your pilot also needs position and speed information, add "RMC" to the list. It is recommend to read your Autopilot documentation to know what sentence you should select from the list.

Note: When switching a Waypoint, TimeZero Catch will always send an AAM (Waypoint Arrival Alarm) sentence to the Pilot. This allows the pilot to properly detect a switching Waypoint condition and notify you. If you want to trigger a notification inside TimeZero, make sure to check "Waypoint Switching Notification" and/or "End of Route Notification" from the Routes Options.

Press "Next" to validate the settings then "Finish" to close the Wizard.

In order to confirm a good connection in between TimeZero Catch and your Autopilot

- Activate a route in TimeZero Catch (or create an Active Waypoint using the "Go To" tool)

- Add three Route NavData to the NavData panel: "CST", "DTW" and "XTE"
  Please refer to the NavData chapter for more information

- Make sure that the Autopilot and TimeZero Catch are using the same North reference (either "True" or "Magnetic"). You can adjust the North reference in TimeZero Catch by adjusting the "Bearing Display" setting in the Units Options

- Configure your pilot to show a "Steering Page" displaying at minimum the corresponding information:

  - Distance to Waypoint (usually labeled as "DTW" or "RNG" or "DIST")

  - Bearing to Waypoint (usually labeled "CST" or "BRG" or "Bearing")

  - Cross Track Error (usually labeled "XTE")

- Confirm that the information displayed in TimeZero Catch and on the pilot matches

If no information appears on the Autopilot ("--" for example), or if the pilot is not steering properly, check the Autopilot Troubleshooting chapter.

Advanced Output Settings:

Nobeltec TimeZero Catch v2.1.0

NMEA Talker:

This setting changes the NMEA talker used in the NMEA sentence generated by TimeZero Catch . The default is set to "II" ("integrated instruments"). Some older pilots or external displays might not recognize the "II" talker. In this case, try to change it to "GP".

APB:

This settings define the North Reference that will be used inside the APB sentence for the Bearing to Waypoint (or CTS). Usually, if the Autopilots is connected to a Magnetic Heading sensor, you will use "Magnetic North". If the Autopilot is connected to a True Heading Sensor (such as a Satellite Compass), you will use "True North". If set to "Both", the APB sentences will alternatively use Magnetic and True North.

MWV:

This setting defines the Wind Reference that will be used inside the MWV sentence. If set to "Both" the MWV sentence will alternatively use Apparent Wind and True Wind.

APB & HSC Heading to Steer:

The APB sentence contains two bearing references: Course to Steer and Heading to Steer. When "Course to Steer" is selected in TimeZero Catch , the Heading to Steer field inside the APB and HSC NMEA sentences will use the same value as the Course To Steer field (copy). If "Heading to Steer (real time)" is selected, TimeZero Catch will apply the drift vector to the Course to Steer value to compute the proper Heading to Steer that takes into account the real time currents and use that value in the Heading to Steer field of the APB and HSC sentences. Note that for the Heading to Steer (real time) value to be correct, you need a high precision heading source (such as a Satellite Compass). For most application, it is recommend leave this setting to "Course to Steer".

XTE:

The "Precision" settings indicate the number of digits used for the Cross Track field used in the NMEA sentences. Only decrease the precision if you have an old Autopilot that has trouble adjusting to high precision XTE.

The "ZEUS" mode is only to be used with ZEUS Mercury Autopilot. This setting alter the "end of route" behavior of TimeZero Catch . When the ZEUS mode is selected, all the XTE fields are set to a NULL value (,,) when reaching the end of a route. For any other Autopilots, leave that setting uncheck.

DPT (Depth) Offset:

Indicates the type of transducer offset used in the NMEA Depth output. Make sure that the "Transducer Draft" and "Keel Draft" settings are properly setup in TimeZero Catch from the [Initial Setup](#) Options.

TTM Bearing and Course:

Used to output the TTM bearing relative to own ship heading (relative) or relative to North.

Man Over Board (MOB)

Choose "Man Over Board" when you want to configure a Man Over Board system that outputs the proprietary MXS Man Over Board Sentence ("$PMXS,MOB"). Please refer to [Proprietary Sentence](#) for more information.

Port Monitor

The Port Monitor is used to troubleshoot and look at the data flowing into a specific port (if any). The port monitor can analyze:

- Any Serial COM Port available on your computer

- Any UDP Port already configured in TimeZero Catch

- The NavNet NMEA ports
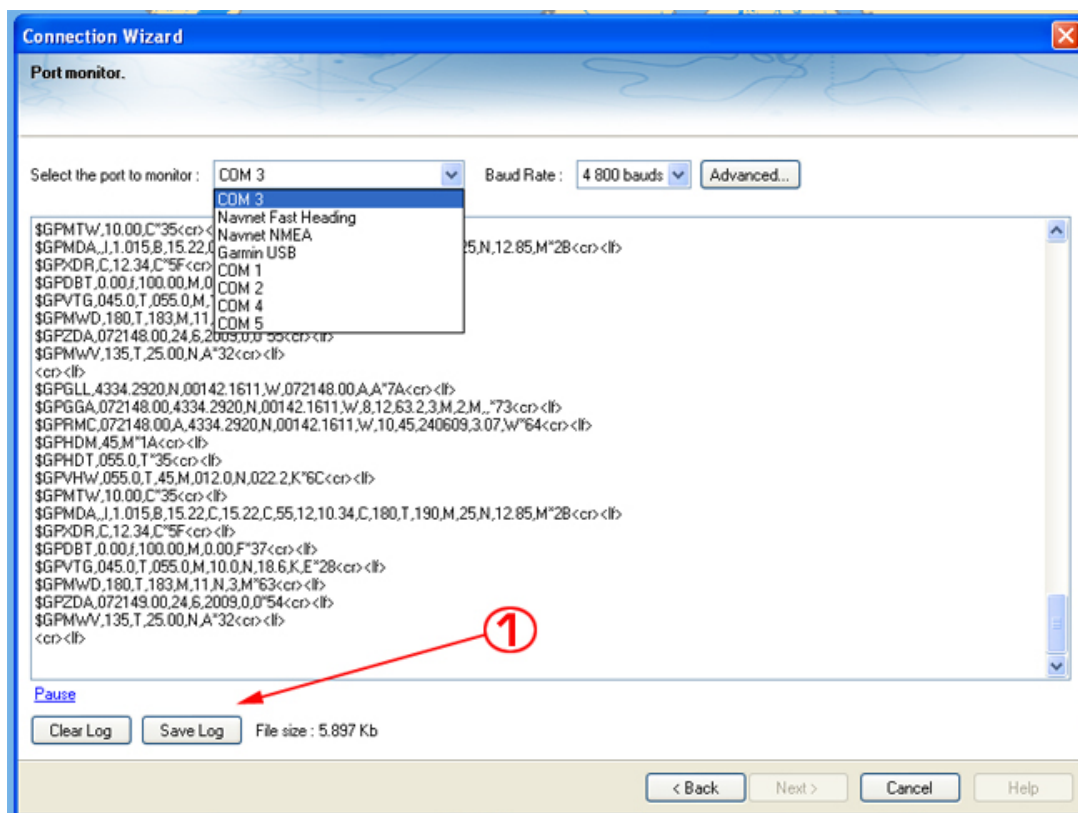
The "Save Log" button allows you to create a text file containing the log of the NMEA data. This is very useful to send this file to Tech Support for analysis, in case TimeZero Catch does not seem to decode the sentence properly.

Data Source

The Data Source displays a "matrix" view of all the inputs and outputs and allows you to setup port priorities (when more than one sensor provide the same data). All data types supported by TimeZero Catch are listed in the first column (position, heading, etc...). Before this window is displayed, TimeZero Catch analyzes all the inputs. For each data type and configured ports, the data source window display if it is "unselected" (unavailable), "Selected & Detected" (configured and correctly detected), or just "Selected" (configured by not detected).

If the same data type has been selected on more than one port, a drop down menu (in the "Master") column allows you to select which port to use as a primary sensor (which will be the port used for that specific data in TimeZero Catch):

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If the Master Sensor becomes unavailable, TimeZero Catch will automatically select another for you. If the Master Sensor becomes available again, TimeZero Catch will revert back to it automatically without user interaction.

This allows you to design a system with total redundancy (as long as you have multiple GPS sources).

Clear All

This option will erase all the Input and Output configuration of TimeZero Catch . Only use this option if you want to configure all the Inputs and Outputs of TimeZero Catch from scratch.

Be careful as this cannot be undone.

NMEA0183 Serial Connection

Instruments (GPS, Heading sensor, Sounder, AIS...) are usually connected to the computer using a serial connection. The data being transferred on that serial connection needs to be in NMEA0183 format for the instrument(s) and computer to understand each other. Be aware that physical serial connections may be achieved using two different protocols: RS-232 or RS-422.

RS-232 (regular PC "COM port")

The default standard for serial ports on computers is RS-232. It uses 3-wires consisting of a transmit signal "TD" (pin 3 of the DB9 connector from the computer perspective), a receive signal "RD" (pin 2 of the DB9 connector), and a signal ground "SG" (pin 5 of the DB9 connector). Some GPS (like the Furuno GP32) have a dedicated PC port (RS-232) that can be connected directly to the serial input of the PC.

Pin	Signal	Pin	Signal
1	Data Carrier Detect	6	Data Set Ready
2	Received Data	7	Request to Send
3	Transmitted Data	8	Clear to Send
4	Data Terminal Ready	9	Ring Indicator
5	Signal Ground		

Yellow to Pin2

Blue to pin 5
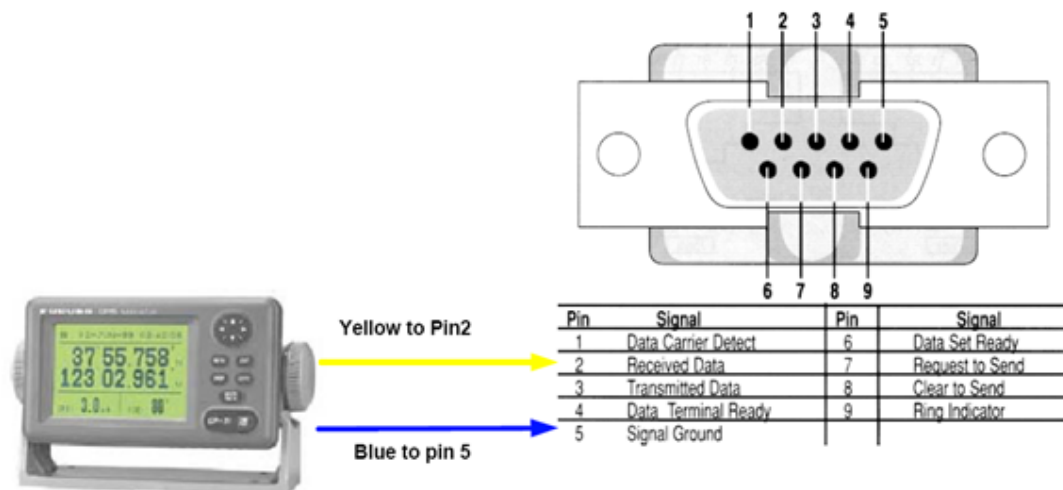
Note: In the above diagram, only 2 wires of the GPS are used: the transmit signal and ground (or "Signal Ground"). In this example the PC is just a "listener" and doesn't send any information back to the GPS.

RS-422 (or "NMEA port")

RS-422 uses a "balanced" (or differential) signal that does not use a common ground. RS-422 uses 4 wires: TD-A (Transmit Positive), TD-B (Transmit Negative), RD-A (Receive Positive) and RD-B (Receive Negative).

Note: "TD-A" / "TD-B" can also be noted "TD-H" / "TD-C" (Hot/Cold)

RS-422 has been selected as a preferred interface to transmit NMEA0183 data on a boat. RS-422 uses a differential signal instead of a single ended signal used by RS232. Where a single-ended system will start to become unreliable after a couple dozen feet, a differential system can be reliable for several hundreds of feet. In an electrically noisy environment like a boat, this can make a big difference. With RS-422 (differential signal), 4 wires are used (two to transmit and two to receive). Note that there is no common ground with RS-422 (no "signal ground"). The transmit and receive lines use their own "point of comparison".

All Furuno depth sounders (such as FCV1100) only output NMEA0183 using the RS-422 protocol. If you want to connect the FCV1100 to a serial COM port (RS232), you will have to use a RS-422 to RS-232 adapter.

Connect the white wire to the RD-A (receive positive) and the black wire to the RD-B (receive negative) of the converter. In this example we do not want to talk back to the sounder (so we will not use TD-A and TD-B of the converter).

If you want to talk and listen to the NMEA0183 device, you will have to wire both TD and RD lines:
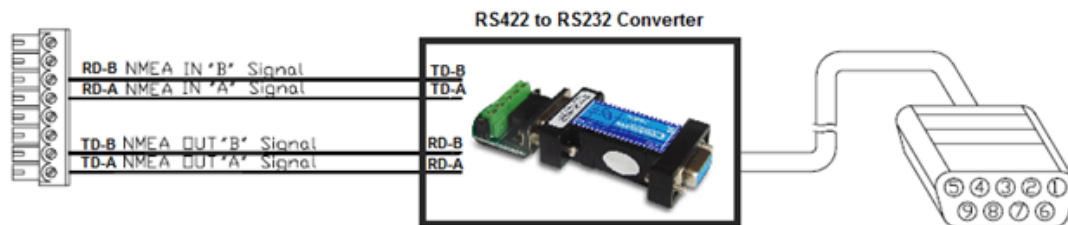
Using a Serial to USB Adapter

On most computers, the USB interface has replaced the old COM port (serial) interface. Most laptop manufacturers got rid of serial ports years ago. Some desktop computers still have a serial port, but these serial interfaces are less common and it is unlikely that modern computers will have a serial port. So, if you need to connect an instrument serially to your computer, you will have to purchase a Serial to USB Adapter.

Before connecting the Serial to USB Adapter, you will have to install the "driver" provided by the hardware manufacturer. Usually, the driver is provided on a CD, but it is always a good idea to download it from Internet (to make sure that you install the latest version). When connecting the Serial to USB Adapter to your computer, the driver will create a "virtual COM port" (also known as "VCO"). This means that for any software installed on the computer, the adapter will be seen and detected as a regular COM port (just like if the PC had a Serial COM port). Note that if the appropriate driver has not been correctly installed in Windows, the Serial to USB Adapter will not function properly and will not appear as a Virtual COM Port for the software.

To make sure the drivers are correctly loaded, open the "Device Manager" and look for a COM port under "Ports (COM & LPT)":

To open the Device Manager under Windows 7, search for "device Manager" from the Start menu. Under Windows 8, right click on the "Start" button (on the lower left of the Desktop) and select "Device Manager".

InSight Radar Connection

The "InSight Radar Plus Pack" needs to be unlocked prior to configure an InSight 2 series Radar in TimeZero Catch . Please note that TimeZero Catch is **only** compatible with Ethernet Based Radar (it is not compatible with older Serial 2Kw dome or with the IR2BB)

Introduction

TimeZero Catch is compatible with all the MDS Ethernet InSight Radars (Koden radars with MDS5 or MDS6 control box). Since V2, TimeZero Catch is also compatible with the Ethernet 2KW Dome Radar (MDS1R and MDS8R Koden radars). The InSight Radar connects to the PC through the control box using an Ethernet connection (100Base-T). In order for TimeZero Catch to display and control the radar, the PC and the Radar must be on the same IP network and subnet.

Direct Connection or connection via HUB/Switch:
The Nobeltec InSight Radar operates on 192.168.0.x / 255.255.255.0 if there is no router on the network. In this case the Radar will automatically assign itself an IP address of 192.168.0.1 / 255.255.255.0 and you will have to manually set the computer with an IP address on that same subnet (usually 192.168.0.100/255.255.255.00).

Note: If there is more than one radar on the network, DIP switches inside the MDS box will need to be adjusted to offset the IP address of the second radar (because it is forbidden to have two radars with the same IP address). Please refer to the Radar User Guide.

Connection via a Router (DHCP Server):
If you have a router on the network (with DHCP capability), the Radar and the PC will automatically get their IP addresses from the router. You should not have to configure the IP address.

Note: The Radar Setup Wizard will show you the IP address of the Radar (default Nickname). This can be useful for troubleshooting (ping the radar). However, there is no guarantee that the radar IP address will never change in the future (because the Router can dynamically assign new IP address). If your router can "reserve" specific IP address for specific hardware (using the MAC address), it is recommended to reserve one for the Radar. That way the radar will always keep the same IP address (easier for future troubleshooting). Please refer to the documentation of your Router.

Once the Radar and Computer are on the same network, the Radar Installation Wizard (from the Windows Start Menu) is used to detect the radar on the network. Once the Radar is detected, TimeZero Catch can be open.

Note: The Radar initial configuration (such as Heading Align, Transmit Trigger, etc.) can be made from the Radar Installation Wizard or from TimeZero Catch .

Important: If you want to connect Nobeltec to the InSight Radar and to a Furuno Ethernet Sounder at the same time, please refer to the InSight Radar & Furuno Sounder chapter (a specific IP configuration needs to be adjusted on the PC).

Set the IP address:

Connection without a Router:

If you connect the radar directly to the PC (using a crossover cable) or via a HUB or Switch, you have to manually assign an IP address to the PC.

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the radar (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the radar, you can temporary disconnect the Ethernet Cable connected to the radar from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address 192.168.0.100 and subnet mask 255.255.255.0:

Connection with a Router:

The IP addresses of the computer and Radar should be automatically assigned by the router (DHCP Server). Just make sure that the Router is powered ON and connected to the Computer and Radar.

Note: For troubleshooting, we recommend to write down the IP and Subnet Mask of the Computer. This way, it will be possible to compare the IP address of the PC and Radar later to make sure they are on the same subnet. Follow the instruction below to discover the IP address of the PC: Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel. Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the radar (usually "Local Area Connection"). Select "Details" on the "Local Area Connection Status" window. This will display the IPv4 Address and IPv4 Subnet Mask.

Detecting the radar

Make sure that TimeZero Catch is closed, open the Windows "Start" menu -> Nobeltec TimeZero -> Radar Installation Wizard.

Note: TimeZero Catch needs to be closed while the Radar Installation Wizard is opened, but note that TimeZero Catch needs to be activated and needs to have been open at least one time before launching the Wizard. The Radar Setup Wizard will create a "RADAR.INI" file that needs to be stored in "*C:\ProgramData\Nobeltec TZ\PreferencesTimeZero*". This folder is created by TimeZero Catch the first time it is opened.

Follow the on-screen instructions of the Wizard. The radar should be automatically detected and displayed as below:

Note: If the wizard does not seem to detect the radar (after waiting a long time), just Power OFF and ON the radar. Check Ethernet Cable and HUB/Switch for traffic activity. Try to turn OFF the firewall of the computer.

The next page of the wizard, will display the IP address of the Radar (default Nickname of the Radar). It is recommended to write down that IP address for troubleshooting. On the example below, the Radar is getting its IP address automatically from the Router and we can learn by reading the default Radar Nickname that its IP is currently 192.168.1.101:
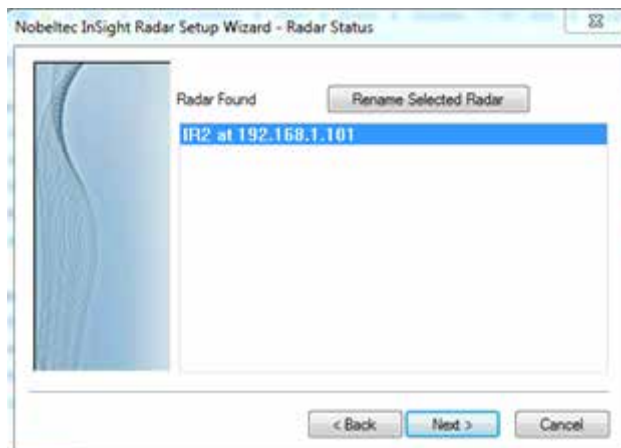
Note: If the Radar was not connected to a Router (and with the DIP switches set for default configuration), the IP address displayed would be 192.168.0.1.

The next page will allow you to confirm that the radar is properly working. The radar will automatically start to transmit after warming up. You should see some messages exchanged in between the Radar and PC and a small radar picture in the "Radar Viewer":
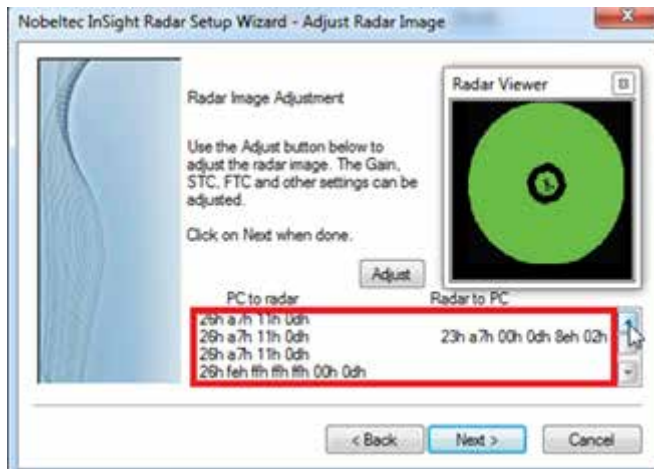
You can click the "Adjust" button to change the Range and some Parameters (Gain. Sea, etc.), however, you don't have to setup the initial radar settings from within the Wizard as you can perform the adjustment from within TimeZero Catch (that offers a better view of the radar).

Note: If the Radar Installation Wizard detects the radar but do not display any picture (or is stuck on the message "Warming Up"), it might be caused by multiple network adapters or by having the PC on the wrong subnet or wrong IP. First, make sure to disable any other network adapter, double check the IP address of the PC (for IP and subnet) and try again. You can also try to look and change the subnet of the "Radar.ini" file manually (see "Advanced Troubleshooting" below).

When you are done, click on "Next" then "Finish" to close the Radar Installation Wizard.

Nobeltec TimeZero Catch Configuration

Open TimeZero Catch in Navigation mode and select the "Radar" Work Space.

Note: If the radar Work Space is not available, make sure that the "InSight Radar Plus Pack" is activated

Click on the Radar button in the Ribbon and make sure that the radar source is selected:

Transmit the Radar, then open the Radar Options to adjust the various initial setup:
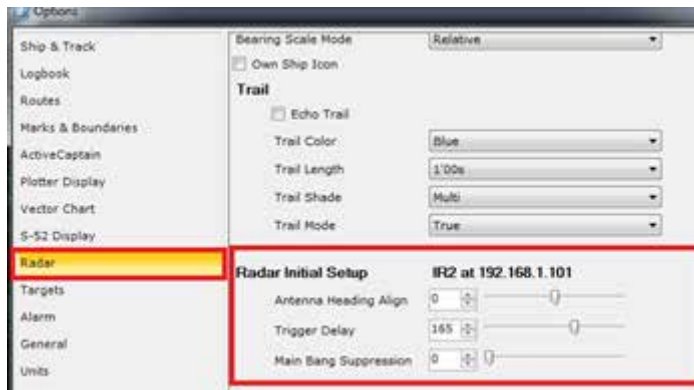
Make sure to review the Radar Options chapter to learn how to adjust the various settings.

IMPORTANT: The Radar Overlay (displaying the Radar Picture on top of the chart) is ONLY available when a GPS and Heading sensors are connected and configured.

Tips: Please refer to the IR2 Installer's Guide PDF document located on the Software Installation DVD (inside the "Document" folder) if you need more information.

Advanced Radar Troubleshooting

When the Radar Setup Wizard is closed, it creates a "RADAR.INI" file located in "C:\ProgramData\Nobeltec TZ\PreferencesTimeZero" (hidden folder). This file stores the radar information and is used by TimeZero Catch . You can open that file with a text editor such as Notepad for troubleshooting. Some interesting values are the Radar MAC Address and Subnet Mask:
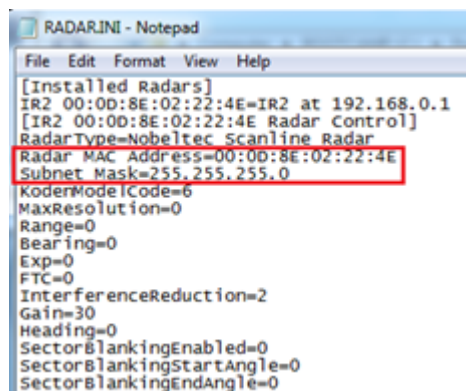
Make sure that the subnet mask match the one of the PC. In some cases (when having multiple network adapter for example), the radar installation wizard might detect the wrong adapter and write in the file the wrong subnet mask.

Note that the radar IP address is not saved in this file (the Nickname might contain the initial IP address of the radar, but this value is not updated if a DHCP server is used). It is possible to retrieve the Radar IP address by using the command "arp –a". This will display a corresponding list of MAC address and IP address:
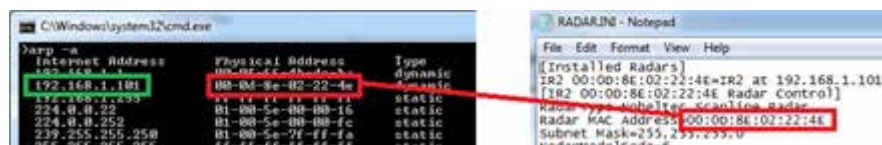
Note: Most router web interface also allows you to look for the Radar IP from the MAC address table

Once you know the IP address of the Radar, you can "Ping" the radar from the computer to make sure that the connection in between the computer and the radar is OK. For more information on how to ping an Ethernet device, refer to the How To Ping chapter.

Radar Initial Setup

Heading Align

It is not always possible to install a radar so that the front of the radar is exactly parallel with the boat's keel or center line. The Antenna Heading Align adjustment can compensate for this discrepancy. This process allows you to align the radar transceiver with the center line of the boat and only needs to be set once. Note that this is a different function than aligning your heading sensor. To adjust the Radar Antenna Alignment, it is best to display the Radar Work Space in "Head Up" mode and aim the bow of your vessel (during calm weather) at a buoy while underway. The buoy target should appear straight up on the Radar Screen.

Trigger delay

After successfully installing the radar, transmit trigger delay should be reviewed and adjusted in order to compensate for cable transmission delays. Longer cables generally require a higher trigger delay setting. Trigger delay should be initially set to reduce the size of the ring. Trigger Delay can also affect the radar image of a linear object such as a breakwater or riverfront. These can appear deformed due to excessive or inadequate trigger delay. Properly setting the delay requires to look at a straight object (refinement of the Transmit Trigger is best viewed using radar overlay on the Chart). On the water adjustment when the boat is parallel to a straight jetty is the ideal choice.

Inadequate Tx Trig   Good Tx Trig   Excessive Tx Trig
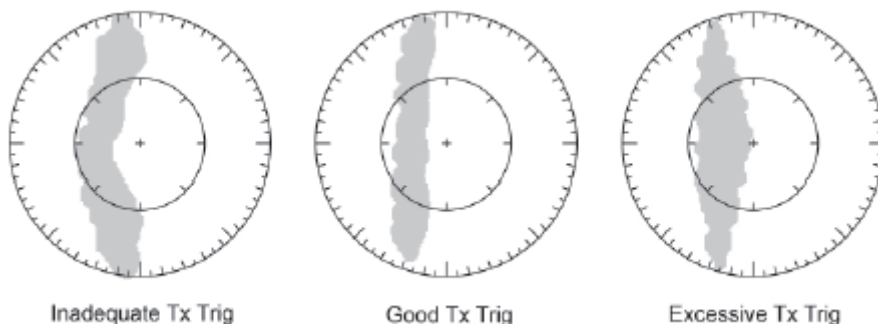
In most cases, Transmit Trigger settings remain between 125 and 160.

Auto Tune (InSight Radar with MDS box only)

Nobeltec radars are always in "Auto Tune" mode. To optimize the image, it is necessary to set the auto tune preset. Once established, you should not need to adjust the auto tune preset unless the image quality deteriorates. Generally, you should adjust the auto tune preset on average once a year to make sure you have the highest quality image.

Follow these steps:

· Select the Radar Work Space and transmit the radar at 3NM. Make sure that you see a radar picture.

· Open the Radar Options and scroll to the "Initial Setup" Category

- Adjust the auto tune control down until you see the image start to deteriorate. Note the value of the setting.

- Adjust the auto tune control up past the point where the image looks good until it starts to deteriorate. Take note of the setting value.

- Set the controls at a point between the two extreme settings, where the quality of the image is at its best.

Radar Presets (InSight Radar with MDS box only)

The Presets settings are used to adjust the "range of operation" of specifics value. For example, if you are using the Radar in Manual Gain and find that you have to "push" the manual gain value very high to see good targets, you may want to increase the "Manual Gain Preset". This will internally increase the manual gain value range and you will be able to reduce the manual Gain value to reach the same level of gain. Note that you have an independent Manual and Automatic Preset for Gain and the Sea Clutter (STC). The various controls will be enabled or greyed out according to the Radar current value. So if you want to adjust the Manual Gain Preset, make sure that the Radar is in Manual Gain.

- *Auto Gain Preset:* To adjust the Auto Gain preset make sure that the Sea Clutter is set to 0 (manual Sea = 0). Set the Radar to Auto Gain (from the Radar Ribbon button) and pick a range suitable for navigation (around 3NM). Adjust the Auto Gain Preset control down if the image looks too strong or up if the image looks too faint.

- *Manual Gain Preset:* To adjust the Manual Gain preset make sure that the Sea Clutter is set to 0 (manual Sea = 0). Set the Radar to Manual Gain at 50% (from the Radar Ribbon button) and pick a range suitable for navigation (around 3NM). Adjust the Manual Gain Preset control down if the image looks too strong or up if the image looks too faint.

- *Auto Sea Preset:* The Auto Sea Preset is only used for range above 1NM (under 1NM TimeZero Catch uses the Auto Harbor Sea preset instead). To adjust the Auto Sea preset, set the radar range to 12nm and select Auto Sea (from the Radar Ribbon button) to turn on that function. Set the Auto Sea preset to 10. Set the STC Curve preset to 4. From the Radar Ribbon button, manually adjust the gain until you get secondary echoes (noise) throughout the image. From the Options panel, adjust the Auto Sea preset value up until most of the weak echoes for an 8nm radius are eliminated. Adjust the radar range to 1.5nm and verify that strong echoes from nearby vessels or land are not eliminated. If land or vessel echoes are small or have been eliminated, decrease the Auto Sea preset.

- *Manual Sea Preset:* To adjust the Manual Sea preset, set the radar range to 12NM and set the Sea Clutter to Manual at 50% (from the Radar Ribbon button). Set the Auto Sea preset to 10. Set the STC Curve preset to 4. From the Radar Ribbon button, manually adjust the gain until you get secondary echoes (noise) throughout the image. From the Options panel, adjust the Manual Sea preset value up until most of the weak echoes for an 8nm radius are eliminated. Adjust the radar range to 1.5nm and verify that strong echoes from nearby vessels or land are not eliminated. If land or vessel echoes are small or have been eliminated, decrease the Manual Sea preset.

- *Auto Harbor Sea Preset:* To adjust the Harbor Sea Clutter Preset, set the radar range to 1NM and select Auto Sea (from the Radar Ribbon button) to turn on that function. Set the Harbor Sea preset to 10. Set the STC Curve preset to 4. From the Radar Ribbon button, manually adjust the gain until you get secondary echoes (noise) throughout the image. From the Options panel, adjust the Auto Harbor Sea preset value up until most of the weak echoes are eliminated. Adjust the radar range to 1/8nm and verify that strong echoes from nearby vessels or land are not eliminated. If land or vessel echoes are small or have been eliminated, decrease the Auto Harbor Sea preset.

- *Auto Tune Preset:* Nobeltec radars are always in "Auto Tune" mode. To optimize the image, it is necessary to set the auto tune preset. Once established, you should not need to adjust the auto tune preset unless the image quality deteriorates. Generally, you should

adjust the auto tune preset on average once a year to make sure you have the highest quality image. Adjust the auto tune control down until you see the image start to deteriorate. Note the value of the setting. Adjust the auto tune control up past the point where the image looks good until it starts to deteriorate. Take note of the setting value. Set the controls at a point between the two extreme settings, where the quality of the image is at its best.

- *STC Curve:* The STC Curve function allows you to control all modes of the Sea Clutter profile of the radar. By default, the STC Curve profile is set to a value of 4. For most applications, there should be no need to change this setting. However, you may want to adjust this value to get a better application of Sea Clutter if the radar is mounted higher or lower than a typical installation. To adjust the STC Curve profile, set the radar range to 12nm, set Gain and Sea Clutter to manual settings (from the Radar Ribbon button). When the STC curve profile is set to a lower number, the sea clutter is only applied in an area closer to the vessel. Setting the curve profile to a higher number causes STC to be applied to more of the image. Note that if the STC curve profile is not set correctly, adjusting the sea clutter (manual or automatic) may not have the desired impact. If you notice that increasing the sea clutter control has no impact on the image, your STC curve profile is too low. On the other hand if you notice that echoes disappear too quickly, your STC profile may be too high

NavNet MFD & DRS Connection

The "Furuno Radar Plus Pack" needs to be unlocked prior to configure NavNet3D or NavNet TZtouch in TimeZero Catch .

IMPORTANT: It is NOT possible to connect the DRS Antenna directly to the computer. At least one MFD (NavNet3D or TZtouch) needs to be present on the network.

Nobeltec TimeZero Catch connects to a Furuno NavNet3D or TZtouch "MFD" (Multi Function Display) and "DRS" (Digital Radar Sensor) through an Ethernet connection (100Base-T). The computer needs to have an IP address that "matches" the Furuno Network (172.31.x.x/255.255.0.0) in order to exchange information with the MFD and DRS. We highly recommended using 172.31.3.150 as a fixed IP address for the computer with a subnet mask of 255.255.0.0.

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the radar (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the radar, you can temporary disconnect the Ethernet Cable connected to the radar from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address 172.31.3.150 with a subnet mask of 255.255.0.0:

Once the computer's IP address has been assigned, launch Nobeltec TimeZero Catch in Navigation Mode. Select the Connection Wizard and perform an "Automatic Detection". Nobeltec TimeZero Catch will automatically detect the Navigation Data available on the NavNet network (GPS, Heading, AIS, Wind,…).

If the NavNet instrument is not automatically detected, you can manually add a NavNet Port:

- Select "Manual Port Configuration" from the Connection Wizard and click on "Next"

- Select "Add/Configure NavNet Connection" and click on "NMEA & AIS", "Fast Heading" and "ARPA". Click on "Next"

- Make sure that the type of data you want to receive from the NavNet network are checked for the various NavNet ports

Note: Make sure that NavNet3D or TZtouch MFD setup as a Master is turned on **before** starting Nobeltec TimeZero Catch . Nobeltec TimeZero Catch will not recognized the DRS if the NavNet MFD is turned OFF or not present on the network.

Important note about DHCP Server and Router on a NavNet3D Network:

Using a Router (with a DHCP server) is **absolutely forbidden** on a NavNet3D Network. The NavNet3D MFD "Master" is already a DHCP server (and would conflict with any other third party DHCP server). You may setup the computer to acquire an automatic IP address, but in that case, the NavNet3D MFD set as a Master needs to be turned ON before the computer. If the computer is connected to the network or turned ON prior to the NavNet3D MFD set as Master, the computer will not acquire a valid IP address and the Ethernet connection must be repaired manually. That is why it is recommended to setup a fixed IP address (172.31.3.150 / 255.255.0.0).

Note: Some PC Network Interface (under Windows7) cannot acquire an IP address from the NavNet3D DHCP server (from the Master). In these rare case there is no other way but to fix the IP address of the PC or use the Windows "Alternate IP Configuration"

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FAR 2XX7 Connection

The "Furuno Radar Plus Pack" needs to be unlocked prior configuring a FAR 2XX7 series Radar in TimeZero Catch .

Check and Assign Radar Hostname(s)

When multiple radars are networked or inter-switched together, a unique number must be assigned to each processor. Note that for TimeZero Catch to correctly detect the radar, at least one FAR2xx7 must be assigned to "RADAR1" (IP address = 172.31.3.6).

To assign the radar number, hold "HL OFF" and press the "MENU" key 5 times on the FAR 2XX7. The "Initialize" menu will appear. Select "Installation" (4), then Radar NO (4). Once the radar number is changed, the radar must be restarted to store the new setting. If applicable, follow the same procedure for each radar on the network, and then confirm that each radar number is unique. You cannot have two radars on the same network with the same name or number.

Note: Whenever a network change is made, it is recommended that all radars are powered down and restarted.

To confirm the network settings and communications between multiple radars, power up all of the radars in the network, then right click on the Radar Antenna box (top left corner). The antenna information for all of the available radars in a network will appear on the right in the menu panel. Be sure that all the radars on the network are listed in this panel. If not, check the cables and the network settings.

Repeat Navigation Data over the network

The FAR2xx7 can be set up to output Position, COG, SOG and Heading on the network. Select the FAR2xx7 that you want to use to broadcast the information and right click on the "Own Ship Position" box. Select ON for the "SIO Data LAN Output" (3).

Note: Only **one** FAR 2XX7 can be set up to repeat Position, COG and SOG on the network. Never turn ON the "SIO Data LAN Output" on multiple FAR2xx7.

Configure the computer

Nobeltec TimeZero Catch connects to a Furuno FAR 2XX7 radar through an Ethernet connection (100Base-T). The computer needs to have an IP address that "matches" the Furuno Network (172.31.x.x/255.255.0.0) in order to exchange information with the radar. We highly recommended using 172.31.3.150 as a fix IP address for the computer with a subnet mask of 255.255.0.0.

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the radar (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the radar, you can temporary disconnect the Ethernet Cable connected to the radar from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address 172.31.3.150 with a subnet mask of 255.255.0.0:

Once the IP address of the computer has been assigned, launch Nobeltec TimeZero Catch in Navigation Mode. Select the Connection Wizard and perform an "Automatic Detection". Nobeltec TimeZero Catch will automatically detect the Navigation Data shared on the network by the FAR2XX7. Note that the FAR2XX7 will **only** share GPS, Heading, and COG/SOG over the network. If you want AIS, Depth or any other data, you will have to connect it directly to the computer (or use an Ethernet Sensor such as the Furuno AIS FA30 or Ethernet Sounder DFF1).

IMPORTANT: Heading will **NOT** appear as being detected in the Configuration Wizard through the network. This is normal! The Heading is extracted from the Radar Echo information and not from the Navigation Data.

ARPA Configuration

2XX7 Configuration:
The ARPA target output must be setup through the LAN for all the FAR2xx7 on the network. Hold "HL OFF" and press the "MENU" key 5 times. The "Initialize" menu appears. First, select "TT Preset" (6). Select "True" for "TTM Output" (2). Select "Back" to return to the "Initialize" menu and select "Other" (8). Set "INS" (5) to "LAN". Repeat this process for each processor on the network.

TimeZero Catch Configuration:
In order for the ARPA target to be received over the network, you need to configure it manually in the software:

- Open the Connection Wizard

- Select "Manual Port Configuration" and click on "Next"

- Select "Add/Configure UDP Connection" and click on "Next"

- Select the IP address that begins with 172.31.x.x from the "Network Adapter" drop down menu and type "10028" for the "UDP Port". Click on "Next"

- When Nobeltec TimeZero Catch is done analyzing the port, select "UDP 10028" in the list on the left and make sure that "ARPA" is checked in the list on the right. Click "Next" then "Finish".

DFF1 & BBDS1 Sounder

The "Furuno Sounder Plus Pack" needs to be unlocked prior to configure a Furuno Ethernet Sounder in TimeZero Catch .

Computer Setup

The DFF1 or BBDS1 connect to the PC through an Ethernet connection (100Base-T). All the Furuno Ethernet sensors (including ethernet sounders) only operate on the 172.31.x.x / 255.255.0.0 class B network. You will have to setup your computer IP address to match that network. We highly recommended using 172.31.3.150 as a fixed IP address for the computer with a subnet mask of 255.255.0.0.

Important: If you want to connect Nobeltec to the InSight Radar and to a Furuno Ethernet Sounder at the same time, please refer to the InSight Radar & Furuno Sounder chapter (a specific IP configuration needs to be adjusted on the PC).

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the sounder (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the sounder, you can temporary disconnect the Ethernet Cable connected to the sounder from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address 172.31.3.150 with a subnet mask of 255.255.0.0:

Sounder Setup

Make sure that the DFF1 is set for the fix IP address mode. Remove the "MODE SW" rubber cap on the DFF1/BBDS1 side panel and make sure that DIP Switches are in the configuration "Down-Up-Up-Down":

Connect the DFF1/BBDS1 to the computer (directly or via a HUB/Switch).

Note: You can "Ping" the DFF1 from the computer to make sure that the connection in between the computer and the sounder is OK. The address if the DFF1/BBDS1 to ping is: 172.31.92.1. For more information on how to ping an Ethernet device, refer to the How To Ping chapter.

Nobeltec TimeZero Catch Settings

Open TimeZero Catch in Navigation mode, select the Sounder Options and make sure that the "DFF1" or "BBDS1" is set as a Fish Finder Source

Click on the "Transducer Setup" button. If you see "TD-ID", you do not need to make any further adjustments. If you see "Model" or "Manual" you either need to pick a model number from the list or manually adjust the settings (frequency and power).

Notes: Most transducers use 200KHz for the High Frequency and 50Khz for the low frequency. If you are setting up a BBDS1, a model NEEDS to be selected, you cannot use "Manual". If you want the Bottom Discrimination function to work properly the transducer either needs to be set to "TD-ID" or a model number needs be selected

Restart TimeZero Catch .

Select the Sounder WorkSpace: you should see the sounder picture scrolling on the screen. Adjust the Sounder Range to get a good view of the bottom (it is recommended to set the mode to Auto Fishing).

Note that the depth number is sent to TimeZero Catch via the Ethernet connection on a NavNet NMEA port. Select the Connection Wizard and perform an "Automatic Detection". Nobeltec TimeZero Catch will automatically detect the depth available on the network (sent by the Ethernet Sounder on the "NavNet NMEA" port).

If the sounder is not sending depth information while performing the Automatic Detection, you will have to manually add a NavNet Port:

- Select "Manual Port Configuration" from the Connection Wizard

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- Select "Add/Configure NavNet Connection" and click on "NMEA & AIS"

- Make sure that "Depth" is checked for the "NavNet NMEA" port

Note: If the transducer has a temperature and speed sensor, you will also receive Speed Through Water (STW) and Sea Surface Temperature (SST) through the network.

Advanced Troubleshooting

If TimeZero Catch display "Power OFF" on the Sounder WorkSpace, it means that the sounder is not recognized on the network. Check the IP address of the computer (make sure the subnet mask is set to 255.255.0.0) and check the cable(s). You can "Ping" the DFF1 from the computer to make sure that the connection in between the computer and the sounder is OK. The address if the DFF1/BBDS1 to ping is: 172.31.92.1. For more information on how to ping an Ethernet device, refer to the How To Ping chapter.

If you use a BBDS1 and cannot see the Bottom Discrimination data (after enable the feature from the Sounder Ribbon), check the following points:

- The BBDS1 will ONLY send Bottom Discrimination data for depth over 5 Meters. If you are configuring the software at the dock with less than 5 meters of water, the bottom discrimination data will NOT appear. You will have to perform a Seatrial.

- In some instance, the TD-ID wire of the transducer needs to be cut off to allow the transducer to be manually selected to a specific model (in some rare instance, the TD-ID feature of the sounder prevent correct configuration of the model number). Cut the TD-ID orange wire which is connected to PIN5 of the regular 10Pin Transducer Furuno Cable:
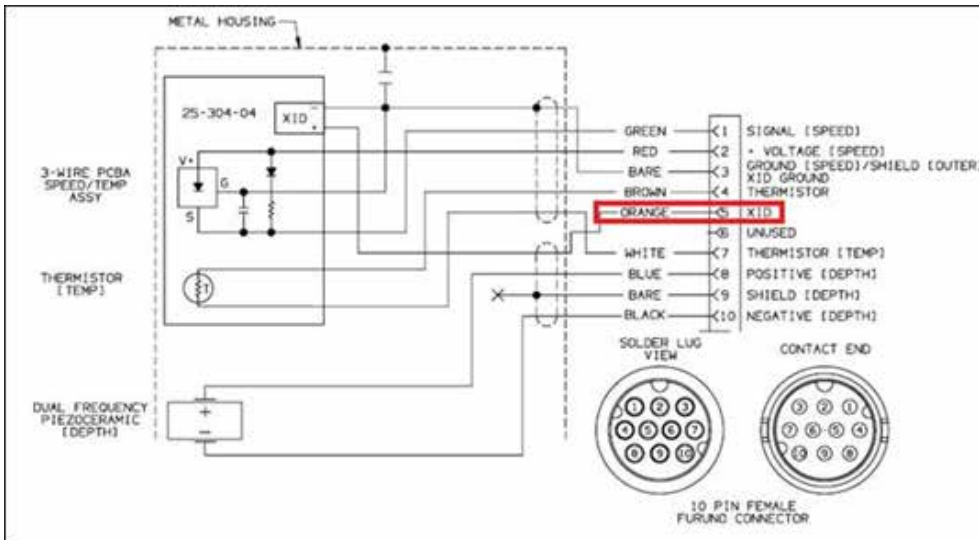
Once the orange wire has been cut, restart the BBDS1 and TimeZero, then set the Transducer Setup by Model Number and pick the corresponding Transducer Model.

If TimeZero Catch displays a white screen even after changing the Transducer Setup and restarting the DFF1 or BBDS1, it is recommended to perform a Master Reset of the DFF1/BBDS1 and try the configuration again.

To perform a Master Reset of the DFF1 and BBDS1:

- If possible, start TimeZero and confirm that the Sounder shows up correctly in the Sounder WorkSpace (if the sounder does not appear in TZ, continue to next step)

- Remove the DFF1/BBDS1 cover (leave the Sounder ON)

- Set the DIP 4 to ON (while the sounder is ON) then press on the red button (located on the top near the middle) and release it
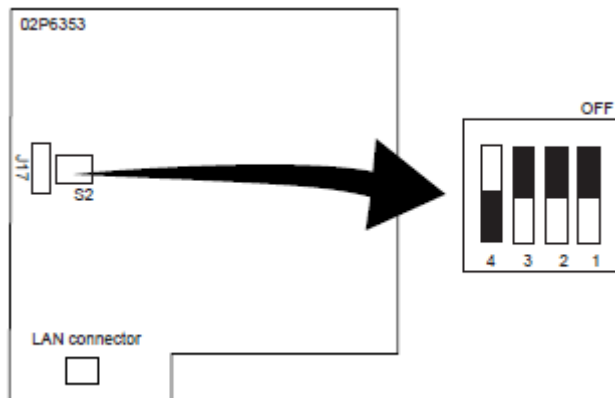
S2		OFF	ON
1	Power select	600W	1kW
2	Not Use	-	-
3	clear	OFF	ON
4	All clear	OFF	ON

- Wait for approximately 20 seconds (until the LED flash ON and OFF on the Sounder board)

- Set the DIP switch 4 back to the OFF position

- Start TimeZero and configure the Sounder Transducer settings from the "Sounder" Options.

IMPORTANT: It is important to perform the Sounder Reset (turning the DIP switch ON then OFF) while the Sounder is powered ON and if possible with TimeZero open and showing the sounder on screen. There is no need to turn OFF the sounder during that procedure

DFF3 Sounder

The "Furuno Sounder Plus Pack" needs to be unlocked prior to configure a Furuno Ethernet Sounder in TimeZero Catch .

Computer Setup

The DFF3 connects to the PC through an Ethernet connection (100Base-T). All the Furuno Ethernet sensors (including ethernet sounders) only operate on the 172.31.x.x / 255.255.0.0 class B network. You will have to setup your computer IP address to match that network. We highly recommended using 172.31.3.150 as a fixed IP address for the computer with a subnet mask of 255.255.0.0.
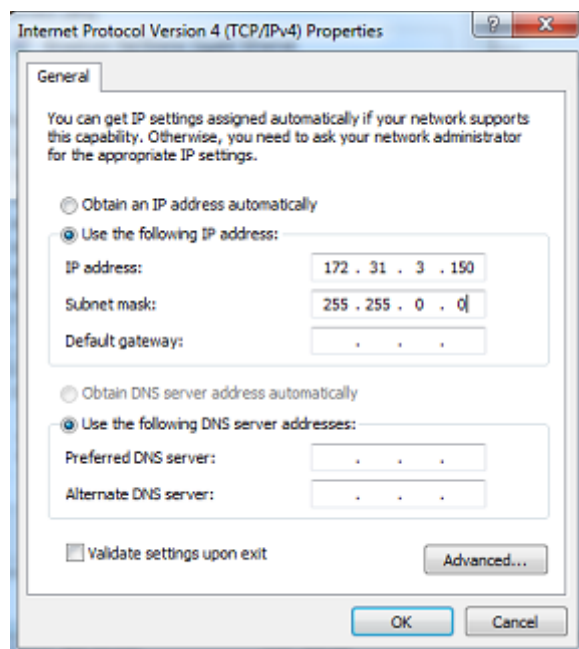
Important: If you want to connect Nobeltec to the InSight Radar and to a Furuno Ethernet Sounder at the same time, please refer to the InSight Radar & Furuno Sounder chapter (a specific IP configuration needs to be adjusted on the PC).

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the sounder (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the sounder, you can temporary disconnect the Ethernet Cable connected to the sounder from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address 172.31.3.150 with a subnet mask of 255.255.0.0:

Sounder Setup

Make sure that the DFF3 is set for the fix IP address mode. Open the DFF3 cover and make sure that "S2" DIP Switches 1 and 2 are set to the ON position (all other DIP Switches to OFF):
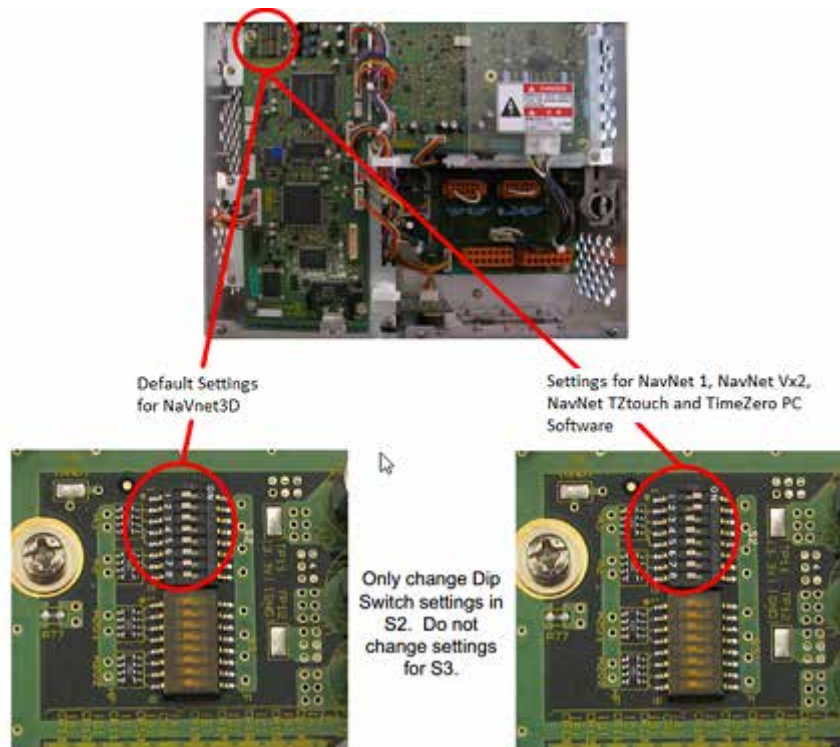
Connect the DFF3 to the computer (directly or via a HUB/Switch).

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Note: You can "Ping" the DFF3 from the computer to make sure that the connection in between the computer and the sounder is OK. The address if the DFF3 to ping is: 172.31.92.1. For more information on how to ping an Ethernet device, refer to the How To Ping chapter.

Nobeltec TimeZero Catch Settings

Open TimeZero Catch in Navigation mode, select the Sounder Options and make sure that the "DFF3" is set as a Fish Finder Source.

Click on the "Transducer Setup" button. If you see "TD-ID", you do not need to make any further adjustments. If you see "Model" or "Manual" select "Model" and select a Model.

Note: If you don't know the model, just pick a model that match the frequencies characteristics of your transducer. When you select a Model Number, you will see the frequencies appear (in green below):
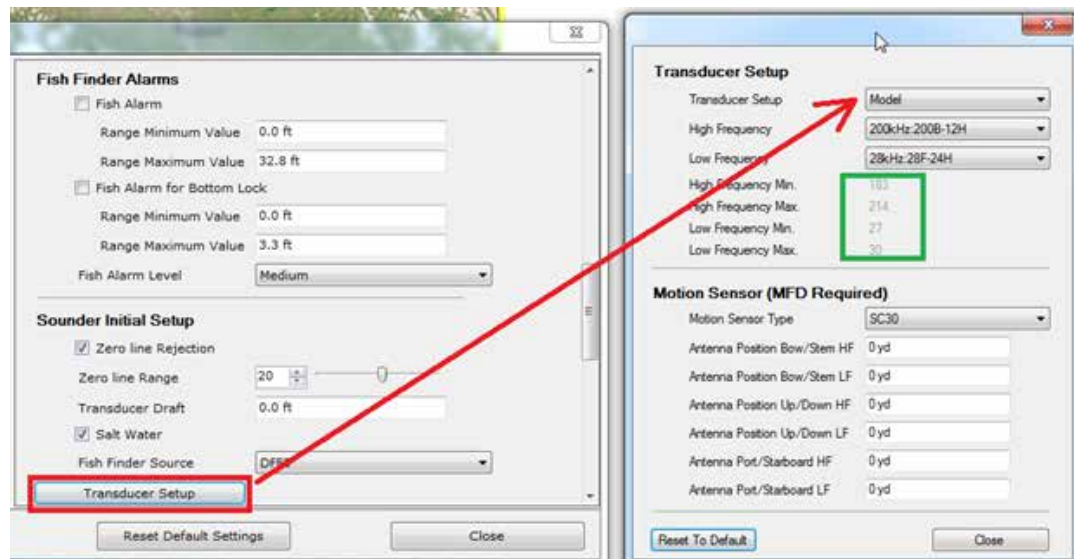
After doing any change to the Transducer Setup window, the DFF3 needs to be restarted (to lock the settings in the DFF3 memory). Just unplug and plug back the DFF3 power cable. Restart TimeZero Catch .
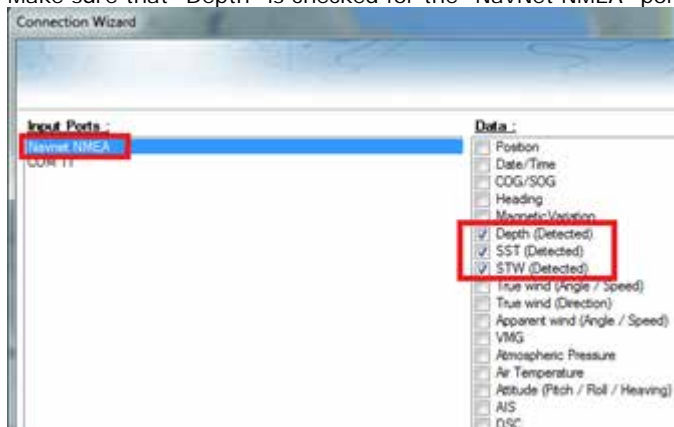
Select the Sounder WorkSpace: you should see the sounder picture scrolling on the screen. Adjust the Sounder Range to get a good view of the bottom (it is recommended to set the mode to Auto Fishing).

Note that the depth number is sent to TimeZero Catch via the Ethernet connection on a NavNet NMEA port. Select the Connection Wizard and perform an "Automatic Detection". Nobeltec TimeZero Catch will automatically detect the depth available on the network (sent by the Ethernet Sounder on the "NavNet NMEA" port).

If the sounder is not sending depth information while performing the Automatic Detection, you will have to manually add a NavNet Port:

· Select "Manual Port Configuration" from the Connection Wizard

· Select "Add/Configure NavNet Connection" and click on "NMEA & AIS"

• Make sure that "Depth" is checked for the "NavNet NMEA" port

Note: If the transducer has a temperature and speed sensor, you will also receive Speed Through Water (STW) and Sea Surface Temperature (SST) through the network.

Advanced Troubleshooting

If TimeZero Catch display "Power OFF" on the Sounder WorkSpace, it means that the sounder is not recognized on the network. Check the IP address of the computer (make sure the subnet mask is set to 255.255.0.0) and check the cable(s). You can "Ping" the DFF3 from the computer to make sure that the connection in between the computer and the sounder is OK. The address if the DFF3 to ping is: 172.31.92.1. For more information on how to ping an Ethernet device, refer to the How To Ping chapter.

If TimeZero Catch displays a white screen even after changing the Transducer Setup and restarting the DFF3, it is recommended to perform a Master Reset of the DFF3 and try the configuration again.

To perform a Master Reset of the DFF3:

• Disconnect the DFF3 from the network and power it OFF (remove power)

• Remove the DFF3 cover (leave the Sounder OFF)

• Set the "S2" DIP switch 8 to ON (while the sounder is OFF)
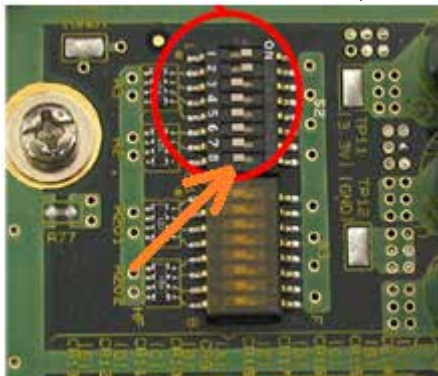
• Power ON (connect power) the Sounder and wait 1 minute

• Power OFF the sounder, set DIP switch 8 back to the OFF position

· Power ON the Sounder and confirm that the LED blink fast (every 0.5 sec) after 1 minute

· Start TimeZero Catch and configure the Sounder Transducer settings from the "Sounder" Options

· Close the Options window and exit TimeZero Catch

· Restart the DFF3 (disconnect and reconnect power)

· After 1 minute, confirm that the DFF3 led blink slowly (once every 2 seconds)

· Start TimeZero Catch

DFF1-UHD Sounder

The "Furuno Sounder Plus Pack" needs to be unlocked prior to configure a Furuno Ethernet Sounder in TimeZero Catch .

Computer Setup

The DFF3 connects to the PC through an Ethernet connection (100Base-T). All the Furuno Ethernet sensors (including ethernet sounders) only operate on the 172.31.x.x / 255.255.0.0 class B network. You will have to setup your computer IP address to match that network. We highly recommended using 172.31.3.150 as a fixed IP address for the computer with a subnet mask of 255.255.0.0.

Important: If you want to connect Nobeltec to the InSight Radar and to a Furuno Ethernet Sounder at the same time, please refer to the InSight Radar & Furuno Sounder chapter (a specific IP configuration needs to be adjusted on the PC).

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the sounder (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the sounder, you can temporary disconnect the Ethernet Cable connected to the sounder from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address 172.31.3.150 with a subnet mask of 255.255.0.0:

If the DFF1-UHD is directly connected to the computer, make sure that the DFF1-UHD is set for the fix IP address mode. Open the DFF1-UHD cover and make sure that the "S2" DIP Switches 1 and 2 are set to the OFF position (all other DIP Switches to OFF):
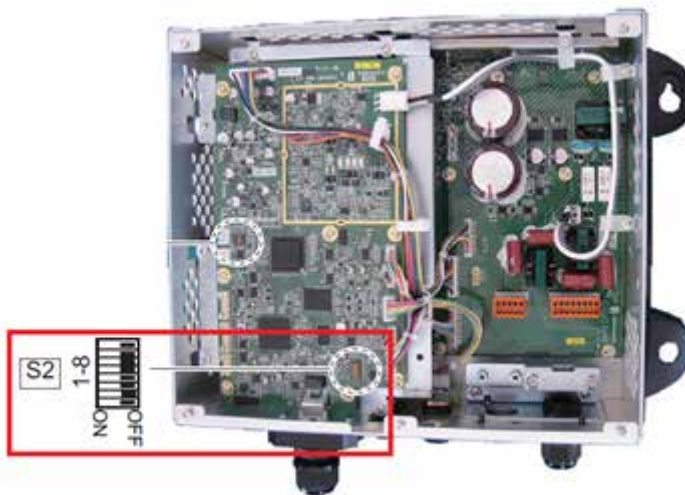
Connect the DFF1-UHD to the computer (directly or via a HUB/Switch).

Note: You can "Ping" the DFF1-UHD from the computer to make sure that the connection in between the computer and the sounder is OK. The address if the DFF1-UHD to ping is: 172.31.92.2. For more information on how to ping an Ethernet device, refer to the How To Ping chapter.

Nobeltec TimeZero Catch Settings

Open TimeZero Catch in Navigation mode, select the Sounder Options and make sure that the "DFF1-UHD" is set as a Fish Finder Source.

Click on the "Transducer Setup" button. Select "Model" and select the corresponding transducer model.

Important Transducer Information for TimeZero Catch integration with FURUNO DFF1-UHFD: We recommend using the Airmar transducer B265 or CM265 with the DFF1-UHD. Other "Low High" CHIRP transducers such as the 175LH, 109LH or 509LH may be used, however the accuracy of both ACCU-FISH and Bottom Discrimination modes will not be guaranteed. In this case, put the transducer settings to "Model Number" and select "B265LH". Please refer to a Furuno dealer for more information on the DFF1-UHD sounder and compatible transducers.

After doing any change to the Transducer Setup window, the DFF1-UHD needs to be restarted (to lock the settings in the DFF1-UHD memory). Just unplug and plug back the DFF1-UHD power cable. Restart TimeZero Catch .

Select the Sounder WorkSpace: you should see the sounder picture scrolling on the screen. Adjust the Sounder Range to get a good view of the bottom (it is recommended to set the mode to Auto Fishing).

Note that the depth number is sent to TimeZero Catch via the Ethernet connection on a NavNet NMEA port. Select the Connection Wizard and perform an "Automatic Detection". Nobeltec TimeZero Catch will automatically detect the depth available on the network (sent by the Ethernet Sounder on the "NavNet NMEA" port).

If the sounder is not sending depth information while performing the Automatic Detection, you will have to manually add a NavNet Port:

- Select "Manual Port Configuration" from the Connection Wizard

- Select "Add/Configure NavNet Connection" and click on "NMEA & AIS"

- Make sure that at minimum "Depth" is checked for the "NavNet NMEA" port

Note: If the transducer has a temperature and speed sensor, you will also receive Speed Through Water (STW) and Sea Surface Temperature (SST) through the network.

Advanced Troubleshooting

If TimeZero Catch display "Power OFF" on the Sounder WorkSpace, it means that the sounder is not recognized on the network. Check the IP address of the computer (make sure t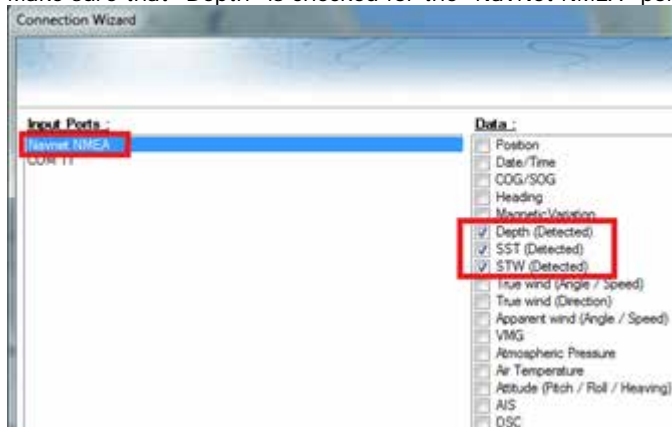he subnet mask is set to 255.255.0.0) and check the cable(s). You can "Ping" the DFF1-UHD from the computer to make sure that the connection in between the computer and the sounder is OK. The address if the DFF1-UHD to ping is: 172.31.92.2. For more information on how to ping an Ethernet device, refer to the How To Ping chapter.

If TimeZero Catch displays a white screen even after changing the Transducer Setup and restarting the DFF1-UHD, it is recommended to perform a Master Reset of the DFF1-UHD and try the configuration again.

To perform a Master Reset of the DFF1-UHD:

- Disconnect the DFF1-UHD from the network and power it OFF (remove power)

- Remove the DFF1-UHD cover (leave the Sounder OFF)

- Set the "S3" DIP switch 4 to ON (while the sounder is OFF)
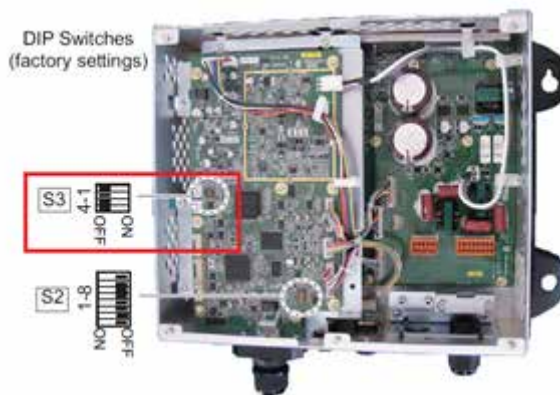
- Power ON (connect power) the Sounder and wait 1 minute

- Power OFF the sounder, set DIP switch 4 back to the OFF position

- Power ON the Sounder and confirm that the LED blink fast (every 0.5 sec) after 1 minute

- Start TimeZero Catch and configure the Sounder Transducer settings from the "Sounder" Options

- Close the Options window and exit TimeZero Catch

- Restart the DFF1-UHD (disconnect and reconnect power)

- After 1 minute, confirm that the DFF1-UHD led blink slowly (once every 2 seconds)

- Start TimeZero Catch

FCV1150 Sounder

The "Furuno Sounder Plus Pack" needs to be unlocked prior to configure a Furuno Ethernet Sounder in TimeZero Catch .

Computer Setup

The FCV1150 connects to the PC through an Ethernet connection (100Base-T). All the Furuno Ethernet sensors (including ethernet sounders) only operate on the 172.31.x.x / 255.255.0.0 class B network. You will have to setup your computer IP address to match that network. We highly recommended using 172.31.3.150 as a fixed IP address for the computer with a subnet mask of 255.255.0.0.

Important: If you want to connect Nobeltec to the InSight Radar and to a Furuno Ethernet Sounder at the same time, please refer to the InSight Radar & Furuno Sounder chapter (a specific IP configuration needs to be adjusted on the PC).

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

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Once the Network and Sharing Center window is opened, click on "Change Adapter Settings".
Double click on the Network Adapter connected to the sounder (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the radar, you can temporary disconnect the Ethernet Cable connected to the radar from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address 172.31.3.150 with a subnet mask of 255.255.0.0:

Sounder Setup

IMPORTANT: In order to connect properly to TimeZero Catch , the FCV1150 internal software must be v3.02

Make sure that the FCV1150 is in "NavNet" mode (in order to enable the network connection of the FCV1150). To access the setup menu, power ON the FCV1150 while pressing the [MENU] key:

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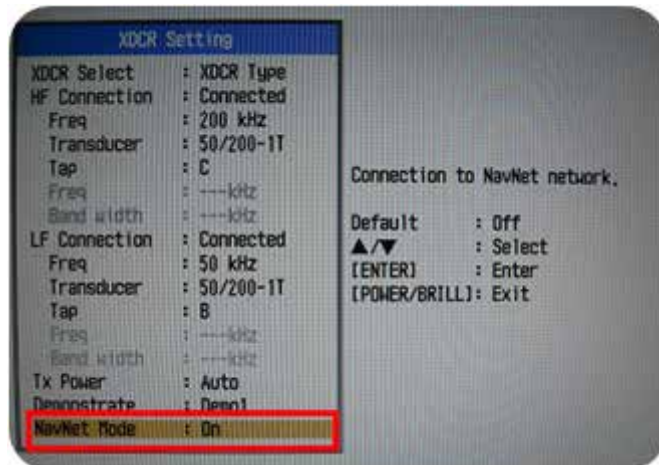
Once the NavNet mode has been enabled restart the FCV1150.

The FCV1150 can be used in "FCV1150" or "NavNet" control mode. This setting can be adjusted from the "NavNet" menu:
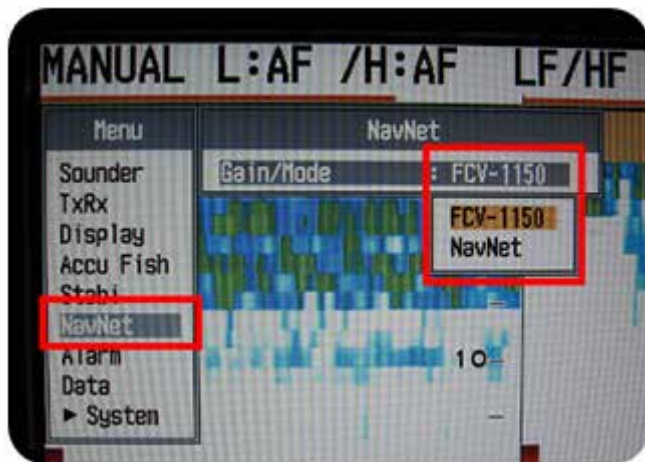
When the FCV1150 is setup in "NavNet" mode, the hardware knobs located on the FCV1150 will be disabled and TimeZero Catch will have full control over the various settings (Gain, Mode, Range, etc...). When the Sounder is setup in "FCV1150" mode, TimeZero Catch will only be able to control the Range and Shift of the FCV1150 (all the other controls such as gain and mode will have to be adjusted using the hardware knobs on the FCV1150 itself). Most users will want to setup the sounder in "FCV1150" mode in order to be able to use the knob of the sounder.

Configure all the initial Sounder settings directly from the FCV1150 (please refer to the FCV1150 installation guide).

TimeZero Catch Setup

Launch TimeZero Catch in Navigation Mode. Select the Connection Wizard and perform an "Automatic Detection". Nobeltec TimeZero Catch will automatically detect the depth available on the network (sent by the Ethernet Sounder on the "NavNet NMEA" port).

If the sounder is not sending depth information while performing the Automatic Detection, you will have to manually add a NavNet Port:

· Select "Manual Port Configuration" from the Connection Wizard

· Select "Add/Configure NavNet Connection" and click on "NMEA & AIS"

- Make sure that "Depth" is checked for the "NavNet NMEA" port

Note: If the transducer has a temperature and speed sensor, you will also receive Speed Through Water (STW) and Sea Surface Temperature (SST) through the network.

WASSP Multibeam Sounder

The "WASSP Plus Pack" needs to be unlocked to access these features.

Introduction

TimeZero Catch is compatible with the following WASSP Multibeam sounder:

WASSP Models	WMB-160F	WMB-80F	WMB-3230	
WASSP Software	v1.52.4.346	v1.52.4.346	v4.1.2.455 v4.1.3.550	
Type	Fishing	Fishing	Fishing	
Frequency	160 kHz	80 kHz	160 kHz	
Beam Width	112 beams over 120°			
Maximum Depth	2m - 200m	10m - 500m	2m - 200m	
Output Format	v1.1	v1.1	MaxSea (v2.2)	
Multibeam Depth	Yes	Yes	Yes	
BackScatter	Yes	Yes	Yes	

Navigation Data	No (*)	No (*)	Yes	

(*) GPS, Heading and other instruments need to be connected using dedicated serial COM port or NMEA2000 in TimeZero Catch

TimeZero Catch connects to the WASSP Processor PC using an Ethernet cable. With WASSP WMB-XX30 and WMB-XX50 series, the navigation data is also received from the WASSP processor through Ethernet. With legacy models (WMB-160F and WMB-80F), dedicated Serial COM port or NMEA2000 connection that are configured through the Connection Wizard must be used to receive Navigation Data (GPS, Heading, etc..).

WASSP Processor Configuration

Assign a fix IP address to the WASSP processor (if not already assigned). Assign a similar (but different IP address) on the same subnet for the TimeZero Catch computer.

Example:

- 192.168.0.10 /255.255.255.0 for the WASSP processor

- 192.168.0.20 / 255.25.255.0 for the TimeZero Catch computer

Before proceeding to the WASSP configuration, it is recommended to "ping" the WASSP processor from the TimeZero Catch computer to make sure the network is correctly setup. Please refer to the How To Ping chapter.

WMB-160F/80F

Open the WASSP Processor "System Configuration" utility and select "Technician"
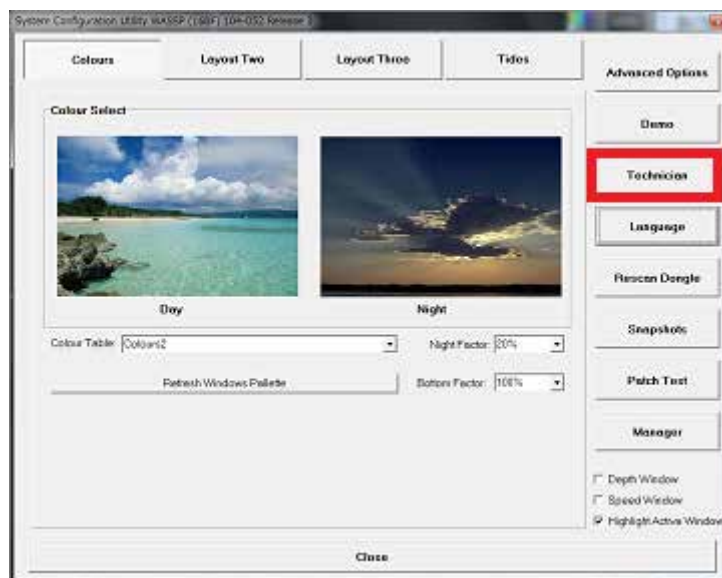
Select "Network" and make sure that "WMB Format 1.1" is selected as "External Output TCP Port":

Nobeltec TimeZero Catch v2.1.0
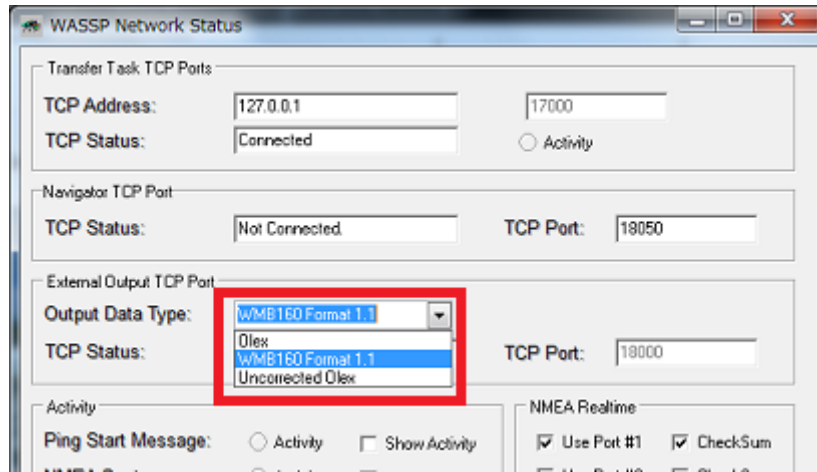
Close the window and make sure that the WASSP is set to output data:
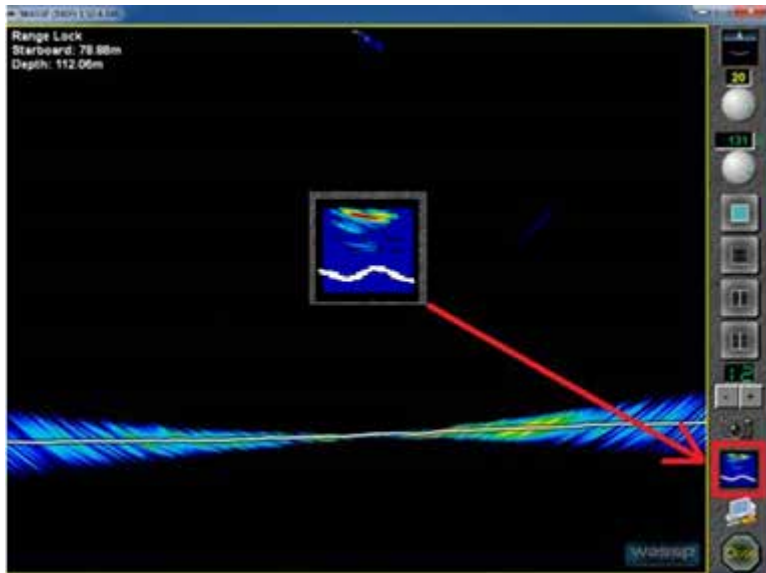
WMB-3230/5230

Click on the "Utility" button located on the WASSP Toolbar:
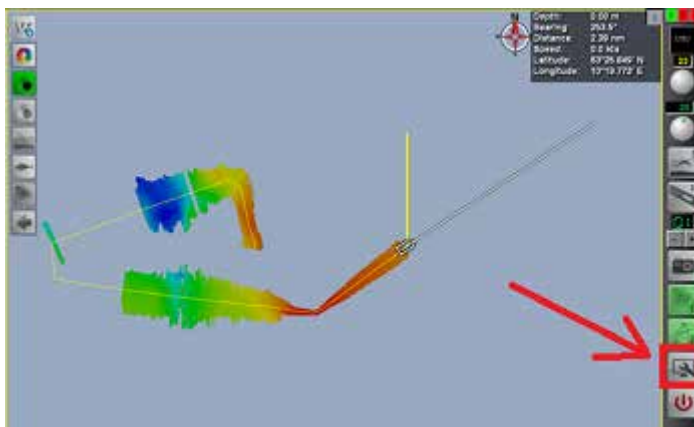
Click on the "Network Utility" button from the Utility Panel:

Select "MaxSea" as "External Output TCP Port":
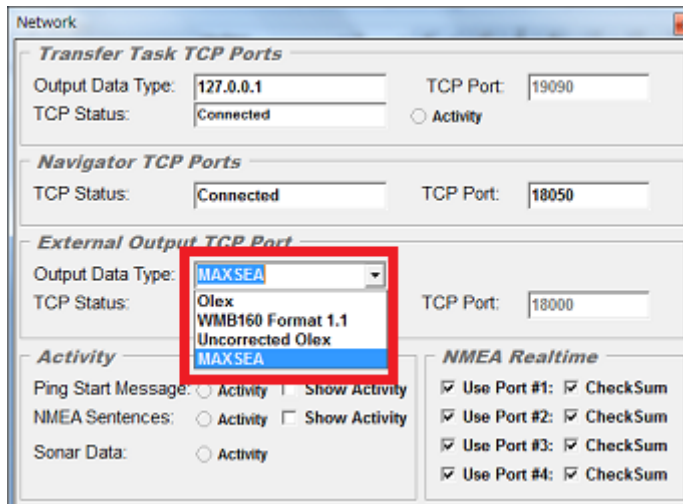
IMPORTANT: If you cannot select "MaxSea" as an Output Port, the WASSP dongle must be updated with the correct license file. Please contact your WASSP dealer to get the appropriate license file.

WMB-3250

Open the "Processing" tab from the Ship Setup Options and select "MaxSea" for the Third Party Output Options:
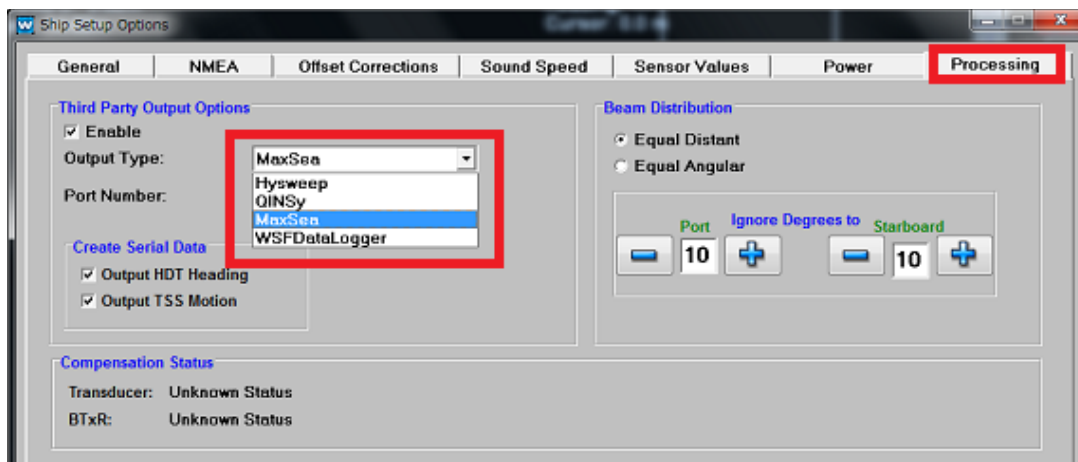
IMPORTANT: If you cannot select "MaxSea" as an Output Port, the WASSP dongle must be updated with the correct license file. Please contact your WASSP dealer to get the appropriate license file.

TimeZero Catch Configuration

Open the Connection Wizard by clicking on the Nobeltec button on the upper left of your screen.

Select "Manual port configuration" then "TCP WASSP Connection"
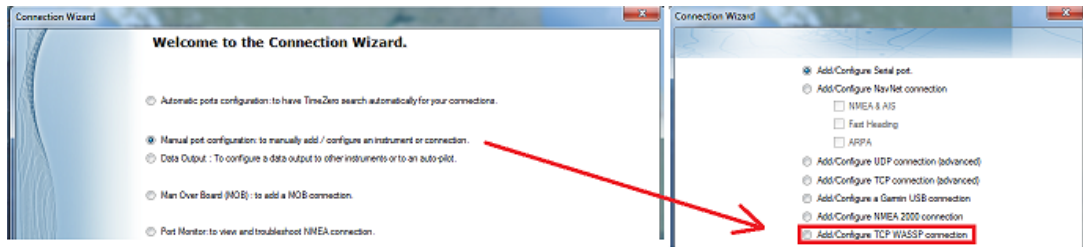
Note: If don't see WASSP Connection from the Connection Wizard, ensure that the WASSP module is configured.

Enter the WASSP Processor IP address and the Port number (18000 for WMB-160F/80F/3230/5230 and 18007 for WMB-3250):
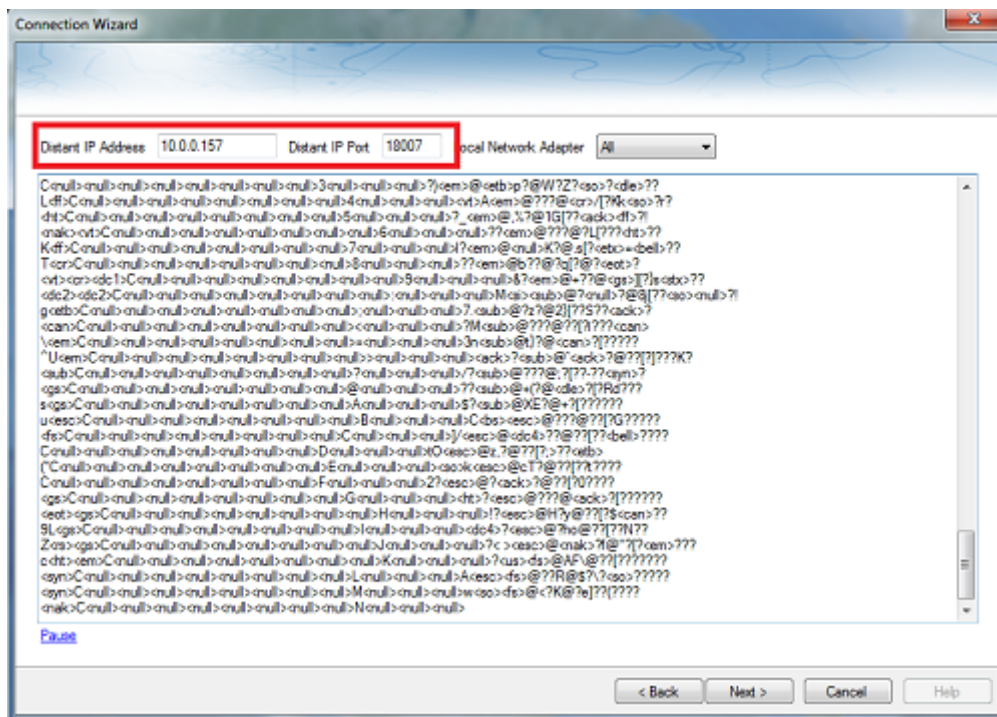
Confirm that data is received from the WASSP processor. Note that the data sent over Ethernet is not NMEA, so it is normal to see "scramble data" as illustrated in the screenshot above.

Click on "Next" and wait for the Connection Wizard to analyze the Port.

Click on "TCP/IP 1800x" on the left to select that port and confirm that "MultiBeam" is detected and selected. If you have a WMB-3230/5230 or WMB-3250, make sure that the Navigation data are also detected and selected:
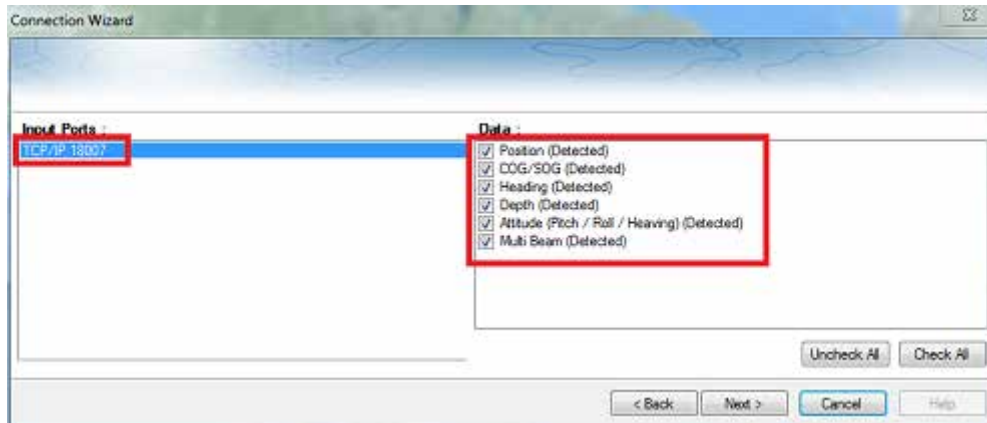
Note: In some case, it is possible for "Multi Beam" to not be detected automatically. In these case, just select it manually.

Click on "Next". Select the "Master" Data Source (in case TimeZero Catch is connected to multiple sensors) then click on "Next" then "Finish" to close the Connection Wizard.

Select "Options" by clicking on the Nobeltec button on the upper left of your screen. Click on "PBG" and select the corresponding WASSP model ("Fishing" for WMB-3230/5230/WMB-160F/80F and "Survey" for WMB-3250):
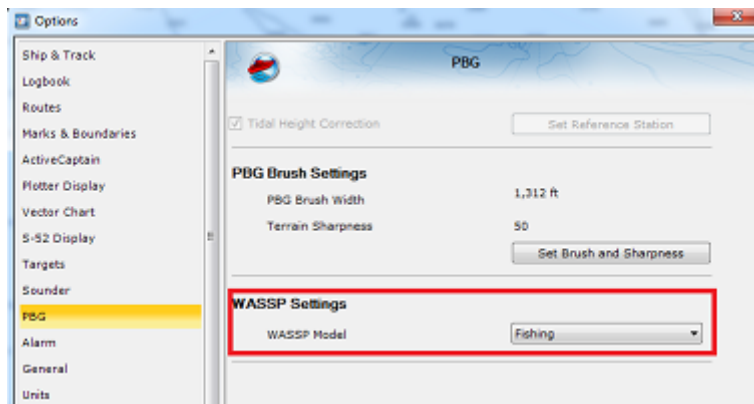
Click on the "Initial Setup" Options then enter the same "Transducer Draft" as the WASSP Processor. Please note that the value for "Transducer Draft" is always a positive value (enter the distance in between the water line and the position of the transducer).

Click on "Close" to close the "Options".

You should now receive navigation data and be able to record Multibeam depth data and BackScatter data by clicking on the "PBG" button in the Toolbar.

Note: In order to confirm that data is being recorded, you might have to perform a sea trial in order for the boat position to move. In some case (if the GPS is very stable), you will not be able to see depth being recorded until you move.

InSight Radar & Furuno Sounder

Introduction:

All the Furuno Ethernet sensors (including the Ethernet sounders) only operate on the 172.31.x.x / 255.255.0.0 Class B network. The Nobeltec InSight Radar operates on a different network (usually 192.168.0.x / 255.255.255.0 if there is no router on the network).

In order for the computer to communicate with both the Furuno Ethernet Sounder and the Nobeltec InSight radar at the same time, the computer needs to be manually assigned two IP addresses:

- The IP address to communicate with the Furuno Sounder must be set to 172.31.3.150/255.255.0.0

- The IP address to communicate with the InSight Radar varies according to the network setup:

- If there is no router on the network (just HUB or Switch), the IP address must be manually set to 192.168.0.100 / 255.255.255.0

- If there is a router (DHCP Server) on the network, the IP address must be manually set to something compatible with the Router. To determine a compatible IP address, leave the computer IP in automatic mode and look at the IP address assigned automatically by the router (using the IPCONFIG command or by looking at the Status of the Ethernet Connection). Once you know the IP address given automatically by the router (for example 192.168.1.17), manually assigned the same IP address by just changing the last digit to a higher number (safer) such as 192.168.1.200

Note: If the router is used to access the Internet, make sure to enter the IP address of the router for the default gateway and DNS server. Usually the IP address of the router will end with "1" (192.168.1.1 in this example).

Dual IP address configuration:

Click on the Windows "Start" menu and search for "Network". Under the "Control Panel" category, click on "Network and Sharing Center". Under Windows 8 you can press the combination shortcut "Windows Key" + X and select directly the Control Panel.

Once the Network and Sharing Center window is opened, click on "Change Adapter Settings". Double click on the Network Adapter connected to the sounder (usually "Local Area Connection").

Note: If you have multiple Area Connections (multiple Ethernet Cards) and if you don't know which one is connected to the sounder, you can temporary disconnect the Ethernet Cable connected to the sounder from the computer and look at which icon will display a red cross. This will indicate the LAN that has been disconnected from the computer, and thus the one that needs to be configured.

Select "Properties" on the "Local Area Connection Status" window. Double click on "Internet Protocol Version 4 (TCP/IPv4)". Use the fix IP address (172.31.3.150) and subnet mask (255.255.0.0) corresponding to the Furuno network then click on "Advanced":
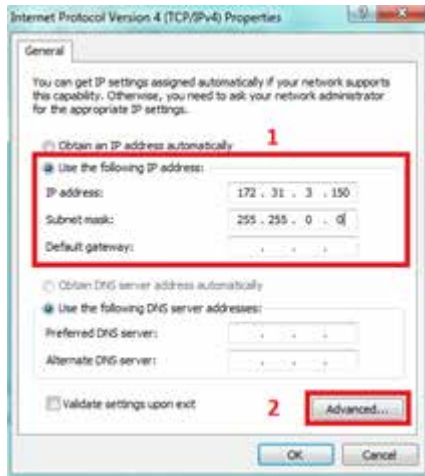
Click on "Add":
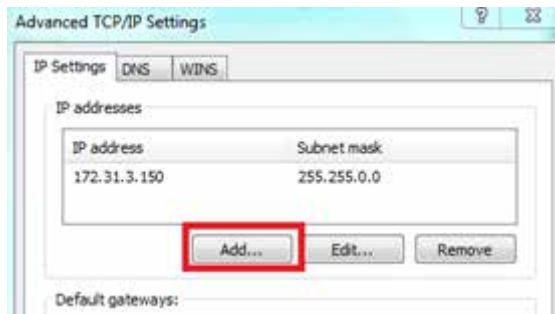
Enter the fix IP address of the InSight radar (192.168.0.100 or the one that has been identified if a Router is used) and subnet mask (255.255.255.0) then click on "Add":
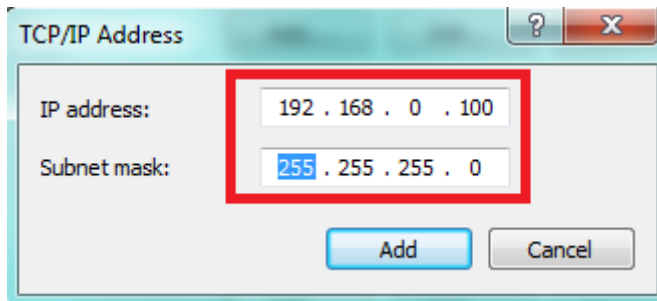
Note: If you use a router to access the Internet, enter the router IP address for the default gateway and DNS server

Your computer will now be assigned with two IP addresses and will be able to talk on both networks (the Furuno Network and the InSight Radar network):

Nobeltec TimeZero Catch v2.1.0
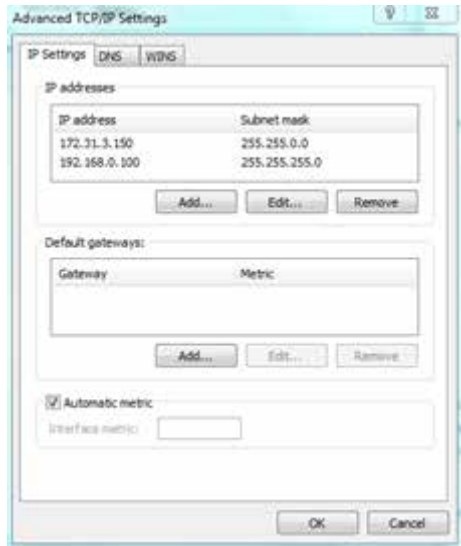
Click on "OK" to save the changes and close the various windows.

Continue the configuration of the InSight Radar and Furuno Sounder as usual.

Important: If you need to configure two computers on the same network, simply increment the IP addresses of the second computer: 172.31.3.151/255.255.0.0 and 192.168.0.101/255.255.255.0

Camera

AXIS IP Camera & Converter

Introduction

TimeZero Catch is compatible with AXIS IP Cameras and AXIS IP Converters (old and new style converters).

If the Camera has Pan/Tilt/Zoom (PTZ) ability, TimeZero Catch can control the camera from the Camera Work Space, from the Camera NavData virtual joystick, and from the chart (if the camera is set to be displayed on the chart and set for tracking).

Installation Overview

In order to view (and control) Axis IP Cameras from TimeZero, it is necessary to:

- Assign a fixed IP Address to the camera or converter using the AXIS IP Utility Program

- Setup the camera or converter using the default admin name ("root") and default password ("pass")

- Make sure the AXIS AMC and AXIS MPEG4 or H264 Codec are installed on the computer

Setting the IP of the computer

You can pick and choose any network IP address scheme you want (as long as the camera and PC are on the same network and subnet). In the following example, we will configure the Camera and Computer addresses to use the NavNet IP network (172.31.x.x / 255.255.0.0).

- Open the "Control Panel" from the Windows "Start" menu (under Windows 8, press and hold the Windows key on your keyboard then press "x"; and then select "Control Panel" from the pop-up menu)

- Switch to "Classic View" under XP or select view by "Small Icon" under Windows 7 or Windows 8

- Open "Network Connection" under XP or "Network and Sharing Center" under Windows 7 and Windows 8 (Under Windows 7 or Windows 8 select "Change Adapters")

- Right click on the Local Area Connection corresponding to the Ethernet card where the network is connected to and choose "Properties"

- Select "Internet Protocol (TCP/IP)" under XP or "Internet Protocol version 4 (TCP/IPv4)" under Window 7 and Windows 8 then click on "Properties"

- Select "Use the following IP address" then enter the appropriate IP address and Subnet Mask for the computer (leave the Default Gateway empty)

In this example, we will use the NavNet IP network, so set the IP address of the computer to 172.31.3.150 and subnet mask to 255.255.0.0

Setting the IP of the camera(s)

In this example, we will set up 3 IP cameras:

- One Pan/Tilt/Zoom IP camera (AXIS 212PTZ)

- One fixed (non PTZ) IP Camera (AXIS 207)

- One fixed (non PTZ) IP Camera (AXIS 207)

Load the AXIS CD "Network Video Products" that was including with the IP camera. Open the DVD, browse to the "Software" folder. Right click on the "IPUtility" software and choose "Run as Administrator".

Note: The AXIS IP Utility can also be found on the TimeZero Catch DVD.

If the Windows Firewall appears, make sure to click on "Unblock" to allow the software to configure correctly the IP Camera.

The AXIS IP utility will detect all the IP cameras connected on the network:

Note: If you use the same camera models in multiple locations, BE SURE to WRITE DOWN the IP Camera serial number (which can be found on the back of the camera) with the intended location to help correctly assign the IP camera.

To change the IP address of the Camera, select the camera in the list and click on the "assign new IP address to selected device" button. Enter the correct IP address and click on "Assign":
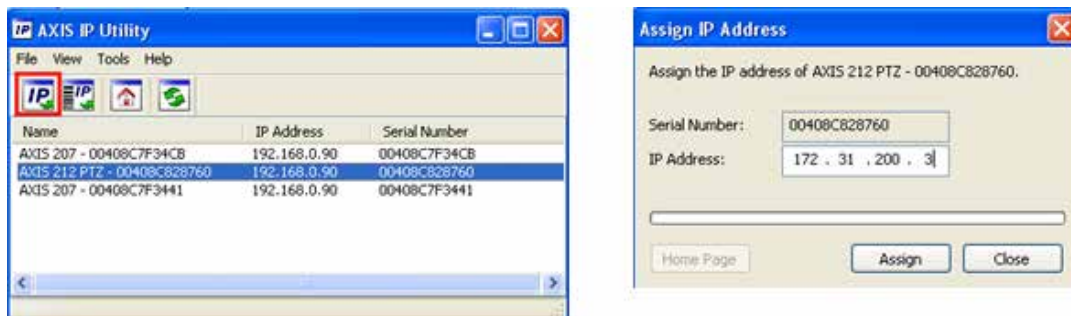
Wait 30 seconds. If you don't get a confirmation message within 30 seconds, you will need to restart (power OFF and ON) the camera (unplug and plug back in the Ethernet cable if you are using a POE camera/converter or unplug and plug back the power cord). After restarting the camera, wait for 3 minutes.

Note: Leave the AXIS Tool running on your PC while restarting the camera.

You may have another Windows Firewall warning during the process. Simply accept it.

Note: If you do not get a confirmation message after 3 minutes, repeat the entire process.

If applicable, repeat the process with other cameras (to fix the IP of the other cameras).

Configuring the camera

The cameras need to be configured using **Internet Explorer running as administrator**. Other browsers (such as Chrome or Safari) cannot be used to configure the camera properly. Right click on the Internet Explorer icon and choose "Run as Administrator"

Enter the IP address of the first IP camera in Internet Explorer:
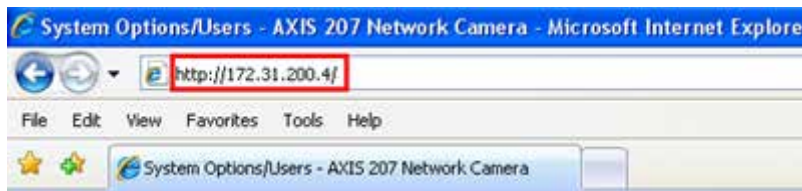
If you are using Internet Explorer 10 or later, it is recommended to add the IP address of the camera to the compatibility view settings:
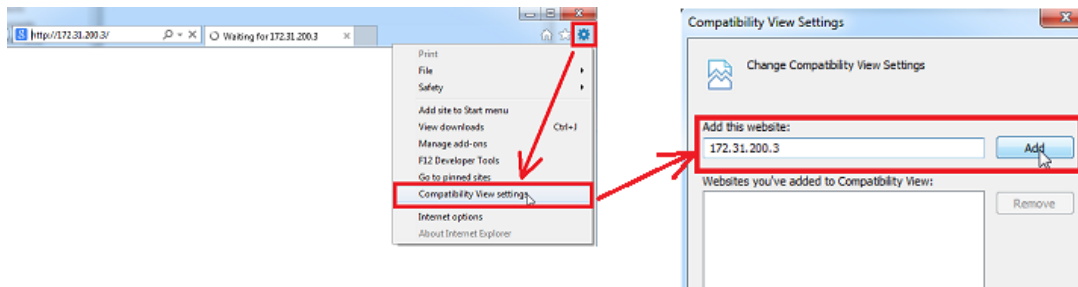
When the Camera page asks you to create the Root account, set the password of the IP camera to "pass" (recommended default password) and click "OK"

When the web page loads, pay attention to the top or bottom of the page to authorize the installation of the ActiveX. Click on the yellow bar and choose "Install ActiveX":

In the "Video Format" drop down menu, select either MPEG4 or H.264 (according to the model of the camera/converter). A message should appear with a link to install the AXIS Codec on your computer (follow the On-Screen instructions):

Note: If you have trouble installing the AXIS Codec from the computer (especially on Windows 7 or Windows 8) please check AXIS Codec Troubleshooting.

Now, click on Setup:

In "Basic Configuration -> Date and Time" select "Synchronize with computer time" and click on "Save"

RECOMMENDATION: To achieve better performance and optimize network bandwidth, it is recommended to limit the resolution and frame rate (fps) of the camera to 15 fps. Select the "Video & Image->Image" and set the "Maximum Frame Rate" to "limited to 15".

Note: If you have a PTZ camera with the "Control Queue" option (under "PTZ Configuration-> Control Queue"), make sure to leave that setting OFF.
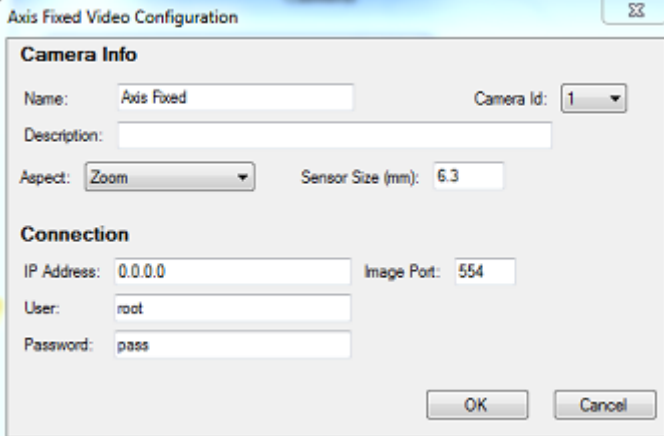
Setting TimeZero Catch

Open TimeZero Catch , select the Camera Options and click on the "Add" button

AXIS Fixed Camera or Converter

Click on the button "AXIS Fixed Camera or Converter" to configure

- · a fixed camera

- · a single channel video encoder

- · some multi-channel video encoders such as Q7404 (that are configured like multiple single encoders with 4 individual IP addresses):

Enter a name and a description (the description is optional) for the camera, then select the Aspect:

- · "Zoom" will zoom the picture to fill the screen without changing the aspect ratio of the camera

- · "Fit" will keep the aspect ratio of the camera and add a black border to fill the screen if needed

Note: The "Sensor Size" is not used today for fixed camera. You can simply leave the default value.

Under "Connection", enter the IP address and credential of the camera or converter (default credentials should be "root" and "pass").

Note: Leave the port number to its default value unless you have changed it in the camera (advanced settings) for remote access (NAT).

Click on "OK" to validate the settings and add the camera to the configuration.

AXIS Quad 241Q Converter

Click on the button "AXIS Quad 241Q Converter" to configure an AXIS multi-channel video encoder, such as the 241Q, which only has one IP address. Unlike some of the newest AXIS encoders that use a separate IP address for each video feed (similar to having multiple single encoders), the other multi-channel AXIS encoders use a unique IP address for all the video feeds:
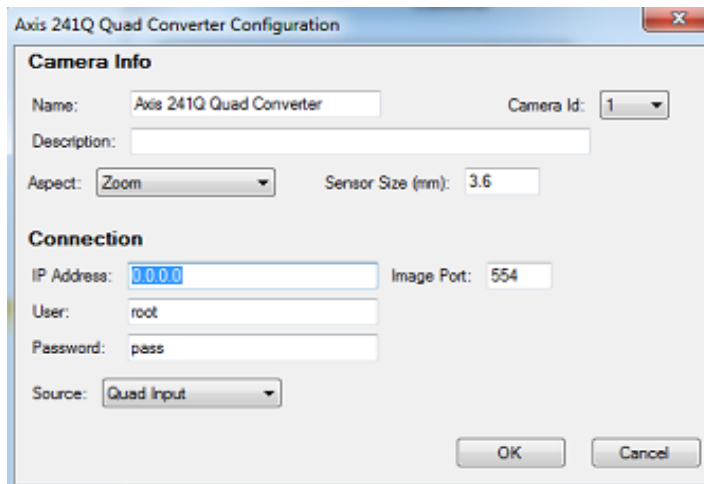
Enter a name and description (the description is optional) for the encoder. Select the Aspect:

- "Zoom" will zoom the picture to fill the screen without changing the aspect ratio of the camera

- "Fit" will keep the aspect ratio of the camera and add a black border to fill the screen if needed

Note: The "Sensor Size" is not used today for fixed camera. You can simply leave the default value.

Enter the IP address and credential of the converter (default credentials should be "root" and "pass").

Note: Leave the port number to its default value unless you have changed it in the camera (advanced settings) for remote access (NAT).

Select the channel that will be used from the "Source" drop down. Note that the "Quad Input" will display the four video channels at the same time in a single window (in quarter sections).

Click on "OK" to validate the settings and add the converter channel to the configuration. If you want to add another channel from the same converter, repeat the process by adding another converter with the same credential and IP address but with another channel selected (each channel is seen as an independent camera from TimeZero).

AXIS PTZ Camera

Click on the button "AXIS PTZ Camera" to configure an AXIS Pan/Tilt/Zoom camera:
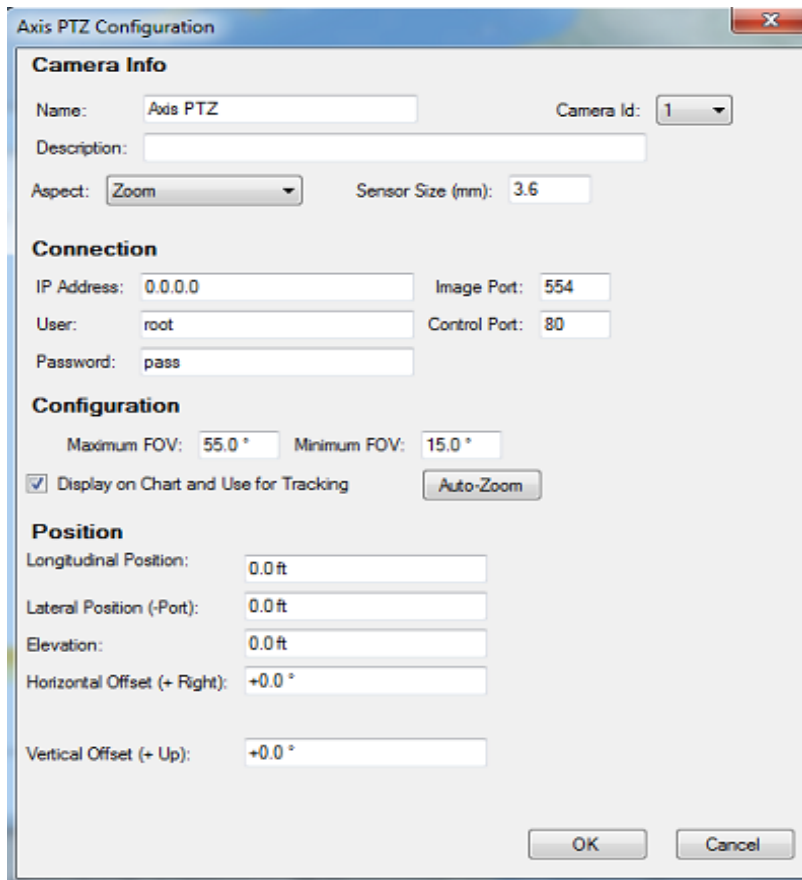
Enter a name and description (the description is optional) for the camera. Select the Aspect:

- "Zoom" will zoom the picture to fill the screen without changing the aspect ratio of the camera

- "Fit" will keep the aspect ratio of the camera and add a black border to fill the screen if needed

Enter the "Sensor Size" in mm. Most cameras have an image sensor of 1/3'' (8.46mm) or 1/4'' (6.35mm). Please refer to the AXIS camera Technical Specification.

Enter the IP address and credentials of the camera (default credential should be "root" and "pass").

Note: Leave the port numbers with their default values unless you have changed them in the camera (advanced settings) for remote access (NAT).

Enter the Maximum and Minimum Horizontal Angles of View (FOV). Please refer to the AXIS camera Technical Specification.

Select "Display on Chart and Use for Tracking" if you want the Field of View (cone) of the camera to be displayed on the chart and if you would like to control the camera (move or lock) from the chart using the right click contextual menu.

Click on "Auto-Zoom" if the AXIS camera supports continuous zoom. In the example below, the camera will start to zoom when the point or object to track reaches 1NM. The adjusted maximum zoom (80% of camera zoom maximum capacity) will be reached at 2NM. In between 1NM and 2NM, the zoom will be adjusted linearly (in between 1X and adjusted maximum zoom):
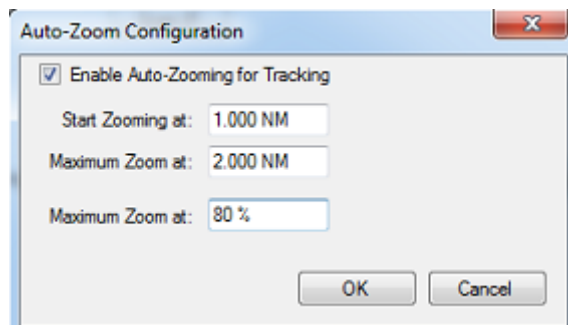
Note: The adjusted maximum zoom (%) is useful if you don't want the camera to zoom at its full value (because it becomes "too blurry").

The diagram below illustrates the zoom value according to distance with a 10X camera that has been restricted to 8X (80% of maximum zoom value):

The longitudinal and lateral position are used to adjust the camera location on the boat from the *CCRP* position. When entering these settings, remember that the longitudinal positions are always positive (from Bow to Stern) while the lateral position is negative for Port and positive for Starboard (0 is the middle of the vessel). The CCRP settings are adjusted from the Initial Setup Options.

The Horizontal Offset can be used if the camera origin is not perfectly aligned with the bow of the vessel. The vertical offset can be used if you feel that the camera tilts too much up or down when tracking an object. Before adjusting the vertical offset, make sure to enter the proper elevation setting (used to compute the tilt angle according to the distance of the target).

Click on "OK" to validate the settings and add the camera to the configuration.

FLIR Configuration

Nobeltec TimeZero Catch can be connected to a FLIR M-Series. The camera control is done through Ethernet and the analog video is either displayed on an external monitor or in TimeZero when using an AXIS converter. Below is an example showing a typical connection diagram using a regular hub or switch:
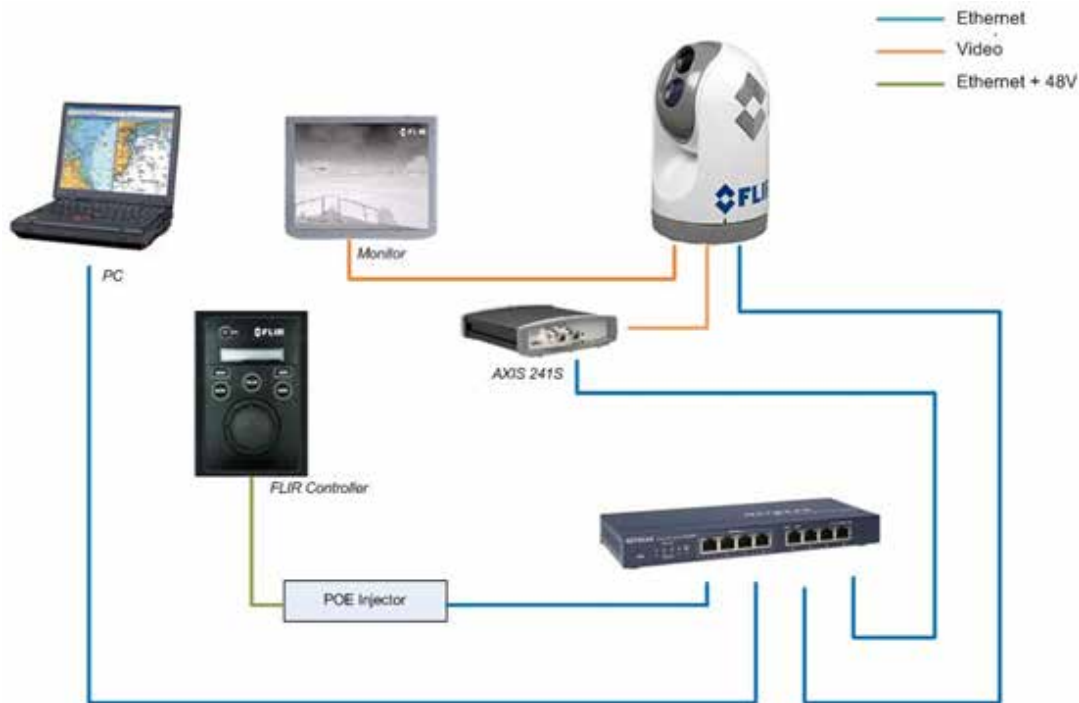
Note the FLIR M-Series does not output video on Ethernet. According to the model, the FLIR has one or two analog video outputs (on BNC connection) which can be connected to an external display or an AXIS Video encoder. If you want the video to be displayed inside TimeZero Catch (inside a NavData or inside the Camera WorkSpace), you will have to use an AXIS Video encoder (such as the AXIS M7001) in order to convert the analog video feed into IP video.

Note: If the Monitor is nearby the PC, the AXIS Video Encoder is optional. You can control the Camera from Nobeltec TimeZero Catch while looking directly at the monitor.

Note that the FLIR Joystick ("JCU") uses one Ethernet cable for data and power. To provide power to the JCU, you can use a regular Switch with a "Power over Ethernet" (POE) injector (as shown on the diagram above) or use a POE Switch that can provide power directly from the Ethernet POE connector. If you use a POE Switch, make sure to connect the non-POE devices (PC) on the non-POE side of the Switch and the POE devices (JCU) on the POE side.

Note: The M-Series can be connected either on the POE or non-POE side of the switch (it does not matter)

Camera Configuration

You have to assign to the Camera, the JCU Controller (Optional) and the computer a fixed IP address. In this example, we will use a traditional Class C network configuration (192.168.1.X / 255.255.255.0), but you could also use the NavNet network configuration (172.31.x.x / 255.255.0.0) if you want to integrate the PC, NavNet Sensor and the FLIR Camera to the same network (refer at the end of this document for an example).

Note: When manually assigning the IP addresses, make sure to not use the same IP address twice!

Example:

- Computer = 192.168.0.50 / 255.255.255.0

- FLIR Camera = 192.168.0.100 / 255.255.255.0

- JCU (FLIR Joystick) = 192.168.0.101 / 255.255.255.0

- AXIS Converter = 192.168.0.102 / 255.255.255.0

The FLIR Camera and the JCU controller are UPnP-enabled devices. You can see the list of UPnP-enabled device from your computer by opening "My Network Places" under XP or "Network" under Windows 7 and Windows 8. Note that the devices (M-Series, JCU, and AXIS Converter) will only appear on your PC if they are on the same network domain.

When the computer is directly connected to the FLIR Camera and JCU via an Ethernet cable or via a Hub/Switch (without router or DHCP server on the network), the Camera and JCU automatically assign themselves an IP address of 169.254.x.x / 255.255.0.0. In order to access the configuration page of the Camera and JCU, you need to setup your PC on that network (ex: 169.254.1.2 / 255.255.0.0)

Note: If your computer is set to "obtain an address IP automatically", it should automatically set an IP address of 169.254.x.x after two minutes. However, it is sometimes easier to manually fix the IP address 169.254.1.2 / 255.255.0.0.

Note: If the JCU and the Camera, where previously assigned another IP address, you can display the JCU IP address by pressing the COLOR button while pushing the puck. You can then assign an IP address to your PC accordingly, and thus be able to access the Camera and JCU configuration page.

Once the computer is on the same network as the FLIR Camera and JCU, with UPnP enabled, you should see the M-Series and JCU icon under "My Network Places" (XP) or "Network" (Windows 7/8):
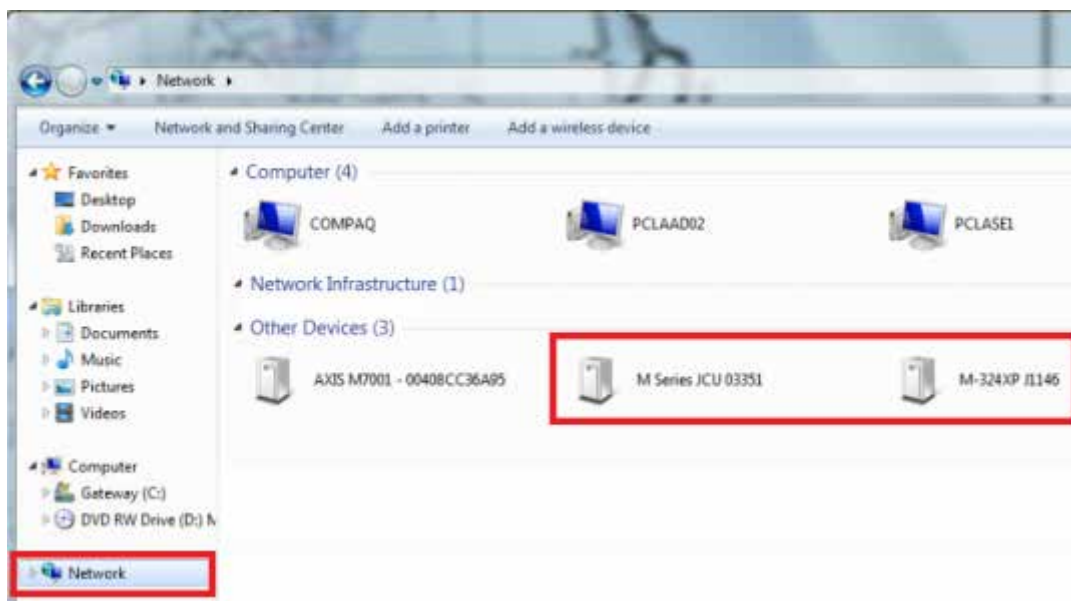
Note: If the devices don't appear, check to make sure that your computer is setup to display UPnP notifications:
- Start the Control Panel and go to Add/Remove programs
- On the left-hand side, select the Add/Remove Windows components
- From the Windows Component Wizard, scroll down to Networking Services, then highlight and select the "Details" button
- Check the box to enable the UPnP User Interface and select OK
- Select Next when returning to the Windows Component Wizard
- Select Finish

Double click on the Camera icon to open its configuration web page. To configure a fixed IP address, select the Static option rather than Dynamic. The screen will refresh, and the IP, Mask, and Gateway fields will change from grey to white, indicating that they can accept user entries. Once you have entered the appropriate IP address and subnet mask (192.168.0.100 / 255.255.255.0 in this example), click on the "Save" link.

Note: You will not be able to access anymore the Camera configuration page after changing its IP address (until you change the IP address of your computer later in this process)

Wait one minute then restart the Camera (cycle the power).

JCU (FLIR Joystick) Configuration

Go back to "My Network Places" and double click on the JCU to open its web page and set the IP address in the same way.
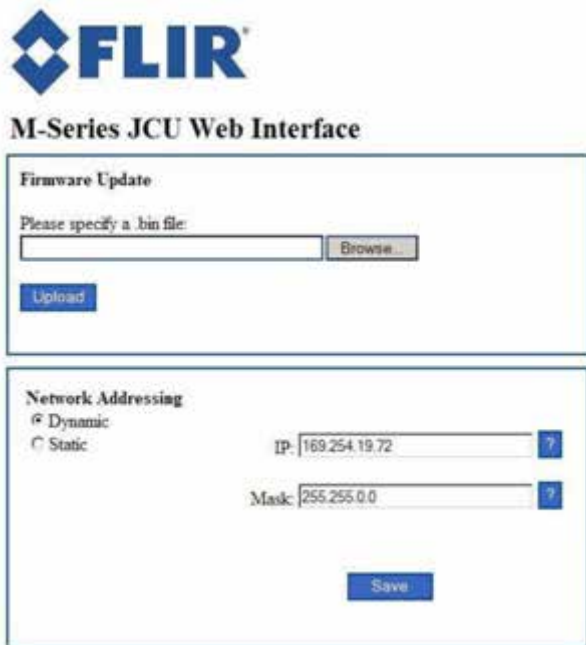
Enter the appropriate IP address and subnet mask (192.168.0.101 / 255.255.255.0 in this example), click on the "Save" link.

After changing the IP address of the Camera and JCU, you need to setup the final IP address of the PC on the new domain (192.168.0.50 / 255.255.255.0 in this example).

Once the IP addresses have been fixed on the same domain for all devices (PC, Camera & JCU), you should be able to see their icons in "My Network Place" (XP) or "Network" (Vista/Window 7).

AXIS Converter Configuration:

If you use an AXIS converter, use the "AXIS IP Utility" to fix the IP address of the converter. Note that the AXIS IP Utility is able to discover any AXIS device even if the computer is not on the same network domain. Leave the IP address of the PC to its final IP configuration (192.168.0.50 / 255.255.255.0 in this example) and open the AXIS IP Utility. Change the IP and the settings of the AXIS converter according to the documentation (please refer to the AXIS IP Camera & Converter chapter for more information).

Note: We recommend to setup the default "Root" password to "pass" (default password used by TimeZero). If you want, you can change the password, but make sure to change it in TimeZero when configuring the AXIS Converter.

TimeZero Catch Configuration:

Open the Camera Options and click on "Add". Click on "FLIR Camera":
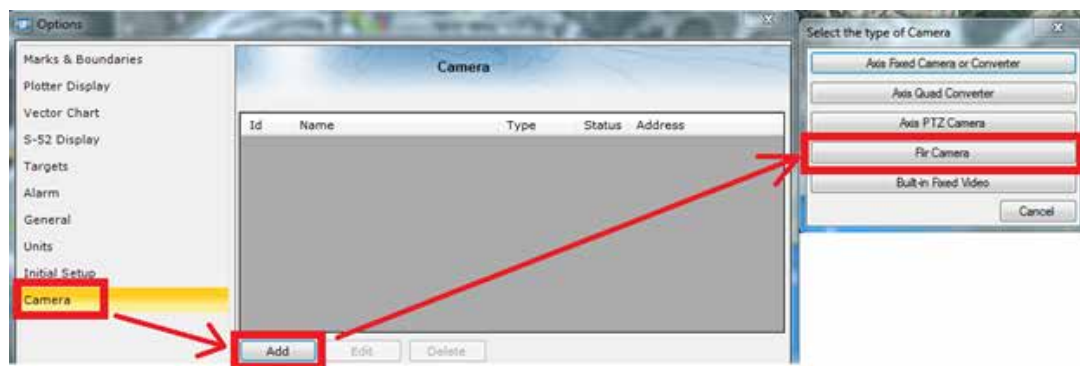
The FLIR Configuration window appears:

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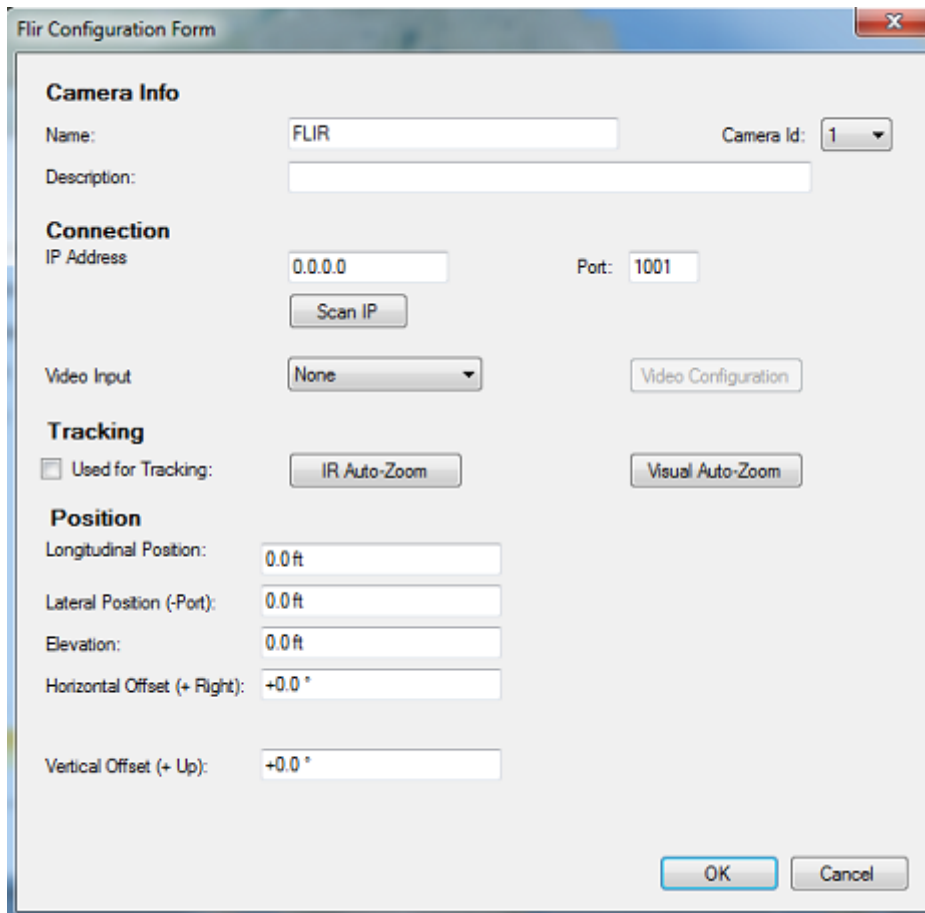
Enter a name and a description (the description is optional). Click on "Scan IP" to automatically discover the IP address of the FLIR camera.

Note: If the FLIR Camera is not detected, you may have to enable the discovery settings of the FLIR Internal Server ("Nexus"). Please refer to the chapter FLIR Nexus Server Activation for more information.

If you use an AXIS Video encoder, select "Axis" in front of "Video Input" and click on "Video Configuration". Enter the IP address of the video encoder and its credentials (default should be set to "root" and "pass"):
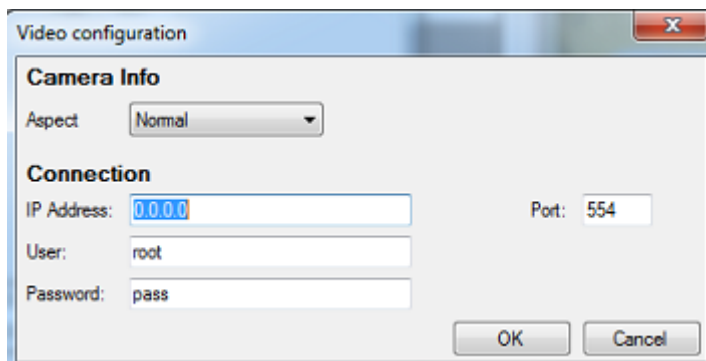
Note: Leave the port numbers with their default values unless you have changed them in the AXIS camera and in the FLIR Nexus Server configuration (advanced settings) for remote access (NAT). The "Sensor Size" settings (under the "AXIS configuration" are not used with FLIR cameras. Leave the setting with its default value.
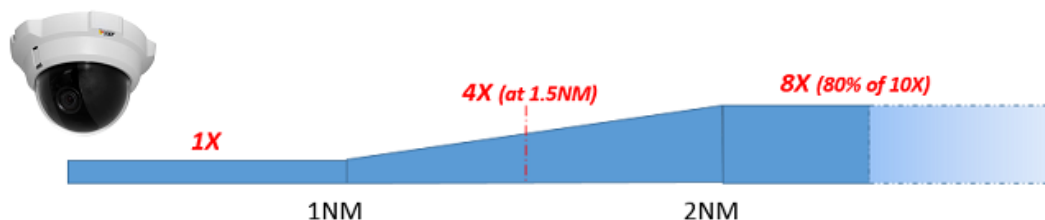
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Select "Display on Chart and Use for Tracking" if you want the Field of View (cone) of the camera to be displayed on the chart and if you would like to control the camera (move or lock) using the right click menu.

Click on "IR Auto-Zoom" if you would like the camera to automatically zoom when it is controlled from the chart:
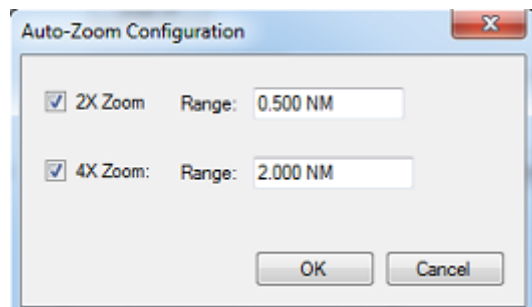
In the example above, the camera will automatically set the IR zoom to 2X if the tracked point or object is located in between 0.5NM and 2NM. It will automatically switch to 4X zoom after 2NM.

Note: Refer to the FLIR Camera specification to see if it supports 4X IR zooming (according to IR sensor resolution). FLIR M-Series do NOT support Visual AutoZoom. Leave that option uncheck.

The longitudinal and lateral position are used to adjust the camera location on the boat from the *CCRP* position. When entering these settings, remember that the longitudinal positions are always positive (from Bow to Stern) while the lateral position is negative for Port and positive for Starboard (0 is the middle of the vessel). The CCRP settings are adjusted from the Initial Setup Options.

The Horizontal Offset can be used if the camera origin is not perfectly aligned with the bow of the vessel. The vertical offset can be used if you feel that the camera tilts too much up or down when tracking an object. Before adjusting the vertical offset, make sure to enter the proper elevation setting (used to compute the tilt angle according to the distance of the target).

Click on "OK" to validate the settings and close the configuration window. The FLIR camera should be added to the list with a green status. The camera control (using the right click on the chart) will now be available and the camera field of view ("FOV") will automatically appear on the chart.

Note: If the Camera FOV (Field of View) does not appear on the chart, make sure you have Heading configured in TimeZero Catch , then restart the software.

Installation Example with NavNet3D

The following example illustrates the integration of the FLIR M-Series into a NavNet network. The M-Series and the JCU controller are set with a fix IP address compatible with the NavNet network (for example 172.31.200.10 / 255.255.0.0 and 172.31.200.11 / 255.255.0.0 for a NavNet3D network). The PC is also set with a fix IP address compatible with the NavNet network (usually 172.31.3.150 / 255.255.0.0).

Note: The NavNet 3D MFD set as Master can act as a DHCP server and can automatically assign an IP address to the FLIR, JCU and Computer. However, this would require the DHCP client (PC, JCU and FLIR) to NOT be power up before the MFD. For that reason, it is recommended to use a fix IP address for every device.
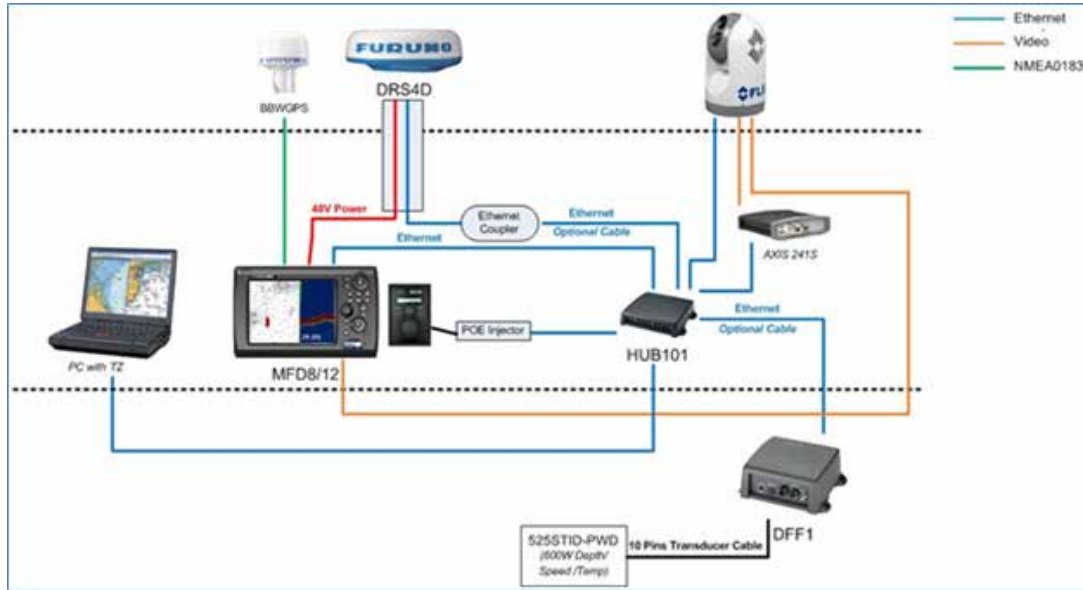
In the example above, one analog video output of the FLIR is connected to the analog video input of the MFD. The other is connected to the AXIS IP Video encoder.

Note: If the FLIR model you are using has only one analog video output, you can use the link (pass through) port of the AXIS Video Encoder to daisy chain it with the analog input of the MFD.

Installation Example with NavNet TZtouch

The following example illustrates the integration of the FLIR M-Series into a NavNet network. The M-Series and the JCU controller are set with a fix IP address compatible with the NavNet network (for example 172.31.200.10 / 255.255.0.0 and 172.31.200.11 / 255.255.0.0 for a NavNet3D network). The PC is also set with a fix IP address compatible with the NavNet network (usually 172.31.3.150 / 255.255.0.0).

Recommended Network Configuration with NavNet TZtouch MFDs:

The installation diagram for NavNet TZtouch is similar to the NavNet3D above, however the IP configuration differs. It is recommended to use the "Furuno third party network" when connecting third party sensors (ie: FLIR, Camera, etc...) to a NavNet TZtouch network. The TZT MFDs have been set at factory to talk and listen on two types of IP networks:

- The regular NavNet Network: 172.31.x.x/255.255.0.0

- The "Third Party" Network: 192.168.252.x/255.255.255.0

If the FLIR M-Series and JCU are already configured to connect to the NavNet TZtouch through the third party network (to isolate the FLIR from the NavNet sensors), you will have to set two IP addresses to the computer (in order for the computer to talk with NavNet and the FLIR). This can be done from the Network Control Panel from the "Advanced" settings:
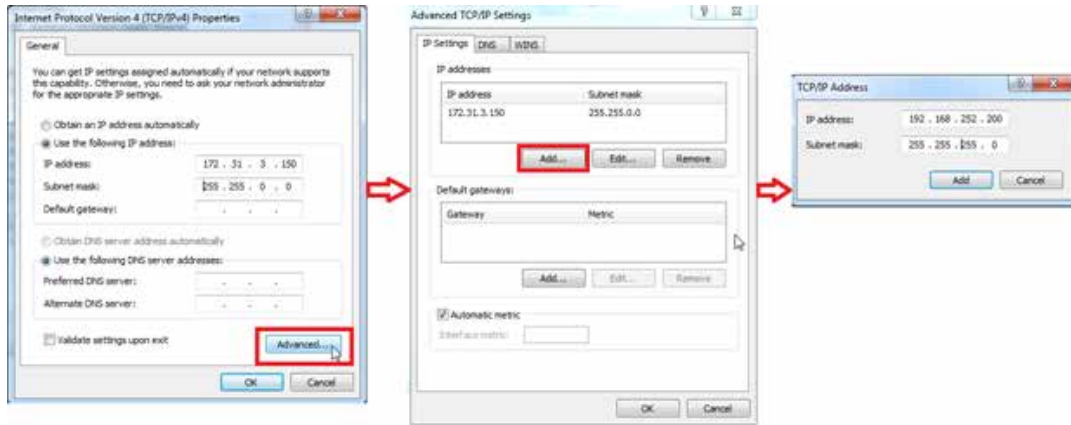
Reference

Import & Export Data

Backing-up and Restoring Data:

When you want to backup your data or when you want to "clone" your data on another computer, it is recommend to use the "Collection". A collection conveniently groups all objects (route, marks, objects, tracks, …), 3D data and layers configuration in one file.

To backup all your data, select "Backup Collection" from the Nobeltec menu.

To restore all your data, select "Open Collection" from the Nobeltec menu.

Note that the charts or settings are not backed up inside a collection. You will have to re-install the charts if you want to transfer your data to another PC. The settings are not saved into the collection, however, it is possible to save the user settings by using Save the User Interface from the Nobeltec menu.

IMPORTANT: When importing a collection, your current data will be overwritten with the data contained in the Collection. If you want to exchange data with another user (and merge the data) you have to use the TZD or GPX format from the "Import/Export" Wizard (see below).

Importing Data

Select "Import/Export" from the Nobeltec menu to import data from the following format:

Note: Imported data is merged with your existing data

Data:

- **Time Zero Data (TZD files):** this format is used to exchange data in between TimeZero users. This format guaranties the full integrity of the data (it supports Route, Marks, Tracks & Objects).

- **GPX:** this "open source" format is often used by third party software or converter. It is primary used to exchanged Routes and Marks, but you can also export tracks and logbook points.

- **KML:** this format is primary used to exchange data with Google Earth. Marks, Routes, Tracks and logbook points are supported.

- **CSV:** this format is used to exchange Routes and Waypoints with Furuno NavNet3D Multi Function Display. Only Marks and Routes are supported.

- **PTF**: this format is used to import the marks and tracks from MaxSea "Classic" (v12 and below) that are stored in PTF file(s). Usually PTF files are stored in "My Documents->My MaxSea". Look for any files whose extensions are "*.ptf". Note that the customer might have saved his PTF files to another location. In that case, search for any files having the PTF extension.

- **ONF:** this format is used to import data from Nobeltec VNS & Admiral into TimeZero Catch

- **P-Sea WindPlot:** this format is used to import Marks and Tracks from WinPlot. Note that the Marks and tracks need to be exported in a text file from WinPlot prior being imported in Nobeltec TimeZero Catch . Please refer to Export WindPlot data for more information.

- **SeaPlot PRO**: this format is used to import Marks and Tracks from SeaPlot PRO.

3D Data

- **PBG:** this format is used to import 3D data from another TimeZero user

- **XYZ:** this format is used to import generic XYZ depth data or XYZ file(s) generated from MaxSea v12 and below. The generic XYZ format consists of Longitude, Latitude, Altitude. The altitude is in Meters with negative values representing depth:
  Ex: -136.0004000   56.9942500   -107.9
  Value can be separated by spaces, tabs or commas.
  TimeZero Catch also supports the XYZ file from NOAA that have the following header:
  "survey_id,lat,long,depth,quality_code,active"
  Ex: H11371,48.3276139,-122.8239623,42.06,1,1

- **PTZ:** this format is used to import MaxSea 3D user data (.ptz files). Usually the PTZ file is located in "My Documents->My MaxSea". Look for a file named "3DDB.PTZ".

Note: The 3DDB.GRZ file only contains basic 3D data and cannot be imported in TimeZero Catch . All the PBG user data is stored in a single file (the "3DDB.PTZ" file).

- **BTH:** this format is used to import "Bathy Recorder" user data recorded with Nobeltec VNS or Admiral

- **Olex:** this format is used to import Olex 3D user data

When importing data, you can restrict the points that get imported by entering a depth range (minimum and maximum). Entering a tight range corresponding to your fishing area is the best way to filter out bad points that may be inside the 3D file you are importing. You can also select "Remove points using statistical analysis", but this is only efficient in area with moderate slope. Do not use this options in area that have lots of changes in the terrain as this might filter out good depth points.

Images

- **JPEG:** this format is used to import and geo-referenced photos (pictures are automatically placed on the charts). In order to be imported, the photo must either embed the lat/lon or a time/date that can be correlated by TimeZero Catch with a GPS position.

Exporting Data:

Select "Import/Export" from the Nobeltec menu to export data in the following format:

Data

- **Time Zero Data (TZD files):** this format is used to exchange data in between TimeZero users. This format guaranties the full integrity of the data (it supports Route, Marks, Tracks & Objects)

- **GPX:** this "open source" format is often used by third party software or converter. It is only used to exchanged Routes and Marks

- **KML:** this format is used to exchanged Routes and Marks with Google Earth

- **CSV:** this format is used to exchange Routes and Marks with Furuno NavNet3D Multi Function Display

If you want to export selected Routes or Marks, use the "Actions" menu of the Route List or Mark List:

- Open the "Route List" or "Mark List" from the "Lists" button in the Ribbon

- Select one line on the list by clicking inside the first grey column in front of the specific line (or select multiple lines using the CTRL or SHIFT key)

- Click on the "Action" menu and select "Export Selected Route/Marks" in either GPX or KML format

- Select the location, give a name to the file and then validate

3D Data

- **PBG**: this option allows to export your 3D PBG data (WASSP or Monobeam). This is useful if you want to share your 3D data with another TimeZero user or if you want to backup your data. Please note that this **DOES NOT** export the 3D data may have been imported. This only exports the 3D data that has been generated inside TimeZero.

- **XYZ**: this option allows to export your 3D PBG data (Mono Beam only) in a standard XYZ format. This is useful if you want to export your 3D data to another GIS. Please note that this **DOES NOT** export the 3D data may have been imported. This only exports the 3D data that has been generated inside TimeZero. The format is lat, lon, elevation with depths represented by negative values in meters:
  Ex: -124.272242954799, 46.7432681482846, -8.1

Note: It is NOT possible to export XYZ depth data issued from WASSP.

Export WindPlot data

Nobeltec TimeZero Catch can import Marks and Tracks exported from the P-Sea WindPlot software.

To export your Marks from WindPlot:

Select the "Marks" menu -> "Search & Exit" then "Print"->"Save As TXT file":

Select the folder where you want to save the Marks file and validate. At the end of the export process, you should have a "MARKS.TXT" file that can be imported in TimeZero Catch .

To export your Tracks from WindPlot:

Select the "Track" menu -> "Search & Edit" then "Export->as text file to A with header":
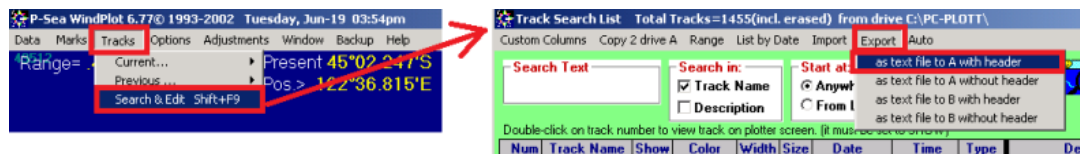
This will save all your tracks on the Floppy Disk Drive (one file per track). To import the Tracks in TimeZero Catch , select the folder containing all the track files.

Tips: If your computer does not have a "A" volume (Floppy Drive), you can use a USB Jump drive then enter "subst A: X:\" in the Windows Command line where "X" is the drive letter of your USB Jump drive. This command will redirect all files saved on "A:" to the USB drive.

Note: Windows has a problem when a folder contains more than 500 files. If you have more than 500 tracks, you will have to move the track files to a secondary folder **as they are generated** (to avoid having more than 500 files in one folder).

Save the User Interface (UI)

Nobeltec TimeZero Catch can be highly customized to fit your needs. You can customize the Ribbons and ToolBar of each Work Spaces, configure the NavData, adjust Options, etc…

All these settings can be saved in a file by selecting "Save UI as" from the Nobeltec menu.

When you want to load the settings, make sure that Nobeltec TimeZero Catch is closed, then double click on the file to open the software and load the corresponding settings.

Note that multiple files containing multiple setting profiles can be created (one per captain for example). Instead of opening the software using the TimeZero Catch shortcut located on the desktop, open the file setting instead. This will ensure that your default settings are re-apply each time you start the software.

Note: The User Objects (Routes, Marks, etc..) and the Instruments Configuration (GPS, AIS, etc…) are not stored inside the setting files (they are global to the software and will stay the same when you open a file setting)

Shortcuts

Default Shortcuts

The default Shortcuts of TimeZero Catch are:

- **Ctrl**: Maintain the CTRL key down while selecting several objects together by clicking them one after one using the hand tool.

- **Shift**: Maintain the Shift key down while dragging with the hand tool to select multiple objects

- **Ctrl + F**: Find Places (if connected to Internet), Marina (from ActiveCaptain) and Tides Station.

- **Ctrl + Z**: Undo the last command or action

- **Ctrl + Y**: Repeat the last command or action

- **Del**: Delete selected object

- **Page Up**: Zoom in

- **Page Down**: Zoom out

- **CTRL + Page Up**: Activate next step of the animation

- **CTRL + Page Down**: Activate previous step of the animation

- **CTRL + F2**: To stop the animation

- **F1**: Call up the Help Guide

- **F2**: Zoom in step by step

- **F3**: Zoom out step by step

- **F4**: Center on boat

- **F5**: Track on /off

- **F6**: Show / Hide NavData

- **F7**: Show/Hide Lists

- **F8**: Man Over Board (MOB)

- **F9**: Create an Event (same as ENTER key)

- **F10**: Radar Range Out

- **F11**: Radar Range In

- **SHIFT + F2**: Switch between Day, Dusk and Night display

- **SHIFT + F3**: Enable/Disable the "TrackBall" mode (to pan the chart by just moving the mouse)

- **SHIFT + F5**: PBG (Bathy Recorder) on /off

- **SHIFT + F10**: Show / Hide Depth shading

- **SHIFT + F11**: Switch from 2D to3D view

Keys 0 through 9 create a custom event (defined in Marks & Boundaries Options under "Configure Events)

Custom Shortcuts & Macro

Shortcuts (F1 through F12 and Shift+F1 through Shift + F12) can be customized by the user from the General Options under "Customize Function Key". Multiple actions ("Macro") can be triggered by one shortcut. The action will be triggered in the order they are listed in the window.

NMEA Sentence

NMEA0183 Input

Below is the list of NMEA0183 sentences supported by TimeZero Catch as input. There are sorted by the type of data they provide. In case multiple sentences provide the same data, there are listed by priority (higher priority first).

- Air Temperature: MDA

- AIS Target: VDM

- AIS Own Ship Information: VDO

- Apparent Wind Angle: MWV; VWR

- Apparent Wind Speed: MWV; VWR

- Atmospheric Pressure: MDA

- Course Over Ground: RMC; VTG; RMA; VDO

- Depth Below Transducer: DPT; DBT

- Distance From Transducer To Keel: DPT

- Distance From Transducer To Water Line: DPT

- Drift Direction: VDR

- Drift Speed: VDR

- Event: TLL (without ID)

- GPS Mode Indicator: GGA (field "GPS Quality Indicator") or "Mode Indicator" (last field) of GLL, GNS, RMC, VTG

- Heading: FEC_GPatt; HDG; HDT; HDM; VHW; OSD; VDO

- Heave: FEC_GPhve

- Horizontal Dilution Of Precision (Accuracy): GGA; GSA; GNS

- Local Time Zone: ZDA

- Magnetic Deviation: HDG

- Magnetic Sensor Heading: HDG

- Magnetic variation: HDG; RMC; RMA

- Number Of Satellites In Use: GGA; GNS

- Rudder Sensor Angle: RSA

- Position: RMC; GGA; GLL; RMA; GNS; VDO

- Positioning System Mode Indicator: RMC; GLL; RMA; VTG; GNS

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- Position Quality Warning: GLL

- Rate Of Turn: ROT; VDO

- Relative Pitch: FEC_GPatt

- Relative Roll: FEC_GPatt

- Sea Surface Temperature: MTW; MDA

- Speed Over Ground: RMC; VTG; RMA; VDO

- Speed Through Water: VHW

- Rudder Sensor Angle: RSA

- ARPA Target: TTM, TLL (containing an ID), WPL (containing an ID and having the "CD" talker)

- DSC Target: DSC & DSE

- True Wind Angle: MWV

- True Wind Direction: MWD; MDA

- True Wind Speed: MWD; MWV; MDA

- UTC Date Time: ZDA; VDO

- UTC Of Position: RMC; GGA; GLL; GNS

- Velocity Made Good: VPW

NMEA0183 Output:

Below is the list of NMEA0183 sentences supported by TimeZero Catch as output:

- DPT

- GGA

- GLL

- HDG

- MWD

- MWV

- OSD

- RMC

- VPW

- VTG

- ZDA

- APB

- BOD

- BWC

- BWR

- HSC

- RMB

- XTE

NMEA2000 Input

Below is the list of NMEA2000 sentences supported by TimeZero Catch as input. There are sorted by the type of data they provide. In case multiple sentences provide the same data, there are listed by priority (higher priority first).

Note: At this time, TimeZero Catch cannot output NMEA2000 sentences. Only NMEA0183 output is supported.

- Air Temperature: PGN_130310; PGN_130311_PressureAndAirTemperature; PGN_130312_AirTemperature

- AIS Class A Position Report: PGN_ 129038

- AIS Class A Static and Voyage Related Data: PGN_ 129794

- AIS Class B Position Report: PGN_129039

- AIS Class B Extended Position Report: PGN_129040

- AIS Class B "CS" Static Data Report: PGN_129809 ; PGN_129810

- Apparent Wind Angle: PGN_130306_ApparentWindSpeedAndAngle

- Apparent Wind Speed: PGN_130306_ApparentWindSpeedAndAngle

- Atmospheric Pressure: PGN_130314; PGN_130311; PGN_130310; PGN_130311_PressureAndAirTemperature; PGN_130311_PressureAndSST

- Depth Below Transducer: PGN_128267

- Distance From Transducer To Keel: PGN_128267

- Distance From Transducer To Water Line: PGN_128267

- Drift Direction: PGN_129291_DriftAndMagneticSet; PGN_129291_DriftAndTrueSet

- Drift Speed: PGN_129291; PGN_129291_DriftAndMagneticSet; PGN_129291_DriftAndTrueSet

- Fuel Level: PGN_127505

- Fuel Flow Economy: PGN_127497

- Global Positioning System Mode Indicator: PGN_129029

- Horizontal Dilution Of Precision: PGN_129539; PGN_129029

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- Magnetic Course Over Ground: PGN_129026_Sog_GeoCog; PGN_129026_Sog_MagCog

- Magnetic Deviation: PGN_127250

- Magnetic Heading: PGN_127250

- Magnetic Sensor Heading: PGN_127250

- Magnetic Variation: PGN_127250

- Number Of Satellites In View: PGN_129540; PGN_129029

- Position: PGN_129025; PGN_129029

- Sea Surface Temperature: PGN_130310; PGN_130311_PressureAndSST; PGN_130312_SST

- Speed Over Ground: PGN_129026; PGN_128259; PGN_129026_Sog_GeoCog; PGN_129026_Sog_MagCog

- Speed Through Water: PGN_128259

- Tracked Target Data : PGN_ 128520

- True Course Over Ground: PGN_129026_Sog_GeoCog; PGN_129026_Sog_MagCog

- True Heading: PGN_127250

- True Wind Angle: PGN_130306_TheoriticalWindSpeedAndAngle

- True Wind Magnetic Direction: PGN_130306_TheoriticalWindSpeedAndGeographicDirection; PGN_130306_TheoriticalWindSpeedAndMagneticDirection

- True Wind Speed: PGN_130306_TheoriticalWindSpeedAndAngle; PGN_130306_TheoriticalWindSpeedAndGeographicDirection; PGN_130306_TheoriticalWindSpeedAndMagneticDirection

- True Wind True Direction: PGN_130306_TheoriticalWindSpeedAndGeographicDirection; PGN_130306_TheoriticalWindSpeedAndMagneticDirection

- UTC Date Time: PGN_126992

- UTC Of Position: PGN_129029

Proprietary Sentence & File Format

Proprietary sentences provide a means for manufacturers to use the sentence structure definitions of NMEA 0183 standard to transfer data which does not fall within the scope of approved sentences. Below are the proprietary sentences recognized and used by TimeZero Catch .

"PMXS, MOB" NMEA Sentence

```
MOB - Man Overboard

$PMXS,MOB,c--c,hhmmss.ss,llll.ll,a,yyyyy.yy,a,x.x,x.x,x.x,x.x,a*hh<CR><LF>
  | |   |    |         |       | |        | |   |   |   |   |  |  |
  | |   |    |         |       | |        | |   |   |   |   |  |  |
  | |   |    |         |       | |        | |   |   |   |  +-- Test mode (*1)
  | |   |    |         |       | |        | |   |   |  +-- Speed over ground, knots
  | |   |    |         |       | |        | |   |  +-- True course over ground (*2)
  | |   |    |         |       | |        | |  +-- Time since MOB event (*3)
  | |   |    |         |       | |        | +-- Horizontal dilution of precision
  | |   |    |         |       | |       +----+-- Longitude, E/W
  | |   |    |         |       +----+-- Latitude, N/S
  | |   |    |    +-- UTC of position
  | |   |   +-- ID of mobile emitter
  | |  +-- Man Overboard mnemonic
  | +-- MaxSea International manufacturer code
 +-- Proprietary sentence ID


Notes:
*1) Test mode: set to "T" if this sentence is used for testing purpose, null otherwise.
Example in normal mode:
$PMXS,MOB,EBN0007,113552.23,1233.4567,N,00123.6542,E,10.4,101.10,123.4,12.1,*FF

Example in test mode:
$PMXS,MOB,EBN0007,113552.23,1233.4567,N,00123.6542,E,10.4,101.10,123.4,12.1,T*FF

*2) Expressed in decimal degrees.
*3) Expressed in decimal hours.
```

POSREPORT file format

Nobeltec TimeZero Catch can scan a folder (defined in the Targets Options under "Vessel Tracking Data Location") for new or updated POSREPORT file(s). Once TimeZero Catch detects a valid file, it analyzes it and displays the location of the fleet target on screen.

The POSREPORT text file always start with "POSREPORT", then one line per target with the fields separated by ";".

Fields Definition:

- Rank

- Id

- Latitude

- Longitude

- Date

- Comment (can contain basic HTML tag such as <u>, <i> and <b>)

Example:

POSREPORT
0;13;15.0215N;26.4728W;01/10/11 09:00:00;comment

Fishing Buoys file format

TimeZero Catch will check periodically the content of a directory, specified in the [Targets](#) Options under "Fish Buoys Data Location". If a file with a name following the pattern *_PosReport*.* is present, TimeZero Catch analyzes it and display the Buoys on screen.

The text file contains data that looks similar to NMEA sentences. Each line starts with $MXMIT with all the fields separated by comas.

Fields Definition:

ID- string(8) - Identifier

ALIAS - string(20) - Name

Date Utc – 220709 - DDMMYY

Time Utc – 125632 - HHMMSS

Latitude - 003.8955 (like NMEA)

Hemisphere - [N,S]

Longitude - 122.9486 (like NMEA)

Meridian - [E,W]

Vcc - 00.0 – Battery voltage

Temp - [-]00.0 - Temperature

Flash - [0,1]

Battery alarm - [0,1]

Speed alarm - [0,1]

Remote command active - [0,1]

Example:

$MXMIT,M2I51041,Buoy,060710,125851,042.1363,N,008.8022,W,11.7,37.7,0,0,0,0

Note: For each buoy, TimeZero accepts only new positions dated after last position. TimeZero deletes the positions file after reading it.

[Toolbar](#)

Tools

Some tools may only be available in specific WorkSpaces or with specific Plus Pack:

- "Center On": Click on this button to center on Own Ship position

- "AutoShift": Right Click on the "Center On" button to access the "AutoShift" mode. Click on the "AutoShift" button to enable or disable Auto Shift. Auto Shift is enabled when this button is surrounded in yellow.

- "Track": Click on this button to enable or disable Track Recording. Track recording is enabled when this button is surrounded in yellow

- "PBG": Click on this button to enable or disable the Bathy Recording ("PBG"). Data is being recorded when this button is surrounded in yellow.

- "Zoom In/Out": Click on these buttons to zoom in or zoom on the chart. You can adjust the scale selection from the Plotter Display Options (by clicking on the button "Chart Scales Selection")

- "Zoom": This tool is very useful if you don't have a scroll wheel to zoom continuously on the chart. When this tool is selected, left click to zoom in and right click to zoom out.

- "Pan": This is the tool which is selected by default. It allows you to pan the chart with the mouse. If you have another tool selected, pressing the ESC key on your keyboard revert to the Pan tool.

- "Divider": This tool allows you to make bearing and range measurement in between two points. If you select this tool and double click on the chart, it will create a divider line in between own ship position and the point where you double clicked. You can double click on the tool itself to erase all dividers. For more information, please refer to the Divider Tool Chapter.

- "Go To": This tool allows to create a quick "Go To" point by creating an Active Route. You can double click on this tool to create a Go To using lat/lon.

- "Mark": This tool allows to create marks. You can right click on this tool to select the mark icon and color. You can double click on this tool to create a mark using lat/lon.

- "Route": This tool allows to create route. You can right click on this tool to create various Search and Rescue ("SAR") route pattern. The Search and Rescue parameters (distance) are set up from the Routes Options (under "SAR Interval").

- "3D Orientation": This tool is used to adjust the 3D view when "3D" and "Unlimited" are selected from the Mode Ribbon.

- "Boundary Area": This tool is used to create areas. Click on the chart to create boundary points and double click to close the area. You can double click on this tool to create an area by using lat/lon.

- "Boundary Circle": This tool is used to create circles.

- "Boundary Line": This tool is used to create lines. Click on the chart to create boundary points and double click to close end the line. You can double click on this tool to create a line by using lat/lon.

- "Annotation": This tool is used to create annotation. You can double click on this tool to create an annotation by using lat/lon.

- "Event": This tool is used to drop a mark under the boat position.

- "MOB": This tool is used to drop a "Man Over Board" (MOB) mark under the boat position. When you press on this button (single click), it drops a marks, selects the "Navigation" WorkSpace and zooms at a navigation scale automatically. If you double click on the tool, it will also activate a route and raise an alarm. To cancel the "MOB" alarm, simply Cancel the active route.

- "Logbook Event": This tool allows to create a manual event in the logbook.

- "Selection": This tool is used to select multiple objects. If you right click you can select the "Free Selection" tool that allows to draw a free selection on the screen. When multiple objects are selected, you can delete them, change icon and color.

- "Delete": This tool is used to delete objects. You can either click on an object or draw an area around multiple objects.

- "Delete PBG Points": This tool allows to delete depth data that has been recorded in TimeZero Catch . Note that this tool is only active when PBG is turned OFF and when the "PBG Points" are selected from the PBG button in the Ribbon.

- "Synchronize Radar Range": This button synchronize the Radar range with the current chart range. Press this button to adjust the radar range to the closest matching chart scale.

- "Range In/Out" (Radar): These buttons are used to increase or decrease the radar range.

- "EBL VRM 1/2": Right click on this tool to select either "EBL" or "VRM" mode (two set each). Click on the chart or radar screen and drag the cursor to create the EBL or VRM. Double click on this tool to erase all EBL and VRM.

- "Guard Zone 1/2": Click on this tool to create a Guard Zone (relative to the boat) by clicking and dragging the cursor on the chart or radar screen. Once the guard zone has been created, right click to adjust its parameters. You can create up to two guard zones by right clicking on the tool. Double on this tool to erase all guard zones.

- "Contour Line 1/2": Right Click on this tool to either select the red or green contour line tool. When this tool is selected, a yellow contour line is drawn under the cursor. Click once to drop the corresponding contour line (red or green). If you drop a second red or green contour line, it will replace the previous one. Double click on this tool to erase the red and green contour line.

- "Range In/Out" (Sounder): These buttons are used to increase or decrease the sounder range. You can adjust the scale selection from the Sounder Options (by clicking on the button "Sounder Range Selections")

· "Update Area": This tool is only available in the "Update" WorkSpace and is used to define the weather update area. Once the area is define, select the "Update" button from the Ribbon.

· "Launch Routing": This tool requires the "Routing" Plus Pack. It is used to create routing in between two points. If you double click on the chart and have a valid GPS position, it will create a routing in between own ship position and the point.

Ribbons

Mode
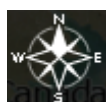
This buttons gives access to various chart orientation in 2D or 3D, exaggeration in 3D mode and various objects linked to the own ship (COG vector, camera Field of View, etc...)

· **North Up**: This mode displays the North at the top of the screen.

· **Head Up**: This mode orients the bow of the vessel to the top of the screen. The chart rotates as the vessel's bow is always pointed toward the top of the screen. In Head up mode, pay close attention to the Compass icon (on the bottom left). It provides information about the direction of North. Head Up mode is only available if a Heading sensor is connected OR if your speed is over 1Kn (GPS COG will be used in that case).

· **Course Up**: This mode is only available when a "Go To" or Route has been activated and when the boat is moving over 1Kn. When this mode is selected, the chart rotates and aligns vertically with the active leg. This mode provides a "stabilized" view (not moving with the own ship heading) toward your destination (or active Waypoint).

· **Unlimited (3D only):** In this mode, the azimuth and pitch can be freely adjusted by holding the middle click button and moving the mouse. If the mouse does not have a middle button, press and hold the Alt (Option) key of the keyboard while moving the cursor.

· **2D**: Selects 2D mode.

· **3D**: Selects 3D mode.

· **3D Bathymetry**: Enable the 3D bathymetry view under water. This option is only available when the 3D mode is selected.

· **COG/SOG Predictor**: Display the COG vector (displayed in red dashes). COG ("Course Over Ground") is calculated by the GPS. It indicates the direction of movement relative to a ground position. The length of the COG vector can be setup by distance or time. When it is set to "Time", the length varies according to the speed of the boat and can be configured to show the predicted position in a specified amount of time. This setting is available in the Ship & Tracks Options ("COG/SOG Predictor").

· **Heading Line**: The Heading Line (displayed as a green line) is sent by an Electronic Compass and shows the direction of the bow of boat.

- **Drift Vector**: The Drift Vector (displayed as a blue dashed line) can be received from a sensor or computed by TimeZero Catch when COG, SOG, STW and heading are received. This vector represents graphically the drift direction and speed.

- **Vessel Fuel Range Ring**: Displays a circle on the chart around the boat representing the maximum range according to current fuel consumption, remaining fuel and speed. The Color of this circle can be changed from the Routes Options.

- **Range Circle**: Displays the Range circle around the boat. The Color and Size of this circle can be changed from the Ship & Track Options

- **Day/Dusk/Night/Automatic**: Adjusts the screen's brightness and vector chart color palette (for night or day). When set to Automatic, TimeZero Catch will automatically switch modes according to your local sunset and sunrise time.

Marks

This buttons allows to show or hide marks and objects on the chart. It also gives you the option to create objects using coordinate:

- **Display Object Names**: Turns ON or OFF the object label on the screen.

- **Visible Layers**: Selects which Layer(s) will be displayed on the screen. Please refer to the Layer Introduction for more information.

- **Active Layer**: Selects the layer that is used by default when creating object. Please refer to the Layer Introduction for more information.

- **Manage Layer**: Opens a window that allows you to manage the layers.

- **Create Marks/Boundary/Annotation/GoTo**: Creates objects using coordinate manually entered by the user.

- **Transform**: Opens a window that allows to select and transform objects using various criteria.

- **Delete**: Opens a window that allows to select and delete objects using various criteria.

- **Options**: Open the Marks & Boundaries Options.

Chart

This buttons allows you to select the chart used on the screen, adjust some of its property (vector chart only) and show/hide various layers of information on top of the chart:

- **Chart**: Selects the type of chart used. Select "Auto" if you want TimeZero Catch to pick automatically the best chart source according to the area.

- **S52 Display** (vector Chart only): Provides quick access to five different levels of detail for vector charts. Please refer to S-52 Display for more information.

- **Terrain Shading**: Displays and adjusts the intensity of the relief shading (in 2D or 3D). This adjusts the chart contrast according to the slope and improve the perception of terrain.

- **Depth Shading**: Displays and adjusts the intensity of the depth shading. Please refer to Depth Shading for more information.

- **Bottom Classification**: Displays and adjusts the intensity of the Bottom Classification (with BBDS1 or DFF1-UHD). Please refer to Bottom Classification for more information.

- **Depth Contour Lines**: Displays contour lines on the chart that are generated from the 3D database. These contour lines can be displayed over any type of chart and the density can be configured.

- **Satellite Picture**: Displays the Satellite Pictures over the chart.

- **Tidal Height Stations**: Displays the Tidal Stations over the chart.

- **Tidal Currents**: Displays the Tidal Currents over the chart.

- **Grid**: Displays a grid over the chart

- **Options**: Opens the Plotter Display Options.

PBG

This buttons gives access to the type of 3D data used. When multiple type of 3D data are selected, TimeZero Catch merge them on the screen. It also offers a quick access to some of the PBG filters:

- **PBG Points**: Displays red dots where bathy data has been recorded by the user. This also displays where 3D data has been imported (from other format). When zooming on the chart, the dots transforms in depth soundings.

Note: The PBG points do not appear for data that has been recorded or imported from WASSP.

- **3D Chart Database**: Enables the 3D from the chart (.dbt files that are installed with the chart).

- **3D High Resolution**: When a high resolution 3D file has been installed (.dbh files only available for selected areas), this items enable its display. Note that it is recommended to turn OFF the 3D chart Database when this item is turned ON.

- **Imported 3D database**: Enables the 3D imported from other format.

- **PBG Database**: Enables the 3D data recorded by the user (Bathy Recorder).

- **Tidal Height Correction**: Enable the tide correction when depth soundings are recorded from the sounder.

- **PBG Filters**: Enable the various PBG filters configured under the PBG (Bathy Recorder) Options.

- **Reset Consistency Filter**: When the consistency filter using the previous data has been enable from the PBG Options, this allows to force the current data to be used for the next depth point comparison. This is useful when the filter get "stuck" (when the filter thinks that a big slope is abnormal).

Note: The PBG tide and Filters are not available when connected to a WASSP system. All the filter are done from the WASSP processor.

- **Options**: Opens the PBG (Bathy Recorder) Options.

Target

This button allows to show/hides targets on screen as well as adjusting parameter related to targets:

- **Display Target ID**: Shows or hides the target labels (name or ID) on the screen. For AIS targets, the label displayed on the screen is the name of the ship or the MMSI number in case the name is not available.

- **CPA/TCPA Alarm**: Gives a quick access to the CPA/TCPA alarm. Please refer to the Alarms Options for more information.

- **Display CPA/TCPA for Selected target**: Enables the display of the CPA point on the screen for the selected target (target surrounded in orange). Please refer to Target Graphic CPA for more information.

- **Display CPA/TCPA for Activated targets**: Enables the display of the CPA point on the screen for the targets that are activated. Please refer to Target Graphic CPA for more information.

- **Display Trail on Selected Target:** Displays a trail on the selected target. For more information, refer to Target Tracking.

- **Display Trail on all Targets:** Displays a trail on all targets. For more information, refer to Target Tracking.

- **ARPA Targets**: Displays the ARPA target from the radar. Please refer to ARPA Target for more information. Heading information is required.

- **Clear All Lost ARPA targets**: Erases from the screen all the ARPA targets that are lost (with a red cross).

- **Cancel all ARPA targets**: Erases all the ARPA targets that are currently tracked by the radar.

- **AIS Class A**: Displays AIS Class A targets. Class A are usually commercial vessels.

- **AIS Other**: Displays AIS Class B targets, shore stations, AIS SAR and AIS SART. AIS Class B are usually recreational vessels. Please refer to AIS Target for more information.

- **AIS Online**: Displays AIS targets from Internet. This does not require TimeZero Catch to be connected to a live AIS receiver. However, the AIS from Internet can be subject to high latency and is not intended for navigation. Please refer to AIS Online for more information.

- **Activate all AIS targets:** Activate all AIS targets. Please Refer to the AIS Activation for more information.

- **Reset AIS Activation Status**: Resets all the AIS that have been manually activated or deactivated. Please Refer to the AIS Activation for more information.

- **DSC**: Displays DSC targets. Please refer to DSC Targets for more information.

- **DSC Tracks**: Displays DSC target tracks.

- **Clear all DSC Targets and Tracks**: Erase all the DSC targets and their tracks.

- **Display All Fleet Targets**: Displays Fleet targets. Please refer to Fleet Tracking for more information.

- **Hide All Fleet Targets**: Hide Fleet targets.

- **Fleet Target Tracks**: Displays fleet target tracks.

- **Clear all Fleet Targets and Tracks**: Erase all the fleet targets and their tracks.

- **Options**: Open the Targets Options.

Tracks

- **Track Color**: Selects the track color of the current and future tracks that are recorded in TimeZero Catch .

- **Variable Color**: When track color is set to "Variable", this adjusts the type of data used or track coloring. The color scale is adjusted from the Ship & Tracks Options.

- **Recall Track**: Opens a window that allows to recall a track in TimeZero Catch . Please refer to Tracks for more information.

- **Options**: Opens the Ship & Tracks Options.

Route

This buttons allows you to perform various actions on the Active Route:

- **Restart Route**: Restarts the Active Route. This set your current position as the new origin and restart the Cross Track Error (XTE). Please refer to Activating a Route for more information.

- **Skip Waypoint**: Manually Skip the active Waypoint. Note that this also set your current position as the new origin and restart the Cross Track Error (XTE). Please refer to Activating a Route for more information.

- **Previous Waypoint**: Manually set the Previous Waypoint as the new active Waypoint. Note that this also set your current position as the new origin and restart the Cross Track Error (XTE). Please refer to Activating a Route for more information.

- **Cancel Navigation**: Cancels the Active Route and stop the navigation.

- **Activate Route**: Activates the selected Route.

- **Reverse Route:** Reverses the selected route.

- **Options**: Open the Routes Options.

Lists

This buttons allows you to open the various lists at the bottom of the screen. Once the list are opened, you can switch list by using this button again or by directly selecting the corresponding list on the left pane:

Radar

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and radar configured to access this feature

This buttons gives access to various radar adjustments and radar related features:

- **Radar Overlay** (Chart Only): Enables the Radar Overlay on the chart. Heading sensor is required.

- **Echo Trail**: Enables the Radar Echo Trail. Please refer to [Radar Controls](#) for more information.

- **Trail Mode**: Adjusts the trail mode. Please refer to [Radar Controls](#) for more information.

- **Trail Length**: Adjusts the trail length. Please refer to [Radar Controls](#) for more information.

- **Clear Trail**: Clear and reset the Trail.

- **Gain/Sea/Rain**: Adjusts the Gain/Sea/Rain parameters of the radar.

- **Interference Rejection**: Adjusts the Interference Rejection. Please refer to [Radar Controls](#) for more information.

- **Echo Averaging**: Adjusts the Echo Averaging. Please refer to [Radar Controls](#) for more information.

- **Echo Stretch**: Adjusts the Echo Stretch. Please refer to [Radar Controls](#) for more information.

- **Pulse Length**: Adjusts the Pulse Length. Please refer to [Radar Controls](#) for more information.

- **Noise Rejection**: Adjusts the Noise Rejection. Please refer to [Radar Controls](#) for more information.

- **Video Contrast**: Adjusts the Video Contrast. Please refer to [Radar Controls](#) for more information.

- **Guard Zone 1/2**: Adjusts the working mode of the Guard Zones. Please refer to [Guard Zones](#) for more information.

- **Radar Rings**: Displays the Radar Ring on the Radar.

- **Radar Source**: Selects the Radar Source in case multiple radars are configured on the network.

- **Transmit**: Sets the Radar in Transmit or Standby mode.

- **Options**: Opens the [Radar](#) Options.

Sounder Mode
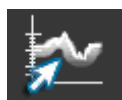
This buttons adjusts the operating mode of the Sounder such as frequency, Zoom Mode, etc...

- **HF / LF** : Selects the operating frequency of the sounder. If the sounder is in Dual Frequency mode (both HF and LF displayed on screen), clicking on this button will inverse the side of the operating frequency.

- **Single Frequency**: Set the Sounder in Single Frequency mode. This will only display one sounder echogram on the screen. Select either HF or LF from the menu above.

> **Note**: If AccuFish or Bottom Discrimination is selected, the sounder will transmit HF and LF even if the mode appears to be set to Single Frequency only. This is because AccuFish and Bottom Discrimination need both frequencies in order to work. If you want the sounder to only operate in one frequency, make sure to disable AccuFish and Bottom Discrimination.

- **Dual Frequency**: Set the Sounder in Dual Frequency mode. This will display two sounder echogram on the screen (one for the Low Frequency and the other for High Frequency). When operating in Dual Frequency, the range of both frequencies is synchronized. To inverse the side of the HF and LF, select the "HF" or "LF" button above.

- **Bottom Zoom:** Set the Sounder in Bottom Zoom. Please refer to Sounder Display Mode for more information.

- **Bottom Lock:** Set the Sounder in Bottom Lock. Please refer to Sounder Display Mode for more information.

- **Auto Range**: Enables the Sounder Auto-Range. When set, the sounder will attempt to track the bottom and adjust its range automatically.

> **Note**: If Bottom Discrimination is selected (BBDS1 or DFF1-UHD), the sounder automatically goes into Auto Range even if the Auto Range appears to be deactivated from the menu above.

- **Day/Dusk/Night/Automatic**: Adjusts the screen's brightness and vector chart color palette (for night or day). When set to Automatic, TimeZero Catch will automatically switch modes according to your local sunset and sunrise time.

- **Transmit**: Set the Sounder in Transmit or Standby.

- **Options**: Opens the Sounder Options.

Sounder Display
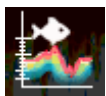
This button enables various display feature of the sounder:

- **A-Scope**: Enables the A-Scope display of the Sounder.

- **AccuFish**: Enables the AccuFish feature of the sounder. This only applies to DFF1/BBDS1/DFF1-UHD sounders with compatible transducer.

- **AccuFish Color/Icons**: Allows to select the AccuFish icon and color.

- **Bottom Classification**: Enables the Bottom Classification of the Sounder. This only applies to the BBDS1 and DFF1-UHD. Please Refer to Bottom Discrimination for more information.

- **Options**: Opens the Sounder Options.

Sounder Adjustments

This button allows to adjust the main settings of the sounder (Gain, Auto Mode,...):

- **Auto-Fishing / Auto-Cruising**: Enables the Automatic Mode of the sounder. Please refer to Sounder Controls for more information.

- **Manual**: Sets the sounder in manual mode, allowing you to manually adjust the gain for HF and LF frequency below.

- **Manual Gain HF/LF**: Adjusts the HF and LF gain when the sounder is set in manual mode.

- **Interference Rejection**: Enables the Interference Rejection of the sounder. Please refer to Sounder Controls for more information.

Logbook

This buttons allows to display and start new logbook:

- **Display Logbook on charts**: Displays all the logbooks on the chart. The logbook consists of a series of events (triggered manually or automatically from the Logbook Options) linked in between each other. They are displayed in green on the chart similar to route. Double clicking on a logbook opens it and display it details from the list (Logbook Detail). Logbook events stores all the data that is available in TimeZero Catch at that time. Note that even if the logbook are hidden, the Active logbook will remain on the chart if it has been previously selected. To hide the Active Logbook, simply right click on the chart and select "Unselect All".

- **Start New Logbook**: Stops the current logbook and starts a new one. When pressing this button a window will appear allowing you to give a name to the new logbook.

- **Options**: Opens the Logbook Options.

POIs

This button allows you to display various POI ("Point of Interest") on the chart and find places:

- **Display POIs**: Shows or Hides all the POIs that are selected at once.

- **My Photos**: Displays the pictures that are imported in TimeZero Catch . Please refer to Photos & Notes for more information.

- **Panoramio**: Displays Panoramio pictures on the chart (required an Internet connection). Please refer to Panoramio for more information.

- **AC Marina/Anchorage/Local Knowledge/Hazards**: Displays the corresponding ActiveCaptain markers in the chart. Please refer to [ActiveCaptain](#) for more information.

- **Find**: Opens a window that allows to search for place. TimeZero Catch can search in the Marina ActiveCaptain database, Tide database and in the online geoname database.

Weather

This buttons allows to display weather on the chart by selecting various presets:

- **Display Weather**: Shows or Hides the selected Weather Presets.

- **Navigation / Fishing / Custom Preset**: Click on one of these buttons to activate the corresponding weather preset. To define a preset, just select the type of data you want to display from the sub-menus. Please refer to [Displaying Weather Data](#) for more information.

- **Options**: Opens the [Plotter Display](#) Options.

Camera Control

This button allows to access features of the camera (according to the type of camera) and allows to unlock the camera (stop the tracking):

- **Unlock Camera**: Stop the camera tracking

- *<Camera Features>*: According to the type of Camera (FLIR for example), various features can be selected from this menu ("Home", "Scene", etc...)

- **Reconnect Camera**: Attempts to reconnect to the camera when the connection is lost.

Camera

This button (only available in the Camera WorkSpace) allows to select the Camera Source:

- *<List of Camera Name>*: Select the Camera to be displayed on the screen.

Update

This button is only available in the "Update" WorkSpace. It is used to update the Weather and ActiveCaptain:

- **Get Last Weather Request**: Bypasses the Weather Update Wizard and gets an up to date weather file using the same parameters as before. For this option to be available, you have to at least run and complete the Weather Update Wizard once.

- **Weather Update Wizard**: Launch the Weather Update Wizard that allows you to get up to date weather file. Please refer to Requesting a Weather File for more information.

- **Update ActiveCaptain**: Launch the ActiveCaptain Update Wizard. You need to enter your ActiveCaptain credential from the ActiveCaptain Options for this button to be available. Please refer to ActiveCaptain for more information.

Options

Options Overview

All preferences and settings within Nobeltec TimeZero Catch are set using the Options window found under the "Nobeltec" button. The Options window is comprised of a categorized list of options to the left, and the main display area to the right which contains all of the controls that the user can customize. At the bottom of the Options window a "Reset Default Settings" button allows you to reset the settings of the current page to the factory default.

Note: The "Reset Default Settings" button only affects the selected page (or category)
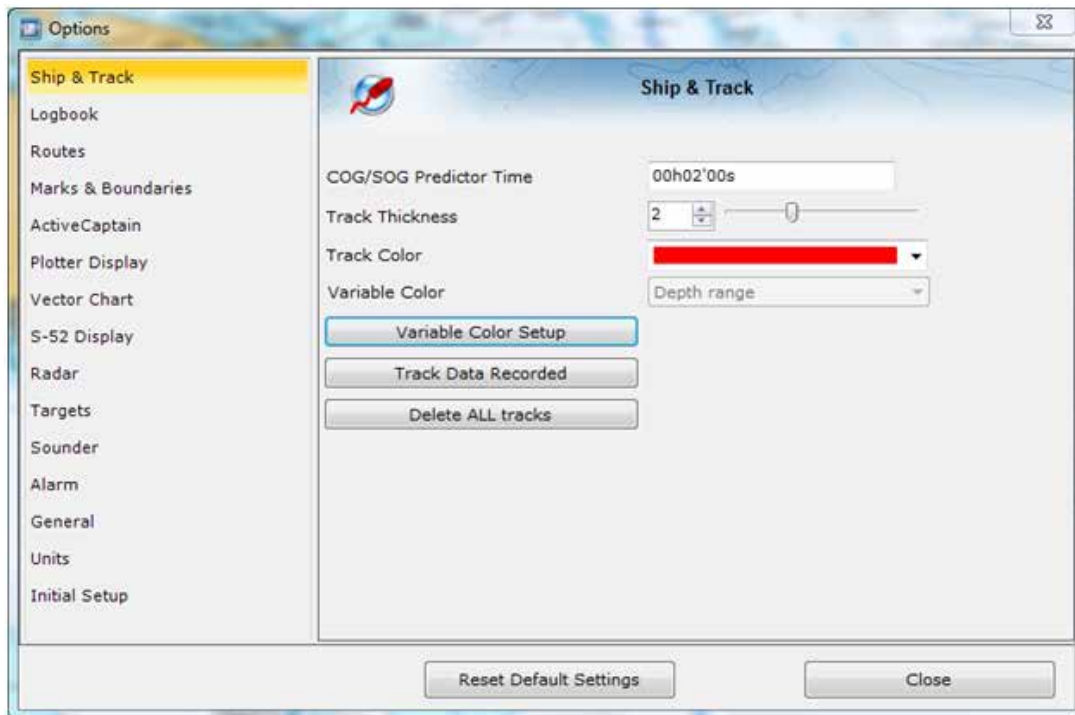
Note that some categories and features (such as Radar and Sounder) may not be available in your software (specific Plus Packs may be required). Other categories (such as "NN3D Chart Server") will only appear when a specific sensor (a NavNet3D MFD in this example) has been detected.

Ship & Tracks

The Ship & Track options are used to configure the vessel's COG & SOG predictor line and various track recording and display options.

- **Own Ship COG/SOG Predictor:** Selects if the Course Over Ground (COG) predictor varies in length according to speed or fixed by a distance value.

- **COG/SOG Predictor Length**: Adjusts the Course Over Ground (COG) predictor length when set for distance.

- **COG/SOG Predictor Time:** Increases the time value to make the Course Over Ground (COG) & Speed Over Ground (SOG) predictor line longer. Decreases the time value to make the predictor lines smaller.

Note: The COG/SOG Predictor Time setting also affects the ARPA and AIS target predictor

- **COG/SOG Predictor Thickness:** Adjust the thickness of the Course Over Ground (COG) predictor line.

- **Autoshift Maximum Speed**: When the Autoshift mode is selected (look ahead), this value is used to determine the off center position of the boat based on its speed. For example, if this value is set to 10Kn, the boat will be off centered to the edge of the motion circle at speed of 10kn and above.

- **Motion Circle:** Increases or decreases the size of the Relative Motion Circle (used for Relative and True Motion). Refer to the Centering on the boat chapter for more information on the Relative Motion Circle.

- **Range Circle Size:** Adjusts the range circle size (enable from the "Mode" button located in the Ribbon or by right clicking on the boat icon).

- **Range Circle Color**: Adjusts the range circle color

- **Range Circle Thickness**: Adjusts the range circle thickness

- **Track Thickness:** Increases or decreases the thickness of all the track lines that are set to use the "Default" thickness. Track thickness can be customize independently for each track by right clicking on the track and selecting a thickness size other than the "default" size.

- **Track Color:** Changes the default Track line color to one of 8 fixed set colors, or Variable colors according to real time parameters received by TimeZero Catch .

- **Variable Color:** This option can be set to Depth, Bottom Discrimination, Sea Surface Temperature or Speed, but only if the Track Color option is set to Variable.

- **Variable Color Setup:** Press the Variable Color Setup button to access the control where you can alter the Track line coloring based on Depth range, Sea Surface Temperature (SST) range, or Speed. Users can adjust the minimum maximum values of the ranges as

well as adding and customizing color to satisfy particular needs.
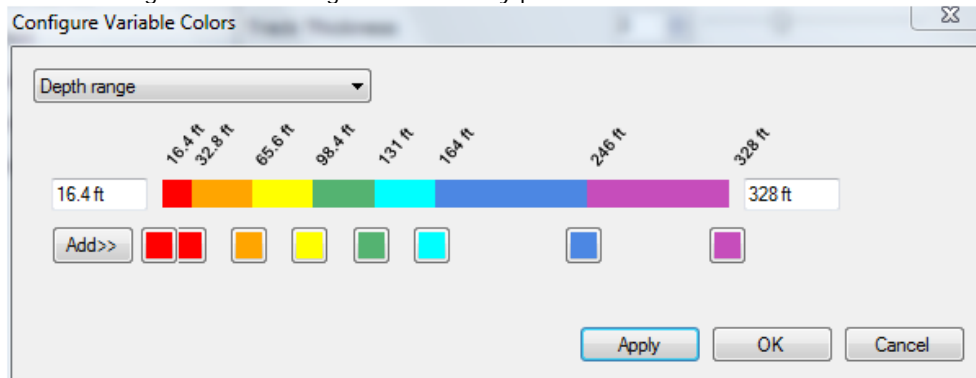
Tips: To remove a color, click and drag it all the way to the right (until a trash icon appear) then release the mouse

- **Track Data Recorded:** By default, Date, Depth, Sea Surface Temperature and Speed over Ground are recorded within the track. It is possible to record more data (up to 10) by checking the appropriate box. This data can then be displayed in a Tooltip when the cursor is placed over the track line. This only applied to own ship track (target tracks only record date and speed).

Logbook

The Logbook allows users to create a log of their voyage by recording manual (using the "Logbook" button in the Toolbar) or automatic events. The Logbook options are used to setup automatic conditions.

- **Enable Auto Logging:** Turns On or Off automatic Logging.

- **Record Every...:** A time interval from 20 minutes up to 1 day

- **Additional Condition:** User can select additional environmental conditions of Heading, Wind Force, Wind Direction, Depth and Waypoint switching to log as they change.

- **Conditional Criteria:** User can increase or decrease threshold values to trigger logging for the following environmental conditions.

  - *Heading Condition:* will trigger an automatic logbook event if the heading changes by the set amount within 1 minute

  - *Wind Direction Condition:* will trigger an automatic logbook event if the wind direction changes by the set amount within 1 minute

  - *Wind Force Condition:* will trigger an automatic logbook event if the wind speed changes by the set amount within 1 minute

- **Delete ALL Logbooks**: Push this button to delete all the Logbook data you have created to date.

Note: No more than one automatic event can be recorded every 5 minutes to avoid filling the logbook with too much events. When the boat is not moving, the Auto Logging is disabled.

Routes

The Route options allow users to configure settings related to routes behavior and appearance.

- **Route Color:** changes the default Route color.

- **Route Thickness:** changes the thickness of all routes. This is a global setting that will affect all the routes displayed on the screen.

- **Prompt for Route Name**: check this option to have the software prompt for a Route Name after creating a route.

- **Great Circle Navigation:** when this option is checked, the software will compute and display distance (with the divider tool) using the Great Circle distance (shortest distance between points on the surface of the Earth). The software will also chop long routes in smaller segments along the great circle path. These shorter resulting legs can be considered as straight ("rhumb line") segments that follow the shortest path on a Mercator projection using fixed bearing (on each segment).

- **Route Auto Zoom:** when this option is checked, the software will automatically adjust the zoom level when a new Waypoint is activated along a route. The software will either zoom in or zoom out in order to show the current position and the next Waypoint.
  Note: The Route Auto Zoom will only work if the boat is displayed on the screen (the software will not attempt to adjust the zoom level if you are panning on another area)

- **Waypoint Switching Mode:** this setting determines how the software switches to the next Waypoint automatically in a route

  - *Circle:* in this mode, the next Waypoint is automatically switched when your boat icon enters the active Waypoint's switching circle
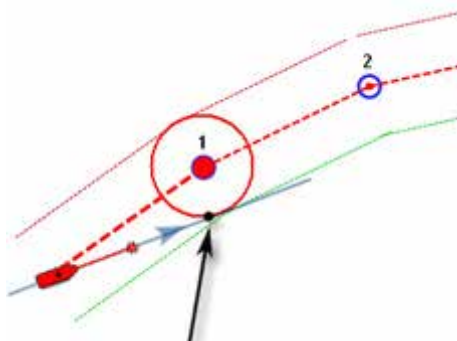
  - *Cross Line (also known as "perpendicular")*: in this mode, the next Waypoint is automatically switched when your boat crosses the line through the Waypoint that is perpendicular to the active leg line
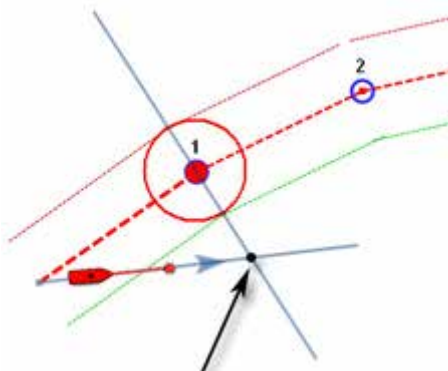
  - *Circle and Cross line:* in this mode, the next Waypoint is automatically switched if it enters the switching circle or crosses the line.

·   **Switching Circle Radius:** this option sets the radius of the switching circle and arrival alarm. This is a global setting that affects all Waypoints in a route.

·   **Waypoint Switching Notification:** when this option is checked, a notification will appear in the status bar (on top of the screen) whenever the active Waypoint is automatically switched. A sound will also be triggered if a sound is selected under "Define Alarm Sounds" of the Alarms options.

·   **End of Route Notification:** when this option is checked, a notification will appear in the status bar (on top of the screen) whenever the last Waypoint of a Route is reached. A sound will also be triggered if a sound is selected under "Define Alarm Sounds" of the Alarms options.

·   **Intelligent Waypoint Centering:** when this option is checked, the chart will automatically pan when a route is being built.

·   **Display XTE Alarm Lines**: when this option is checked, a red and green dash line (respectively port and starboard) will appear on each side of the active leg (when a route is activated). These lines are a graphical representation of the Cross Track Alarm value (that can be setup in the Alarms Options).
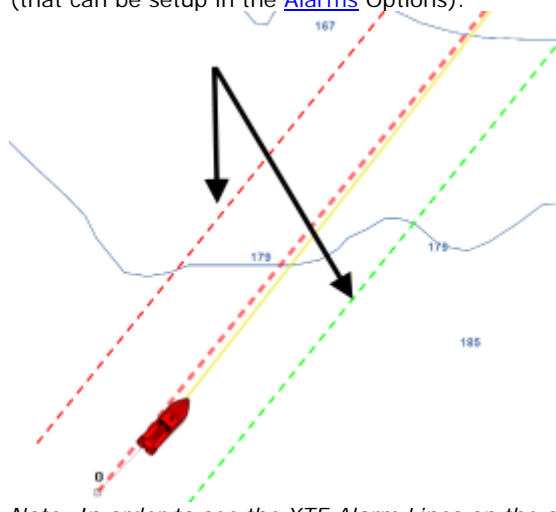
Note: In order to see the XTE Alarm Lines on the chart, you may have to zoom in at a closer range

·   **Display Leg Distance and Bearing:** when this option is checked, the distance and bearing (course to steer) will be displayed on the route leg:
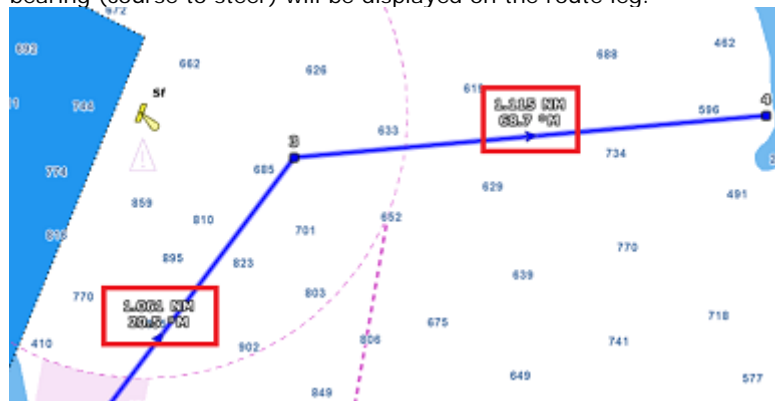
Note: the distance and bearing are not displayed on the active leg. This information can be displayed in the NavData using the "Route NavData"

- **Fuel:** Fuel options are used to configure the display of estimated maximum fuel range calculations within the TimeZero software. Fuel tank levels and fuel flow information come from NMEA2000 sensors (or J1939 sensors that are converted to NMEA2000 data streams)

  - *Show Max Range on Route:* this option turns on or off the display of the estimated maximum fuel range overlay on a Route line.

  - *Max Range On Route Color:* allows the user to change the color of the maximum fuel range overlay on a Route line.

  - *Show Vessel Fuel Range Ring:* this option turns on or off the display of the estimated maximum fuel range ring (a range ring centered around the vessel)

  - *Vessel Fuel Range Color:* allows the user to change the color of the maximum fuel range ring.

  - *Use First (Second, Third or Fourth) Fuel Tank In Vessel Calculations:* allows the user to decide to use the First, Second, Third or Fourth fuel tanks on their vessel for the purposes of calculating estimated maximum fuel range

- **SAR Interval:** Search and Rescue (SAR) Interval value for auto routing density. Values can be manually entered, or if the user uses the SAR Interval Table, the value will be automatically populated with a distance appropriate for the search conditions.

- **SAR Interval Table:** Open a window that allows to automatically set the optimum distance in between SAR path according to visibility and the type of object to look for.

Marks & Boundaries

The Marks & Boundaries options allow users to configure settings related to marks, events and boundaries (line, area and circle)

- **Default Layer**: This button opens a window that allows you to force specific type of object to be assigned to different default layers when they are created. Please refer to the Creating & Editing Layers chapter for more information.

- **Display Objects Names:** this option displays object names next to the object. This is a global settings that affects all the marks, routes and boundaries displayed on the screen.

- **Mark Symbol:** changes the default Mark icon.

- **Mark Color**: changes the default Mark color.

- **Mark Size:** changes the size of all marks (ranges from 50-200). This is a global settings that affects all marks displayed on the screen.

- **Event Mark Symbol:** changes the default mark icon used when an event is triggered (when the "Event" tool or ENTER key is used).

- **Event Mark Color:** changes the default mark color used when an event is triggered.

- **Attach Picture with Event:** Enables the user to attach a screenshot of the navigation screen to event marks when they are created.

- **Configure Events:** opens a window that allows you to customize events icons and colors when you press the 0 to 9 numeric keys on your keyboard.

- **Event Label:** changes the type of label that is used when saving events. Select "Prefix" when you want to use a user defined text prefix or select "Depth" when you want to name events with the current depth received from your sounder.

- **Event Label Prefix:** enter the text that will be assigned to the events when "Event Label" is set to "Prefix"

- **Event Auto-numbering:** enter a numeric value that will be used after the prefix. This numeric value will be automatically incremented each time you drop an event. Erase that field if you don't want any number to appear after the prefix.

Tips: If you do not want any label when creating event, erase the Label Prefix and Event Auto Numbering

- **Prompt for Event Name:** when this option is checked, a window allowing you to rename the event will appear each time you drop an event.

- **Automatic Event Recording:** when you check this option, an event will be automatically dropped periodically. The time is defined under the "Record every…" option. The minimum time interval is one minute.

- **Boundaries Color:** changes the default Boundary color.

- **Boundaries Transparency**: This option determines the default intensity of boundary transparency (ranges from 0-80).

- **Boundaries Contour:** changes the default Boundary contour style.

- **Boundaries Contour Thickness:** changes the contour thickness for all boundaries. This is a global setting that affects all boundaries displayed on the screen.

- **Annotation Color:** changes default Annotation color.

- **Annotation Size:** changes default Annotation size (ranges from 5-50).

- **Icon Set:** Allows the user to choose between a modern or classic icon set.

ActiveCaptain

The ActiveCaptain options allow users to enter their ActiveCaptain credentials and set advanced marker filters

- **Login/Password:** enter the Email address used to register your ActiveCaptain account and your password

- **Only Show Marinas with:** this allows the user to show only Marinas that have information regarding specific features. Leave all the options un-check to show all marinas.

- **Local Knowledge to show:** this allows the user to show only specific "local knowledge" marker type. Leave all the options checked to show all "local knowledge" markers.

Plotter Display

The Plotter Display options allow users to configure settings related to the Navigation and Planning Work Spaces:

- **Day/Night Mode**: adjusts the screen's brightness and vector chart color palette (for night or day). When set to Automatic, TimeZero Catch will automatically switch modes according to your local sunset and sunrise time.

- **Inverse Chart Palette in Day Mode:** force the night chart color palette at all times.

- **Chart Priority in Auto Mode:** If you have both Raster charts and Vector charts installed for the same area, this option allows you to select which type or charts (raster or vector) will be prioritize when the chart selection (under the "Chart" Ribbon button) is set to "Auto". If you have multiple Vector charts for the same area, the following internal priority will be used: Jeppesen then Navionics then S57.

- **Chart Boundaries:** selecting this option displays all chart areas boundaries:

    - The areas having detailed Nautical Charts (either Raster, Jeppesen, Navionics, S57 or Fishing charts according to the current selection) are surrounded in purple

    - The areas having detailed Satellite Pictures are surrounded in green

- **Cross Screen Cursor:** this options display lines on the screen to make the cursor location more visible.

- **Chart Scales Selection:** click on this button to select the chart scale that will be used when clicking on the Zoom In/Out buttons. By default, clicking on the Zoom In/Out button step by step will go through all the chart scales. If you want to "jump" directly from one scale to another or limit the Zoom In/Out, you can deselect the scales you want to skip.

- **Allow Chart Overzoom:** this option prevents the "overzoom" chart tiles to appear even if no detail is available for a specific area at a high zoom level.

- **Display Raster Chart Unit Legend:** this option displays a raster chart depth unit legend in the lower left hand corner of the screen.

- **Grid Interval:** indicates the grid interval (ranges from very low to very high) that can be turned ON and OFF from the "Chart" button located in the Ribbon.

- **Transparencies**: The following objects' transparency can be adjusted:

    - *Tide Range for PhotoFusion:* Offset the depth at which the PhotoFusion will start. This setting is useful in area with important tides.

    - *PhotoFusion Transparency:* Manipulates the overall intensity of PhotoFusion transparency on water (ranges from 0-80)

    - *Tidal Currents Transparency*: Manipulates the intensity of tidal Currents transparency (ranges from 0-80)

    - *Depth Shading Transparency*: Manipulates the intensity of depth shading transparency (ranges from 0-80)

    - Bottom Classification Transparency: Manipulates the intensity of the bottom discrimination transparency (ranges from 0-80). This feature requires a Furuno Sounder with Bottom Discrimination feature or a WASSP multi-beam sounder (Backscatter)

    - *Weather Color Transparency*: Manipulates the intensity of weather color transparency (ranges from 0-80)

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- **3D Display:** While in 3D mode, the following options control the exaggeration of depth and altitude displayed:

  - *Terrain Shading Value*: Determines the strength of the terrain shading (relief shading).

  - *3D Alti Exaggeration*: Determines the exaggeration of land altitudes displayed while in 3D mode.

  - *Display Bathymetry in 3D:* Determines if the bathymetry is displayed or not in 3D mode. When this setting is OFF (default), only perspective is used over the sea to avoid parrallax effect. If you which to represent sea floor with actual 3D, make sure to check this option. This setting does not apply to the "3D" WorkSpace which always displays bathymetry.

- By default, all objects (Marks, Boundaries, Annotations, Routes & Waypoints and Tracks) are displayed in 3D. Use this option if you want to automatically hide objects when switching the charts in 3D. The objects will automatically reappear once the charts are switched back in 2D.

- **Depth Shading Values:** When the depth shading is turned on (from the "Chart" button located in the Ribbon), the range and hue of the depth color scale can be controlled using the following options:

  - *Depth Shading Mode:* When set to "Auto", TimeZero automates the range of water depths to be shaded according to the area displayed on the screen. TimeZero looks for the shallowest and deepest points and automatically adjusts the range accordingly. In this mode, the color scale range is continuously updated as you pan or zoom the charts. When set to "Manual", the color scale uses the Minimum and Maximum values defined below. When set to "Discrete", use the button "Discrete color Palette" below to adjust exactly which color to use for specific depth.

  - *Minimum Value:* Fixes the minimum water depth value to be shaded when the "Manual" mode is selected.

  - *Maximum Value:* Fixes the maximum water depth value to be shaded when the "Manual" mode is selected.

  - *Depth Color Palette: Determines the color palette used for the depth shading in Auto and Manual mode.*

  - Discrete Color Palette: Press that button to display a window that allows you to customize exactly which color to use at specific depth.

- **Depth Contour Line:** When the depth contour line is turned on (from the "Chart" button located in the Ribbon), the contour line mode can be adjusted using the following options:

  - *Contour Line Mode*: When set to "Auto" the contour line interval is automatically adjusted by TimeZero Catch according to the "Automatic Contour Line Density" parameter and the chart zoom level. When set to Manual, the user specify an interval using the options below. "Auto" mode is useful to have a quick overview of the slope without having to dial-in any parameter. "Manual" mode is useful when a specific contour line interval needs to be used.

  - *Automatic Contour Line Density*: Set the overall density of the contour lines when "Auto" mode is selected. Note that the interval will automatically change according to the slope and the chart zoom level.

- *Contour Line Interval*: Set the interval in between two consecutive contour lines when "Manual" is selected.

- *Contour Highlight Frequency*: Adjusts the frequency of the bold contour lines. For example, if you set the contour line interval to 15 ft with a Contour Highlight Frequency of 10, a bold contour line will appear every 150 ft.

- **Bottom Hardness:** When bottom hardness is turned on (from the "Chart" button located in the Ribbon), the color palette can be adjusted using the *Bottom Hardness Color Palette:*

  - Classic: blue - green - yellow - red colors are used respectively for softer to harder area

  - Black & White: the darker, the harder the area

  - Black & White inverted: the darker, the softer the area.

- **Sea Surface Temperature (SST) Values**: The range of Sea Surface Temperature shading can be controlled using the following options:

  - *Auto Color Scale:* Automates the range of temperatures to be shaded. TimeZero looks for the warmest and coldest points and automatically adjusts the range. In this mode, the color scale range is continuously updated as you pan or zoom the charts.

  - *Minimum Value*: Fixes the minimum water temperature value to be shaded.

  - *Maximum Value*: Fixes the maximum water temperature value to be shaded.

Vector Charts

The Vector Charts options allow users to configure common settings related to the Vector Chart display.

- **Chart Object Size:** Adjusts the size of the vector charts object icons (buoys, wrecks,…) and text displayed on the screen.

- **Chart Color Palette:** Determines the colors (or "theme") of the Charts.

- **Chart Symbols:** Determines the symbols (for buoys) to either the "S52" or "International" representation.

- **Shallow/Safety/Deep Contour:** These parameters are used to color the various depth area of the Vector Chart. The transition between colors is based upon the depth contour lines of the vector chart. Note that if there is no contour line available on the vector chart corresponding to the exact value you selected, the color transition will occur at the next deepest (safer) contour line available.

In addition to these screen rendering parameters, the Vector Chart Menu allows you to turn ON or OFF the display of specific object (such as Buoy Numbers or Light Description).

Note: More advanced settings (advanced vector chart layers) are available from the S-52 Display options.

S-52 Display

The Vector Chart engine in Nobeltec TimeZero Catch follows the IHO "S-52" presentation guidelines. The "S-52 Vector Chart Display Mode" provides quick access to five different levels of detail for vector charts:

- "base": shows the minimum set of objects necessary for planning.

- "standard": adds other objects that enhance planning (adds important text, lights, …)

- "Other": adds other layers of information necessary for safe navigation (contour lines, obstructions,…)

- "Fishing": removes some land information from the "Other" configuration

- "Custom": When this option is selected, all object layers appear and can be enable or disable individually

Radar

The "Furuno Radar Plus Pack" or "InSight Radar Plus Pack" needs to be unlocked and radar configured to access this feature

The Radar options allow you to configure various advanced Radar Setup and displays preferences.

Note: If you are using an InSight Radar (or a Koden Ethernet Radar), you first need to run the Radar Connection Wizard available from the Windows "Start" menu under "Nobeltec TimeZero". Please refer to the InSight Radar Connection chapter for more information.

- **Day Background Color:** Determines the background color of the radar display that is used during the day.

- **Night Background Color:** Determines the background color of the radar display that is used during the night.

Note: The Day/Night setting can be found under the Plotter Display options.

- **Echo Color:** Determines the radar echo color:

  - **Multicolor 1**: Red for strong Echo / Yellow for medium Echo / Dark Green for weak Echo

  - **Multicolor 2**: Red for strong Echo / Green for medium Echo / Dark Blue for weak Echo

  - **Multicolor 3**: Dark Red for strong Echo / Yellow for medium Echo / Dark Green for weak Echo

  - **Green**: Monochromatic Green with variable transparency according to echo level

  - **Yellow**: Monochromatic Yellow with variable transparency according to echo level

- **Echo Transparency for Overlay:** Adjusts the overall intensity of echo transparency on the chart (this does not affect the Radar Work Space)

- **Radar Source for Overlay (Furuno DRS only):** When using a DRS with TimeZero Catch , it is possible to use the Dual Range feature of the DRS for the chart overlay:

  - *Range 1 (Default):* Only the Range 1 of the DRS (left side picture of the Dual Radar WorkSpace) will be used for the overlay. By limited the DRS to only one range, it allows the DRS to rotate at high speed (up to 48RPM).

- *Range 2:* The Range 2 of the DRS (right side picture of the Dual Radar WorkSpace) will be used for the overlay. This allows to have individual Radar Range and settings in between the Radar Overlay and the Radar WorkSpace. This is because the regular Radar WorkSpace (not the Dual Radar) is only using the Range 1 of the DRS (left side).

- **Allow COG to be used for Radar Overlay**: In order to display the Radar Overlay on the chart, a heading sensor is usually required. However, in some cases, it is not practicable to install a heading sensor or its value is not reliable. For these specific cases, it is possible to use Course over Ground (COG) instead of Heading if heading information is not configured in TimeZero Catch . When this box is checked and when no heading data is coming in TimeZero, the COG value will be used as a fake heading to align the radar on the chart. Note that this will also enable the radar post-processing (such as Echo Averaging or Echo Trail) that also usually require a heading sensor.
  PLEASE BE CAREFUL WHEN ENABLING THIS OPTION AND DO NOT RELY ONLY ON RADAR OVERLAY FOR NAVIGATION.

- **Auto Sea Mode (DRS Only):** This settings adjust the DRS auto Sea Mode. "Advanced" should be used for most application. Use "Coastal" when in area with lots of return from landmass.

- **Sweep Fade:** The sweep fade displays a "traditional" radar animation. This feature automatically reduces the brilliance of weak signals (noise, sea clutter, rain clutter, etc.) and unnecessary echoes like radar interference.

- **EBL Reference:** When set to "True", the EBL (Electronic Bearing Line) is referenced to the True North. When set to relative, the EBL is referenced to the bow of your vessel.

- **Rings Interval:** You can manually adjust the number of Radar Range rings you want to display in the Radar Work Space. Leave the option set to "Automatic" if you want TimeZero Catch to automatically adjust the number of rings according to the Radar Range and size of your screen (or window).

- **Bearing Scale Mode:** When set to "True", the Bearing Scale (numbers displayed on the outer circle of the Radar Work Space) is referenced to the true North. When set to relative, the Bearing Scale is referenced to the bow of your vessel.

Note: When set to True, the bearing scale does not take into account the Magnetic Variation. It is always referenced to true North.

- **Own Ship Icon:** Check this option if you want to display a real sized ship icon in the Radar Work Space. Note that the ship icon will only appear at small range (according to your own ship beam and width).

- **Trail:** Echo trails show the movements of radar echo relative or true to your vessel. The trails disappear overtime (according to the "Trail Length" parameter). When set to "True" mode, only objects that are moving in reference to the water (such as another ship) will show a trail on the screen. Fixed objects on the water (such as buoys or a rock) will not show a trail even if your own ship is moving. When set to "relative" mode, any objects that move relative to your boat will leave a trail on the screen. So if your own ship is moving

toward a stationary target (buoys for example), the target will leave a trail (smearing):

(a) True target trails
(No smearing of
stationary targets)

(b) Relative target trails
Targets moving relative
to own ship
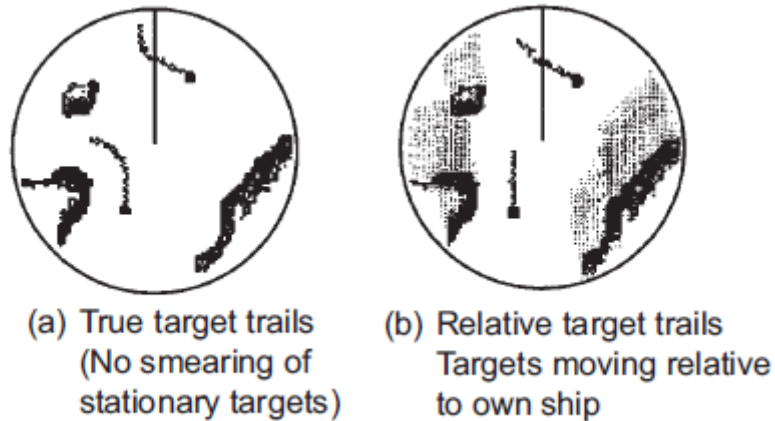
- **Radar Initial Setup:** These settings are used to adjust the initial setup of the Radar. Note that this section will be limited if you are using a Furuno FAR2xx7 as these initial settings are performed from the Radar Processor directly. These settings are always linked to a specific Radar antenna. Make sure to select the correct Radar Hostname (from the drop down menu) before adjusting these settings.

  - *Antenna Height (Furuno DRS Radar only) :* Select the Radar Antenna height. This settings is used to automatically adjust the STC calibration.

  - *Antenna Heading Align:* It is not always possible to install a radar so that the front of the radar is exactly parallel with the boat's keel or center line. The Antenna Heading Align adjustment can compensate for this discrepancy. This process allows you to align the radar transceiver with the center line of the boat and only needs to be set once. Note that this is a different function than aligning your heading sensor. To adjust the Radar Antenna Alignment, it is best to display the Radar Work Space in "Head Up" mode and aim the bow of your vessel (during calm weather) at a buoy while underway. The buoy target should appear straight up on the Radar Screen.

  - *Trigger Delay (InSight Radar only):* The transmit trigger delay is a setting that, when configured incorrectly, can cause a donut-shaped ring to appear in the center of the radar image. Trigger delay should be initially set to reduce the size of the ring. Trigger Delay can also affect the radar image of a linear object such as a breakwater or riverfront. These can appear deformed due to excessive or inadequate trigger delay. Properly setting the delay requires to look at a straight object (refinement of the Transmit Trigger is best viewed using radar overlay on the Chart). On the water adjustment when the boat is parallel to a straight jetty is the ideal choice.

Inadequate Tx Trig   Good Tx Trig   Excessive Tx Trig
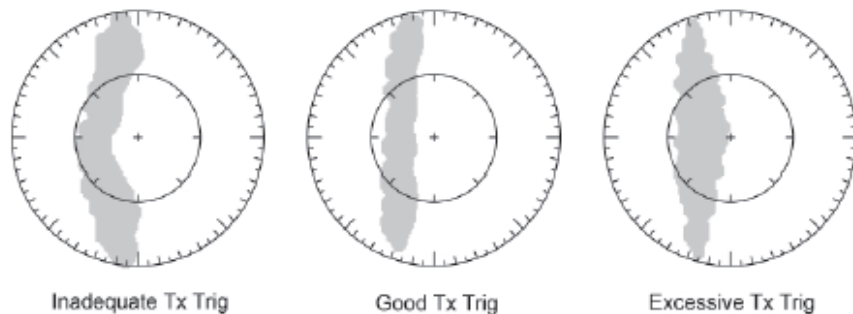
In most cases, Transmit Trigger settings remain between 125 and 165.

- *Sector Blanking:* This feature is used to indicate a zone where the radar does not transmit a pulse. This is necessary if:
  - Two or more radars are mounted within each other's beam;
  - There is a significant structure near the radar that causes strong returns, overwhelming the circuitry of the radar
  - You wish to prevent radiating a particular zone of the radar (for example, your radar is mounted low on the fly bridge).

- *Main Bang Suppression:* Increase this settings to reduce the "main bang" (circle that appears at the center of the radar screen).

- **Presets (InSight Radar MDS 5/6 only):** The Presets settings are used to adjust the "range of operation" of specifics value. For example, if you are using the Radar in Manual Gain and find that you have to "push" the manual gain value very high to see good targets, you may want to increase the "Manual Gain Preset". This will internally increase the manual gain value range and you will be able to backup the Manual Gain value to reach the same level of gain. Note that you have an independent Manual and Automatic Preset for Gain and the Sea Clutter (STC). The various controls will be enabled or greyed out according to the Radar current value. So if you want to adjust the Manual Gain Preset, make sure that the Radar is in Manual Gain.

  - *Auto Gain Preset:* To adjust the Auto Gain preset make sure that the Sea Clutter is set to 0 (manual Sea = 0). Set the Radar to Auto Gain (from the Radar Ribbon button) and pick a range suitable for navigation (around 3NM). Adjust the Auto Gain Preset control down if the image looks too strong or up if the image looks too faint.

  - *Manual Gain Preset:* To adjust the Manual Gain preset make sure that the Sea Clutter is set to 0 (manual Sea = 0). Set the Radar to Manual Gain at 50% (from the Radar Ribbon button) and pick a range suitable for navigation (around 3NM). Adjust the Manual Gain Preset control down if the image looks too strong or up if the image looks too faint.

  - *Auto Sea Preset:* The Auto Sea Preset is only used for range above 1NM (under 1NM TimeZero uses the Auto Harbor Sea preset instead). To adjust the Auto Sea preset, set the radar range to 12nm and select Auto Sea (from the Radar Ribbon button) to turn on that function. Set the Auto Sea preset to 10. Set the STC Curve preset to 4. From the Radar Ribbon button, manually adjust the gain until you get secondary echoes (noise) throughout the image. From the Options panel, adjust the Auto Sea preset value up until most of the weak echoes for an 8nm radius are eliminated. Adjust the radar range to 1.5nm and verify that strong echoes from nearby vessels or land are not eliminated. If land or vessel echoes are small or have been eliminated, decrease the Auto Sea preset.

  - *Manual Sea Preset:* To adjust the Manual Sea preset, set the radar range to 12NM and set the Sea Clutter to Manual at 50% (from the Radar Ribbon button). Set the Auto Sea preset to 10. Set the STC Curve preset to 4. From the Radar Ribbon button, manually adjust the gain until you get secondary echoes (noise) throughout the image. From the Options panel, adjust the Manual Sea preset value up until most of the weak echoes for an 8nm radius are eliminated. Adjust the radar range to 1.5nm and verify that strong echoes from nearby vessels or land are not eliminated. If land or vessel echoes are small or have been eliminated, decrease the Manual Sea preset.

  - *Auto Harbor Sea Preset:* To adjust the Harbor Sea Clutter Preset, set the radar range to 1NM and select Auto Sea (from the Radar Ribbon button) to turn on that function. Set the Harbor Sea preset to 10. Set the STC Curve preset to 4. From the Radar Ribbon button, manually adjust the gain until you get secondary echoes (noise) throughout the image. From the Options panel, adjust the Auto Harbor Sea preset value up until most of the weak echoes are eliminated. Adjust the radar range to 1/8nm and verify that strong echoes from nearby vessels or land are not eliminated. If land or vessel echoes are small or have been eliminated, decrease the Auto Harbor Sea preset.

- *Auto Tune Preset:* Nobeltec radars are always in "Auto Tune" mode. To optimize the image, it is necessary to set the auto tune preset. Once established, you should not need to adjust the auto tune preset unless the image quality deteriorates. Generally, you should adjust the auto tune preset on average once a year to make sure you have the highest quality image. Adjust the auto tune control down until you see the image start to deteriorate. Note the value of the setting. Adjust the auto tune control up past the point where the image looks good until it starts to deteriorate. Take note of the setting value. Set the controls at a point between the two extreme settings, where the quality of the image is at its best.

- *STC Curve:* The STC Curve function allows you to control all modes of the Sea Clutter profile of the radar. By default, the STC Curve profile is set to a value of 4. For most applications, there should be no need to change this setting. However, you may want to adjust this value to get a better application of Sea Clutter if the radar is mounted higher or lower than a typical installation. To adjust the STC Curve profile, set the radar range to 12nm, set Gain and Sea Clutter to manual settings (from the Radar Ribbon button). When the STC curve profile is set to a lower number, the sea clutter is only applied in an area closer to the vessel. Setting the curve profile to a higher number causes STC to be applied to more of the image. Note that if the STC curve profile is not set correctly, adjusting the sea clutter (manual or automatic) may not have the desired impact. If you notice that increasing the sea clutter control has no impact on the image, your STC curve profile is too low. On the other hand if you notice that echoes disappear too quickly, your STC profile may be too high.

- **Radar Optimization (Furuno DRS only):** Press that button while underway when commissioning the radar (note that it is not recommended to perform a Radar Optimization in the harbor because of the strong echo return). Pressing that button will calibrate the radar. You only need to press that button once after installing the radar. Note that there will be no feedback (no confirmation window) when you press that button.

- **Set Hardware to Factory Default (Furuno DRS only):** Click on this button to reset the DRS radar to its factory settings.

- **Advanced ARPA Settings (selected radar model only):** These advanced ARPA settings should not be modified by the end user directly. Only adjust these values if you are given specific instructions by Technical Support or your dealer.

  - *Minimum blob size (in square distance and pixel)*: A radar echo ("blob") that has a smaller surface **AND** smaller radius in pixel than the values specified will not be accepted as a valid ARPA target candidate. These settings are useful to filter out noise. Make sure to adjust properly both settings (a blob that satisfies either setting will be accepted as a valid ARPA target candidate).

  - *Maximum blob size in pixel:* A radar echo ("blob") that has a bigger radius in pixel than the values specified will not be accepted as a valid ARPA target candidate. This setting is useful to filter out landmass.

  - *Minimum echo strength:* This setting adjust a pre-processing filter that removes weak echos from the picture used by the ARPA algorithm (blob detection algorithm). This setting is useful to remove noise (weak echo) but adjusting this value too high may create false "blob" (by breaking apart a strong large echo in multiple distinct smaller echoes).

  - *Target Wake Delay:* This setting is used for predicting the future ARPA location (when tracking a target) by looking at past positions.

  - *Target Max Heading Delta in degree:* This setting specifies the maximum course change allowed when tracking an ARPA target (blob that result in a course change over that setting are rejected when determining an ARPA candidate for the current tracked target).

- *Target Min Acquire Scans:* A target that is being acquired (displayed with dash contour) will be considered as a valid target (displayed with solid contour) when the corresponding underlying blob is present during the specified amount of **consecutive** antenna turn. If the echo (blob) disappears for one (or multiple) antenna turn before reaching the Target Min Acquire scans value, the counter is restarted (the blob must be validated again during x consecutive antenna turn).

- *Target Max Acquire Scans:* A target that is being acquired (displayed with dash contour) for too long (because the blob appears and disappears before reaching the minimum consecutive antenna turn) will automatically disappear after reaching this setting.

- Target Min Lost Scans: A target that is already acquired (displayed with solid contour) will be considered as "Lost" if the underlying echo ("blob") disappears during the specified amount of **consecutive** antenna turn.

- *Target Max Lost Scans:* This setting has been deprecated.

- *Acquiring (manual) search distance in pixel:* This setting specifies the maximum initial search distance (from the cursor location) when the user right click to acquire a target.

- *Tracking Search Distance (in distance and pixel):* This setting specifies the maximum search distance (from the predicted target location) when a target is being tracked.

- *Target Max Speed:* This setting specifies the maximum search distance (from the predicted target location) when a target is being tracked, by setting a radius based on the maximum specified target speed.

- **Radar Status (Furuno DRS only):** This button open a window displaying the DRS antenna status.

Targets

The Targets options allow users to configure settings related to the Targets display.

- **Display Target ID:** Check this option to display target names below the target icons. Note that TimeZero will always try to display the name first (either available inside the AIS information or inside the Buddy List). If a name is not available, TimeZero will display the MMSI number instead.

- **Target Trail Length:** This option adjust the length of target trails. The target trails can be enabled or disabled on specific targets from the Target Ribbon button.

- **ARPA Targets track accuracy:** This option allows to adjust the ARPA target recording accuracy. The higher the setting the higher the ARPA Track recording interval:

  - Very Low = 2 seconds

  - Low = 5 seconds

  - Medium = 10 seconds

  - High = 30 seconds

  - Very high = 60.seconds

- **AIS Activation Filter:** When this setting is enabled, the AIS target are automatically deactivated according to the setting below.

- **Deactivate AIS Targets farther than...:** AIS targets will either be "Active" or "Deactivated". An "Active" AIS target is displayed with a regular sized icon and with a label (if the "Display Target ID" setting is checked). A deactivated target appears smaller and without its label. Use the "Deactivate AIS Targets farther than" setting to help remove clutter on your screen.

Note: An AIS target that breaks an Alarm Condition (such as CPA/TCPA alarm) will be automatically activated even if it is farther than the setting above.

- **Default ARPA Color:** Select the default color used for ARPA target. Note that the target color can be individually changed when right clicking on the target.

- **Default AIS Class A Color:** Select the default color used for AIS Class A target. The color can be set to a fixed value or variable (according to AIS target Type). Note that the target color can also be individually changed when right clicking on the target (this takes priority over the default color).

- **Default AIS Class B Color:** Select the default color used for AIS Class B target. The color can be set to a fixed value or variable (according to AIS target Type). Note that the target color can be individually changed when right clicking on the target (this takes priority over the default color).

- **AIS Variable Color:** Press that button to automatically assign default color according to AIS target type. The default AIS color must be set to "variable" to activate this button. Note that if a color has been setup manually (by right clicking on the target or from the Directory), the manual setup will take priority over the variable color.

- **Target Size:** Adjust the overall target size displayed in TimeZero Catch .

- **Display CPA/TCPA for selected target:** Display graphically on the chart the location of the closest point of approach for the selected target (surrounded in yellow). Please refer to Target Graphic CPA for more information.

- **Display CPA/TCPA for activated target:** Display the CPA graphically on the chart for every activated AIS target on screen

- **Remember AIS tracking status:** When this setting is enabled, TimeZero Catch will remember the tracking status (Track ON or OFF) of AIS targets based upon their MMSI. For example, if you enable the track recording on a specific AIS target, TimeZero Catch will remember and continue to track this target in the future even if the AIS disappear (out of range) and reappear, or if the software is restarted.

- **Reset AIS track Recording Status:** When this button is pressed, TimeZero Catch turns OFF the tracking for all AIS targets (Track OFF on all targets) and forget their recording status. Note that this will not erase any tracks that have been recorded up to this point.

- **Fish Buoys Data location: Nobeltec** TimeZero Catch is compatible with Marine Instruments GPS buoy used for locating and monitoring drifting floating objects via satellite. Click on this button to select the path where Marine Instrument's software stores the fishing buoy data. Once buoys data has been detected, Nobeltec TimeZero Catch will display the Buoys location on the chart.

- **Vessel Tracking Data Location:** Nobeltec TimeZero Catch is compatible with the "POSREPORT" file format that is used to track vessels. Click on this button to select the path on your computer where the POSREPORT files are stored and updated.

- **Update Vessel Position every**: Enable position reporting. When a position reporting interval is set, TimeZero Catch will create a file in the Vessel Tracking Data location (using the MMSI number setup under Initial Setup) and insert its position. If that folder is shared via Dropbox with other TimeZero, position can be shared and synchronize among a fleet.

- **Directory (AIS & DSC):** Press this button to show a window that allows you to pre configure AIS and DSC targets properties (nickname, color) from their MMSI number.

Sounder

The "Furuno Sounder Plus Pack" needs to be unlocked to access the sounder/fish finder features.

The Sounder options allow you to configure various advanced Sounder Setup and Displays preferences.

- **Fish Finder Source:** Select the Furuno Ethernet Sounder detected on the network

- **Day Background Color:** Determines the sounder screen background color in day mode.

- **Night Background Color:** Determines the sounder screen background color in night mode.

Note: The Day/Night setting can be found under the Plotter Display options.

- **Echo Color Levels:** Displays fish finder returns in 8, 16 or 64 colors.

- **A-Scope Peak Hold:** This option allows you to hold the echo return in the A-Scope for a couple of seconds.

- **A-Scope 3D Cone Threshold:** Adjust the A-Scope echo strength that will be displayed in the 3D WorkSpace when the "A-Scope" is displayed on the 3D Cone. This can be used to only show strong fish finder echoes in the 3D A-Scope.

- **Zoom Reference Lines:** Shows or hides the zoom marker that appears in the bottom zoom and marker zoom modes (not implemented yet)

- **High Resolution:** This option is only relevant when TimeZero Catch is used in conjunction with a Furuno NavNet MFD. Turn on this feature to "smooth" sounder echoes if they take a "jagged" appearance on the MFD.

- **Picture Advance:** Adjusts the speed at which the sounder view scrolls across the page.

- **Range Shift:** Adjust the Sounder Range "offset". When the sea-floor depth exceeds a practical, maximum setting, expanding Range causes Sounder returns to become too small to view clearly. The Shift function narrows return to only a portion of Sounder data.

- **Bottom Range Shift Area:** Select the position where you want the bottom of the echo to be located on the screen (when the Sounder is set to Auto Range from the Sounder "Mode" Ribbon button). For example, setting 75% would place the bottom echo at a position equivalent to 75% from the top of the display.

- **Zoom Range Span:** Set the range interval displayed on the left side in Bottom Zoom mode

- **Bottom Lock Range Span:** Set the range interval displayed on the left side in Bottom Lock mode

- **Sounder Range Selections**: Allows to select the various ranges that will be used when using the Sounder Range In/Out buttons.

- **ACCU-FISH:** Check this option to automatically mark any return that the sounder identifies as fish. Note that when ACCU_FISH is enabled, the sounder will work in dual frequency mode (as both frequencies are needed to detect fish automatically). Running your sounder in dual frequency lower the refresh speed.

    - *ACCU-Fish Info:* Fish information is displayed in either depth or size of detected fish.

    - *ACCU-Fish Symbols:* This option determines the fish symbol used to mark detected fish.

    - *ACCU-Fish Size Correction: Adjusts the size of fish information (percentage offset)*

- **Heaving Correction (MFD required):** Check this option when a SC30 or SC50 is connected to a Furuno NavNet3D or TZtouch MFD to compensate the sounder echo from heave. You can adjust the various parameters under "Transducer Setup".

Note: A Furuno MFD (NavNet3D or TZtouch) is required on the network for the heaving correction to work.

- **Interference Rejection:** Interferences from other fish finders and electrical equipment can introduce artifacts (or noise) on the sounder screen:

Interference from other sounder
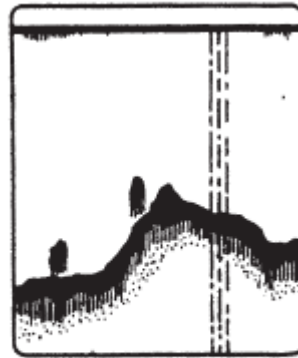
Interference from electrical equipment

When this type of interference appears on the screen, use the lowest interference rejection setting possible that removes the noise on the screen. Three or four levels are available

- **Clutter:** Increase this setting to remove low intensity "spots" of noise that can appear all over the screen when sediment in the water or noise are picked up by the sounder.

- **Color Erase:** Increase this setting to remove weak sounder return from the screen (remove the colors that are used to display weak echo)

- **White Marker:** Allows the user to change one color of the sounder color palette to white. This can be helpful in making certain returns stand out.

- **White Edge:** Check this option to display a white line over the bottom. This can be helpful to distinguish fish that are close to the bottom (they would appear above the white line)

- **TVG HF/LF:** (Time Varying Gain) Increase this setting to reduce gain near the surface in either High or Low frequency while maintaining the gain for deeper water.

- **Transmit Rate Auto:** Automatically set the transmit rate according to ship's speed, and is inoperative when there is no speed data. The transmit rate auto is only working when one or multiple NavNet MFD are on the network. For most application, leave this setting to OFF (manual).

- **Transmit Rate Manual:** In normal use, leave this setting to the maximum value. If you are in shallow waters, set it to a lower value to prevent second reflection echoes that appear between the surface and the bottom echo.

- **Sounder Transmit:** Uncheck to put the Sounder in Standby.

Fish Alarm

Use these settings to configure a fish alarm that will trigger when an echo appears in between the configured ranges. "Fish Alarm" is used in regular mode. "Fish Alarm for Bottom Lock" is only used when the sounder is in "Bottom Lock" mode.

Use "Fish Alarm Level" to setup the sensitivity of the alarm. If the setting is set to "High" a stronger echo is required to trigger an alarm.

Sounder Initial Setup

- **Zero Line Rejection:** Check this option to "mask" the echoes near the top of the screen (that are caused by surface noise).

- **Zero Line Range:** Use this setting to increase or decrease the height of the Zero Line Rejection "mask".

- **Transducer Draft:** Use this option to calibrate the digital depth output of the sounder. This offset is directly stored and applied inside the Ethernet Sounder Black Box.

Note: The Transducer Offset set in the sounder using the above setting may be overwritten by the Keel Draft and Transducer Draft settings of the Initial Setup Options (when set to "Manual")

- **Salt Water:** Adjust the sound speed for fresh or salt water.

- **Fish Finder Source: Select the Furuno Ethernet Sounder detected on the network**

- **Transducer Setup:** When using an Airmar TD-ID transducer, the power and frequency will be automatically selected. When using another type of transducer, you will have to either select a model number or set the frequency and power manually.

- **Transmission Power:** Interference can appear on the screen when the fish finder on your ship and another ship have the same TX frequency. To prevent this interference, lower

your TX power and ask the other ship to lower their TX power. The setting range is 0 to 10 (For DFF1-UHD, 0 to 2). 0 is off and 10 provides the highest TX power

- **External KP**: Turn on to sync with external keying pulse.

- **Bottom Level HF/LF**: Lower this setting to increase bottom detection sensitivity. If the sounder has difficulties displaying a good digital depth value, you may want to lower this setting. The default bottom level setting (0) determines that two strong echoes received in sequence are bottom echoes. If vertical lines appear from the bottom echo in the bottom lock display, lower the bottom level to erase the vertical lines. If you can not identify the fish near the bottom from the bottom echo, increase the bottom level.

- **Gain Offset HF/LF**: If the manual gain setting seems to "weak" or if there is a difference in between the low and high frequencies picture set as the same gain, use the gain offset to balance the gain for the two frequencies here.

- **Auto Gain Offset HF/LF**: If the Gain seems to weak or strong when the sounder is in Auto Mode, use this setting to adjust the picture

- **STC HF/LF (DFF3 only):** Delete unnecessary echoes (plankton, air bubbles, etc.) near the surface that hide the fish near the surface. The setting range is 0 to 10, and 0 is off. 10 deletes unnecessary echoes from the surface to approximately 16 ft. Make sure you do not use more STC than necessary, because you can erase the small echoes near the surface.

- **Frequency Adjust HF/LF (DFF3 only):** You can adjust the TX frequency of both the low- and high-frequency transducers. Use this feature when your fish finder and another fish finder operate on the same frequency, causing interference. Change the frequency of your transducer by enough percentage points to remove the interference

- **TX Pulse HF/LF (DFF3 only):** The pulse length is automatically set according to range and shift. Use a short pulse for better resolution and a long pulse when detection range is important. To improve resolution on zoom displays, use "Short 1" or "Short 2". "Short 1" improves the detection resolution, but the detection range is shorter than with "standard". "Short 2" raises the detection resolution, however detection range is shorter. "Std" is the standard pulse length, and is suitable for general use. "Long" increases the detection range but lowers the resolution (about 1/2 compared to the "Std" pulse length).

- **RX Band HF/LF (DFF3 only):** The RX bandwidth is automatically set according to pulse length. To decrease noise, select "Narrow". For better resolution, select "Wide".

- **Temperature Port (DFF3 and DFF1-UHD only)**: Select the data source for water temperature.

- **Set Hardware to Factory Default:** Perform a Master Reset of the Sounder. After pressing this button the sounder will restart (wait a couple of minutes). Note that you will have to adjust the transducer setup after performing a Master Reset.

PBG (Bathy Recorder)

The PBG Options allow to setup the various parameters that will be used when recording depth and when rendering the 3D Bathy Data on your screen.

- **Tidal Height Correction**: Check this option to have Nobeltec TimeZero Catch correct in real time the depth recorded in the 3D database. By default, the nearest Tide Station (from GPS position) will be used as a reference. You can manually set a specific tide station by clicking on "Set Reference Station".

Note: The Depth Filter are not available when connected to a WASSP system. To adjust filters on a WASSP system (such as Tide Offset), use the parameters of the WASSP Processor.

- **PBG Filters**: Turn ON and OFF all the PBG filters setup below

PBG Filters:

- **Quality Filter**: This filter is only used when a Furuno Ethernet Sounder (DFF1, DFF3, DFF1-UHD, BBDS1 or FCV1150) provides depth to the software. A special protocol has been developed with the Furuno Ethernet Sounders to automatically stop the PBG recording when the sounder detects that the depth is not reliable. It is recommended to leave that filter checked.

- **Depth Filter**: Adjust the minimum and maximum depth parameters according to your fishing grounds. Having that filter has "tight" as possible will ensure that the maximum number of erroneous data will be rejected.

- **Speed Filter**: The sounder performance (capability of returning a good depth value) decrease with speed. The speed at which the sounder begin to lose bottom varies with the type of transducer and its location on your boat. Adjust this filters in order to stop recording 3D data at speed where the sounder starts to send unreliable data.

- **Consistency with previous recorded data**: When this filter is engaged (by selecting a % value), the software compares the last recorded value with the current depth value sent by the sounder. If they differ by more than the selected percentage, the depth value is rejected and not recorded in the 3D database. For example, when this filter is set to 20%, if the last depth value recorded was 100ft, the current depth will only be recorded if falls in between 80ft (100 - 20) and 120ft (100 + 20).

- **Consistency with 3D database**: This filter works similarly to the "Consistency with previous recorded data" filter, but uses the existing 3D data available in TimeZero Catch to make the comparison (instead of using the last value recorded)

    - **Merging with 3D Database**: when this check box is selected, the "Consistency with 3D Database" filter uses both the 3D data coming from the charts and your previous recorded data (the 3D PBG and 3D Chart database are merged and used for comparison). If you are using the consistency filter and are just begining to record data in an area, it is suggested to select that check box. If you already have recorded lots of PBG data in an area, you may want to deselect that option to only compare the data sent by the sounder with real (most up to date) 3D data.

- **Fixed data rejection**: When this filter is engaged, the software will start rejecting data when receiving the exact same depth value multiple times (consecutively). This filter is very useful if you have a sounder that repeat over and over the same depth value when it loses bottom.

PBG Brush Settings:

Nobeltec TimeZero Catch records mono-beam sounder depth data on a fixed grid that has a resolution of 3.5m*3.5m (at latitude 45). However, displaying a swath of only 3.5 meter on the chart would not be practical for most zoom level (it would be too small). The brush setting allows to expand the coverage by interpolating depth data. This makes depth points appearing bigger on the screen where data has not been recorded yet.

> **Note**: When a WASSP multibeam sounder is used, the accuracy is 20cm * 20cm for fishing version and 10cm * 10 cm for Survey version. However, the swath is much bigger than with a regular mono-beam sounder, so, in that case, no "brush" interpolation is used. The brush setting and Terrain Sharpness are not applied with WASSP data (only with imported mono-beam data).

- **PBG Brush Width**: This parameter allows to change the interpolation "size" (or "width") of a Bathy track. Increasing this value widen the interpolation in between the various "passes":

Small brush size:
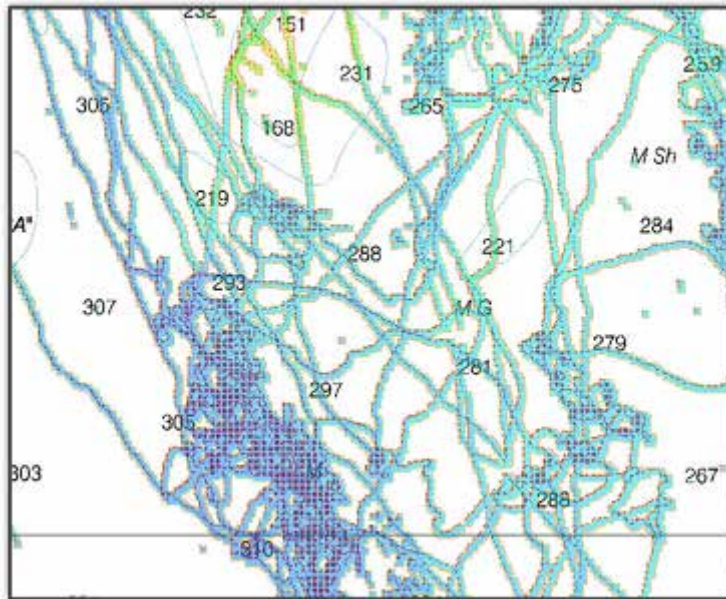
Medium brush size:
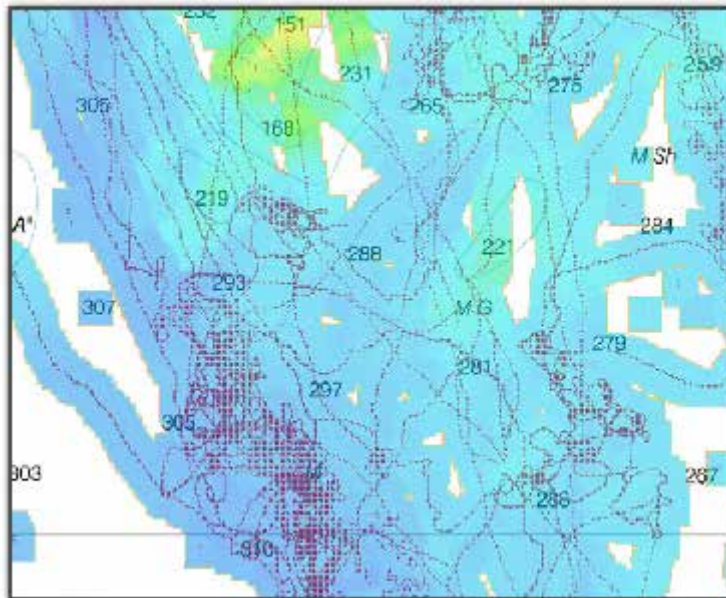
Large brush size:
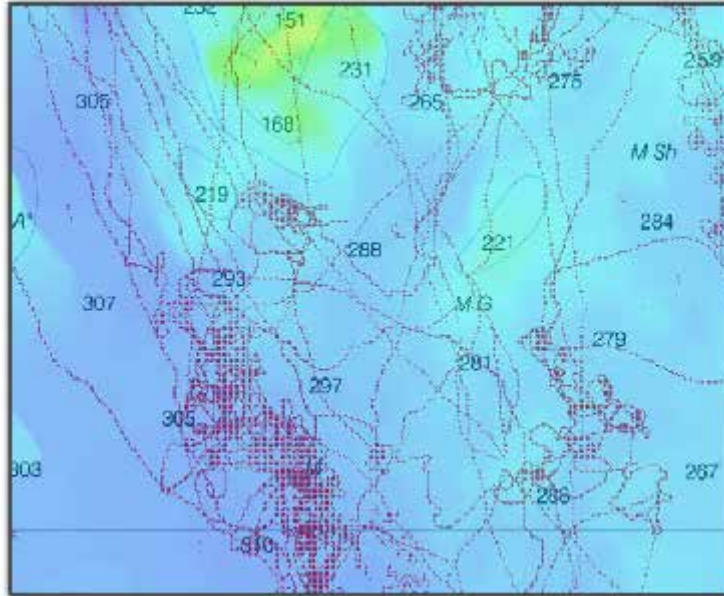
We highly recommend to leave the default brush size.

Note: even with a very large brush size, the details are not disappearing. Nobeltec TimeZero Catch uses a very advanced interpolation process that keeps a good detail where the data has been recorded while filling the "holes" when necessary.

- **Terrain Sharpness**: this sliders adjust the "smoothness" of the 3D Bathy rendering. A higher value will display a very sharp terrain but might highlight the depth error that might have been recorded. A lower value will "smooth" the terrain (averaging out the errors, if any).

  With a high Sharpness value, some "pic" due to incorrect depth points are visible:
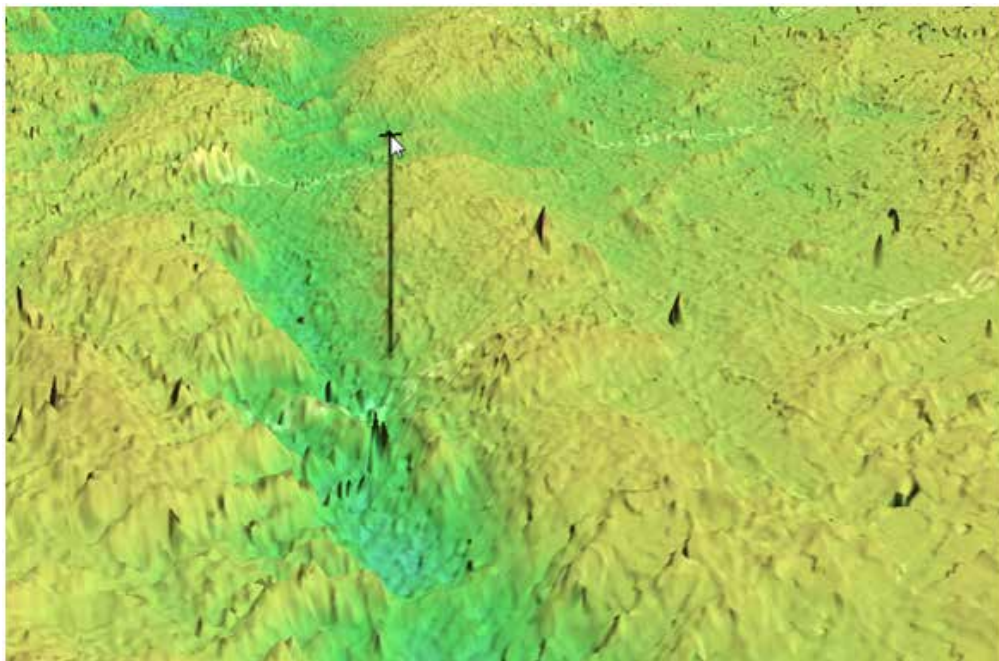
With a lower Sharpness value, the terrain is "smoother":
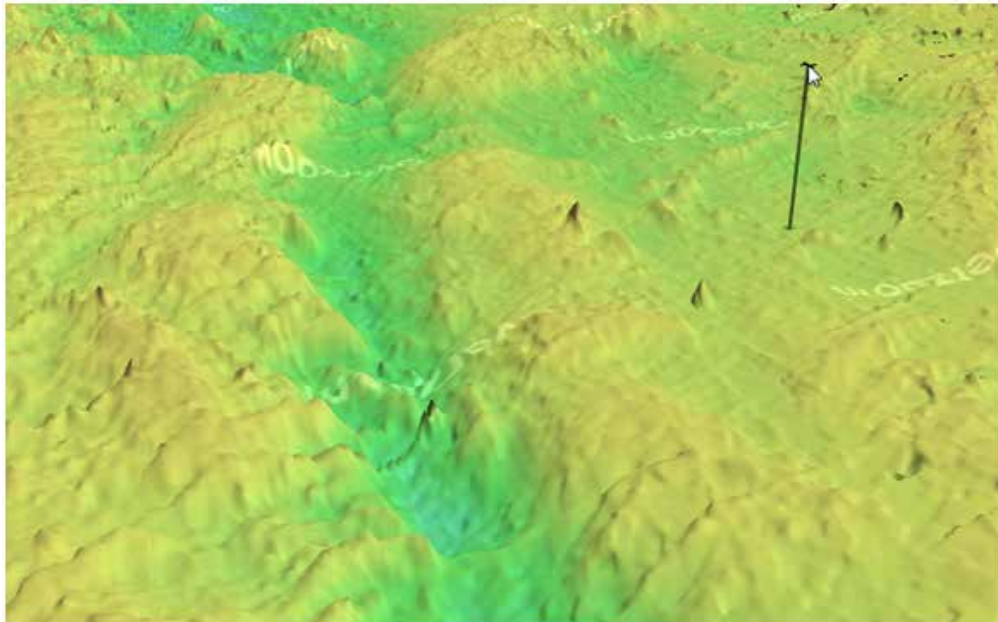
Adjusting the Brush Setting and Terrain Sharpness requires the entire PBG database to be recompiled. This can take a long time if you already have recorded lots of data.

To adjust the Brush and Terrain Sharpness, press the "Set Brush and Sharpness" button.

Bottom Classification Settings:

This feature requires the Furuno Sounder Plus Pack and is only available with the BBDS1 and DFF1-UHD when paired with selected transducers. Contact your Furuno dealer for more information about transducer compatibility.

When TimeZero Catch records the Bottom Hardness, it also record a confidence index for each points. A filter can be enabled to only show the bottom discrimination on points above a specific probability index (between 0 and 100). Press the "Set Bottom Classification filter" to enable and adjust the minimum probability filter. Increase the filter value if you want to display on the chart only the points that have a very high probability.

Please note that changing the filter parameter causes the database to be refreshed and this operation can take a long time initially.

Rebuild all PBG databases:

This button should only be used when instructed by Technical Support. Pressing this button recompile the entire PBG 3D database.

Alarms

The Alarm options allow you to configure all of the various alarms and warnings that can be trigger by the software. Alarms are displayed at the very top of the screen. An individual sound can be

selected for each alarm by clicking on the "Define Alarm Sounds" button (at the end of the page). By default, all the Alarm sounds are turned off.

- **XTE Alarm** (Cross Track Error): An alarm is triggered when the vessel has strayed a designated distance ("XTE Alarm Value") from the active route. Note that you can display a graphical representation of the Cross Track Error limit on the chart by enabling the "Display XTE Alarm Lines" available in the Routes options.

- **Alarm Zone:** User can create Boundary Zones on the chart (using the "Boundary Area" tool or by right clicking on the chart and select "Create -> Boundary Area") and then set them as Alarm Zones by right clicking on them and selecting "Alarm". Once Boundary Alarms are created, the "Alarm Zone" setting will define their behavior:

  - OFF: No alarm will be triggered even if the boat enters in an Alarm Zone

  - ON: An alarm will be triggered as soon as the boat enters in any Alarm Zone

  - Progressive: When the boat reach the distance set in "Progressive Alarm Zone Value" from any Alarm Zone, a notification will be displayed (to warn the user from the proximity). When the boat enters any Alarm Zone, an alarm is triggered. Note that a dedicated NavData ("Alarm Zone NavData") can be setup to display the distance from the nearest Alarm Zone at any time.
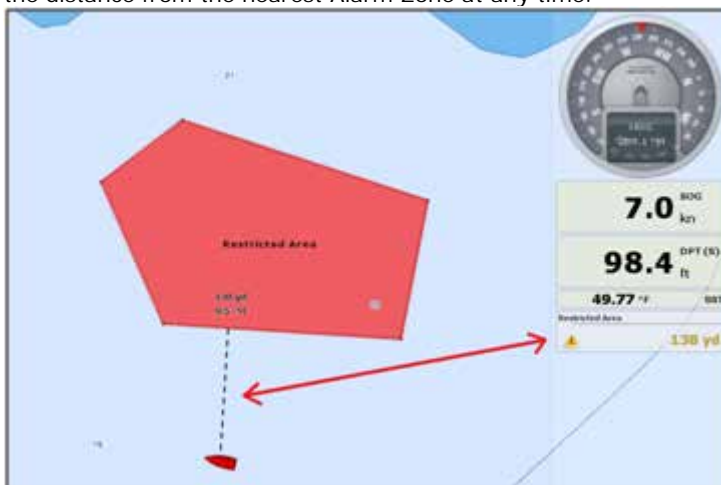
- **Depth Alarm**: An alarm is triggered when the vessel passes over water shallower than a designated depth value.

- **Sea Surface Temperature Alarm**: An alarm is triggered when a specific condition regarding Sea Surface Temperature value is met.

- **Speed Alarm:** An alarm is triggered when a specific condition regarding the speed value of your vessel is met.

- **CPA/TCPA Alarm/Display Value**: Defines the CPA and TCPA values for which a target is considered dangerous and displayed in red on the chart.

- **CPA/TCPA Alarm:** An alarm is triggered when a target becomes dangerous.

- **Proximity AIS Target Alarm:** An alarm is triggered when the vessel passes within a designated distance from an AIS target..

- **Ignore for AIS slower than...:** Use this setting to prevent AIS targets that are not moving from triggering the proximity or CPA/TCPA alarm. This setting is very useful in harbor to prevent safe target (moored or docked boat) to raise unwanted alarms.

- **GuardZone Alarm Level:** Set the sensitivity of the Radar Guard Alarm Zone (increase the value to increase the sensitivity)

- **GuardZone Alarm In/Out:** Sets if the Radar Guard Alarm Zone responds to echos entering or leaving the Guard Zone

- **Anchor Watch Alarm:** An alarm is triggered when the vessel strays a designated distance from where the user set anchor. Note that you can enable/disable the Anchor Alarm by right clicking directly on the Own Ship icon.

- **Define Alarm Sounds:** This option allows the user to assign a sound to various alarms. 10 predefined sounds are installed with the software, but it is possible to replace the default sounds by overwriting the sound files located under "C:\Program Files\Nobeltec_TZ\TimeZero\Sounds".

- **Sound Alarm Until Acknowledged:** When this setting is checked, the Alarm Sound will repeat over and over until the user acknowledge the alarm (by clicking on the status bar or checking "Acknowledge" from the Alarm List)

- **Save Log File as...:** Saves a history of all alarms to the user's computer.

General

The General options allow you to configure various TimeZero Catch settings:

- **Connect to the Internet**: Adjusts how TimeZero Catch access the Internet. When set to "When Necessary", there is no restriction and TimeZero Catch accesses the Internet whenever it needs to (at startup for new unlock codes, for AIS Online, Weather Update, Online Place Name Search, Panoramio and ActiveCaptain). When set to "At Launch", TimeZero Catch only accesses the Internet when starting up to see if new charts or modules where purchased. When set to "Never", TimeZero Catch is never allowed to access the Internet.

- **Tidal Step:** Sets the duration of tidal step (ranging from 5 minutes to 12 hours) that is used when the user clicks on the "Step Forward" button of the Virtual Time Control (available in the Planning Work Space) when set in "Tide" mode.

- **Duration of Animation:** Sets the duration of animation (ranging from 5 seconds to 3 minutes) when the "Play" button is pressed on the Virtual Time Control. If you find that the weather animation moves too quickly, increase this setting.

- **NavData Transparency:** This option manipulates the intensity of NavData transparency (ranges from 0-90)

- **NavData Multi Data Dwell Time:** When multiple numeric data are assigned to the same NavData panel, the "Multi Data Dwell Time" adjusts the time (from 2 to 10 seconds) that each piece of data will be displayed before switching to the next one. To add multiple data to the same NavData panel, right click on a numerical NavData (NavData displaying Number), select "Add" and click on the Data you want to add.

- **Hide Undocked NavData:** Check this option to hide undocked NavData when the NavData tab is closed

- **Lock Undocked NavData:** Check this option if you want to "freeze" the NavData that you have dragged outside of the NavData Bar. This prevent undocked NavData to be
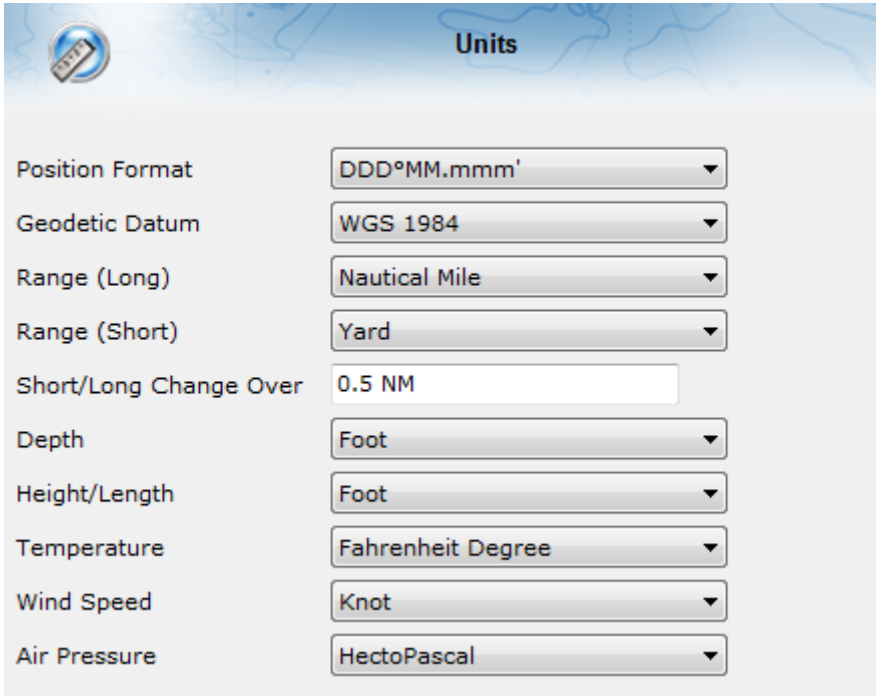
accidentally moved when dragging the chart. Make sure to undock and set up the NavData on the screen before enabling this option.

- **NavData Size:** Determines the size of the NavData bar on the right side of the screen (ranges from 50-150).

- **Toolbar Size:** Determines the size of the Toolbar on the left side of the screen (ranges from 25-100).

- **Ribbons Size:** Determines the size of the Ribbons at the top of the screen.

- **Auto Hide Ribbon and Toolbar:** This option automatically hides the Ribbon, Toolbar and pop-up window when the cursor stops moving after a designated period of time ("Auto Hide Delay").

- **Display Tooltip Over Object:** Determines how quickly the Tooltip appears when hovering over an object. If you don't like the Tooltips to appear when the mouse is over an object, set this option to OFF. You can always display the Tooltip by left clicking on any objects.

- **Center on Screen when Zooming with Hand:** Check this option if you want the plotter to zoom in on the center of the screen when using the mouse wheel (instead of zooming on the cursor location).

- **Enable Auto Hand Tool Selection:** Leave this option checked if you want TimeZero to automatically select the panning tool (Hand Tool) after creating a route or object. Un-check this option if you want to create multiple objects in a row.

- **Allow Unselected Object to be Moved:** Leave this option checked if you want to be able to move an object by dragging it on the map. If you have lots of marks and objects drawn on the chart, you might accidently move an object when you just want to move the chart. In this case, un-check this option. This will force you to first select (by clicking) an object before being able to drag it to move it. Note that you can also "Lock" objects (using the Right Click) if you want to protect them from accidental modifications.

- **Customize Function Keys:** The user can create shortcut keys to control various system settings.

- **Dual Monitor:** Enables the user to use dual monitors to view the software. This option will only be available when (at least) two monitors in extended mode are detected.

- **Power Consumption Optimization:** This option adjusts software power consumption in order to aid either performance or battery conservation. If you want Nobeltec TimeZero Catch to take full advantage of the video card computing power and achieve the fastest refresh time (regardless of power optimization), set this parameter to "performance".

Units

The Units options allow you to setup the units that you want to use for various data displayed on screen.

Simply select the corresponding unit you would like to use for each data:

Camera

The Camera options allows you to configure camera(s) in TimeZero Catch . Up to 4 cameras can be configured, allowing the user to switch source from the Camera WorkSpace or Camera Navdata. TimeZero Catch is compatible with AXIS network camera and converter, built-in or USB webcam, and FLIR camera (M-Series).

- · **Camera List:** This window allows to Add, Edit and Remove camera. The status column indicates if the camera is working properly (green) or not (red). In case of problem (red status), you can rollover the mouse to get more information. In case of IP camera or converter, the IP address will be available under the Address column.

- · **Active Camera Cone Color:** Selects the color of the Cone that will be representing the Field of View (FOV) of the Active Camera on the chart and radar screen.

- · **Lock Active Camera in Man Over Board:** When this option is checked, the camera will automatically track the Man Over Board position.

- · **Enable USB joystick control for active camera:** Select this option when a USB joystick is connected to the computer

    - · **Invert Tilt axis:** Select this option if the movement of the camera seems inverted when pushing or pulling the Joystick.

    - · **Minimum Threshold:** This sliders adjust the Joystick "dead band". The higher the setting the greater the Joystick has to move (initially) before sending a command to the Active Camera.

IMPORTANT: Make sure to calibrate the USB joystick in Windows. Please refer to the Calibrate Joystick Chapter

Initial Setup

- **Boat Length:** Enter the vessel length

- **Boat Width:** Enter the vessel width

- **Boat MMSI**: Enter the vessel MMSI (identification).

- **Boat Icon:** Users can choose the shape of the boat icon when the plotter is used in 3D (the shape of the 2D icon is fixed and cannot be changed)

- **Static Icon Size:** Users can choose the size of the 2D boat icon. Note that if you zoom to a very small range, the vessel icon size (in either 2D or 3D) will be displayed at its real scale (size) on the chart according to the "Boat Length" parameter.

- **Day Boat Icon Color**: Allows to select the color of the boat icon and COG vector during the day

- **Night Boat Icon Color**: Allows to select the color of the boat icon and COG vector during the night

- **Average Boat Speed:** Enter the type of boat (either "Sailing", "Commercial" or "Power Boat"). This setting is used in the software to set some internal parameters such as the maximum scale of the Speed Analog Gage NavData.

- **NavData Maximum Depth:** Used to set the maximum scale of the Depth Analog Gage NavData

- **Depth Display**: Users can choose to display the depth below the waterline or below keel. This requires the user to enter proper values for "Keel Draft" and "Transducer Draft"

- **Transducer Draft Source:** When set to "automatic", TimeZero Catch will try to use the offset sent by the instruments and revert to the offset set below if they are missing. When set to "hardware", Nobeltec will only use the offset received by the instruments (causing lack of data if the instruments are not sending the proper offset). When set to "manual", Nobeltec will only use the offset set below:

  - **Transducer Draft:** The value for "Transducer Draft" is always a positive value (enter the distance in between the water line and the position of the transducer).

  - **Keel Draft:** The value for "Keel Draft" is also a positive value (enter the distance in between the water line and the bottom of the Keel).

- **3D Cone Width:** Adjusts the 3D cone angle displayed in the 3D WorkSpace. Please refer to the 3D WorkSpace chapter for more information.

- **COG and SOG Damping:** This setting can be useful when the GPS sends unreliable COG value (a COG that "jumps all over the place") to smooth the value in TimeZero Catch . Increasing this value will raise the COG & SOG averaging time (but will decrease the response time).

- **Route Planning Default Speed:** This settings is the default speed value of any route you create.

- **True Wind and VMG Calculation**: When set to "Surface", Heading and Speed through Water will be used to compute True Wind and VMG if they are not received. When set to "Ground", Course Over Ground (COG) and Speed Over Ground (SOG) will be used instead.

Make sure to adjust this selection to "Ground" if you only receive Apparent Wind and don't have a Heading Sensor and Speed sensor.

- **CCRP**: The CCRP (Consistent Common Reference Point) settings allows you to define offsets for GPS and Transducers (the Radar offset is setup from the Radar Options). As set by IMO regulations, the CCRP is the location at the ship icon, to which all horizontal measurements, such as target range, bearing, relative course/speed, closest point of approach, or time to closest point of approach are referenced. Usually this is the Wheelhouse position on the boat. When entering all the settings (for CCRP, GPS, Transducer,...) remember that the longitudinal positions are always positive (from Bow to Stern) while the lateral position is negative for Port and positive for Starboard (0 is the middle of the vessel)

- **Fuel Rate Display:** Used to set the maximum scale of the Fuel Rate Analog Gage NavData.

- **Fuel Tank Nickname:** TimeZero can decode up to four fuel tank levels. Each fuel tank sensor must have a different instance number. The Software will sort all of the fuel tank sensors by ascending instance number. So if you have three fuel tanks with instance numbers 0, 2 and 5. TimeZero will map the first fuel tank to the one that has instance 0, the second to the one that has instance 2 and the third one to the one that has instance 5.

- **Advanced Settings:** These settings should not be adjusted unless instructed by Technical Support.

Troubleshooting

Serial Connection

Open the Device Manager and make sure that the Virtual COM port(s) appear under the "Ports (COM & LPT)" category. If they don't appear (or if a warning appears next to it), disconnect the USB converter, make sure that the latest drivers are installed and reconnect the USB converter. If the driver is still not recognized please refer to the USB Drivers troubleshooting chapter.

Write down the Virtual COM port number (you will need that information for the next step)

Open the navigation software and use the "Port Monitor" on each of the virtual COM port. Look at the NMEA sentence (ex: "$GPGGA") to determine what type of sensor is connected (GPS, Sounder, etc...). If you see "garbage data" (random text characters), try a different Baud Rate speed (usually 4800 is used for GPS, Sounder, Heading and 38400 is used for AIS but you can occasionally have a device using something else such as 9600). Also try to invert the wire polarity if you continue to see garbage at all Baud Rate. If you don't see any data, check the wiring.

Use the Connection Wizard Auto Detection first to see if the software will detect the instruments automatically. Use the Manual Configuration (pointing at the Virtual COM port) if you have trouble.

Note: If you have multiple software on the PC accessing multiple COM ports at the same time, do NOT perform an Automatic Configuration in TimeZero Catch . If you do an Automatic Detection, TimeZero Catch will open and use all the active COM ports, preventing the other software to use them at the same time. In this case, configure manually the COM Port in TimeZero Catch one by one (configure ONLY the one you want TimeZero Catch to use).

If an AIS instrument is connected to the PC, make sure that the GPS/COG/SOG/Heading Master sources are not set to the AIS Port (too slow). Use the Port Priority of Data Source selection and select the real COM port connected to the GPS, Heading... Or uncheck "Position" and "Heading" coming from the AIS port.

USB Drivers

Sometimes, a USB to Serial adapter will not be able to find the proper drivers to use. This can happen if the adapter was plugged before installing the computer or if the wrong drivers were previously loaded. An adapter loaded without the drivers will look like that on the Device Manager:

To solve the problem, double click on the adapter, select the "Driver" tab and then click on "Uninstall":

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Once the device is uninstalled, unplug the adapter from the computer.

Make sure that the drivers are correctly installed. Remember that it is always better to download the latest version of the drivers on line. Be careful as not all drivers come with an installer. Sometimes, the driver is just a ZIP file that you have to unzip and put somewhere (on your desktop for example).

Plug the USB Adapter on your computer. If the drivers didn't come with an installer (just a ZIP file), select "Browse my computer for driver software" and select to the location of the unzipped folder:

If the drivers came with an installer, just select "Search Automatically for driver software".

Autopilot Troubleshooting

Connection and Configuration

TimeZero Catch sends NMEA0183 Navigation information to the autopilot via a COM port or via a USB to Serial adapter. The first step is to know where to send the pilot information (on which COM port).

Note: If the location of the pilot is not known, you can use the Port Monitor function of TZ to detect what port the heading is coming in on; usually this is the same port as the pilot (most pilots have a bi-directional communication with the PC to listen for pilot sentence from the PC and send Heading information to the PC).

Most Autopilots use the APB sentence to get course to steer, cross track error and Waypoint ID. TimeZero Catch is set to output this sentence by default along with the XTE sentence. Other data to output is dependent on what the pilot will accept or need. For example, some pilots need to receive speed from the computer, in that case the VTG or RMC sentence will need to be turned ON. The user can find this information in the owner's manual for their autopilot.

From the Connection Wizard, select Data Output and Pilot. Click on "Serial Port" and select the COM port and Baudrate (usually 4800). Select the sentences to output to the pilot. If you don't know leave APB and XTE selected.

Note that the APB sentence has two modes: "Magnetic North" or "True North". This setting defines the North Reference that will be used inside the APB sentence for the Bearing to Waypoint (or CTS) information. If the Autopilot is connected to a Magnetic Heading sensor, you should use "Magnetic North". If the Autopilot is connected to a True Heading Sensor (such as a Satellite Compass or Gyrocompass), you should use "True North". Note that most installations are using a Magnetic Compass, so the APB default setting ("Magnetic North") should be used.

> **Note**: Also be sure that TimeZero Catch and the autopilot are set to display the same North reference. You can adjust the North reference in TimeZero by adjusting the "Bearing Display" setting in the Units Options.

Once the settings have been adjusted in the Connection Wizard, click on "Next" and "Finish"

Test the Connection

On the NavData panel in TimeZero Catch , configure to display CTS (also seen as BRG or bearing), XTE, and DTW (also seen as RNG or DIST). Configure the pilot to display a "steering page" with the same information:

Once you have configured the NavData panel, simply activate a route/waypoint. Now look at the pilot screen and make sure that the data matches what the software displays.

If the data does not match (course to steer), make sure that the Pilot and TimeZero are using the same North reference (Magnetic or True). If the course to steer is off by 1 or 2 degree, this might be due to the difference in the magnetic variation table of the Pilot (or Heading Sensor) and of TimeZero. To avoid the pilot (or heading sensor) from making any variation calculations (going from True North to Magnetic North or the inverse), make sure that TimeZero is sending Magnetic bearing if the heading sensor is a magnetic sensor and True bearing if the heading sensor is a true heading sensor (Satellite Compass or Gyrocompass).

> **Note**: Only the APB sentence allows you to select Magnetic or True bearing. If you use the RMB sentence, it will always send True Bearing (as per NMEA specification). For that reason, if you have a magnetic compass, it is better to use the APB sentence and make sure that it is set up in TimeZero Catch for "Magnetic North".

If no information appears at all on the Autopilot ("--" for example), check the following:

- Wiring (are the wires reversed?)

- COM port number (is TZ outputting on the correct port?)

- Some (older) pilots don't recognize the "II" NMEA Talker. Try to change the NMEA talker to "GP" (on the output setup page of the connection wizard)

- Check the Navigation source on your Autopilot. Some pilot have two or more inputs that can be switched. The "Navigation Source" port must match the input port of the pilot connected to the computer

- Check the input baud rate of the pilot. Most of the time it is set to the regular 4800bps, but it may be changed sometimes (38.4Kbps)

- Check if the pilot is using RS232 or RS422 and if the COM port used by TimeZero Catch uses the same protocol

When you have confirmed that the data matches in TimeZero Catch and on the pilot (at minimum XTE and CTS), you can perform a sea trial

Pilot not steering properly during a sea trial

If the data is correctly sent by TimeZero to the pilot (with matching values), but if the pilot is not steering properly (not following a straight line or not steering in the correct direction), check the following points:

Note: At this point, we are not troubleshooting TimeZero itself but the pilot. TimeZero's "responsibility" is only to send a good value to the pilot. If the pilot is not steering properly at this point, then something needs to be adjusted on the pilot itself (or compass feeding information to the pilot)

Check Pilot behavior in "Auto Mode"

Every pilot has an "Auto" mode which does not rely on any external Navigation information (unlike the "Nav" or "Navigation" mode which relies on XTE and CTS sent by a "Navigator" such as TZ). Testing the pilot in "Auto" mode allows to validate its correct behavior in standalone mode. When engaging the "Auto" mode, the pilot simply takes a snapshot of the heading at the time the user presses the "Auto" button and it simply holds that course. If the pilot is unable to navigate a straight course in Auto mode, it will not be able to navigate a straight course in "Nav" mode either. In that case, adjust the pilot parameters until having a satisfactory "Auto" mode behavior.

Note: Some pilots allow to change course while in auto mode by turning the rotary knob. It is a good idea to change the course in Auto mode to see how the pilot react to change of course order.

Check the Heading Sensor

If the Pilot behaves correctly in "Auto" mode, but has problems following a route in "Nav" mode, then the problem is likely coming from the heading sensor. Understand that when TimeZero is sending an order to the pilot, via the Course to Steer sentence (ex: go to 273 degree), the pilot can only rely on its heading sensor to know where 273 degree is. If the heading sensor sends a corrupted value, then TimeZero and the Pilot will not agree on where 273 degree is, resulting in an erratic behavior (pilot seems to follow an alternate course).

First, make sure that TimeZero and the Pilot are receiving the heading value from the same heading sensor. This will help when troubleshooting the heading sensor value. Then make sure that the heading value displayed on the pilot matches the value displayed in TimeZero (configure heading in the NavData panel to compare the value). If the values don't match, make sure that the pilot and TimeZero are using the same North Reference (Magnetic or True).

Once you checked that the heading is the same on the pilot and TimeZero, add a Course Over Ground ("COG") data box in TimeZero. On a calm day (low wind, no current, low wave), steer your boat on a straight line at 6-10Kn. In these conditions, the direction you are going (COG) should match the heading of the boat. In other words, the Heading and COG values displayed in TimeZero should be the same (+/- one degree). Repeat this process in various directions (heading North, heading South, East and West). If the heading and COG values don't match (offset more than 2-3 degrees), then the heading sensor needs to be calibrated if you want the "Nav" mode to steer in the correct direction.

Pilot not handling correctly the change of Waypoint

If the Pilot "overshoots" a Waypoint, make sure that you have setup a Waypoint Switching Radius large enough in TimeZero to allow the pilot to start the turn before it actually reaches the Waypoint. The Waypoint Switching Radius can be adjusted from the Routes Options.

Also, make sure that the counter rudder gain (parameter of the pilot) is set up properly for your boat. This parameter varies with the "inertia" of your boat. Some pilots (like the Furuno Pilots) learn this parameter dynamically and gets better after a couple of turns. This information will be found in the pilot manufacturer's documentation.

Summary

Here what to keep in mind when configuring a pilot with TimeZero Catch :

- Make sure that the pilot is correctly connected to TimeZero (NMEA0183, Port COM, Baudrate, Wiring)

- Select the correct NMEA0183 output sentence (in most of the cases, APB and XTE will work)

- Make sure to match the bearing readout in TimeZero Catch and on the Pilot (Magnetic or True) and make sure to send a bearing that has the same reference as the heading sensor (magnetic in most case)

- Activate a route and make sure that XTE and Course to Steer (also named Bearing to Waypoint) match on TimeZero Catch and on the Pilot (display these two information on the pilot)

- Make sure that the heading sensor used by TimeZero Catch is the same heading sensor used by the Pilot and make sure it is properly calibrated. Remember that a heading sensor that is offset by 3 or more degrees will cause the pilot to steer the boat by the same error!
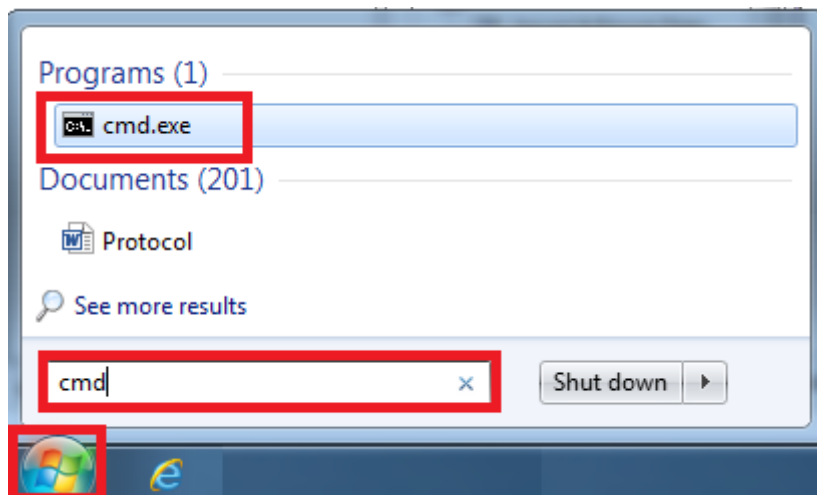
How To Ping

Ping a Network Device

To check the connection between the computer and any Ethernet device (Sounder, Radar, etc...), you can ping the device using its IP address.
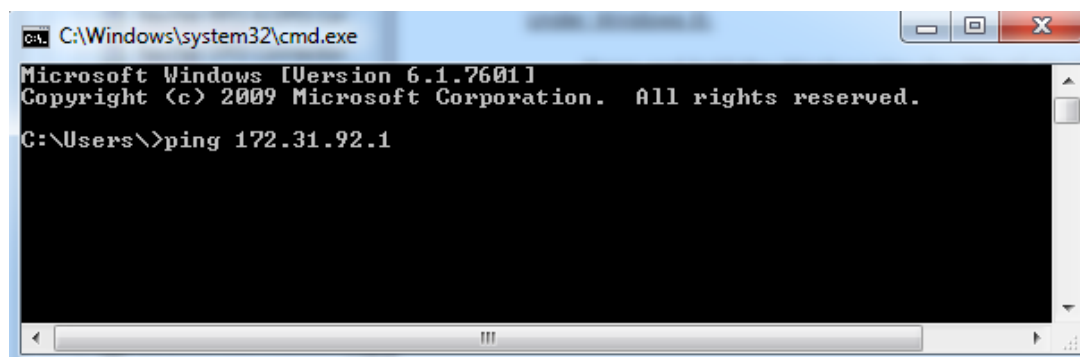
Under Windows 7:

Click on the Windows Start button and search for "cmd". Select "cmd" under "Programs":

Under Windows 8:

Press and hold the Windows Key (or "Start" Key) and the "X" key. A pop up menu will appear. Select "Run", type "cmd" in the prompt and select "OK"

Once the Command prompt appear, type "ping 172.31.92.1" (replace "172.31.92.1 with the IP address of the device you would like to ping):

Note: Do not enter leading 0 in the command. For example do NOT type "ping 172.031.092.001"

If the result is Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), the communication with the Ethernet device is OK.

If the result is Packets: Sent = 4, Received = 0, Lost = 4 (100% loss) or if any error is returned, there is a problem with either the IP configuration of the computer or the cable. Ensure the IP address is correctly set-up and the correct cable is plugged into the network interface. If the computer is connected to a Hub, ensure that the "green light" is on and blinking on the corresponding Ethernet cable. If you still have problems, try alternate Ethernet cables.

Common IP addresses:

Furuno IP Addresses:

- AIS FA30 = 172.31.24.2

- AIS FA50 = 172.31.24.3

- · Weather BBWX1/ BBWX2 = 172.31.200.2

- · Sounder DFF1 (when the switch are "Down – Up – Up – Down") = 172.31.92.1

- · Sounder DFF3 (when DIP switch 1 and 2 are set to ON) = 172.31.92.1

- · Master NavNet3D MFD = 172.31.100.254

- · NavNet TZtouch = 172.31.252.1

- · Radar FAR2xx7 (set to radar 1) = 172.31.3.6

- · Radar FAR2xx7 (set to radar 2) = 172.31.3.7

Koden IP Addresses:

- · MDS5/6 or MDS1/8R with NO router on the network = 192.168.0.1

FLIR Nexus Server Activation

In some instance, the internal server of the M-Series ("NEXUS" server) is configured in a way that prevents the PC from discovering and controlling it. If you have are unable to discover and control the M-Series from TimeZero and are able to use the Web Control of the M-Series to control it via a web browser, follow the instructions below.

Note: If you cannot display the internal FLIR web server from the computer or are not able to control the camera from the Web Interface, then you might have a network configuration problem.

Open a Web Browser and type the IP address of the M-Series: http://<IP ADRESS >.

Example: http://192.168.0.100

**Note:** To access the Web Server configuration, type in the IP address (do not add any port numbers)

The Nexus configuration page should appear. Log in as an admin (the default password is "indigo")

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Click on the "Configuration File" menu, scroll to the very bottom of the page and click on "Download Configuration File".

Save the file somewhere on your computer (on the desktop for example) and open the configuration file ("server.ini") with NotePad and look for the section "[Networking Configuration]"
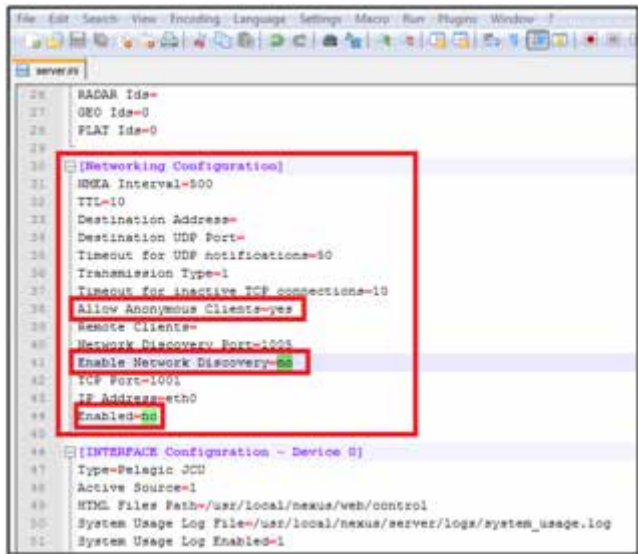
Set "Enable Network Discovery", "Enabled" and "Allow Anonymous Clients" to "yes":

Note: You can search the text file for "Anonymous", "Discovery" and "Enabled" to find the line you need to check.

Save the file, making sure that you don't modify anything else.

Go back to the Nexus Configuration page (you might have to log in again), select "Configuration File" and scroll down to the bottom of the page. Click on "Choose file" and select the "server.ini" file you just modified. Click on "Upload".

The FLIR M-Series Nexus server needs to be restarted to take the changes into account. Go to the very top of the page (header) and click on "Stop"

Wait until the Start button appears, then click on it. TimeZero Catch should now be able to detect and control the Camera.

AXIS Codec Troubleshooting

In some instances, the AXIS ActiveX and Codec cannot be installed using the regular process (described under the AXIS IP Camera & Converter chapter). If the camera picture does not appear in TimeZero or if you seem to have problems with the AXIS Web interface (crashes), follow these instructions.

Prerequisite

If you are using Internet Explorer v10 or v11, you should add the AXIS web page to the list of Compatibility View.

Open Internet Explorer and click on "Tools > Compatibility View settings":
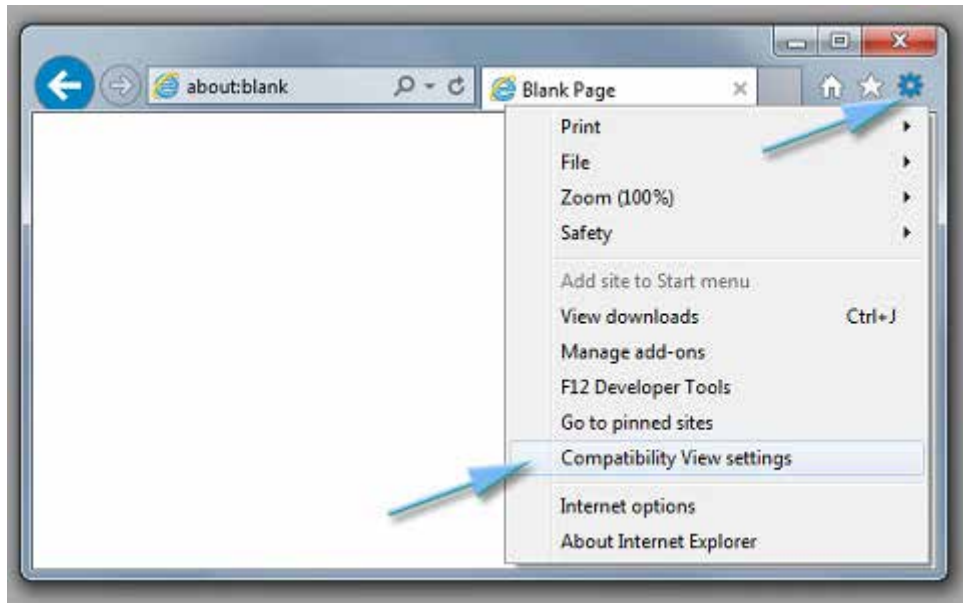
Add the IP(s) of your camera(s) to the list:
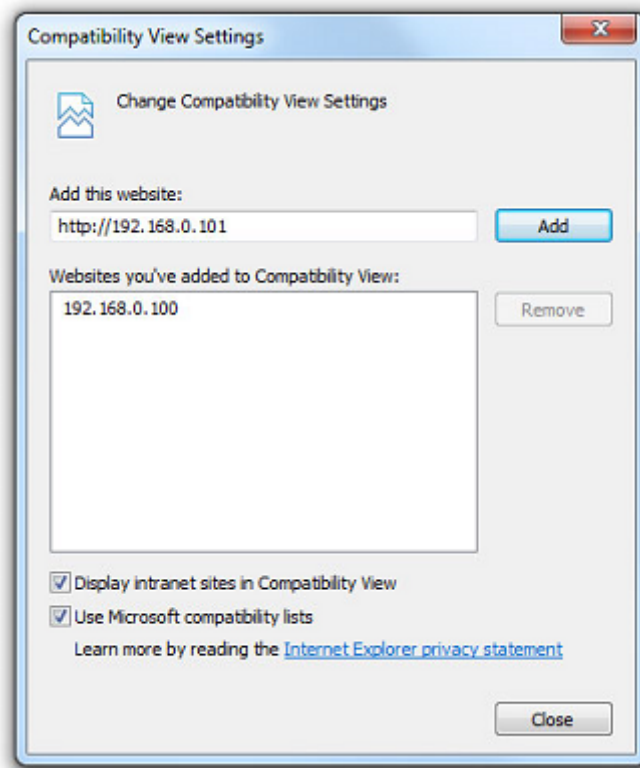
AXIS Media Control

It is recommended to download the latest version of the AXIS Media Control directly from the AXIS Website. You can also find the AXIS Media Control installer on the TimeZero Catch DVD located under "Support\Tools\Axis_Codec". Just double click on "AMC_Embedded_msi" and follow the on-screen instructions to install the AXIS Media Control.

Video Codec Installation

The Video Codec can be found inside the camera. To make sure that the latest video Codec are used, make sure to update the camera firmware to the latest version (check the AXIS Website).

To install the Video Codec, Open Internet Explorer and type in the address bar: ftp://*<camera ip>*/usr/share/

where *<camera ip>* is the IP address of the Camera or Converter:
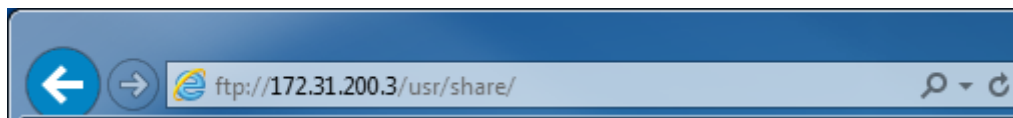
A window will appear that prompts for the Axis Administrator login and password:
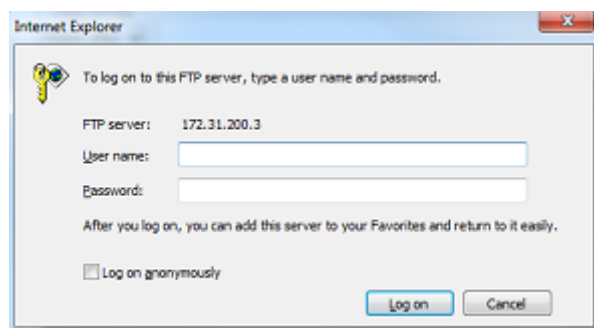
After entering the credential, a list of directory will appear. Click on "Intel_m4dec" if the Camera is using MPEG4 (legacy converter and camera) or "h264_dec" for the newest Axis camera using H264:
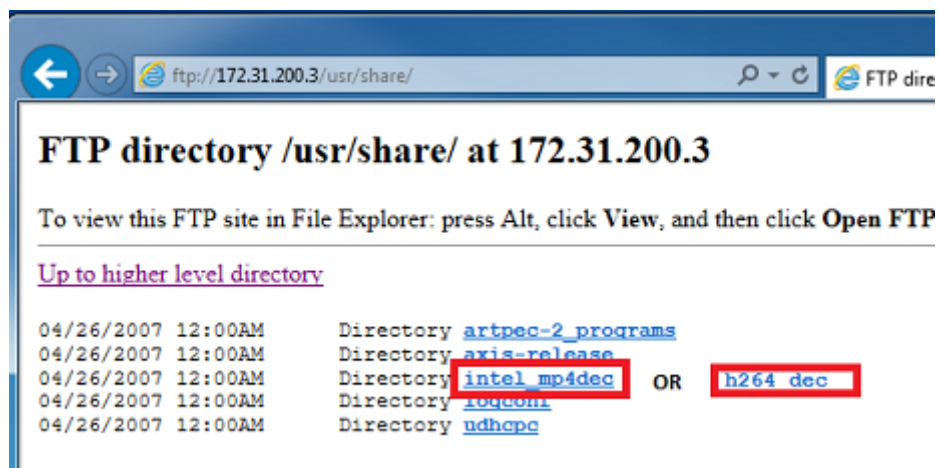
Click and save the .cab file to your desktop:

Nobeltec TimeZero Catch v2.1.0
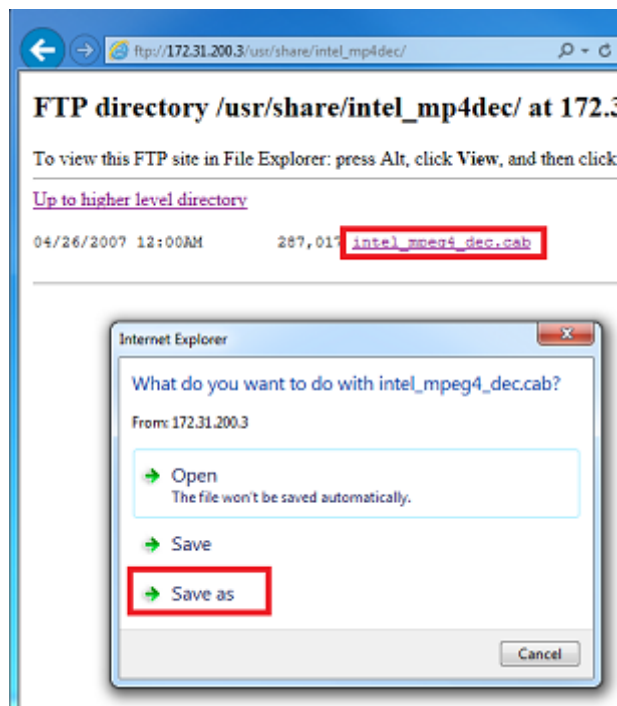
Once the file has been downloaded, close Internet Explorer. Double click on the .cab file and drag all the files onto a new folder (or directly on the desktop). Double click on the batch file "Install" to install the Codec.

Note: The Codec installer files (MPEG4 and H264) can be found on the TimeZero Catch DVD located under "Support\Tools\Axis_Codec"

Calibrate Joystick

Before using a USB joystick to control a PTZ Camera, it is highly recommended to calibrate it. Joystick that are not properly calibrated can move and zoom the camera on its own resulting into abnormal movements and tracking that is not working.

To calibrate the Joystick, open the "Start" menu of Windows and search for "Joystick". Under settings or control panel, select "Setup USB Game Controller". The Game Controllers control panel opens. Select the Joystick that appear in the list and click on "Properties". Select the "Settings" tab and click on "Calibrate"
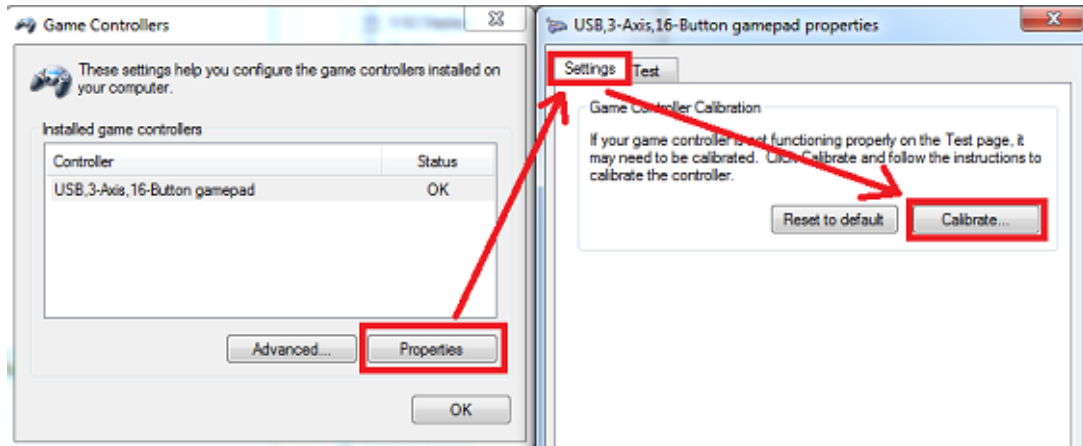
Follow the on-screen assistant to calibrate the Joystick.

Factory Default

To reset TimeZero Catch to Factory Default (Master Reset), exit Nobeltec TimeZero Catch .

Open the Windows "Start" menu, locate "Nobeltec TimeZero" and click on "Clear Settings"
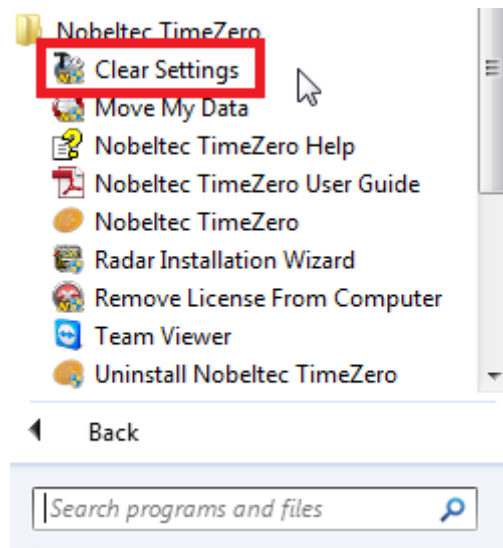
The following window will appear:

Nobeltec TimeZero Catch v2.1.0
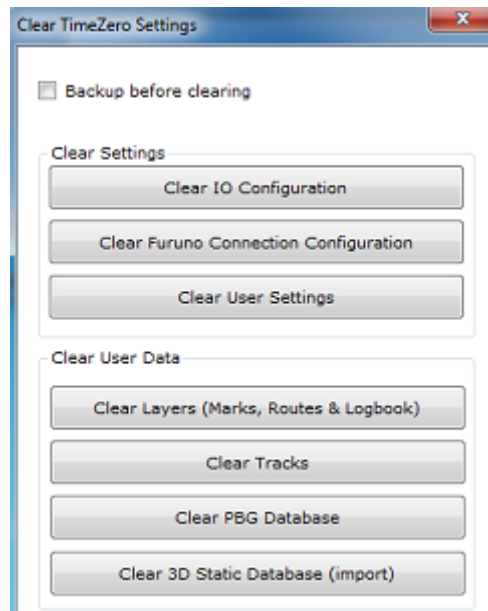
Clear IO Configuration: Erase the Input and Output configuration.

Clear Furuno Connection Configuration: Erase various Furuno Connection and Synchronization settings. These settings are restored automatically the next time you connect to a Furuno Sensor.

Clear User Settings: Set to default all the Options, NavData Configuration, Toolbar, Ribbon and Work Spaces.

Clear Layers: Erase all the objects (Marks, Boundaries, Annotation,…), Routes and Logbook

Clear Tracks: Erase all the tracks and their history (Recall Track)

Clear PBG Database: Erase the personal PBG data (Bathy data recorded within Nobeltec)

Clear 3D Static Database (import): Erase the 3D bathy data that has been imported in Nobeltec

If you check "Backup before clearing", the various settings files and database will be duplicated before being erased. Contact Tech Support to recover the files if necessary.

To perform a Factory Default or Master Reset, press on all the buttons.

Getting More Help

How to Contact Nobeltec

If you have a question about your Nobeltec Software, please first review this User's Guide. If you cannot find the answer you are looking for, please contact Nobeltec Customer Support.

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Support email: support@nobeltec.com
Web site: www.nobeltec.com

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Nobeltec TimeZero Catch v2.1.0

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