

Nobeltec TimeZero Odyssey

v2.1.0

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Welcome

Thank you for purchasing Nobeltec TimeZero Odyssey . 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.

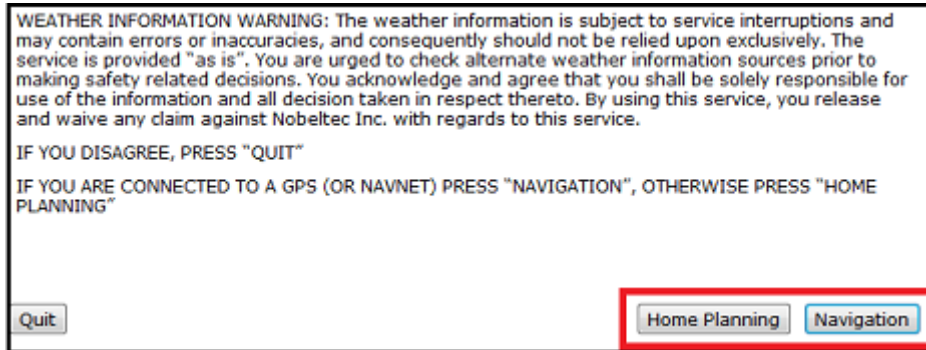


WARNING: Nautical navigation is a serious undertaking and should only be engaged in by persons trained and experienced persons in such navigation.

Getting Started

Home Planning Vs Navigation

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



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 Odyssey .

Chart Compatibility

Nobeltec TimeZero Odyssey 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 Odyssey 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 Odyssey 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 Odyssey, simply save the files in "*My Documents | My Nobeltec | Downloaded Charts*". The next time you open TimeZero Odyssey, it will scan this folder and prompt you if you want to install the charts (TimeZero Odyssey 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 Odyssey.

Setting up Instruments

Nobeltec TimeZero Odyssey 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 Odyssey.

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).

Automatic Instrument Configuration

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

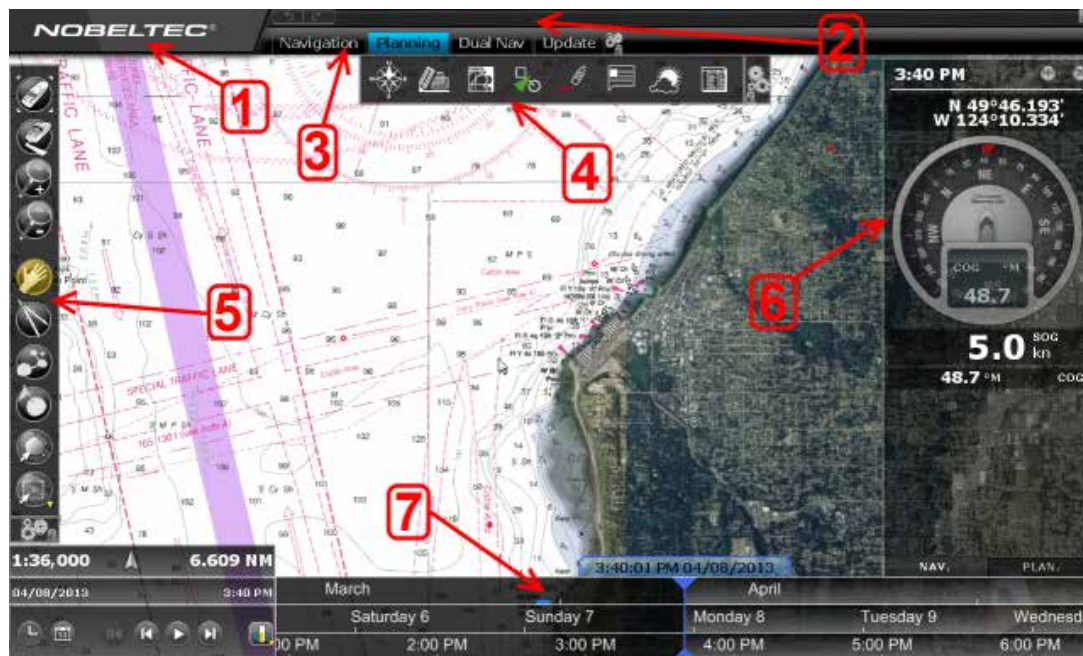
- Click on the "Nobeltec" Button located on the top left of the screen
- Click on "Connection Wizard"
- Select the "Automatic Ports Configuration"; and then, click "Next"
- Follow the on screen instructions

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 Odyssey 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

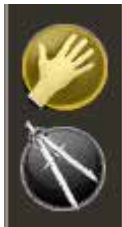
Button: 

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 Odyssey 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:

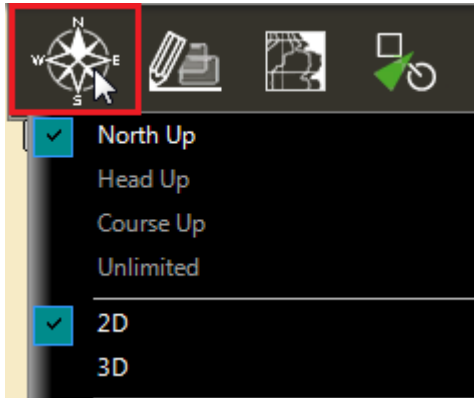


In this case, right clicking on the "Selection" tool allows you choose in between the regular selection method (square) or the free selection method:



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.

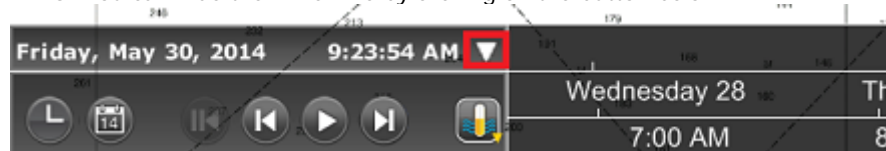


Work Spaces

Nobeltec TimeZero Odyssey is designed to perform multiple navigation tasks such as planning a voyage, navigating according to that plan, downloading weather information. 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 Odyssey 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 Odyssey 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:



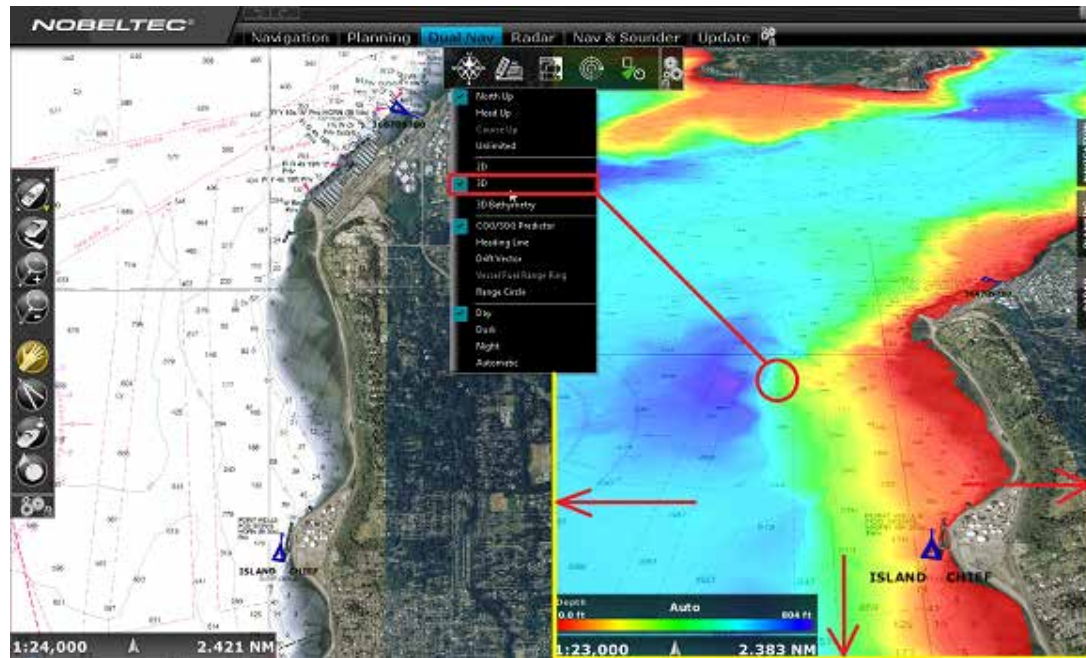
- **"Dual Nav" Work Space:** The Dual Navigation Work Space allows you to display two Plotter windows side by side. Each Plotter window can be managed independently. For example, one Plotter could be set up in 3D with Satellite Pictures while the second Plotter could display a more traditional 2D view. The Dual Navigation Work Space shares the same configuration settings as the Navigation Work Space.
- **"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.

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 Odyssey offers a new ultra-fast cartographic engine with unparalleled seamlessness and speed of zooming. Nobeltec TimeZero Odyssey will always select the best charts as you scroll around and zoom in and out. Because scrolling and zooming are so important, Nobeltec TimeZero Odyssey 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 disabled 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 Odyssey 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:

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:

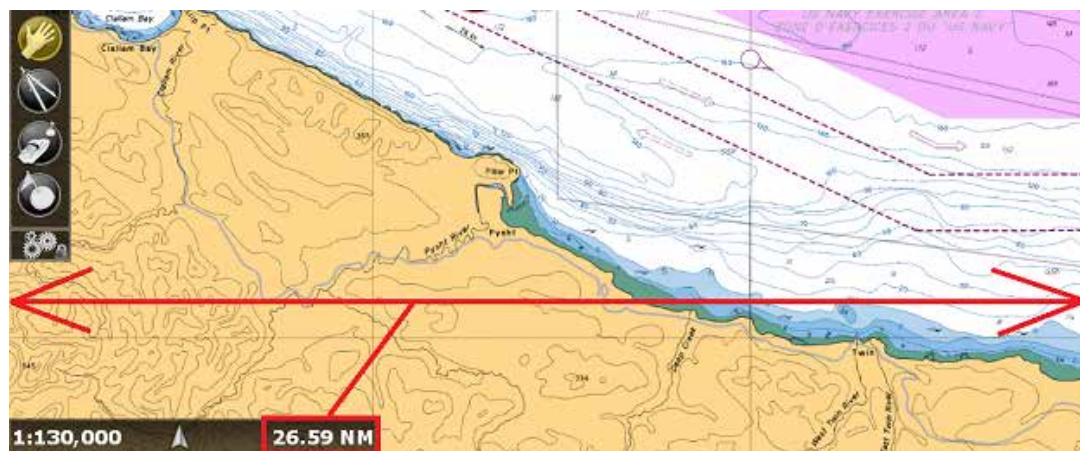
Use the Page Up / Page Down key or +/- keys (extended keyboard only) to zoom in or out.

Note: When zooming with the Zoom +/- buttons or +/- keys, Nobeltec TimeZero Odyssey 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 Odyssey 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:

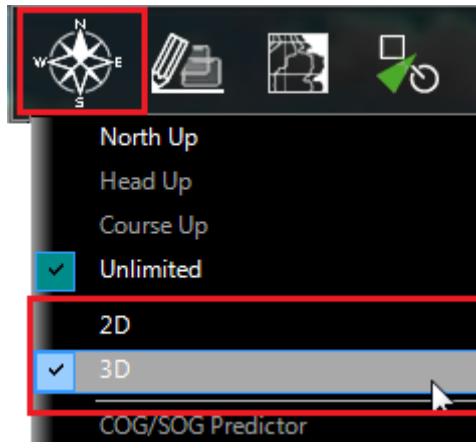


Chart Orientation

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.

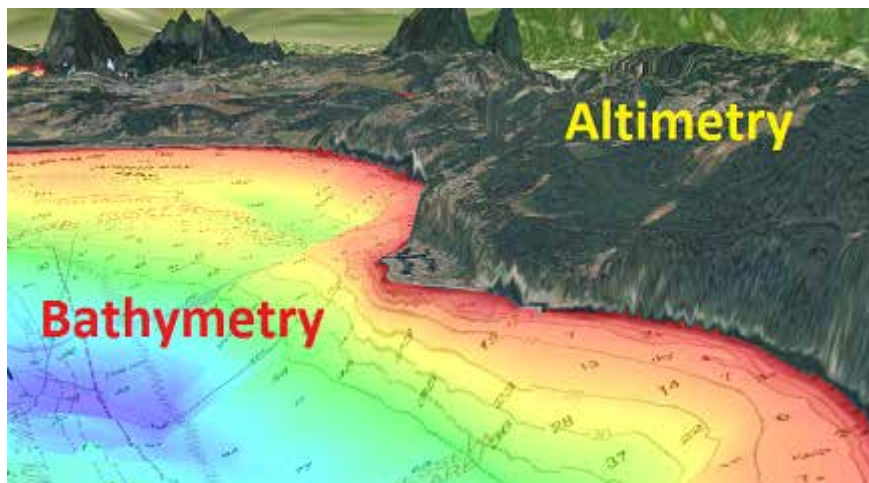
Tips: A "Pan Tilt" tool is available (hidden by default) and allows the user to adjust the azimuth and pitch by clicking and dragging the cursor over the charts. This is very useful if your mouse does not



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 Odyssey handles Altimetry (3D above Sea Level) and Bathymetry (3D below Sea Level) in two different ways:

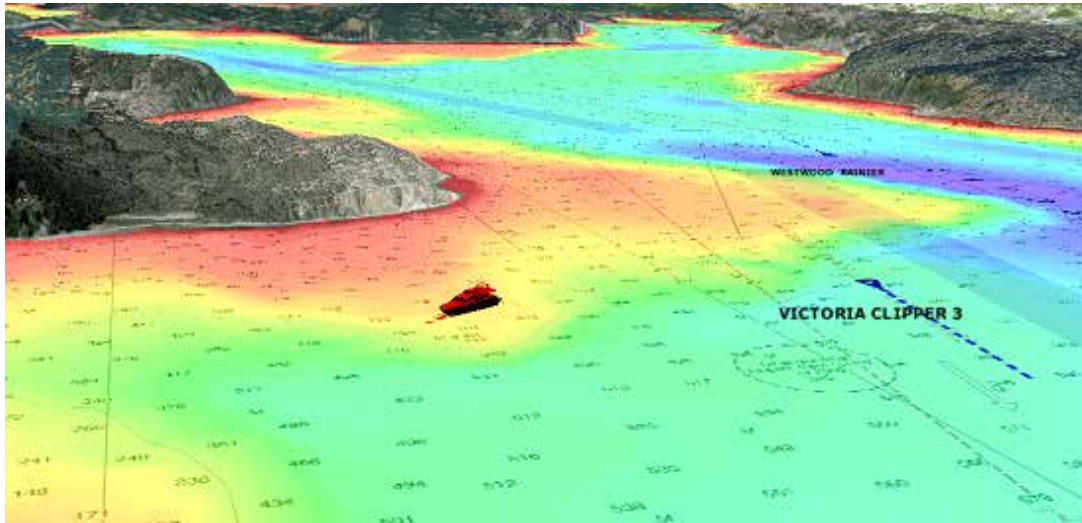


Altimetry (3D above water) is always activated and its exaggeration can be changed manually from the [Plotter Display](#) Options under the "3D Display" by adjusting the "3D Alti Exaggeration" slider.

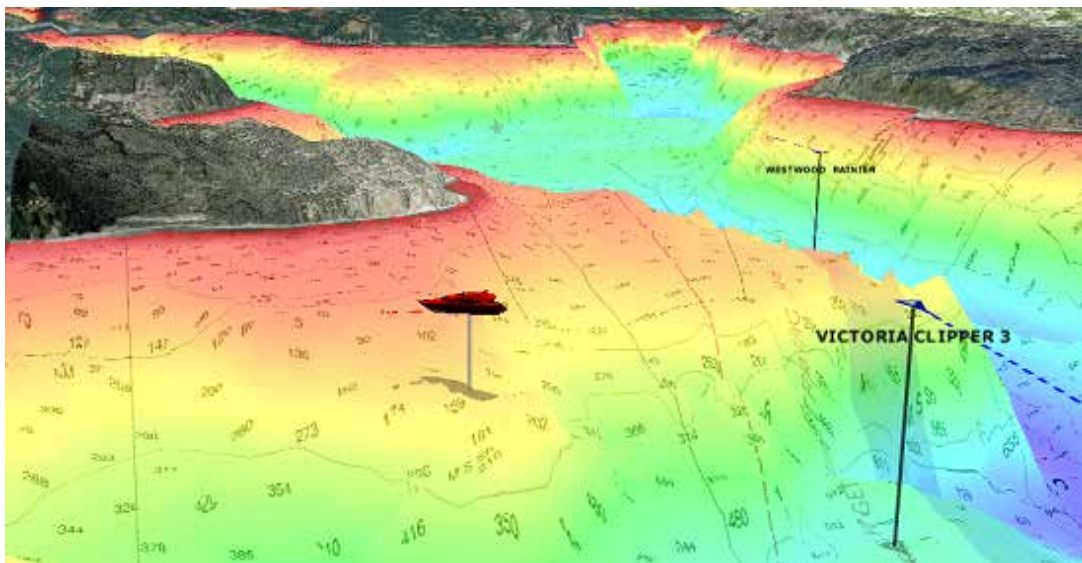
Note: This setting is used to enhance the 3D image over land by over or under-exaggerating 3D data over land. Minor changes in elevation become visible in areas that might otherwise appear completely flat (or vice-versa). If you are in an area where the mountains appear too high, simply reduce the 3D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

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

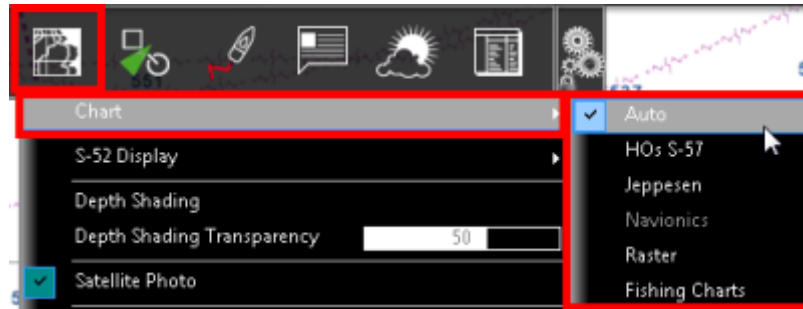
Selecting Charts & Overlays

Nobeltec TimeZero Odyssey 's powerful graphics engine adds new chart presentation options to the conventional method of electronic chart plotting. TimeZero Odyssey 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 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 Odyssey 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":



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.

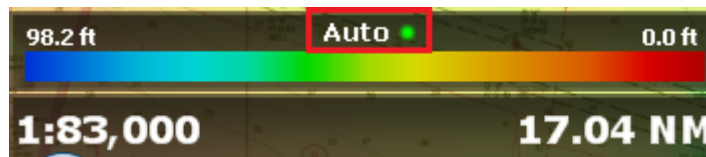
Note: PhotoFusion automatically adjusts the transparency of the Satellite Photo, however, it is possible to manually offset the transparency (make it more or less transparent) using the "PhotoFusion Transparency Offset" setting available in the Plotter Display Menu.

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

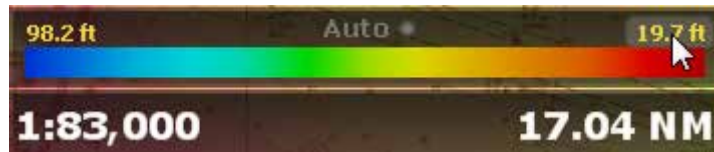
Depth Shading

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 Odyssey 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).

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 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 Odyssey 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").

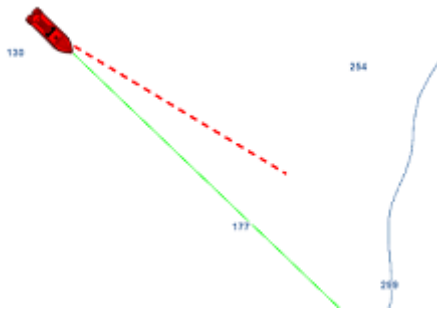
When sufficiently zoomed in on the chart, the ship icon will be displayed in real size according to the scale of the chart and the "Boat Length" parameter.



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.



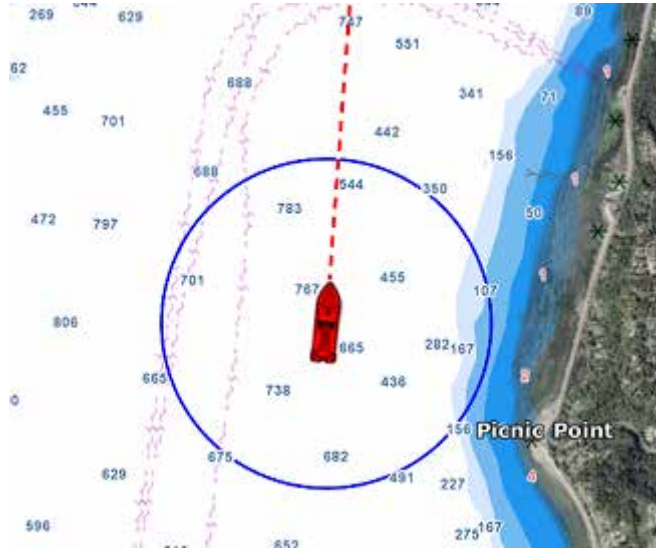
The COG vector (displayed in red dashes) is calculated by the GPS. It indicates the direction of movement relative to a ground position. The length of the COG vector can be setup by distance or time. When it is set to "Time", the length varies according to the speed of the boat and can be configured 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 Odyssey 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.

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

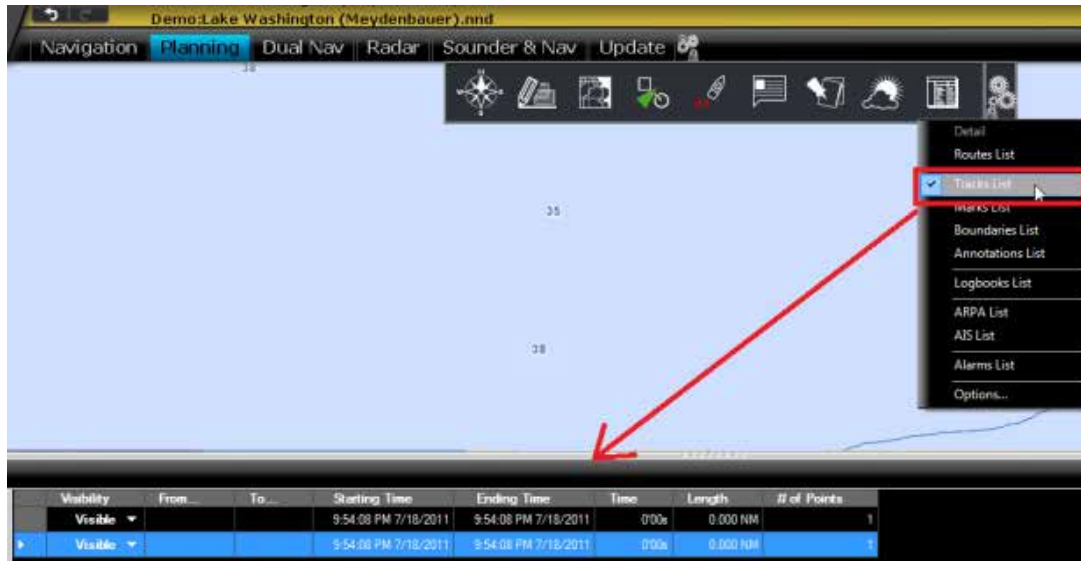
Note: When tracking, the track point are recorded every second.

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.

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

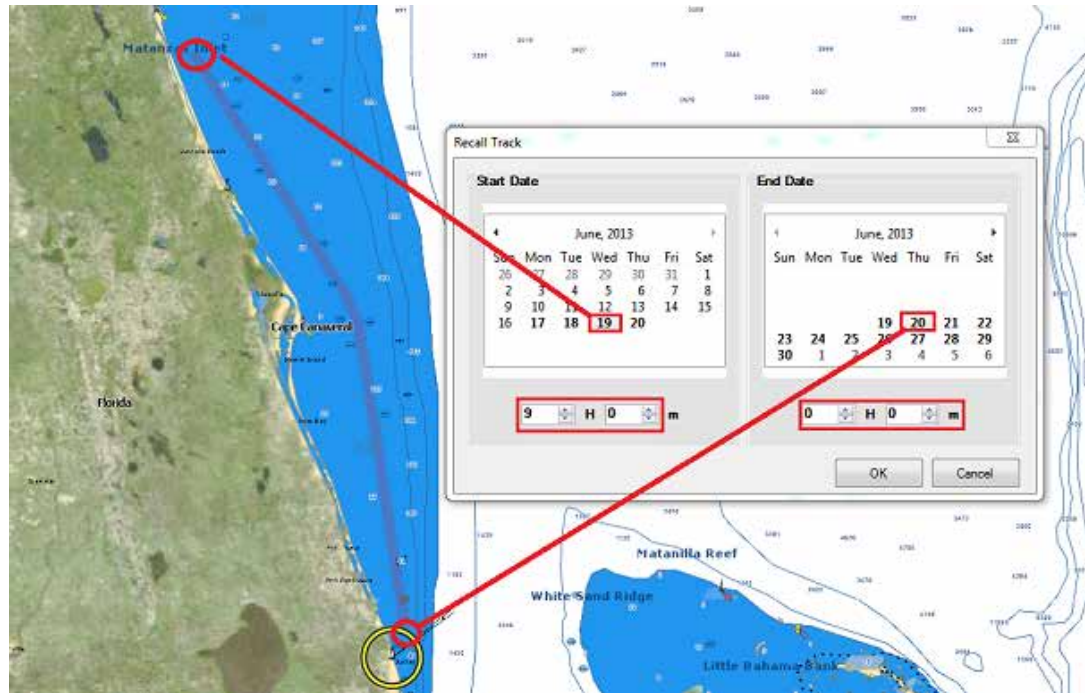
TimeZero Odyssey has an innovative feature that allows you to recall a track even if you have forgotten to activate the tracking at that time. Even when you are not actively tracking (if the "Track" button is turned OFF), TimeZero Odyssey keeps a log of your position allowing to create a track at a later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

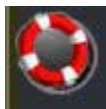
The chart will move and zoom to display you on the screen the track segments located in between these two dates. At that point, you can either refine the date selection or press the "OK" button. When pressing the "OK" button, the track is recalled.



Note that the dates that contains track points (date when TimeZero Odyssey 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

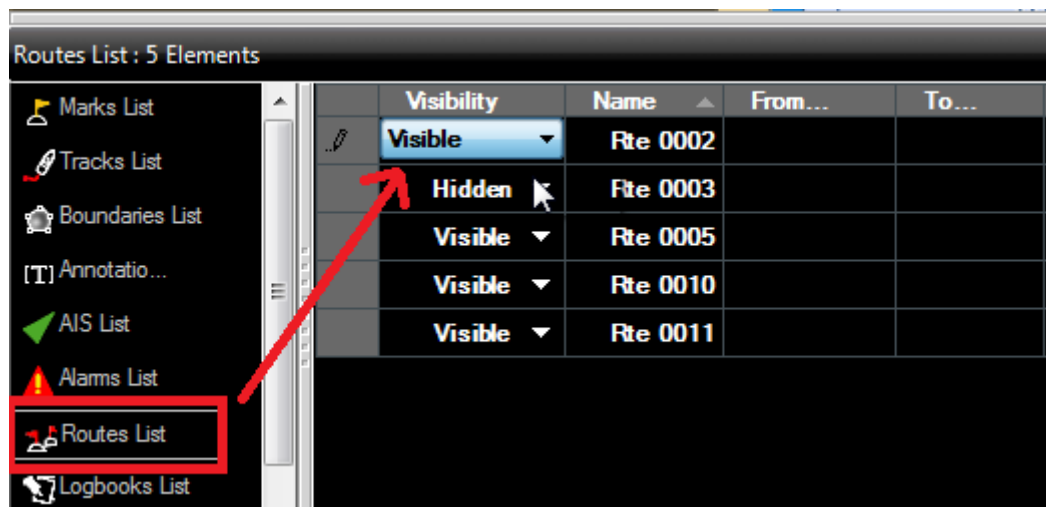
TimeZero Odyssey allows for the creation of an unlimited number of routes, with only one activated at a time. An active route is displayed in red and has special priority in the navigation system. When a route is activated, the first Waypoint becomes active (surrounded in yellow) and the leg to reach that Waypoint displays the Cross Track Alarm (red and green dashed lines). If a pilot is connected to TimeZero Odyssey, 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):

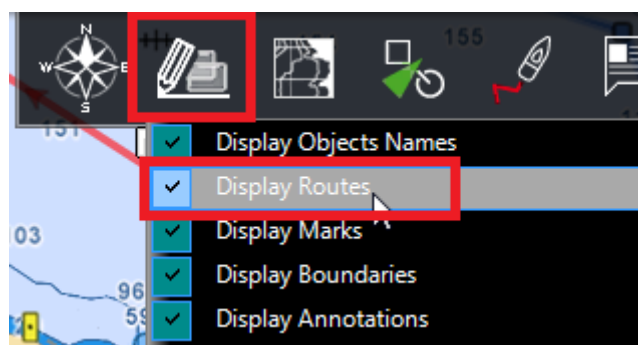


Hiding Routes

You can hide any route by right clicking on it and choosing "Hide". To display a route that has been previously "hidden", open the "Route List" by clicking on the "List" ribbon button (available by default in the Planning Workspace) and set the corresponding route to "Visible":



Note that all routes can be hidden by deselecting "Display Route" from the "Marks" Ribbon Button



Tips: To Show or Hide multiples routes, select multiple row (using Shift or CTRL click) then right click and choose "Visible/Hidden"

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.

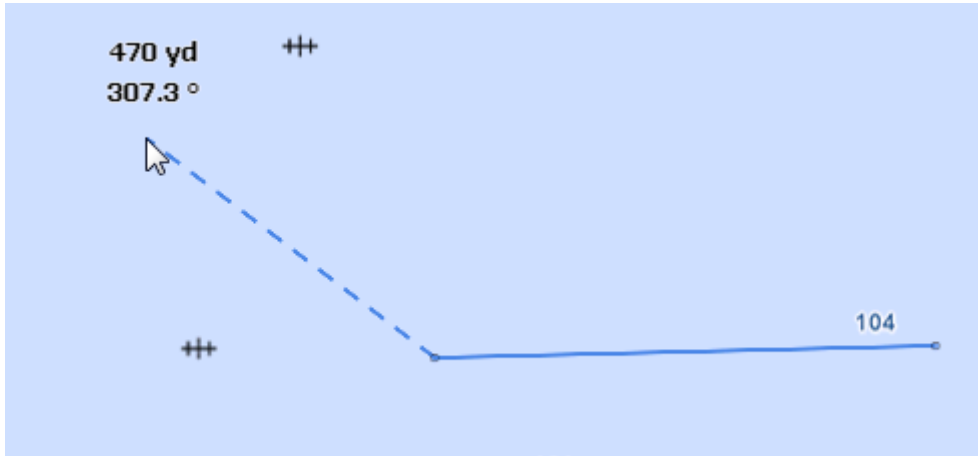
Creating a Route

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:



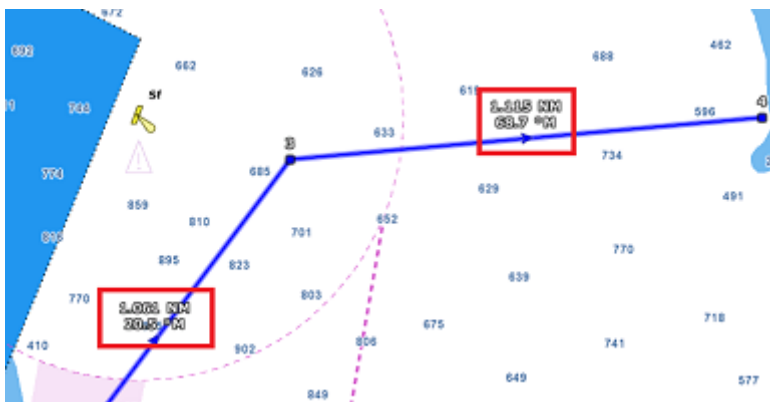
While creating a route the chart will move automatically to follow the route. To move the chart manually, click and drag the chart. A Waypoint will only be created when you left click on the same position (without dragging the cursor). The arrow keys on the keyboard can also be used to scroll the chart 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 Odyssey can be setup to display the range and bearing of each leg (from the [Routes Options](#)):



Great Circle Route:

TimeZero Odyssey 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 Odyssey 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 Odyssey 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 Odyssey 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 Odyssey 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.

Leg No.	Name	H13	Speed	CTS	SOG	Distance	Total	ETA	Current	TTS	Total TTS	Current D	Current S	Wind Current Name
1	01.1.78	2.00 kn	01.1.78	2.0 kn	2.00 kn	2.00 kn	2.00 kn	2.00 kn	00.00%	0.00	0.00	0.00 kn	0.00 kn	
2	02.1.78	2.00 kn	02.1.78	2.1 kn	1.95 kn	4.00 kn	4.00 kn	4.00 kn	00.00%	0.00	0.00	0.00 kn	0.00 kn	
3	03.1.78	2.00 kn	03.1.78	2.1 kn	1.95 kn	6.00 kn	6.00 kn	6.00 kn	00.00%	0.00	0.00	0.00 kn	0.00 kn	
4	04.1.78	2.00 kn	04.1.78	2.1 kn	1.95 kn	8.00 kn	8.00 kn	8.00 kn	00.00%	0.00	0.00	0.00 kn	0.00 kn	
5	05.1.78	2.00 kn	05.1.78	2.1 kn	1.95 kn	10.00 kn	10.00 kn	10.00 kn	00.00%	0.00	0.00	0.00 kn	0.00 kn	
6	06.1.78	2.00 kn	06.1.78	2.1 kn	1.95 kn	12.00 kn	12.00 kn	12.00 kn	00.00%	0.00	0.00	0.00 kn	0.00 kn	

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 Odyssey will calculate the ETA according to the parameters available in the table (speed, current,...).

Nobeltec TimeZero Odyssey 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 Odyssey 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 Odyssey, 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 than 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 Odyssey 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:

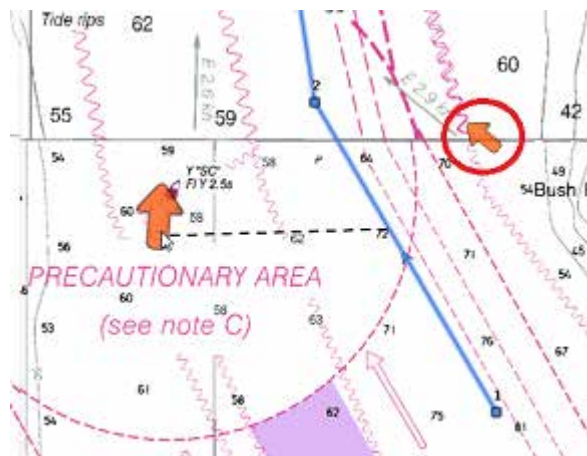
The screenshot displays the Nobeltec TimeZero Odyssey software interface. The top section shows a map with a blue route and a virtual boat. The bottom section shows a table with route details. A red box highlights the 'Leg To...' column in the table, and a yellow arrow points to the first row of the table.

Leg To...	Name	HTS	Speed	CTS	SOG	Distance	Total	ETA	Layover
1		—'M	—'kn	—'M	—'kn	0 yd	0 yd	3:53:36 PM Monday, April 08, 2013	00h:00m:00s
2		264.2' M	5.00 kn	264.2' M	5.0 kn	608 yd	608 yd	3:57:12 PM Monday, April 08, 2013	00h:00m:00s
3		241.1' M	5.00 kn	241.1' M	5.0 kn	1,153 NM	1,453 NM	4:11:03 PM Monday, April 08, 2013	00h:00m:00s
4		172.9' M	5.00 kn	172.9' M	5.0 kn	3,629 NM	3,152 NM	4:19:26 PM Monday, April 08, 2013	00h:00m:00s
5		128.9' M	5.00 kn	128.9' M	5.0 kn	0,690 NM	2,842 NM	4:27:43 PM Monday, April 08, 2013	00h:00m:00s

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 Odyssey will compute the simulation with the new parameters taking into account the currents (if available).

By default, Nobeltec TimeZero Odyssey 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.



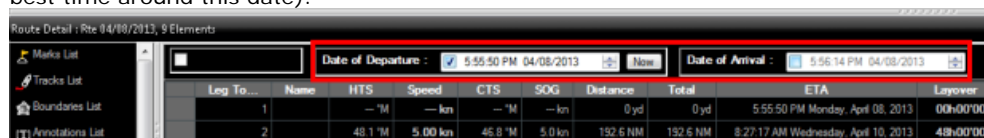
Currents that have been assigned manually to a leg will not display "Auto" in the Tidal Current name column.

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)

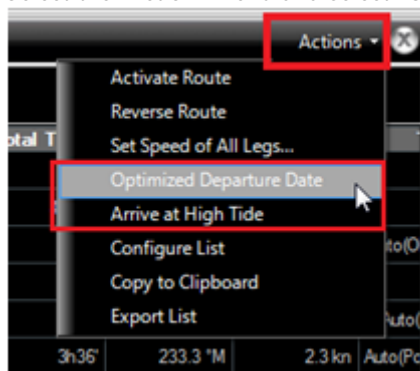
Route Optimization

To determine the best time of departure:

- Open the Route Detail
- Enter the route departure or arrival time desired (TimeZero Odyssey 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 Odyssey 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 Odyssey 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 Odyssey provides to do this.

Note: Nobeltec TimeZero Odyssey needs to be started in "Navigation" mode with a valid GPS fix for the route activation to be available.

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.

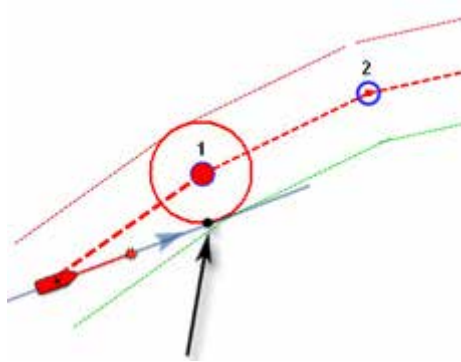
Note: Any Instant Active Waypoint created with the Go To tool will be erased when the Active Route is canceled. To save the destination drop a Mark using the Mark Tool onto the Active Instant Waypoint.

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:

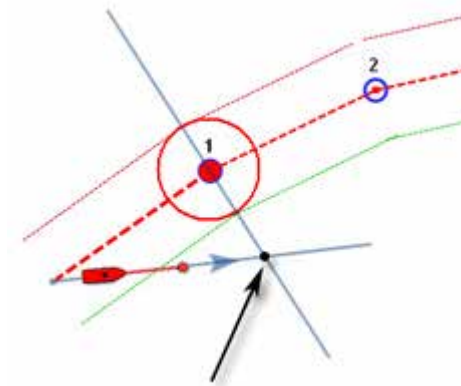
Circle:

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.

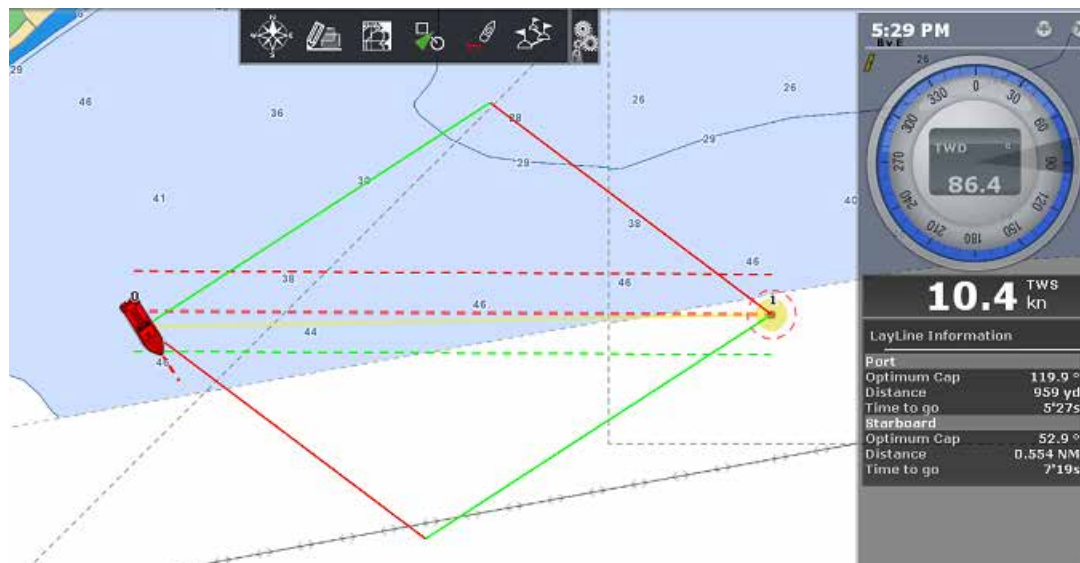
Laylines

The "Sailing Plus Pack" or "Routing Plus Pack" needs to be unlocked to access this feature

Laylines can be displayed on the chart from the "Mode" button located in the Ribbons. The Laylines will only be displayed on the chart with the following conditions:

- True Wind Direction (TWD) is received in TimeZero Odyssey (note that Nobeltec can compute TWD from True Wind Angle and Heading)
- A Go To or Route is Active and displayed on screen
- The destination (the Active Waypoint) is in such a way that would put the Sail Boat in a "No Go Zone" if sailed directly to the destination.

In the example below, the Wind Direction is coming from the East (displayed using a TWD Gauge NavData). The Active Waypoint is straight into the wind and it is not possible for the Sail Boat to reach directly the destination without tacking. In that case, the Laylines appear on the chart and show the two best tacking points (optimum course and distance):



A Layline NavData can be configured in the NavData bar. This will display the port and starboard optimum course and distance as well as Time to Go (or "Time to Tack").

Note that the laylines computation takes into account the [Polar](#) file loaded in the software, true wind direction and tidal currents (if applicable).

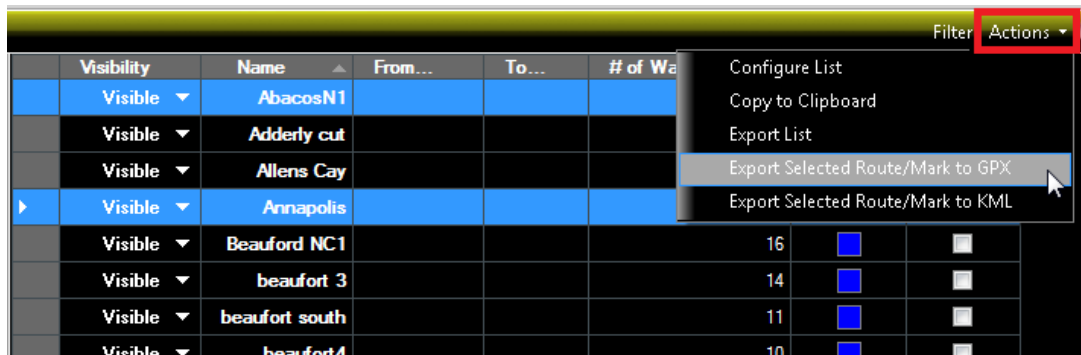
Importing & Exporting Route

Exporting

You can export all your Routes 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):

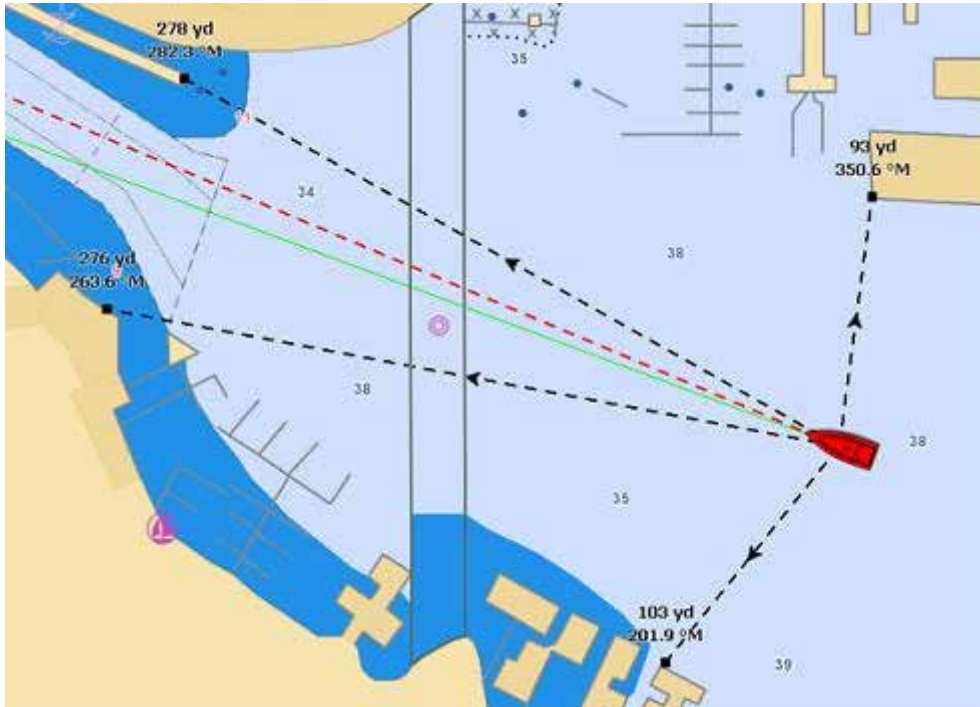


Note: After dropping the first point, it is possible to move the chart by clicking and dragging on the screen. You can also zoom in/out using the scroll wheel or keyboard shortcut. Please refer to the Scrolling & Zooming chapter.

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

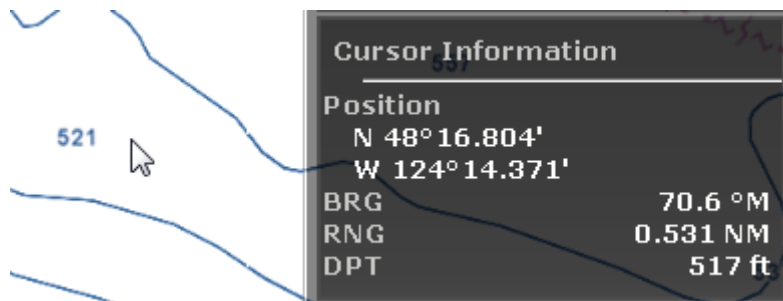
Divider lines can be moved by clicking and dragging the point to a new position

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.

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.

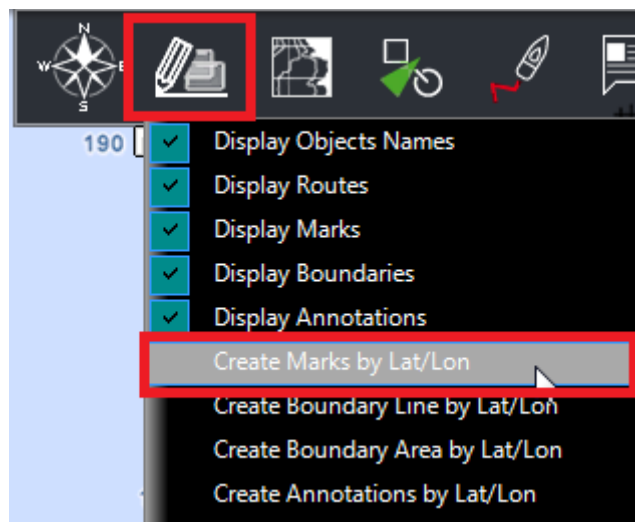
You can also right click anywhere on the Chart and choose "Create" -> "Mark".

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 any mark by right clicking on it and choosing "Hide". To display a mark that has been previously "hidden", open the "Mark List" by clicking on the "List" ribbon button (available by default in the Planning Workspace) and set the corresponding mark to "Visible".

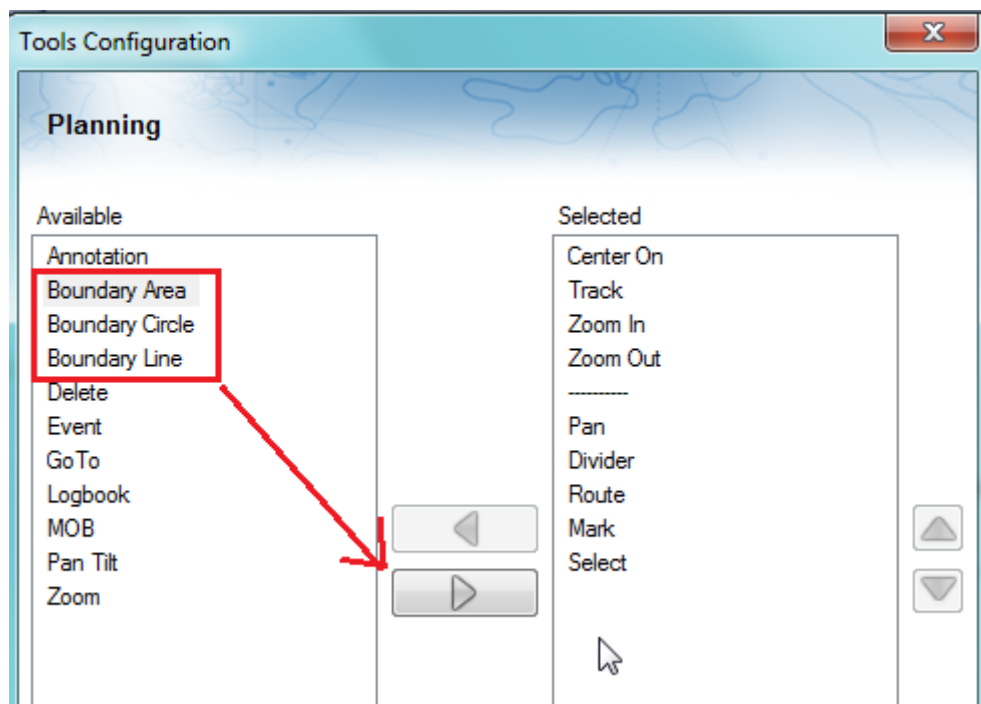
Note that all marks can be hidden by deselecting "Display Mark" from the "Marks" Ribbon Button.

Tips: To Show or Hide multiples marks, select multiple rows (using Shift or CTRL click) in the Mark list and then right click and choose "Visible/Hidden"

Creating & Editing Boundaries

Creating Boundaries graphically:

Lines, Areas and Circles can be created in TimeZero Odyssey 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.

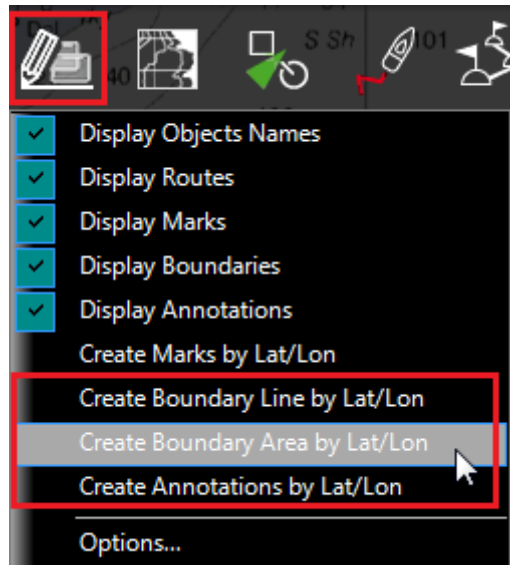
You can also right click anywhere on the Chart and choose "Create" -> "Boundary".

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:



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 any boundary by right clicking on it and choosing "Hide". To display a boundary that has been previously "hidden", open the "Boundary List" by clicking on the "List" ribbon button (available by default in the Planning Workspace) and set the corresponding boundary to "Visible".

Note that all boundary can be hidden by deselecting "Display boundary" from the "Marks" Ribbon Button

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.

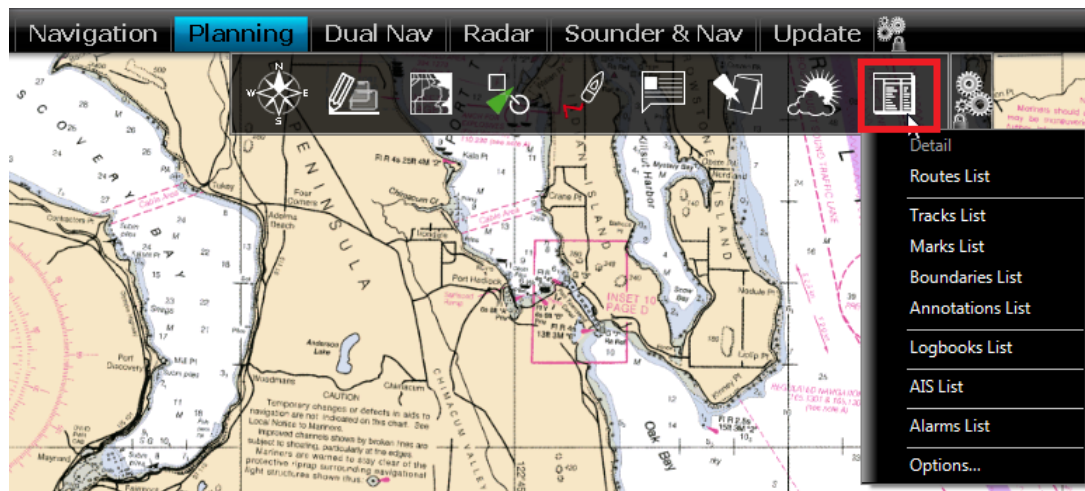
Tips: If you press and hold the SHIFT key on your keyboard, this temporarily activates the Selection tool (in the last mode it was used). When you release the SHIFT key, the previous tool is selected automatically.

Apply a modification on Multiple Objects

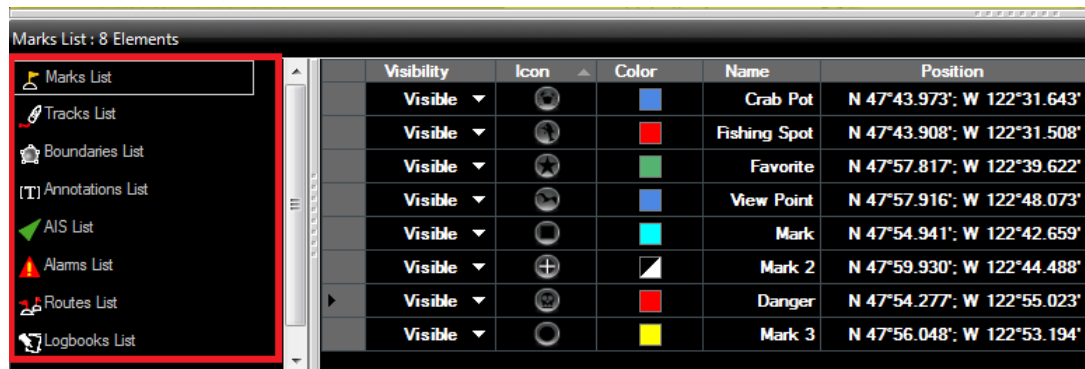
Once multiple objects are selected, you can right click on the selection to delete or change properties common to all the objects (color, icon etc...)

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:

	Visibility	Icon	Color	Name
	Visible ▾			Crab Pot
	Visible ▾			Fishing Spot
▶	Visible ▾			Favorite
	Visible ▾			View Point
	Visible ▾			Mark

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 recommend 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 do not affect what is displayed on the chart. The filters only affect what is displayed inside the list.

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 objects displayed inside the list.

Importing & Exporting Marks

Exporting

You can export all your Marks 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

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

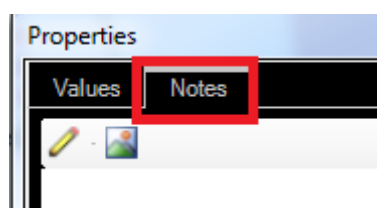
To import marks, select the "Import/Export" button available under the Nobeltec button. Please refer to the Import & Export Data chapter for more information.

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 Odyssey . 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)

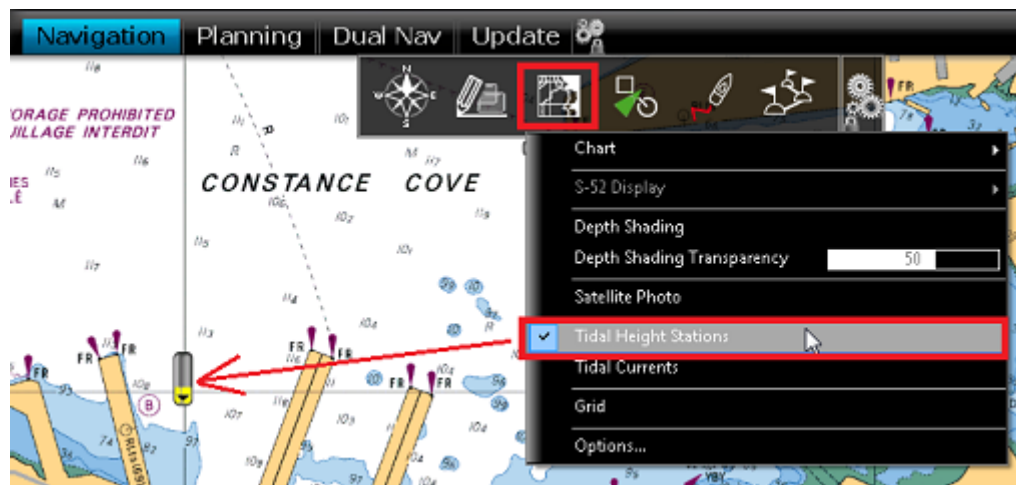
Tides & Tidal Currents

Tides

Nobeltec TimeZero Odyssey 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)

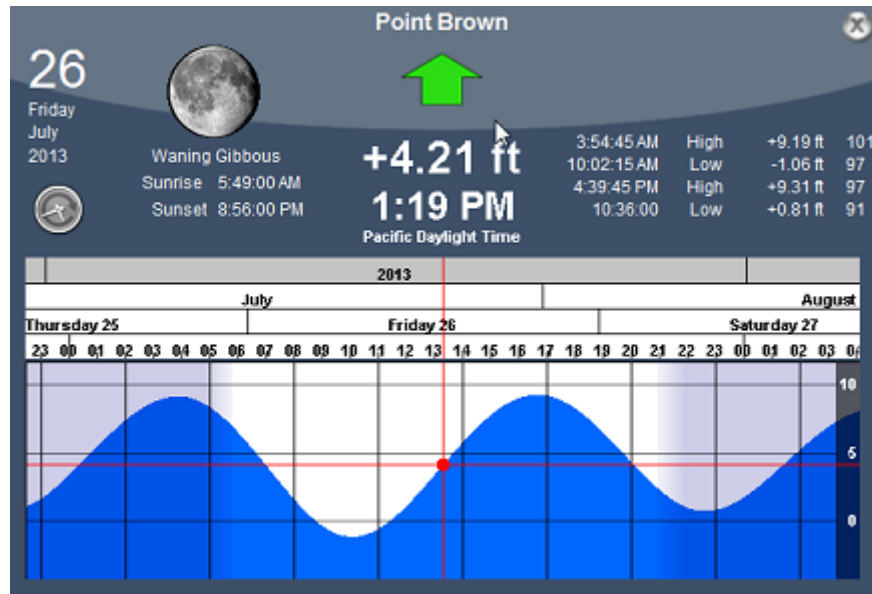
If you put your cursor over a tide icon or click on it, a tool tip indicating the Tide level will appear.

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

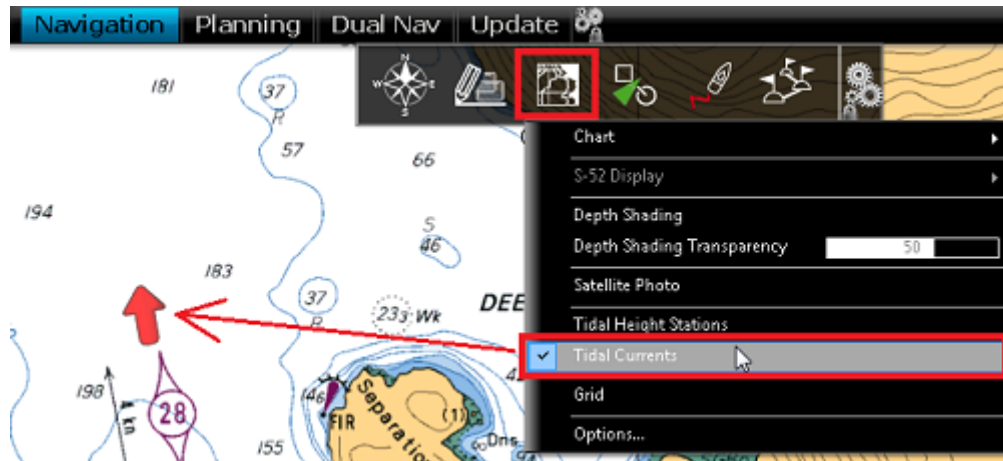
Tidal Currents

Nobeltec TimeZero Odyssey 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.

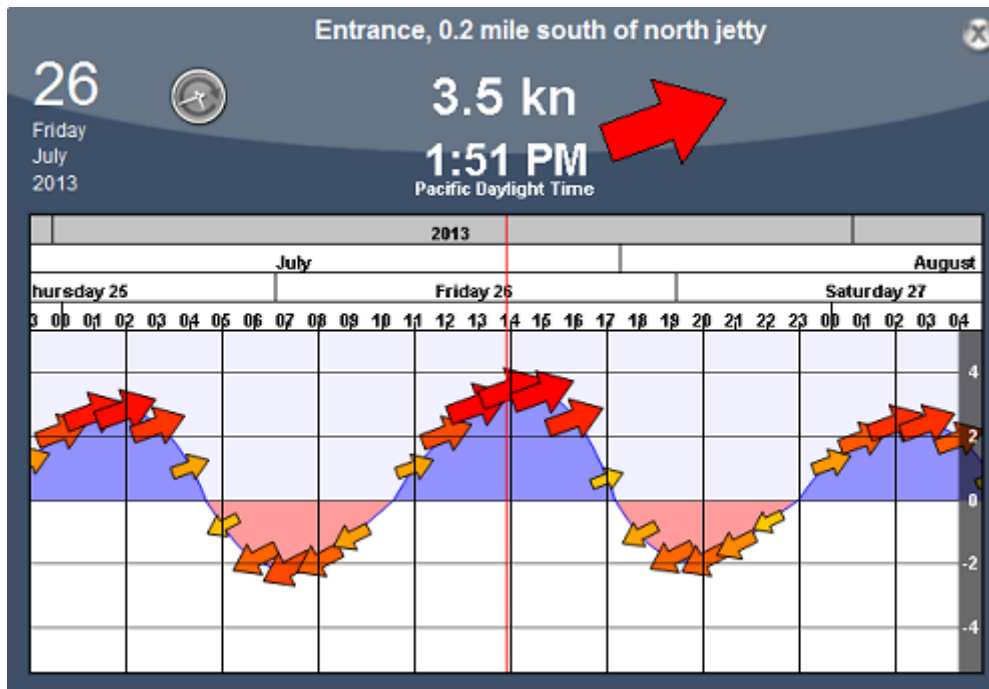
IMPORTANT: Oceanic Currents (that are downloaded with Weather Forecast) are displayed in blue, while Tidal Currents (integrated in the software) are displayed in yellow-red. Oceanic Currents (blue arrow) can be turned ON or OFF from the Weather button located in the Ribbon. Please refer to [Displaying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



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.

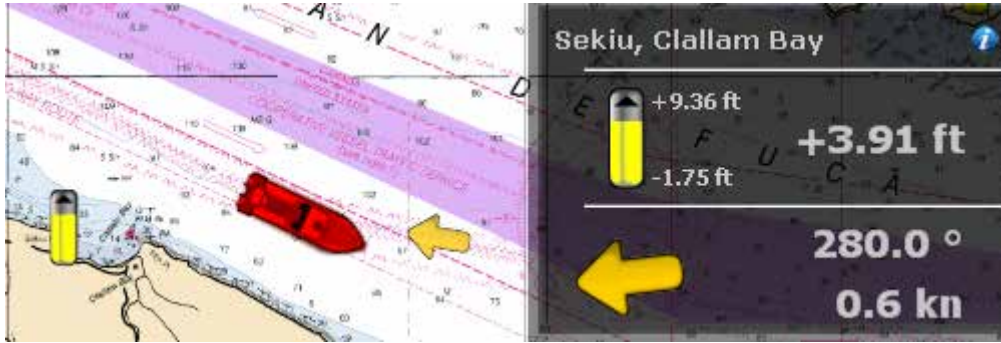
To set the time of the graph back to the current time, click on the clock button:



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".

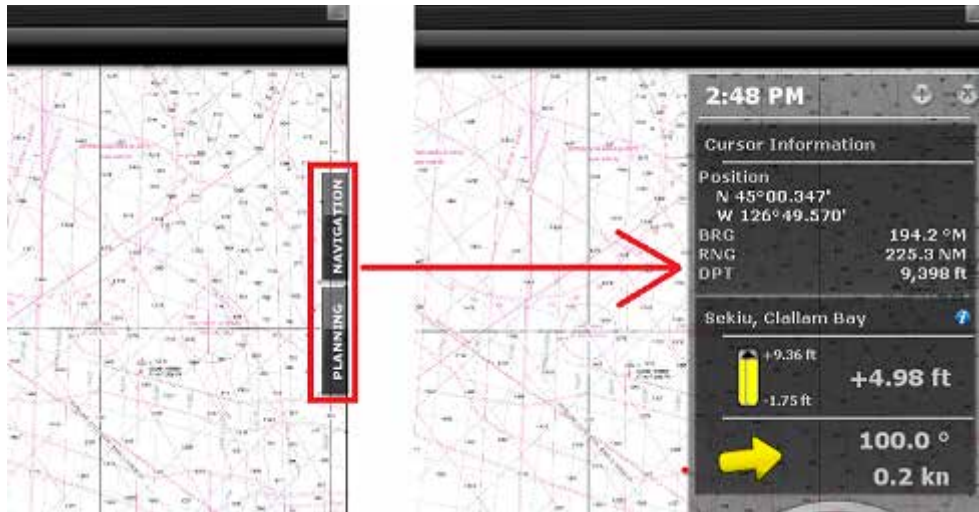
Note: It is not possible to fix a Tidal Current station. Currents are always automatically selected based on distance from own ship.

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

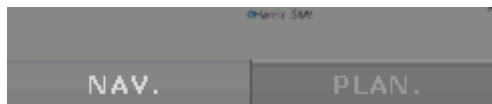
NavData

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:



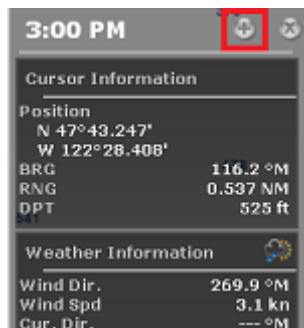
When the NavData panel is open, you can switch from various configurations by clicking on the tabs name located at the bottom of the panel:



Nobeltec TimeZero Odyssey 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:



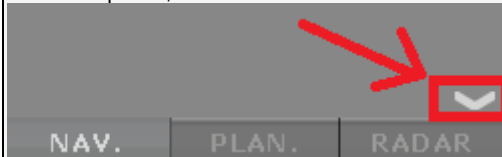
To close the entire NavData Panel, click on the "X" located next to the "+".

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 Odyssey :

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

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 Odyssey . 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 Odyssey 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 Odyssey .

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 Odyssey 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 Odyssey 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".

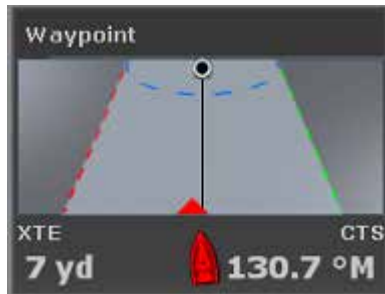
To change the data displayed in a Route NavData, just right click and select a new data from the contextual menu. The NavData will be immediately updated and display the selected data.

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 Odyssey 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 Odyssey 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 Odyssey 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 Odyssey from SOG when the speed is over 1kn)
- STW - Speed Through Water (also known as Speed Over Water)

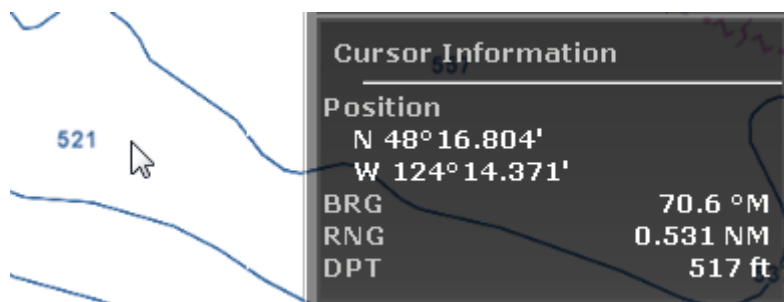
Note: The STW graphic NavData range can be setup using the "Average Boat Speed" from the [Initial Setup](#) Options: 0-15Kn for Sailing Boat, 0-30Kn for Commercial Boat and 0-50Kn for Power Boat.

- TWA - True Wind Angle (can be computed by TimeZero Odyssey from Apparent Wind and STW or Apparent Wind and SOG)
- AWA - Apparent Wind Angle
- AWS - Apparent Wind Speed
- VMG - Velocity Made Good

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.

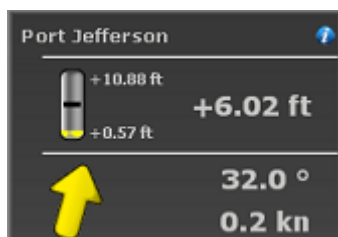
The following data can be displayed inside the Cursor NavData:

- 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.

- 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.

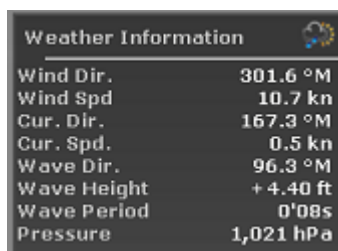
Note that it is possible to choose and fix the Tide Station being display in the NavData by selecting a Tide Station as a "Reference Station". Just right click on a Tide icon on the chart and select "Use as Reference Station". To release the reference station, you can right click on the NavData and select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



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):



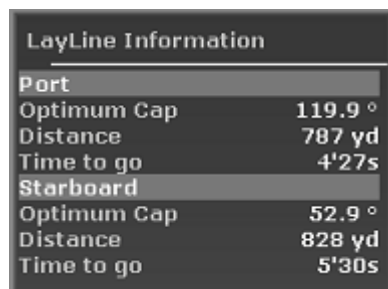
It also displays the GPS accuracy (based on *HDO*P) and the number of satellites in view that are used to compute the position fix.

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

Laylines NavData

The "Sailing Plus Pack" or "Routing Module" needs to be unlocked to access this feature

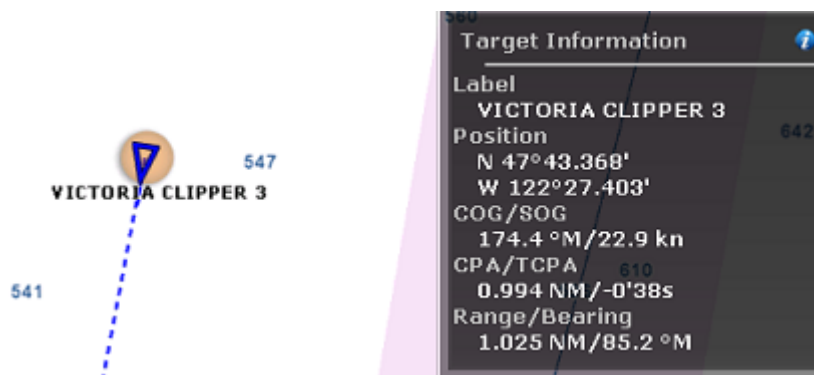
The Laylines NavData displays the Port and Starboard layline optimum Course and Distance as well as Time To Go ("time to tack").



Please refer to the [Laylines](#) chapter for more 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:

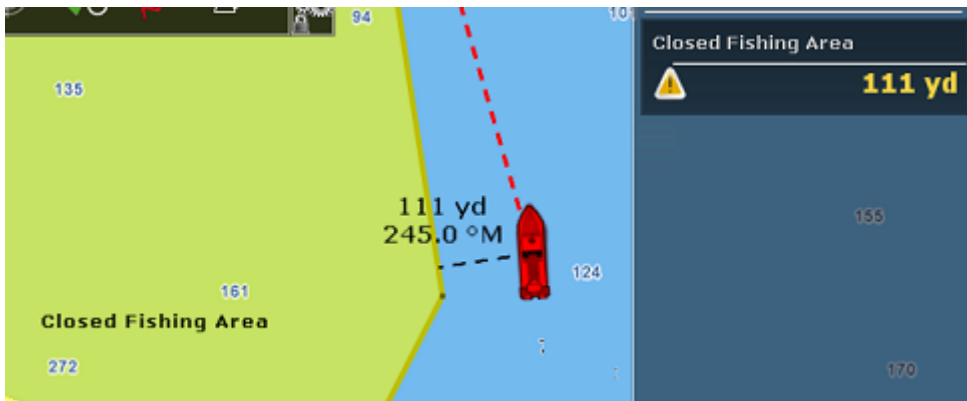
AIS List	Sort by RNG	
VICTORIA	175.7 °M	23.1 kn
WESTWOOD	353.9 °M	17.0 kn
CADEAU	343.6 °M	0.0 kn
367337230	343.6 °M	0.0 kn
ZEEHAEN	84.6 °M	0.0 kn

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

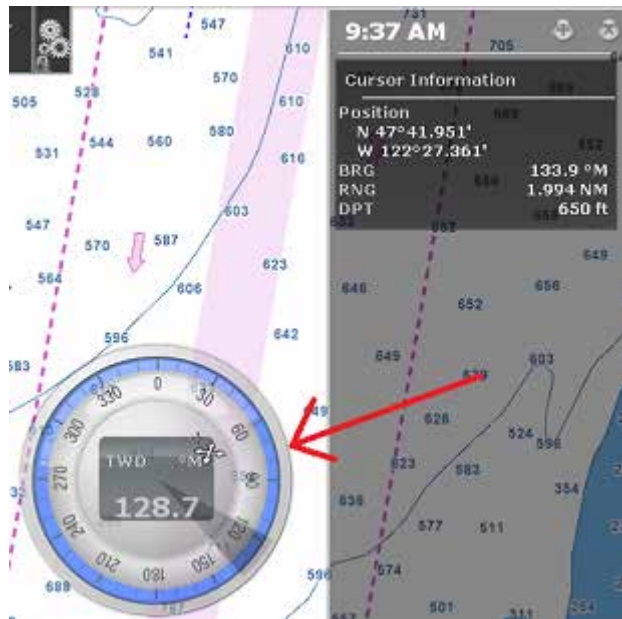
Any Boundary Area can be set as an alarm zone by right clicking on the area and selecting "Alarm". The Alarm Zone NavData is used to display the distance to the closest alarm boundary area. If "Alarm Zone" is set to "Progressive" from the [Alarms](#) Options, TimeZero Odyssey will start by raising a 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.

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.

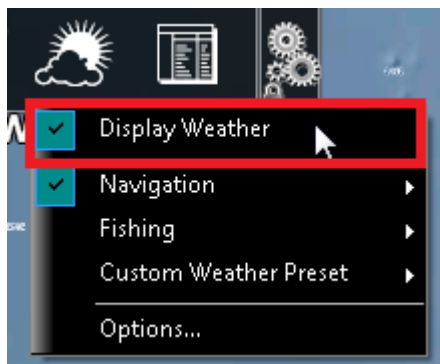
Tips: When requesting a Weather File by e-mail or when subscribing to a request, Nobeltec will use the default e-mail client. To change the default e-mail client of the computer, open Internet Explorer, select the TOOLS menu, INTERNET OPTIONS, PROGRAMS.

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).

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):

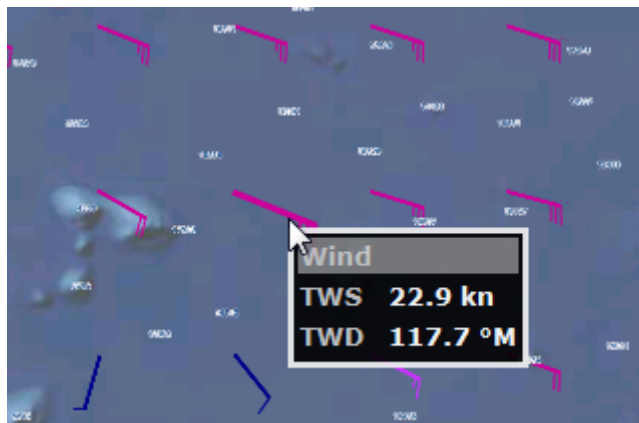
	This icon and color is used if the wind is in between 0 and 2.5Kn
	This icon and color is used if the wind is in between 2.5 and 7.5Kn (one small feather)
	This icon and color is used if the wind is in between 7.5 and 12.5Kn (one big feather)
	This icon and color is used if the wind is in between 12.5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

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

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".

Opening a Weather File

Nobeltec TimeZero Odyssey 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:

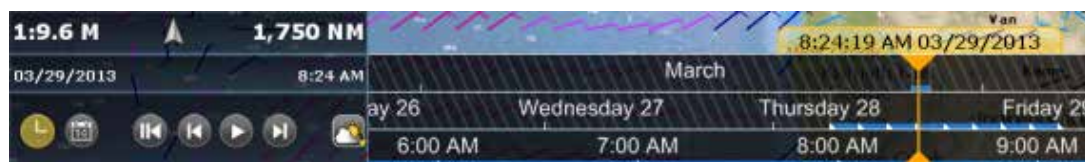
- Click on the Nobeltec Button and select "Open Weather File"
- Browse and select the GRIB file then click on "Open"

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":

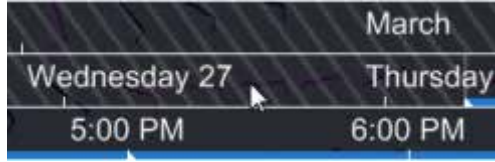


- Click on the "Rewind" ("File Start") button: 
- Click on the "Play/Pause" button to start/pause the movie: 
- To reset the virtual time back to the current time, click on the "Actual Time" button: 
- To step forward and backward using the file forecast interval, click on the "Step Back/Forward" buttons: 

- 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:



Weather Routing

Routing Introduction

The "Sailing Plus Pack" or "Routing Plus Pack " needs to be unlocked to access this feature

Like all sailors know, the most direct route isn't always the best one. TimeZero Odyssey Routing Module (Sailing Plus Pack) enables to calculate the optimal sailing route based on weather forecasts, currents, polars of your yacht and your own navigation style. The Routing algorithm uses the isochrons method (isochrons are displayed on the chart as alternate yellow and purple curves). Each isochron represents a group of points that the selected sailboat can reach in a fixed amount of time, dependent upon the weather forecast (wind, current, wave) and the boat speed (as defined in the polars).

Excerpts from comments on "weather routing" by Brice Pryszo, founder of MaxSea International:

In 1984, when I designed the "isochrones" routing algorithm method, the only existing routing solutions required the use of powerful shore-based computers which basically tested millions of routes to choose the best one. This required power and time then not available on board sail boats. The MaxSea routing algorithm was designed to be executed on a personal computer. The very first time that I tested the MaxSea weather routing algorithm was during the trans-Atlantic race "La Route de la Decouverte" with Philippe Jeantot onboard Credit Agricole. Philippe was late arriving at the Canary Islands due to equipment failure. The fleet leaders, 24 hours ahead, were sailing WSW in nice 10-15 Kt trade winds, south of a low pressure system (as any smart sailor would do). Meanwhile, the MaxSea weather routing algorithm sent Credit Agricole NW, straight into unsettled weather and unstable wind, up to the cold front of a deep low pressure system. The first hours were not welcoming but behind the cold front, a 20 Kt North wind pushed the large catamaran at twice the speed of the remaining fleet. Two days later, Credit Agricole was leading the race by several hundred miles. At that time no experienced navigator would have chosen such a solution!

Another astonishing example of the power of routing occurred when we tried to optimize an Atlantic passage West to East with regular high pressure mid Atlantic. As any good sailor knows, routing should begin by passing around the high pressure using a northerly course. Instead of following the quiet sailing to the east, the weather routing plunged the course to the south, straight into the low pressure center. Before reaching ineffective wind, the MaxSea routing jibbed the boat port into an increasing breeze perfect for reaching, making her route much faster than if she had taken the northern route with a downwind slog.

These two incidents had a major effect on sail boat racing results. Today, using routing is absolutely necessary to be competitive in ocean and long distance races. Routing has also proven to be great tool for cruisers because it greatly enhances safety and comfort. Routing can exploit user-defined characteristics and create what we call "cruising" or "safety" polar curves. Utilizing such polar curves the routing will do all it can to find a path which avoids strong wind. This is beneficial because strong wind is generally surrounded by medium wind in which the boat is faster allowing her to "escape".

Brice Pryszo

Note: Nobeltec TimeZero Odyssey uses the same routing algorithm as MaxSea.

Creating a Routing

The "Sailing Plus Pack" or "Routing Plus Pack " needs to be unlocked to access this feature

Before creating a routing, it is recommended to update the weather for the corresponding area. Please refer to [Requesting a Weather File](#) for more information. Make also sure to load the corresponding Polar file in TimeZero Odyssey .

Select the "Planning" WorkSpace and display the weather data on the chart (to make sure that the weather file cover the area). Please refer to [Displaying Weather Data](#) for more information.

Next, select your departure time by adjusting the date and time using the Time Bar at the bottom of the Planning Work Space. You can either drag the Time Bar with the cursor or click on the "Calendar" icon to precisely select a date and time. Note that you have to select a time and date that fall within the weather forecast range.



Select the "Launch Routing" tool available in the Toolbar:

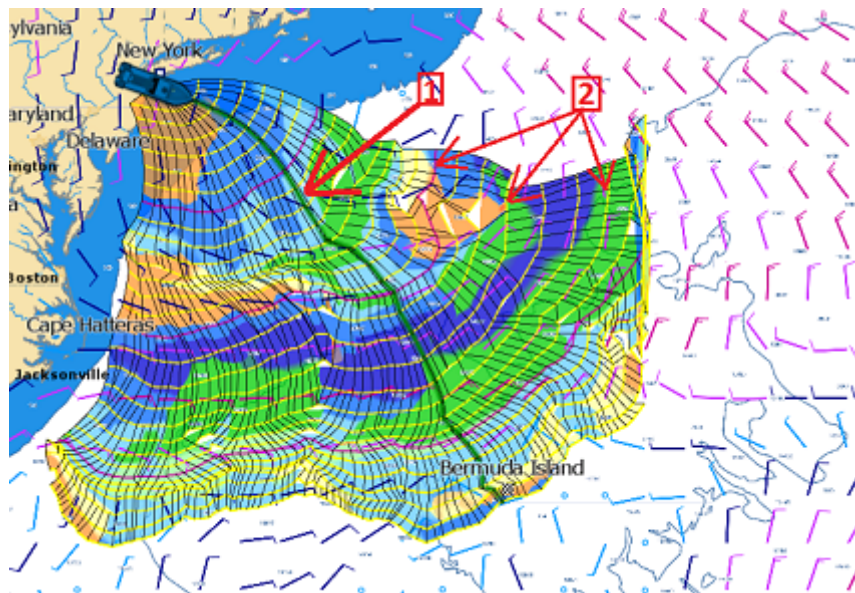
- Move the cursor over the charts (at the departure location) and click once to set the starting point
- Move the cursor over the charts (a rubber line will appear) and click a second time to set the arrival point

Note: If you are currently connected to a GPS and receive live position, you can just double click with the "Launch Routing" tool on your destination. This will launch a routing in between your current location and the destination.

TimeZero Odyssey will automatically launch the Routing calculation and play an animation of the optimized route. You can replay or pause the animation at anytime by using the Time Bar buttons (pause, next, previous, etc...)

Tips: You can press the ESC key of your keyboard to stop the animation

At the end of the animation, the routing will display the optimized route (1), the various "isochrons" (2) and the SailSets (in color):

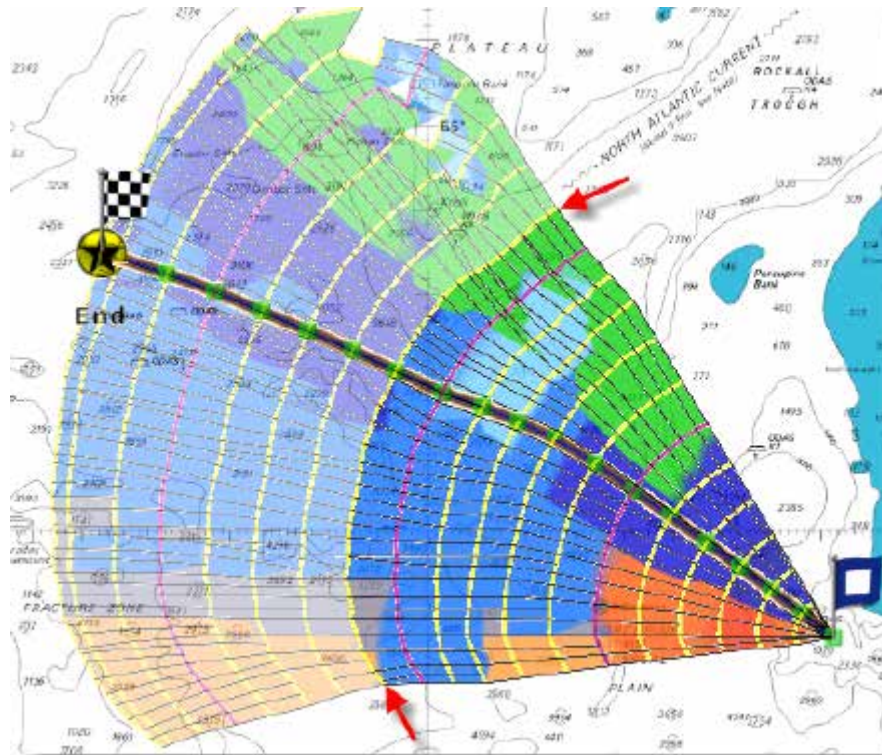


In some case, you might see a red flag appearing when using the Routing tool and preventing you to set the departure or arrival point. This means that either:

- the departure date is outside the time boundaries of the weather forecast
- a weather file is not loaded

- the weather maximum criteria (maximum wind, maximum wave) defined in the [Routing Options](#) are exceeded for this area

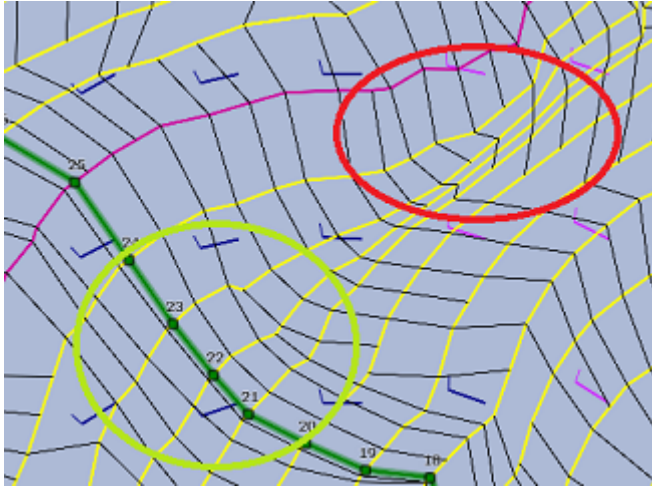
Note that the length of weather forecast should cover the entire time required for the trip. If this is not possible (for a very long cruise), TimeZero Odyssey will use the latest forecast available as an estimation, and display the isochrones in semi-transparent color. In the following example, Nobeltec is using the same fixed weather forecast (latest available) from the location pointed by the red arrow:



How to interpret isochrons

Each isochron represents a group of points that the selected sailboat can reach in a fixed amount of time. For example, if the isochron interval is 3 hours, then the first isochron represents the point the boat can reach within 3 hours, the second isochron is the point the boat can reach within 6 hours, the third one is the point the boat can reach within 9 hours, and so on. The isochrons are drawn as yellow curves on the chart. Every 24 hours, a purple color is used for the isochron (to quickly visualize a day worth of sailing on the chart).

The shape of the isochrons indicates global tendencies. For example, if a group of isochrons is "compacted" in the North (red circle below), and other group is "expanded" in the South (green circle), this indicates that the South holds the better options for travel:



Isochrons that are farther apart means faster speed (because a longer distance can be achieved in the same amount of time).

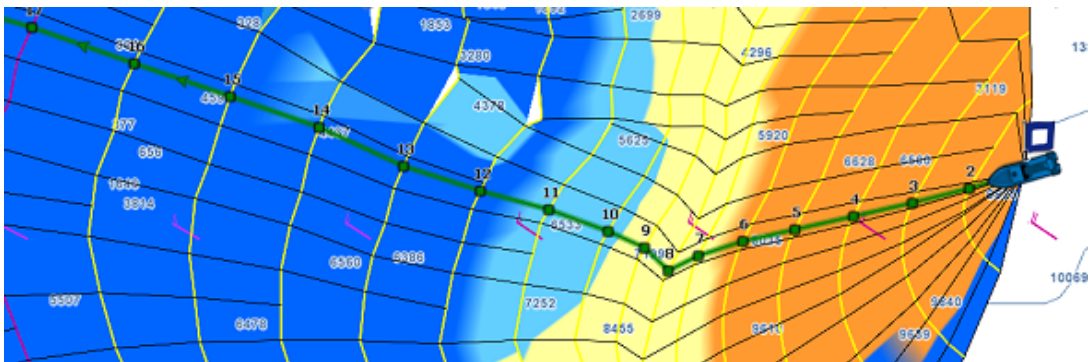
TimeZero Odyssey automatically analyzes these patterns, computes the best route possible and displays it in green on the chart.

How to Interpret SailSets

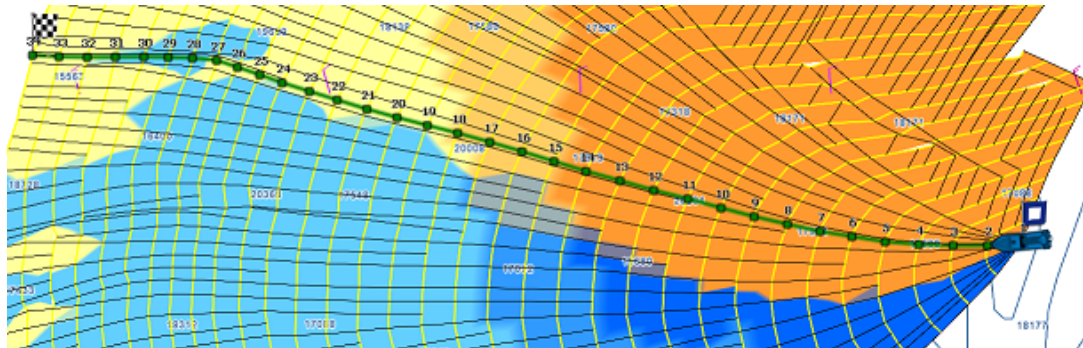
SailSets displays the Sail Configuration to be used in color on the chart. The color scale is defined in the [SailSets table](#) of the [Polar](#) Work Space.

Note that the default color scale pre loaded in TimeZero Odyssey allows you to graphically visualize quickly on the chart the "type of navigation" that you can expect for various area. Red colors are used for Close Hauled navigation or Downwind, green for Broad Reach and blue for Close and Beam Reach. The darker the color, the stronger the wind.

In the example below, the navigation will start Close Hauled with medium wind speed (orange), then the wind speed will drop around waypoint #6 (pale orange), then the configuration will change to reaching with low wind around waypoint #10 (pale blue), then the wind speed will increase around waypoint #12 (darker blue):

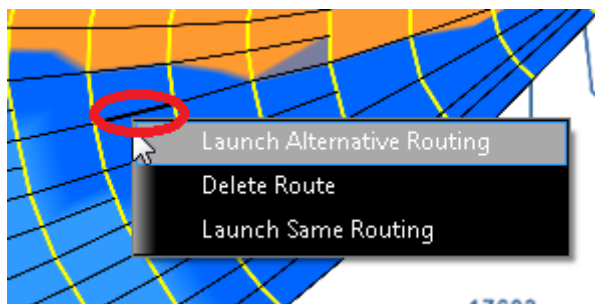


SailSets are great to identify alternate route that may offer easier navigation (if reaching your destination in the shortest time is not your primary goal). In the example below, the fastest route forces you to sail in an area with lots of Close Hauled at the beginning (orange color). You could define an alternate route (south) which would adopt a much easier navigation (in the blue area).



Alternate Routing

The alternate routing allows you to compute a new routing that will pass over a specific location. Sometimes, it can be better to adopt an alternative strategy (as explained above) or if the initial routing result is going over land or crossing any type of obstacle. All route plans drawn in black in between each isochrons are optimal routes (they allow to reach the corresponding location in the minimum amount of time). Simply right click on any Route Plan (black leg) and choose "Launch Alternative Routing".



Note: It is sometimes easier to zoom in on the chart in order to be able to right click on a specific Route Plan

Routing Options

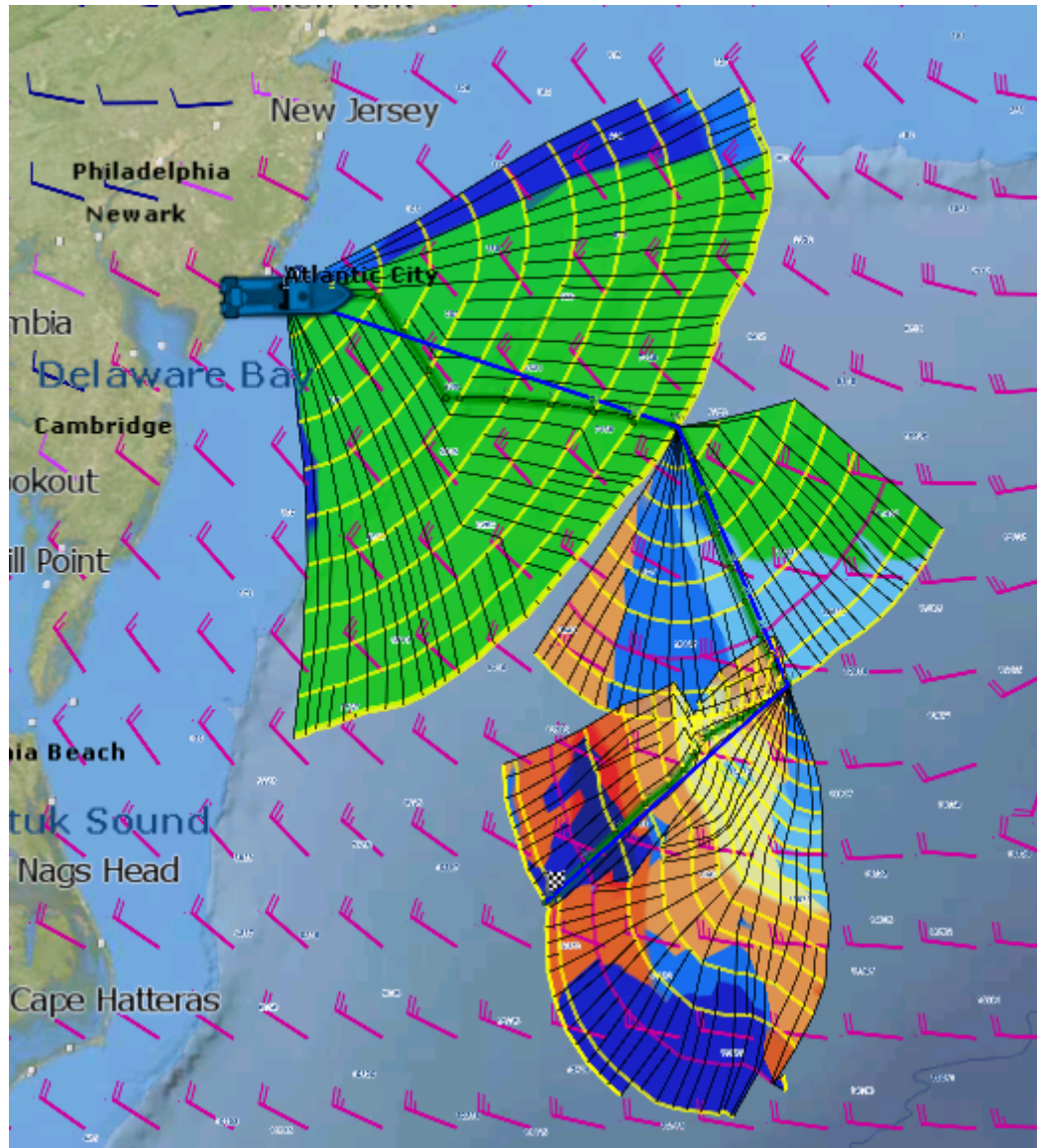
Various criteria used in the Routing algorithm can be adjusted from the [Routing](#) Options. It is common to setup limits (such as Maximum Wind Speed) and compare various scenario (with or without currents for example). In these cases, make sure to check the options "Save All Routings in Planning Spaces" in order to be able to compare multiple routings. When multiple routings are created on the chart (multiple green routes displayed), the Isochrons and SailSets that are displayed corresponds to the latest routing that was selected. If you want to display the Isochrons and SailSets for another Routing, simply click on it to select it.

Complex Routing

The "Sailing Plus Pack" or "Routing Plus Pack" needs to be unlocked to access this feature

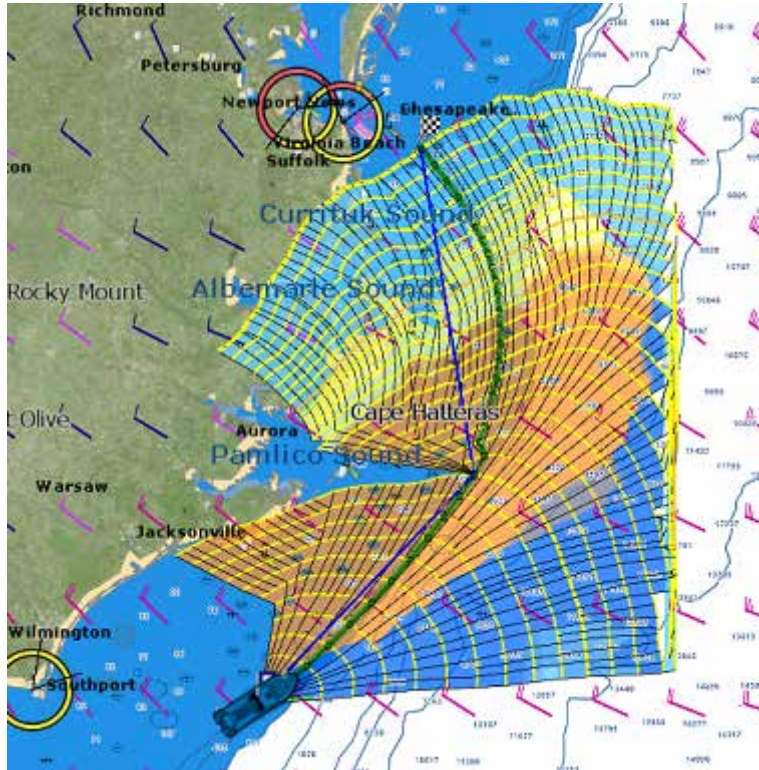
Routing from several Waypoints

It is possible to define a routing that go over specific location. To perform a "multi-leg" routing, start by creating a route with the Route tool. The various Waypoints of the route will define the various location that must be reached by the routing. Once the route is created, select the departure date from the Time Bar, select the "Launch Routing" tool and click once on the route. This will automatically create a routing that go over all the Waypoints:



Routing with constraints

Instead of defining "hard constraint" (going over a specific location), you can perform a routing with "loose" constraints. This can be useful to avoid specific area (a Cap for example). The steps are very similar to creating a routing from several Waypoints. Before clicking on the Route with the Routing Tool, simply right click on the Waypoints and select "Leave Port" or "Leave Starboard". This will allow the Routing algorithm to "explore" more options while leaving a specific mark(s) to the starboard or Port side. In the example below, a route consisting of 3 Waypoints was created. Then Waypoint #2 was set to "leave port":



Routing Detail

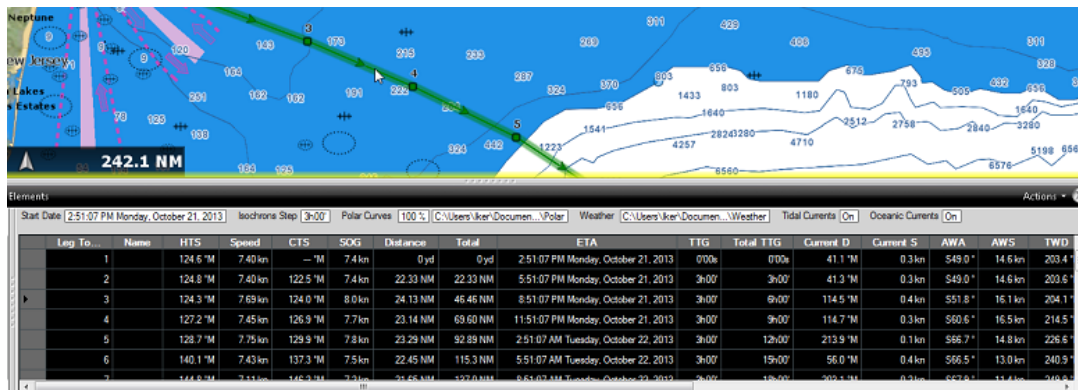
The "Sailing Plus Pack" or "Routing Plus Pack" needs to be unlocked to access this feature

The Routing Detail is very similar to the Route Detail. It displays information about the selected routing in a tabular format together with information about the routing as a whole (date of departure, weather file used for computation, etc...). Unlike the Route Detail, the Routing Detail cannot be modified. If you want to modify a parameter (date of departure, for example), a new routing must be launched.

Opening and Closing the Routing Detail

Note: Although you can display the Routing Detail in the Navigation Work Space, it is highly recommended to work in the Planning Work Space (that provides the Time Bar).

Select the Planning Work Space, zoom in on the optimized route and double click on it (double click on one of the green leg).



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 Routing Detail displays information about the routing itself:

- **Start Date:** The Routing date of departure
- **Isochrons Steps:** The step in between two isochrons displayed on the chart. In most cases (if there is no tack in between two isochrons), this will also be the step in between two legs.
- **Polar Information:** Indicates the polar file used for the routing. Note that the Polar Curve value is currently always set to 100% and cannot be modified.
- **Weather:** Indicates the weather file used for the routing.
- **Tide Current & Oceanic Current:** Indicates if the Tide and/or Oceanic current are taking into account for this routing (can be adjusted from the [Routing Options](#)).

The table display for each leg various useful information that can be displayed, hide or reorder from the "Action" menu:

- **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).
- 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
- Current S: is the current speed
- AWA: is the Apparent Wind Angle
- AWS: is the Apparent Wind Speed
- TWD: is the True Wind Direction
- TWS: is the True wind Speed
- Waves H: is the Wave Height
- Waves D: is the Wave Direction
- SailSet: is the SailSet used for this leg according to Wind Angle, Speed and the SailSet table defined in the Polar Work Space.

Note: Current, AWA, AWS, TWD, TWS, Waves are values coming from the Weather File. 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:

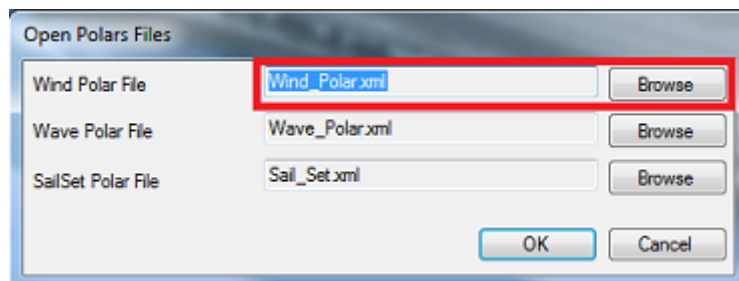
- Activate Route: To activate the planned route and start navigating. Note that this option is not available when Nobeltec TimeZero Odyssey is started in Home Planning mode or when no position (GPS) is available.
- Reverse Route: To reverse the direction of the planning route
- Configure List: To add 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

Polar

The "Sailing Plus Pack" or "Routing Plus Pack " needs to be unlocked to access this feature

Opening a Polar file

Boat speed used by the Routing algorithm and Laylines is entered into TimeZero Odyssey from a polar curve diagram which relates boat speed to wind speed at a given wind angle. To open a polar file, click on the Nobeltec button and select "Open Polar File". Click on the "Browse" button in front of "Wind Polar File":



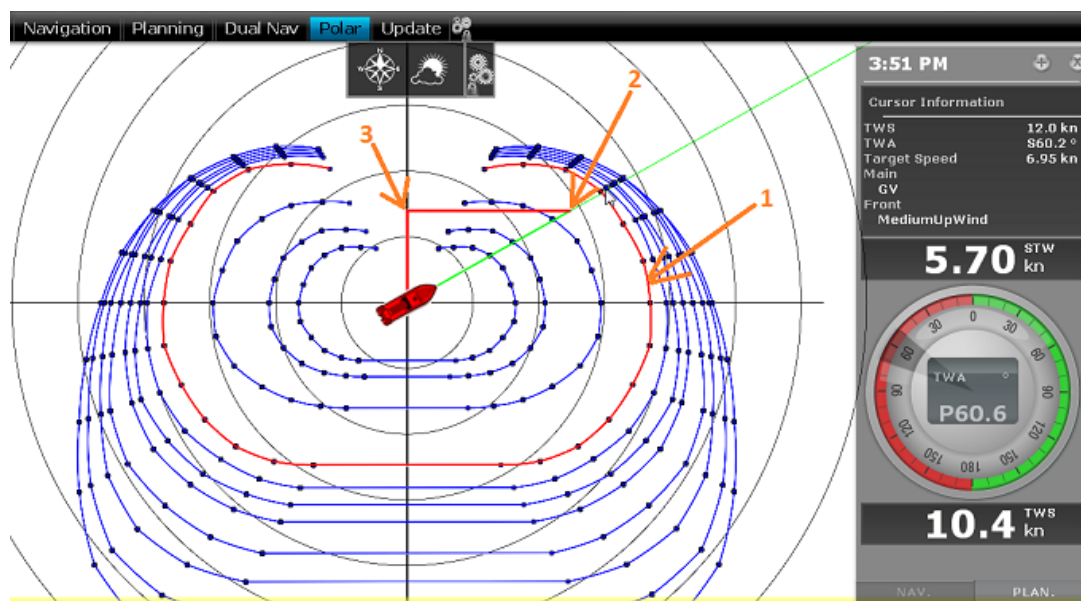
Select the polar file and click on "Open"

Note that various Wind Polar files for multiple sailing boats can be downloaded from www.nobeltec.com. Just sign in, click on "My Nobeltec" then "My Wind Polar".

Note: You should not have to open any Wave_Polar file. The default Wave Polar file loaded in TimeZero Odyssey should work for every users (as it applies an automatic relative offset to the Wind Polar).

The polar Graph

The polar file loaded in the software can be viewed and modified from the "Polar" Work Space:



The various polar curves (in blue) represent the boat theoretical speeds according to True Wind Angle (TWA) and True Wind Speed (TWS). The theoretical boat speed value is given by the distance in between the point on the polar curve and the center of the graph (the farther away the greater the speed). There is one polar curve per True Wind Speed value. If TimeZero Odyssey is connected to a sensor that output True Wind Speed, the polar curve corresponding to the real time wind speed ("Live Polar") will be highlighted in red (1).

Note: The graph can be either displayed in "Wind Up" (default) or "Head Up" from the "Mode" button located in the ribbon. The traditional "Wind Up" display places the wind axis vertically on the graph.

If TimeZero Odyssey is connected to a speed sensor (Speed Through Water), the real time boat speed will be displayed (2) with its projection on the wind axis (3) (aka: VMG).

In the Polar Work Space, the Cursor Information NavData gives various information related to the polar. In the example above, the cursor has been placed over the real time polar curve (displayed in red) in the boat direction (aligned with the heading line). We can learn that the Target Speed

(theoretical boat speed) is 6.95Kn. The real time boat speed (STW) is only 5.70Kn. So, in this case, the boat is not reaching maximum performance. This is either because the polar data over estimates the boat performances or because the sail configuration needs to be adjusted by the crew to meet the real boat performance.

Modifying the Polar data

It is possible to adjust the polar data by using the table at the bottom of your screen. Just make sure to select "Wind Polar" on the left. Value can me modified (like in a spreadsheet) and column and row can be added or deleted. Just right click on the column or row header you wish to add or delete:

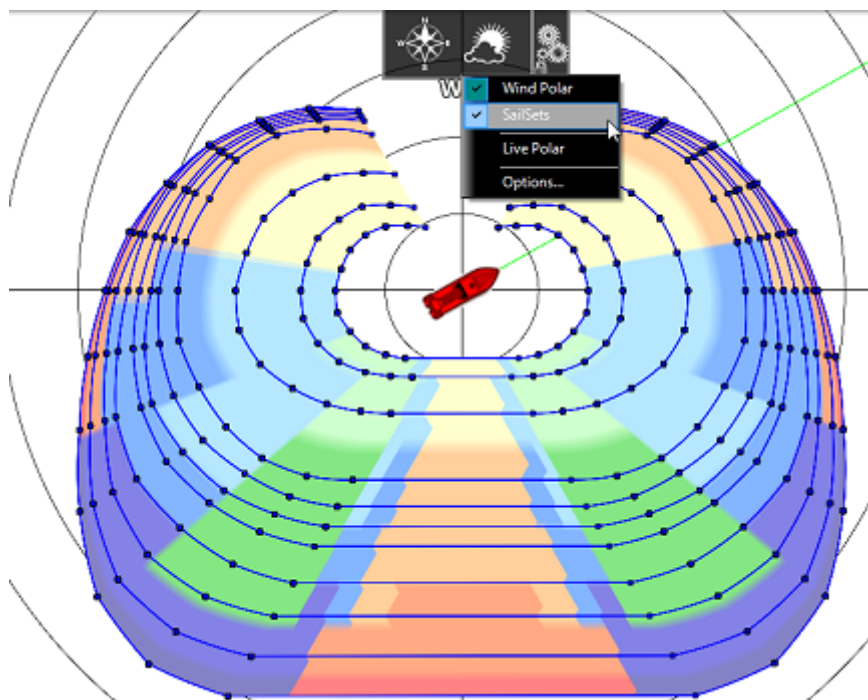
	3.0 kn	4.0 kn	6.0 kn	10.0 kn	12.0 kn	14.0 kn	16.0 kn	20.0 kn	24.0 kn	28.0 kn	32.0 kn
30.0 °	1.90 kn	2.50 kn	3.50 kn	4.70 kn	5.10 kn	5.20 kn	5.30 kn	5.40 kn	5.40 kn	5.40 kn	5.40 kn
40.0 °	2.20 kn	2.90 kn	4.00 kn	5.50 kn	5.80 kn	5.90 kn	6.00 kn	6.10 kn	6.20 kn	6.20 kn	6.20 kn
50.0 °	2.60 kn	3.40 kn	4.60 kn	6.30 kn	6.50 kn	6.60 kn	6.70 kn	6.80 kn	6.90 kn	6.90 kn	6.90 kn
60.0 °	3.00 kn	3.90 kn	5.10 kn	6.80 kn	7.00 kn	7.20 kn	7.30 kn	7.50 kn	7.60 kn	7.60 kn	7.60 kn
70.0 °	3.40 kn	4.40 kn	5.50 kn	7.40 kn	7.60 kn	7.70 kn	7.70 kn	8.00 kn	8.10 kn	8.20 kn	8.20 kn
80.0 °	3.80 kn	4.90 kn	5.70 kn	7.60 kn	7.90 kn	8.10 kn	8.10 kn	8.40 kn	8.50 kn	8.70 kn	8.80 kn
90.0 °	4.20 kn	5.30 kn	7.40 kn	7.90 kn	8.10 kn	8.40 kn	8.40 kn	8.70 kn	9.00 kn	9.20 kn	9.30 kn
100.0 °	3.30 kn	4.20 kn	5.90 kn	7.50 kn	8.00 kn	8.40 kn	8.70 kn	9.10 kn	9.40 kn	9.70 kn	9.90 kn

The rows represents the angle in between the wind and the boat (where is the wind coming from relative to the bow of the boat). The columns represent the Wind Speed. So, in the table above, if the True Wind Speed is 20Kn and if the True Wind Angle is 60 degree, the target speed (theoretical boat speed) is 7.5Kn. You can edit this value by selecting the cell and entering the new value.

As soon as you make a change in the table, the graph above will update. If you want to store permanently the modification, make sure to click on the "Save" button at the top of the table. This will write the modification to the polar file on your Hard Drive.

SailSets

The SailSets color can be displayed on the Polar graph from the "Weather" button in the ribbon:



If you select "SailSets" on the bottom left, the Sail Set color table will be displayed. Each cells can be assign new sail configuration using a drop down menu. If you want to change a sail configuration, click on the "SailSets Configuration" button at the top of the table.

Note: For the average user, the default SailSets configuration does not need to be changed. In this case, the color will simply highlight on the chart the type of navigation (Close Hauled, Reaching, etc...)

Advanced Routing

The "Sailing Plus Pack" or "Routing Plus Pack " needs to be unlocked to access this feature

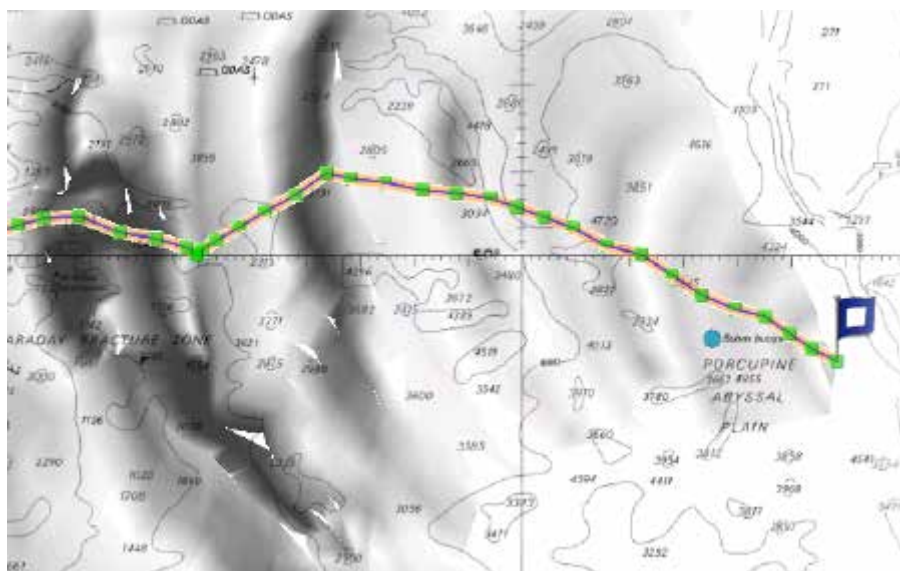
The "Advanced Routing" or "Racing" Plus Pack add the following advanced features to the regular "Routing" Plus Pack:

Routing Variability

The Variability allows to identify important variation of wind direction and speed directly on the chart. Dark areas indicates passage that would require attention (weather transition, important pressure gradient,...)

The variability uses and inverse factor: it is equal to 100% if wind direction and speed are stable and decrease when the routing shows important variations.

To display the variability on the chart, select "Variability" located in the "Weather" button in the Ribbon of the Planning WorkSpace:



The variability can also be displayed leg by leg in the Routing Detail list.

Polar Modification (Percentage)

The Advanced Routing Plus Pack allows you to adjust the Polar Curves Percentage from the "Routing" Options. You can increase or decrease the overall polar performance without having to load multiple polar files. By selecting "Save All Routings in Planning Space", you can launch multiple routings (same origin and destination) with different Polar percentages. This will show you multiple scenarios on screen illustrating what would happen if you under perform (lower percentage) or over perform the Polar speed during your cruise.

The example below shows two routings that have the same origin, arrival and start date. One routing was made without any polar modification (0) and the second one was made with a 10% reduction:



You can see that if you under perform by 10%, the two optimum routes are totally different.

To help you adjust the polar in real time, you can display the real time "% Polar" computation in the NavData. TimeZero Odyssey will compare the theoretical data from the Polar file with the real time speed and wind data from your sensors. The "% Polar" will tell you in real time if you over or under perform the polar data.

Weather Modification

With experience, you may learn how to adjust the weather prediction based on real time observation from you or other competitor. The Advanced Routing Plus Pack allows you to adjust the Weather File using multiple criteria.

You can adjust the overall wind speed (either by percentage or constant value), wind direction and the entire weather grid location. All these parameters can be adjusted from the "Routing" Options.

Targets

Target Overview

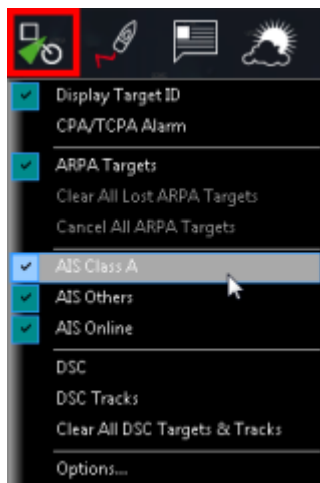
Nobeltec TimeZero Odyssey can track multiple types of targets:

- 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

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 Odyssey 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 Odyssey 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 Odyssey , 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 Odyssey .

AIS Filtering

AIS targets can be filtered (automatically hidden) by adjusting the "Hide AIS target farther than" parameter located in the [Targets](#) Options.

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 Odyssey will process radar data for a few revolutions and display the target using a dashed circle.
	Once the target is fully acquired, TimeZero Odyssey 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 Odyssey will display their returned position. TimeZero Odyssey 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:

	DSC target icon
	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 Odyssey , an alarm will be triggered and the DSC target icon will be displayed in red.

Target Information

Nobeltec TimeZero Odyssey 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.

Range	Bearing	COG	SOG	Heading	Destination	Vessel Type	Ve
749 yd	266.7 °	178.0 °	0.0 kn	-- °		--	15: Not Defined
757 yd	267.7 °	15.0 °	0.0 kn	-- °		--	15: Not Defined
791 yd	268.0 °	283.0 °	0.0 kn	-- °		--	15: Not Defined
0.544 NM	265.1 °	286.0 °	0.8 kn	-- °		--	15: Not Defined
0.686 NM	152.5 °	167.0 °	0.0 kn	-- °		--	15: Not Defined

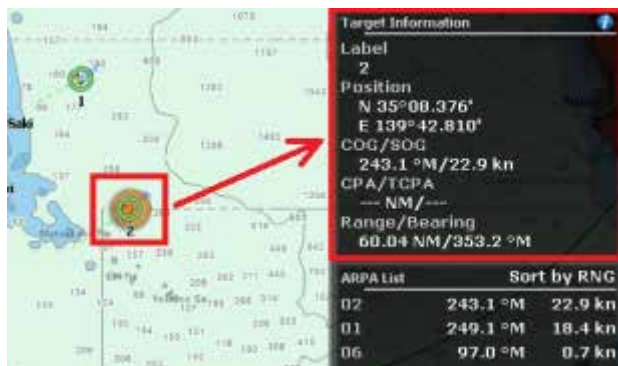
To select and center a target on the Chart, click on the first column corresponding to the target you want to display:



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 Odyssey will start recording and displaying a line showing you the past position of the target.

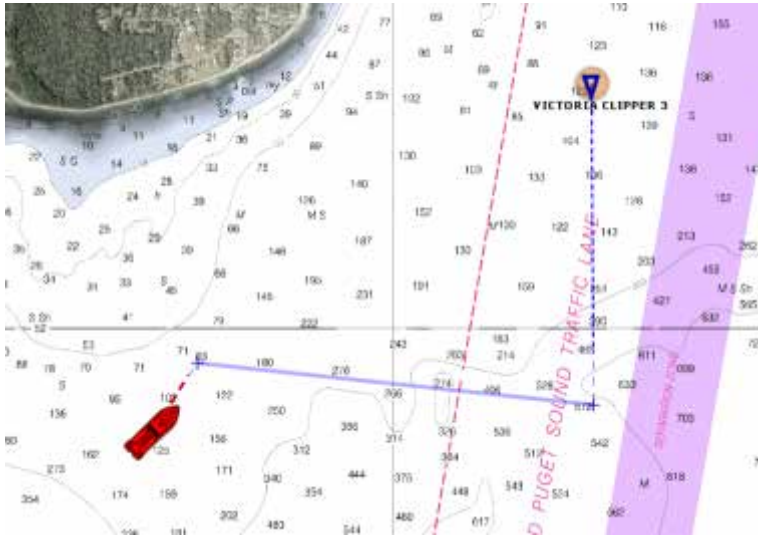
Note: DSC Targets have their tracks automatically and always recorded. Select "DSC Tracks" from the "Target" button in the Ribbon to display them on screen.

The track line has the same color as the target (this can be changed by right clicking on the target or the track).

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 Graphic CPA

Graphic representation of the target Closest Point of Approach (Graphic CPA) is available on the selected 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 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)

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 Odyssey 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 Odyssey , 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 Odyssey . 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 Odyssey 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 Odyssey 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).

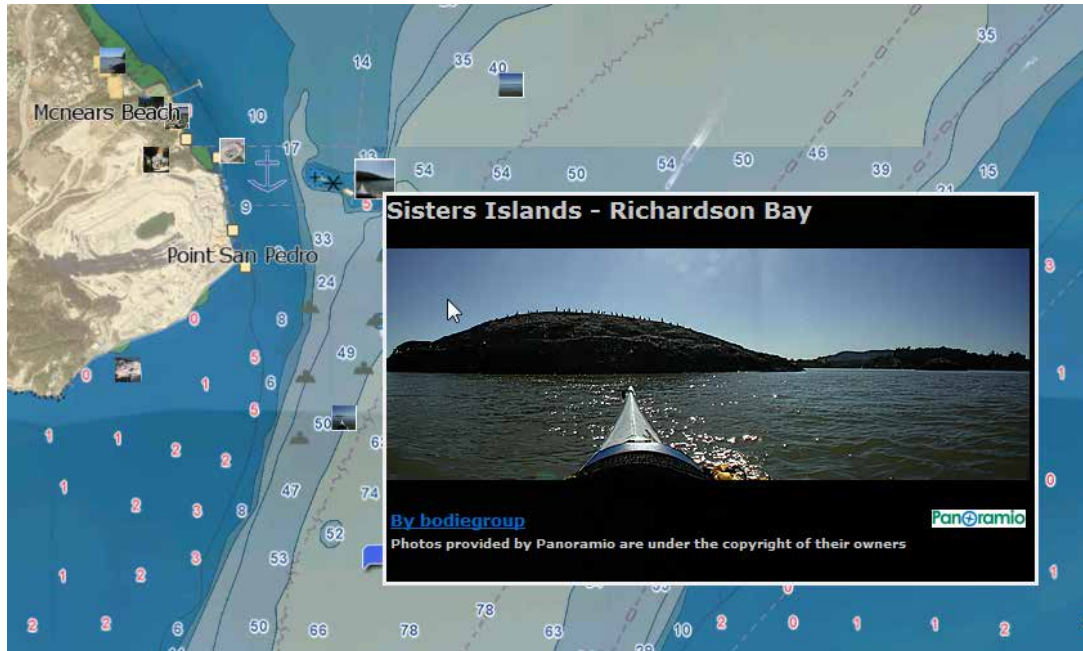


To access AIS Online target information, rollover the AIS icon with your cursor or click on it. In addition to basic data (such as speed, course, ...), the AIS online displays a picture of the ship (when available):



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 Odyssey 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

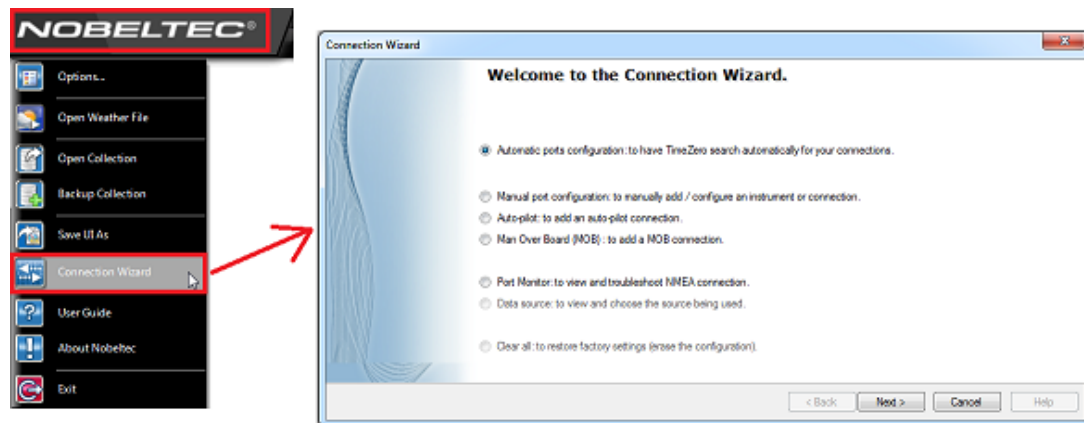
Introduction

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 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:

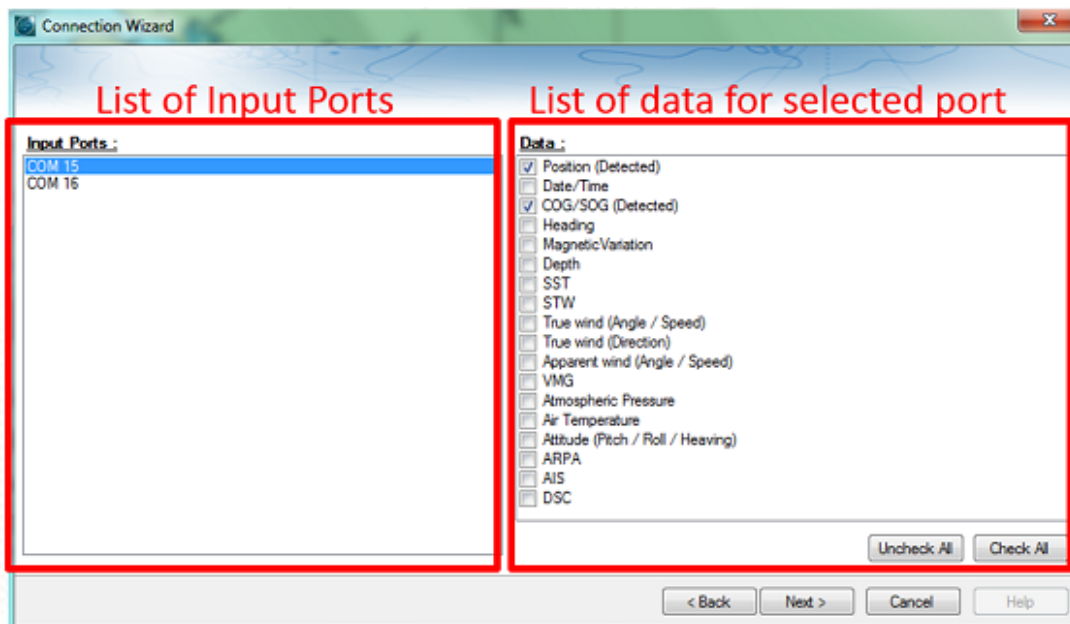
- NMEA0183 sensors (GPS, AIS, Heading, Wind Sensor, etc...) connected through a Serial COM port or USB to Serial Adapter (at 4800 and 38400 baud rate).
- NMEA200 sensors (GPS, AIS, Heading, Wind Sensor, etc...) connected through the Actisense NGT1-USB or through the Nobeltec Gateway.
- NavNet Data (FA30, 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 Odyssey 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.

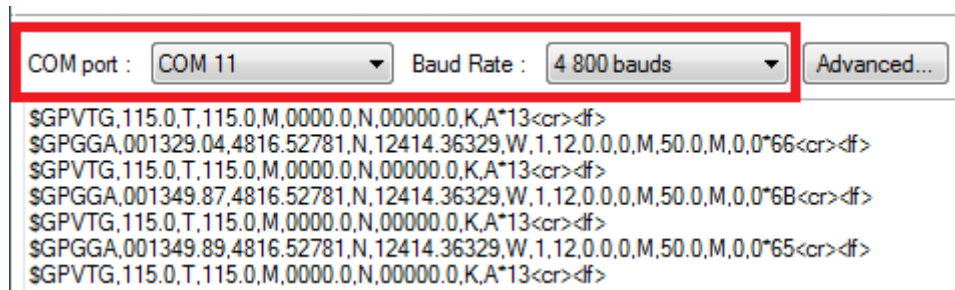
Note: If you feel you are missing a port or data type, check the wiring and use the port monitor to check that data is correctly flowing.

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.

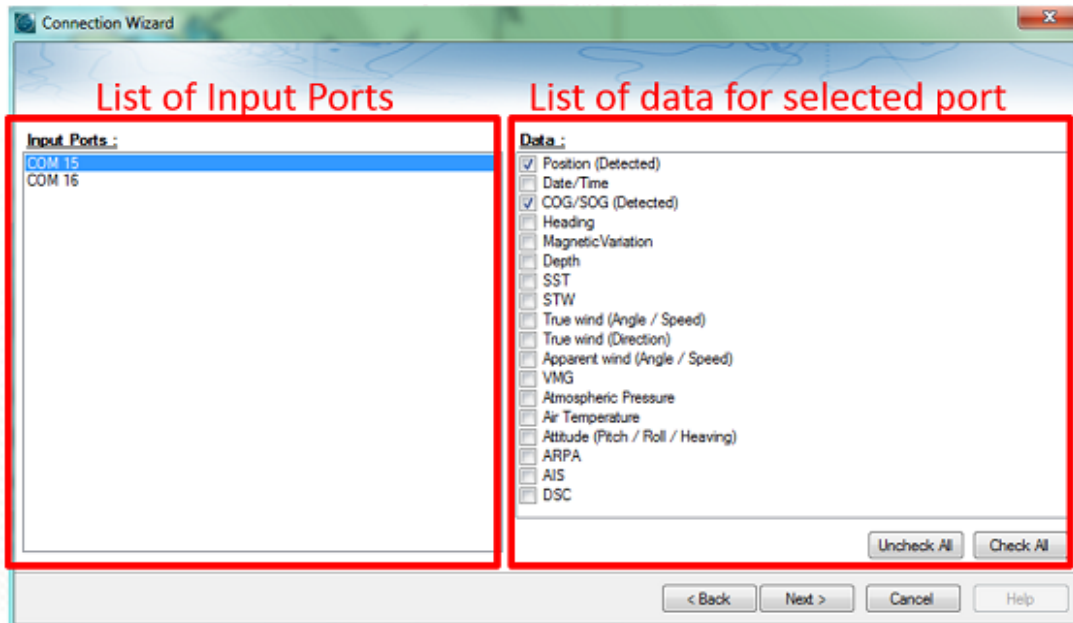
After selecting a COM port, you should see NMEA0183 sentences flowing in the window below. Valid NMEA sentences should:

- 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 Odyssey 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 Odyssey cannot automatically detect (and thus check) specific data types. This can happen with AIS receivers that may not send target data while TimeZero Odyssey 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 "IAI" 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:

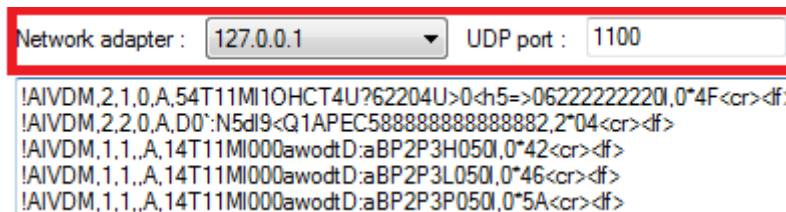
Select this option to configure or modify a NavNet connection when the computer is connected to the Furuno NavNet network through the Ethernet port.

- "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:



Network adapter : 127.0.0.1 UDP port : 1100

```

!AIVDM,2,1,0,A,54T11MI10HCT4U?62204U>0<h5=>0622222220I,0*4F<cr><lf>
!AIVDM,2,2,0,A,D0`N5dl9<Q1APEC58888888888882,2*04<cr><lf>
!AIVDM,1,1,,A,14T11MI000awodtD:aBP2P3H050I,0*42<cr><lf>
!AIVDM,1,1,,A,14T11MI000awodtD:aBP2P3L050I,0*46<cr><lf>
!AIVDM,1,1,,A,14T11MI000awodtD:aBP2P3P050I,0*5A<cr><lf>

```

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 Odyssey to an Autopilot or any External Display.

Each autopilot requires that certain, specific information be provided by TimeZero Odyssey . 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 Odyssey

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 Odyssey 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):

The screenshot shows the 'Output Configuration' window. At the top, there are two dropdown menus: 'COM port' set to 'COM 10' and 'Baud Rate' set to '4 800 bauds'. To the right of these is an 'Advanced...' button. Below this is a section titled 'Select output sentences:' with a list of checkboxes for various NMEA sentences: DPT, GGA, GLL, HDG, MWD, MWV, OSD, RMC, VPW, VTG, ZDA, APB, BOD, BWC, BWR, HSC, RMB, and XTE. The 'RMC' and 'XTE' checkboxes are checked. To the right of the list are several configuration panels: 'NMEA Talker' with a dropdown set to 'II'; 'APB' with radio buttons for 'Magnetic North' (selected), 'True North', and 'Both'; 'MWV' with radio buttons for 'True Wind', 'Apparent Wind', and 'Both' (selected); 'APB & HSC Heading To Steer' with radio buttons for 'Course To Steer' (selected) and 'Heading To Steer (real time)'; 'XTE' with a 'Precision' dropdown set to '4' and an unchecked 'Zeus Mode' checkbox; and 'DPT Offset' with radio buttons for 'From transducer to keel' (selected), 'From transducer to waterline', and 'Both'.

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 Odyssey 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 Odyssey 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 Odyssey and your Autopilot

- Activate a route in TimeZero Odyssey (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 Odyssey are using the same North reference (either "True" or "Magnetic"). You can adjust the North reference in TimeZero Odyssey 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 Odyssey 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:

NMEA Taker

APB
 Magnetic North
 True North
 Both

MWV
 True Wind
 Apparent Wind
 Both

APB & HSC Heading To Steer
 Course To Steer
 Heading To Steer (real time)

XTE
 Precision
 Zeus Mode

DPT Offset
 From transducer to keel
 From transducer to waterline
 Both

NMEA Talker:

This setting changes the NMEA talker used in the NMEA sentence generated by TimeZero Odyssey . 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 Odyssey , 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 Odyssey 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 Odyssey . 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 Odyssey 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.

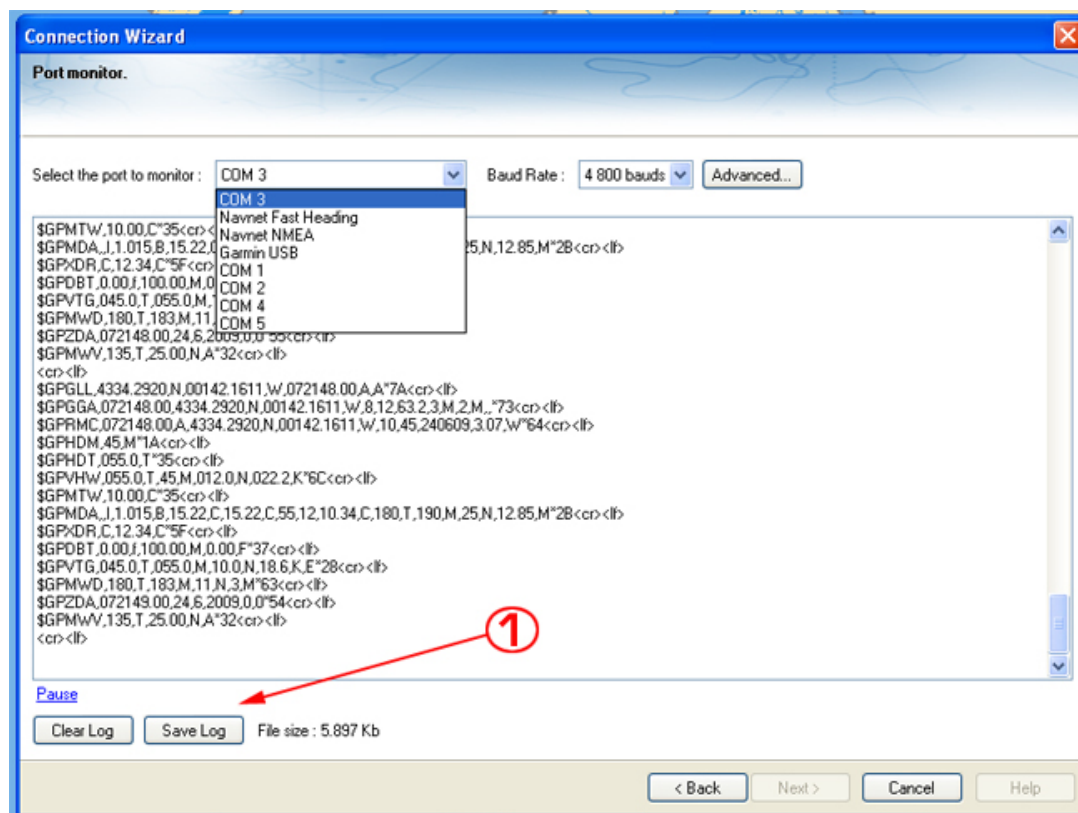
Man Over Board (MOB)

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 Odyssey
- 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 Odyssey 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 Odyssey are listed in the first column (position, heading, etc...). Before this window is displayed, TimeZero Odyssey 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 Odyssey) :

Input :			
Data	Master	COM 11	COM 5
Position	COM 11	Selected & Detected	Selected & Detected
Date/Time	COM 11	Unselected	Unselected
COG/SOG	COM 11	Selected & Detected	Selected & Detected
Heading		Unselected	Unselected
MagneticVariation		Unselected	Unselected
Depth		Unselected	Unselected
SST		Unselected	Unselected
STW		Unselected	Unselected
Drift		Unselected	Unselected
Current		Unselected	Unselected
True wind (Angle / Speed)	COM 11	Selected & Detected	Unselected
True wind (Direction)	COM 11	Selected & Detected	Unselected
Output :			
Data	COM 11	COM 5	
MOB	Unselected	Unselected	
Auto-pilot	Unselected	Unselected	

If the Master Sensor becomes unavailable, TimeZero Odyssey will automatically select another for you. If the Master Sensor becomes available again, TimeZero Odyssey 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 Odyssey . Only use this option if you want to configure all the Inputs and Outputs of TimeZero Odyssey from scratch.

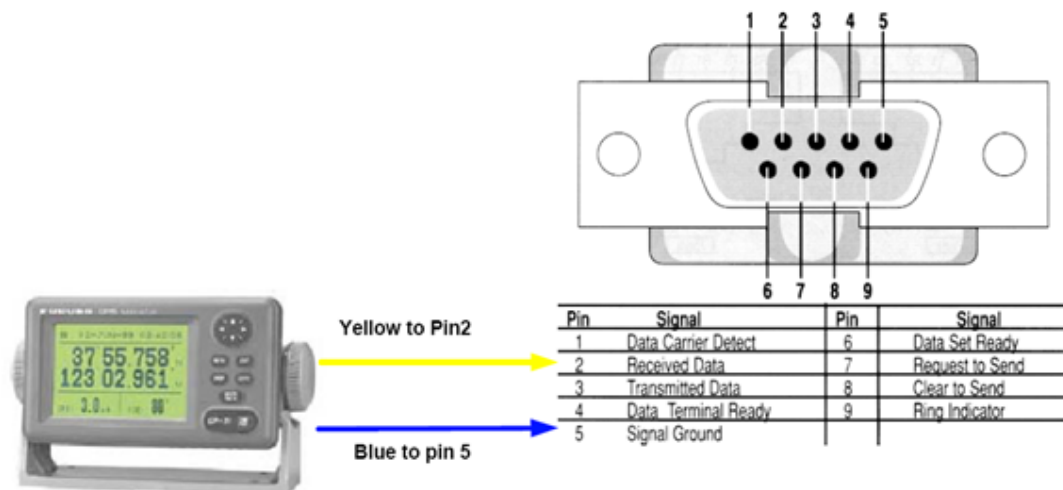
Be careful as this cannot be undone.

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.



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).

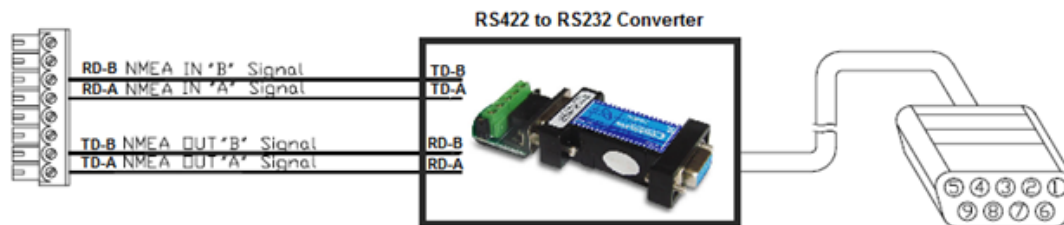
Note: “TD-A” / “TD-B” can also be noted “TD-H” / “TD-C” (Hot/Cold)

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".

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, ...) 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.
- **ONF:** this format is used to import data from Nobeltec VNS & Admiral into TimeZero Odyssey

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 Odyssey 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

Save the User Interface (UI)

Nobeltec TimeZero Odyssey 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 Odyssey 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 Odyssey 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 Odyssey 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 to 3D view

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 Odyssey 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
- 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 Odyssey 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 Odyssey as input. They are sorted by the type of data they provide. In case multiple sentences provide the same data, they are listed by priority (higher priority first).

Note: At this time, TimeZero Odyssey 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

- Global Positioning System Mode Indicator: PGN_129029
- Horizontal Dilution Of Precision: PGN_129539; PGN_129029
- 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_TheoreticalWindSpeedAndAngle
- True Wind Magnetic Direction: PGN_130306_TheoreticalWindSpeedAndGeographicDirection; PGN_130306_TheoreticalWindSpeedAndMagneticDirection
- True Wind Speed: PGN_130306_TheoreticalWindSpeedAndAngle; PGN_130306_TheoreticalWindSpeedAndGeographicDirection; PGN_130306_TheoreticalWindSpeedAndMagneticDirection
- True Wind True Direction: PGN_130306_TheoreticalWindSpeedAndGeographicDirection; PGN_130306_TheoreticalWindSpeedAndMagneticDirection
- 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 Odyssey .



- "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.



- "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.
-  "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 Odyssey 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 Odyssey 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.
- **Display Marks:** Displays Marks on the screen.
- **Display Routes:** Displays Routes on the screen.
- **Display Annotations:** Displays Annotation on the screen.
- **Display Boundary:** Displays Boundary on the screen.

Note: These buttons will only display the objects that are set to "Visible". For more information on object, please refer to the [Creating & Editing Marks](#) Chapter.

- **Create Marks/Boundary/Annotation/GoTo:** Creates objects using coordinate manually entered by the user.
- **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 Odyssey 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.
- **Depth Shading:** Displays and adjusts the intensity of the depth shading. Please refer to Depth Shading for more information.
- **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.

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.
- **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 Odyssey 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.
- **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.
- **Options:** Open the [Targets](#) Options.

Tracks



- **Track Color:** Selects the track color of the current and future tracks that are recorded in TimeZero Odyssey .
- **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 Odyssey . 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:

- **Display Route:** Displays or hides the routes on the screen. Note that the Active Routes is always displayed on the chart even if this button is deselected. However, the Active Route in the Radar WorkSpace will be displayed or hidden according to the status of this button.

Note: This button will only display the routes that are set to "Visible". For more information on object, please refer to the [Route Introduction](#) Chapter.

- **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:

Marks List : 8 Elements

Visibility	Icon	Color	Name	Position
Visible ▾			Crab Pot	N 47°43.973'; W 122°31.643'
Visible ▾			Fishing Spot	N 47°43.908'; W 122°31.508'
Visible ▾			Favorite	N 47°57.817'; W 122°39.622'
Visible ▾			View Point	N 47°57.916'; W 122°48.073'
Visible ▾			Mark	N 47°54.941'; W 122°42.659'
Visible ▾			Mark 2	N 47°59.930'; W 122°44.488'
Visible ▾			Danger	N 47°54.277'; W 122°55.023'
Visible ▾			Mark 3	N 47°56.048'; W 122°53.194'

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 Odyssey 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 Odyssey . 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 Odyssey 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.
- **Routing** (when Routing Plus Pack is enabled): Show/Hide the selected Routing information below
- **Isochrons** (when Routing Plus Pack is enabled): Show/Hide the Isochrons on the chart. Please refer to [Creating a Routing](#) for more information.
- **SailSets** (when Routing Plus Pack is enabled): Show/Hide the SailSets on the chart. Please refer to [Creating a Routing](#) for more information.
- **Options:** Opens the [Plotter Display](#) Options.

Update



This button is only available in the "Update" WorkSpace. It is used to update the Weather and ActiveCaptain:

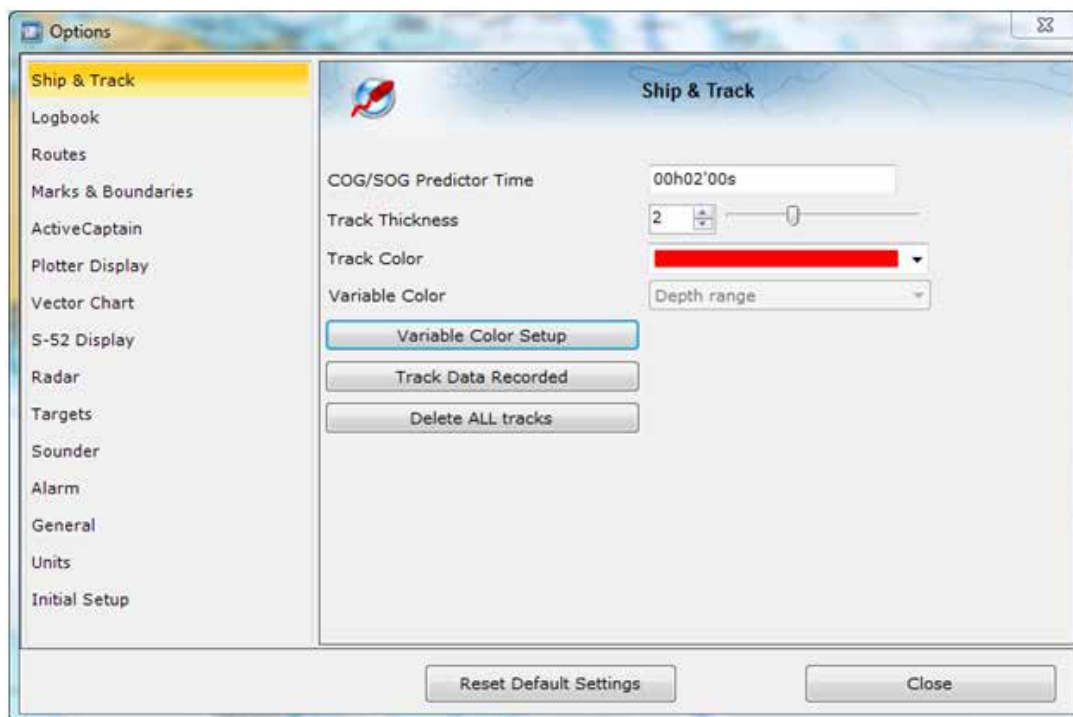
- **Get Last Weather Request:** Bypasses the Weather Update Wizard and gets an up to date weather file using the same parameters as before. For this option to be available, you have to at least run and complete the Weather Update Wizard once.
- **Weather Update Wizard:** Launch the Weather Update Wizard 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 Odyssey 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 may not be available in your software (specific Plus Packs may be required).

Ship & Tracks

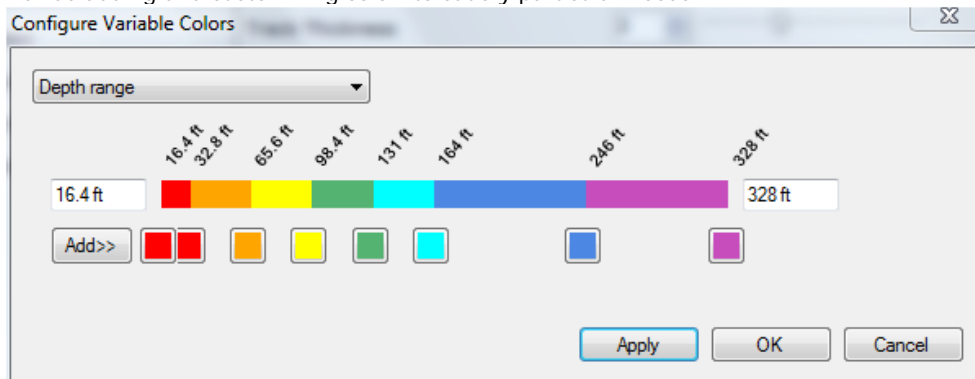
The Ship & Track options are used to configure the vessel's COG & SOG predictor line and various track recording and display options.

- **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 Odyssey .
- **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).
- **Delete ALL Tracks:** Push this button to delete all Tracks that you have created to date.

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.

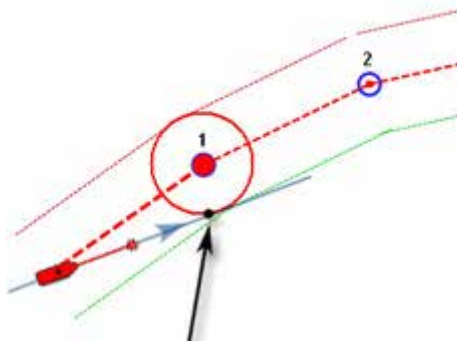
Note: No more than one automatic event can be recorded every 5 minutes to avoid filling the logbook with too much events. When the boat is not moving, the Auto Logging is disabled.

Routes

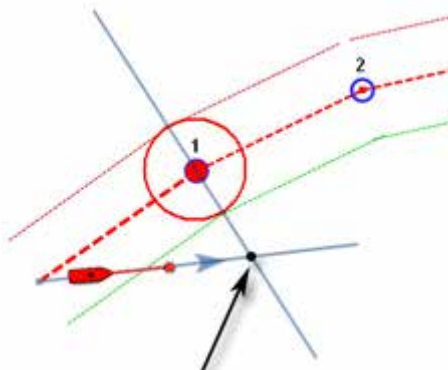
The Route options allow users to configure settings related to routes behavior and appearance.

- **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

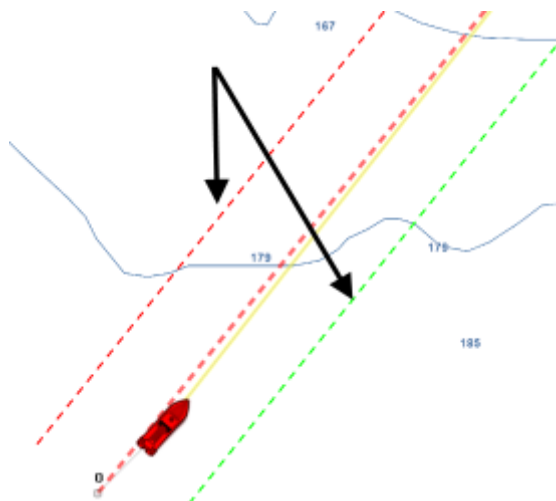
- *Circle*: in this mode, the next Waypoint is automatically switched when your boat icon enters the active Waypoint's switching circle



- *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

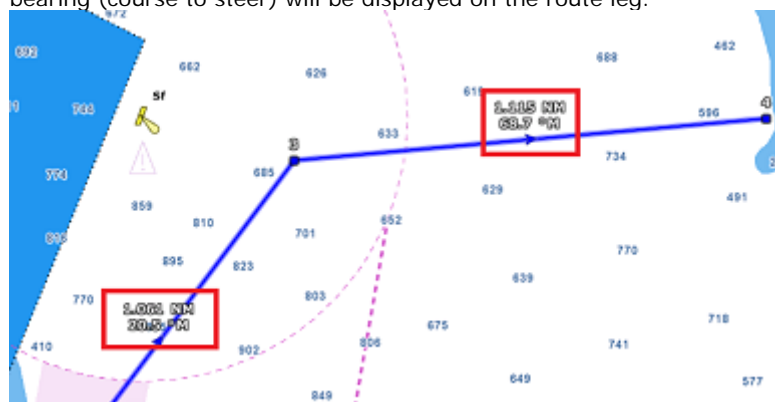


- *Circle and Cross line*: in this mode, the next Waypoint is automatically switched if it enters the switching circle or crosses the line.
- **Switching Circle Radius**: this option sets the radius of the switching circle and arrival alarm. This is a global setting that affects all Waypoints in a route.
- **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"

- **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.

Marks & Boundaries

The Marks & Boundaries options allow users to configure settings related to marks, events and boundaries (line, area and circle)

- **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.
- **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.
- **Delete All Routes Marks and Objects:** Pressing this button erases all existing routes and marks

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-checked 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 Odyssey 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)
 - *Weather Color Transparency:* Manipulates the intensity of weather color transparency (ranges from 0-80)
- **3D Display:** While in 3D mode, the following options control the exaggeration of depth and altitude displayed:
 - *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.
- 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.
- *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.
- **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 Odyssey 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

Routing

The "Sailing Plus Pack" or "Routing Module" needs to be unlocked to access this feature

The Routing options allow users to configure settings that will change the Routing computation:

- **Save All Routings in Planning Spaces:** by default, only the latest routing is kept in TimeZero Odyssey . This means that when creating a new Routing, the previous one is discarded. If you want TimeZero Odyssey to keep all routings on the screen (to test multiple scenarios for example), check this option.
- **Routing Transparency:** adjust the isochrons and sailset transparency on the chart.
- **Isochron Interval:** adjust the time interval in between two isochrons. By default, TimeZero Odyssey adjust automatically the isochron interval according to the routing distance. You can manually select a smaller isochron interval (to increase accuracy), but keep in mind that this will increase the computation time.
- **Waves:** Check this option of you want the routing computation to take into account wave height and direction.
- **Tidal Currents:** Check this option of you want the routing computation to take into account the tidal current.
- **Oceanic Currents:** Check this option of you want the routing computation to take into account the oceanic current (from weather file).
- **Maximum Acceptable Wind Speed:** Enter the maximum wind value acceptable along the optimized route. Use this field if you want to avoid area with strong wind. Leave the default value (125!) if you don't want to put any restriction on the routing computation.
- **Maximum Acceptable Wave Height:** Same as above, but for wave height.
- **Routing Label Prefix:** Prefix used for the default name of every routing. Since routing will also appear in the route list, it is common to give a specific prefix for optimized (routing) routes.
- **Routing Auto Numbering:** Used with the prefix to assign a default name.

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.

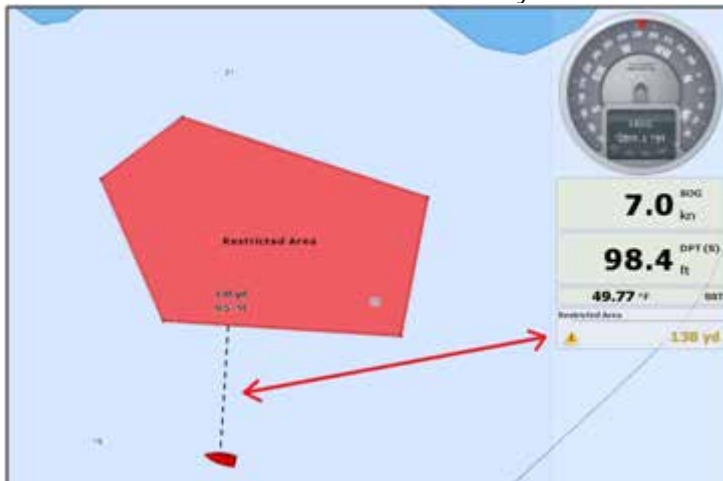
- **Default ARPA Color:** Select the default color used for ARPA target. Note that the target color can be individually changed when right clicking on the target.
- **Default AIS Class A Color:** Select the default color used for AIS Class A target. The color can be set to a fixed value or variable (according 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 Odyssey .
- **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.
- **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.

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 Odyssey settings:

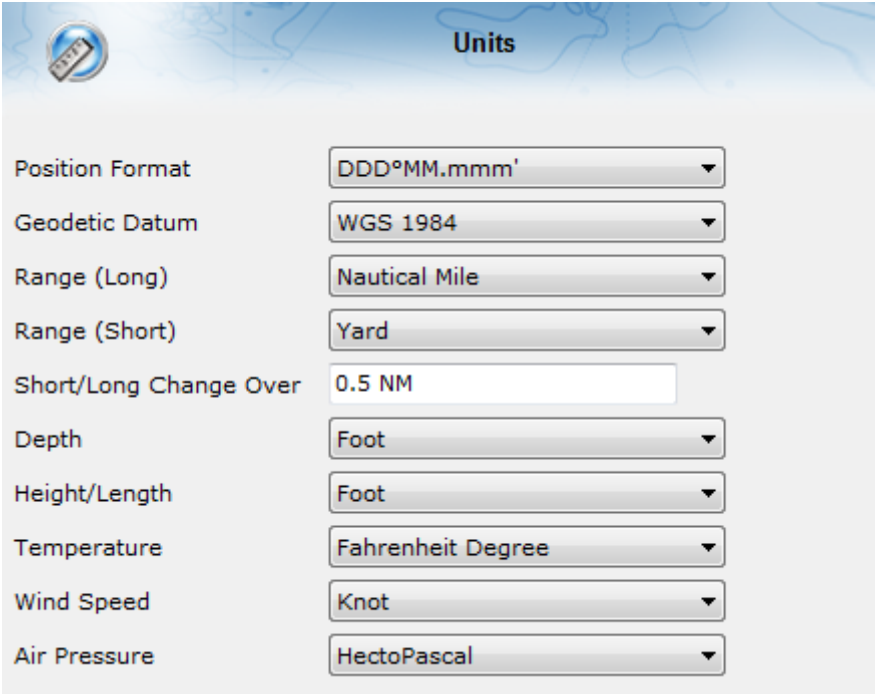
- **Connect to the Internet:** Adjusts how TimeZero Odyssey access the Internet. When set to "When Necessary", there is no restriction and TimeZero Odyssey accesses the Internet whenever it needs to (at startup for new unlock codes, for AIS Online, Weather Update, Online Place Name Search, Panoramio and ActiveCaptain). When set to "At Launch", TimeZero Odyssey only accesses the Internet when starting up to see if new charts or modules were purchased. When set to "Never", TimeZero Odyssey 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 accidentally 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.
- **Power Consumption Optimization:** This option adjusts software power consumption in order to aid either performance or battery conservation. If you want Nobeltec TimeZero Odyssey 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:



Setting	Value
Position Format	DDD°MM.mmm'
Geodetic Datum	WGS 1984
Range (Long)	Nautical Mile
Range (Short)	Yard
Short/Long Change Over	0.5 NM
Depth	Foot
Height/Length	Foot
Temperature	Fahrenheit Degree
Wind Speed	Knot
Air Pressure	HectoPascal

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 Odyssey 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 Odyssey . 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)

- **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.

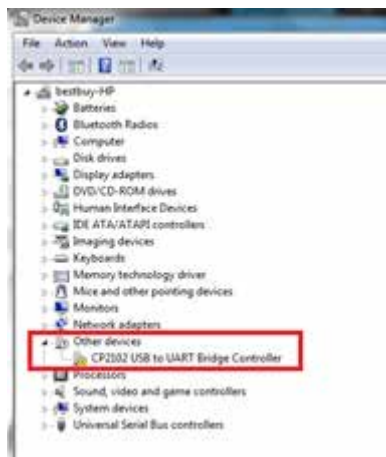
Use the Connection Wizard Auto Detection first to see if the software will detect the instruments automatically. Use the Manual Configuration (pointing at the Virtual COM port) if you have trouble.

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 Odyssey . If you do an Automatic Detection, TimeZero Odyssey 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 Odyssey one by one (configure ONLY the one you want TimeZero Odyssey 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”:



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 Odyssey 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 Odyssey 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 Odyssey 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 Odyssey, 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 Odyssey 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 "I1" 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 Odyssey uses the same protocol

When you have confirmed that the data matches in TimeZero Odyssey 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

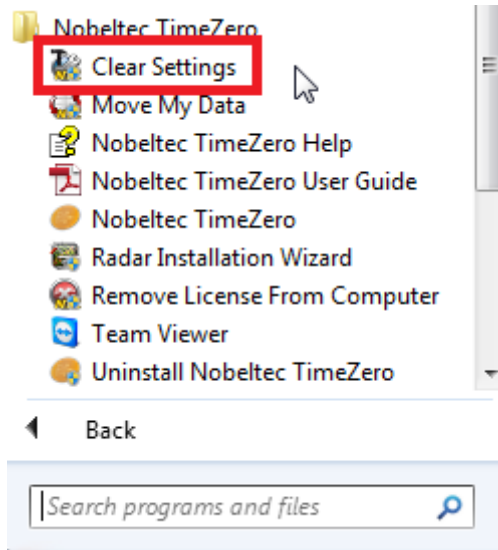
Here what to keep in mind when configuring a pilot with TimeZero Odyssey :

- 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 Odyssey 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 Odyssey and on the Pilot (display these two information on the pilot)
- Make sure that the heading sensor used by TimeZero Odyssey 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!

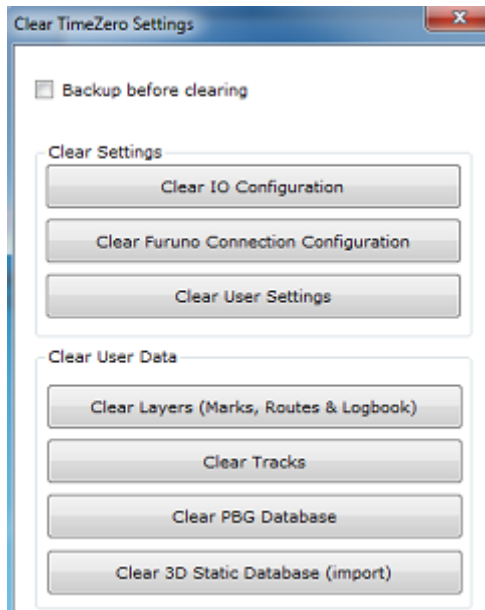
Factory Default

To reset TimeZero Odyssey to Factory Default (Master Reset), exit Nobeltec TimeZero Odyssey .

Open the Windows "Start" menu, locate "Nobeltec TimeZero" and click on "Clear Settings"



The following window will appear:



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)

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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