TZ iBoat User Guide

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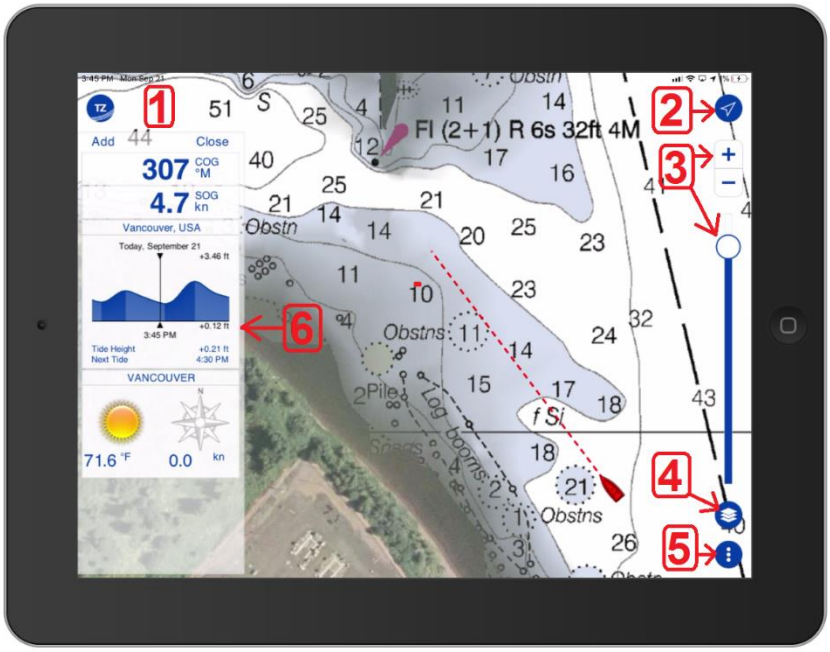
Getting Started

Interface Overview



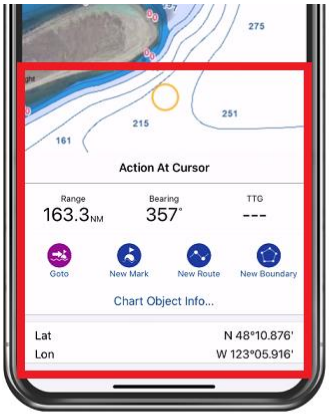
1. TZ button: This button opens the main TZ iBoat menu. From there, you can manage your offline data (charts and weather), access the store (purchase charts and modules), perform quick actions, and access the various advanced settings of TZ iBoat.
2. GPS button: Tap this button to center your Own Ship position on the screen. Tap again to change orientation mode (North Up or Head Up mode). Note that by default the Head Up mode is displayed in 3D perspective to show more of what is going on ahead (this can be changed from the “Plotter” settings).
3. Zoom buttons: Tap these buttons to zoom in or zoom out on the chart. On iPad you can also use a zoom slider (that can be enabled from the “Plotter” settings). Note that both iPad and iPhone support “pinch to zoom” gesture.
4. Layer button: Tap on this button to configure what is displayed on your screen (chart selection, satellite picture overlay, weather overlay, tides icon, …)
5. Action button: Tap this button to perform various actions such as enabling track recording or activating the divider tool.
6. NavData Panel: The NavData panel can be displayed or hidden by swiping your finger from the left edge of your device. Although the NavData panel can be displayed in either portrait or landscape mode, it is better suited for landscape screen orientation.

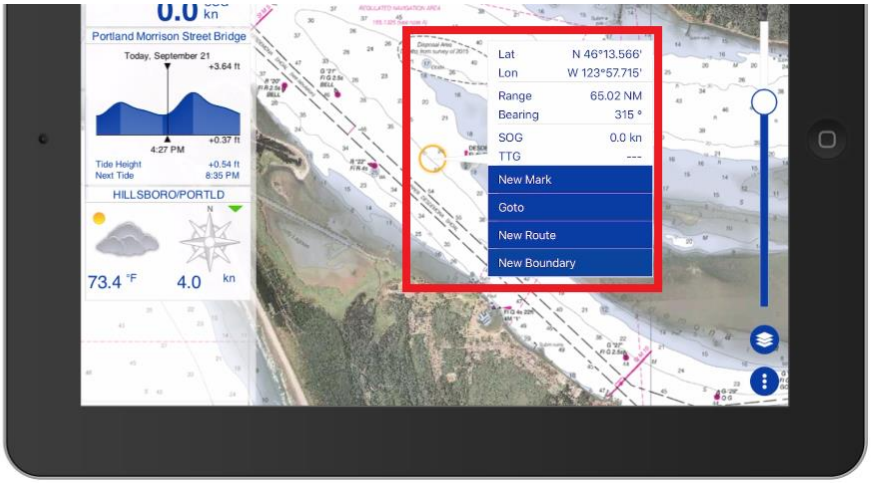
When you create or modify any object (marks, routes, boundaries…), Undo and Redo buttons will appear automatically for 5 seconds:

Also located at the top of the screen is the status bar used to display notification and alarms:

Using the Pop-Up menu

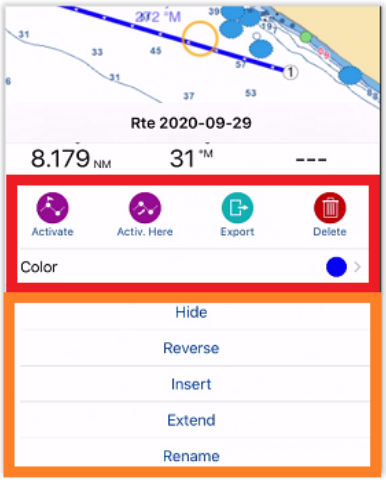
When you tap on the chart or on a specific object, a Pop-Up menu will appear. The Pop-Up menu combines information (such as range and bearing of the object) with buttons that allow you to perform specific actions:





The Pop-Up menu is a core feature of TZ iBoat that makes the App very easy to use. For example, when you want to create a new object or perform a quick “Goto”, simply tap on the chart at the desired location and select the corresponding action from the Pop-Up menu. If you want to modify an object or execute an action on it, just tap on the object and select the corresponding action from the Pop-Up menu.

On iPad, the Pop-Up menu will appear next to the tapped position. On iPhone the Pop-Up menu will appear from the bottom (in portrait mode) or from the left (in landscape mode). Also note that on iPhone the Pop-Up menu is split in between common actions (that use icons) and advanced actions (that use text label). For example, on iPhone, when you tap on a route, the most common actions will be available at the top of the Pop-Up menu (in red below) and the more advanced action will be displayed at the bottom (in orange below):



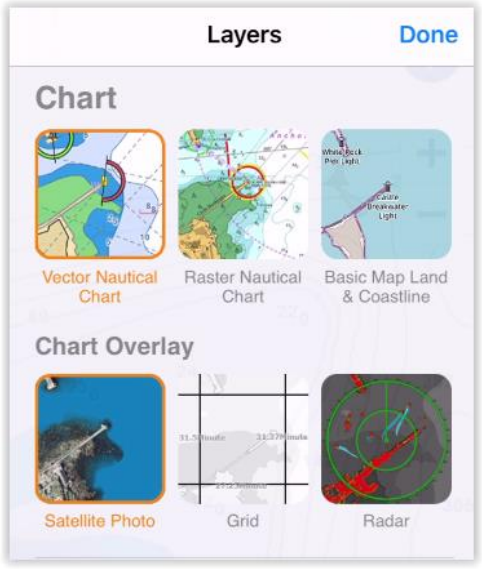
Selecting Charts & Overlays

TZ iBoat is running the powerful TimeZero graphics engine that can display vector or raster charts and merge them with satellite pictures in both 2D and 3D.

By default, TZ iBoat uses a basic land map (Open Street Map data), but you can purchase raster or vector charts directly from the App.

To select the type of chart you want to use, click on the “Layer” button located at the bottom right side of your screen:

At the very top of the Layer menu, you will see the chart and overlay selection:



Vector & Raster Charts

- Vector Nautical Chart: Select this option to display Vector charts. Vector charts are computer generated from a series of points and lines (stored in a database) that make up the features of the chart on the screen. Various details on the chart can be turned on and off and objects can be tapped on to display more details. When zooming in and out of a vector chart the text and objects keep the same size and orientation.
- Raster Nautical Chart: Select this option to display Raster Charts. Raster charts are a direct copy (or scan) of existing paper charts, and thus look identical to the paper charts it was produced from. All information contained within the chart is printed directly on it, so you cannot tap on objects (such as buoys) like on a vector chart. When zooming in and out of a raster chart, TZ iBoat selects automatically ("quilts") the best paper charts for the area and scale displayed on screen. Note that in area with poor chart coverage, everything on the chart grows larger or smaller as you zoom in or out. Also, when rotating a raster chart, everything on the chart rotates with the screen.
- Basic Land & Coastline: Select this option to display a free basic land map powered by Open Street Map. Note that you should not use this option for Navigation. This option should only be used when trying out the App, or when you want to look at specific details on land.

TIP: the first time you select the Vector or Raster Nautical chart option, a pop up allowing you to purchase the chart for the current area should appear. If it does not appear or if you have closed it accidentally, you can access the "Store" to purchase a chart area from the "TZ" button located on the top left side of your screen.

Satellite Photos

Satellite pictures can be fused with raster or 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 you to easily identify the seabed classification as sand, rock, coral, or other obstructions.

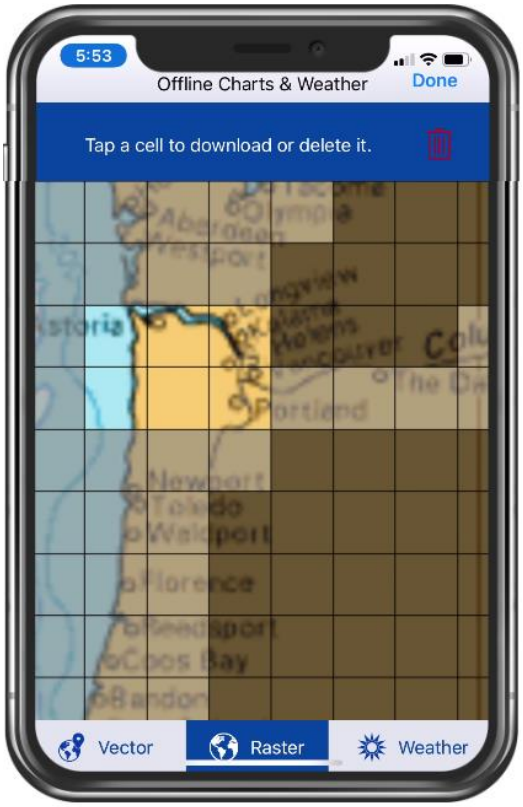
To enable the PhotoFusion overlay, select "Satellite Photo" from the "Layer" button.

TIP: It is possible to display the Satellite Photos without PhotoFusion by disabling the raster and vector charts selection (only leaving the Satellite Photos selected). This can be useful in some areas where the PhotoFusion would remove useful information.

Downloading Charts

After purchasing a Raster or Vector chart area, you will be able to stream the chart directly to your device over the Internet (Wi-Fi or Cellular Connection) as you pan and zoom the screen. However, before using TZ iBoat on the water, it is highly recommended to store the chart locally on your device so that you can access them without any Internet connection.

To store the chart on your device, click on the "TZ" button located on the top left of your screen and select "Offline Charts & Weather". The screen below will allow you to download chart "cells" for the area(s) you purchased:



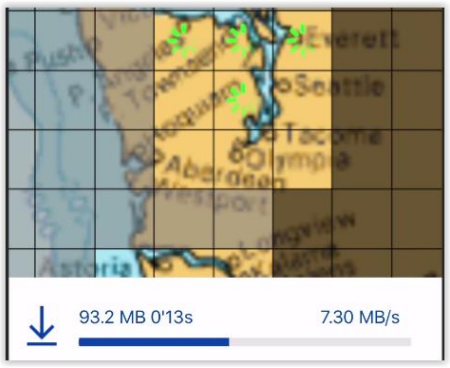
Cells that are grayed out (dark gray color) indicate areas that do not currently exist or areas that have not been purchased yet. Cells that are gray indicated areas that you have purchased, but not yet downloaded on your device. Cells that are bright indicate areas that you have already downloaded on your device.

To download chart data, just tap once on gray cells. To delete chart data that was previously downloaded, tap twice on a bright cell.

TIP: If you want to delete all charts previously downloaded on your device, you can tap on the delete icon located at the top of this screen:

Note that if you have purchased both Raster and Vector charts, make sure to select the proper chart type at the bottom of the screen (Raster and Vector charts are purchased and downloaded separately).

When downloading one or multiple cells, a progress bar will appear at the bottom of the screen indicating the download size and estimated remaining time:



Note that you can close this screen while the download is in progress. The download will continue in the background.

Note: It is not possible to download Satellites Photos from this screen. You need to have an Internet connection to stream Satellite Photos. However, Satellite Photos that have been previously streamed will stay on your device and can be displayed offline.

Adjusting Vector Chart 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 navigational aids, spot soundings and land features that can be displayed or hidden. These adjustments are made from the “Vector Chart” and the “S-52 Display” settings.

Adjustments found under the “Vector Chart” settings are:

- "Chart Object Size" is a slider that allows you to change the size of the depth sounding, text and object icons (buoys, wrecks, obstructions, etc...)
- "Chart Color Palette" allows you to change the colors (or "theme") of the charts.
- "Chart Symbol" allows you to change the buoys icons to either a "S52" or "International" representation.
- The “Shallow Contour”, “Safety Contour” and “Deep Contour” 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.

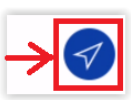
In addition to these screen rendering parameters, the Vector Chart settings allows you to turn ON or OFF the display of specific objects (such as buoys name or light description).

The “S52 Display” groups other less common adjustments (more advanced parameters).

On the Water

Centering on the boat

Click on the "GPS" button located at the top right corner of your screen to center the charts on your own ship position:

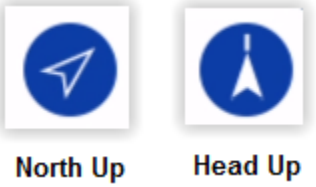


The icon in red represents the boat and indicates its position and heading (or course over ground if heading data is not available):

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

Chart Orientation

The “GPS” button also allows you to cycle in between “Head Up” and “North Up” mode:



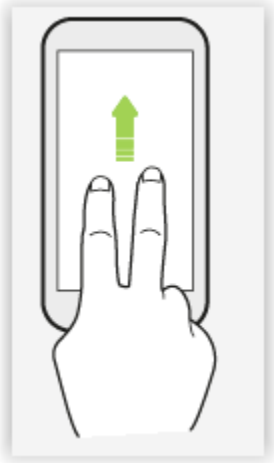
TIP: When the icon is filled, it means that you are centered on your boat. A tap on the button in this state will switch mode. When the icon displays an outline, it means that you are not centered on your boat. Tapping a first time on the button will first center on your boat. Tapping a second time will then change the mode.

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

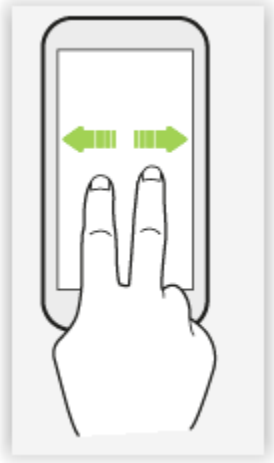
Head Up: This mode orients the bow of the vessel to the top of the screen. The chart rotates as the vessel’s bow is always pointed toward the top of the screen. In Head up mode, pay close attention to the North Indication icon that will appear just below the GPS icon. It provides information about the direction of North:

Note: By default, Head Up mode is presented in 3D perspective allowing you to see further. If you prefer the head up mode to be displayed in 2D, you can uncheck “Head Up in 3D” from the “Plotter” settings.

TZ iBoat operates in a fully rendered 3D environment. The traditional 2D view is just a top down view of this 3D environment. You can switch from the traditional 2D view to the impressive 3D perspective by swiping two fingers upward:



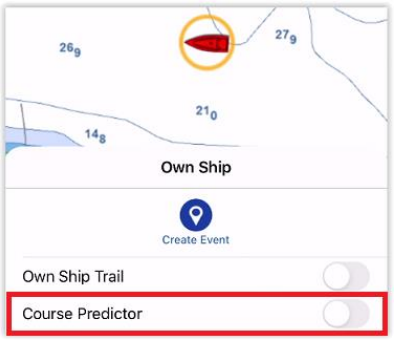
Once in 3D mode, you can also change the orientation of the 3D view by swiping two fingers left and right:



To go back to the traditional 2D mode, simply click on the GPS button.

Course Predictor

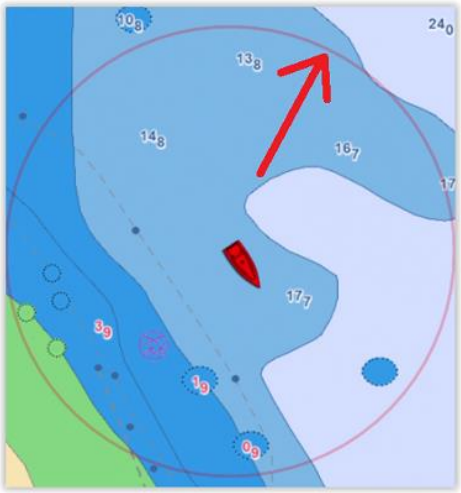
The Course Predictor can be displayed or hidden by tapping on the boat icon:



The Course Predictor is calculated by the GPS. It indicates the direction of movement relative to a ground position. The length of the COG Predictor 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” settings (under "COG/SOG Predictor").

Motion Mode

When the boat icon is on the screen and when 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 motion mode:



When the boat icon is inside the Relative Motion Circle, the chart will scroll on the screen and the boat icon will always stay at the same relative position inside the circle (Relative motion mode). When the boat 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 with your finger until the boat icon is at the desired location on the screen, making sure to keep the boat icon inside the Relative Motion Circle. Note that shifting manually the position of the boat icon inside the relative motion mode is mostly useful in “North Up” mode. When the chart orientation is set to "Head Up", TZ iBoat automatically offsets the boat icon location toward the bottom of the screen, giving more chart view for what is coming ahead.

Trail & Tracks

TZ iBoat can keep track of your Own Ship position history using either Trail or Tracks. The trail is always and automatically recorded in the background (you have nothing to enable) and it can be either displayed or hidden on top of the chart. Tracks need to be manually recorded by using the “Track” button (ON/OFF) located under the Action button.

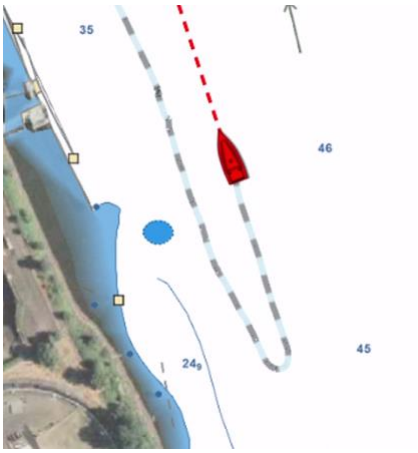
Trail and Track have each their advantages and their specific use cases. Tracks are useful to permanently record specific passages but can quickly clutter your screen if you are not diligent about choosing when to enable or disable the track recording. The trail on the other hand is 100% automatic and you can dynamically adjust its length using the “Own Ship Trail Duration” option located under the “Ship & Track” settings. When you need to know where you have been, you can simply enable the “Trail”

display. When you are done hide them. Some customers may choose to always leave the trail displayed (usually with a shorter duration).

Using Trail

To display the trail on your chart, click on the boat icon and enable "Own Ship Trail":

You can also show or hide the trail using the “Layer” menu (found under the “Other Layers” section). When enabled, the trail displays behind the boat icon all your contiguous position using animated white and black dots:

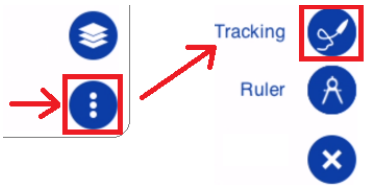


The trail duration can be adjusted from the “Ship & Tracks” settings. Note that the trail display is dynamic and changing its duration will immediately update its length on the chart. By default, TZ iBoat displays a trail duration of 1 day, but you can make it as short as 30 minutes or as long as 20 days.

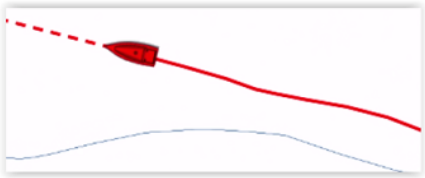
The trail thickness can be adjusted from the “Ship & Tracks” settings to make it as bold or as thin as you want.

Recording Track

The "Track" button that allows you to enable or disable the track recording can be found under the “Action” button:



When enabled, the track displays behind the boat icon all your contiguous position using a red line (default color):



Unlike the trail, the track can be manipulated by tapping on it. You can change its color and cut the track (by deleting from or up to a specific position). Note that track needs to be manually managed (you have

to remember to enable or disable the track). TZ iBoat allows you to save up to 30,000 track points. You can configure the track interval (default is one point every two seconds), the default track color and the track thickness from the “Ship & Tracks” settings.

Measuring Distance

In between two points

To display the bearing and distance in between two points, tap on the “Action” button and select the “Ruler”:

Adjust the position of the two flags that just appeared (representing the start & end position) in between the two object or the two locations you want to take a measurement from. The bearing and distance will be displayed at the top of the screen:

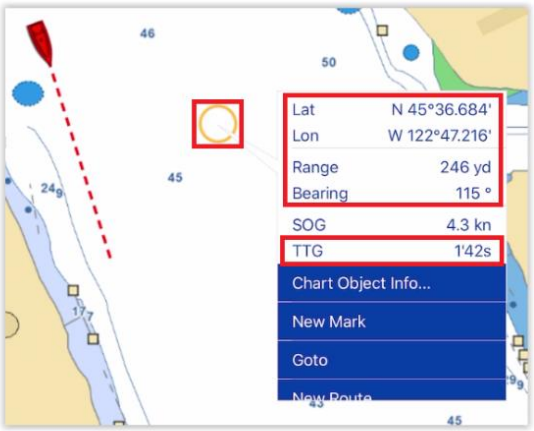
<u>Note</u>: By default, the bearing will be displayed using a magnetic value (considering the local magnetic variation for your area), but you can change it to a true value from the “Unit” settings.

Once you are done with the measurement, simply tap anywhere on the chart or tap on the ruler icon located on the top right of the screen (next to the bearing and distance measurement) to make the flags disappear.

In between your position and a point

To measure distance and bearing in between your position and a point or an object, you can simply tap on it to display the Pop-Up menu:

iPhone



iPad

The Pop-Up menu will display the range, bearing, position and time to go ("TTG") to that point according to your current speed.

Saving Events

Sometimes, you may want to save an "event" at your current position. Events can consist of:

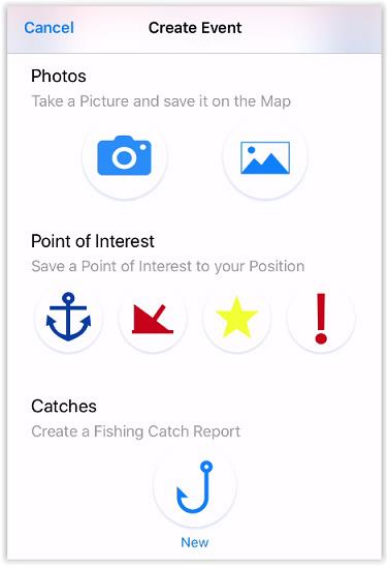
- a mark with a specific icon and color to save a point of interest such as a favorite spot (beach, anchoring location…), or to the contrary, a dangerous spot (obstruction, rock, …)
- a picture to capture a nice beach or marina
- a catch to log your fishing spot and fish information

To save an event in TZ iBoat, you can either:

- Tap on the "Action" button located on the lower right and select "Create Event":

- Or, tap on your boat icon and select "Create Event"
- Or, use the default function gesture by pressing and holding two fingers on the screen for 1 second

The Event window will appear allowing you to select the type of event you want to save at your current position:



Navigating on a Route

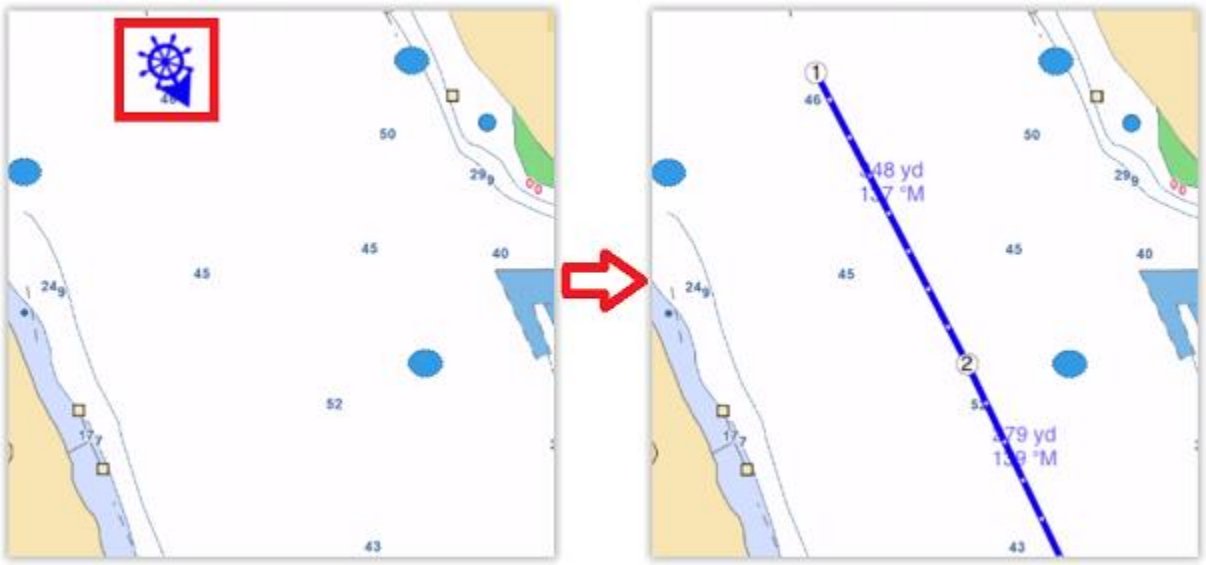
Quick Goto

When you need to navigate to a point (straight line), you can create a quick “Goto” by tapping anywhere on the chart or on a mark and selecting “Goto” from the Pop-Up menu. TZ iBoat will create a temporary active route to that point and display navigation data in the header located at the top of the screen:

When you arrive at your destination (or if you manually press on the “Stop” button located in the header), the Goto will disappear.

Activating a Route

For navigation that consists of multiple waypoints, you can activate a route. If the route is not already selected, find the collapsed route icon (located by default at the first waypoint) and then tap on it to expand and select the route:



To activate the route from the very first waypoint you can tap on the “Activate” button located on the selected route header:

You can also tap on the route itself and select “Activate”.

Note that you can also activate a route further down (if you already passed the first waypoint for example) by tapping on any waypoint or even on any leg and selecting “Activate Here”.

When activated, the route will be displayed in red, the XTE (Cross Track) lines will be displayed on the active leg, and the route header at the top will be updated with navigation information.

Note that you can tap on the route header to cycle among various type of information.

<u>Note</u>: It is possible to add other type of information related to the Active Route in the NavData panel. Just open the NavData panel (swipe from the left), tap on “Add” (top left), and then select the navigation

data you would like to display. You may repeat this operation multiple times to add multiple pieces of navigation data to the NavData panel. For more information, please refer to the NavData Chapter.

Restart or manually switch waypoint

If the cross-track-error ("XTE") gets large enough to start causing alerts, select the "Reset XTE" button from the Active Route header located at the top of the screen:

This will realign the intended course and head directly to the active waypoint without reverting to the original course. Restarting a route is a typical action if you had to take an action to avoid another vessel or an object and just want to head directly toward the active waypoint.

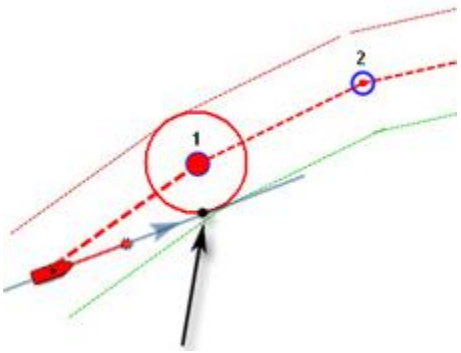
In some situation, instead of restarting the route you may want to directly switch to the next Waypoint. This action can be done by taping on the route leg and selecting “Skip Next” from the Pop-Up menu.

Waypoint Switching Mode

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

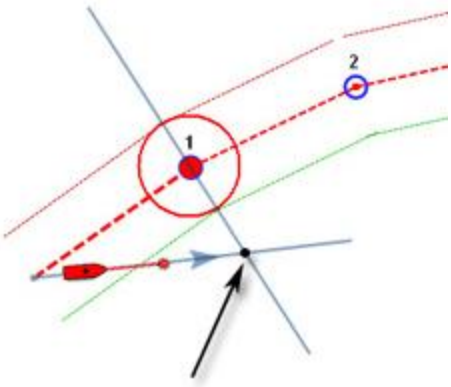
Circle:

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).

Active Route Synchronization

The active route is automatically synchronized on the local network with all the compatible TimeZero devices (TZ Navigator, TZ Professional, TZ iBoat, and Furuno TZT2/TZT3) that are connected on the same local network.

This means that if you have an iPad and an iPhone connected to the same Wi-Fi network, you can activate the route from the iPad and then monitor the progress from your iPhone. Any changes you make on the active route (restart the route, skip waypoint, move a waypoint) is immediately synchronized and updated on all your device that are connected to the same local network.

User Objects

Marks

TZ iBoat allows for the creation of up to 30,000 marks. Marks are used to plot on the chart specific locations such as fishing spots, hazards, harbors, or preferred anchorages.

To save a mark, tap on the chart at the location you want the mark to be created and select “New Mark” from the Pop-Up menu. A mark will be created with the default icon and color set in the “Marks” settings.

TIP: You can also create a Mark by entering its coordinate. Tap on the “TZ” button located on the top left of your screen, select “Add by Lat/Lon” from the Quick Actions and then select “Add Mark by Lat/Lon”. This will display a dedicated Lat/Lon keyboard that will allow you to create the mark using its coordinate.

The mark can be edited from its Pop-Up menu: simply tap on the mark and select the corresponding action from the mark’s Pop-Up menu (color, symbol, delete, …)

To move a mark, simply select “Move” from the Pop-Up menu. A handle will be displayed under the mark allowing you to drag it to a new location:

When you are done, tap anywhere to validate.

Note that when you edit a mark, the undo/redo icon will appear for a couple of seconds at the top of the screen allowing you to revert to the previous mark state quickly and easily:

All marks can be displayed or hidden on the chart by tapping the “Layer” button located on the bottom right and enabling or disabling the “Marks” button under “User Data”.

TIP: Marks size can be adjusted globally from the “Marks” setting.

Routes

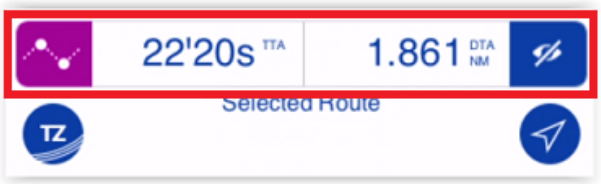
TZ iBoat allows for the creation of up to 200 routes of 500 waypoints each allowing you to plan multiple voyages.

Creating a Route

To create a route, tap on the chart at the location you want the route to start and select “New Route” from the Pop-Up menu. The first waypoint will be created (represented with a starting flag). Continue to tap on the chart to drop your waypoints and build your route. If you need to move a waypoint, simply use the handle displayed just under each waypoint. Note that you can pan and zoom the chart during the route building process.

To end a route, tap on the route validation displayed in the “Route Building” Header at the top right of the screen:

The header will transform into the “Selected Route” header that allows you to either Activate the route for navigation (left button) or Hide the route (right button):



Note that when building or after selecting a route, the header will display a Time To Arrival (TTA). This time is based on the route length and the "Planning Route Speed" set in the "Routes" settings.

TIP: You can also create a route by entering a succession of coordinates. This is useful when you want to create a route that is described in a Cruising Book by a succession of waypoints (in Lat/Lon).Tap on the "TZ" button located on the top left of your screen, select "Add by Lat/Lon" from the Quick Actions and then select "Add Route by Lat/Lon". This will display a dedicated Lat/Lon keyboard that will allow you to create waypoints using their coordinates. Simply enter the coordinate of the first waypoint, then tap on "Add Point #1". Repeat the process with all waypoints. When you are done, tap on "Done".

Editing a Route

When a route is selected, you can perform various operation on the route by tapping on the route itself or on one of its waypoints and select the corresponding action from the Pop-Up menu:

- To adjust a waypoint location, tap on it and select "Move Mark" from the Pop-Up menu. Use the handle that appears just below the waypoint to drag it and then tap anywhere to validate the new position.
- To remove (delete) a waypoint from the route, tap on it and select "Delete Mark" from the Pop-Up menu.
- To insert a waypoint, tap on the route leg where you want to insert a waypoint and select "Insert" from the Pop-Up menu. This creates a new waypoint that you can drag using the handle. Tap anywhere to validate the new waypoint position.
- To extend the route, tap on it and select "Extend" from the Pop-Up menu. This will restart the route building process from the last waypoint.
- To reverse a route, tap on it and select "Reverse" from the Pop-Up menu.
- To rename a route, tap on it and select "Rename" from the Pop-Up menu on iPhone, or tap on the name itself from the Pop-Up menu on iPad.

Note: By default, the route name is not displayed on the chart, but this can be adjusted by enabling "Route Label" from the "Route Settings".

Hiding and Displaying Routes

To help reduce clutter on your map, TZ iBoat only displays one route at a time (the "selected route"). All other routes will be collapsed into a departure (default) or an arrival icon located respectively at the first or last waypoint of the route. To expand a route, simply tap on its collapsed icon:

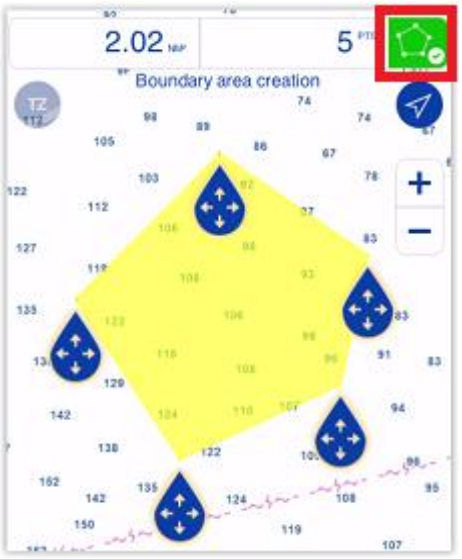
TIP: If you have lots of routes originated from the same departure point, it might make more sense to set the "Route Icon Position" to "Arrival" instead from the "Routes" settings. This way the collapsed route icon will be located on the last route waypoint and might make it easier to select.

Once a route is expanded (or "selected"), the route header will be displayed at the top of your screen. If you want to collapse this route, either select another route or click on the "Hide" button located on the right side of the route header.

Boundaries

TZ iBoat allows for the creation of up to 100 Boundaries (Areas, Lines and Circles) with up to 50 points per Area or Lines.

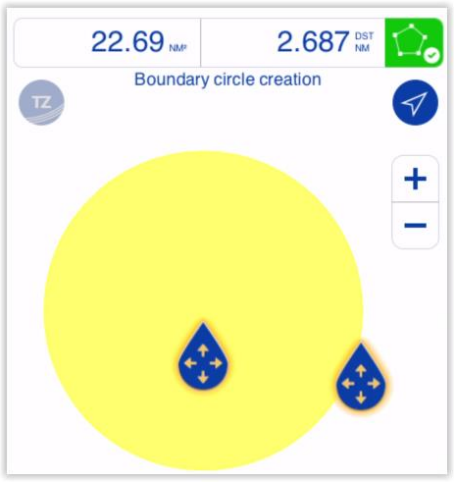
To create a boundary, tap on the chart at the location you want the boundary to start and select "New Boundary" from the Pop-Up menu. A second menu will appear allowing you to select the type of boundary you want to create (Area, Circle or Line). For areas and lines, tap on the chart to create boundary points. While you are in boundary building mode, you can move all boundary corners by using the handle below each point. When you are done click on the boundary validation button in the header:



TIP: You can also create a boundary area or boundary line by entering a succession of coordinates. Tap on the "TZ" button located on the top left of your screen, select "Add by Lat/Lon" from the Quick Actions and then select "Add Boundary by Lat/Lon". This will display a dedicated Lat/Lon keyboard that will allow you to create the boundary points using their coordinates. Simply enter the coordinate of the first point,

then tap on "Add Point #1". Repeat the process with all points that constitute the boundary. When you are done, tap on "Done".

When you create a boundary circle, TZ iBoat will automatically create two handles that will allow you to move the circle center and another that will allow you to set the circle radius:



To change a boundary property (such as its color or pattern) tap on the boundary and select "Boundary Color" or "Pattern" from the Pop-Up menu.

If you wish to edit the boundary (move a point, add a point …) tap on the boundary and select "Edit Points".

TIP: To be able to see the pop-up menu of the boundary, make sure that the entire boundary is visible on screen. Then, tap on it and select "Edit Points".

This will enable the boundary creation mode allowing you to move each point using the handles. If you want to insert a new point (for boundary line or boundary area), tap on the leg of the boundary where you want to insert a point and then drag it to move it to the desired location.

To delete a boundary point, zoom on it until it becomes visible (small dot). Tap on it and select "Delete Point".

All boundaries can be displayed or hidden on the chart by tapping the "Layer" button located on the bottom right and enabling or disabling the "Boundaries" button under "User Data".

Catches

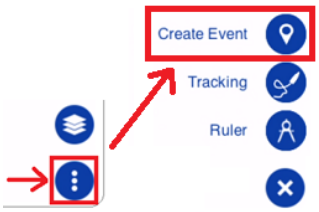
TZ iBoat allows for the creation of up to 1000 Catches. Catches are marks with specific properties allowing to capture information about a single caught fish:

- Fish Species
- Fish Length
- Fish Weight
- Name & Comment
- Depth
- Pressure
- Sea Surface Temperature

The catch icon is fixed and automatically set according to the selected fish species. The color will vary automatically according to the average fish size caught by species (green for above average and red for under average among all the Catches you entered in TZ iBoat:

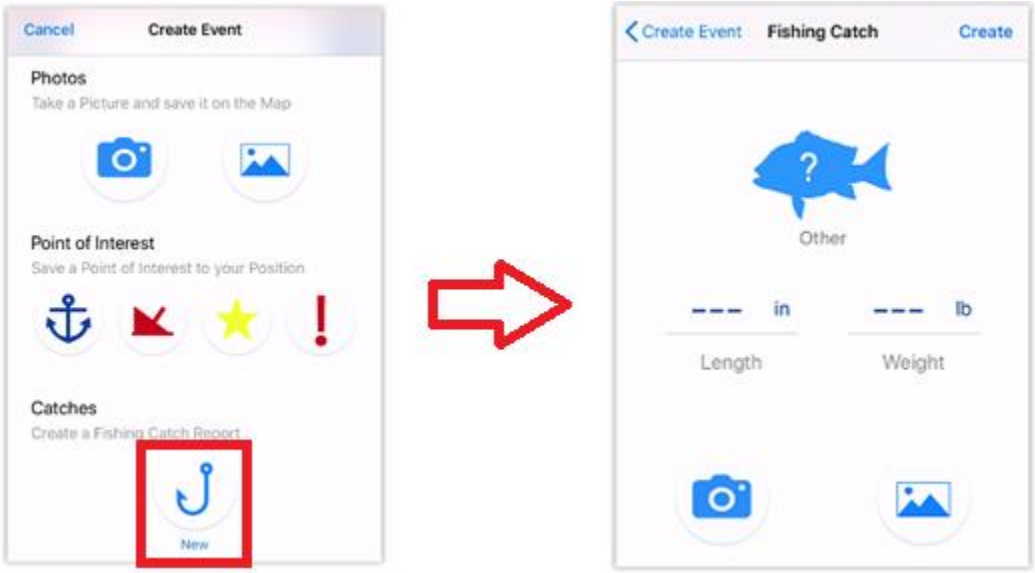
Catches are created from the event window (and automatically saved at your current position). To open the Events window on TZ iBoat, you can either:

- Tap on the “Action” button located on the lower right and select “Create Event”:



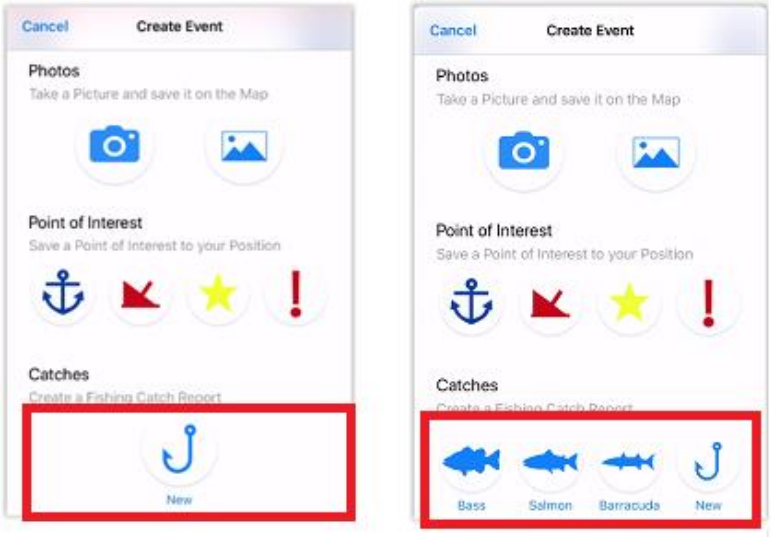
- Tap on your Boat icon and select “Create Event”
- Use the default function gesture by pressing and holding two fingers on the screen for 1 second

Once the Events window appear, tap on “New” under the “Catches” section.



The Fishing Catch window will allow you to select a species (mandatory to create a catch), and optionally enter a fish length, a fish weight and attach a picture (taken directly from your devices’ camera or from your photo album). If TZ iBoat is connected to a NMEA Gateway providing depth or sea surface temperature or atmospheric pressure, these parameters will be logged as well.

Note: The first time you create a Catch, only the “New” button will be available. Once you start logging some catch, you will be able to directly select the fish species from the Event window (shortcut):



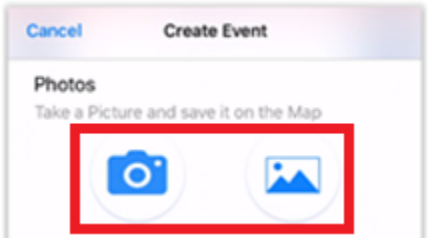
It is possible to edit a catch by tapping on it and selecting the corresponding option in the Pop-Up menu.

TIP: You do not have to add the picture when you initially create your Catch. You can add the picture later by tapping on the Catch and selecting "Add Photo". This is also useful if the Catch was created from another networked device that does not have a camera such as a computer (loaded with TZ Professional or TZ Navigator) or from a Furuno MFD (TZtouch 2 or TZtouch 3). In this case, you can use your iPhone or iPad to attach a picture to your catch.

All catches can be displayed or hidden on the chart by tapping the "Layer" button located on the bottom right and enabling or disabling the "Catches" button under "User Data".

Photos

TZ iBoat allows for the creation of up to 1000 Photos. Photos are a great way to highlight specific point of interest on the chart. Just like Catches, Photos can be created at your current position from the Event window:



You can either take a photo using your device's camera (camera icon) or select an existing photo from your library (picture icon).

You can also tap on the "TZ" button and select "Take a Picture" to take a quick photo using your device's camera (shortcut).

All photos can be displayed or hidden on the chart by tapping the "Layer" button located on the bottom right and enabling or disabling the "My Photos" button under "User Data".

Local Synchronization (Wi-Fi)

All User Objects (marks, routes, boundaries, catches, and photos) and the Active Route are automatically synchronized with all the compatible TimeZero platforms that are connected on the same Wi-Fi network (TZ Navigator, TZ Professional, TZ iBoat, and Furuno TZT2/TZT3). Note that the local synchronization does NOT require an Internet connection to work (as it operates on the local network), but it does require all devices to be logged in with the same My TIMEZERO account (for security and privacy).

The automatic local synchronization is very useful as soon as you have more than one device on your boat. Here are a couple of examples:

- TZ iBoat running on an iPad at the helm and TZ iBoat running on your iPhone as a secondary/backup device. In this situation, you can create and plan your route on the iPad, then activate it and monitor your progress from your phone each time you step out of the helm. You can also use your phone to take pictures or log events that will be automatically synchronized back to your iPad.
- TZ Navigator or TZ Professional running on a fixed PC installed at the helm and TZ iBoat running on your iPad or iPhone. In this situation TZ iBoat can be used as a secondary backup device and to monitor your progress each time you step out of the helm. But when you are at home, TZ iBoat can be used to plan your navigation. You can create your routes from your iPhone or iPad and as soon as you come aboard, all your user objects will be updated/transferred automatically on your PC and be ready when it is time to navigate.
- Multiple iPads at the Helm running all TZ iBoat simultaneously. In this situation, you could use multiple iPads as your main navigation “bridge”. Having multiple iPad allows redundancy, but you can configure each iPad with different “layer” of information (one zoomed in on the chart for navigation purpose, and the other one displaying the weather at more general scale). Anytime you update or make a new user object (route, mark…), both iPads will be fully synchronized.
- A dedicated Furuno TZtouch 3 MFD (Multi-function display) and TZ iBoat running on your iPad or iPhone. In this situation, TZ iBoat is the perfect “companion” to a Furuno MFD (TZtouch 2 or TZtouch 3). Not only TZ iBoat will be able to synchronize all user objects with the MFD, but TZ iBoat will also be able to get all navigation data automatically from the MFD (GPS, Depth, AIS…).

Note that Tracks are note synchronized.

Cloud Synchronization (Internet)

When you are connected to the Internet, your user objects (routes, marks, catches, boundaries, and photos) can be automatically synchronized to the TZ Cloud.

Note: tracks are not synchronized to the TZ Cloud.

The three main advantages of the TZ Cloud synchronization are:

- Automatic User Object Backup: all your user objects are automatically synchronized and backed up any time you make a modification. When you install TZ iBoat on a new device (up to 5 devices are supported under the same My TIMEZERO account), all your user objects will be automatically downloaded.
- Remote Synchronization: if your devices are not connected to the same network (for local synchronization), your user objects can be synchronized via the Internet (TZ Cloud) even remotely. For example, you may decide to plan your navigation at home on your iPad, but then decide to only take your iPhone to the boat. All modifications that were done on the iPad at

home would be synchronized on your iPhone, even if you only launch TZ iBoat on your boat (with cell service).

- Web Viewer: You can look and make modification to your user objects from any web browser at “cloud.mytimezero.com”. This is very useful if you want to review your navigation at home or with friends without having to use TZ iBoat.

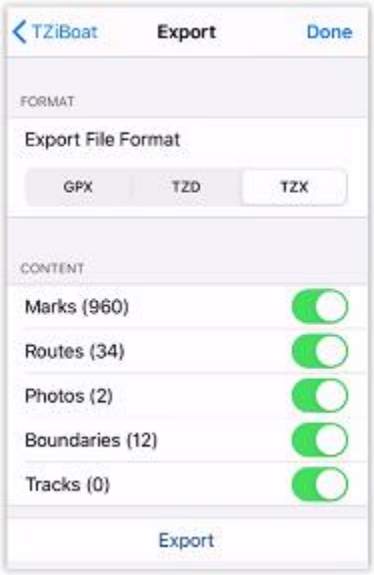
Note: you can disable the cloud synchronization by tapping on the “TZ” button located on the top left of your screen, then tap on your account (at the very top). You will see a “Cloud Synchronization” checkbox that you can disable if you do not want TZ iBoat to synchronize your user objects with the TZ Cloud.

Exporting and Sharing User Objects

User objects can be shared with other TZ iBoat users via the export feature.

Sharing all your User Objects (filtered or not by category)

If you want to share all of your user objects or all user objects of a specific category (all your routes, or all your marks, ….) you can click on the “TZ” button located on the top left and select “Export”. A window will appear allowing you to select the format and the type of user object you want to export. Choose “GPX” when you want to share Marks, Routes, or Tracks with another application which supports the GPX format (note that boundaries and photos are not supported by this format). Choose “TZD” when you want to share Marks, Routes, Boundaries or Tracks with an old TimeZero software (that only supports the older TZD format). If you want to share user objects with another TZ iBoat users or a recent TimeZero platform, select “TZX” which is the latest format and supports all user objects:



When you click on “Export”, your iPhone or iPad will display the standard iOS sharing interface that will allow you to share the file via e-mail, or SMS, or any other App on your device that supports file attachment.

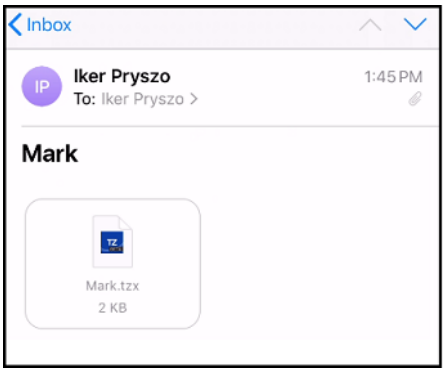
Sharing just one object

Sometimes you only need to export and share a single object (a route or a track for example). For these cases, just tap on the object from the chart screen and select “Export” from the Pop-Up menu:

The same standard iOS sharing interface will appear and will allow you to share the file via e-mail, or SMS, or any other App on your device that supports file attachment.

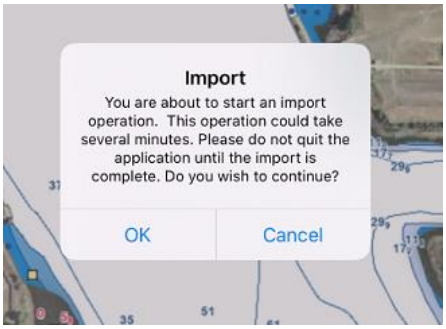
Importing User Objects

When you receive a TZX, TZD or GPX file via text message, e-mail, airdrop or from iCloud drive, you can just tap on it to open it with TZ iBoat. This will import (merge) the file content with your database.



When you tap on the file, iOS will ask to select the App you want to use. If you do not see TZ iBoat in the list, select “More” and “Copy to TZ iBoat”:

This will open TZ iBoat and display the import window:

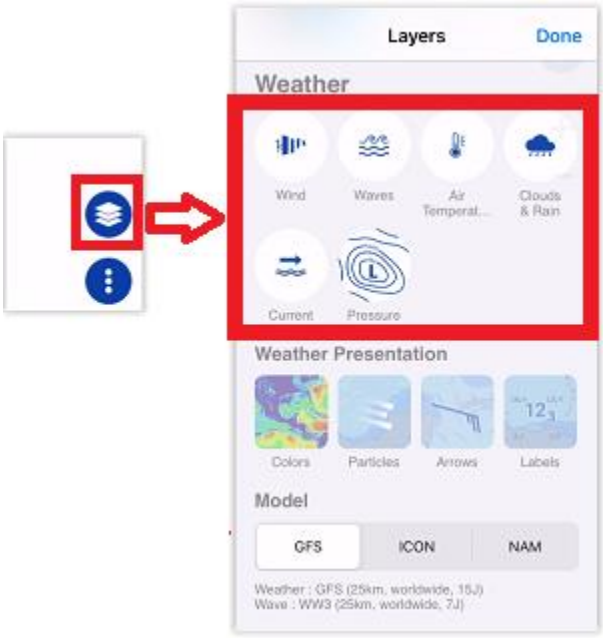


Tap “OK” to validate. After importing (merging) the data, TZ iBoat will display a window letting you know the type and number of user objects that were imported.

Weather

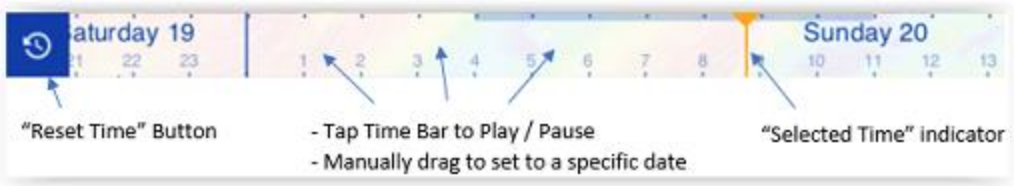
Displaying Weather Forecast on the chart

TZ iBoat can overlay weather forecasts directly on your chart using particles (animation), colors, labels, or traditional arrows. To display weather, simply tap on the “Layers” button located on the bottom right of your screen and select the type of weather data you would like to see among Wind, Waves, Air Temperature, Clouds & Rain, Current, and Pressure:



Just below the type of weather data to display, you can select the type of presentation. Note that you can combine multiple type of presentation if you want. For example, you can decide to display the wind in color + arrows + label.

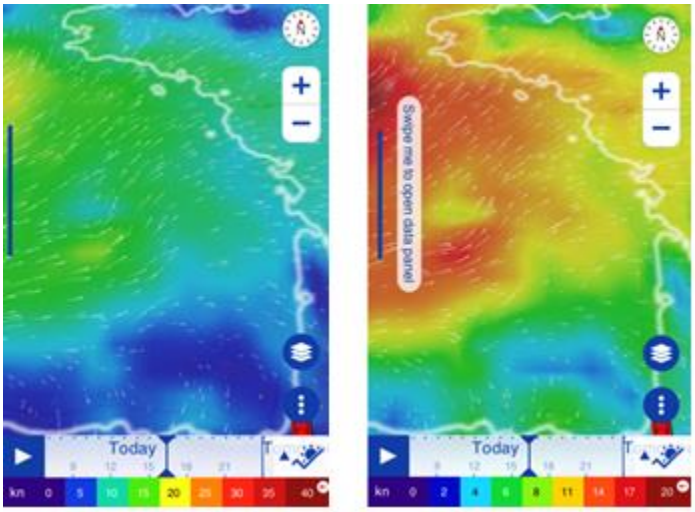
Once a weather parameter has been selected, a time bar is displayed at the bottom of the screen:



The time bar allows you to play an animation (tap on the time bar anywhere) or you can manually drag it to a specific date & time.

Note that when you display the wind in color, you can switch the color range in between "standard" mode (0kn to 40Kn) and "light" mode (0kn to 20Kn) by clicking on the arrow located at the right side of the color palette:

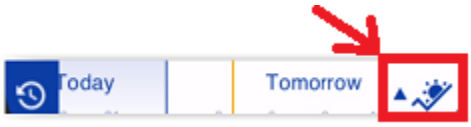
In the screenshots below, you can see that the "light" color palette shows better wind variation in regular environment:



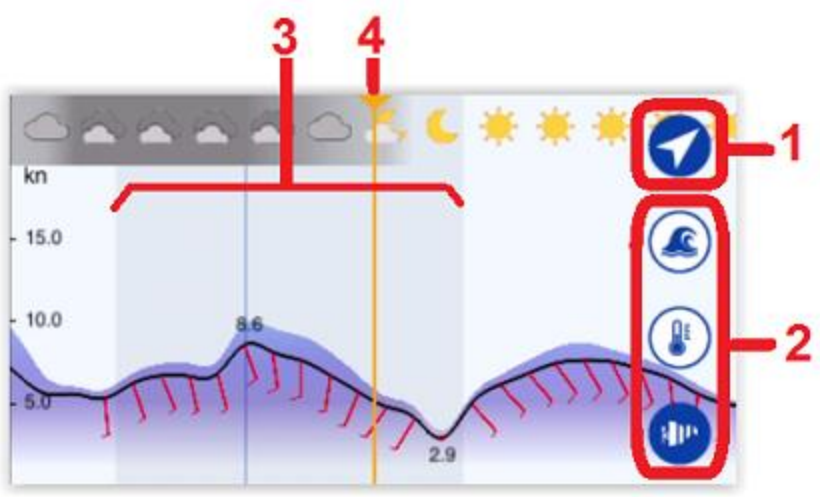
The "standard" color palette may be more suited when you want to track storms or in high wind conditions.

Using the Meteogram

When you want to know the weather condition at a specific location, you can use the "Meteogram". To display the Meteogram, first display any weather parameter on the chart and then click on the Meteogram button:



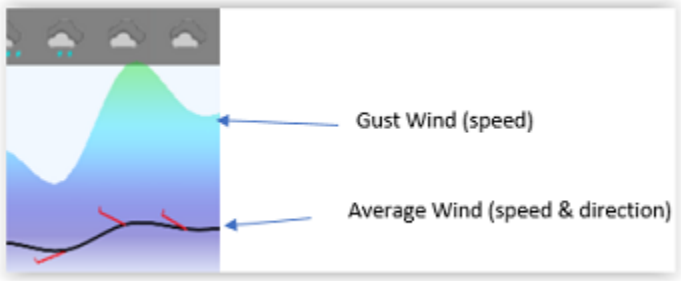
The Meteogram allows to see a graphical presentation of one or multiple meteorological variables with respect to time at a location (either your boat position or a custom location):



1. This button allows you to toggle in between your current location (GPS) and a custom location. When you are in “target” mode, an orange dot will appear on screen. You can drag this orange dot anywhere to see the weather overtime at any location.
2. These buttons allow you to select the parameters that will be displayed inside the Meteogram
3. Night is displayed inside the Meteogram in darker shade
4. Selected Time indicator

Note that when you drag the Meteogram, numerical value will be displayed giving you additional information:

When you select wind, both the average wind and wind gust will be displayed inside the Meteogram:

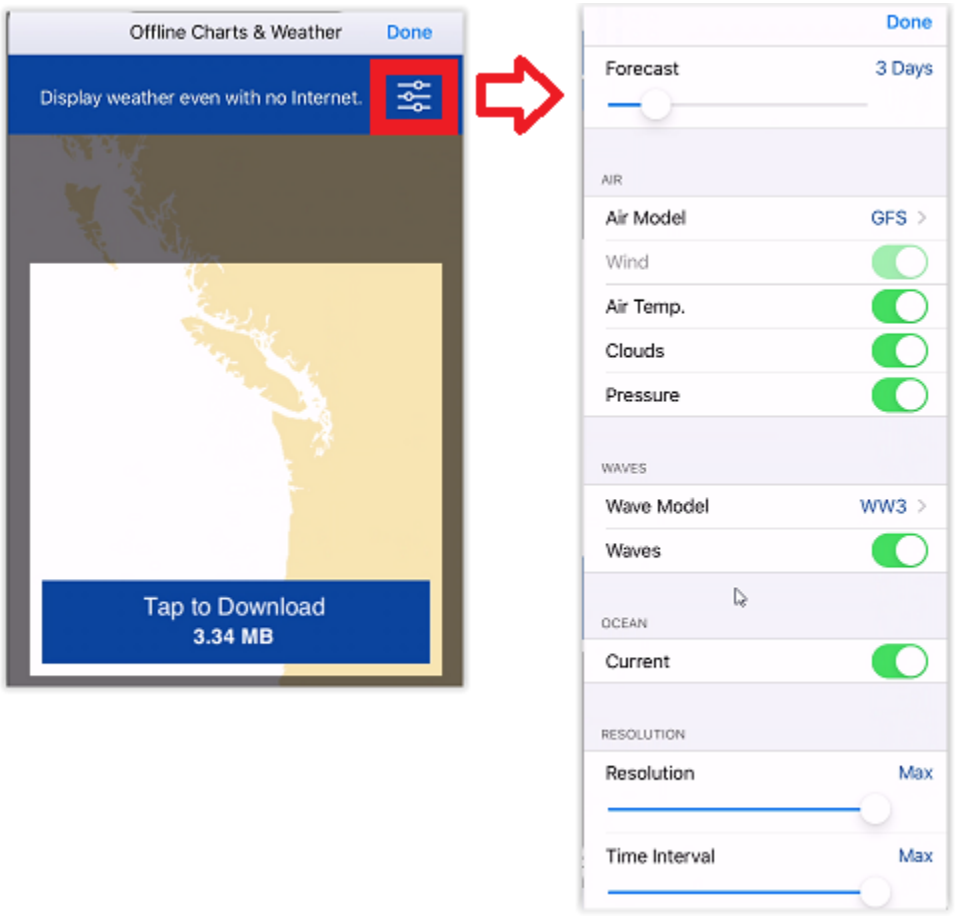


To close the Meteogram, simply tap on the same button that allowed you to open it.

Downloading Weather Forecast

By default, TZ iBoat “streams” weather directly using an Internet connection (“Online” mode). This mode is very convenient when using TZ iBoat at home or within cell coverage. However, if you plan to be at sea without any Internet connection, you can download weather forecast for a pre-determined area at home before you leave by enabling the “Offline” mode from the Weather Settings under “Connection Mode”. Once the Offline mode is enabled, you can click on the “TZ” button and select “Offline Charts and Weather” to access the download interface (just make sure to select “Weather” at the bottom as the same interface is also used to download chart data).

Adjust the download area by panning and zooming the chart. Tap on the settings icon to specify the parameters you want to download:



If you want to keep the downloaded file as small as possible, you can adjust the “Resolution” and “Time Interval”. Decreasing the resolution slider (to the left) will decrease the spatial resolution. For example, the standard GFS model has a native resolution of 25KM. This means that there is one data point every 25Km. If you decrease the resolution, the data point will be further apart (every 50KM).
Decreasing the time interval slider will decrease the forecast interval. For example, the GFS model gives a forecast every 6H (in between each forecast, weather parameters are interpolated in time). If you decrease the time interval, you will decrease the amount of interval within the total forecast period (for example one forecast every 12H instead of one forecast every 6H).

Once you are satisfied with all the parameters and the download area, tap on the download button.

Using an Iridium Go

Note that TZ iBoat can use an “Iridium Go” to download weather data at sea, where Wi-Fi or Cellular connection is not possible. The Iridium Go is a satellite communicator that creates a Wi-Fi Hotspot for your device:

Although very slow (2Kbps), the Iridium Go offers an unlimited data plan for about $150 per month that can be a very good solution to download weather anywhere, even during an ocean crossing. To setup the Iridium Go in TZ iBoat, set the “Connection Mode” to “Offline” and set the “Download Method” to “By Iridium” from the Weather settings. You will then be able to enter your Iridium Go login and password and test the connection.

Just make sure to connect your device to the Wi-Fi Hotspot created by the Iridium Go before testing the connection or attempting to download weather data.

Note: TZ iBoat communicates directly with the Iridium Go. There is no need for third party app to establish the connection. When pressing the "Download" button, TZ iBoat will automatically establish the satellite connection link (dial up), download the data, and finally close the connection (to save power). In case of interruption during the download, the progress bar will turn orange. Do NOT press on "Cancel" to try to relaunch the process manually, TZ iBoat will automatically attempt to reconnect and resume the download at the point where it left off. Note that for data download to start, the satellite status needs to have at least 3 bars.

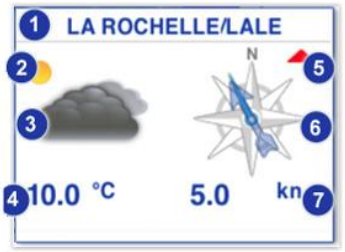
Once setup, the "Offline Weather" screen download button will change to display “Download with Iridium GO!”.

After pressing the download button, TZ iBoat will automatically establish the Iridium Go satellite connection (dial up), download the weather data, and finally close the connection (to save power). In case of interruption during the download, the progress bar will turn orange. Do NOT press on "Cancel" to try to relaunch the process manually, TZ iBoat will automatically attempt to reconnect and resume the download at the point where it left off. Note that for data download to start, the satellite status needs to have at least 3 bars on the Iridium Go.

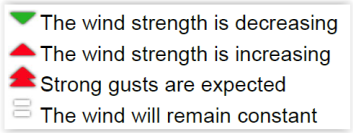
Note: The real-world speed of the Iridium Go is about 10KB/minute. A weather download of 80KB will take a little less than 10 minutes in average. The default maximum size is set to 100kB (from the Weather Options), but you can increase it to up to 1MB (but it might take as long as 2 hours to retrieve 1MB).

Real Time Weather NavData

In addition to weather forecast (that are derived from numerical weather model), TZ iBoat also can display real time weather data and tendency that is collected from observation stations (METAR stations). This real time weather information can be displayed in a NavData. TZ iBoat will always display the closest observation station from your own ship position:



1. Name of the station
2. Weather tendency for the next hours (in this example, the future trend is improving)
3. Current weather (observation)
4. Temperature
5. Wind Speed tendency:



6. Wind Direction:
    a. Average Wind Direction is indicated with the arrow
    b. The blue line, when present, indicates the wind variability (not displayed if the wind direction is steady)
7. Average Wind Speed

Note that an Internet connection is required to populate the Weather NavData (since this is an observation). The Weather NavData is grayed-out if your Internet connection has been lost for 20 minutes or more.

Tides & Tidal Currents

Displaying Tides and Tidal Currents on the Chart

TZ iBoat can predict the tide level and tidal currents direction & strength for thousands of tide stations around the world. To display tides and currents on the chart, tap on the "Layer" button located on the bottom right of your screen and select "Tidal Heights Stations" and/or “Tidal Currents”.

The tide icons displayed on the chart are dynamic and show you a preview of the water level:

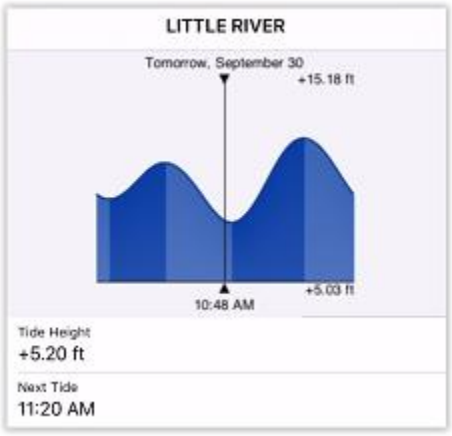
Rising from low to high

Falling from high to low

At slack (low and high)

Tidal Currents will change direction, color, and size according to the current direction and strength:

If you tap on a tide icon or tidal current icon, a Pop-Up menu with a small graph will appear:



Note that when you display either the tides or tidal currents, the time bar appears at the bottom of the screen

Tide Graph NavData

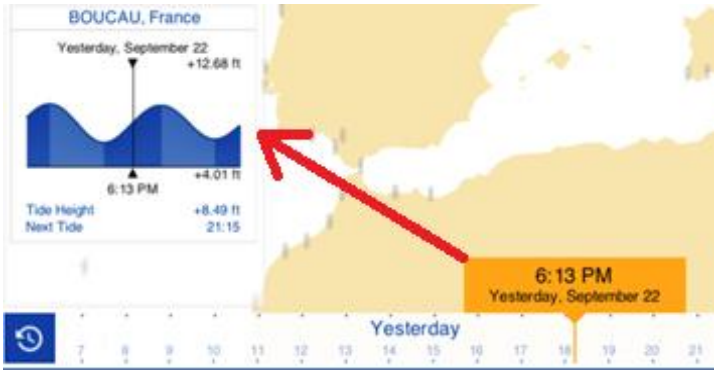
A small tide graph is available in the NavData panel that can be opened by swiping your finger from the left edge of your screen:

Note: If the Tides & Currents NavData was removed from your NavData panel configuration, simply tap on the "Add" button located on the upper left corner of the NavData panel and select "Tide Graph".

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.

You can check the tide for any date & time by dragging the time bar located at the bottom of your screen:

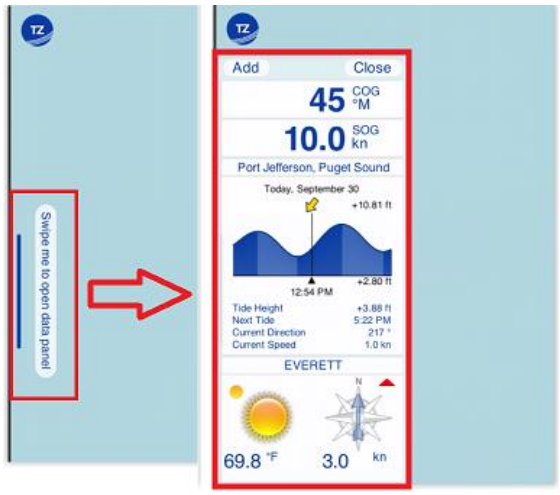


Note that for the time bar to appear, you must display on the chart either the Tides or Currents or Weather from the Layer button.

NavData

Displaying and Configuring NavData

A panel displaying various type of data can be displayed on the left side of your screen. This panel can be configured with multiple “NavData”. To open the NavData panel, simply swipe your finger from the left:



To close the NavData panel, you can either swipe it away, or simply click on the “Close” button located on the top right of the panel. To Add a new NavData, click on the “Add” button located on the top left of the panel. If you want to change an existing NavData (for example change data it displays), just tap on it and select the new data type.

There are multiple types of NavData:

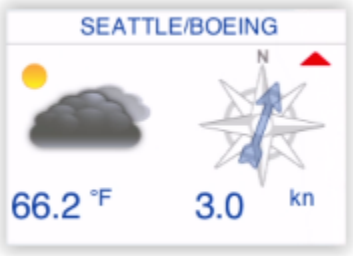
- Numerical NavData: used to display a sensor value (Speed, Depth, Wind…) or the Active Route data (Time to Go, Cross Track Error…) using text:

- Graphic NavData: to display a sensor value using a graphic gauge:

To configure a gauge NavData, first add a numerical NavData with the data you want to display, then tap on it and enable "Graphic" from the Pop-Up menu.

- Tide and Current NavData: to display the closest tide station information as a small graph, and when applicable, the closest tidal current direction and speed.

- Real Time Weather NavData: to display real time weather from the closest METAR station (requires Internet connection)



Note that the NavData panel was designed to be used in landscape mode (and preferably on a larger screen such as on iPads). However, it is possible to display the NavData panel in portrait mode. On iPhone, this would only be practicable to have a quick glance at the NavData, and then close the panel once you no longer need it.

TIP: When you activate a route, steering and route data will automatically appear at the top of your screen in the Active Route header. You can cycle in between multiple values by tapping on the header.

AIS

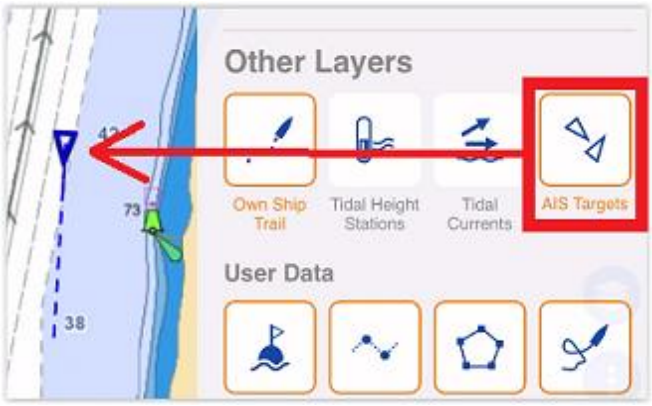
AIS Targets

IMPORTANT: The AIS Module needs to be purchased to be able to connect TZ iBoat to an AIS receiver or AIS transceiver and display AIS targets on your charts. To purchase the AIS module, click on the "TZ" button located on the top left of your screen, select "Store" and then "Modules".

Automatic Identification System (AIS) is an automated tracking system that displays other vessels in the vicinity. It is a broadcast transponder system which operates in the VHF mobile maritime band. If you install an AIS receiver on your vessel, you will be able to see any other vessels on your charts that are equipped with an AIS transceiver. If you install and AIS transceiver on your vessel, your own ship also shows on the screens of other vessels in the vicinity.

IMPORTANT: To display AIS targets, TZ iBoat must be connected to an AIS receiver or AIS transceiver via Wi-Fi using NMEA0183 sentences. TZ iBoat is not "compatible" with AIS over the Internet. Please refer to NMEA Gateway to learn how to connect an AIS system to TZ iBoat.

Once TZ iBoat is connect to an AIS Receiver/Transceiver, you will be able to display AIS target on the charts by selecting "AIS" from the "Layer" button located on the bottom left of your screen:



AIS Symbols are small triangles colored in blue for AIS Class A and green for AIS Class B. The AIS symbol (triangle) will point toward the heading value of the vessel, while the speed vector will use the vessel COG (Course Over Ground):

Note: You can adjust the AIS target speed vector length from the "Targets" settings

Below are the various symbols used by AIS:


AIS Class A with Heading, Rate of Turn (turning starboard) and COG data


AIS Class B

 AIS Icon with one (or multiple) important data missing preventing proper orientation on the chart (missing heading and COG) or preventing CPA/TCPA computation (missing COG and SOG of AIS target or Own Ship)

 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.

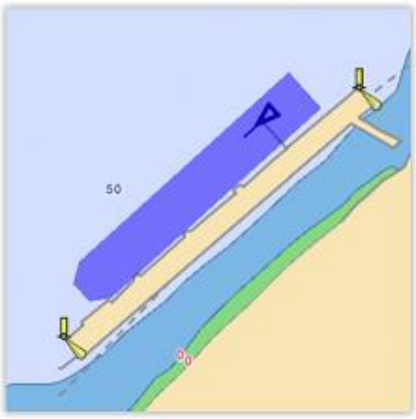
 AIS Search and Rescue Aircraft

 AIS Base Station Icon

 AIS AtON (physical or virtual Aid to Navigation)

 AIS SART (Personal Man Over Board transponder)

Each AIS symbol can reflect the actual size of the ship when you zoom in far enough on the chart (and if that AIS target is transmitting its size):



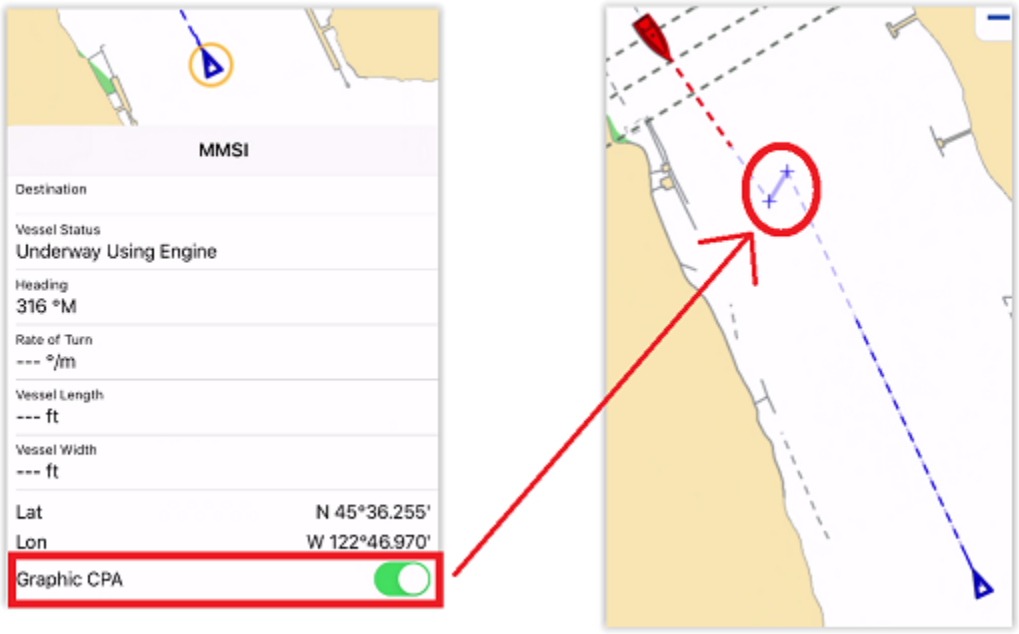
By tapping on the AIS symbol, you can learn the ship name, course and speed, call sign, MMSI, and other information. Maneuvering information, such as range, bearing, closest point of approach (CPA), time to closest point of approach (TCPA) are also available.

CPA & TCPA

One of the most useful features of AIS is the ability to display and raise alarm from the CPA and TCPA values. The CPA (Closest Point of Approach) is the closest that you will come to the vessel in question should you both maintain your current course and speed. The TCPA “Time to Closest Point of Approach” states when the closest pass will occur.

AIS target alarm (CPA/TCPA and AIS Proximity alarms) can be set from the “Targets” settings. When a target predicted closest point of approach (CPA) becomes smaller than the CPA alarm value and when its predicted time to CPA becomes smaller than the TCPA alarm value, the target becomes dangerous and its icon flashes in red. If the CPA/TCPA alarm is checked, an alarm will also appear at the top of the screen to draw your attention.

If you want to visualize on the chart the location where you will be meeting a specific target, tap on it and enabled “Graphic CPA”. A graphic representation of the target Closest Point of Approach (Graphic CPA) will appear:



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.

FURUNO 1st Watch Wireless Radar (DRS4W)

Introduction

IMPORTANT: The Radar Module needs to be purchased to be able to connect TZ iBoat to the Furuno DRS4W 1st Watch Radar. To purchase the Radar module, click on the “TZ” button located on the top left of your screen, select “Store” and then “Modules”.

The FURUNO DRS4W 1st Watch Radar is the world’s first wireless Radar that you can access directly from your iOS devices and TZ iBoat! With the FURUNO 1st Watch Wireless Radar, you can do things previously impossible. Bring the Radar display wherever you go, even put it on the iPhone in your pocket. Since the display is untethered, you are free to roam the vessel while maintaining full situational awareness of your surroundings. The installation is simple with its compact and lightweight Radar antenna:

Mount it, plug in the power cord and you are done. Due to the portability of the iOS devices this makes the system a good option for boats where space constrictions are of concern or for boats that want to only use iPads and iPhone as primary navigation devices.

TZ iBoat paired with an AIS receiver and the DRS4W is the ultimate solution.

Setup

The DRS4W Radar creates its own wireless network access point when powered ON. The first step is to setup your iPhone or iPad to join the Radar's wireless network by following the usual procedure to join a Wi-Fi network. All DRS4W Radars create a network with an identifier (SSID) starting with "DRS4Wxxxxxxxx". The wireless network is protected using a password (WPA2-Personal) which is unique to each DRS4W Radar and available inside your DRS4W User Guide.

Basic Setup

While recommended, an external heading sensor is not mandatory for the overlay of Radar echoes on the chart. TZ iBoat can use your device's internal (or Bluetooth) GPS Course Over Ground (COG) to align the Radar on the chart, making the installation very easy:

Note that the radar echo will appear with high transparency if your vessel is moving below 1Kn (to indicate that the Heading derived from your course over ground is inaccurate).

Advanced Setup

To better aligned the Radar echo on the chart, it is recommended to connect a heading sensor to TZ iBoat. This can be done using a NMEA to Wi-Fi gateway. Note that if you want to bring additional data (other than GPS data) such as depth, wind or AIS, you will also need a NMEA to Wi-Fi gateway:

You need to make sure that the Wi-Fi Gateway you want to use can join an existing WI-FI network to connect to the DRS4W network. This means that you should be able to program the Gateway to connect to the DRS4W network by entering the DRS4W SSID and Password.

IMPORTANT: The DRS4W does not have the ability to join an existing wireless network: it must create its own. Because an iPhone or iPad can only join one Wi-Fi network at a time, the Wi-Fi Gateway bridging the NMEA data (GPS, Heading, Depth, Wind, AIS…) MUST itself join the DRS4W network. Only then the iPhone or iPad will be able to get Radar Echo and NMEA data (by only connecting to the DRS4W network).

The Wi-Fi Gateway must output NMEA0183 sentences over UDP or TCP. Here is a list of recommended NMEA0183 to Wi-Fi Gateways that support connecting to an existing network:

- Digital Yacht NMEA-0183 Wi-Fi Gateway - WLN10 (single port)
- Digital Yacht NMEA-0183 Wi-Fi Gateway - WLN30 (three ports)
- Yacht Devices NMEA-0183 Wi-Fi Gateway - YDWN-02 (dual ports)

Note that if your instruments output data using NMEA2000, most NMEA2000 to Wi-Fi Gateway will support transcoding the NMEA2000 data into NMEA0183 before outputting the data over UDP or TCP. Here is a list of recommended NMEA2000 to Wi-Fi Gateways that support connecting to an existing network (and NMEA0183 transcoding):

- Actisense NMEA-2000 Wi-Fi Gateway - W2K-1
- Digital Yacht NMEA-2000 Wi-Fi Gateway - NavLink2
- Yacht Devices NMEA-2000 Wi-Fi Gateway - YDWG-02

If you are considering purchasing an AIS, some units have Wi-Fi capabilities and can even act as a gateway to bridge existing instruments to the Wi-Fi network multiplexed with the AIS data:

- Vesper AIS Transponder with Wi-Fi and NMEA 2000 Gateway - WatchMate XB-8000
- Digital Yacht AIS Receiver with Wi-Fi Gateway – iAIS Receiver
- Digital Yacht AIS Transponder with Wi-Fi Gateway – iAISTX
- Digital Yacht AIS Transponder with Wi-Fi and NMEA200 Gateway – iAISTX Plus

For all type of gateway, the three steps below need to be achieved:

- Configure the gateway to join the DRS4W Wi-Fi network. Follow the manufacturer instructions to configure the gateway with the DRS4W SSID and Password
- If the gateway only support TCP connection, you will have to setup a fix IP address for the gateway. We recommend using 172.31.100.100 for the gateway's fixed IP once connected to the

DRS4W network
Note: This step (fixing the gateway's IP address is optional if you plan to use UDP)

- Connect TZ iBoat to the DRS4W Wi-Fi network and configure the Wi-Fi Gateway UDP or TCP port from the "Initial Setup" settings (click on "Connect to NMEA Gateway"). Please refer to the gateway's user guide to know the UDP or TCP port number.
  Note: If TCP is used, you will also need to enter the gateway's IP address in TZ iBoat (that is why it is important to fix the gateway's IP address when using TCP).

Displaying Radar

Radar Overlay

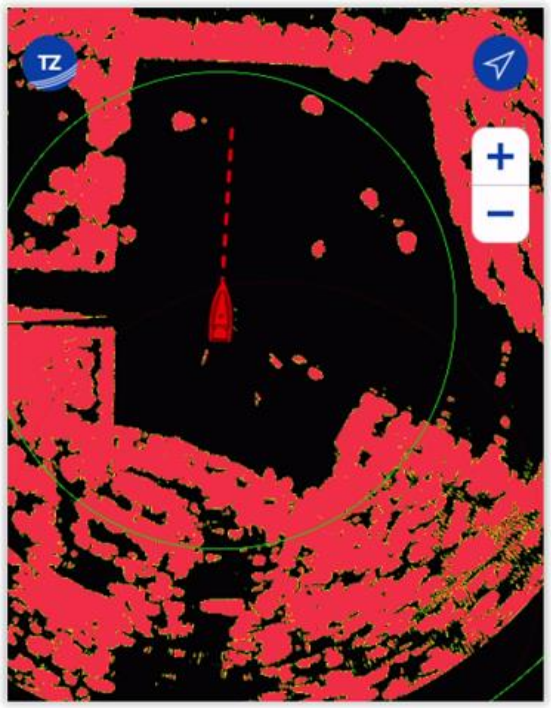
Once TZ iBoat is connected to the DRS4W network, you can display radar echo directly on the chart by selecting "Radar" from the "Layer" button located on the bottom right of your screen:

By default, radar echoes are displayed in multicolor with red representing the strongest radar return, yellow medium return and then green for weak return. You can change the radar overlay color palette from the "Radar" settings.

You can also adjust the radar overlay transparency. By default, the radar echoes are very opaque so that they are clearly visible on your screen. But, if you prefer to be able to see chart through the radar echoes, you can increase the "Radar Overlay Transparency" from the "Radar" settings.

Standalone Radar display

Note that if you prefer to focus solely on the radar echoes, it is possible to remove the chart from the "Layer" and only leave "Radar" selected. In this case, TZ iBoat will render the Radar Echo on a black background. In this mode, pan movements will be limited to the radar range (the radar coverage area).



Radar Control

The DRS4W has limited controls to keep it as easy to use as possible. The radar range is automatically adjusted as you zoom and pan the chart. There is no “Gain” or “Sea” filter like on a traditional radar (these parameters are automatically adjusted by the DRS4W). By default, the “Rain” filter is set to Auto, but “Auto Rain” can be turned OFF from the “Radar” settings allowing you to manually adjust the Rain filter.

Note: For most users it is recommended to leave the Rain filter on Auto. If you find that the DRS4W has issue picking up small target at a distance when it is not raining, you can try to turn OFF “Auto Rain” and set the “Rain Adjust” to 0 to eliminate any rain filtering that has a tendency to weaken some echo. On the opposite, if you have to much noise caused by rain, you may also try to turn OFF “Auto Rain”, but this time increase “Rain Adjust” until the noise goes away.

To Transmit or Standby the radar, click on the Radar Scale located on the bottom left:

Note: When you enable the radar overlay from the "Layer" button, TZ iBoat will automatically set the radar in Transmit mode.

Instruments Connection

Internal & Bluetooth GPS

TZ iBoat is compatible with the internal GPS that can be found in every iPhones and iPads with cellular connection option. However, if you have a "Wi-Fi only" iPad (without an integrated GPS receiver), you can purchase a Bluetooth GPS (compatible with the Apple Core Location Service) to get an accurate position at sea.
IMPORTANT: Although the iPad "Wi-Fi only" models will give you an approximate location on land, you must connect an external GPS (either Bluetooth or via a Wi-Fi NMEA Gateway) in order to use TZ iBoat at sea.

NMEA Gateway

If you prefer to use an external GPS (non-Bluetooth) or connect additional instruments (depth, AIS, wind…), it is possible to connect a NMEA gateway to TZ iBoat that will relay NMEA0183 sentences over Wi-Fi on a single TCP or UDP port. TZ iBoat can currently decode the following NMEA0183 data over TCP or UDP:

- Position (GLL, GGA, RMC, VDO)
- Course and Speed Over Ground (RMC, VTG, VDO)
- Heading (HDG, HDM, HDT, VHW, PFECATT, VDO)
- Depth (DBT, DPT)
- Wind (MWV, MWD)
- Sea Surface Temperature (MDA, MTW)

- AIS (VDM) (*)

(*) AIS targets can only be displayed when the optional AIS module is purchased

Usually, the NMEA Gateway creates its own wireless network access point. The iPhone or iPad must be set up to join this Wi-Fi network. If the NMEA Gateway is set to output NMEA 0183 sentences over Wi-Fi using the UDP protocol, you only need to enter the UDP port number in TZ iBoat. If the TCP protocol is used instead, you need to enter the TCP port number and the IP address of the Wi-Fi Gateway in TZ iBoat. For most application, we recommend using the UDP protocol whenever possible.

The NMEA Gateway can be setup from the "Initial Setup" settings by clicking on "Connect to NMEA Gateway". At the top of the NMEA Gateway configuration window, you can select the UDP or TCP protocol. If the NMEA Gateway you are using supports both UDP and TCP, we recommend you use UDP (which is easier to configure). When you select UDP, you just need to enter the UDP port number that the gateway is using to send NMEA data over Wi-Fi. When you select TCP, you must enter the TCP port number, but also the IP address of the NMEA Gateway:

After configuring the port number (and the IP address of the gateway in case of TCP communication), you should see NMEA data flowing on your screen.

If you do not see any data scrolling, then make sure that:

- Your device has joined the proper Wi-Fi network (usually the Wi-Fi network created by the Gateway itself). Note that TZ iBoat will display the name of the Wi-Fi network your device is currently connected next to "Selected Wi-Fi".
- Your device has a good IP address. If you see an IP address starting with 169.254 next to "Current IP address", it usually means that the NMEA Gateway was unable to assign an IP address to your device. Try to disconnect from the Wi-Fi network and try again.
- The Port Number is wrong. Refer to the NMEA Gateway user guide to make sure the port number is correct.
  Note: If you use UDP, the status indicator (Green / Red square next to the port number) will always been green, even if the port number is incorrect. However, with TCP, if the status indicator is green, it means that the connection to the gateway is correct.

- The NMEA Gateway does not receive any NMEA data. In that case make sure the wiring is correct on the NMEA gateway.

Furuno TZtouch 2 and TZtouch 3

The Furuno TZtouch 2 and TZtouch 3 MFDs can create their own Wireless Hot Spot. When you connect your device to a Furuno MFD Wi-Fi network, not only your user objects (marks, routes, boundaries) will synchronize automatically with the MFD, but TZ iBoat will be able to receive all navigation data available on the MFD (Position, Course, Speed, Heading, Depth, Wind, AIS).

There is nothing to configure in TZ iBoat. When an MFD is detected on the Wi-Fi network, TZ iBoat will automatically use it as a data source (position received from the MFD will take priority over the position received by your device internal GPS).

In-App Purchase and Subscriptions

Subscriptions

Chart Subscriptions

Raster charts and Vector chart areas can be purchased on TZ iBoat by tapping on the “TZ” button located at the top left of your screen and selecting “Store”. Vector charts (or electronic chart) are available worldwide. Raster charts (digital copy of paper charts) are sourced from local hydrographic office and are available on selected areas only. Note that chart purchase is a one-year subscription. After one year, the subscription will be renewed automatically unless auto-renew is turned off at least 24 hours before the end of the current period. Charts are automatically updated during the subscription period.

If you decide to not renew the subscription, you will not be able to download or update the chart anymore (after the subscription period ends). Downloaded charts will remain usable on your device with the latest update done during subscription period, but if you reset your device or want to use a new device, you will have to renew your subscription to be able to download the charts again.

The list of chart areas is available below:

https://mytimezero.com/tz-iboat/charts-directory

Note: Vector charts and Raster Charts are purchased separately.

Premium Weather Subscription

In addition to the free weather forecasts service (based on the GFS model), it is possible to subscribe to a premium weather service that provides access to a higher resolution global model (ICON Global) and four higher resolution local models (NAM CONUS / Arpege / Arome / ICON Europe):

- The NAM CONUS offers coverage for North America at a resolution of 3 kilometers up to 2.5 days of forecast.
- The Arpege model offers European coverage at a resolution of 10 kilometers and up to 4 days of forecast.
- The Arome model offers coverage of French coasts and bordering countries at a resolution of 1 kilometer and up to 2 days of forecast.

- The ICON Global model offers a worldwide resolution at a 6 kilometers resolution (more than twice the GFS model) up to 5 days of forecast.

The premium weather service also offers access to 3 additional wave models.

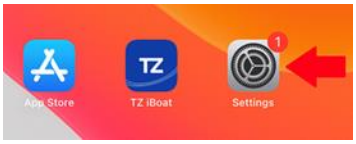
Service	**Weather (Free)**	**Premium Weather (Subscription)**
Wind	25Km	1Km
	GFS (0.25 * 0.25)	GFS (0.25 * 0.25) ICON Global (0.125 * 0.125) ICON Europe (0.062 * 0.062) Arome (0.01 * 0.01) Arpege (0.1 * 0.1) NAM CONUS (0.3 * 0.3)
Wind Gust	25Km	1Km
	GFS (0.25 * 0.25)	GFS (0.25 * 0.25) ICON Global (0.125 * 0.125) ICON Europe (0.062 * 0.062) Arome (0.01 * 0.01) Arpege (0.1 * 0.1) NAM CONUS (0.3 * 0.3)
Pressure	50Km	50Km
	GFS (0.5 * 0.5)	GFS (0.25 * 0.25) ICON Global (0.125 * 0.125) ICON Europe (0.062 * 0.062) Arome (0.01 * 0.01) Arpege (0.1 * 0.1) NAM CONUS (0.3 * 0.3)
Air Temperature	25Km	1Km
	GFS (0.25 * 0.25)	GFS (0.25 * 0.25) ICON Global (0.125 * 0.125) ICON Europe (0.062 * 0.062) Arome (0.01 * 0.01) Arpege (0.1 * 0.1) NAM CONUS (0.3 * 0.3)
Cloud	25Km	1Km
	GFS (0.25 * 0.25)	GFS (0.25 * 0.25) ICON Global (0.125 * 0.125) ICON Europe (0.062 * 0.062) Arome (0.01 * 0.01) Arpege (0.1 * 0.1) NAM CONUS (0.3 * 0.3)

Precipitation	25Km	1Km
	GFS (0.25 * 0.25)	GFS (0.25 * 0.25) ICON Global (0.125 * 0.125) ICON Europe (0.062 * 0.062) Arome (0.01 * 0.01) Arpege (0.1 * 0.1) NAM CONUS (0.3 * 0.3)
Humidity	25Km	1Km
	GFS (0.25 * 0.25)	GFS (0.25 * 0.25) ICON Global (0.125 * 0.125) ICON Europe (0.062 * 0.062) Arome (0.01 * 0.01) Arpege (0.1 * 0.1) NAM CONUS (0.3 * 0.3)
Wave (Significant)	50Km	3Km
	WW3 (0.5 * 0.5)	WW3 (0.5 * 0.5) Copernicus Global (0.083 * 0.083) Arome (0.02 * 0.02) Arpege (0.1 * 0.1)
Current	8Km	8Km
	(0.08 * 0.08)	(0.08 * 0.08)

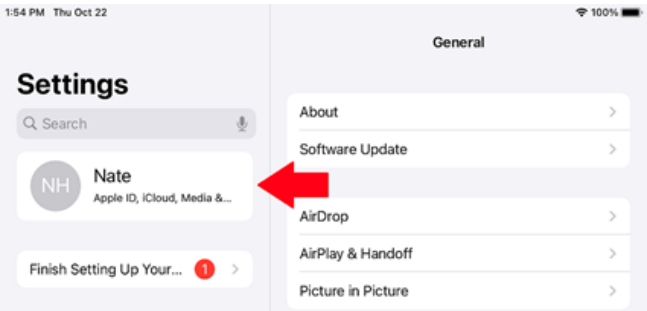
The premium weather is a monthly subscription that can be stopped at any time. To purchase the premium weather subscription, tap on the “TZ” button located at the top left of your screen and select “Store”. When the subscription ends, TZ iBoat will revert to the free GFS model.

Cancel a Subscription

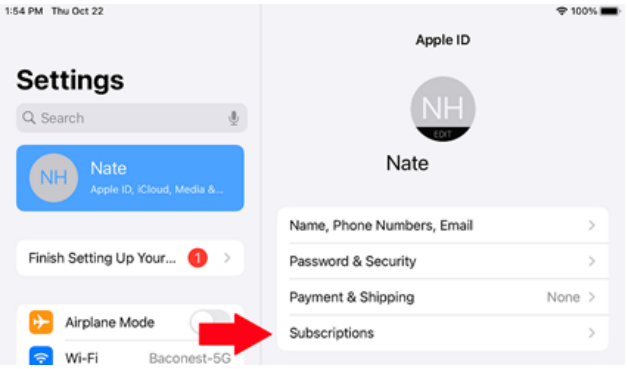
If you need to cancel a subscription (charts or premium weather), you can do so from your device's Settings App. Press the “Home” button and open the Settings App:



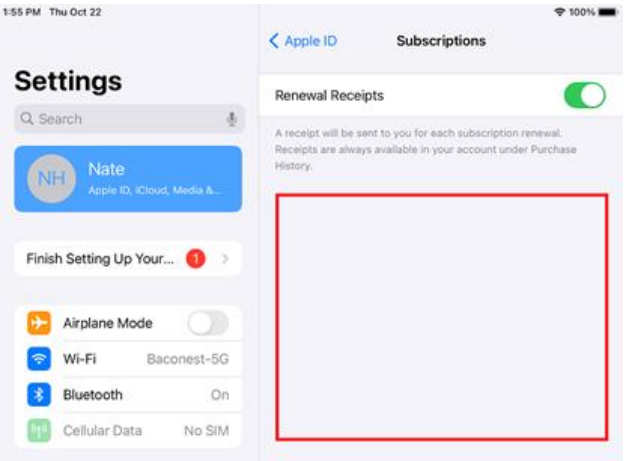
Tap your Apple ID “card” with your name and profile image at the top of the menu:



Tap on Subscriptions:



You will see a list of all your active and expired subscriptions. If you want to cancel one, press the desired active subscription and then press Cancel Subscription toward the bottom:



Purchases (modules)

TZ iBoat offers two modules: AIS and Radar. These modules are a “one shot” purchase that unlocks specific features in TZ iBoat.

AIS Module

The AIS Module allows to connect TZ iBoat to an AIS Receiver (purchased separately) via Wi-Fi (through a UDP or TCP port). TZ iBoat is compatible with the NMEA0183 protocol (VDM sentences) that is outputted by most AIS receiver. Please refer to the “Instruments Connection -> NMEA Gateway” for more information.

Radar Module

The Radar Module allows to connect TZ iBoat to a Furuno 1st Watch (DRS4W) Wireless Radar (purchased separately) and display the radar echo directly over the chart (radar overlay). Please refer to the “Furuno 1st Watch” for more information.

Refund Charges

TZ iBoat does not have the ability to process refunds since all purchases are made through the Apple App Store. To request a refund through Apple, follow these steps below:

1. Go to https://reportaproblem.apple.com
2. Login with your Apple ID.
3. Find your TZ iBoat purchase in the list.
4. Click on Report a Problem to request a refund.

Settings

General

Function Gesture: You can set and customize a function gesture that will be triggered when press and hold two fingers on the screen for 1 second. Functions that can be triggered are Camera (taking or selecting a picture from your library to create a Photo user object at the current location), Screen Capture (taking a screenshot used to create a Photo user object at the current location) or Event (default) that will display the Event window.

Boat Length: Set your vessel length. This information is used to display the boat icon in real scale when zoomed in far enough on the chart.

Size of Static Icon: Adjusts the size of the boat icon. Note that if you zoom to a very small range, the vessel icon size will be displayed at its real scale (size) on the chart according to the "Boat Length" parameter.

Prevent Auto-Lock: When enabled, this setting prevents your device from going into sleep mode while TZ iBoat is open. It is useful when your device is mounted on your dash and when you want to have TZ iBoat always turned ON.

Wind Speed Alarm: When enabled and when real time wind information is configured (via a Wi-Fi NMEA Gateway), TZ iBoat will display an alarm in red (in the status bar located at the top of the screen) when the wind speed crosses the threshold alarm value setup in the setting below.

Wind Speed Alarm Value: Adjusts the threshold used by the Wind Speed Alarm.

Ship & Track

COG/SOG Predictor: Selects if the Course Over Ground (COG) predictor varies in length according to speed or is 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.

Own Ship Trail Duration: Adjusts the length of the trail (in time) displayed on the chart.

Trail Thickness: Adjusts the thickness of the trail.

Track Interval: Sets the track recording interval in second.

Note: The trail interval is fixed to one second (for maximum accuracy) and it cannot be changed.

Track Color: Sets the default track color. Note that track color can be changed individually after they have been created by tapping on any track and selecting the color from the Pop-Up menu.

Track Thickness: Adjusts the thickness of all tracks.

Delete All Tracks: Pressing this button will delete all tracks that have been recorded. Pressing this button will NOT erase the trail.

Routes

Route Icon Position: Selects if the collapsed route icons are located at the first or last waypoint of the route. In TZ iBoat, routes that are not selected automatically collapse to unclutter your screen.

Route Label: Enabling this setting will display the route name just below the route icon (when they are collapsed).

Route Color: Sets the default route color when creating a route. Note that route color can be changed individually after they have been created by tapping on any route and selecting the color from the Pop-Up menu.

Route Thickness: Adjusts the thickness of the selected and active route.

Route Auto-Zoom: when this option is enabled, TZ iBoat will automatically adjust the zoom level when a new waypoint is activated along a route. TZ iBoat will either zoom in or zoom out to show the current position and the next waypoint on screen when switching to a new waypoint.

Note: The Route Auto Zoom will only work if the boat is displayed on the screen (TZ iBoat will not attempt to adjust the zoom level if you are panning on another area).

Waypoint Switching Mode: this setting determines how TZ iBoat switches to the next waypoint automatically when navigating on 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 an imaginary line that is perpendicular to the current active leg and goes through the waypoint.
- 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 around the active waypoint.

Intelligent Route Waypoint Centering: when this option is checked, the chart will automatically pan when a route is being built.

Display XTE 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).

XTE Value: this setting sets the default value of the route cross track error (used for displaying the XTE lines).

Planning Route Speed: Set the speed that is used when creating a route to compute the Time To Arrival (TTA) displayed in the Route Header (at the top of your screen). Note that when the route is activated, the speed used to compute Time to Go (TTG) and Estimated Time of Arrival (ETA) switches automatically to your real time speed (from your GPS).

Delete All User Objects: Press this button to delete all your user objects (marks, routes, photos, catches and boundaries).

Marks

Mark Label: Enabling this setting will display the marks name just below their icons.

Default Mark Symbol: changes the default mark icon used when creating a mark. Note that marks icon can be changed individually after they have been created by tapping on any mark and selecting the icon from the Pop-Up menu.

Default Mark Color: changes the default mark color used when creating a mark. Note that marks color can be changed individually after they have been created by tapping on any mark and selecting the color from the Pop-Up menu.

Mark Size: Adjusts the size of all marks displayed on screen.

Delete All User Objects: Press this button to delete all your user objects (marks, routes, photos, catches and boundaries).

Plotter

Day/Night Mode: adjusts the screen's brightness and vector chart color palette (for night or day). When set to Automatic, TZ iBoat will automatically switch modes according to your local sunset and sunrise time.

Grid Interval: indicates the grid interval (ranges from very low to very high) that can be turned ON and OFF from the "Layer" menu when selecting “Grid” overlay.

Zoom on Center: Automatically adjusts the zoom level when tapping on the “GPS” button and when changing mode (when switching from North Up to Head Up).

Head Up in 3D: Automatically tilt the screen in 3D (perspective) when the Head Up mode is selected

PhotoFusion Transparency: Manipulates the overall intensity of PhotoFusion transparency on water (ranges from 0-80)

PhotoFusion Offset: Offsets the depth at which the PhotoFusion will start. This setting is useful in area with large tides.

Weather Transparency: Adjust the weather transparency when it is displayed in color.

3D Alti Exaggeration: Determines the exaggeration of land altitudes displayed while in 3D mode.

Vector Chart

The Vector Charts options allow users to configure common settings related to the Vector Chart display.

Chart Boundaries: Displays the outline of all the electronic charts.

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.

Areas Boundaries: Determines how some boundaries are displayed on the chart: either using simple dash lines (“Plain”) or patterns (“Symbolized”).

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).

S-52 Display

The Vector Chart engine in TZ iBoat 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

Weather

Connection Mode: When the connection mode is set to “Online” the weather is streamed directly to your device. This mode is very convenient (you can look at any area and see the weather immediately), but it requires an Internet connection. If you plan to be in an area without Internet connection, you should switch the mode to “Offline” and then download a specific an area by clicking on the “Download Offline Weather” button just below.

Global Wave Model *(premium weather subscription only)*: Selects the wave model used for weather

Wind Particles Trail: Adjusts how long the particles animation are.

Color Shading Palette: Sets the appearance of the weather color palette (when a weather parameter is displayed in color). When set to “Continuous”, the transition in between colors is “smooth” (using a perfect gradient). When set to “Low” the color palette will use discrete colors that may better highlights variation in the underlying data.

Download Method: Set to “By Iridium” when you have an Iridium Go device. Leave it to “Direct Download” when you want to access the Weather server using a regular Internet connection. When you enable the Iridium Go download, new settings appear to enter your Iridium Go username and password.

Radar

This page is only available after purchasing the “Radar Module” when you want to connect TZ iBoat to a Furuno 1st Watch Radar (DRS4W)

Auto Rain: Sets the Radar Auto Rain mode ON or OFF

Rain Adjust: When the Auto Rain mode is set to OFF, this slider allows you to adjust the Auto Rain filter

Echo Color: Adjust the color of the Radar Overlay

- Multicolor 1: Red for strong echo / Yellow for medium echo / Dark Green for weak echo
- Green: Monochromatic Green with variable transparency according to echo level
- Yellow: Monochromatic Yellow with variable transparency according to echo level

Radar Overlay Transparency: Adjust the radar overlay transparency on the chart

Targets

Display Target ID: Check this option to display target name on the chart below the target icons.

Target COG/SOG Predictor: Selects if the Course Over Ground (COG) predictor varies in length according to speed or is 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.

CPA/TCPA Alarm: Enable or Disable the CPA/TCPA alarm for AIS

CPA and TCPA: Defines the CPA and TCPA values for which a target is considered dangerous and displayed in red on the chart. These values are also used to trigger the CPA/TCPA Alarm, when enabled.

Proximity AIS Target Alarm: An alarm is triggered when the vessel passes within a designated distance from an AIS target.

Units

The Units settings 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.

Initial Setup

Demo Mode: When enabled, the boat can be moved anywhere on the chart (tap anywhere and select “Move Boat” from the Pop-Up menu). If you activate a route, the boat will follow the route.

Connect to NMEA Gateway: Press this button to configure a wireless NMEA Gateway connection (TCP or UDP).

NavData Maximum Depth: Used to adjust the maximum scale of the depth NavData when displayed using graphic gage.

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", TZ iBoat will try to use the offset sent by the depth sounder (inside the NMEA0183 sentence) and revert to the offset set below if it is missing. When set to "hardware", TZ iBoat will only use the offset received by the sounder (causing lack of data if the sounder is not sending the proper offset). When set to "manual", TZ iBoat 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).

Wind Speed / Direction Offsets: These settings allow to introduce various offset in the wind data received by TZ iBoat.

Internal GPS Info: Displays some internal GPS information as well as the Authorization status.

About

Displays the license agreement, user objects statistics and the version of the App.