



MAP Planner Manual

MAP TECH Marine Auto-Pilot Technical Systems

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MAP Planner Manual

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Connecting to the Vessel

1. Install the **MAP Planner** software from the **MAP Pro Software and Manuals** USB drive packaged with your MAP Pro.
2. Click on the MAP shortcut as shown in Figure 1.



Figure 1: MAP Pro icon

3. Wait for the Sail Plan window to appear, as shown in Figure 2. You can now plan and upload routes to the vessel.

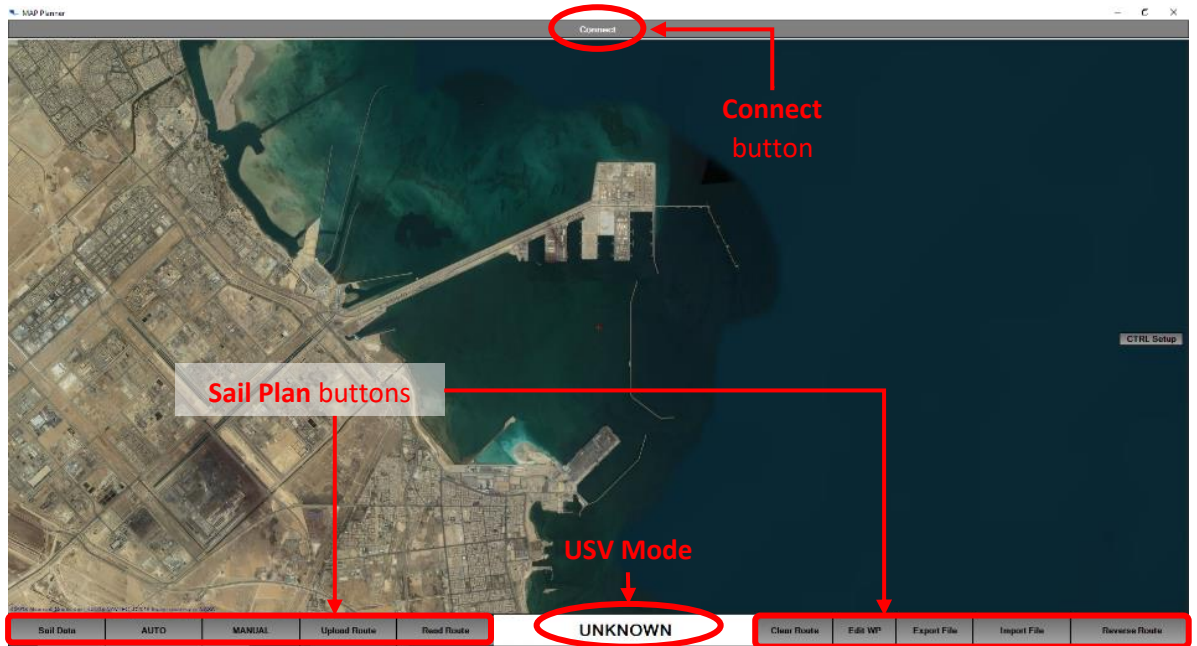


Figure 2: The Sail Plan interface

4. Click on the **Connect** button in Figure 2. Once the software successfully connects to the MAP Pro, the modes of the MAP Pro will appear, as shown in Table 1.

Table 1: MAP Pro control modes

USV Mode	Description
Hold	Midships the rudder and engages the neutral gear
Manual	Forwards joystick commands to the steering
Auto	Engages track control & steers the USV onto the planned route

In each mode, the **Mode LED** on the MAP Pro will change, as described in Table 2:

Table 2: Mode LED status

USV Mode	Description
Manual mode	Solid light blue
Redundant RC override	Solid green
Auto mode	Flashing dark blue

The functions of the remaining Sail Plan buttons from the MAP Planner interface in Figure 2 on page 2, are described as follows in Table 3:

Table 3: Sail Plan buttons

Button	Function
Sail Data	Switches from the Sail Plan window to the Sail Data window
Auto	Engages Auto Mode
Manual	Engages Manual Mode
Upload Route	Uploads the route displayed on the Sail Plan window to the MAP Pro
Read Route	Loads a route saved on the MAP Pro, displaying it on the Sail Plan window
Edit WP	Allows you to edit waypoint coordinates and speed
Export File	Saves the route displayed on the Sail Plan window to the computer
Import File	Loads a route file from the computer to the Sail Plan window
Reverse Route	Reverses the current route

Manual Remote Operation

1. Before using the **Manual USV** mode, click on the **CTRL Setup** button. The **Joystick Window** should appear, as seen in Figure 3.

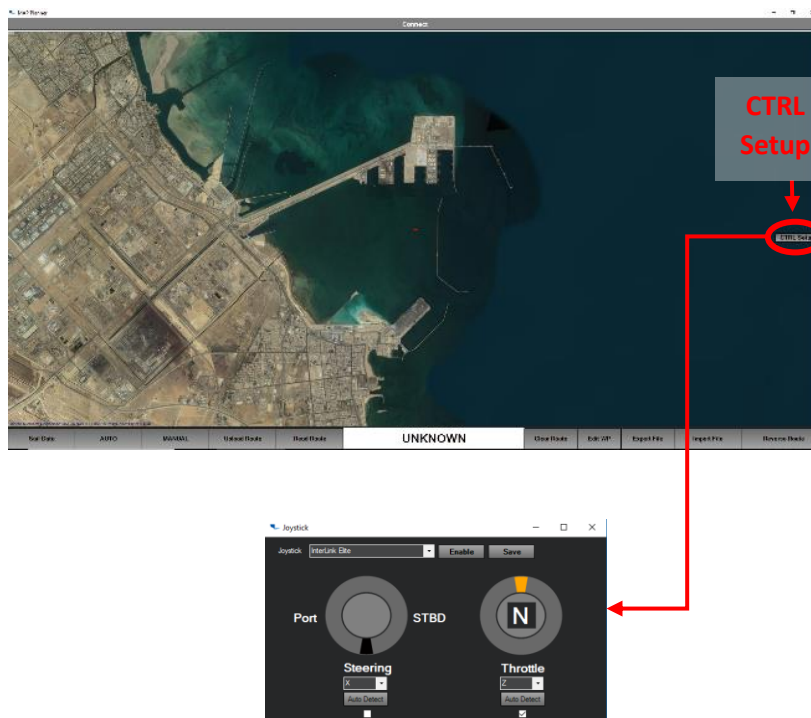


Figure 3: The Joystick window through the CTRL Setup window

2. Click **Enable** to activate joystick control.

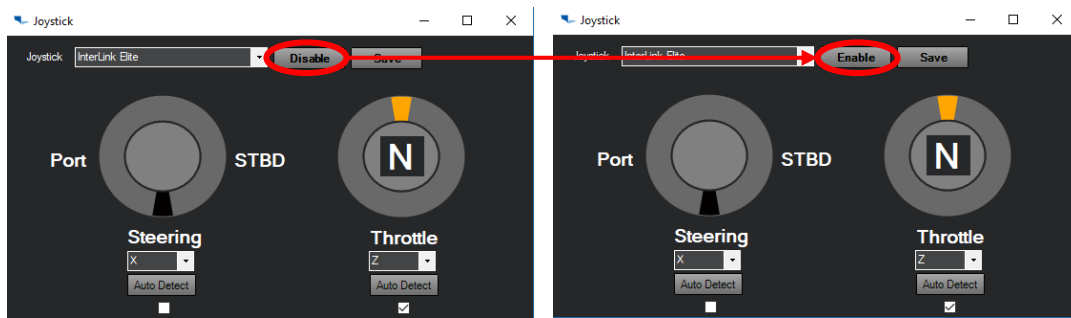


Figure 4: Enable joystick control

3. Observe the controls in the **Joystick** window, as shown in Figure 5.

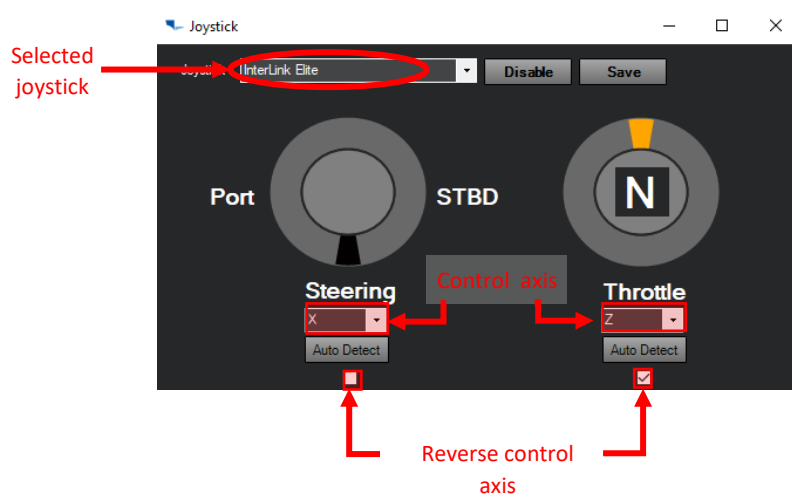


Figure 5: Manual mode joystick controls

In Figure 6, you can see the default axis configuration of the joystick.



Figure 6: Default joystick axis configuration

- Click on the **Manual** button to engage **Manual** mode, as shown in Figure 7.

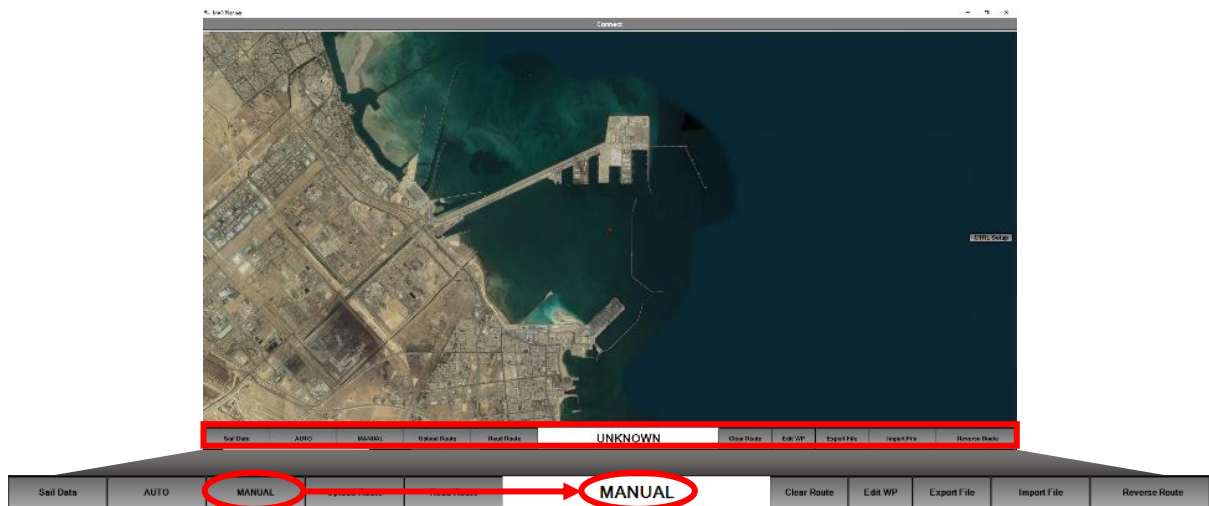
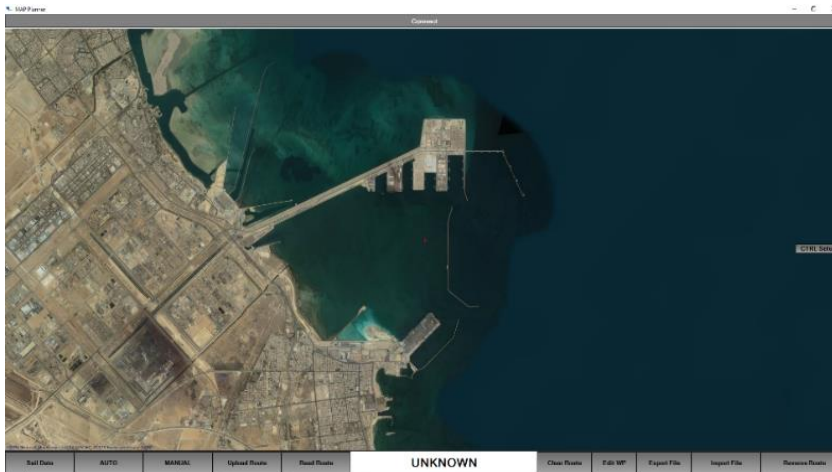


Figure 7: Manual mode

Auto USV Mode

Route Planning

- To set up waypoints on your route, left-click the **Sail Plan** in



- Figure 8.

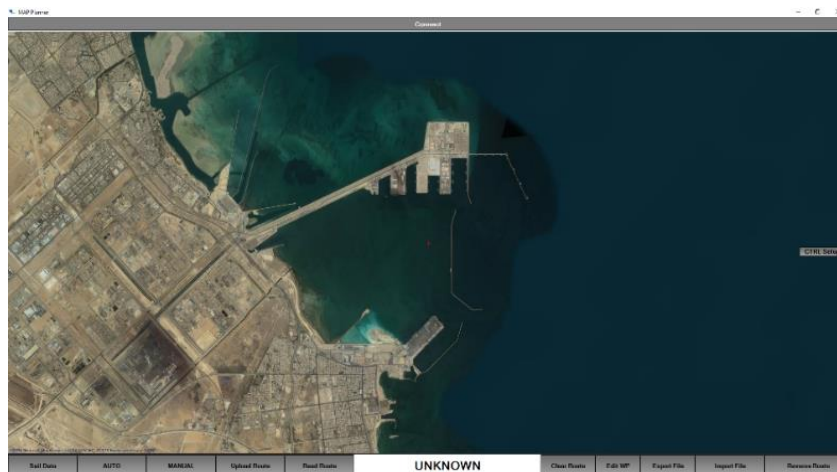


Figure 8: Sail Plan window

- 3. Click on the **Edit WP** button to view waypoint properties, as shown in Figure 9:

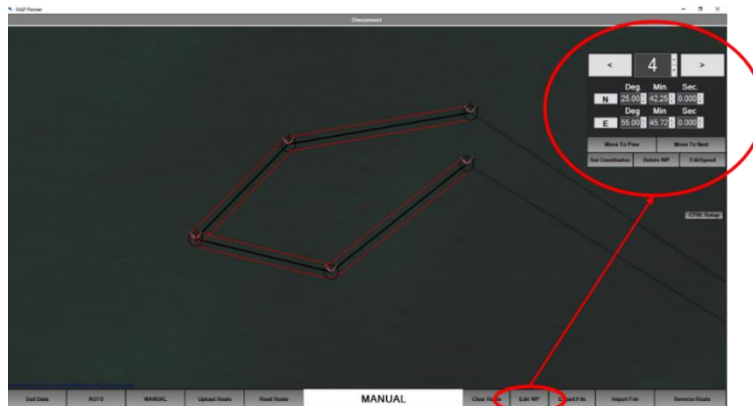


Figure 9: View waypoint properties

Through the waypoint properties window, you can:

- change the target speed of the vessel over ground, en-route to the waypoint, shown in Figure 10:

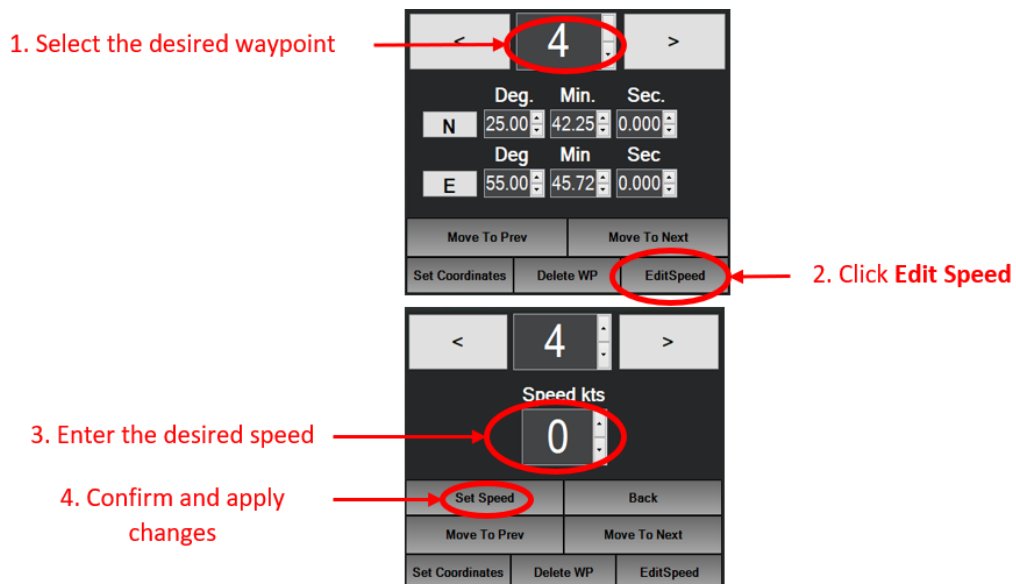


Figure 10: Edit waypoint speed

- edit waypoint coordinates, as illustrated in Figure 11:

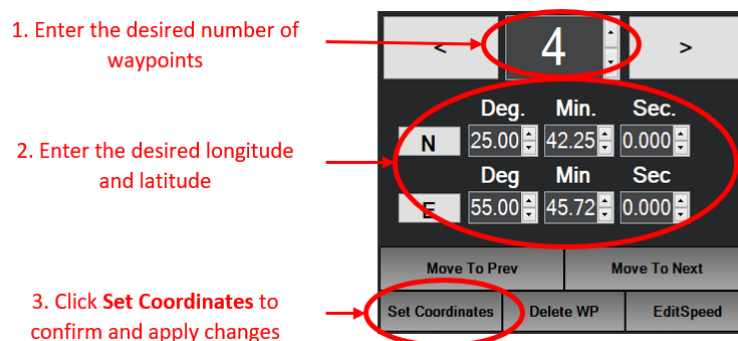


Figure 11: Set waypoints

- delete a waypoint, as shown in Figure 12:

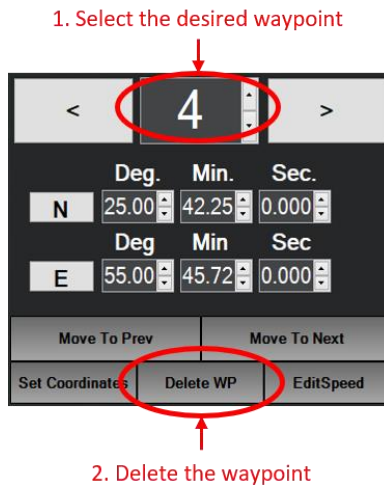


Figure 12: Delete a waypoint

4. Click **Upload Route** to upload the planned route onto the MAP Pro, as shown in Figure 13:

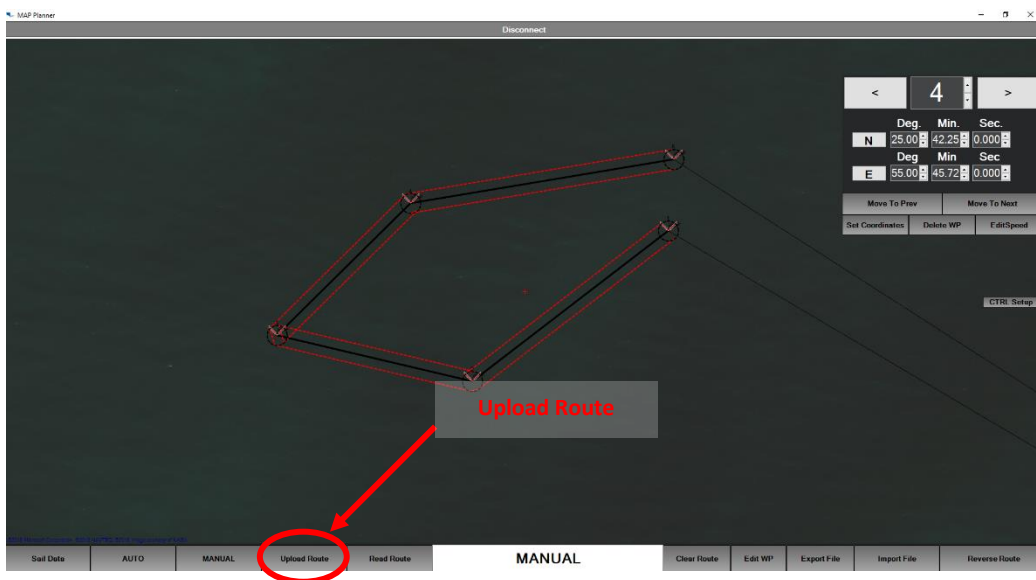


Figure 13: Upload the planned route

Auto Track Control

1. To change the starting waypoint, click on the **Sail Data** button to open the **Sail Data** window, shown in Figure 14:

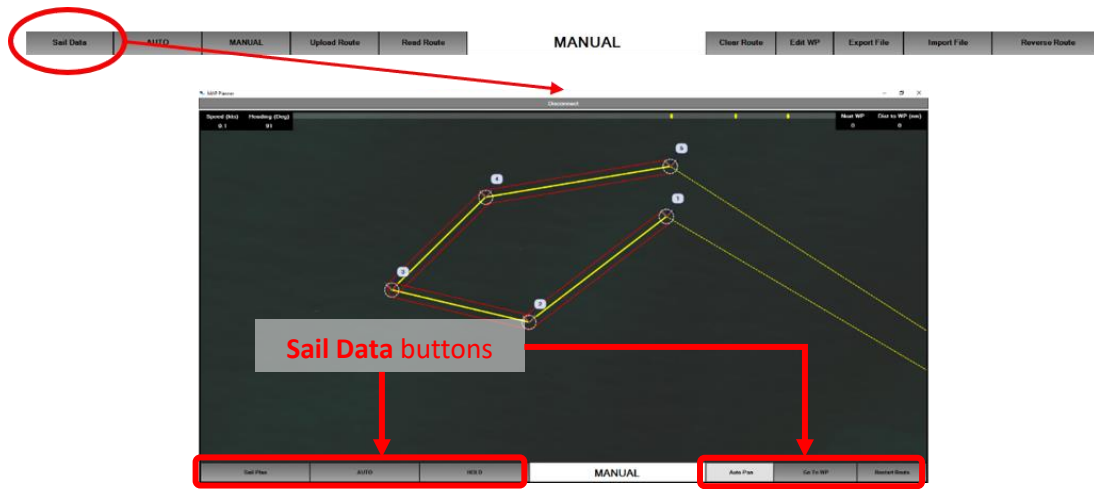


Figure 14: Sail data

Table 4 describes the function of each button.

Table 4: Sail Data buttons

Button	Function
Sail Plan	Switches from the "Sail Plan" window to the "Sail Data" window
Auto	Engages Auto mode
Hold	Engages Hold mode
Auto Pan	Enables/Disables auto pan
Go To WP	Sets the next waypoint
Restart Route	Restarts route & commands the USV to go back to WP1

Click on **Go to WP**, illustrated in Figure 15:

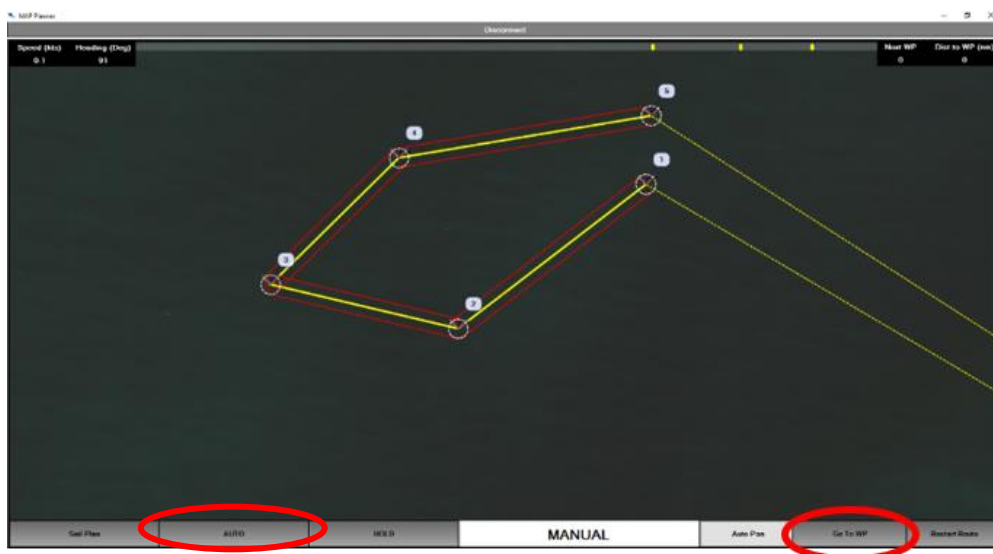


Figure 15: View waypoints

- To change the starting waypoint, follow the steps in Figure 16:

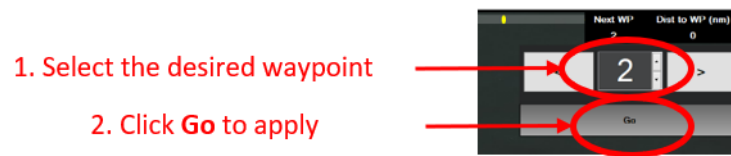


Figure 16: Change the starting waypoint

3. Using the joystick, manually drive the USV towards the initial waypoint.
4. Click **Auto** to engage track control, as shown in Figure 15.

When Auto mode is engaged, the MAP Pro will try to gradually steer the USV on the line joining the next waypoint with the previous waypoint.

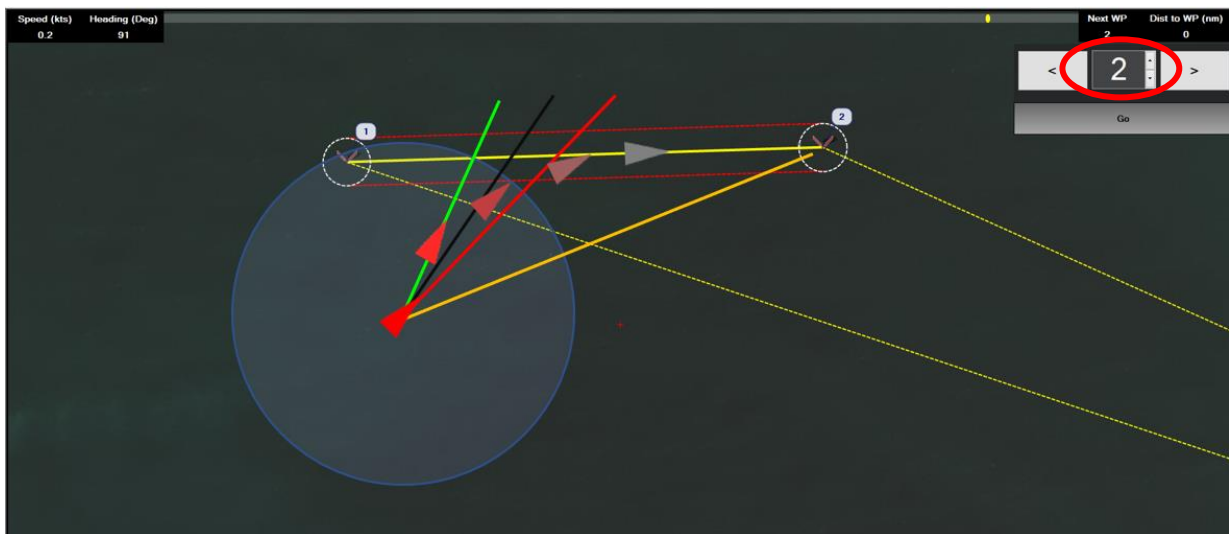


Figure 17: Gradually steering towards the next waypoint (WP 2)

A number of lines will appear around the icon of the USV when the **Auto** mode is engaged. The meaning of each line is explained in Table 5.

Table 5: **Auto** mode line colors

Line Color	Meaning
Green	MAP Pro heading correction command
Yellow	Next WP
Red	Heading
Black	Course over ground

Notes

- In case the user intends to directly navigate to the next waypoint without going through the line joining the next and previous waypoints, then the user can do so by clicking the **Go** button multiple times until the yellow and green lines coincide, as illustrated in Figure 17.
- The user can temporarily override the **Auto** commands of the MAP Pro by moving the steering control axis of the joystick from its center position.