



NavView User Guide – 07 Vehicles

Document: 4DN_NVUG_S07_01A
Release: 01
Revision: A
Released: 6/3/2024
4D Nav, LLC

Rel	Rev	Issue Description	Prepared	Reviewed	Approved	Date
01	A	Initial release	SW	GAW	GAW	Jun 3, 2024

© Copyright 2024 4D Nav LLC

Unless explicitly stated otherwise, all rights including those in copyright in the content of this document are owned or controlled by 4D Nav LLC (4D Nav). Except as otherwise expressly permitted under copyright law or by 4D Nav, the content of this document may not be copied, reproduced, republished, downloaded, posted, broadcast, or transmitted in any way without the written permission of 4D Nav.

Table of Contents

- 7. Vehicles1
- 7.1 Overview.....1
- 7.2 Vehicle Static Offsets and Tracking Points.....1
- 7.3 Realtime, Remote and Remote Telemetry Vehicles1
- 7.4 Vehicle Management..... 2
- 7.4.1 Add a Vehicle 3
- 7.4.2 Import a Vehicle15
- 7.4.3 Edit Vehicle.....16
- 7.4.4 Remove Vehicle17
- 7.5 Monitoring.....17
- 7.6 Vehicle Data Tab19

7. Vehicles

7.1 Overview

The term *vehicle* refers to any dynamic or static, surface, or sub-surface object that is to be positioned and oriented using a calculation and monitored with respect to its surroundings and other vehicles. These include dive support vessels (DSV), construction support vessels (CSV), remotely operated vehicles (ROV) and structures being positioned and placed as part of construction work.

If Roles and Privileges are enabled, the following are what is allowed for each role:

Roles	Privileges
Not Logged In	Cannot add, configure/edit or remove a vehicle
User	Cannot add, configure/edit or remove a vehicle
Online/Supervisor	Cannot add, configure or remove a vehicle; Can change vehicle name, outline and add/edit Static Offset
Admin (Administrator)	Can add, configure/edit or remove a vehicle

7.2 Vehicle Static Offsets and Tracking Points

Vehicles are not restricted to using a single tracking point. Instead, a calculation that provides the positioning for the vehicle's CRP is assigned to the vehicle and the position of all static offsets, i.e., offsets defining specific unchanging points on the vehicle, is updated at every calculation cycle. The CRP and all static offsets are available for selecting as the point of interest for guidance and/or centering on rather than a single, specific tracking point.

7.3 Realtime, Remote and Remote Telemetry Vehicles

NavView supports Realtime, Remote and Telemetry vehicles.

A Realtime vehicle is one that has been added to and configured on the local NavView station, positioned using real-time data sources such as device inputs and Calculation results.

A Remote vehicle is one that has been added and configured on another NavView station and is available for display on the local NavView station through the deployment and use of the NavView network services. See the **Networking** section for details.

A Remote Telemetry vehicle is one that has been added on another NavView station located on another vessel that is being communicated with via the Serial Radio Telemetry device. See **4DN_NVUG_A03_xxx-Devices** for details on this device and **4DN_NVUG_M01_xxx-Anchor Management Module** for an example of the use of the Remote Telemetry vehicle.

7.4 Vehicle Management

Vehicles are managed via the Configure Vehicles dialog, opened by clicking on the Vehicles button in the Configure section in the Setup ribbon (see Figure 7-1) or Explorer (see Figure 7-3)

Note: If Roles are enabled, only users with Administrator privileges can add, edit, or remove vehicles.

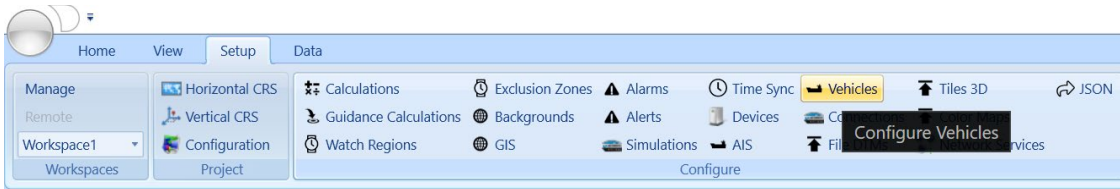


FIGURE 7-1 VEHICLES - SETUP RIBBON - VEHICLES BUTTON

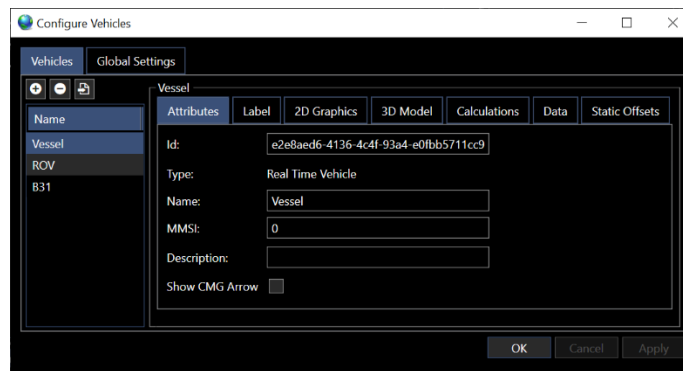


FIGURE 7-2 VEHICLES - CONFIGURE VEHICLES DIALOG

Note: When a change is made in the Configure Vehicles dialog, the *Apply* and *Cancel* buttons will become active.

- Click the Apply button to apply the changes and keep the dialog open
- Click the Cancel button to revert changes made since the last time the Apply button was clicked and keep the dialog open
- Click the OK button to apply changes and close the dialog

Alternatively, the Vehicles can be managed via the project Explorer view.

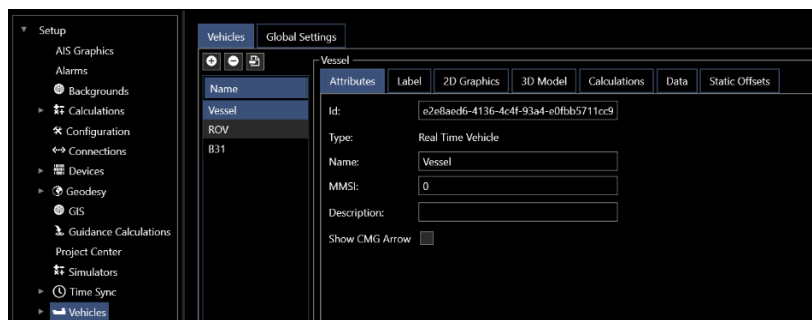

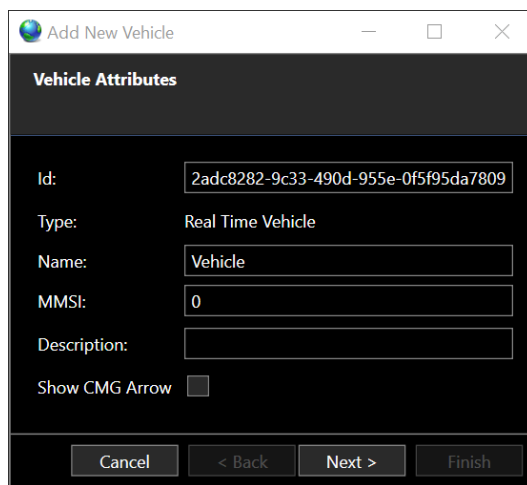


FIGURE 7-3 VEHICLES - EXPLORER VIEW - VEHICLES

7.4.1 Add a Vehicle

1. Access the **Configure Vehicles** view via the Setup ribbon or Explorer view (see Figure 7-1 and Figure 7-3)
2. Click the  button to launch the **Add New Vehicle** wizard.



The screenshot shows a dialog box titled "Add New Vehicle" with a dark background. The main heading is "Vehicle Attributes". Below this, there are several input fields: "Id:" with the value "2adc8282-9c33-490d-955e-0f5f95da7809"; "Type:" with the value "Real Time Vehicle"; "Name:" with the value "Vehicle"; "MMSI:" with the value "0"; "Description:" which is an empty text box; and "Show CMG Arrow" which is an unchecked checkbox. At the bottom of the dialog, there are four buttons: "Cancel", "< Back", "Next >", and "Finish".

FIGURE 7-4 VEHICLES - NEW VEHICLE WIZARD - ATTRIBUTES PAGE

3. Edit the **Attributes** page.
 - a. **Id:** Global Unique Identifier (**GUID**) is populated by default and should be left as is for internal use by NavView
 - b. **Type:** Displays Real Time Vehicle or Remote Vehicle (see section 7.3)
 - c. **Name:** Enter a name for the vehicle
 - d. **MMSI:** Enter the Mobile Maritime Service Identity (MMSI) for the vessel being represented by the vehicle (optional)

Note: NavView supports tracking vessels using the input from an Automatic Identification System (AIS). The vessel data provided by the AIS includes the vessel's MMSI. NavView uses the MMSI to match vessels being received via the AIS with those being positioned by NavView. When a match is made, NavView decides which to use for the display of that vessel, the AIS data or the NavView data. If the NavView data has failed for any reason, NavView uses the AIS data to display the vessel. Otherwise, it uses the NavView data.

- e. **Description:** Enter a description of the vehicle (optional), this is used when displaying metadata
- f. **Show CMG Arrow:** Check the box to display the Course Made Good vector arrow

Note: The CMG Arrow is configured in the Global Settings Tab.

- g. Click **Next**

4. Edit the **Label Config** page.

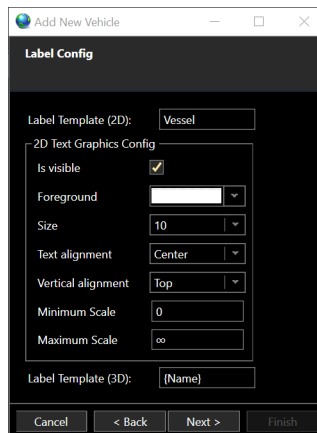


FIGURE 7-5 VEHICLES - NEW VEHICLE WIZARD – LABEL CONFIG PAGE

- a. **Label Template (2D):** Enter the attribute and/or data associated with the vehicle to be displayed on Map window within curly brackets, e.g., {Name}
 - i. Default options are:
 - A. {Name}
 - B. {Description}
 - C. {Easting}
 - D. {Northing}
 - E. {Depth}
 - F. {Elevation}
 - G. TrueHeading}
 - H. {GridHeading}
 - I. {Pitch}
 - J. {Roll}
 - K. {CourseOverGround}
 - L. {SpeedOverGround}
 - ii. To display data that has been made available using the Vehicle Data Tab, use {Data:Key} where Key is replaced with the display name of that data item
 - iii. Multiple items can be displayed by entering each individual item within curly brackets, e.g., {Name} {Description}
- b. 2D Text Graphics Config
 - i. **Is visible:** Check the box to display the label
 - ii. **Foreground:** Select color of label from drop-down list
 - iii. **Size:** Select label size from drop-down
 - iv. **Text alignment/Vertical alignment:** Select from drop-down where to place label on vehicle
 - v. **Minimum/Maximum Scale:** Controls when to display label using map scale settings
- c. **Label Template (3D):** See **Label Template (2D)**

5. Edit the **2D Outline** page.

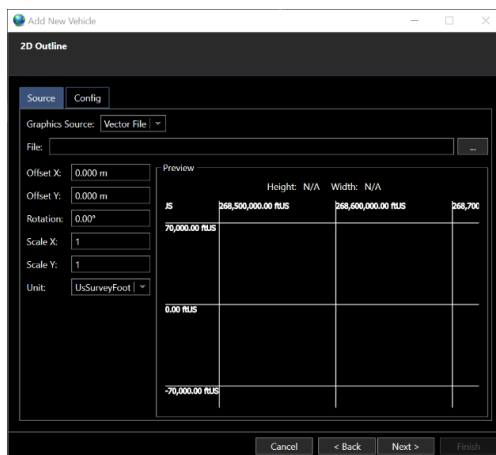


FIGURE 7-6 VEHICLES - NEW VEHICLE WIZARD – 2D OUTLINE PAGE – SOURCE TAB

- a. **Source Tab:** From the drop-down list select how the outline will be created. The three options are from a Vector file, Raster file or outline from dimensions. If file is selected, then go to **File**, if dimensions are selected go to **Dimensions**.

Note: In NavView versions prior to 3.6, the vehicle geometry, whether created from the Dimensions option or the File option, was distributed to other NavViews as part of the Vehicle configuration. In 3.6 and later, this is only the case when using Dimensions. When using a File, the relative path to the file is distributed in the Vehicle configuration. It is the responsibility of the user to ensure that the respective file is present in the referenced folder. For example, if the outline file selected on one NavView PC is located in that NavView’s [ProjectName]\Shared\Visuals\Objects\2D Outlines folder, the user must copy the outline file to the [ProjectName]\Shared\Visuals\Objects\2D Outlines folder on all other NavView PCs in order for the outline to display in their Map views.

Note: An alternative to placing outline files in the [ProjectName]\Shared\Visuals\Objects\2D Outlines folder and then distributing this folder is to move the 2D Outlines folder to the [ProjectName]\Shared\SyncFolder.

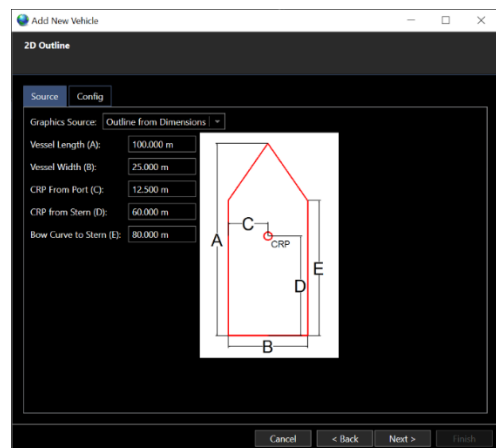


FIGURE 7-7 VEHICLES - NEW VEHICLE WIZARD – 2D OUTLINE PAGE – DIMENSIONS

- i. **Dimensions:** Enter respective distances to define the vessel relative to the CRP as shown in see Figure 7-7.
- ii. **File:** Displays the current outline file path and name



- A. **Import:** Click to browse for the 2D outline file to use to represent the vehicle in the 2D views, select from the following supported formats:
 - Vector:
 - *.dwg
 - *.dxf
 - *.shp (Navipac files)
 - *.veh (WinFrog files)
 - 2D xaml files
 - Raster
 - *.png
 - *.jpg
- B. Depending upon the file type selected, a **Select AutoCAD Layer** (dwg/dxf) or **Select Vehicle to Load** (veh) prompt displays, select the layer/vehicle accordingly and click OK, if a Navipac shp file is selected no prompt will appear
- C. The shape will display in the preview window. See Figure 7-8
 - I. The vehicle CRP relative to the outline is at 0,0 grid lines
 - II. The outline extents are displayed as the **Height** and **Width**

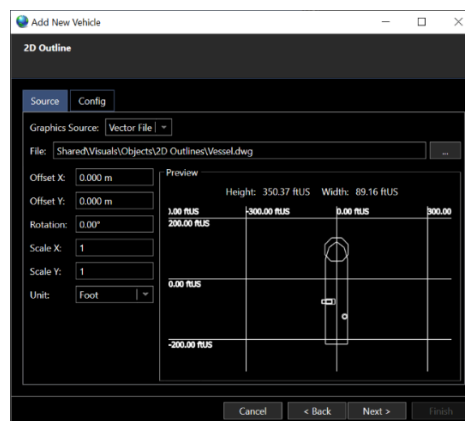


FIGURE 7-8 VEHICLES - NEW VEHICLE WIZARD – 2D OUTLINE PAGE – IMPORTED OUTLINE FILE

- D. **Offsets (X and Y):** By default, the outline origin and vehicle CRP are set to the same point, if the outline file origin does not correspond to the CRP, enter the X and Y offsets from CRP to outline origin to correctly relate the outline to the CRP, e.g., if the CRP is 10.0m aft and 5m port of the origin, enter X +5 and Y +10 to translate to the CRP from the vehicle outline origin
- E. **Rotation:** By default, the outline is orientated 0°. To rotate the outline, enter the value required, the rotation is positive counterclockwise
- F. **Scale (X and Y):** The outline can be scaled using the X and Y scale factor values

- G. **Units:** From the drop-down list select the source outline drawing units. NavView uses this selection to show the outline size correctly in Map display

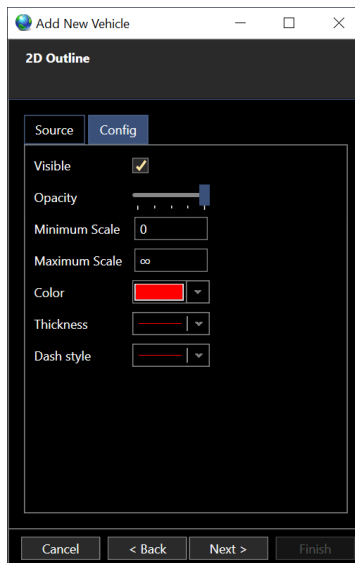


FIGURE 7-9 VEHICLES - NEW VEHICLE WIZARD - 2D OUTLINE - CONFIG TAB

b. **Config Tab**

- i. **Visible:** Check the box to display vehicle outline on Map view
- ii. **Opacity:** Slider to control opacity of vehicle outline on Map view
- iii. **Minimum/Maximum Scale:** Map scale limits to display outline. Default Minimum is set to zero (0) and the default Maximum is set to infinity (∞). The outline will only be visible on the Map display if the map scale is within the limits set here
- iv. **Color:** Assign outline color, line thickness and style

c. Click **Next**

6. Edit **3D Model** page.

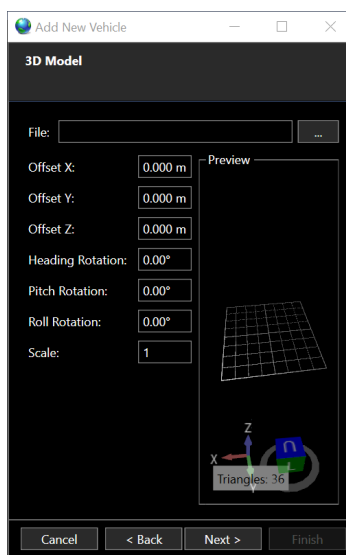


FIGURE 7-10 VEHICLES - NEW VEHICLE WIZARD - 3D MODEL PAGE

Note: If a 3D model is not available, click **Next**.

Note: The relative path to the file is distributed in the Vehicle configuration. It is the responsibility of the user to ensure that the respective file is present in the referenced folder. For example, if the model file selected on one NavView PC is located in that NavView's [ProjectName]\Shared\Visuals\Objects\3D Models folder, the user must copy the outline file to the [ProjectName]\Shared\Visuals\Objects\3D Models folder on all other NavView PCs in order for the outline to display in their 3D views.

Note: An alternative to placing model files in the [ProjectName]\Shared\Visuals\Objects\3D Models folder and then distributing this folder is to move the 3D Models folder to the [ProjectName]\Shared\SyncFolder.

- a. Click the browse button to select the 3D model to be associated with vehicle for display in the 3D/3Dx Map View. The model is displayed in the Preview pane

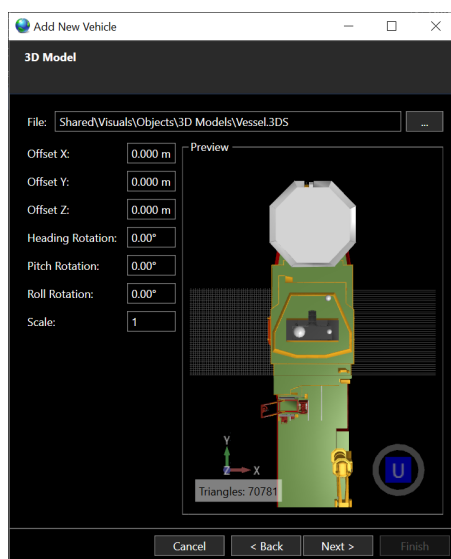


FIGURE 7-11 VEHICLES - NEW VEHICLE WIZARD – 3D MODEL PAGE – MODEL PREVIEW

- b. File: Displays the current 3D model file path and name



- c. **Offset (X, Y, Z):** By default, the model origin and vehicle CRP are set to the same point, if the model origin does not correspond to the CRP, enter the X, Y and Z offsets from CRP to model origin to correctly relate the model origin to the CRP
- d. **Heading Rotation:** By default, the model is orientated 0°. To rotate the model, enter the value required, the rotation is positive clockwise
- e. **Pitch/Roll Rotation:** By default, the model attitude is 0°. This can be changed by entering value in appropriate box
- f. **Scale:** Scale is used to correctly display the model size in the 3D/3Dx Map display. If the units of the model is the same units as the working units, then the scale would be left as the default 1. If the model units are different, e.g. model units are meters and working units are feet, then enter the value to scale model from meters to feet (3.2808)
- g. Click **Next**

7. Edit the **CRP Calculation** page.

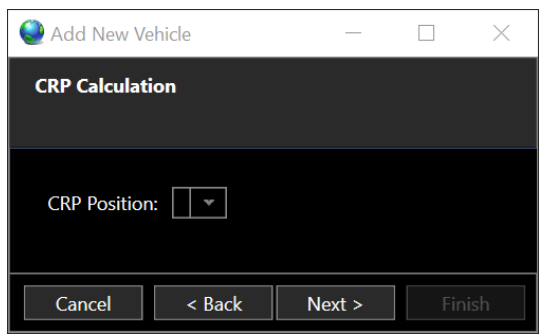


FIGURE 7-12 VEHICLES - NEW VEHICLE WIZARD - CRP CALCULATIONS PAGE

- a. **CRP Position:** Click the drop-down to view the options that will provide the positional data for this vehicle from the following options:
 - i. **Calculations:** All Calculations that have been configured prior to opening the Vehicle wizard are listed by name, selecting one of these displays the respective Calculations view for review and editing if required. Also, a new Rigid Body or Kalman Filter calculation can be created. See adding Calculations section

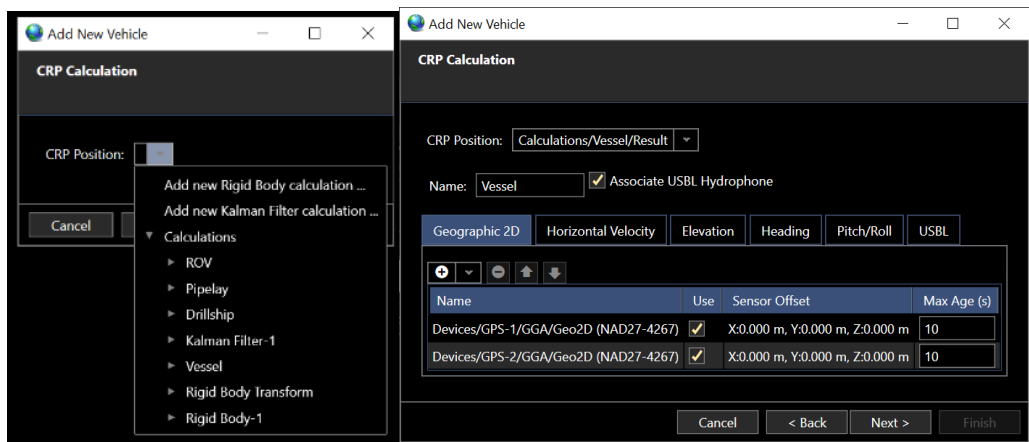


FIGURE 7-13 VEHICLES - NEW VEHICLES WIZARD - CRP CALCULATIONS PAGE - EXISTING CALCULATION

Note: Editing the Calculation here is the same as editing it via the Configure Calculations dialog.

- ii. **Connections:** All connections that have been added prior to opening the Vehicle wizard that provide position and heading are listed by name, selecting one of these results in the displaying of the selected Connection by name

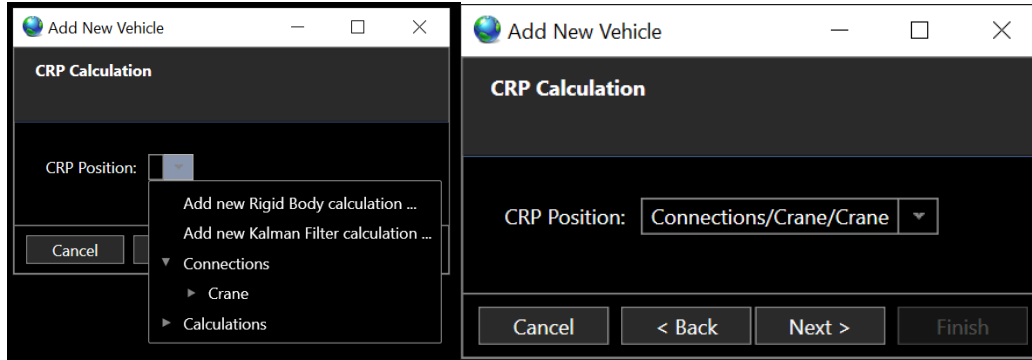


FIGURE 7-14 VEHICLES - NEW VEHICLES WIZARD - CRP CALCULATIONS PAGE - EXISTING CONNECTION

- iii. **Add new Rigid Body calculation:** Selecting this option opens a Rigid Body Calculation view ready to be configured

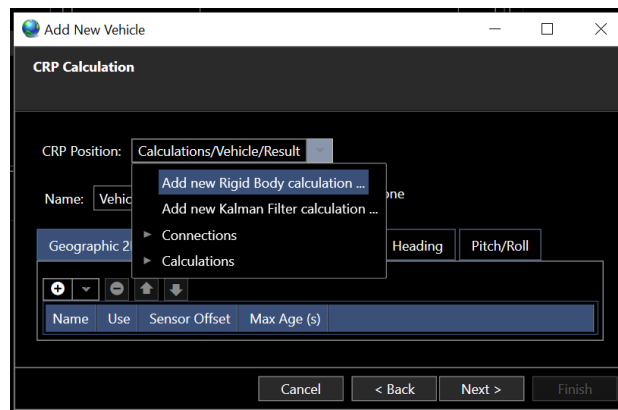


FIGURE 7-15 VEHICLES - NEW VEHICLES WIZARD – CRP CALCULATIONS PAGE - NEW RIGID BODY CALCULATION

- iv. **Add new Kalman Filter calculation:** Selecting this option opens a Kalman Filter Calculation view ready to be configured

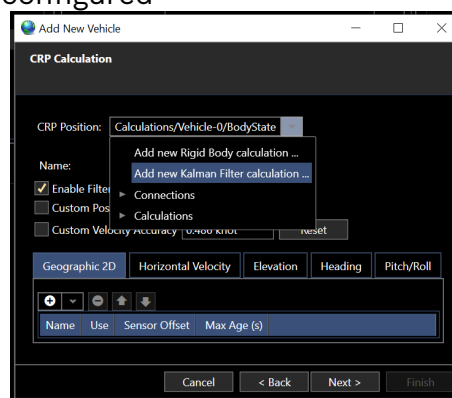


FIGURE 7-16 VEHICLES - NEW VEHICLES WIZARD – CRP CALCULATIONS PAGE - NEW KALMAN FILTER CALCULATION

Note: See Calculations section for details regarding configuring a Calculation.

- b. Select the desired option, edit as required
- c. Click Next

8. **Data** tab. See section 7.6

9. Edit **Offset Locations**

From this page, offsets are added to the vehicle and configured for graphical presentation, measurement accuracy, history, and tolerance display options. By default, an Origin offset with 0,0,0 is added to the vehicle.

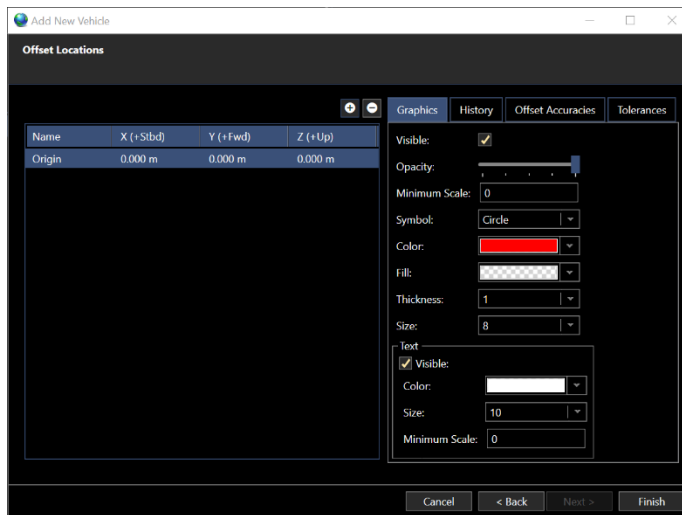




FIGURE 7-17 VEHICLES - NEW VEHICLES WIZARD - OFFSET LOCATIONS PAGE

- a. To add an offset, click the  button and a new offset will show in the data grid
- b. To remove an offset, select it in the data grid and click the  button

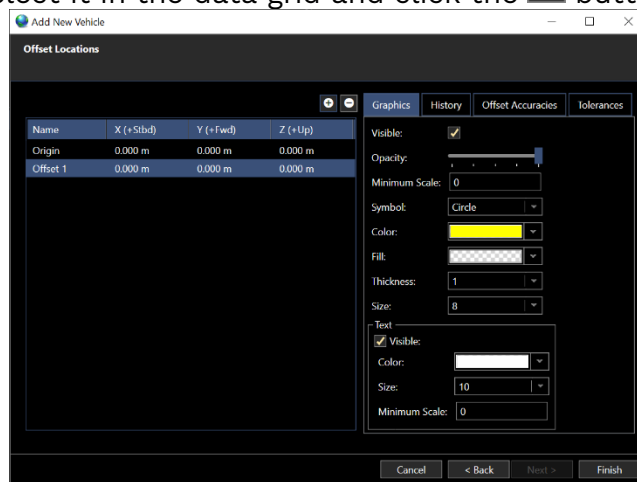


FIGURE 7-18 VEHICLES - NEW VEHICLE WIZARD - OFFSET LOCATIONS PAGE - OFFSET ADDED

- c. Edit the offset name and XYZ values (see Figure 7-18), note that offsets are from the CRP to the sensor
 - i. Click in the **Name** cell to be edited, enter the desired name

Note: Be careful selecting a name, this name is used in all hierarchical trees where offsets are listed and on the Map view if the respective map layer option is enabled. A long name can be problematic from a viewing perspective.

- ii. Click in the **X** or **Y** or **Z** cell to be edited, enter the respective offset values

Note: Sign convention is based on from CRP to offset point as follow:

X: - to port; + to starboard

Y: - to the stern; + to the bow

Z: - down; + up

- d. Edit the **Graphics** presentation (see Figure 7-18), this controls the display of the offset symbol and annotation in Map views
 - i. Select the offset to edit in the data grid
 - ii. In the **Graphics** tab, configure the following options:
 - A. **Visible:** Check to enable the display of the offset in the Map view
 - B. **Opacity:** Using the slider, set the opacity (brightness) to display the offset symbol and text where all the way to the left is an opacity of 0 and the offset will not display and all the way to the right is an opacity of 1 and the offset will display brightly
 - C. **Minimum Scale:** Map scale limits to display the offset symbol. Default Minimum is set to zero (0), always visible

Note: The offset symbol will only be visible on the Map display if the map scale is within the minimum limit set here.

- D. **Symbol:** From the drop-down list select the symbol shape used to represent the offset in the Map views
- E. **Color:** From the drop-down list select the offset symbol Color
- F. **Fill:** From the drop-down list select the offset symbol Fill (pattern)
- G. **Thickness:** From the drop-down list select the offset symbol line Thickness
- H. **Size:** From the drop-down list select the offset symbol Size
- I. **Text:** To display the offset name, check the Visible box and use the drop-down list boxes to configure the text Color and Size

Note: Even if the Text Visible box is checked, it will not display unless the Visible box for the offset graphics at the top is checked.

Note: The offset text will only be visible on the Map display if the map scale is within the minimum scale limit set here. Default Minimum is set to zero (0), always visible.

- e. Edit the **History** (see Figure 7-19), this controls the capture and display of a history (snail trail) of points in any open Map view

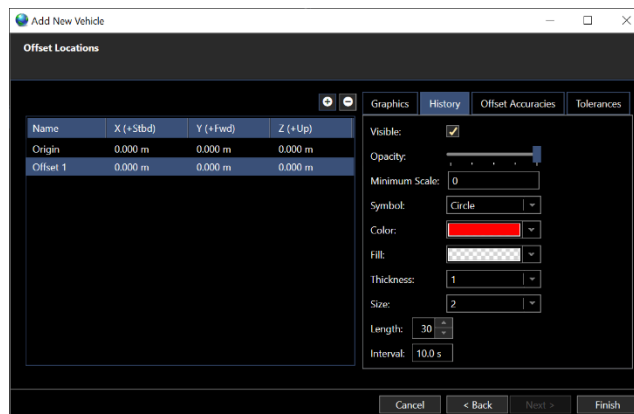


FIGURE 7-19 VEHICLES - NEW VEHICLE WIZARD - OFFSET LOCATIONS PAGE - HISTORY TAB

- i. Select the offset to edit in the data grid
- ii. Click the **History** tab, configure the following options:
 - A. **Visible:** Check this box to enable the history to be displayed on a Map View
 - B. **Opacity:** Using the slider, set the opacity (brightness) to display the history where all the way to the left is an opacity of 0 and the history will not display and all the way to the right is an opacity of 1 and the history will display brightly
 - C. **Minimum Scale:** Map scale limit to display the history symbol. Default Minimum is set to zero (0), always visible

Note: The history symbol will only be visible on the Map display if the map scale is within the minimum scale limit set here.

- D. **Symbol:** From the drop-down list select the symbol shape used to represent the history in the Map views
- E. **Color:** From the drop-down list select the history symbol Color
- F. **Fill:** From the drop-down list select the history symbol Fill (pattern)
- G. **Thickness:** From the drop-down list select the history symbol line Thickness
- H. **Size:** From the drop-down list select the history symbol Size
- I. **Length:** Set the number of points to maintain in the history
- J. **Interval:** Enter the interval in seconds between points in the history
- f. Edit the **Offset Accuracies** (see Figure 7-20), used in the error propagation for the offset position

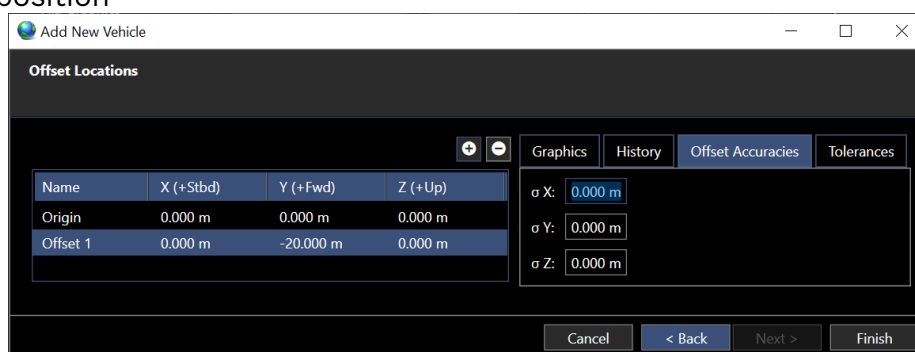


FIGURE 7-20 VEHICLES - NEW VEHICLE WIZARD - OFFSET LOCATIONS PAGE - OFFSET ACCURACIES TAB

- i. Select the offset to edit in the data grid
- ii. Click the **Offset Accuracies** tab, configure the following options:

- A. Enter the 1 sigma accuracies (standard deviation) of the offset measurements. Default is 0
- g. Edit the **Tolerances** (see Figure 7-21), this controls the display in the Map views of the estimated accuracy of the offset position, either that determined through rigorous error propagation by NavView or as estimated by the user

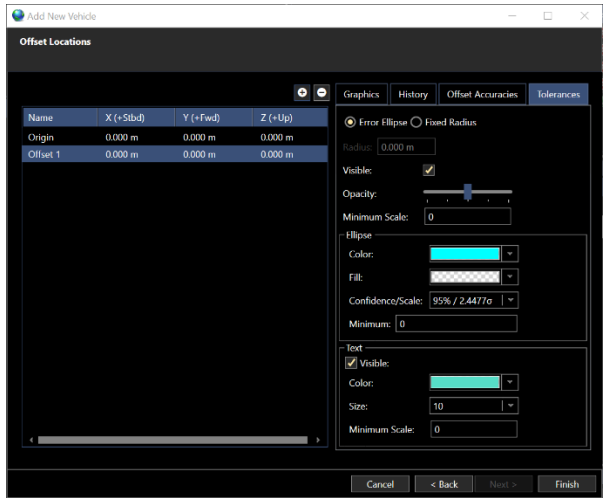


FIGURE 7-21 VEHICLES - NEW VEHICLE WIZARD - OFFSET LOCATIONS PAGE - TOLERANCES TAB

- i. Select the offset to edit in the data grid
- ii. Click the **Tolerances** tab, configure the following options:
 - A. Select the display option to use:
 - I. **Ellipse:** Selecting this displays the error ellipse resulting from the error propagation by NavView
 - II. **Fixed Radius:** Selecting this displays an error circle of a fixed radius as estimated by the user
 - B. **Radius:** Enabled if **Fixed Radius** is selected above, enter the radius of the circle to display
 - C. **Visible:** Check this box to display the **Tolerance** ellipse or circle
 - D. **Opacity:** Using the slider, set the opacity (brightness) to display the tolerance Ellipse or Circle where all the way to the left is an opacity of 0 and the tolerance will not display and all the way to the right is an opacity of 1 and the tolerance will display brightly
 - E. **Ellipse:** If **Ellipse** is selected above, from the drop-down boxes configure the ellipse Color, Fill (Pattern), Confidence (level)/Scale and Map scale Minimum limit to apply to the ellipse

Note: The error ellipse will only be visible on the Map display if the map scale is within the minimum scale limit set here. Default Minimum is set to zero (0), always visible.

- F. **Text:** To display the tolerance specifics (e.g., semi-major axis length), check the Visible box and use the drop-down list boxes to configure the text Color, Size, Minimum Scale

Note: The text will only be visible on the Map display if the map scale is within the minimum scale limit set here. Default Minimum is set to zero (0), always visible.

Note: Even if the Text Visible box is checked, it will not display unless the Visible box for the tolerances at the top is checked.

h. Complete adding offsets

10. **Global Settings** tab is used to configure the Course Made Good (CMG) vector.

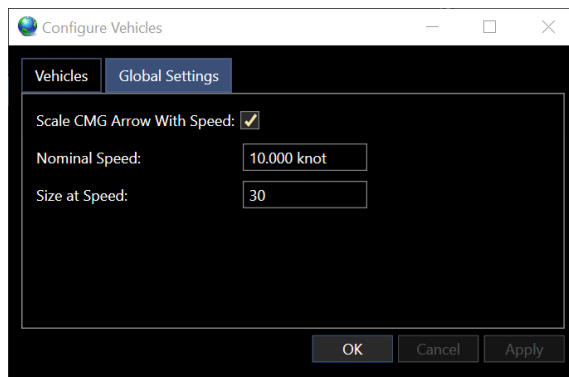


FIGURE 7-22 VEHICLES - NEW VEHICLE WIZARD - GLOBAL SETTINGS

11. Click **Finish** to complete the wizard.

12. The new vehicle is listed and highlighted (selected) in the **Name** data grid or added to the tree under Vehicles in the Explorer view.

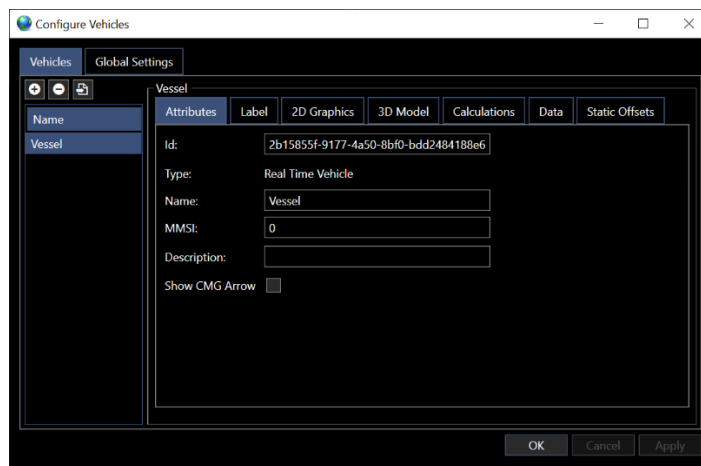



FIGURE 7-23 VEHICLES - CONFIGURE VEHICLES VIEW - VEHICLE ADDED

7.4.2 Import a Vehicle

The option to import a vehicle enables the user to take advantage of a vehicle that has already been configured as part of another project or another station in the same project. This is particularly beneficial when setting up a project prior to deployment, for example, when setting up an Anchor Management project.

1. Access the **Configure Vehicles** view via the Setup ribbon or Explorer view (see Figure 7-1 and Figure 7-3)

2. Click the  button to open the standard Windows Open File dialog
 - a. Navigate to the Project and Station with the vehicle you want to import
 - b. Navigate to that Station's Config folder
 - c. Select the Vehicles.xml file and click Open to open the Import Vehicle dialog listing all the vehicles in the file that are not already present in the project/station

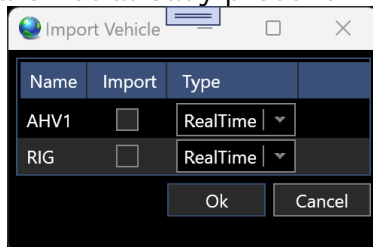


FIGURE 7-24 IMPORT VEHICLE DIALOG

- d. Check the **Import** box of those vehicles to be imported
- e. From the **Type** drop down, select how the vehicles is to be imported
 - i. **RealTime:** Imports the vehicle configuration as a RealTime vehicle, but does NOT import the Calculation since it needs to be configured with local data sources
 - ii. **Remote:** Imports the vehicle as a Remote vehicle whose position will be obtained via Network Services.
 - iii. **Telemetry:** Imports the vehicle as a Remote Telemetry vehicle whose position will be obtained via a Serial Radio Telemetry device
- f. Click OK
- g. If the vehicle was imported as a Realtime vehicle, complete the Calculation configuration

7.4.3 Edit Vehicle

1. Access the **Configure Vehicles** view via the Setup ribbon or open the Explorer view (see Figure 7-1 and Figure 7-3) or via the Vehicles on the Ribbon View Tab. Right click on the vehicle in the list to be edited.
2. In the Configure Vehicle view
 - a. Select the vehicle to be edited, right panel displays a tabbed view with a tab to match each of the pages in the New Vehicle wizard
 - b. Select the tab for the respective vehicle configuration to be edited
3. In the Explorer view
 - a. Expand the tree under Setup > Vehicles and select the vehicle to edit
 - i. The right panel displays a tabbed view with a tab to match each of the pages in the New Vehicle wizard
 - ii. Select the tab for the respective vehicle configuration to be edited
 - b. Or expand the tree under the vehicle to be edited to display Attribute, Outline, Calculation and Static Offsets branches
 - i. Select the branch for the respective vehicle configuration to be edited
 - ii. The right panel displays a view that matches the respective page in the wizard

Note: If the selected vehicle is a Remote Vehicle, the Calculations tab will not be present.

4. Edit the configuration.

5. Click the **Apply** to apply the changes or **Cancel** to abort the changes.

7.4.4 Remove Vehicle

1. Access the **Configure Vehicles** view via the Setup ribbon or open the Explorer view.
2. In the Configure vehicles view.
 - a. Select the vehicle to be removed
 - b. Click the button
3. In the Explorer view.
 - a. Expand Setup branch and select Vehicles to display the Configure Vehicles view in the right panel
 - b. Select the vehicle to be removed
 - c. Click the button
4. Answer the prompt to confirm the deletion of the vehicle accordingly.

Note: Only the station that created a vehicle can remove that vehicle, i.e., a Remote vehicle cannot be removed.

7.5 Monitoring

The Vehicles window displays a summary of vehicle position and navigation information. It provides a simple monitoring tool. It is opened by clicking the Vehicles button in the Windows section of the View ribbon.

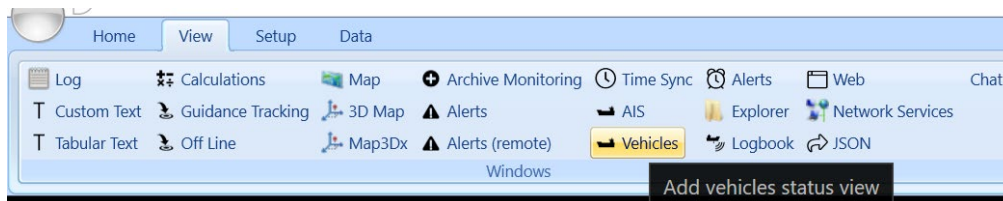


FIGURE 7-25 VEHICLES - VIEW RIBBON - VEHICLES BUTTON

Name	Age	Easting	Northing	Depth	Heading	SOG	Pitch	Roll
Rig	--	N/A	N/A	N/A	N/A	--	N/A	N/A
LCV	--	0.000 ftUS	0.000 ftUS	0.000 ft	N/A	--	N/A	N/A
ROV 2	--	N/A	N/A	N/A	N/A	--	N/A	N/A
Vehicle	--	0.000 ftUS	0.000 ftUS	0.000 ft	N/A	--	N/A	N/A
Drill Ship	0.2 s	2,147,137.151 ftUS	9,904,681.912 ftUS	0.000 ft	300.00°	0.027 knot	N/A	N/A
Pipelay	0.8 s	2,138,976.664 ftUS	9,912,073.123 ftUS	0.000 ft	315.64°	0.373 knot	N/A	N/A
ROV	1.8 s	2,139,603.533 ftUS	9,911,400.700 ftUS	2,985.141 ft	315.72°	--	N/A	N/A

FIGURE 7-26 V VEHICLES - VEHICLES STATUS WINDOW

The information displayed can be edited by right mouse clicking in the window to open a popup menu (see Figure 7-27).



FIGURE 7-27 VEHICLES - STATUS INFORMATION TO BE DISPLAYED POPUP MENU

If an item is already configured to be displayed a checkmark will appear against it. Click on any item to toggle its display on and off. The changes are immediate, and the popup menu will close.

To access a vehicle’s configuration, right mouse click on that vehicle in the window and select Configure Vehicle from the pop-up menu (see Figure 7-27)

Note: If a data type set to display does not have a data source assigned, e.g., if pitch and roll are selected to display but no pitch and roll observations have been assigned, the cell displays “N/A”.

Note: If a data type has a data source assigned and displays “N/A” it indicates a problem with the data source.

Vehicle status can also be monitored in the Custom Text, Tabular Text and 2D windows.

In the Custom Text and Tabular Text windows, the display of data that has aged is displayed in strikethrough text as shown in Figure 7-28.

Vehicle Position	
Lat	28° 58.4262'N
Long	88° 37.4609'W
East	1,121,173.039 ftUS
North	10,518,320.851 ftUS

FIGURE 7-28 VEHICLES - TABULAR TEXT – OLD VEHICLE POSITION

7.6 Vehicle Data Tab

NavView supports distributing text strings to NavView remotes for display utilizing the Data tab. For example, given a Configurable Input configured for counter and tension 1 and tension 2 as shown here, the count and/or tensions can be distributed to NavView remotes.

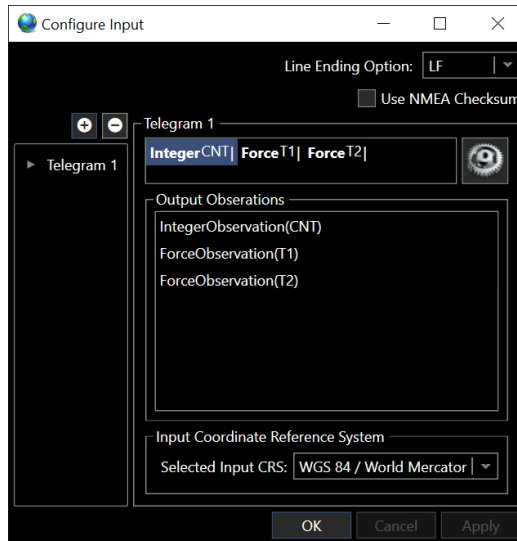


FIGURE 7-29 VEHICLES - CONFIGURABLE INPUT

1. Go to Configure Vehicles, select a vehicle and then select the Data tab and expand the drop-down list next to the button to display the options you can select from to distribute as **ASCII text strings** to the NavView remotes and click the button (need to be added 1 at a time).

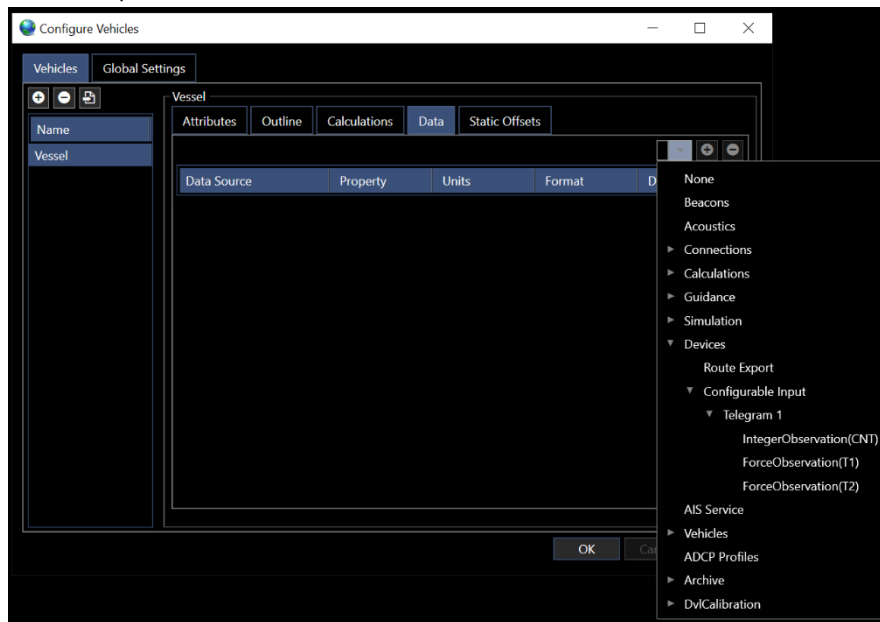


FIGURE 7-30 VEHICLES - CONFIGURE VEHICLES - DATA TAB

- To edit the Text string output, click in the **Property** cell, **Units** cell, **Format** cell and **Display Name** cell.

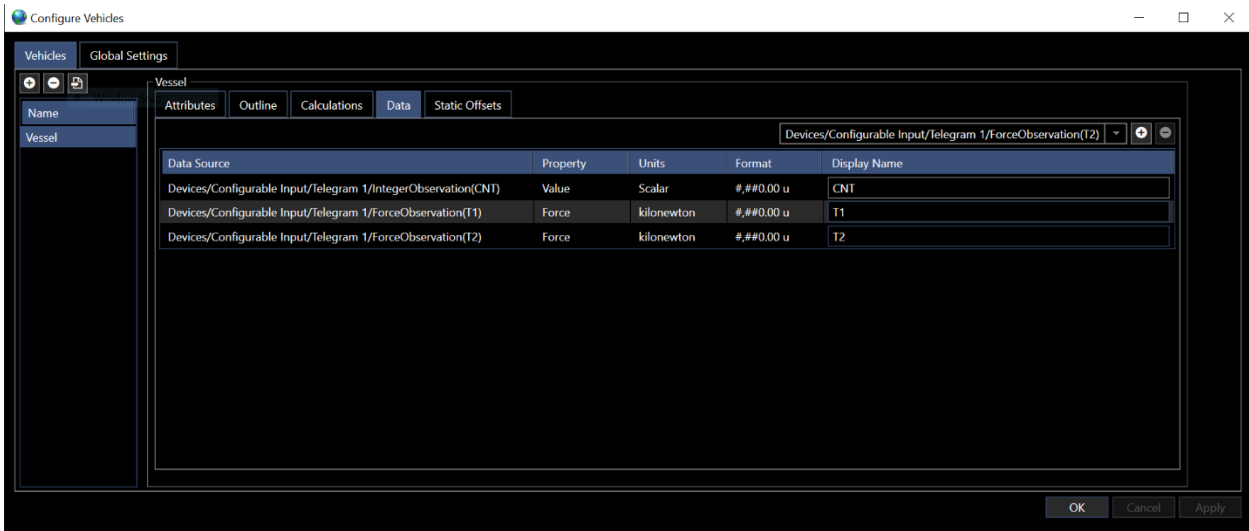


FIGURE 7-31 VEHICLES - VEHICLE DATA TAB -ADDED DATA SOURCES

Note: This data is distributed only as text strings and cannot be used in views where data is required, e.g. the Time Series view.

- On the NavView remotes, open the Configure Text Window. In the Available Items, expand Vehicles, you will see the **Data** item in the tree. Expand **Data** and the items added at the Online NavView are available for display.

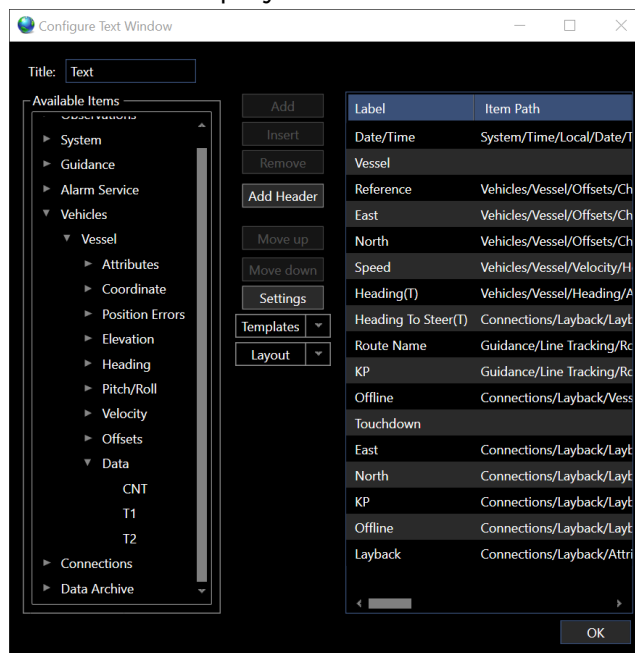


FIGURE 7-32 VEHICLES - NAVVIEW REMOTE - CONFIGURE TEXT WINDOW

Note: This feature has been superseded with the Observation Distributor Connection (see the Connections section for details.)