NavView User Guide – 08 Windows

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8. Windows

8.1 Overview

NavView supports a variety of graphical and alphanumerical windows to monitor operations. For the most part, these are accessed via the View ribbon, though some are accessed via the Setup ribbon due to their combined configuring and monitoring purpose.

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

Roles	Privileges
Not Logged In	Can add, configure or edit all windows
User	Can add, configure or edit all windows
Online/Supervisor	Can add, configure or edit all windows
Admin (Administrator)	Can add, configure or edit all windows

FIGURE 8-1 WINDOWS - VIEW RIBBON

8.1.1 Open a Window

To open a window simply click on its icon in the ribbon.

Most windows can have an unlimited number of instances opened in a workspace, but some may only be opened once. These specifics are noted in the respective window's section.

Each window has a default location it opens to. This is detailed in the respective window's section.

8.1.2 Configure a Window

If the window has a configurable component or tools specific to it, these can be accessed by one or more of the following methods:

- Right mouse click in the window to pop up a menu.
- Tool bar on the top or left of the window.
- Context sensitive tab added to the ribbon when the window has the focus.

The available configuration and tools will be noted in the respective window's section.

8.1.3 Close a Window

This is window type specific. Refer to Window Docking in the Introduction section.

8.1.4 Window Configuration Files

The settings for a window are written to configuration files and stored in workspace specific folders. These are named based upon the window type and its index “n”, e.g. MapViewModel_n.xml, where “n” is the count of that specific window within the total number of windows of that type that are open in a given workspace. When a window is opened, NavView determines the index of the next window of that type to open and looks for a configuration file that matches the window type and index in the respective workplace folder. If a match is found that configuration file is loaded and used as the configuration for the newly opened window. If a match isn’t found, the window is opened with default configuration.

8.1.5 Available Windows

- Log
- Text
  - Tabular Text Window
  - Custom Text Window
- Calculations (see Calculations section)
- 2D Map
- 3D Map
- 3Dx Map
- Explorer
- QC Widgets
  - Position QC Widget
  - Time Series QC Widget
  - Bar Chart QC Widget
  - Inclination QC Widget
- Guidance Tracking (see Guidance Calculations section)
- Off Line (see Guidance Calculations section)
- Archive Monitoring
- Alerts (system)/Alerts (remote)/ Alerts (list) (see Alerts section)
- Time Sync
- Logbook
- AIS
- Vehicles (see Vehicles section)
- Network Services
- Chat
- Web (View)
- JSON (see JSON Exchange section)
- Documents
  - Project Documents
    - All Documents
- Manage Tags
- Alarms (see Alarms section)
- Console
- Status
- GPS Status
- GPS Satellite Status**Error! Reference source not found.**
- Video (see Video section)
- ADCP (see ADCP section)

8.2 Log Window

A log file containing trace messages generated by NavView such as reports of errors encountered by the software, events such as when a calculation observation failover occurs, and general operational information such as remaining space available for data recording, is written to the folder Project/[Station]/Data/Logs. Each record has a UTC time stamp. One file is created for each day based on UTC time, and is named based on date, e.g. yyyy-mm-dd.log. These are ASCII files and can be opened to review operation and assist trouble shooting.

The Log window displays the records written to the log file since the launch of NavView. It can span multiple log files.

To open the Log window, click the icon labelled Log in the Windows section of the View ribbon. The window will open as a document window in the main part of the workspace. If a document window already occupies that space, it will be added to it as a tab.

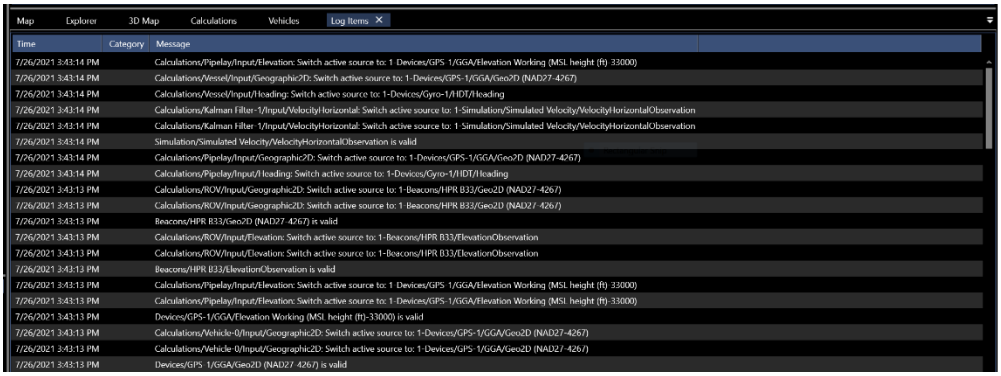


FIGURE 8-2 WINDOWS - LOG WINDOW

Right mouse clicking in the window pops up a menu with the single item Clear. Clicking this clears the window. It has no impact on the log file.

Note: If Roles are enabled, all user have privileges to be allowed to clear the window.

Note: Only one Log window can be open in a workspace at a time.

8.3 Text Windows

NavView supports two text displays: Custom Text and Tabular Text. These have similar features but vary in their presentation. Both support multiple lines, but the Custom Text can have a varying number of items per line whereas the Tabular Text supports a single item per line.

The common features are detailed here, followed by details for each specific text window.

8.3.1 Available Data

The data that is available for display is wide ranging. The following lists the basic data groups from which items can be selected:

- Observations: Displays the observations associated with the following data sources
  - Beacons
  - Acoustics
  - Connections
  - Calculations
  - Guidance
  - Simulation
  - Devices
  - AIS Service
  - Vehicles
  - ADCP Profiles
  - Archive
  - DVL Calibration
- System: Displays the system Date/Time
  - Time
- Guidance: Displays the data associated with the respective guidance objects
  - System: Guidance objects automatically created by NavView, e.g. for the Pipeline Layback connection
    - Layback guidance
    - Touchdown monitoring
    - Reference to monitor
  - User: Guidance objects created by the user, dependent upon the guidance type: Point to Point, Point to Route, Point to 3D Line, 3D line to 3D line
- Alarm Services: Displays Alarm messages
  - Alarm Level
  - Message
- Vehicles: Displays the data associated with each vehicle and its offsets, including:
  - Attributes
  - Coordinate
  - Position Errors
  - Elevation
  - Heading
  - Pitch/Roll
  - Velocity
  - Offsets
  - Data
- Connection: Displays the data for selected connections, e.g.
  - Pipeline Layback
  - Attributes
  - Layback Value
  - Vessel Tracking
  - Layback Route Guidance

- Layback Guidance
- Touchdown Monitoring Guidance
- Reference to Monitor Guidance

- Data Archive
  - Database name
  - Database maximum size
  - Database size
  - Available diskspace
  - Session name
  - Recording active (status)
  - Last write time

8.3.2 Tabular Text Window

The Tabular Text window is opened by clicking on the **Tabular Text** button on the View ribbon. The window opens as a Dockable window pinned to the right side of the workspace. If a dockable window is already located there, the Tabular Text window is added as a tab.

Note: If Roles are enabled, any user can open a Tabular Text Window.

Note: It is possible to open as many Tabular Text Windows as desired.

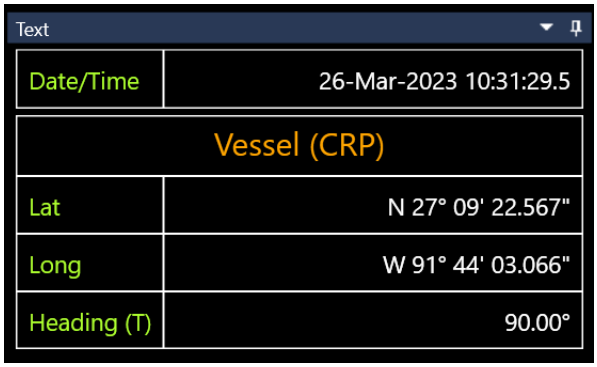


FIGURE 8-3 WINDOWS - TABULAR TEXT WINDOW

The window format is a two (2) column table (see Figure 8-3) consisting of the following three components:

- Header:
  - Spans both columns
  - Operator set text
  - Multiple headers can be added enabling separation of data
- Label:
  - Occupies left column
  - Operator set text
  - Can be disabled

- Value:
  - Occupies right column
  - Displays the data associated with the item selected
  - In the Configure Text Window dialog, the full hierarchical path for the item is shown
  - Default format and units based on those set in Preferences.

The font style, size, weight and color are operator configurable independently for each component. The value has additional configuration options to indicate the data state.

The Tabular Text window supports direct access to the configuration for the data sources of the data displayed (see Configure Item Data Source). This facilitates accessing those displayed items that can change as the project progresses and require updates to their configuration, e.g. guidance targets.

8.3.2.1 Configure the Tabular Text Window

To configure the tabular text window, right mouse click in the window. If the right mouse click is in an area of the window with no items displayed, a single option Configure is presented. Clicking on this opens the Configure Text Window dialog (see Figure 8-4). If the right mouse click is on a display item in the window, 2 options are presented, Configure Text Window and Configure *Item* where *Item* is the parent of the displayed item clicked on, e.g. if a vehicle position, the option presented is Configure Vehicle. Clicking on Configure Text Window opens the Configure Text Window dialog. Clicking on the other option opens the respective configuration dialog.

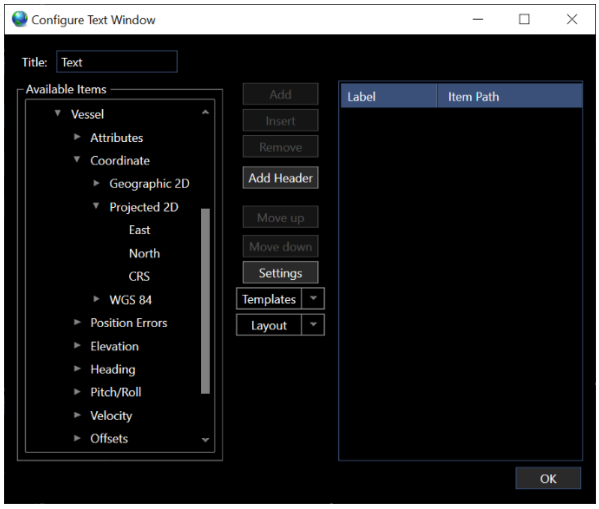


FIGURE 8-4 WINDOWS - TABULAR TEXT CONFIGURATION DIALOG

The dialog includes a hierarchical tree on the left listing those items that can be selected for display, configuration controls in the form of buttons are in the middle, and a data grid on the right, listing those items selected for display. The following details these controls for the configuration are described below.

Title: Supports editing the title displayed at the top of the window and in the tab when window is tabbed.

Available Items: A hierarchical tree of the items available for display. Not all items themselves can be added as they may be parent items with child items that can be added to the display. For example, the Coordinate item in Figure 8-4 cannot be added, but its child items Geographic2D and Projected2D and their child items can be added. The **Add** and **Insert** buttons are enabled when the selected item in the available items list can be added to the display.

Add — Adds the currently selected item from the Available Items tree to the bottom of the display items data grid. Double clicking on the item in the Available Items tree has the same result.

Insert — Inserts the currently selected item from the Available Items tree in the display items data grid above the currently selected item in that grid. Note that the insert button is not available if the top item is selected in the data grid.

Remove — Removes the currently selected item from the display items data grid.

Add Header — Adds a new header to the bottom of display items data grid.

Move up — Moves the currently selected item in the display items data grid up by one position. Note that the Move Up button is not enabled if the top item is selected.

Move down — Moves the currently selected item in the display items data grid down by one position. Note that the Move Down button is not enabled if the bottom item is selected.

Settings — Click the Settings button to display Configure Style dialog, see Modify Style for details.

Templates — Accesses the Templates options, see Text Templates for details.

Layout — Accesses the Layout options, see Text Layouts for details.

8.3.2.2 Displayed Items Data Grid

The displayed items in the data grid can be edited or left as default. The data grid columns are as follows.

- **Label:**
  - Name of item to be displayed in the tabular text window.
  - This can be edited by right click in the cell
- **Item Path:**
  - Full hierarchical path of the item.
  - Right click on the path opens the Configure Item prompt, when selected opens a configuration window

Note: If a Header is added it spans both columns, Label and Item Path, the header name can be edited.

- **Default:**
  - If this option is selected, the display will use the project configured (refer to Configuration Preferences) unit and format for the data display in the text window
- **Unit:**
  - If the default option is selected, the unit in the cell will be greyed out.
  - If the default option is not selected, the unit can be changed from the drop-down.
  - The selected unit will be displayed in the text window
- **Format:**
  - If the default option is selected, the unit format in the cell will be greyed out.
  - If the default option is not selected, the unit format can be changed from the drop-down.
  - The selected unit format will be displayed in the text window
- **Style:**
  - If this is selected, the options are enabled for applying a custom style for the selected row.
  - If not selected, the style used will be taken from Configure Style accessed with the Settings button and the cells will be greyed out
- **Color:**
  - A custom color for the selected row can be assigned for the unit if Style is enabled
- **Font Size:**
  - A custom font size for the selected row can be assigned for the unit if Style is enabled.
- **Font Weight:**
  - A custom font weight for the selected row can be assigned for the unit if Style is enabled
- **Label Color:**
  - A custom label color for the selected row can be assigned for the label if Style is enabled
- **Label Font Size:**
  - A custom font size for the selected row can be assigned for the label if Style is enabled
- **Label Font Weight:**
  - A custom font weight for the selected row can be assigned for the label if Style is enabled

8.3.2.3 Add Header

1. Open the Configure Text Window dialog.
2. Click Add Header to add a header to the bottom of the display item data grid.
3. Select the new header in the display item data grid and using Move up and/or Move down position the header where desired.
4. Click in the header cell and edit the text.

8.3.2.4 Add Display Item

1. Open the Configure Text Window dialog.
2. Expand the Available Items hierarchical tree and navigate to the item to be displayed.
3. Click Add or **double click** on the item to add it to the bottom of the display item data grid.
4. Select the new item in the display item data grid and using Move up and/or Move down position the item where desired.
5. Click in the new item's label cell and edit the text.

8.3.2.5 Insert Display Item

1. Open the Configure Text Window dialog.
2. Select the item in the display items data grid that the new item is to be added above.
3. Expand the Available Items hierarchical tree and navigate to the item to be displayed.
4. Click Insert to insert it above the item selected in display item data grid.
5. Click in the new item's label cell and edit the text.

8.3.2.6 Remove Item

1. Open the Configure Text Window dialog.
2. Select the item in the display items data grid to be removed.
3. Click Remove to remove it.

8.3.2.7 Change Label or Header Text

1. Open the Configure Text Window dialog.
2. Click in the new item's label or header cell and edit the text.

8.3.2.8 Global Label Style, Header Style, Value Style and Background Properties

1. Open the Configure Text Window dialog.
2. Click Settings to open the Configure Style dialog. See Figure 8-5

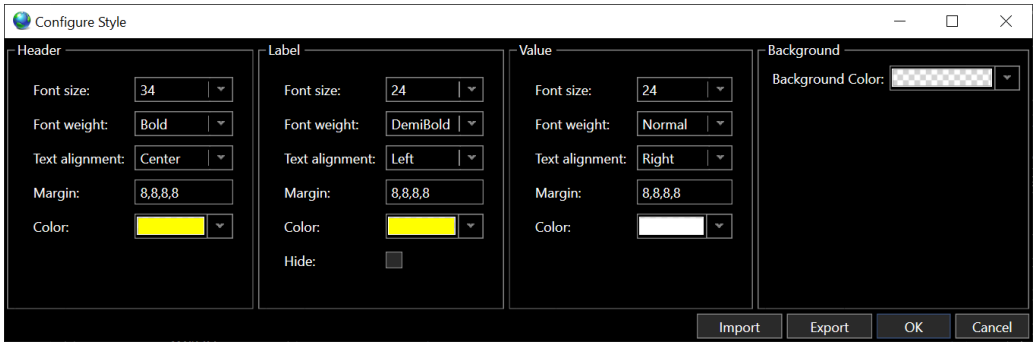


FIGURE 8-5 WINDOWS -TABULAR TEXT SETTINGS CONFIGURE STYLE DIALOG

3. From the respective drop-down boxes, configure the Font size, Font weight and Color.
4. From the Text alignment drop-down box, select the horizontal alignment of the text in the cell.
5. In the Margin control enter the margins for the text in the cell where the order is *Left, Top, Right, Bottom.*

Note: The application of the margins is partially dependent upon the selected alignment, i.e. if the alignment is set to Left a Right margin may not appear to impact the location of the text in the cell.

6. Click OK to save the settings or Cancel to abort.

Note: Stale Data goes Strike Through, this is not configurable.

8.3.2.9 Configure Item Data Source

This feature provides quick access to the source of the data being displayed. For example, if the range and bearing from a vehicle to a waypoint (a point-to-point guidance object) is being displayed, the configuration for that guidance object can be quickly accessed to change the target waypoint directly from the Tabular Text window.

1. Right mouse click in the Tabular Text cell displaying the respective data to display a pop-up menu, if the item supports direct access of its configuration this menu will have 2 items, Configure Text Window and Configure Point to Point Guidance.

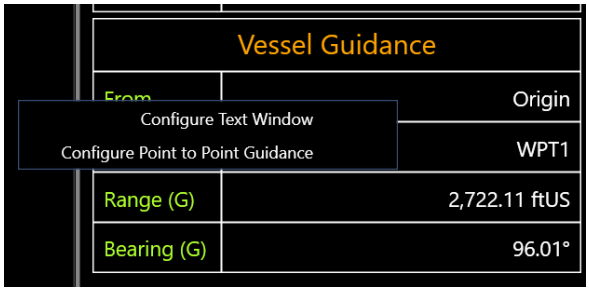
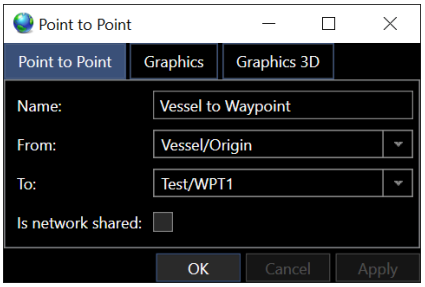


FIGURE 8-6 WINDOWS – TABULAR TEXT – POP-UP MENU

2. Click on the second menu item to display the respective configuration dialog, e.g. Guidance.



3. Make the required changes and click Apply to apply the changes and keep the dialog open, click OK to apply the changes and close the dialog, or click Cancel to abort the configuration.

8.3.3 Custom Text Window

The Custom Text window provides a comprehensive configurable display capable of presenting virtually any data received and generated by NavView. The flexibility of the presentation is illustrated in Figure 8-7, Figure 8-8 and Figure 8-9.

Note: If Roles are enabled, any user can open and edit a Text window.

Note: Multiple Text windows can be open in a workspace at any one time.

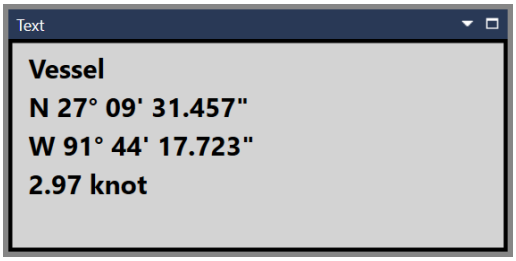


FIGURE 8-7 WINDOWS - TEXT WINDOW – SINGLE COLUMN - NO BORDERS

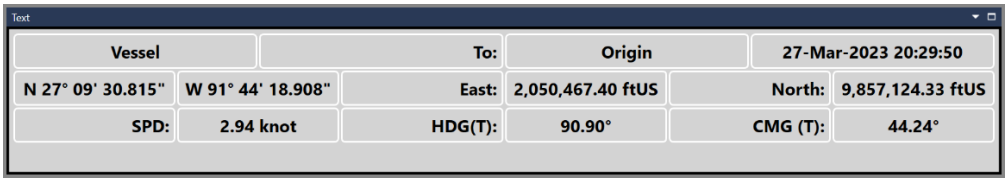


FIGURE 8-8 WINDOWS - TEXT WINDOW – HORIZONTAL, UNIFORM WIDTH WITH BORDERS

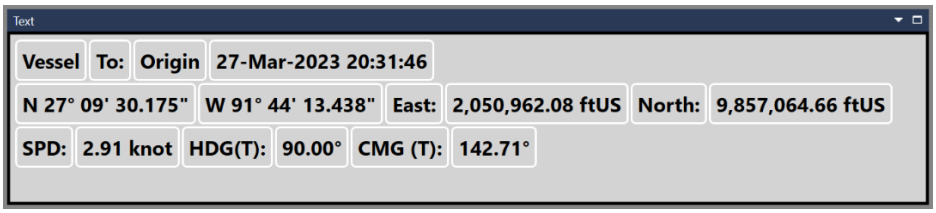


FIGURE 8-9 WINDOWS - TEXT WINDOW - HORIZONTAL WITH BORDERS

To open the Text window, click the icon labelled Custom Text in the View ribbon (See Figure 8-10). The window will open as a dockable window at the bottom of the workspace. If a

dockable window already occupies that space the Text window will be added to it as a tab. The window can also be changed to floating.

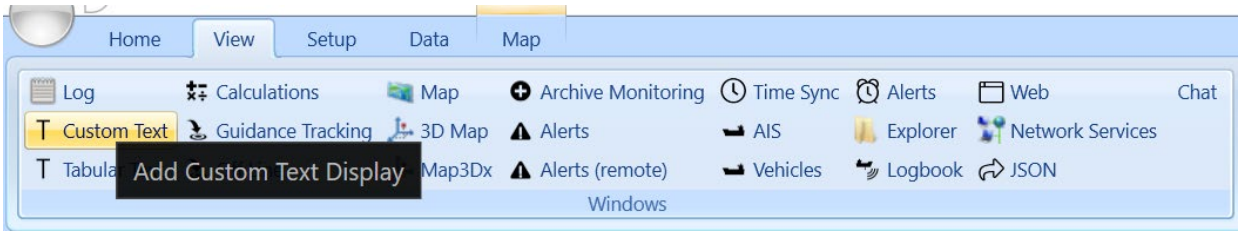


FIGURE 8-10 WINDOWS - CUSTOM TEXT - VIEW RIBBON

8.3.3.1 Configure the Text Window

The configuration dialog is opened by right clicking in the window and selecting the lone pop-up menu item... Configure.

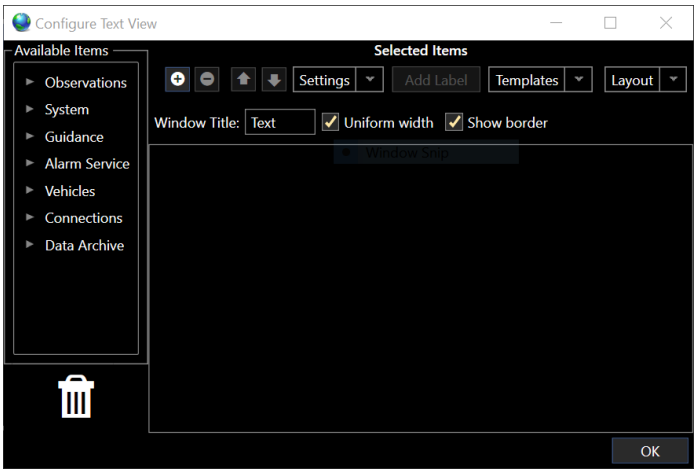


FIGURE 8-11 WINDOWS - TEXT WINDOW CONFIGURATION DIALOG

The dialog includes a hierarchical tree on the left listing those items that can be selected for display, configuration controls on the top of the right panel, and a data grid on the bottom of the right panel representing the text window. The following details the controls for the configuration.

Available Items A hierarchical tree of the items available for display. Not all items themselves can be added as they may be parent items with child items that can be added to the display. Items are added to the display by left mouse clicking on an item in this tree and dragging it to the desired location in the display items data grid. An empty row must be available to drag an item into the grid. A row is added by clicking the add button .

Drag items that are no longer to be displayed from display items data grid to the Trash Can.

Adds a row to the bottom of the list of existing rows.

Removes the selected row.

Note: Select a row by clicking at the very left edge of the row or one of the items in the row (not a label).

Moves the selected row up. This button is disabled if the top row is selected.

Moves the selected row down. This button is disabled if the bottom row is selected.

Drops down a list of items supporting configuration: Label, Value and Background. Select an item to open the respect view configuration dialog.

Adds a label to the selected row.

Accesses the Templates options from the drop-down list, see Text Templates for details.

Accesses the Layout options from the drop-down list, see Text Layouts for details.

Window Title Enter the title to display in the window's title bar or tab when it is tabbed or when it is docked.

Uniform width Check this box to display the cells in each row uniformly distributed with equal widths. Note this uniformity is row by row, i.e. the cells in a row with 3 items will not have the same widths as those in a row with 4 items. Figure 8-8 illustrates a window with **Uniform width** enabled, Figure 8-9 is the same window without **Uniform width** enabled.

Show border Check this to display each cell with a border. Figure 8-7 is an example of no borders, Figure 8-8 is an example with borders.

Data Grid Represents the multi-row Text window (see Figure 8-12). Left mouse clicking on an item and dragging it to the trash can removes that item from the display. The contents of a Label can be edited by clicking in the respective cell and entering the desired text.

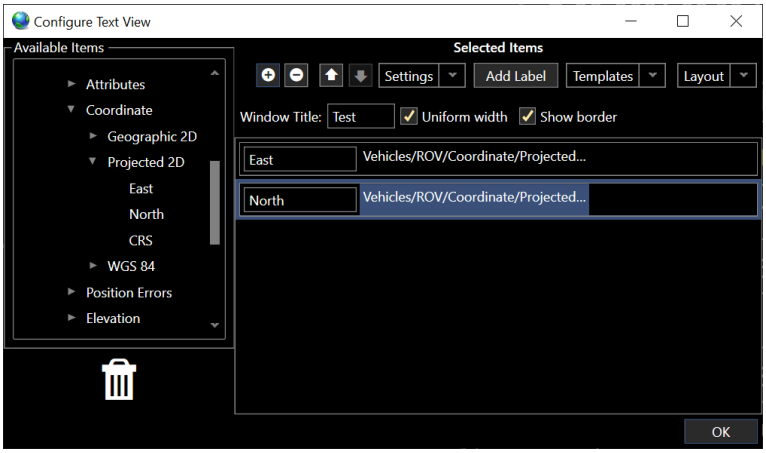


FIGURE 8-12 WINDOWS - CUSTOM TEXT CONFIGURATION WITH DATA ITEMS

8.3.3.2 Add a Row

1. Open the Configure Text Window dialog.
2. Click the ⊕ button to add a row to the bottom of the display items.

8.3.3.3 Remove a Row

1. Open the Configure Text Window dialog.
2. Select a row to remove by clicking on an item in the row to be removed (not a label) or on the left edge of the row.
3. Click the ⊖ button to remove the selected row.

Note: The ⊖ button is not enabled if a row is not selected.

8.3.3.4 Move a Row

1. Open the Configure Text Window dialog.
2. Select a row to move by clicking on an item in the row (not a label) or on the left edge of the row.
3. Click the ⬆ button to move the selected row up or the ⬇ button to move the row down.

Note: The ⬆ button is not enabled if the top row is selected, the ⬇ button is not enabled if the bottom row is selected.

8.3.3.5 Add a Display Item

1. Open the Configure Text Window dialog.
2. Expand the Available Items hierarchical tree and navigate to the item to be displayed.
3. Left mouse click on it and drag it to the desired row and location in the display items.

8.3.3.6 Add a Label

1. Open the Configure Text Window dialog.
2. Select a row by clicking on an item in the row or on the left edge of the row.
3. Click the Add Label button to add a label to the end of the selected row.
4. Left mouse click on the edge of the label cell to drag it to the desired location.
5. Click in label cell to edit the label text.

Note: To drag a label, the very edge of the respective cell must be clicked on as clicking anywhere else on the cell access the cell for editing.

8.3.3.7 Modify Label Text

1. Open the Configure Text Window dialog.
2. Click in the label cell and edit the text.

8.3.3.8 Move a Display Item or Label

1. Open the Configure Text Window dialog.
2. Left mouse click on the item/label and drag it to the new desired row and location.

Note: When a cell is moused over, the area that must be clicked on to drag the item/label is highlighted.

8.3.3.9 Remove a Display Item or Label

1. Open the Configure Text Window dialog.
2. Left mouse click on the item/label to remove and drag it to the trash can.

8.3.3.10 Modify Style

1. Open the Configure Text Window dialog.
2. Click Settings and select Label or Value.

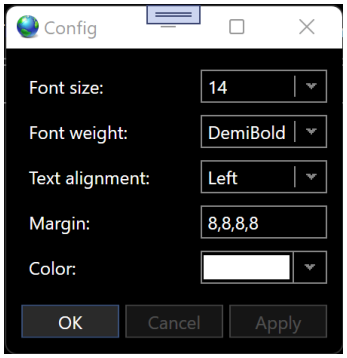


FIGURE 8-13 WINDOWS – TEXT - CONFIGURE LABEL AND VALUE STYLE

a. From the respective drop-down boxes, configure the Font size, Font weight, Text Alignment and Color.

b. In the Margin control enter the margins for the text in the cell where the order is *Left, Top, Right, Bottom*.

Note: The application of the margins is partially dependent upon the selected alignment, i.e. if the alignment is set to Left a Right margin may not appear to impact the location of the text in the cell.

c. Click OK to apply the changes and close the dialog, Cancel to abort the changes and Apply to apply the changes but leave the dialog open.

3. Click Settings and select Background.

FIGURE 8-14 WINDOWS – TEXT - CONFIGURE BACKGROUND COLOR

a. From the dropdown, select the color to use for the window's background (default is transparent)
b. Click OK to apply the changes and close the dialog, Cancel to abort the changes and Apply to apply the changes but leave the dialog open

8.3.4 Text Templates

Text templates are used to quickly build up text windows based on predefined settings. They provide the means to create a specific display configuration for a selected data source type, e.g. a Vehicle, that can then be used for any of that data source type. For example, if a template is configured for a Vehicle data source, it can be opened, and a vehicle selected to use it and the window will be populated with the respective information for that vehicle. Text templates can be created for tabular and custom text windows.

Text templates are stored in isolated storage on the system and thus are not kept with the individual project. This way it is possible to make the template once on a given PC and apply it to any project.

Text templates can also be exported to an xml file for easy importing for use with other NavView installations, where they are then imported.

Text Templates are managed from the Configure Templates dialog.

8.3.4.1 Manage Text Templates

1. Open either a Tabular or Custom Text Configure Text Window dialog.
2. Click the Templates drop-down and click on Manage to open the Configure Templates dialog.

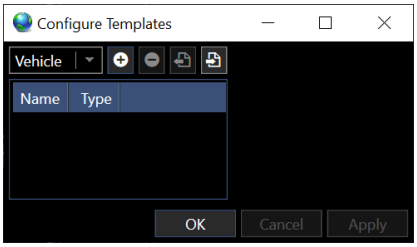


FIGURE 8-15 WINDOWS - CONFIGURE TEXT TEMPLATES DIALOG

8.3.4.2 Add a Text Template

1. Open the Configure Template dialog (see Manage Text Templates)
2. Click the drop-down list in the top left of the dialog to display those base data source types that support the application to a template, these are module and configuration dependent and can include the following:
   a. Point to point guidance (listed as P->P Guidance)
   b. Point to route guidance (listed as P->R Guidance)
   c. Vehicle
   d. Vehicle Offset
   e. Profiler
   f. Layback connection (listed as Pipeline Layback)
   g. Text Item
3. Select the desired type and click the  button to add the template to the list ready to be configured (see Figure 8-16 for an example of a Vehicle type)

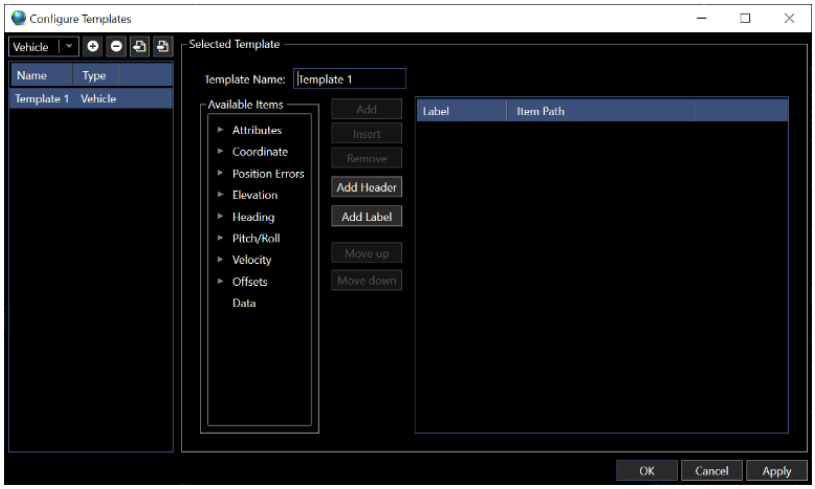


FIGURE 8-16 WINDOWS - TEXT TEMPLATE - VEHICLE TYPE

8.3.4.3 Configure a Text Template

1. Open the Configure Template dialog (see Manage Text Templates)
2. Select the template to edit in the list, this will result in the display of a view similar to the Tabular Text configuration dialog in the right panel.

Note: The Available Items listed in the hierarchical tree are dependent upon the data source type selected and are therefore a subset of what is available in a standard Tabular Text configuration dialog.

3. Configure the text view display items as you would a Tabular Text view (see Tabular Text Window) with the following exceptions:

Template Name: Instead of an option to enter a window title, enter a name for the template, it is recommended this be short but representative of the template's application.

Add Label — Adds a label. If the template is used for a Custom Text window, any labels that have been added are ignored. If the template is used for a Tabular Text window, the labels are displayed as usual

Add Header — Adds a header. If the template is used for a Tabular Text window, any headers that have been added are displayed as usual. If the template is used for a Custom Text window, the headers are ignored

Settings — Edit font size, font weight, text alignment, margins and colors for data in text window

Note: Any template created regardless of whether from a Tabular Text or Custom Text configuration dialog can be used by both the Tabular and Custom Text windows. The Tabular Text window will display as configured in the template. The Custom Text window displays the items on a single line in the order they appear in the template display item data grid.

4. Click Apply to apply changes without closing the dialog or click OK to apply the changes and close the dialog or click Cancel to revert any changes made since the last time Apply was clicked.

8.3.4.4 Remove a Text Template

1. Open the Configure Template dialog (see Manage Text Templates)
2. Select the template to remove in the list of templates.
3. Click the  button to remove the template.

8.3.4.5 Export a Text Template

1. Open the Configure Template dialog (see Manage Text Templates)
2. Select the template to export in the list of templates.
3. Click the  button to open the Windows Save As dialog.
4. Navigate to the destination folder. See Figure 8-17 for default folder.

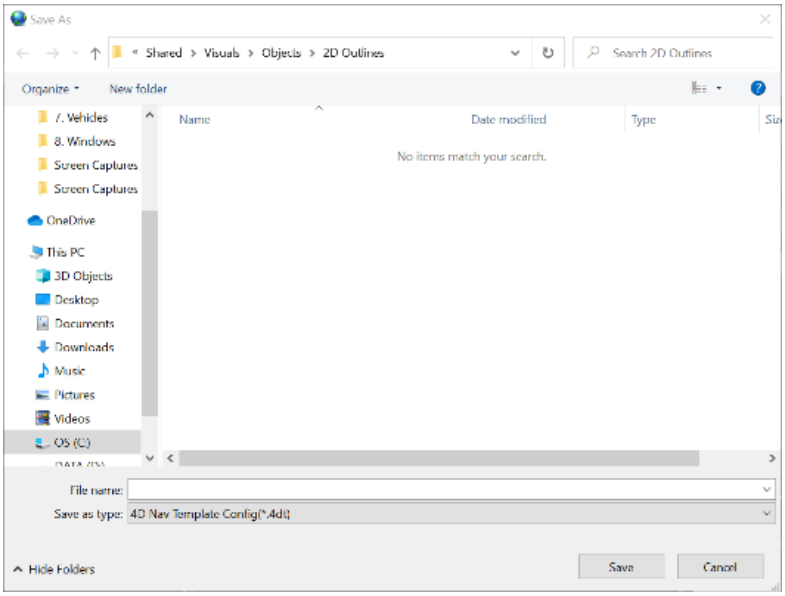


FIGURE 8-17 WINDOWS - TEXT TEMPLATE EXPORT DEFAULT FOLDER

5. Enter a suitable file name.

Note: NavView automatically appends the extension ".4dt"

6. Click **Save**

8.3.4.6 Import a Text Template

1. Open the Configure Template dialog (see Manage Text Templates)
2. Click the  button to open the Windows Open dialog.
3. Navigate to and select the NavView template file (*.4dt)
4. Click **Open**
5. The template is added to the list of templates.

Once a template is imported, it can be edited for the specific application. It can also be resaved.

Note: The same template can be imported multiple times, each one subsequently edited as required. In this way, a template can be used as a template itself.

8.3.4.7 Apply a Text Template

1. From the text window that the template is to be applied to, click the 

drop-down and click on Apply to expand the dialog to display a "Add a Templated Item to View" dialog. See Figure 8-18

Note: The Apply option will only be enabled if at least one template has been created.

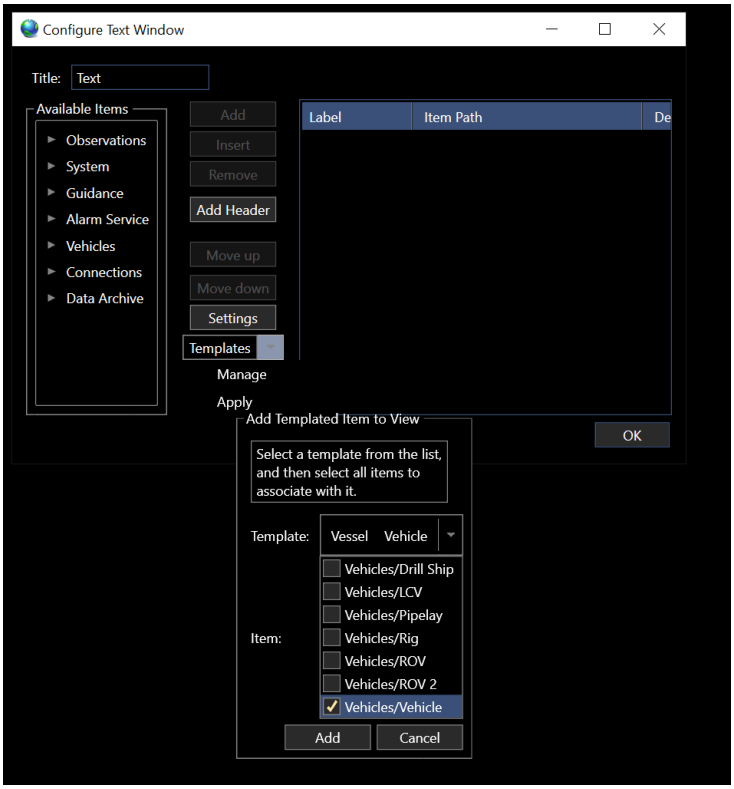


FIGURE 8-18 WINDOWS - APPLY TEXT TEMAPLATE DIALOG

2. From the Template drop down list, select the template to use.
3. A list of those base data source items that are supported by the selected template is displayed, check the box of those that are to use the template and be added to the text window.
4. Click **Add** to apply the selections and add templates for each to the text window or **Cancel** to abort.

When applying a template, the display built for each selected base data source using the template is appended to the bottom of the existing display in the order they appeared in the drop-down list from which they were selected. In the case of a Tabular Text window, a set of rows that matches the template is added for each base data source. In the case of a Custom Text window, a row containing all base data source is added.

Once a template is added to a window, it becomes part of the configuration and can be edited in the normal manner.

8.3.5 Text Layouts

NavView's Text Layouts feature enables the saving of specific text window configurations for later loading and use. This is useful when switching back and forth between different tasks on a given project that require the display of different data for monitoring. With saved text layouts it is possible to close text windows that are not needed at the time but easily restore them later when needed.

Text layouts are stored in the file TextLayouts.xml in the current project and station's config folder.

8.3.5.1 Save a Text Layout

1. From the Tabular Text or Custom Text window whose layout is to be saved, open the Configure Text dialog.
2. Click the Layout button and from the drop-down list, select **Save** to open the Save Layout dialog.

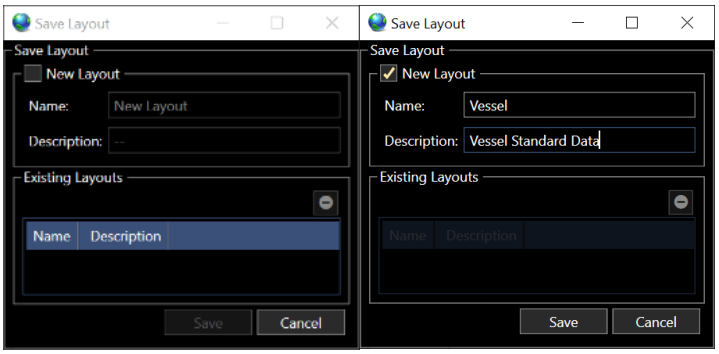


FIGURE 8-19 WINDOWS - TEXT LAYOUTS - SAVE LAYOUT

3. If a new layout:
   a. Check the **New Layout** box
   b. **Name:** Enter a name for the layout
   c. **Description:** Enter a description for the layout
4. If an existing layout that is to be updated
   a. Select the layout from the Existing Layouts list
5. Click **Save** to save the layout or **Cancel** to abort.
   a. In the case of updating an existing layout, answer the prompt confirming the overwriting of the existing configuration accordingly
   b. The Save Layout dialog closes regardless of which button is clicked

8.3.5.2 Load a Text Layout

1. From the Tabular Text or Custom Text window whose layout is to be replaced, open the Configure Text dialog.
2. Click the Layout button and from the drop-down list, select Load to open the Load Layout dialog.

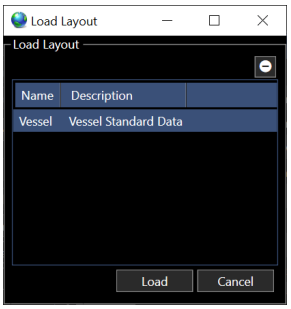


FIGURE 8-20 WINDOWS - TEXT LAYOUTS - LOAD LAYOUT

3. Select the layout to load from List.
4. Click **Load** to load the layout, **Cancel** to abort.
5. If the current window contains display items, a warning that the loading of the layout will clear the existing layout will appear, answer accordingly.

8.3.5.3 Remove a Text Layout

1. From the Tabular Text or Custom Text window whose layout is to be removed, open the Configure Text dialog.
2. Click the Layout button and from the drop-down list, select Save to open the Save Layout dialog or Load to open the Load Layout dialog.
3. Select the layout to remove in the Existing Layouts list.

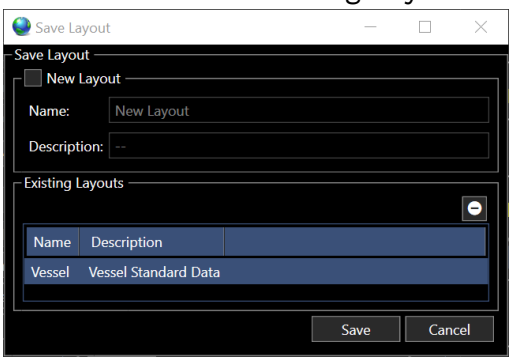


FIGURE 8-21 WINDOWS - REMOVE TEXT LAYOUT DIALOG

4. Click the button.
5. Answer the deletion confirmation prompt accordingly.

8.4 2D Map Window

The Map window presents a 2-dimensional top-down (plan) view of the work area, providing a comprehensive means to monitor the operation of NavView for a surveying application. It is opened by clicking on the Map icon in the Windows section in the View ribbon. The window opens as a document window in the center of the workspace. If a document window is already in that location it will open as a tab in that window.

When the cursor is within a Map view, tool bar displays.

FIGURE 8-22 WINDOWS - MAP VIEW TOOL BAR

In addition, when a Map view has the focus, a context sensitive Map tab is added to the ribbon. Both provide access to Map specific tools and features.

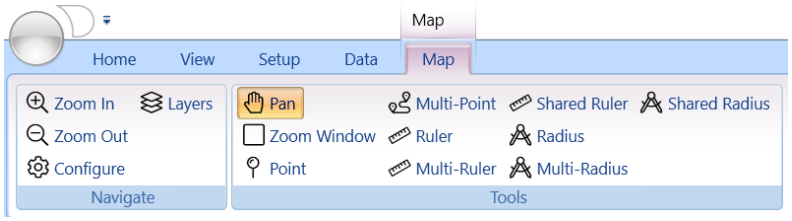


FIGURE 8-23 WINDOWS - MAP WINDOW CONTEXT SENSITIVE RIBBON TAB

Note: If Roles are enabled, any user can open and edit a Map window. The exception being the project level configuration of the backgrounds.

Note: Multiple Map windows can be open in a workspace at any one time. The Map window needs to be changed to a floating window, this is done by left clicking on the Map View Tab and dragging the window.

Note: If positioning fails on a vehicle, its outline will start to fade, disappearing completely when the age of the data reaches 5 minutes.

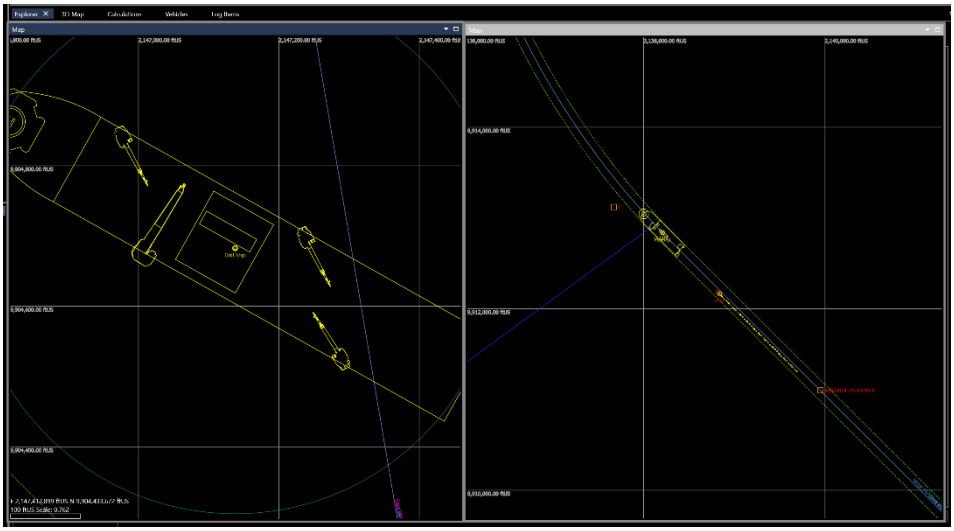


FIGURE 8-24 WINDOWS - MULTIPLE MAP WINDOW EXAMPLE

8.4.1 Background Displays

NavView supports the use of AutoCAD *.dwg and *.dxf files as backgrounds for the Map views. The Configure Backgrounds dialog (see Figure 8-26) is opened by clicking on the Background button in the ribbon's Setup tab in the Configure section or from the project Explorer view, see Figure 8-25. At the project level, the user manages the background files to load for the project and therefore be available for use in the Map windows from this dialog. If the NavView is deployed on a network utilizing NavView Network Services, this project level background configuration and the drawings are distributed to all NavView clients connected on the network. This is beneficial for ensuring that all NavView clients on a network remain in synchronization.

Note: If Roles are enabled, only users with Administrator privileges can add and remove background files and edit the settings. Users with lower privileges can only view the configuration.

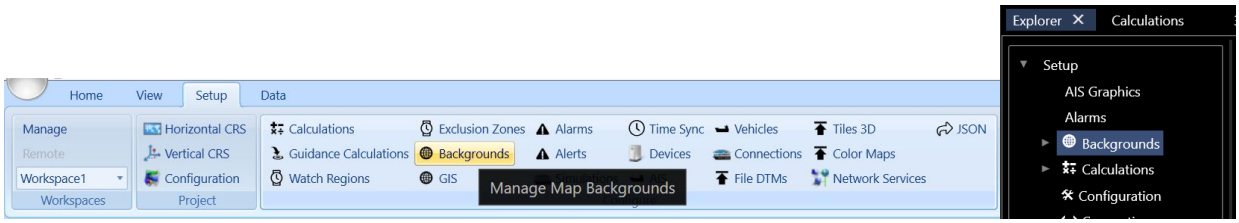


FIGURE 8-25 WINDOWS – MAP BACKGROUNDS – SETUP TAB AND EXPLORER VIEW

When a Map window is opened on any NavView client on the network, any Local station configured on that client, by default all layers of all the configured background files are enabled for display. Control of the display of the background layers can be exercised for each Map window independently using the Layer option in the respective Map window's tool bar (see **Map Layers**).

Note: Changes made to the background's configuration are applied to all open Map windows on any client.

8.4.1.1 Add a Background File

1. Open the Configure Backgrounds dialog.

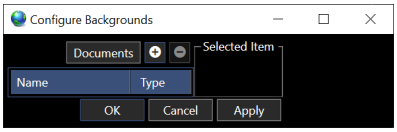


FIGURE 8-26 WINDOWS – MAP - CONFIGURE BACKGROUNDS DIALOG

2. Click the  button to open the Load Background File window from the project's Shared\Visuals\2D Background folder
   a. The file types are *.dwg and *.dxf
   b. If the file to load is not located In Shared\Visuals\2D Background, navigate to the folder where the file(s) is located
   c. Select 1 or more files (file types can be mixed)
   d. Click **Open**
3. The files are added to the list displaying the file name and the file type with the first file selected, or only one file if only one was selected, the file is highlighted and presented in the right panel ready for configuration (see **Edit a Background File Display Settings**)
4. Repeat as required to load all the desired files.

Note: There is no limit to the number of background drawings that can be displayed, but the level of detail and number of entities should be considered in conjunction with processor and graphic capabilities of the computer being used.

8.4.1.2 Remove a Background File

1. Open the Configure Backgrounds dialog.
2. Select the file to remove in the list.

Note: Only 1 file can be removed at a time.

3. Click the  button.
4. Respond to the file removal confirmation prompt accordingly.

8.4.1.3 Edit a Background File Display Settings

1. Open the Configure Backgrounds dialog.
2. Select the file to edit from the list to display the associated configuration in the Selected Item group box to the right.

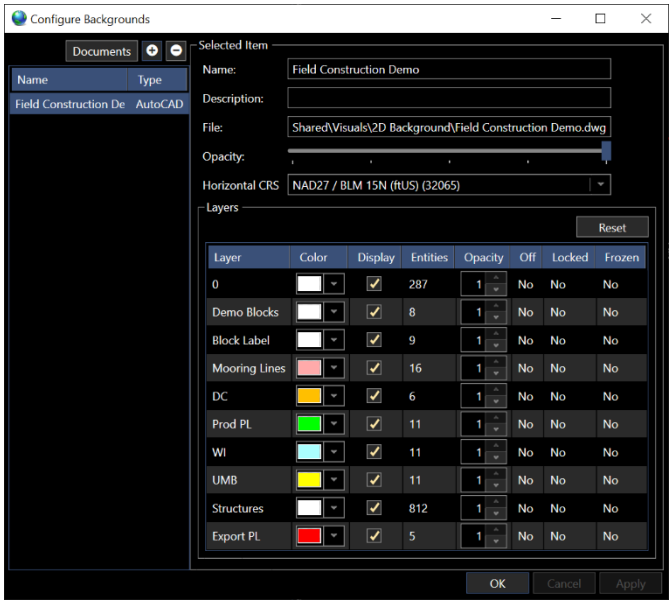


FIGURE 8-27 WINDOWS – 2D MAP - BACKGROUND FILE DISPLAY SETTINGS

3. Edit the settings.

Name: Enter a name to use for the background. This will be displayed wherever the background files are presented for use and manipulation, e.g. in the Map window Layer list. The default name is the file's name with the extension removed

Description: Enter a description for the background (optional)

File: Displays the name and path of the file associated with this background

Opacity: Use the slider to control the opacity of the drawing, to the right is opaquer, to the left is more transparent

Horizontal CRS: Select the Horizontal CRS from the drop-down list that the background file uses, default is the Working Horizontal CRS at the time the file is added. A background file is only available for use and

displayed when the current Working Horizontal CRS matches the Horizontal CRS assigned to the file

Note: The layers and their settings are displayed in a **Layers** data grid. Selected settings can be changed. To facilitate editing, the data grid can be sorted by clicking in the desired column header. Changes are saved as part of the NavView configuration, they are not written out to the dwg file.

Note: When sorting by Color, it may appear that the sort fails because different colors are grouped or appear out of order. This is due to the hexadecimal value that represent the colors and are used to sort by.

Layer: Name of the layer. Cannot be edited

Color: Color used to display the layer entities. Can be edited. Clicking on color box pops up a color list from which to select the color to use for the layer

Display: Display setting for layer. Can be edited. Clicking in the checkbox toggles the display on and off

Note: If a layer that is **Locked** in the AutoCAD file is toggled from the dwg setting, a warning to the operator that the layer is Locked and therefore it may be best not to change the display setting appears, respond accordingly.

Note: If a layer is set to not display from this configuration level, it cannot be toggled to display at the Map level via that window's tool bar Layers tree but even though the respective checkbox in that tree can be checked.

Entities: The number of entities on the layer. Cannot be edited. It is suggested that when optimizing responsiveness of NavView, layers with a large number of entities be examined to determine if they can be set to not display

Opacity: This is the opacity of the layer. Can be edited. Opacity is rated from 0 to 1, 0 being transparent (essentially invisible) and 1 being opaque (very bright) Click in the cell and enter a value or use the  to adjust the setting

Off: The on/off setting for the layer. Cannot be edited

Locked: The locked setting for the layer. Cannot be edited

Frozen: The frozen setting for the layer. Cannot be edited

Reset: Click this button to reset the layer settings back to those of the original drawing

4. Click **Apply** to apply the changes and leave the dialog open, or OK to apply the changes and close the dialog or **Cancel** to revert any changes not yet applied and leave the dialog open.

8.4.2 GIS

NavView supports the use of GIS as backgrounds for the Map views. This is accessed by selecting GIS in the Configure section of the Setup ribbon or from the project Explorer view, see Figure 8-28.

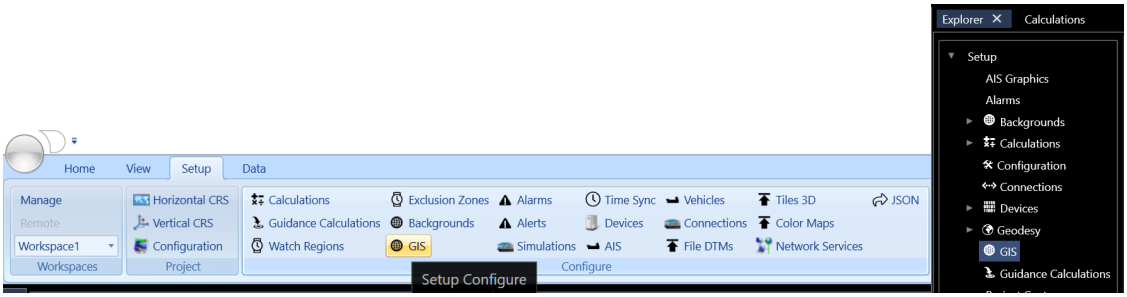


FIGURE 8-28 WINDOWS – 2D MAP - GIS - SETUP TAB AND EXPLORER VIEW

1. Selecting GIS opens the GIS Layers management window.

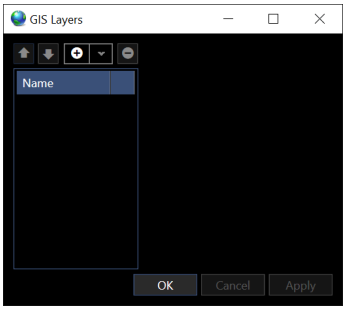


FIGURE 8-29 WINDOWS – 2D MAP - GIS – GIS LAYERS WINDOW

2. From drop-down select the GIS layer.

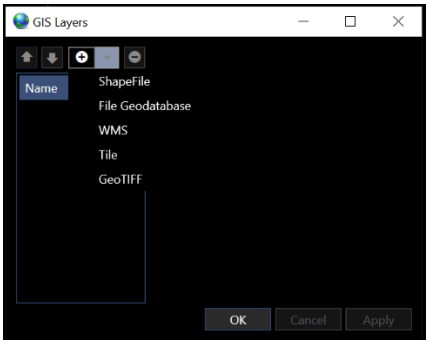
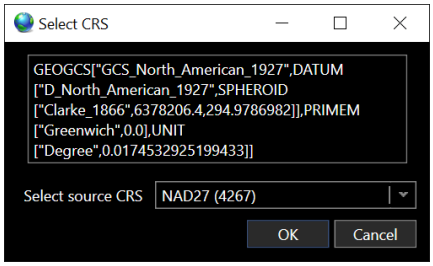


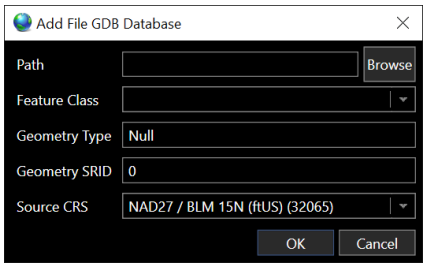
FIGURE 8-30 WINDOWS – 2D MAP – GIS – SUPPORTED FILE FORMATS

NavView supports the following GIS Layers:

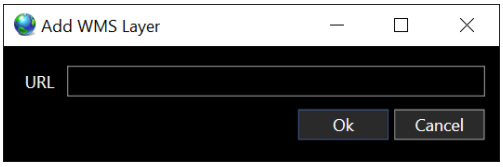
- ShapeFile: Browse to file then open



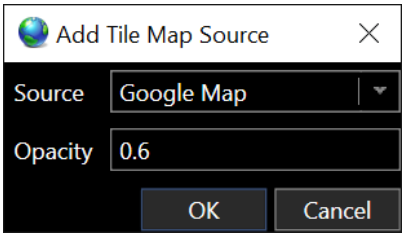
- Geodatabase File: Browse to file then open



- WMS (Web Map Service): Enter URL

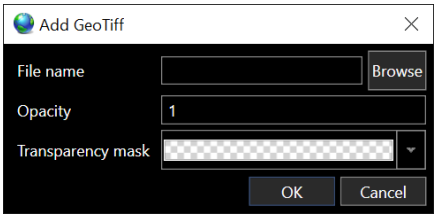


- Tile Layers (i.e. Google Map): Select Tile Layer from drop-down



Note: Tile Layers require WGS84 Pseudo-Mercator added in NavView Horizontal CRS.

- GeoTIFF: Browse to file then open



8.4.3 2D Map Configuration

The configuration of the individual Map windows involves the basic background and centering options and the map entity layer control.

8.4.3.1 Basic Map Configuration

The basic configuration of the window is performed via the Configure Map dialog (see Figure 8-31). This is accessed by right clicking in the window and selecting Configure from the pop-up menu or clicking on the button in the tool bar or clicking on Configure in the Navigate section of the Map ribbon.

Note: Changes to settings in the Configure Map dialog take effect immediately upon being made, they do not require the dialog to be closed with the **OK** button to apply.

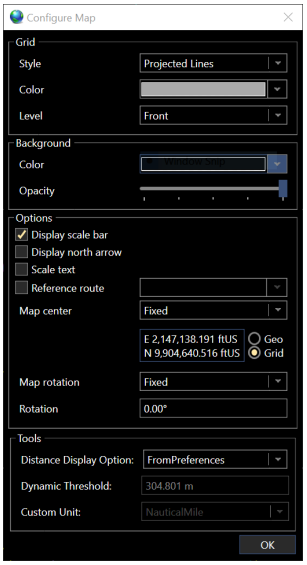


FIGURE 8-31 WINDOWS – 2D MAP - MAP WINDOW CONFIGURATION DIALOG

- Grid Settings

  Style: Controls the map projection and/or geographic graticules displayed, select from the drop-down list options: None, Projected Lines, Projected Ticks, Geographic Lines or Geographic Ticks

  Color: Controls the color used to display the graticules and their labels, select from the drop-down list

  Level: Controls the placement of the Grid, either in Front of all objects/layers displayed or in Back of all objects/layers

- Background Settings

  Color: Controls the color used for the background, select from the drop-down list

Opacity: Slider controls the opacity of the background (note if the background is Black this has no effect), to the right is more opaque, to the left is more transparent

- Options Settings

Display Scale Bar: Checking the box displays the Scale bar in the Map view

Display North Arrow: Checking the box displays the north arrow in the Map view

Scale Text: Checking the box results in the text annotating waypoints, survey line nodes, etc. to scale with the zoom in and out, text size increases when zooming in, decreases when zooming out

Reference Route: Selecting this will add the cursor KP/DCC as a text to the bottom left corner of the map view.

Map Center: The three options available from the drop-down list are **Fixed**, **Follow** and **Center**

Fixed: A coordinate entry box appears, enter a coordinate to center the window on.

Follow: Two drop-down list controls appear, Track Primary and Track Secondary each containing all objects available to select from in a hierarchical tree. Expand this and navigate to and select the object to follow and the window will center on this object. If the object moves outside the window bounds the window will redraw centered on the object. Selecting an object in both Primary track and Secondary Track the window will redraw to keep both objects in the Map window.

Note: The list of available objects includes static objects such as waypoints, if one of these is selected the window will simply redraw centered on this object.

Center: Similar to the Follow option, two drop-down list controls appear, Track Primary and Track Secondary each containing all objects available to select from in a hierarchical tree. Expand this and navigate to and select the object to center on and the window will remain centered on this object. Selecting an object in both Track Primary and Secondary Track the window will redraw to keep both objects in the Map window. If an object moves outside the window bounds the window will now redraw centered on the object.

Map rotation: The two options from the drop-down list are **Fixed** and **Follow**

Fixed: A rotation entry box appears; the orientation of the Map view will be rotated by the value entered in the rotation box.

Follow: A source drop-down list will be shown containing all objects available to select from in a hierarchical tree. Expand this and navigate to and select the object to follow and the window will rotate around this object. As the object changes orientation, the Map view will follow.

Tolerance: A rotation value can be entered, the smaller the value the more sensitive the map view rotation will be. An application would be a heads-up display of a vessel.

- Tools Settings

Distance Display Options: The three options from the drop-down list available are **From Preferences**, **Dynamic** and **Override**

From Preferences: The ruler/radius text values displayed on the Map view will be in the units configured in the Project Configuration/Preferences.

Dynamic: The ruler/radius text values displayed on Map view will be in the units configured in the Project/Preferences, unless the distance is greater than **Dynamic Threshold** entry, in which case the text will use the unit selected in **Custom Unit.**

Override: The ruler/radius text values displayed on Map view will be units selected in **Custom Unit**.

- OK button closes dialog, it is not required to close with OK to apply changes as they are applied as they are made.

8.4.3.2 Map Layers Control

Objects are displayed in the Map window on Layers, e.g. waypoints (including the visuals assigned to them), vehicles, vehicles' offsets, etc. The display of these layers can be controlled to optimize the display for the intended purpose.

The control for all layers, including the background drawing files, can be accessed by clicking the  button in the Map window tool bar or right mouse clicking in the Map widow and selecting Layers from the pop-up menu. This displays a hierarchical tree listing all layers present in the Map view (see Figure 8-32) grouped according to type, e.g. vehicles. This can be expanded to drill down to a specific single layer. Clicking in the check box associated with a specific layer toggles that layer on/off. Clicking in the check box associate with any grouping toggles that group on/off. For example, in Figure 8-32, clicking in the box next to ROV/Offset/Origin turns the symbol and label for this offset on the vehicle ROV on and off in the Map view. Clicking in the box next to ROV listed under Vehicles turns the display of that vehicle's outline and its label plus the symbol and label for all of its offsets on and off. Clicking in the box associated with Vehicles toggles the display of all vehicles on and off.

FIGURE 8-32 WINDOWS – 2D MAP - MAP WINDOW - AVAILABLE LAYERS LIST

Note: If a layer in a background file has been set to not display at the project level configuration (see Edit a Background File Display Settings), it will still be listed in this tree but checking or unchecking the associated box cannot override the project level setting to not display.

Note: If a background file has been assigned a CRS other than the current Working Horizontal CRS, the background will be listed in this tree but will have no layers associated with it.

Note: All configuration settings for the Map window are written to the respective configuration file with the exception of Layer control for Vehicles. Therefore, whenever NavView opens a Map window from a configuration file, whether upon the launching of the program, opening a project and station or opening a Map window for which a configuration file exists, the Layer settings for **Vehicles** default to display all vehicles and their offsets and must be reconfigured.

8.4.4 Tools

The tools for the Map window can be accessed via the window's tool bar, the window's context sensitive ribbon Map tab, with a right mouse click in the window and with the mouse directly.

8.4.4.1 Zoom In/Out

Zooming in and out can be done by clicking the  and  buttons in the Map window tool bar or the Zoom In and Zoom Out buttons in the context sensitive Map tab in the ribbon. Zooming in and out with these buttons steps the window in or out maintaining the same window center.

The Map window can also be zoomed in and out using the mouse scroll wheel. When zooming with the mouse wheel, the real-world position of the mouse is maintained, and the window redraws accordingly. This facilitates using the scroll wheel to both zoom in and out and re-centering.

8.4.4.2 Follow Reset

If the Follow mode has ever been configured for a Map window (see Basic Map Configuration), the Follow mode button in the tool bar can be used to enable and disable it. If this option has not been set, this button has no affect.

If the Follow mode is not enabled, this button displays as  . Clicking it will enable the Follow mode for the target object that it was last configured for. The tool tip for the button will give the name of the Follow target. If the Follow mode is enabled, the button displays as  . Clicking it will disable the Follow mode. The tool tip in this state displays the name of the Follow target that will be disabled.

8.4.4.3 Panning

The Map window can be panned by clicking the  button in the Map window tool bar or by clicking and holding the left mouse button down, or clicking and holding the scroll button down, and moving the mouse to drag the window around. If either the Ruler or Coordinate Picker are active, clicking and holding down the scroll bar option must be used.

Note: Panning automatically resets the centering option to Fixed disabling Follow/Center mode. The Follow/Center mode can be activated by clicking on the Follow Reset button.

8.4.4.4 Measure Distance/Measure Radius Tool

Clicking the  button activates the Measure Distance tool, when active the button is highlighted  . Clicking on the button again deactivates the tool.

To use the Measure Distance tool to make a measurement, place the cursor on the point in the Map window from which a distance and/or bearing to another point is desired, click and hold the left mouse button down and drag the cursor to the second point. A line is drawn from the starting point to the end point. The line is annotated with the distance and bearing in the format and units configured in Preferences.

By clicking and holding the left mouse button down on the end point icon  the point can be dragged to a new location.

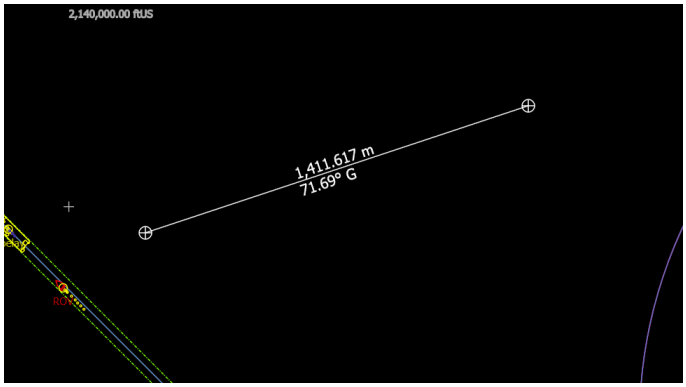


FIGURE 8-33 WINDOWS – 2D MAP - MEASURE DISTANCE EXAMPLE

Multiple Measure Distance tools can be drawn and displayed simultaneously by clicking the button this activates the Measure Distances tool. See Figure 8-34

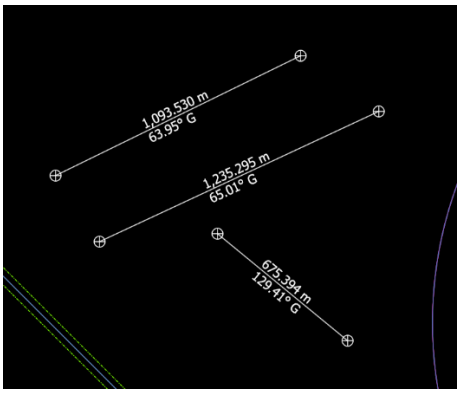


FIGURE 8-34 WINDOWS – 2D MAP - MEASURE DISTANCES EXAMPLE

To use a ruler across multiple maps, click on the button this activates the Measure Distances across maps tool. See Figure 8-35

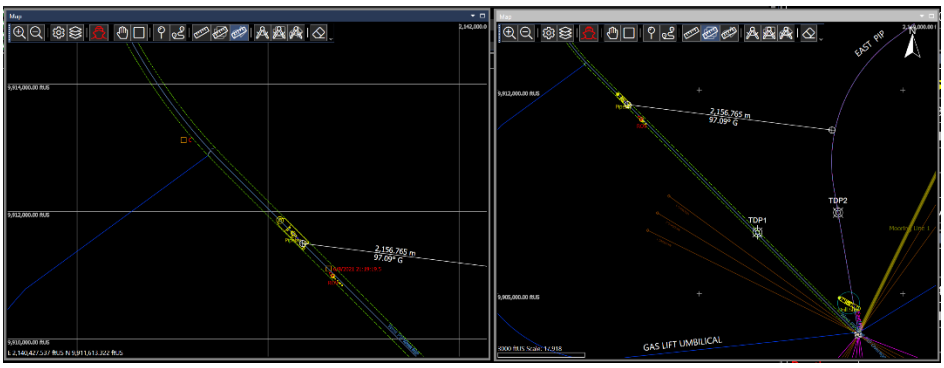


FIGURE 8-35 WINDOWS – 2D MAP - MEASURE DISTANCES ACROSS MAPS EXAMPLE

To measure a radius, click on the to activate the Measure Radius tool. See Figure 8-36

By clicking and holding the left mouse button down on the end point icon the point can be dragged to a new location.

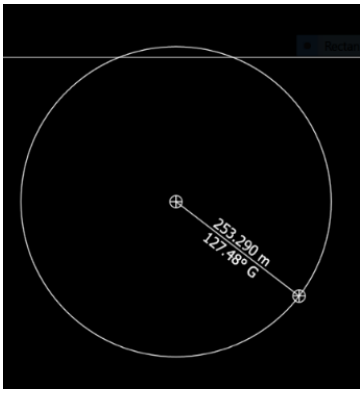


FIGURE 8-36 WINDOWS – 2D MAP - MEASURE RADIUS EXAMPLE

To measure multiple radiuses, click on the button to activate the Measure Radiuses tool. See Figure 8-37

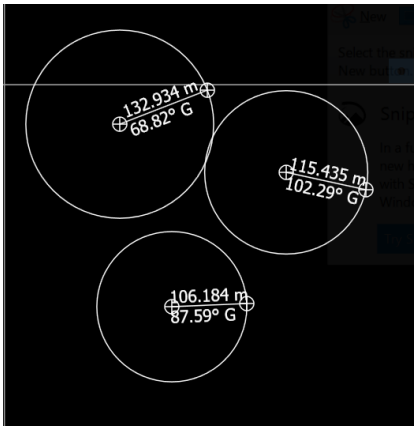


FIGURE 8-37 WINDOWS – 2D MAP - MEASURE RADIUSES EXAMPLE

To measure radius across multiple maps, click on the button to activate the Measure Radiuses Across Maps tool. See Figure 8-38

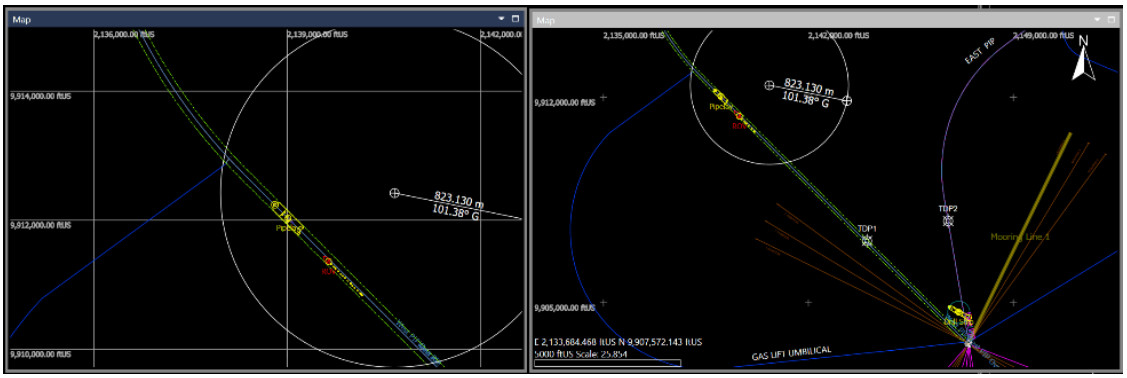
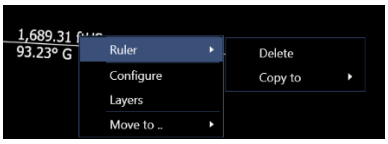


FIGURE 8-38 WINDOWS – 2D MAP - MEASURE RADIUSES ACROSS MAPS EXAMPLE

To erase measurements from the map window, click on the erase button .

Right mouse clicking on the measurement line (Ruler) presents a pop-up menu whereby the user can delete the selected ruler or copy it.



To delete, select the Delete menu item.

To copy the start and/or end points of the last measurement made, move the mouse away from the end point and right mouse click on the measurement, annotation or line, to display a Copy To... menu with the options to copy to Clipboard, 3D Line, Pipeline, Survey Line, Watch Group, Exclusion Zone and Waypoint, see Figure 8-39.

Note: In the case of multiple rulers/radiuses present, the Copy To... feature copies the start and end points of the last measurement made.

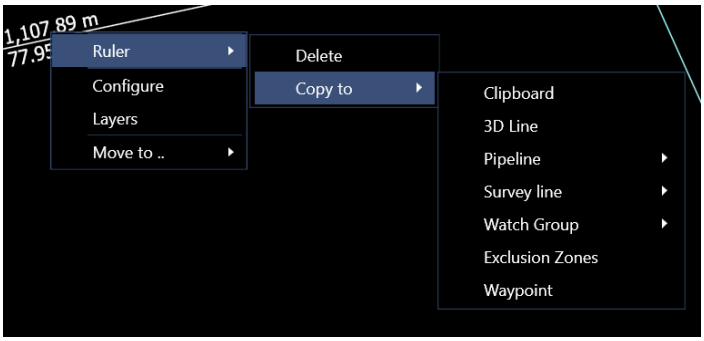


FIGURE 8-39 WINDOWS – 2D MAP - MEASUREMENT COPY TO POP-UP

Copy to Clipboard: Both points are copied to the clipboard as map projection coordinates.

Copy to 3D Line: The 3D Line dialog is displayed with a 2 Node line named based on the time created added and selected. The measurement starting point is set the start of line and the measurement end point as the end of line. This can be edited as required and accepted by clicking OK or aborted by clicking Cancel. Upon clicking cancel, a warning “There are unsaved changes. Would you like to save them?” will appear, click No to continue the aborting process (clicking yes will save the 3D line).

Copy to Pipelines: The Configure Pipeline dialog is displayed with a 2 Node line. The measurement starting point is set the start of line and the measurement end point as the end of line. This can be edited as required and accepted by clicking OK or aborted by clicking Cancel. Upon clicking cancel, a warning “There are unsaved changes. Would you like to save them?” will appear, click No to continue the aborting process, clicking yes will save the Pipeline.

Copy to Survey Line: The Survey Lines dialog is displayed with a 2 Node survey line. The measurement starting point is set the start of line and the measurement

end point as the end of line. This can be edited as required and accepted by clicking OK or aborted by clicking Cancel. Upon clicking cancel, a warning “There are unsaved changes. Would you like to save them?” will appear, click No to continue the aborting process, clicking yes will save the survey line.

Copy to Watch Group: The Create Region dialog is displayed to enter the region name, region type and buffer distance. When finished click okay this will display the Configure Watch Groups dialog which contains the two end points of the measurement.

Copy to Exclusion Zones: The Create Region dialog is displayed to enter region name, region type and buffer distance. When finished click okay, the two end points of the measurement will be in the Regions tab of the Configure Exclusion Zones dialog.

Copy to Waypoint: A Waypoint dialog is displayed with the measurement starting point as the coordinate. The information can be edited as required and accepted by clicking OK which will result in it being added to the waypoints or ignored and not added to the waypoints by clicking Cancel. This process is repeated for the measurement end point.

8.4.4.5 Point/Multi-point Picker

Clicking the  button activates the Single Point Coordinate Picker feature. This is an interactive feature that allows the operator to graphically define Watch Groups, Exclusion Zones and Waypoints. In addition, coordinates can be copied to the clipboard. When active, the button is highlighted ()

When activated a box appears in the top left of the window. The coordinates being ‘picked’ are defined by left mouse click in the map window whereupon a  icon is drawn, and the coordinate is displayed in the box. Each time the left button is clicked the previous point is removed and the new one displayed.

The point created using the Single Point Coordinate Picker can be copied for use elsewhere by mouse right click on point picked to display the Copy To pop-up menu, see Figure 8-40.

FIGURE 8-40 WINDOWS – 2D MAP - SINGLE POINT PICKER COPY TO MENU

Clicking the  button activates the Multi Point Coordinate Picker feature. This is an interactive feature that allows the operator to graphically define 3D Lines, Pipelines, Survey

Lines, Watch Groups, Exclusion Zones and Waypoints. In addition, coordinates can be copied to the clipboard. When active, the button is highlighted ( ).

The coordinates being 'picked' are defined by left mouse click in the map window. The points picked are displayed with connecting lines with the line annotated with distance and bearing, this replaces the coordinate box displayed when using the Single Point picker. See Figure 8-41

By clicking and holding the left mouse button down on a point icon the point can be dragged to a new location.

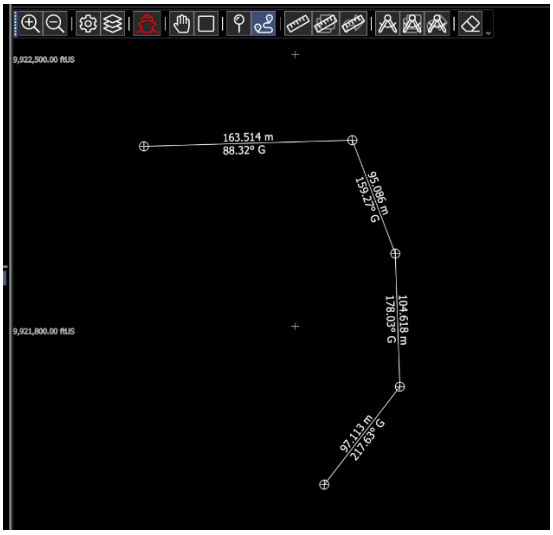


FIGURE 8-41 WINDOWS – 2D MAP - MULTI-POINT COORDINATE PICKER EXAMPLE

The points created using the Multi-Point Coordinate Picker can be copied for use elsewhere by mouse right click on the line or annotation to display the Delete/Copy To pop-up menu, see Figure 8-42.

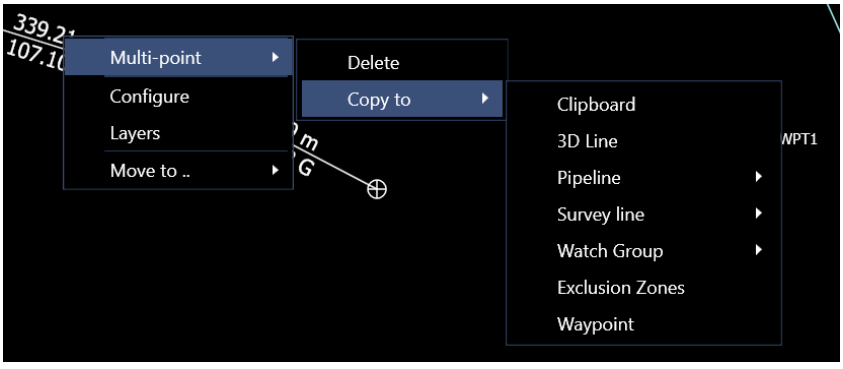


FIGURE 8-42 WINDOWS – 2D MAP - MULTI-POINT PICKER POP-UP MENU

8.4.4.6 Save Map As

Clicking the button enables the user to save the current Map view as an AutoCAD DXF/DWG file or an Image PNG/JPG file.

1. Click the  button to open the Save As window.

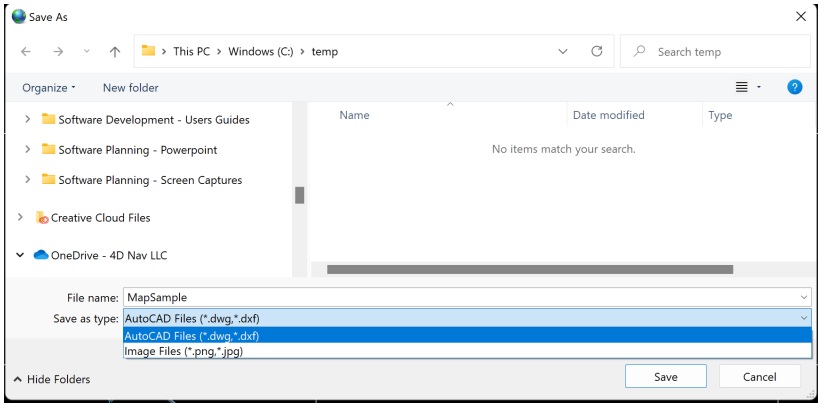


FIGURE 8-43 WINDOWS – 2D MAP – MAP SAVE AS WINDOW

2. Navigate to the folder to save the map file to.
3. To save as a DXF file
   a. Enter the filename and include the extension dxf, e.g. WorkAreaMap.dxf
   b. Click Save
4. To save as a DWG file
   a. Enter the filename and include the extension dwg, e.g. WorkAreaMap.dwg; or
   b. Select the file type AutoCAD Files (*.dwg, *.dxf) and enter a filename without an extension, e.g. WorkAreaMap
   c. Click Save
5. To save as a JPG file
   a. Enter the filename and include the extension jpg, e.g. WorkAreaMap.jpg
   b. Click Save
6. To save as a PNG file
   a. Enter the filename and include the extension png, e.g. WorkAreaMap.png; or
   b. Select the file type Image Files (*.png, *.jpg) and enter a filename without an extension, e.g. WorkAreaMap
7. Click Save

8.4.5 Short Cuts

Short cuts to common configurations are available via the Map window. These are accessed using the right mouse button in the window.

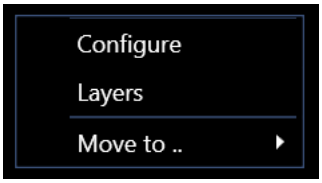


FIGURE 8-44 WINDOWS – 2D MAP - SHORT CUTS

8.4.5.1 Move To...

Right mouse clicking in the Map window displays a pop-up menu.

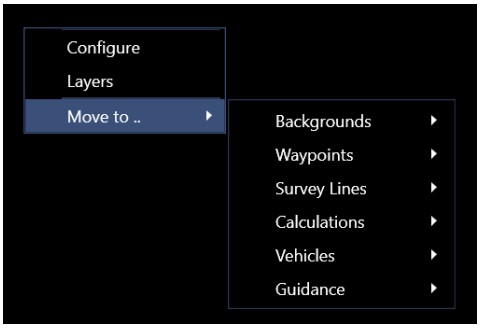


FIGURE 8-45 WINDOWS – 2D MAP - MOVE TO

Mouse over the **Move to..** ▸ item to display a list of sources of objects that can be selected to move the center of the Map window to. Continue to roll over the list items displayed to expand the respective source down to the base objects, e.g. Vehicles expands down to specific offsets. Selecting one of the base objects causes the window to redraw with the selected object at the center.

Note: If the Follow mode is enabled, using the Move to feature disables it.

8.4.5.2 Editing - Waypoints

Waypoint information can be accessed for viewing and editing from the Map window.

Right mouse click on the waypoint (or its label or a line in its 2D outline) and select Edit from the pop-up menu that appears. Click on this to open the Waypoint dialog for that waypoint. This can be edited with the changes applied by clicking OK or discarded by clicking Cancel.

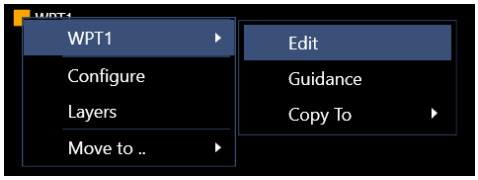


FIGURE 8-46 WINDOWS – 2D MAP - MAP VIEW - EDIT WAYPOINT POP-UP MENU

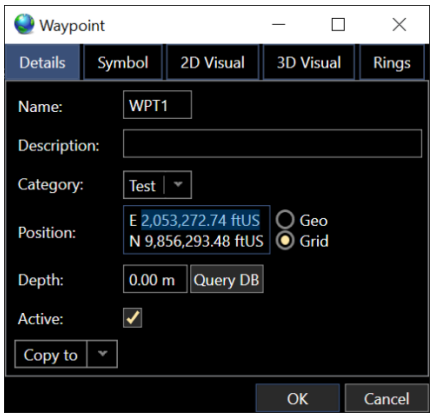


FIGURE 8-47 WINDOWS – 2D MAP - WAYPOINT EDIT WINDOW

8.4.5.3 Editing - Survey Lines and Pipelines

Survey Lines and Pipelines information can be accessed for viewing and editing from the Map window.

Right mouse click on any segment and select Edit from the pop-up menu to open the Configure Survey Line dialog from which the line can be edited. See Figure 8-48 and Figure 8-49

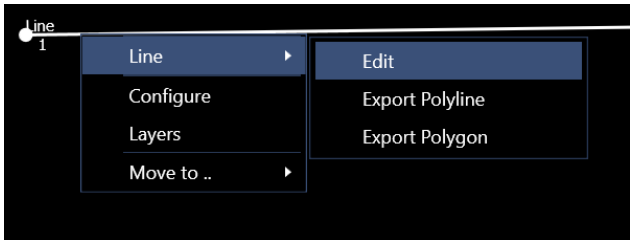


FIGURE 8-48 WINDOWS – 2D MAP - MAP VIEW - EDIT SURVEY LINE POP-UP MENU

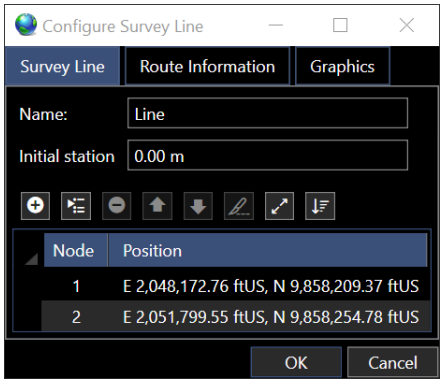


FIGURE 8-49 WINDOWS – 2D MAP - EDIT SURVEY LINE WINDOW

To apply the changes made, whether made graphically or directly within the dialog or some combination, click **OK** in the configure dialog. To cancel all changes, whether made graphically or directly within the dialog or some combination, click **Cancel** in the configure dialog.

In the case of pipelines, the pop-up menu from the right mouse click displays the Edit option and Segment Details. Clicking on these provides the following information:

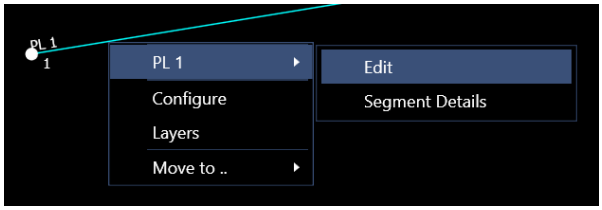


FIGURE 8-50 WINDOWS – 2D MAP - MAP VIEW - PIPELINES POP-UP MENU

Edit: Opens the Configure Pipeline dialog (see Figure 8-51)

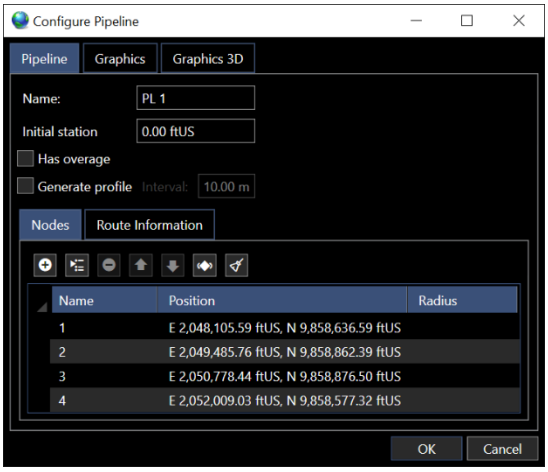


FIGURE 8-51 WINDOWS – 2D MAP - MAP VIEW - CONFIGURE PIPELINE DIALOG

Segment Details: Opens a Segment window displaying a summary of the selected segment data.

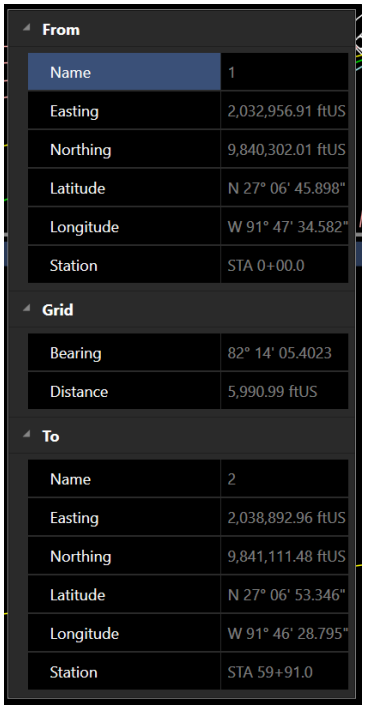


FIGURE 8-52 WINDOWS – 2D MAP - PIPE LINE - SEGMENT DETAILS

8.4.5.4 Create an Object from a Polyline

If an AutoCAD dwg file is displayed as a background in a Map window, right clicking on a Polyline will display a menu allowing the operator to create an 3D Line Connection, Pipeline, Survey Line, Exclusion Zone or Watch Group. Click on the object to be created in the menu and the respective Configuration dialog will open allowing the editing of the resulting object.

1. Position the cursor over a polyline in the Map window and right mouse click.

2. From the resulting menu (see Figure 8-53), select the type to convert to from the polyline.

Note: If the selected object in the background drawing is not a polyline, a warning will appear alerting the operator of this and the process will abort.

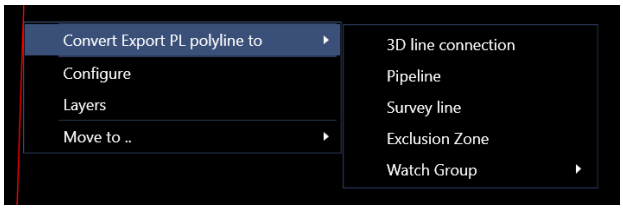


FIGURE 8-53 WINDOWS – 2D MAP - MAP WINDOW - CREATE OBJECT OPTION

3. The respective configuration dialog will appear, for example, if Create Survey Line is selected the Configure Survey Line dialog as shown in Figure 8-55 will appear.

Note: If creating a Survey Line from a polyline, an Import Polyline dialog showing "Simplification tolerance" is opened before the Configure Survey Line Configuration dialog. The Simplification tolerance value determines the accuracy of the created geometry from the selected polyline. The smaller the tolerance the more accurately the geometry is created, the default is 0.000.

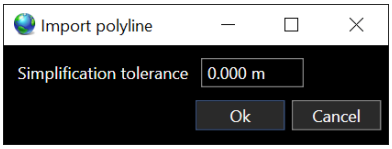


FIGURE 8-54 WINDOWS – 2D MAP - IMPORT POLYLINE – SURVEY LINE

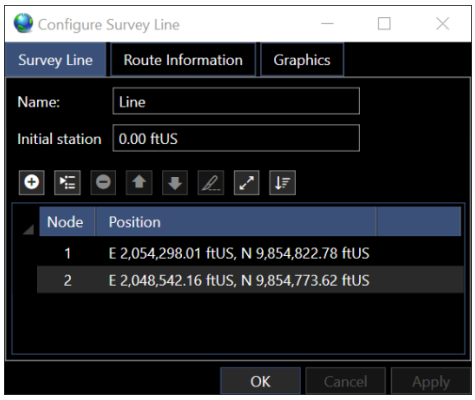


FIGURE 8-55 WINDOWS – 2D MAP - CONFIGURE SURVEY LINE DIALOG

4. Edit as required and click Apply to accept the object and add it to the respective collection and leave the dialog open or click **OK** to do the same but close the dialog or click **Cancel** to abort the process and close the dialog.

Note: If a polyline is added as one type of object, e.g. a Survey Line, to add it as another type, e.g. Pipeline, or as another Survey Line, the display of the first object must be turned off in the Configure Layers in order to expose the polyline again.

8.4.5.5 Guidance Setup

A Guidance calculation can be quickly set up directly from the Map window complete with a tabular Text widow displaying the data.

1. Right mouse click on the intended From object, waypoint or a vehicle, to open a menu displaying Edit and Guidance.

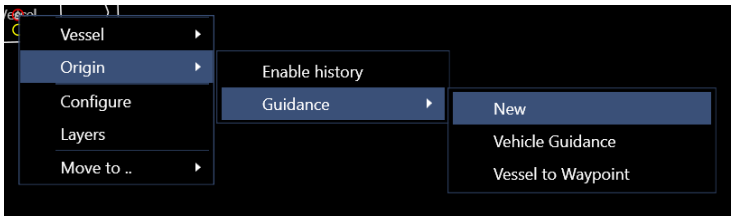


FIGURE 8-56 WINDOWS – 2D MAP - GUIDANCE SHORT CUT

2. Click on Guidance to open the Guidance Wizard, edit the dialog accordingly.

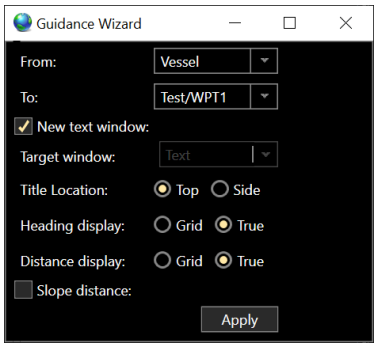


FIGURE 8-57 WINDOWS – 2D MAP - GUIDANCE WIZARD

   a. **From:** Select the From object from this drop-down list
      i. If a waypoint was selected as the From object, it will be the only item in this drop-down list
      ii. If a vehicle was selected as the From object, this drop-down list contains its static offsets to selected from
   b. **To:** This presents a hierarchical tree of all objects that can be selected as the track To targets.
   c. **New Text Window:** Check this box if the data for from this new guidance object is to display in a new Tabular Text window, uncheck if it is to display in an existing Tabular Text window.
   d. **Target Window:** If the New Window box is not checked, using this drop-down list, select the existing Tabular Text window to add this guidance object's data to.

Note: If an existing Tabular Text window is selected, the rows for this guidance object will be added to the bottom of the selected window.

   e. **Title Location:** Specify where the guidance object's 'title' is to be placed in the respective window.

i. **Top:** Selecting Top results in the Guidance name (From>To) being added as a Header followed by the data, To Waypoint example

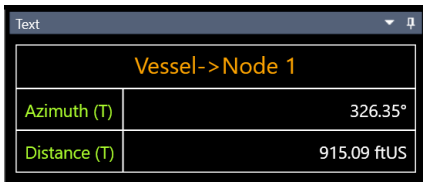


FIGURE 8-58 WINDOWS – 2D MAP - TO WAYPOINT

ii. **Side:** Selecting Side results in the Guidance name (From>To) being added as an item with the label Name followed by the data, To Waypoint example

f. If a line (e.g. Survey Line or Pipe Line) was selected as the To target, go to step j.

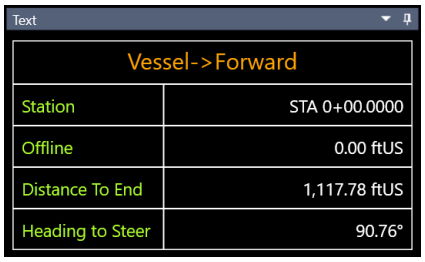


FIGURE 8-59 WINDOWS – 2D MAP - TO LINE

g. **Heading Display:** Select if the data to be displayed is Grid or True (geographic)
h. **Distance Display:** Select if the data to be displayed is Grid or True (geographic)
i. **Slope Distance:** Check the box if the range displayed is to be slope distance, if unchecked the range will be a horizontal distance.
j. Click **Apply** to apply the Guidance Wizard this will open the Configure Text Window to edit the text configuration.

Note: If a Track To target was selected before closing with the X, a warning stating “There are unsaved changes. Would you like to save your changes?” appears. Clicking Yes will result in the wizard configuration being applied, clicking No or closing with the X will continue the abort process.

If the Track To target is a waypoint, the guidance data displayed is the target name, direction to target and distance to target as shown in the Tabular Text window in Figure 8-58 titled To

Waypoint. If the Track To target is a line, the guidance data displayed is the target name, station, distance off line from the current line segment, the distance to the end of the current line segment and Heading to Steer as shown in the Tabular Text window in Figure 8-59 titled To Line.

In the case of creating a new Tabular Text window, once created it is just another Tabular Text window and can be manipulated and edited accordingly.

8.5 3D Map Window

The 3D Map window presents an easily interpreted real-time 3D view of seabed infrastructure, surface vessels, mid-water cables and other objects such as buoys, ROVs or deployed packages. The content of the scene is project-specific and requires either properly formatted 3D models that can be drawn in the scene, or special setup to allow calculation of specific models on the fly, such as dynamic riser lines. In addition to objects, a Digital Terrain Model (DTM) representing the seabed over the project area may also be drawn. Figure 8-60 below displays partial views of typical scenes containing structures and jumpers in a subsea field. Additionally, 3D Map has the ability to overlay a background drawing on the seabed DTM, see Figure 8-61.

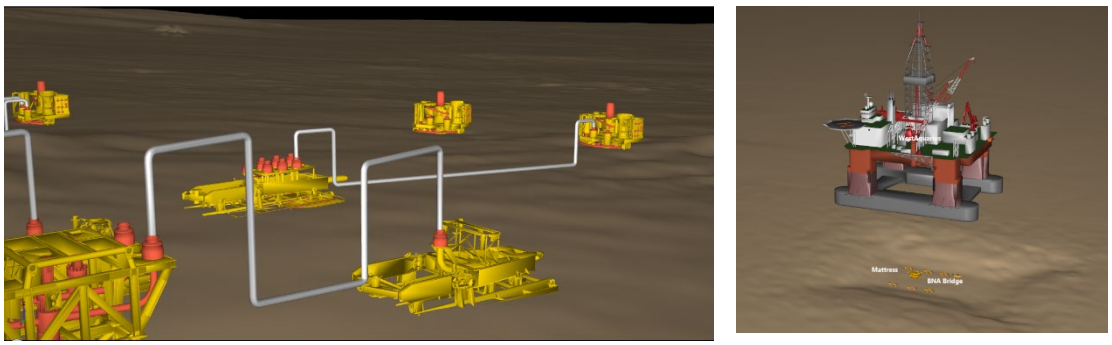


FIGURE 8-60 WINDOWS – 3D MAP - PARTIAL 3D SCENES

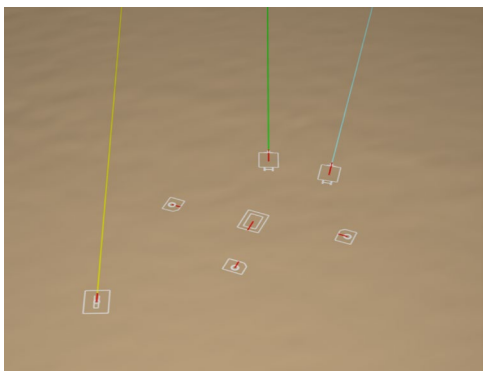


FIGURE 8-61 WINDOWS – 3D MAP – BACKGROUND OVERLAY

Note: If Roles and Privileges are enabled, any user can open and edit a 3D Map window.

Note: To properly display the 3D Map, a **Project Center** position must be defined. This is done via the Explorer view. If this is updated while a 3D Map view is opened, it must be closed and re-opened to apply the new Project Center.

Note: Multiple 3D Map windows can be open in a workspace at any one time.

To open a 3D Map window, click the 3D Map icon in the View ribbon. The window will open as a document window in the main part of the workspace. If a document window already occupies that space, it will be added to it as a tab.

When a 3D Map window has the focus, a context sensitive 3D Map tab is added to the ribbon. This provides access to 3D Map specific tools and features.

See **Database Services** for details on loading the DTM.

8.5.1 Basic Operations

In many cases users will be introduced to NavView after the site project has already been configured. This section describes basic operations that may be executed in the 3D Map view, using the assumption that the 3D Map scene has already been configured and loaded from a project file. Details describing the procedures for loading 3D objects will be discussed later in the document.

8.5.1.1 Mouse Actions

The mouse is the primary user interface tool when interacting with the 3D scene. Supported mouse actions are detailed here.

8.5.1.1.1 Pan

Panning through the scene is done with a left button click and drag operation. When the left button is released the pan operation is stopped. It can also be done with a mouse scroll wheel click and drag operation.

8.5.1.1.2 Zoom

Zooming in and out of the scene is done by rotating the mouse wheel. A forward rotation zooms in while a reverse rotation zooms out.

8.5.1.1.3 Rotate

Rotating the scene is done with a right-click and drag operation. When the right mouse button is clicked a light-grey bull's eye appears in the view at the rotation center point. If an object is selected from the selection tree the rotation center will be located at that object's origin. The rotate actions are summarized below:

1. Right-click and drag left: Rotates scene clockwise.
2. Right-click and drag right: Rotates scene counterclockwise.
3. Right-click and drag up: Rotates scene down (towards a seabed-level view)
4. Right-click and drag down: Rotates scene up (towards a top-down view)

By default, rotations beneath the seabed are restricted. This restriction may be removed if there is a reason to do so as will be discussed later in the document.

8.5.1.2 Selection Tree

The selection tree appears on the left side of the 3D view when the mouse is inside the view, see Figure 8-62. When the mouse is moved outside the 3D scene the selection tree fades from the view.

> **Note:** The display of the selection tree can be turned off, see Hide Selection Tree in the Control section of the 3D Map tab.

From the selection tree the user can:

1. Select an object to center
2. Hide or show specific objects or categories of objects
3. Toggle object labels on or off
4. Toggle on/off background Overlay

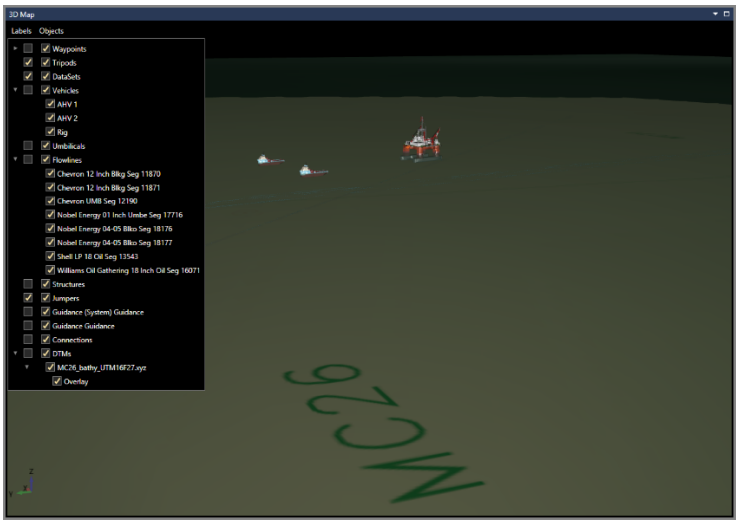


FIGURE 8-62 WINDOWS – 3D MAP - 3D VIEW WITH SELECTION TREE

Figure 8-62 shows a 3D Map view with the Selection Tree. The tree lists the categories of graphical objects such as vehicles, structures, umbilicals, etc., that are supported in the view. Clicking on the arrow at the left of a category expands that branch displaying the associated items that are present in NavView as illustrated for Vehicles, Flowlines and DTMs in this figure. Categories that do not have an arrow beside them are empty. For example, in this case there are no Structures, Jumpers, Connections, etc. in the project because no arrow is visible beside these categories.

Clicking on an item in a branch will cause the view to re-center on that object with the camera looking directly at the object. This makes it very easy to navigate to any object of interest.

The first column of checkboxes controls the visibility of the labels for a category. Checking one of these boxes turns on the display of labels for all objects in that category. Unchecking one of these boxes turns the display of labels for all objects in that category off.

Note: Control of the display of labels is by category, not by individual object.

The second column of checkboxes controls the display of objects in the 3D Map view. Checking the box associated with a category, e.g. Structures, turns on the display of all objects of that category type. Unchecking the box associated with a category turns off the display of all objects of that category type. Checking the box associated with a specific object turns on the display of that object. Unchecking the box associated with a specific object turns off the display of that object.

Note: The display of any single object or group of objects is determined by the last action, e.g. unchecking the box associated with a category will turn off the display of all objects in that category regardless of the display setting of each individual object in that category.

8.5.1.3 3D Map Context Sensitive Tab

When a 3D Map window has the focus a context sensitive tab is added to ribbon. This tab presents users with several tools and operations that may be used to modify the 3D scene or to execute special functions inside the scene.

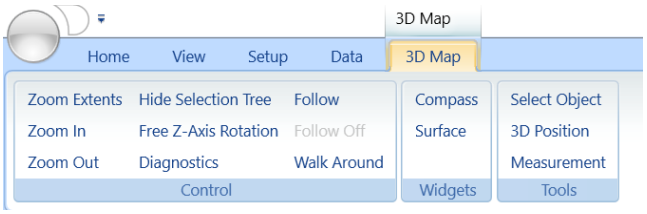


FIGURE 8-63 WINDOWS – 3D MAP - CONTEXT SENSITIVE TAB

8.5.1.4 Controls

This set of functions directly affect the scene or how the user interacts with the scene.

8.5.1.4.1 Zoom Extents

When the **Zoom Extents** button is clicked, the scene is immediately changed to a top-down (plan) view from a high altitude. This may be considered essentially a view 'reset' to a known camera angle and position. The operation does not necessarily zoom to the entire extents of the project area, so the true extents of the terrain may not be visible. This is intentional as zooming to true extents can cause objects on the seabed to disappear from the view when the project area is very large, and this can make the user's perception of where the camera is pointing more difficult.

8.5.1.4.2 Zoom In

Clicking the **Zoom In** button decreases the scale of the scene by one zoom level.

8.5.1.4.3 Zoom Out

Clicking the **Zoom Out** button increases the scale of the scene by one zoom level.

8.5.1.4.4 Hide Selection Tree

Clicking the **Hide Selection Tree** button toggles the display of selection tree on and off.

8.5.1.4.5 Free Z-Axis Rotation

By default, scene rotation in the z-axis is restricted to prevent accidentally flipping the scene such that the camera is looking upwards from beneath the seabed. When this happens, it can be very confusing to the user, but the default setting generally prevents this occurrence.

In some cases, it may be desirable to look at the scene from beneath the seabed. If this is required, the **Free Z-Axis Rotation** toggle removes the restriction.

8.5.1.4.6 Diagnostics

Diagnostic information relating to the 3D view may be toggled on or off by clicking the **Diagnostics** button. When turned on, the information is displayed in the upper-right corner and lower-left corner of the 3D Map as shown in Figure 8-64.

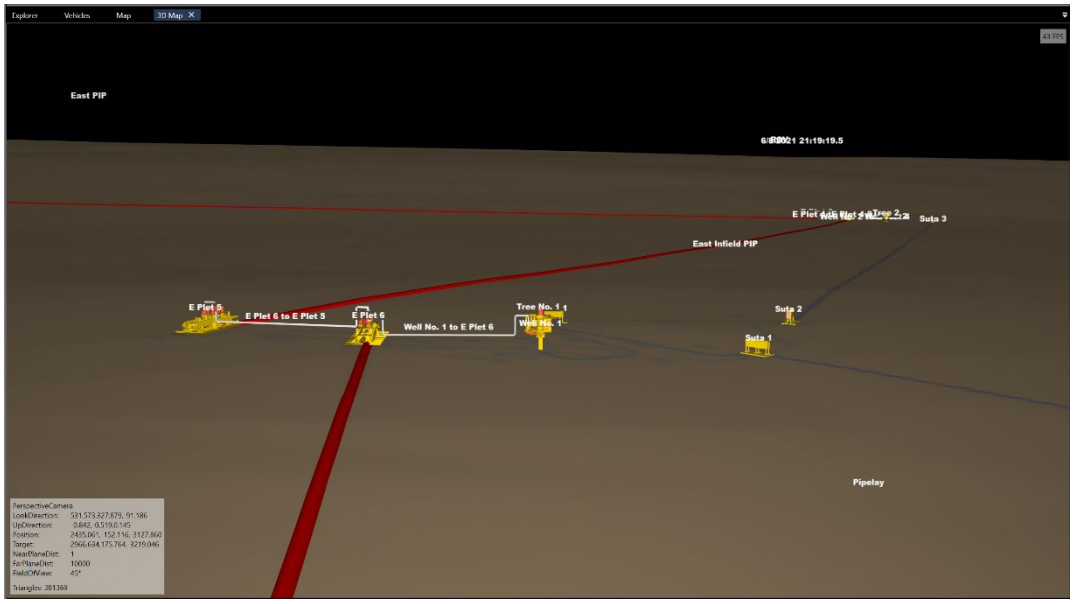


FIGURE 8-64 WINDOWS – 3D MAP VIEW – DIAGNOSTIC DATA

Note: The diagnostic information is to assist troubleshooting. It is not expected that it would generally be displayed.

8.5.1.4.7 Follow/Follow Off

Clicking on the Follow item opens the Follow options dialog.

1. Select the vehicle to be followed from the drop-down list.
2. Click Follow to apply the settings, click Cancel to abort this configuration

Figure 8-65 shows the Follow mode active using the 3rd Person perspective.

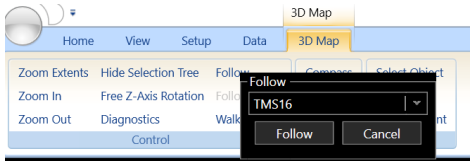


FIGURE 8-65 WINDOWS – 3D MAP – FOLLOW SELECTION

Clicking the Follow Off item toggles this feature off.

8.5.1.4.8 Walk Around/Inspect

Toggles between Walk Around and Inspect camera modes.

- Walk Around:
  - Zoom In/Out: Camera moves in/out in the direction of the cursor
  - Pan: Scene moves in the direction of the cursor
  - Rotate: Scene rotates about point indicated by the crosshairs set when the right mouse button is first clicked
- Inspect: Camera remains fixed, and the scene moves.
  - Zoom In/Out: Scene moves towards/away from the camera
  - Pan: Scene moves in the direction of the cursor
  - Rotate: Scene rotates about the camera.

8.5.1.5 Widgets

These are graphical gadgets that may be added to the scene to provide additional context or data. Clicking a widget button adds the widget to the scene. Clicking the button a second time removes the widget from the scene. Each available widget is described in more detail below.

8.5.1.5.1 Compass Widget

Clicking the **Compass** button adds the compass widget to the scene. The compass presents the direction of the camera view looking into the scene in grid degrees. When the compass is first added to the scene, or when the mouse is moved over top of the compass, a move handle is made visible. The move handle may be grabbed by the mouse and the compass moved to any preferred location on the view. Figure 8-66 shows the compass.

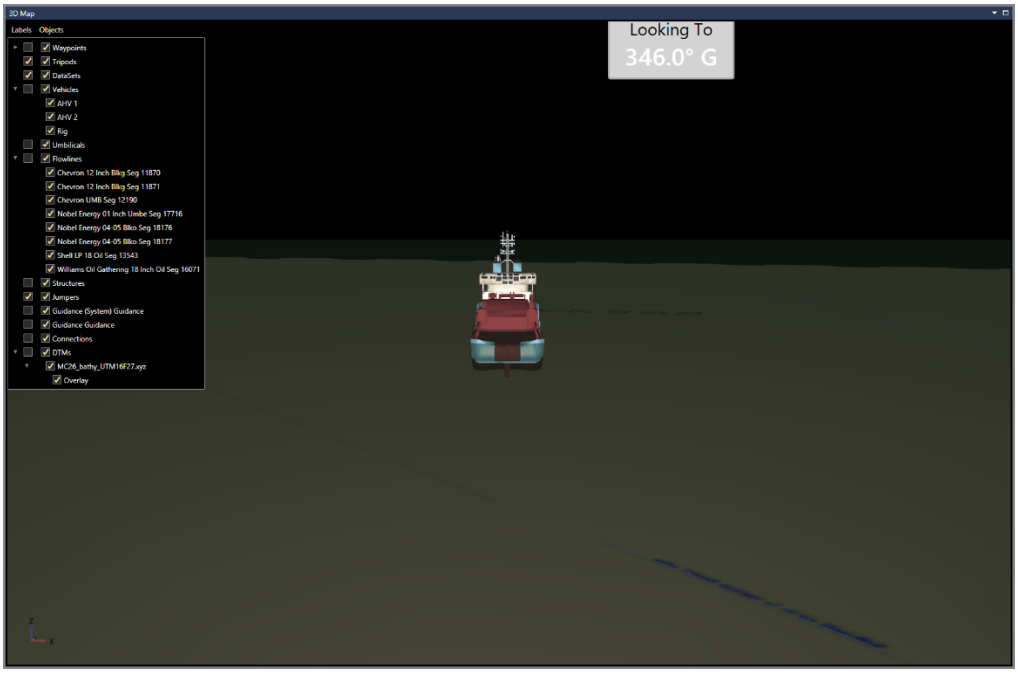


FIGURE 8-66 WINDOWS – 3D MAP – FOLLOW MODE WITH COMPASS

8.5.1.5.2 Sea Surface

A glassy sea surface can be added to or removed from the scene by clicking the **Sea Surface** button. The surface is drawn at an elevation of zero (MSL) and may be used for visual effect and reference.

Note: The surface is only drawn over that area where a DTM is present.

8.5.1.6 Tools

Tools allow the user to execute more complex operations within the scene from measuring between 3D objects to creating terrain. Only one tool may be selected at any time because tools require mouse input. When a tool is selected it will automatically close any previously selected tool.

8.5.1.6.1 Select Object Tool

Clicking the **Select Object** tool enables certain 3D objects in the scene to be selected by double-clicking on that object. When an object is selected it will be highlighted by a blue rectangle drawn around the object. Double-clicking on the same object a second time will de-select the object. Any number of objects may be selected at the same time.

Note: Not all objects support the Select Object feature, e.g. waypoint 3D models. If double-clicking on an object does not highlight the object then it is likely the object is not selectable.

Once an object has been selected, right clicking in the 3D Map window pops up a context menu listing all selected objects. Mousing over an object in the list will present options associated with that item. Click on one of these to execute that option.

Note: At this time the only operation that can be executed is the display of general metadata describing the selected object.

Figure 8-67 illustrates the context pop up menu with 2 objects selected and the metadata for one of these.

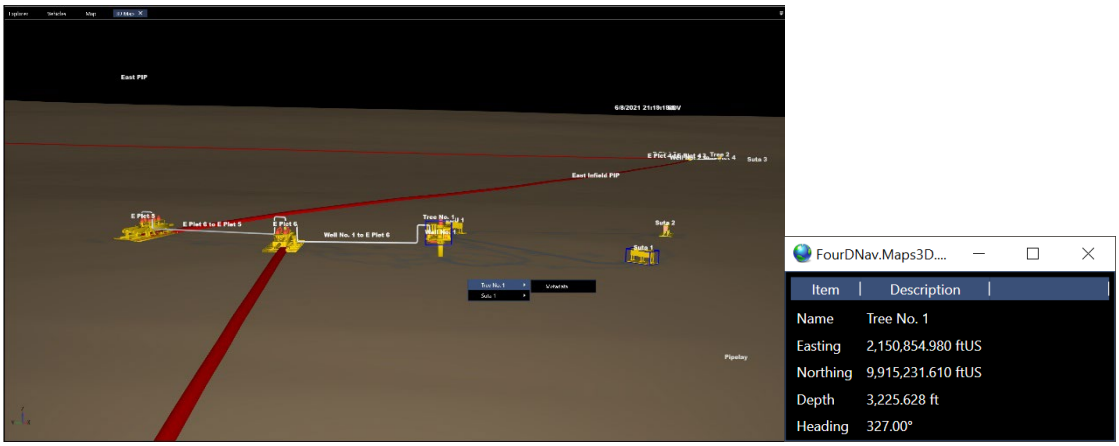


FIGURE 8-67 WINDOWS – 3D MAP – SELECTED STRUCTURES AND METADATA

8.5.1.6.2 3D Position Tool

The **3D Position** tool allows a position and seabed depth to be displayed. Clicking the **3D Position** button enables the tool. When enabled double clicking anywhere on the terrain will result in the position and depth of that point to be displayed. A red sphere identifies the point and a view window above the sphere displays the position data. Double clicking at a different location in the scene will remove the previous point and create a new one at the second location. Figure 8-68 shows an example of a 3D Position point.

FIGURE 8-68 WINDOWS – 3D MAP – 3D POSITION

8.5.1.6.3 Measurement Tool

The measurement tool enables users to measure distances and angles between two objects located in the 3D Map window. Clicking on the **Measurement** button enables the tool. A measurement consists of a start point and an end point, which may be placed on the scene by double clicking near the desired measurement point. After the first double click action, the start point will be placed in the scene. This is seen as a green cross displayed directly beneath a red, green and blue fine adjustment tool as shown in Figure 8-69.

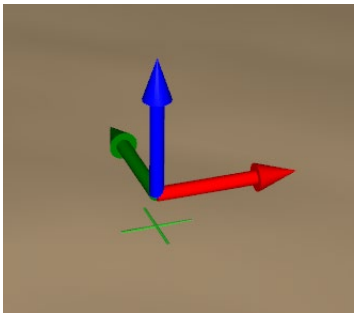


FIGURE 8-69 WINDOWS – 3D MAP – MEASUREMENT FINE ADJUSTMENT TOOL

The red arrow enables fine adjustment in the x-axis, the green arrow in y-axis and the blue arrow in the z-axis. To move the green cross marker in any axis, press either the **Shift**, **Ctrl** or **Alt** key and left mouse click and drag on the desired arrow (green, red or blue) along the axis of the selected arrow. This single axis motion allows very precise positioning of the marker in all 3 dimensions.

When the end measurement point is placed into the scene by double-clicking at a second location measurement lines are drawn in the scene describing the slant-range, horizontal range and vertical range between the two points. This is demonstrated in Figure 8-70.

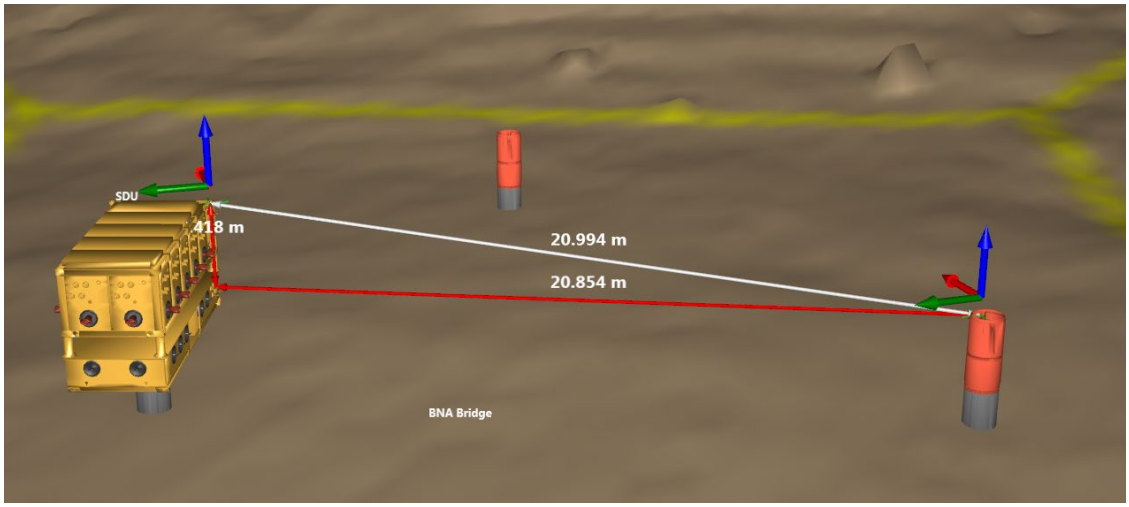


FIGURE 8-70 WINDOWS – 3D MAP – MEASUREMENT BETWEEN 2 POINTS

Fine adjustments can be made after the first point is set or after both points are set. For example, Figure 8-71 shows the difference between the measurement point in Figure 8-70 before and after centering on the wellhead. The measurement values will update automatically as the cross marker is moved in each axis.

FIGURE 8-71 WINDOWS - 3D MAP – MOVING THE MEASUREMENT TOOL

Additional measurement detail (see Figure 8-72) may be viewed by right clicking the mouse button and selecting the **Measurement Detail** option from the context menu.

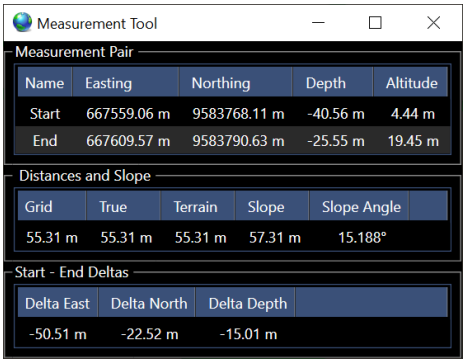


FIGURE 8-72 WINDOWS – 3D MAP – MEASUREMENT TOOL REPORT

A brief explanation of each value of the report is shown below.

- Measurement Pair
  - Start: Identifies the 1st selected point
  - End: Identifies the 2nd selected point
  - Easting: Easting coordinate of each point
  - Northing: Northing coordinate of each point
  - Depth: Depth below sea level of each point
  - Altitude: Height above seabed of each point
- Distances and Slope
  - Grid: The trigonometric plane (x,y) distance between the two points
  - True: The true (ellipsoid) distance between the two points
  - Terrain: The distance between the two points as if it were measured using a flexible cable laying on the seabed
  - Slope: The hypotenuse distance between the two points
  - Slope Angle: The z-axis slope angle in degrees
- Start – End Deltas
  - Delta East: Difference between Start and End easting coordinates
  - Delta North: Difference between Start and End northing coordinates
  - Delta Depth: Difference between the Start and End depths

8.6 3Dx Map Window

The 3Dx Map window is a graphics enhanced version of the 3D Map window. This is similar to 3D Map in that it interprets real-time 3D view of seabed infrastructure, surface vessels, mid-water cables and other objects such as buoys, ROVs or deployed packages. The content of the scene is project-specific and requires either properly formatted 3D models that can be drawn in the scene, or special setup to allow calculation of specific models on the fly, such as dynamic riser lines. 3Dx Map uses tiles generated from a DTM to represent the seabed terrain over the project area to improve the detail of the seabed. Figure 8-73 below displays partial views of typical scenes containing structures and BOP in a subsea field.

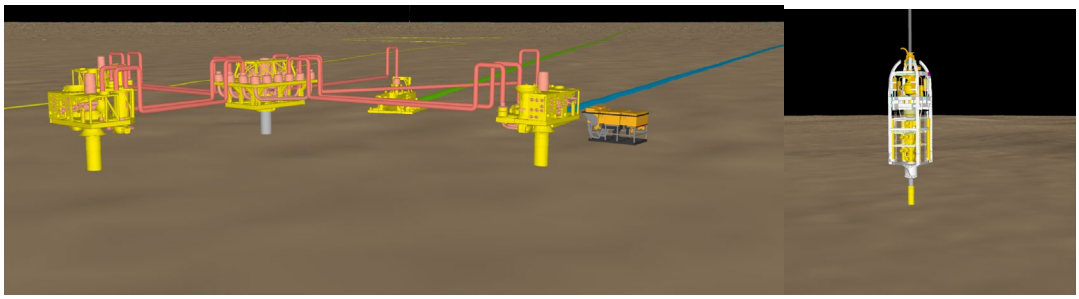


FIGURE 8-73 WINDOWS – 3DX MAP - PARTIAL 3DX SCENES

Additionally, 3Dx Map has the ability to overlay a background drawing on the seabed terrain, see Figure 8-74.

FIGURE 8-74 WINDOWS – 3DX MAP – BACKGROUND OVERLAY

Note: If Roles and Privileges are enabled, any user can open and edit a 3Dx Map window.

Note: To properly display the 3Dx Map, a **Project Center** position must be defined. This is done via the Explorer view. If this is updated while a 3Dx Map view is opened, it must be closed and re-opened to apply the new Project Center.

Note: Multiple 3Dx Map windows can be open in a workspace at any one time.

To open a 3Dx Map window, click the 3Dx Map icon in the View ribbon. The window will open as a document window in the main part of the workspace. If a document window already occupies that space, it will be added to it as a tab.

Note: 3Dx Map does not have a context sensitive tab.

8.6.1 Basic Operations

This section describes basic operations that may be executed in the 3Dx Map view, using the assumption that the 3Dx scene has already been configured and loaded from a project file. Details describing the procedures for loading 3Dx objects will be discussed later in the document.

8.6.1.1 Mouse Actions

The mouse is the primary user interface tool when interacting with the 3Dx scene. Supported mouse actions are detailed here.

8.6.1.1.1 Pan

Panning through the scene is done with a mouse scroll wheel click and drag operation.

8.6.1.1.2 Zoom

Zooming in and out of the scene is done by rotating the mouse wheel. A forward rotation zooms in while a reverse rotation zooms out. Zoom in can also be executed with Page Up button and zoom out with the Page Down button.

8.6.1.1.3 Rotate

Rotating the scene is done with a left-click and drag operation. When the left mouse button is clicked a light-grey bull's eye appears in the view at the rotation center point. If an object is selected from the selection tree the rotation center will be located at that object's origin. The rotate actions are summarized below:

1. Left click and drag left or keyboard left arrow: Rotates scene clockwise.
2. Left click and drag right or keyboard right arrow: Rotates scene counterclockwise.
3. Left click and drag up or keyboard up arrow: Rotates scene down (towards a seabed-level view)
4. Left click and drag down or keyboard down arrow: Rotates scene up (towards a top-down view)

8.6.1.2 Selection Tree

The selection tree appears on the left side of the 3Dx Map which contains Map Tools and Layers, see Figure 8-75.

FIGURE 8-75 WINDOWS - 3DX MAP – SELECTION TREE

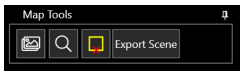
The tree lists the categories of graphical objects such as vehicles, structures, umbilicals, etc., that are supported in the view. Clicking on the arrow at the left of a category expands that branch displaying the associated items that are present in NavView as illustrated for Vehicles, Flowlines and Terrains in this figure. Categories that do not have an arrow beside them are empty. For example, in this case there are no Structures, Jumpers, Connections, etc. in the project because no arrow is visible beside these categories.

Clicking on an item in a branch will cause the view to re-center on that object with the camera looking directly at the object. This makes it very easy to navigate to any object of interest.

The first column of checkboxes controls the visibility of the labels for a category. Checking one of these boxes turns on the display of labels for all objects in that category. Unchecking one of these boxes turns off the display of labels for all objects in that category off. Labels can be turned on/off for individual objects by expanding the category and selecting an object.

The second column of checkboxes controls the display of objects in the 3D Map view. Checking the box associated with a category, e.g. Structures, turns on the display of all objects of that category type. Unchecking the box associated with a category turns off the display of all objects of that category type. Checking the box associated with a specific object turns on the display of that object. Unchecking the box associated with a specific object turns off the display of that object.

8.6.1.2.1 Map Tools

Map tools consists of the following 

-  Enables Image (background) Overlay for single color terrains. Tiles 3D and Color Maps in the Configuration section of the Setup Tab are used to define the terrain. This will be discussed in Setup>Configuration section of the document
- Zoom to Extent  operation zooms to the entire extents of the project area, so the true extents of the seabed terrain is visible. This can cause objects on the seabed to disappear from the view when the project area is very large
- Clear Selection  deselects selected objects. Button disappears when cleared. Visible when object is selected
- Export Scene 

exports visible layers to static scene

8.6.1.2.2 Layers

The Layers section of the Selection Tree is where the user can:

1. Select an object to center
2. Hide or show specific objects or categories of objects
3. Toggle object labels on or off

Note: The display of the selection tree can be set to Auto Hide by clicking on the Pin at the top right corner  . To display the tree with auto hide enabled, move mouse pointer to left side of 3Dx Map window. The Pin can then be clicked to disable auto hide.

8.6.1.3 Object Tools

Right-clicking objects displayed in 3Dx Map view will open a pop-up window providing display/edit options for the selected object depending on object type.

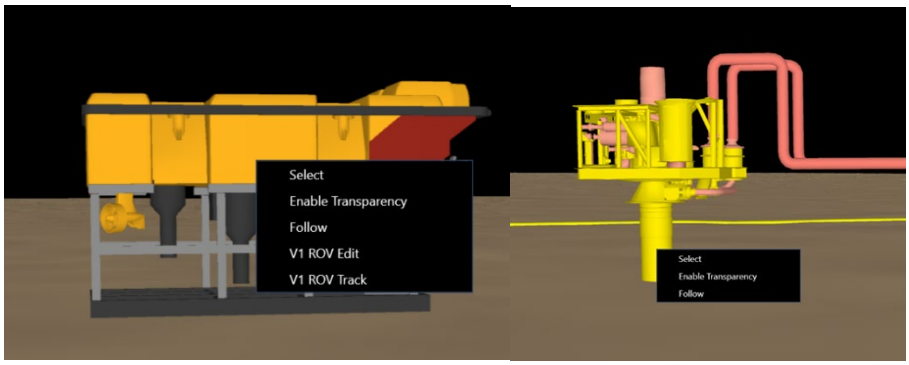


FIGURE 8-76 WINDOWS - 3DX MAP – OBJECT TOOLS

- Select: **TBD**
- Enable Transparency: Toggles on/off object transparency
- Follow: Object remains in 3Dx Map view center
- Object Edit: Selecting this opens Configure Vehicle window
- Object Track: Selecting this opens the Guidance Wizard

8.7 Archive Monitoring Window

Archive Monitoring window displays the Data Archive/Logging status.

To open the window, click on Archive Monitoring in the Windows section of the View ribbon.

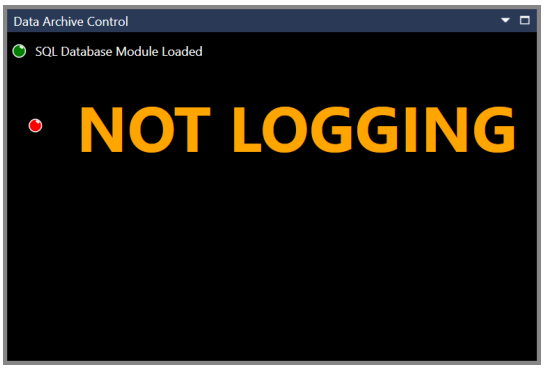


FIGURE 8-77 WINDOWS - ARCHIVE MONITORING - NOT LOGGING

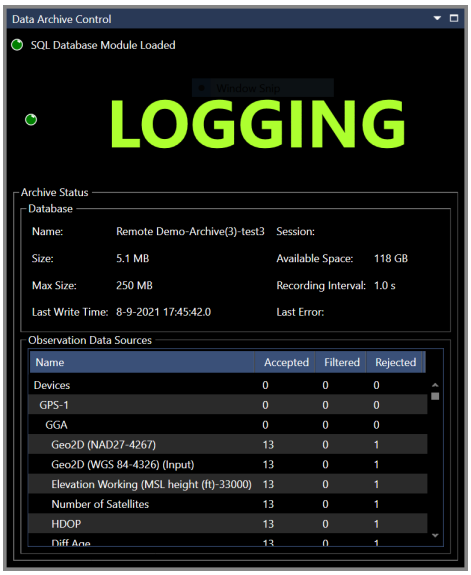


FIGURE 8-78 WINDOWS - ARCHIVE MONITORING – LOGGING

8.8 Time Sync Window

Window to monitor Time Sync status. Refer to Time Sync setup in the Setup Ribbon.

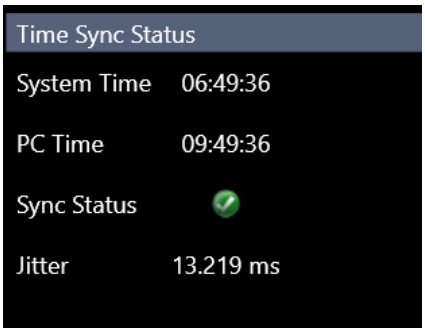


FIGURE 8-79 WINDOWS - TIME SYNC MONITOR

8.9 AIS Window

List display of current AIS vessels from the AIS input in Devices. Refer to Devices section and AIS Configuration section.

To open the window, click on AIS in the Windows section of the View ribbon.

FIGURE 8-80 WINDOWS - AIS - VIEW RIBBON

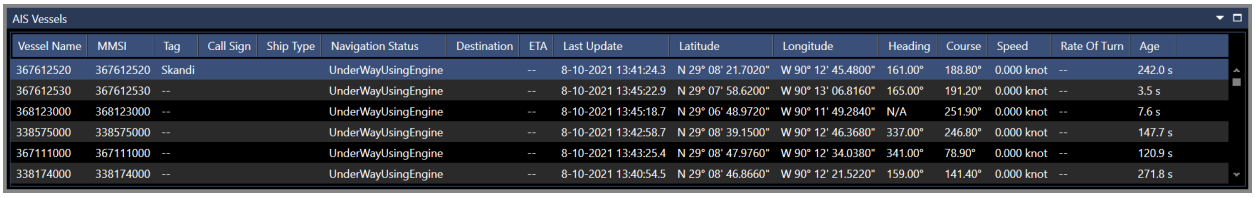


FIGURE 8-81 WINDOWS - AIS - VESSELS LIST WINDOW

There is the option to edit individual AIS vessels by mouse right click on the Vessel Name in the list (see Figure 8-82).

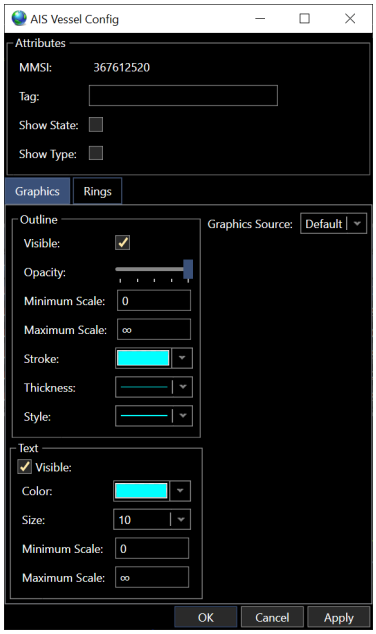


Figure 8-82 Windows - AIS Vessel Config Dialog

- Attributes
  - MMSI: Vessel MMSI number
  - Tag: Optional tag to specify something about the target. This will be displayed on the map view of AIS targets
  - Show State: Check the box to show details about the state of the AIS target on the map view
  - Show Type: Check the box to show details about the type of AIS target, such as Cargo, Passenger, etc.

- Graphics Tab
  - Outline
    - Visible: Check the box to show vessel outline in map view
    - Opacity: Adjust the opacity of the outline using the slider
    - Maximum/Minimum Scale: Outline will be visible in map view if map scale is within the limits set here
    - Stroke: From the drop-down list select the outline color.
    - Thickness: From the drop-down list select the line thickness for the outline
    - Style: From the drop-down list select the line style for the outline
  - Text
    - Visible: Check the box to show vessel text in map view
    - Color: From the drop-down list select the text color
    - Size: From the drop-down list select the text size
    - Maximum/Minimum Scale: Text will be visible in map view if map scale is within the limits set here
  - Graphics Source: The vessel's outline can be left as a default shape or can be customized by selecting an option from the drop-down list

8.10 Explorer Window

The Explorer window provides an overview of NavView using a two-panel window with a hierarchical tree in the left and the details of the item selected in the tree in the right. The contents of the tree contain two sections, Setup and Data. Items listed in each section are dependent upon the configuration of NavView and the modules present. Figure 8-83 illustrates this with the Setup branch in the left panel expanded to the individual items in Geodesy and Horizontal CRS selected and its details displayed for review and editing in the right panel.

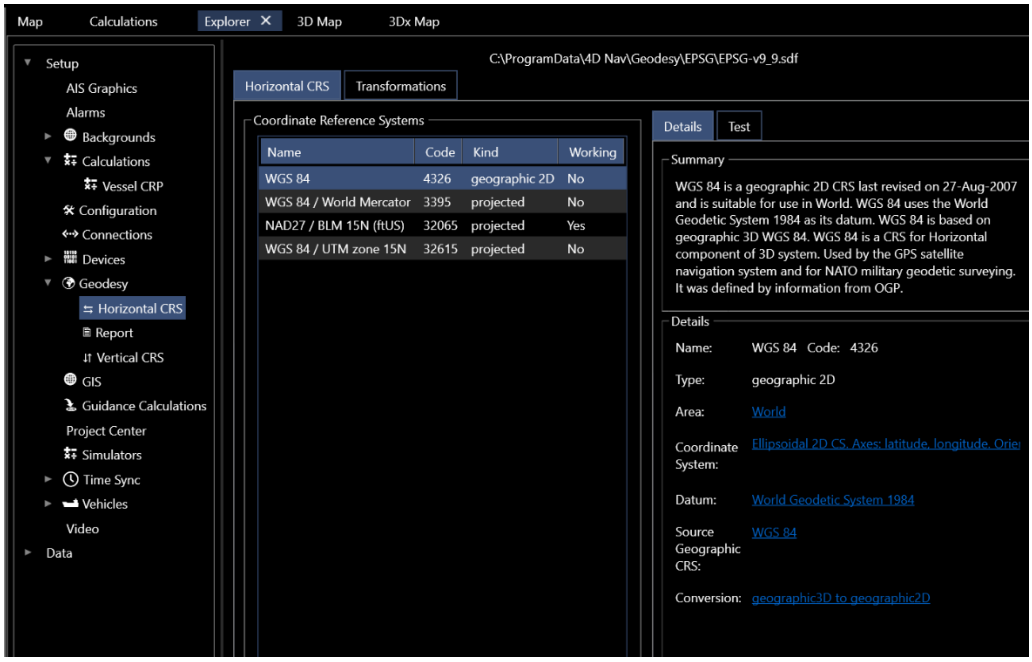


FIGURE 8-83 WINDOWS - EXPLORER WINDOW

The Explorer window is opened by clicking on the Explorer icon in the Windows section of the View ribbon tab 

. The window opens as a document window in the center of the workspace. If a document window is already in that location it will open as a tab in that window.

Explorer provides the option to view and edit project setup and data items from a single panel.

For details on the information displayed in the Explorer window and how to use it, refer to the specific sections or sub-sections in this guide.

8.11 Logbook Window

This window supports Microsoft Excel which enables the user to open an existing spreadsheet or create a spreadsheet from blank.

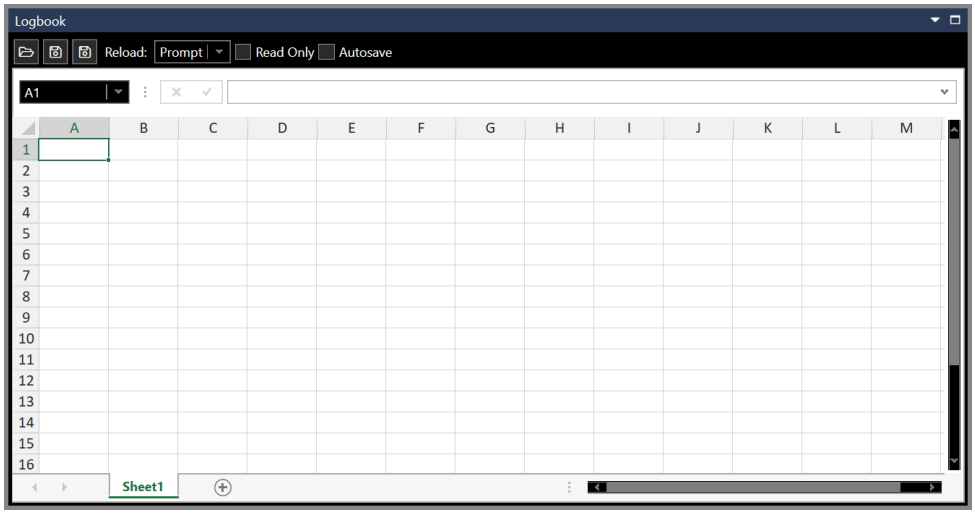


FIGURE 8-84 WINDOWS- LOGBOOK WINDOW

- Load File
- Save File
- Save File As
- Reload: Prompt If the Excel file is synced over a network and if changes are made to the file from another source, Reload will detect the changes made. Reload options are as follows.
  - **Prompt:** Notification sent to view changes and option to reload file with changes
  - **Auto:** File reloads when a change is made automatically
  - **Ignore:** Ignores changes does not reload
- Read Only If Read Only is selected, Save File and Save File As are not available
- Autosave Option to enable autosave

8.12 Web (View)

Web View opens a window supporting the entry of a URL to access content available on the network. This can be video broadcast over the internet by the 4D Nav video system (see Figure 8-85) or a web GUI to monitor and access equipment connected on the network, e.g. an Ethernet Serial Server (see Figure 8-87). All that is required is the full address to link to.

FIGURE 8-85 WINDOWS - WEB VIEW – VIDEO STREAM

To open the window, click on Web in the Windows section of the View ribbon.

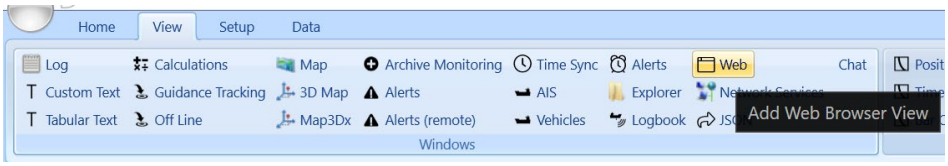


FIGURE 8-86 WINDOWS - WEB (VIEW) – VIEW RIBBON

Note: This feature requires the installation of Microsoft Edge WebView2 (see the Introduction section for details regarding the installation of this).

Note: The full URL must be typed in, e.g. http://192.168.2.104/ and https://www.google.com/. NavView does not automatically complete the entries.

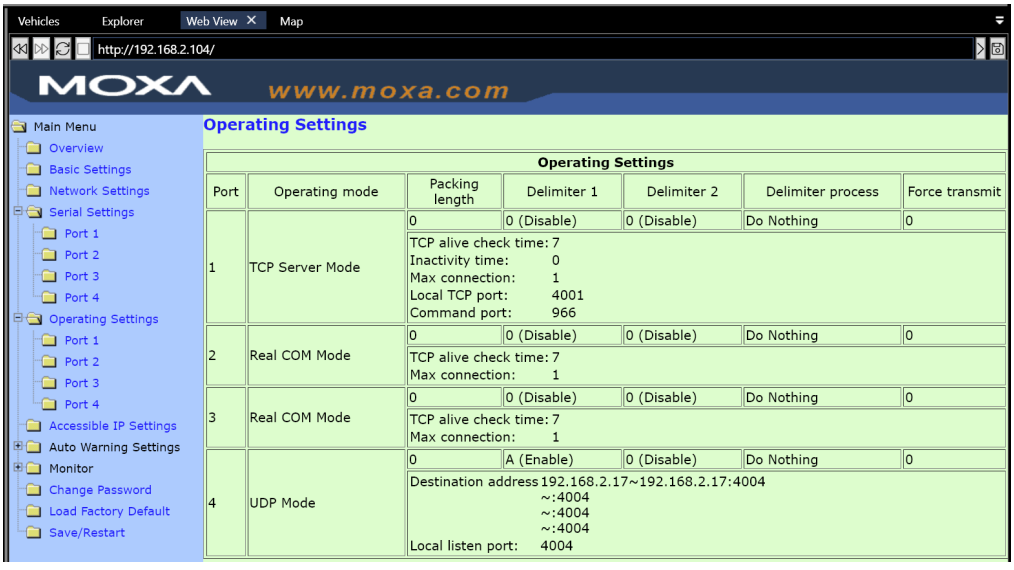


FIGURE 8-87 WINDOWS - WEB VIEW - PERIPHERAL EQUIPMENT GUI

8.13 Network Services Window

The Network Services window (see Figure 8-89) displays the status of the network service and supports configuration of publishing intervals so the user can optimize the performance.

To open the window, click on Network Services in the Windows section of the View ribbon.

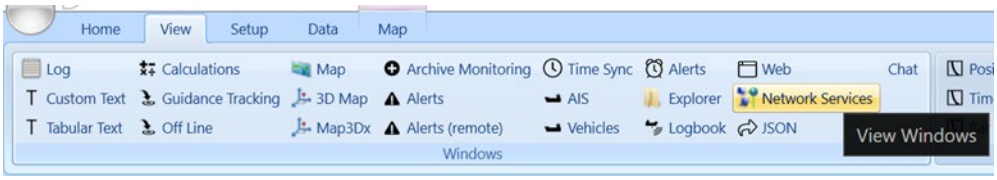


FIGURE 8-88 WINDOWS - NETWORK SERVICES - VIEW RIBBON

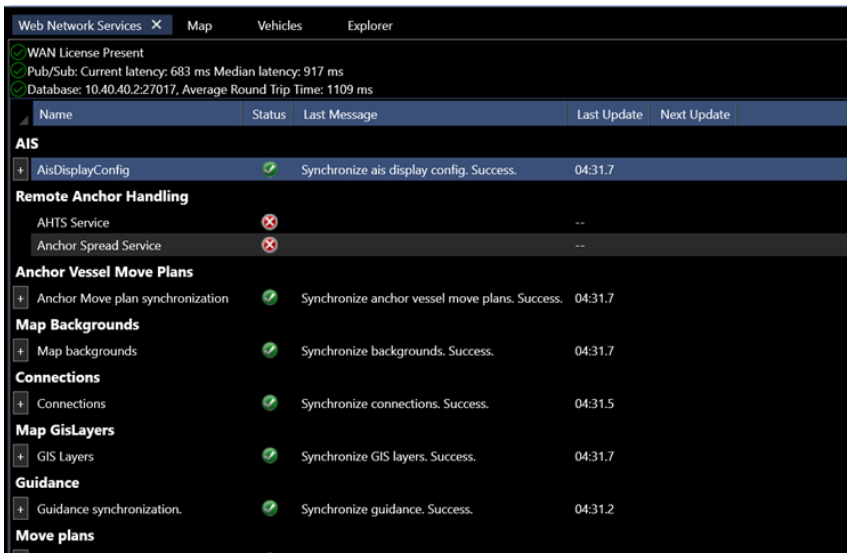


FIGURE 8-89 WINDOWS - NETWORK SERVICES WINDOW

Network Services window provides network connection details located at top left corner of the window. The information grid is listed in columns by Name, Status, Last Message and Next Update.

- **Name:** Items in NavView connected to
- **Status:** connection successful, connection not available or disabled
- **Last Message:** connection status message
- **Last Update:** elapsed time since last update
- **Next Update:** time remaining till next update

The performance of the Network can be optimized by disabling unnecessary connections. Under the Name column, select the item to disable by expanding the item using the button then uncheck the Enabled box (see Figure 8-90)

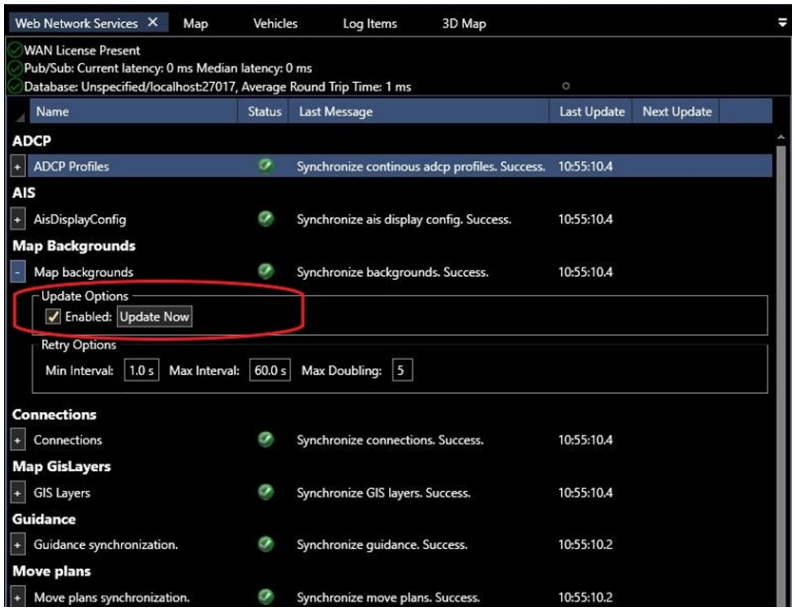


FIGURE 8-90 WINDOWS - NETWORK SERVICES – UPDATE OPTIONS

8.14 Chat Window

NavView supports chat between NavView instances connected to Network Services.

The display format is [NavView station name : Time]Text, see Figure 8-92

To open the window, click on Chat in the Windows section of the View ribbon.

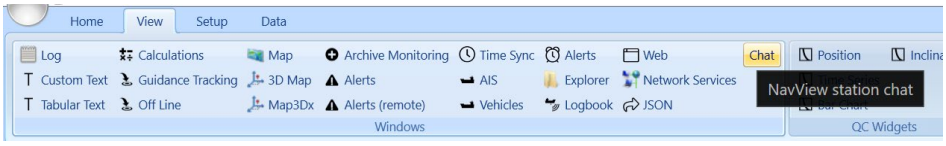


FIGURE 8-91 WINDOWS - CHAT – VIEW RIBBON

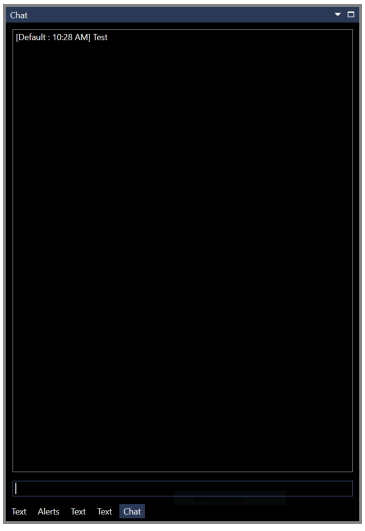


FIGURE 8-92 WINDOWS - CHAT WINDOW

8.15 QC Widgets Windows

QC Widgets are windows that provide real time monitoring and comparison of observations. The QC Widgets are opened from the View tab on the Ribbon. The windows will open as a dockable window pinned to the top edge of the workspace. If a dockable window already occupies that space, it will be added as a tab in that window.

FIGURE 8-93 WINDOWS - QC WIDGETS

8.15.1 Position QC Widget

The Position QC Widget supports the comparison of multiple positions against a primary. The comparison can be viewed as a chart centered on the primary position or table listing the observations and the range and bearing from the primary position to the secondary positions (see Figure 8-94).

1. To open the window, click on the Position item in the QC Widgets section of the View ribbon.
2. Right click anywhere in the window, select **Edit** from the context menu to display the Config Position Monitor window.

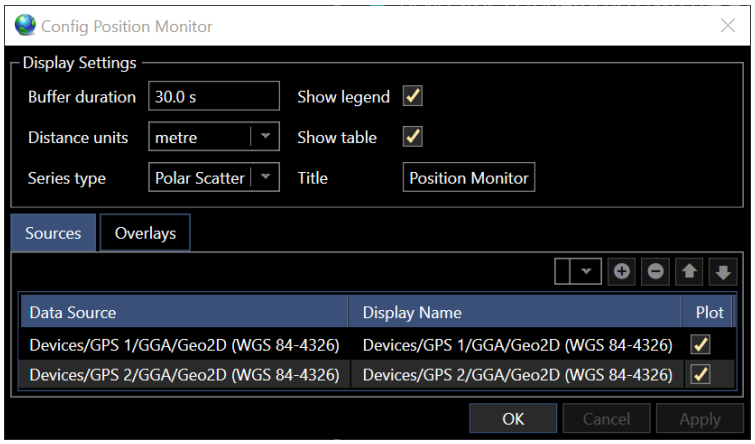


FIGURE 8-94 WINDOWS - POSITION QC WIDGET - CONFIG POSITION MONITOR

3. The Config Position Monitor contains Display Settings, Sources Tab and Overlays Tab.
   a. Display Settings
      i. Buffer Duration: How long data will be kept in view, e.g. setting of 30 s removes data older than 30 seconds
      ii. Distance Units: From the drop-down list select units to be displayed in the Position Monitor Window

iii. Series Type: From the drop-down list select the graphical representation type, Polar Line or Polar Scatter, to display the position comparison
iv. Show Legend: Check the box to show a legend in the Position Monitor window
v. Show Table: Check the box to show the position's data in a table format in the Position Monitor window
vi. Title: Enter a name to be displayed on the Position Monitor window header

b. Sources Tab

i. Click the  button to display a hierarchical tree of observations to select from, navigate to the desired position observation and click on it
ii. Click  to add selection to the Data Source table.
iii. Repeat to add all the position observations to be monitored and compared.
iv. To re-order the observations, select the observation to move and click the  button to move it up the order or the  button to move it down the order.
v. To remove an observation, select it in the list and click the  button.

Note: The observation at the top of the list is considered to be the Primary, all other observations will be compared to this.

c. Overlays Tab: A circular overlay can be superimposed on top of the polar display, e.g. expected tolerance circle

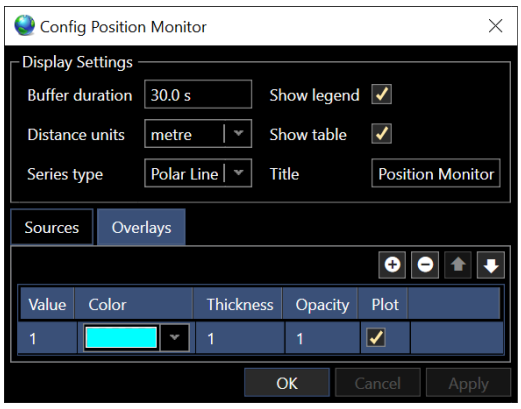


FIGURE 8-95 WINDOWS - POSITION QC WIDGET – OVERLAY TAB

i. **Value:** Enter the radius for the circular overlay to be displayed, the value is in the units set in Distance Units above
ii. **Color:** From the drop-down list select the color of the circular overlay
iii. **Thickness:** Option to change the thickness of the circular overlay
iv. **Opacity:** Enter an opacity value from 0 to 1, 1 being the most opaque
v. **Plot:** Check the box to display the overlay

4. Click **Apply** to accepted changes, **Ok** to finish, or **Cancel** to board the operation.

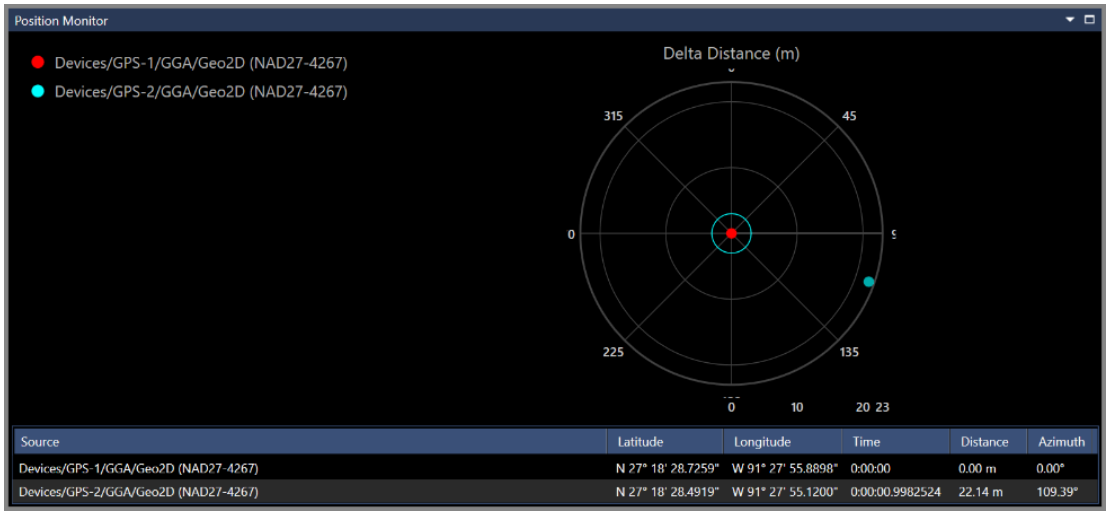


FIGURE 8-96 WINDOWS - POSITION QC WIDGET – POSITION MONITOR WINDOW

Note: Time in the table is the interval between comparisons.

8.15.2 Time Series QC Widget

The Time Series QC Widget supports the monitoring and comparison of observations in a time series plot.

1. To open the window, click on the Time Series item in the QC Widgets section of the View ribbon.

2. Right click anywhere in the window and select **Edit** from the context menu to display the Config Time Series Monitor window.

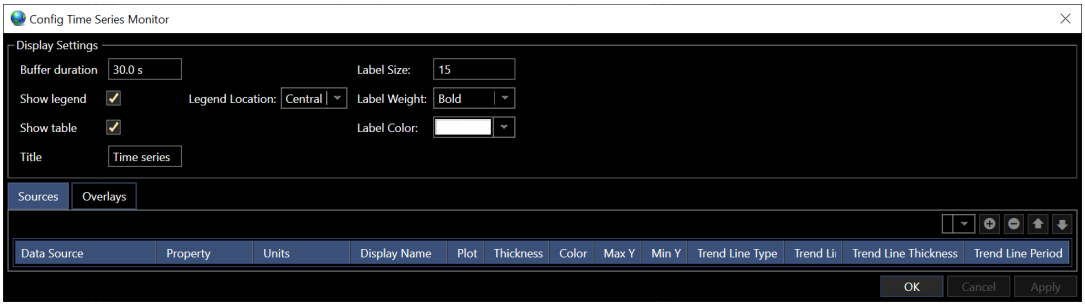


FIGURE 8-97 WINDOWS - TIME SERIES QC WIDGET - CONFIG TIME SERIES MONITOR

3. The Config Time Series Monitor contains Display Settings, Sources Tab and Overlays tab.
   a. Display Settings
      i. Buffer Duration: How long data will be kept in view, e.g. setting of 30 s removes data older than 30 seconds
      ii. Show Legend: Check the box to show a legend in the Time Series window
      iii. Show Table: Check the box to show the data in a table format in the Time Series window
      iv. Title: Enter a name to be displayed on the Time Series window header
      v. Legend Location: From the drop-down list select where the legend will be positioned in the window

vi. Label Size: Enter the text size for the label
vii. Label Weight: From the drop-down list select the weight the label text will be displayed
viii. Label Color: From the drop-down list select the label color

b. Sources Tab
   i. Click the  button to display a hierarchical tree of observations to select from, navigate to the desired and click on it
   ii. Click  to add selection to the Data Source table, repeat to add all the observations to be monitored and compared.
   iii. To re-order the observations, select the observation to move and click the  button to move it up the order or the  button to move it down the order.
   iv. To remove an observation, select it in the list and click the  button.
   v. Once added, configure the display of the data
      A. Property**:** Select the added Observation's Property to display

Note: Some observation types provide multiple data (also referred to as Properties) that can be selected to display in the time series. For example, selecting PitchRoll observations provides access to Pitch, Roll, Pitch standard deviation (SigmaPitch), Roll standard deviation (SigmaRoll) and Age.

      B. Units: Select the units to display the property in
      C. Display Name: The default name is the Data Source this can be edited by operator
      D. Plot: Check the box to display the time series plot in the window
      E. Thickness: Thickness of the time series line
      F. Color: From the drop-down list select the color of the time series line
      G. Max Y: Maximum limit of the Y-axis to display
      H. Min Y: Minimum limit of the Y-axis to display
      I. Trend Line Type: From the drop-down list select the type of trend line of the data to display
      J. Trend Line Color: From the drop-down list select the color for the trend line
      K. Trend Line Thickness: Thickness of trend line
      L. Trend Line Period: How many data updates are used to average

c. Overlays Tab: Line overlays can be superimposed on top of the time-series display, e.g. expected tolerance limits

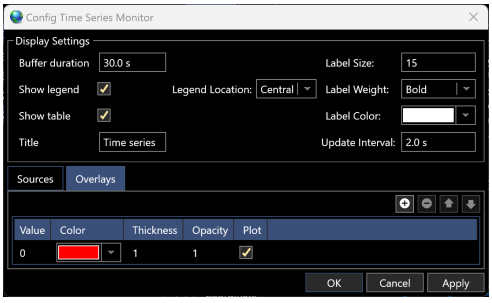


FIGURE 98 WINDOWS - TIME-SERIES WIDGET – OVERLAY TAB

   i. **Value:** Enter the value for the line overlay to be displayed, the value is in the units set in Distance Units above
   ii. **Color:** From the drop-down list select the color of the line overlay

iii. **Thickness:** Option to change the thickness of the line overlay
iv. **Opacity:** Enter an opacity value from 0 to 1, 1 being the most opaque
v. **Plot:** Check the box to display the overlay

4. Click **Apply** to accepted changes, **Ok** to finish, or **Cancel** to board the operation.

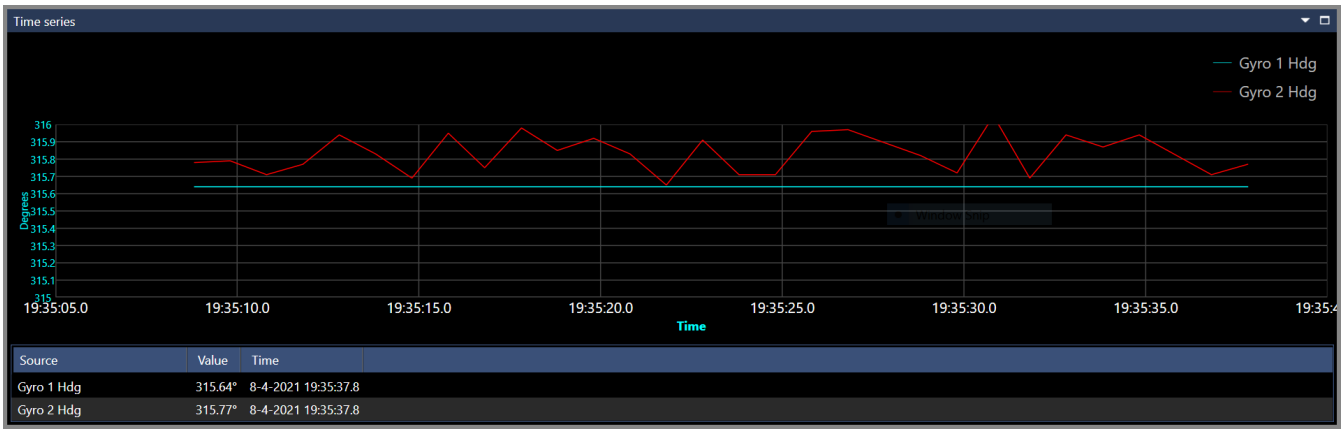


FIGURE 8-99 WINDOWS - QC WIDGET - TIME SERIES

8.15.3 Bar Chart QC Widget

The Bar Chart QC Widget supports the monitoring and comparison of observations in a time series plot as a bar instead of a line.

1. To open the window, click on the Bar Chart item in the QC Widgets section of the View ribbon.

2. Right click anywhere in the window and select **Edit** from the context menu to display the Config Time Series Monitor window.

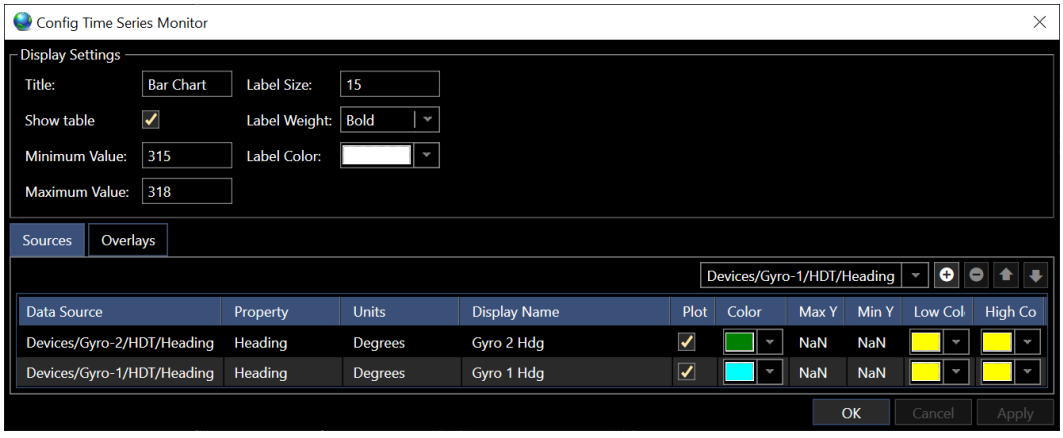


FIGURE 8-100 WINDOWS - BAR CHART QC WIDGET - CONFIG TIME SERIES MONITOR

3. The Config Time Series Monitor contains Display Settings, Sources Tab and Overlays Tab.
   a. Display Settings
      i. Title: Enter a name to be displayed on the Bar Chart window header
      ii. Show Table: Check the box to show the data in a table format in the Bar Chart window
      iii. Minimum Value: Minimum limit of the Y-axis to display

iv. Maximum Value: Maximum limit of the Y-axis to display
v. Label Size: Enter the text size for the label
vi. Label Weight: From the drop-down list select the weight the label text will be displayed
vii. Label Color: From the drop-down list select the label color

b. Sources Tab
   i. Click the  button to display a hierarchical tree of observations to select from, navigate to the desired and click on it
   ii. Click  to add selection to the Data Source table. Repeat to add all the observations to be monitored and compared.
   iii. To re-order the observations, select the observation to move and click the  button to move it up the order or the  button to move it down the order.
   iv. To remove an observation, select it in the list and click the  button
      A. **Property:** Select the added Observation's Property to display

      Note: Some observation types provide multiple data (also referred to as Properties) that can be selected to display in the time series. For example, selecting PitchRoll observations provides access to Pitch, Roll, Pitch standard deviation (SigmaPitch), Roll standard deviation (SigmaRoll) and Age.

      B. **Units:** Select the units to display the property in
      C. **Display Name:** The default name is the Data Source this can be edited by operator
      D. **Plot:** Check the box to display the Bar Chart in the window
      E. **Color:** From the drop-down list select the color of the Bar Chart
      F. **Max Y:** Set a maximum threshold for the data source. If the value is above this quantity, the bar will be displayed using the High Warning Color
      G. **Min Y:** Set a minimum threshold for the data source. If the value is below this quantity, the bar will be displayed using the Low Warning Color
      H. **Low Color:** From the drop-down list select the color to be used for the Low Warning Color
      I. **High Color:** From the drop-down list select the color to be used for the High Warning Color

c. Overlays Tab: A linear overlay can be displayed on Bar Chart, this could be used to show a value of interest
   i. **Value:** Enter the value of the linear overlay to be displayed, the value is in the units of the data source
   ii. **Color:** From the drop-down list select the color of the linear overlay
   iii. **Thickness:** Option to change the thickness of the linear overlay
   iv. **Opacity:** Enter an opacity value from 0 to 1, 1 being the most opaque
   v. **Plot:** Check the box to display the overlay

4. Click **Apply** to accepted changes, **Ok** to finish, or **Cancel** to board the operation.

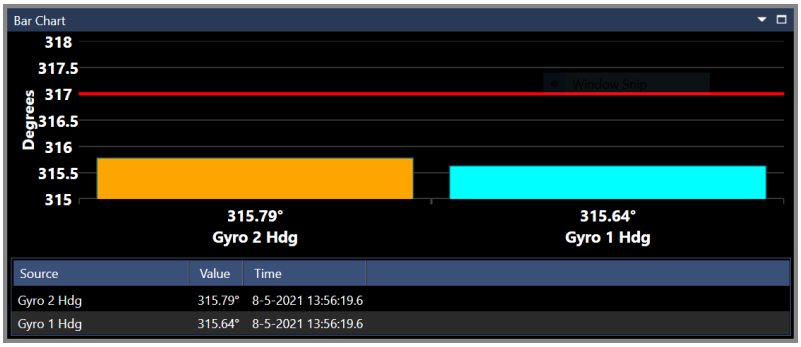


FIGURE 8-101 WINDOWS - QC WIDGET – BAR CHART

8.15.4 Inclination QC Widget

The Inclination QC Widget supports the monitoring of inclination observations in a time series plot.

1. To open the window, click on the Inclination item in the QC Widgets section of the View ribbon.

2. Right click anywhere in the window and select **Configure** from the context menu to display the Configure Inclination Monitor window.

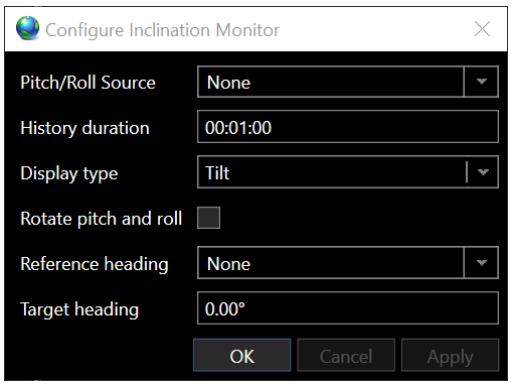


FIGURE 8-102 WINDOWS- INCLINATION QC WIDGET - CONFIGURE INCLINATION MONITOR

a. **Pitch/Roll Source:** Click the drop-down to display a hierarchical tree of observations to select from
b. **History duration:** Duration of observations to display in the history buffer (hh:mm:ss). This is reflected in the polar plot scale
c. **Display type:** How the inclination is graphicly displayed on the polar plot. The two options are Tilt, see Figure 8-103, or Level (Bubble) see Figure 8-104
d. **Rotate pitch and roll:** Check the box to rotate the pitch and roll from the reference heading to a target heading
e. **Reference heading:** Click the drop-down to display a hierarchical tree of heading observations to select from
f. **Target heading:** The input pitch and roll will be rotated to this target heading if Rotate pitch and roll is enabled

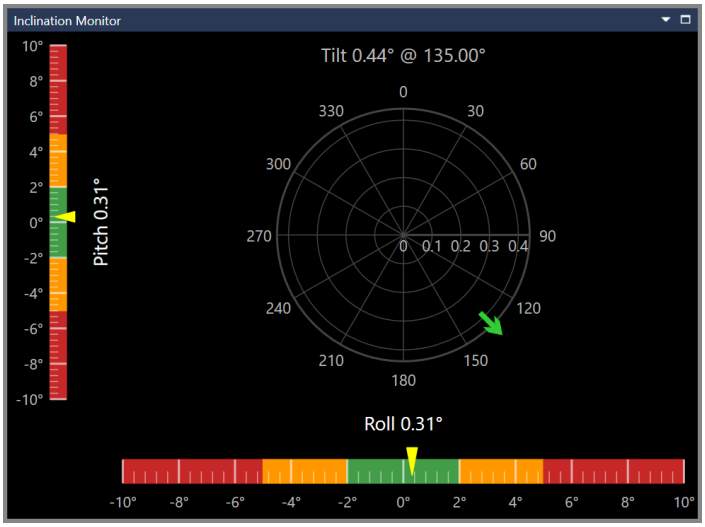


FIGURE 8-103 WINDOWS - INCLINATION MONITOR – DISPLAY TYPE – TILT

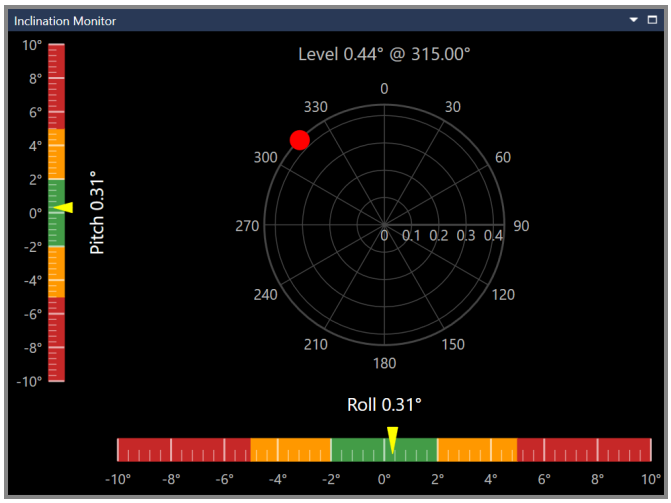


FIGURE 8-104 WINDOWS - INCLINATION MONITOR – DISPLAY TYPE – LEVEL (BUBBLE)

8.16 Documents

NavView has the option to store project related documents in the project folder. Documents are stored in Shared > Data > Project when added. This provides a document registry for ease of viewing, also all documents are kept with the project for archiving.

8.16.1 Project Documents

Project Documents window is where documents are managed. This is accessed by selecting Project Documents in the Documents section.

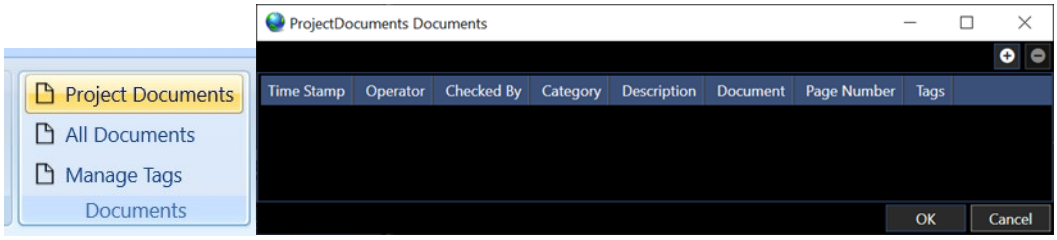


FIGURE 8-105 WINDOWS - DOCUMENTS – PROJECT DOCUMENTS

1. To add a document, click on the add button  and browse to the document to be added. When document is selected, the Add Document dialog is opened, see Figure 8-106.

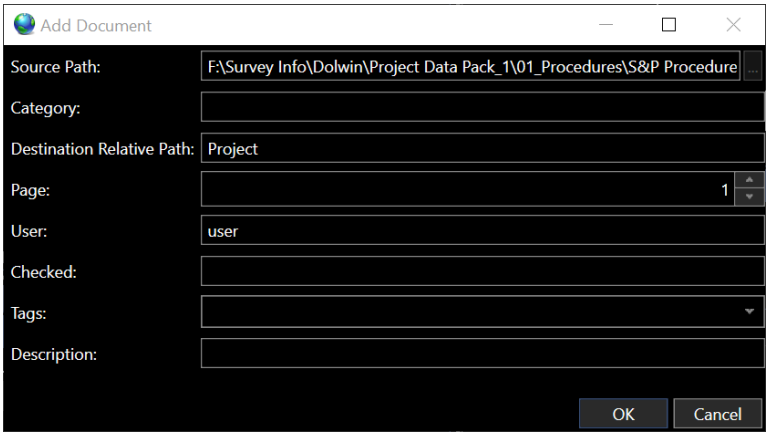


FIGURE 8-106 WINDOWS - DOCUMENTS – ADD DOCUMENT DIALOG

a. (Optional) Edit the fields, the information will be displayed in the document registry.
   i. **Source Path:** Path of selected document, cannot be edited
   ii. **Category:** Enter a name for the document grouping
   iii. **Destination Relative Path:** Default is Project, cannot be edited
   iv. **Page:** When the document is selected for viewing it opens at the page number selected here. Defaults to page 1 of the document.
   v. **User:** Enter a name, defaults to user
   vi. **Checked:** Name of checker
   vii. **Tags:** There is a drop-down selection of tags that can be associated to the document. See Manage Tags

   Note: There can be multiple Tags associated with a document.

   viii. **Description:** Enter a description of the document, i.e. Document Title

2. Click **OK** to accept or **Cancel**

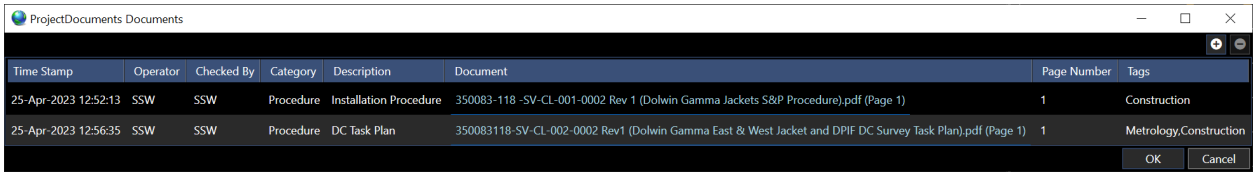
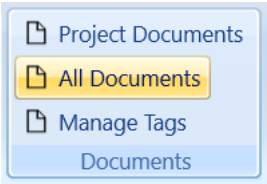


FIGURE 8-107 WINDOWS - DOCUMENTS – ADDED DOCUMENTS

Note: The document can be viewed by selecting the document in the cell below the header Document.

8.16.2 All Documents

All Documents window displays a listing of all documents added. This is accessed by selecting All Documents in the Documents section.



Selecting this opens All Document References window. Documents cannot be added or removed only opened for viewing.

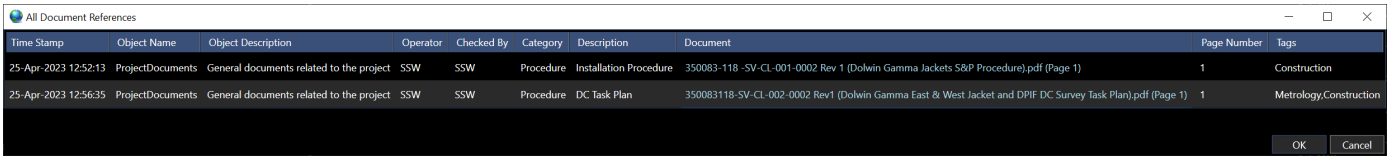
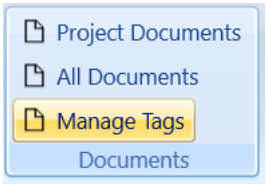


FIGURE 8-108 WINDOWS - DOCUMENTS – ALL DOCUMENT REFERENCES

8.16.3 Manage Tags

Window displays available tags. This is accessed by selecting Manage Tags in the Documents section.



Selecting this opens the Tags window that lists all available tags.

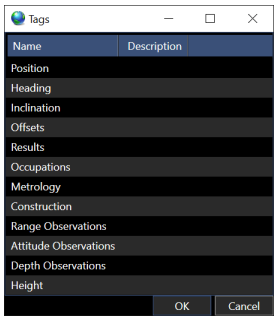


FIGURE 8-109 WINDOWS - DOCUMENTS – MANAGE TAGS

8.17 GPS Status

The GPS Status window provides a sky plot and summary for the respective GNSS solution.

GPS input that is detected is placed in a section in the View ribbon labelled **GPS Status** where **GPS** is the user defined name for the device.

An icon is generated for each NMEA Input device configured with the required messages, specifically GGA, GSV, GSA and VTG.

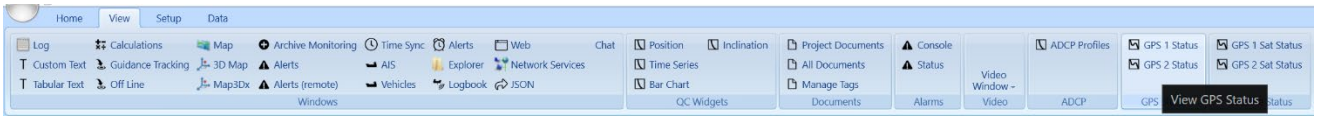


FIGURE 8-110 WINDOWS - GPS STATUS – VIEW RIBBON

To open the GPS Status View window, click on a GPS Status icon, i.e. GPS 1 Status.

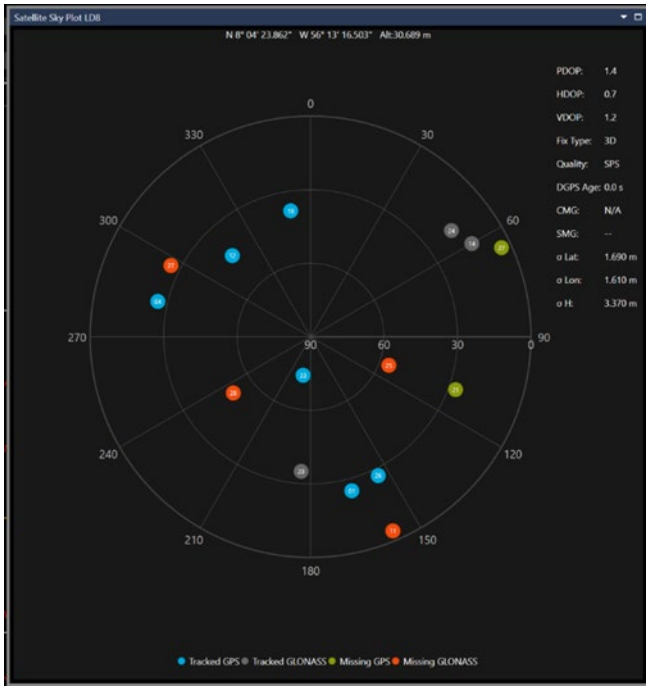


FIGURE 8-111 WINDOWS - GPS STATUS WINDOW

The window will open as a dockable window pinned to the right edge of the workspace. If a dockable window already occupies that space, it will be added as a tab in that window.

The information displayed and the associated NMEA message is as follows:

Raw GPS antenna position (GGA)

- Sky plot of Satellite positions and elevation (GSV)
  - Tracked GPS satellite
  - Tracked GLONASS satellite
  - Not tracked (missing) GPS satellite
  - Not tracked (missing) GLONASS satellite
- DOP values (GSA)

- Fix type, e.g. 3D GPS (GGA)
- Quality, e.g. Diferrential (GGA)
- Course and speed made good (VTG)
- Position Accuracies (from GST message)

Note: There is no configuration associated with this window.

Note: Only one window per GPS device can be open in a workspace at a time.

8.18 GPS Satellite Status

The Satellite Status window provides a view of the respective GNSS device's tracking and solution status in terms of satellite Signal to Noise Ratio (SNR) and satellite Range Residuals as a bar chart.

GPS input that is detected is placed in a section in the View ribbon labelled **GPS Sat Status** where **GPS** is the user defined name for the device.

An icon is generated for each NMEA Input device configured with the required messages, specifically GRS and GSV.

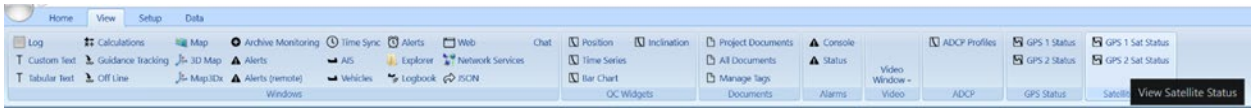


FIGURE 8-112 WINDOWS - SATELLITE STATUS – VIEW RIBBON

To open the Satellite Status View window, click on a GPS Sat Status icon, i.e. GPS 1 Sat Status.

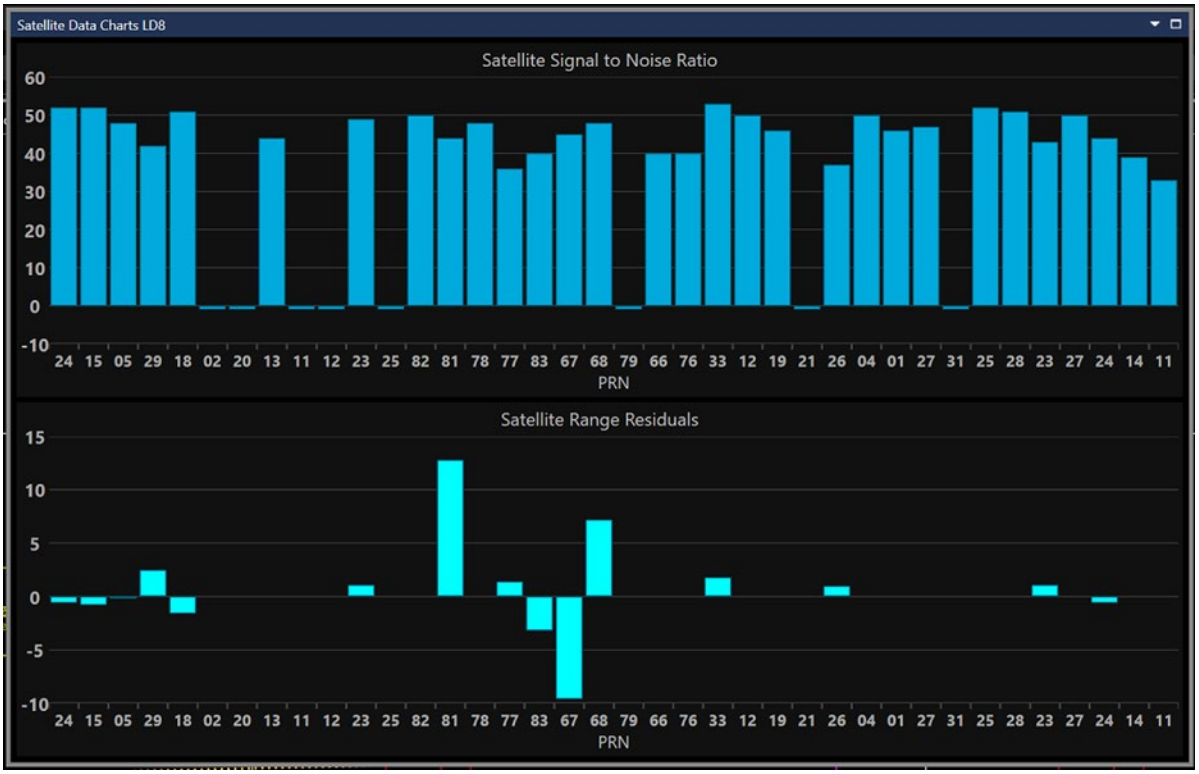


FIGURE 8-113 WINDOWS - GPS SATELLITE STATUS VIEW

- Satellite Signal to Noise Ratio: db
- Satellite Range Residuals : Meters