NavView User Guide – 20 Watch Regions

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20. WATCH REGIONS

Watch Regions are a NavView feature that allows a user to monitor one or more dynamic objects in relation to the boundaries of one of more areas and to trigger an alert when the dynamic objects are either inside or outside of the boundaries, depending on the alarm mode selected. A given set of dynamic objects and regions with the same alarm mode setting make up a Watch Group. Multiple Watch Groups can be added enabling a comprehensive range of monitoring options.

If Roles and Privileges are enabled, a user must be logged in as Online, Supervisor or Admin to be able to manage Watch Regions.

Note: Watch regions are distributed by Network Services to all connected NavView stations. Any change on one station is updated on all connected remote stations.

20.1 MANAGING WATCH GROUPS

Watch groups are managed from the Configure Watch Groups window, Figure 20-2. This is accessed from the Setup ribbon by clicking on Watch Regions in the Configure section, see Figure 20-1.

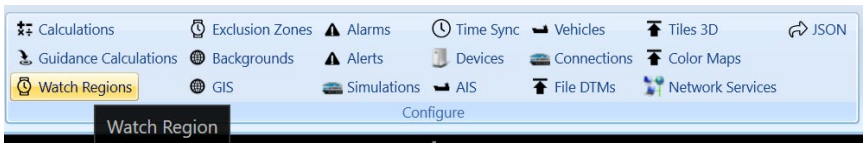

FIGURE 20-1 SETUP RIBBON - WATCH REGIONS

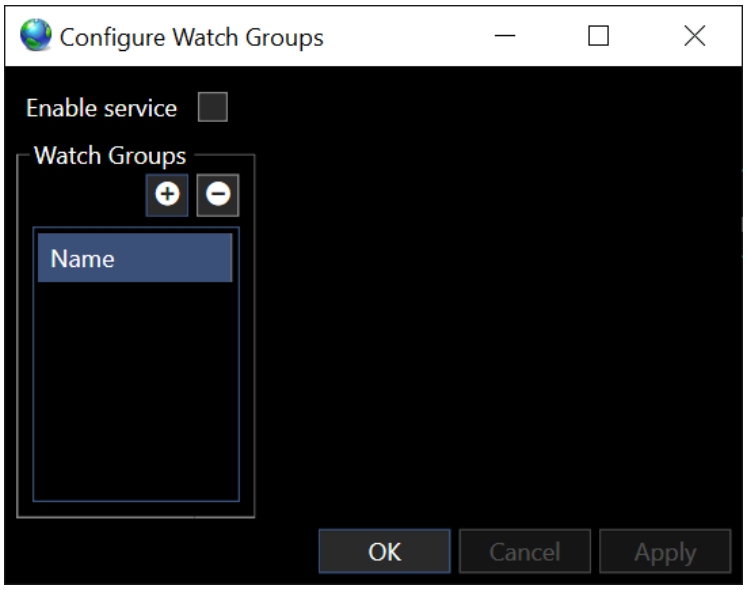

FIGURE 20-2 CONFIGURE WATCH GROUPS

1. Use of the Watch Regions feature is controlled from the Configure Watch Groups window by checking or unchecking the **Enable service** box.

2. A Watch Group can be added from the Configure Watch Groups window**Error! Reference source not found.** or directly from the 2D Map view.
    a. Click the ⊕ button in the Watch Groups panel of the Configure Watch Groups window; or
    b. When adding a region directly from a 2D Map view, select New Watch Group in the pop up menu (see Configure Regions)
3. To remove a Watch Group.
    a. Select the Watch Group to remove in the left panel
    b. Click the ⊖ button

20.2 BASIC CONFIGURATION

1. Select the Watch Group to configure in the left panel, see Figure 20-3, to display the respective configuration in the Selected Watch Group panel on the right.

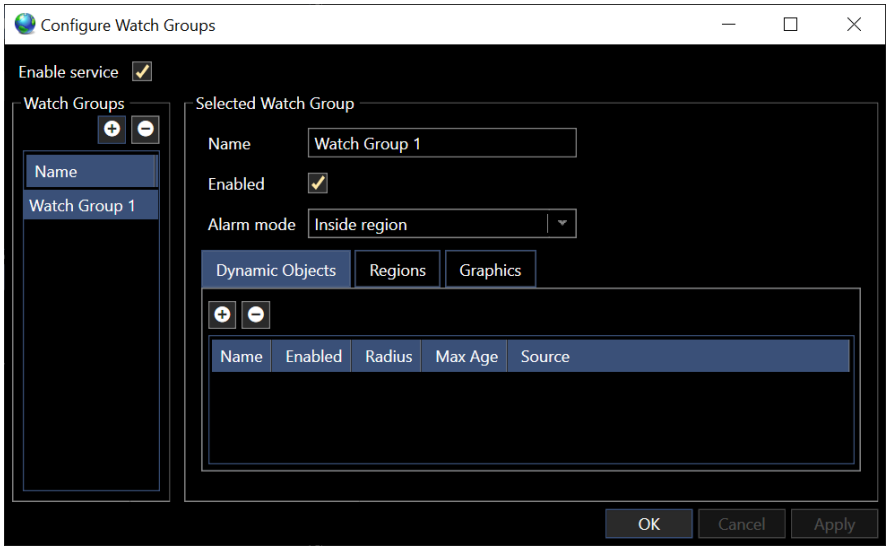

FIGURE 20-3 SELECTED WATCH GROUP CONFIGURATION

- **Name:** Enter the name to be used to identify the watch group in the system
- **Enabled:** Check the box to enable the selected Watch Group
- **Alarm Mode:** Select the type of spatial constraint to evaluate between each configured dynamic object and spatial region
    - **Inside region:** Generates an alert if any of the dynamic objects ENTERS into or over any of the region
    - **Outside region:** Generates an alert if any of the dynamic objects EXITS outside of any of the regions

20.2.1 CONFIGURE DYNAMIC OBJECTS

Dynamic objects define the dynamic spatial objects in the watch group relationship. Dynamic objects are any dynamic NavView object that publishes a 2D Geographic observation.

1. Select the Watch Group to configure in the left panel, see Figure 20-3,**Error! Reference source not found.** to display the respective configuration in the Selected Watch Group panel on the right.
2. Click the  button to add a dynamic object; or
3. Click the  button removes the selected dynamic object.

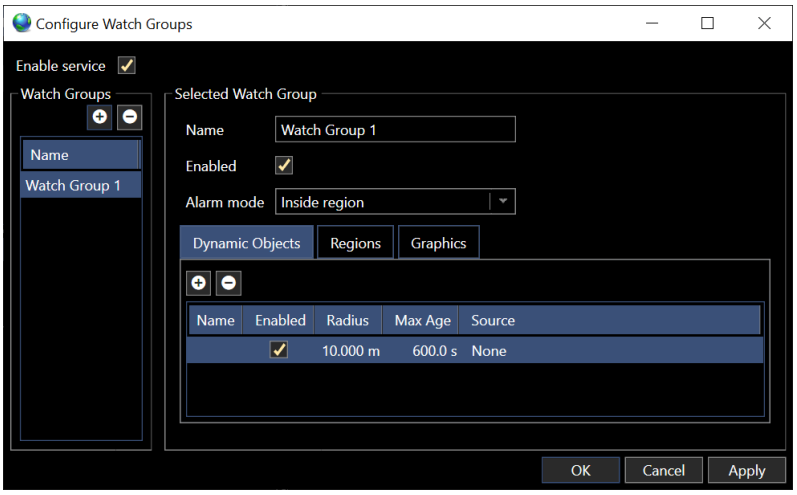

FIGURE 20-4 CONFIGURE WATCH GROUPS – DYNAMIC OBJECTS

- **Name:** Enter the name used to identify this dynamic object in any generated alerts
- **Enabled:** If checked, this dynamic object is evaluated against the regions of this group. If unchecked this dynamic object is ignored in the spatial calculation
- **Radius:** Enter the distance to define a circle around the dynamic object. The spatial relationship is evaluated by comparing the spatial region around a dynamic object compared to each configured spatial region. The radius value is used to enlarge the region around the dynamic object. For example, if the radius is 10m the dynamic object is spatially represented as a circle with a radius of 10m around the coordinate that defines the current location of the dynamic object

Note: The Radius value cannot be 0.

- **Max Age:** Enter the maximum age of the dynamic object's position before the position is no longer used in the spatial calculations. For example, if the max age is set to 60 seconds, this dynamic object is spatially evaluated only if its last updated position is <= 60 seconds. If the age is greater than 60 seconds this dynamic object is effectively disabled
- **Source:** The drop-down list is populated by all data sources that publish 2D Geographic observations, e.g. Vehicles, Calculations, select Devices, etc., select the data source to position the dynamic object

20.2.2 CONFIGURE REGIONS

A Region defines the watch region that an object is monitored against. Regions can be created from Static coordinates, a Dynamic Body or a Dynamic Line. Regions are added from the Configure Watch Regions window, see Figure 20-5, or directly from a 2D Map view.

Note: In the case of adding a region from a 2D Map, spatial geometries can be created using the Point Picker and Multi-Point Picker tools and by right mouse clicking on any of the background polylines (GIS, AutoCAD, etc.) and converting these to a region.

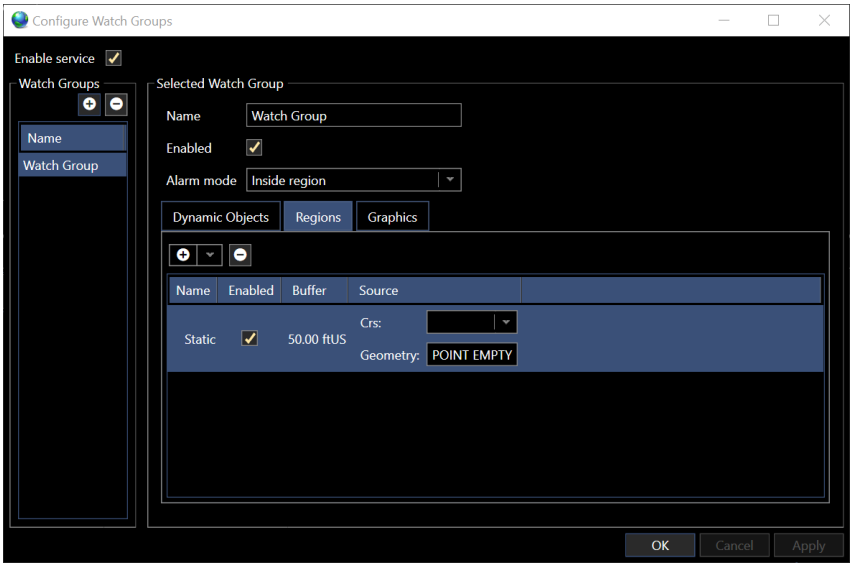

FIGURE 20-5 CONFIGURE WATCH GROUP – REGIONS TAB

20.2.2.1 STATIC REGION

A non-moving region. This can be added from the Configure Watch Groups window or directly from a 2D Map.

1. Create a Static Region from the **Configure Watch Groups** window.
   a. Click on the  to select the region type to create, see Figure 20-6

FIGURE 20-6 REGION TYPES

   b. Select the **Static** option from the add button expansion menu. This will add a new geometry item to the list with a default buffer and empty geometry. The geometry field can then be edited, see Figure 20-7

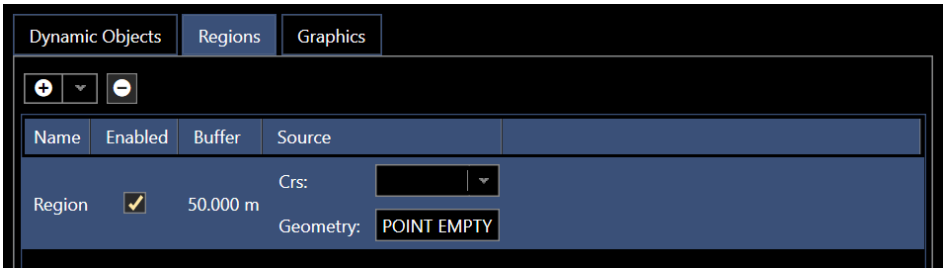

FIGURE 20-7 STATIC REGION

- **Name:** Enter a suitable name for the region
- **Enabled:** Use this function to turn on/off alerts associated with the region
- **Buffer:** Distance around a line or point used for the region geometry
- **Source:** Clicking in the Source cell causes it to expand to display
    i. **CRS:** Select the Coordinate Reference System of the static geometry data
    ii. **Geometry:** Enter or copy the geometry defining the region in Well-Known-Text (WKT) format

Note: Well-known text (WKT) is a text markup language for representing vector geometry objects. See [Well-Known Text (WKT) | GEOS (libgeos.org)]

2. Create a Static Region from a **2D Map** view.

This approach uses either the single point picker  , the multi point picker  , or the capability to select a polyline from a background layer. The single point picker will define an area based on a radius around a single point, while the multi point picker allows the user to create more complex geometry. This process will generate the geometry in WKT format and apply it to define the region.

a. **Point Picker Tool**

To set up a region based on a single point, select the point picker on the map view. click in the desired location on the map. Then right click on the point, see Figure 20-8, and select copy to-> Watch Group >

i. Select New Watch Group to create a new Watch Group and add this as a region to it

or

ii. Select [Watch Group Name] to add it to the selected existing Watch Group

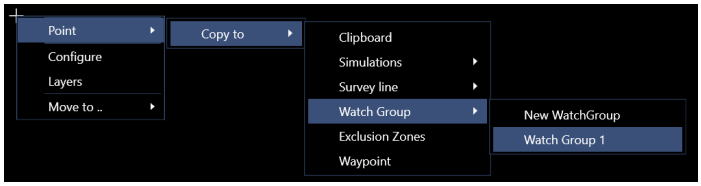

FIGURE 20-8 COPY SINGLE STATIC POINT TO WATCH GROUP

iii. In the resulting dialog, see Figure 20-9

- **Name:** Enter a suitable name for the region

- **Buffer Distance:** Enter the distance to apply to the point to create the region

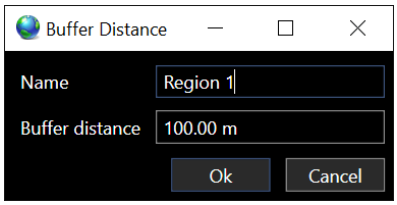

FIGURE 20-9 STATIC SINGLE POINT REGION DIALOG

iv. The shape will then appear on the map view, see Figure 20-10, and will be added to the regions list in the Configure Watch Groups window

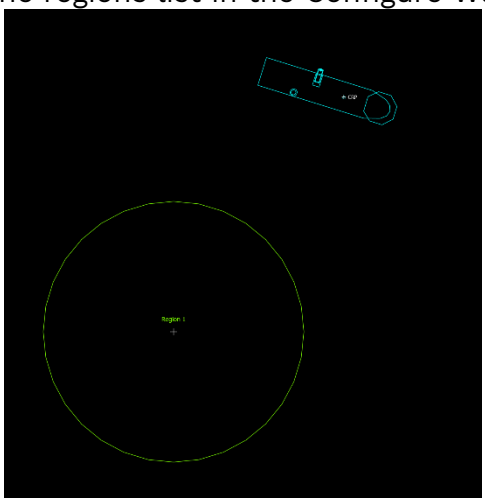

FIGURE 20-10 STATIC SINGLE POINT REGION – MAP VIEW

b. **Multi-Point Picker Tool**

The Multi-Point picker is used to create more complex regions. To use this tool select the Multi-Point picker on the map toolbar and select 2 or more points on the map. If only two points are selected, only a line based region can be created. If more than 2 points are selected, a line or polygon based region can be created. Then right click on the line(s) which have been created, see and select copy to-> Watch Group >

I. Select New Watch Group to create a new Watch Group and add this as a region to it

or

II. Select [Watch Group Name] to add it to the selected existing Watch Group

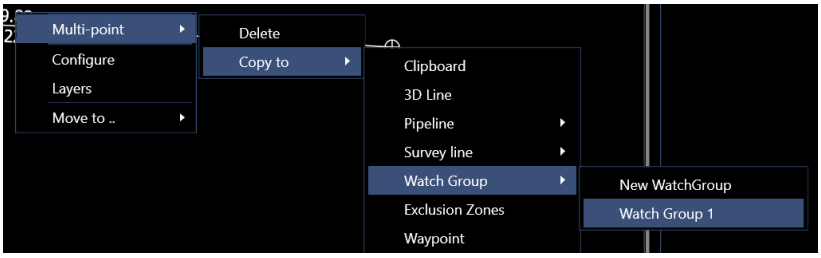

FIGURE 20-11 COPY STATIC MULTI-POINT TO WATCH GROUP

III. In the resulting Create Region dialog, see Figure 20-12
   - **Name:** Enter a suitable name for the region
   - **Region Type:** From the drop-down control, select if the region is to be:
     - **Polygon**: If the selected polyline does not form a polygon itself, NavView will connect the end points to create a polygon. The buffer will be applied to the outside of the polygon to form the region

Note: If the multi-point picker line has only 2 nodes and the Region type selected is Polygon, NavView will throw an exception and abort the creation of the region.

     - **Line**: The buffer will be applied to the polyline to create the region
     - **Buffer Distance:** Enter the distance to apply to the line/polygon to create the region

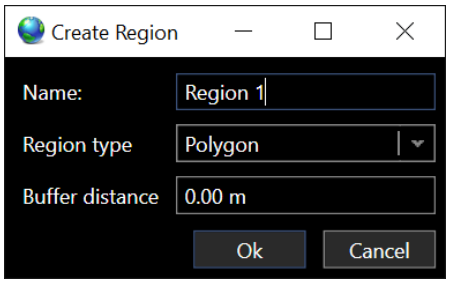

FIGURE 20-12 STATIC MULTI-POINT CREATE REGION DIALOG

IV. The shape will then appear on the map view, see Figure 20-13, and will be added to the regions list in the Configure Watch Groups window

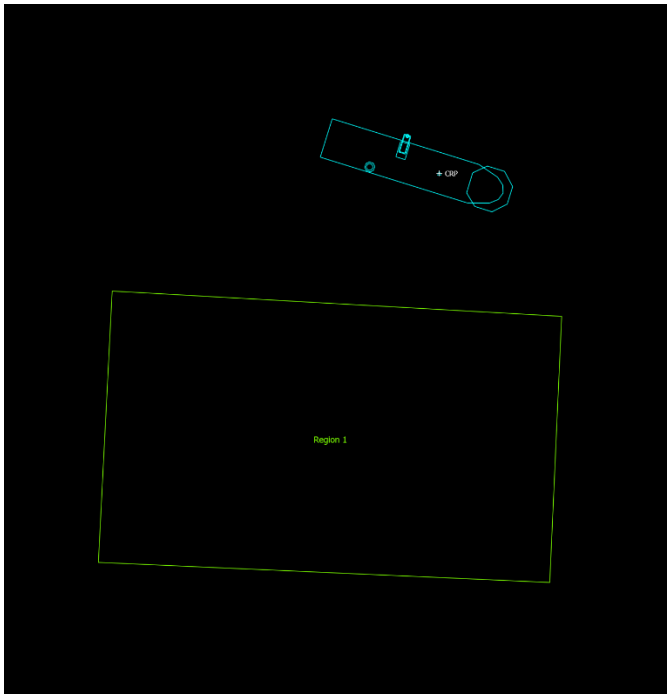

FIGURE 20-13 STATIC MULTI-POINT REGION – MAP VIEW

c. **Background Polyline**

Right mouse click on a polyline in the 2D Map view, see Figure 20-14 and select Convert [polyline name] to -> Watch Group ->

I. Select New Watch Group to create a new Watch Group and add this as a region to it

or

II. Select Add -> [Watch Group Name] to add it to the selected existing Watch Group

FIGURE 20-14 CONVERT POLYLINE TO WATCH GROUP

III. In the resulting Create Region dialog, see Figure 20-15

- **Name:** Enter a suitable name for the region
- **Region Type:** From the drop-down control, select if the region is to be:
  - **Polygon**: If the selected polyline does not form a polygon itself, NavView will connect the end points to create a polygon. The buffer will be applied to the outside of the polygon to form the region
  - **Line**: The buffer will be applied to the polyline to create the region
  - **Buffer Distance:** Enter the distance to apply to the line/polygon to create the region

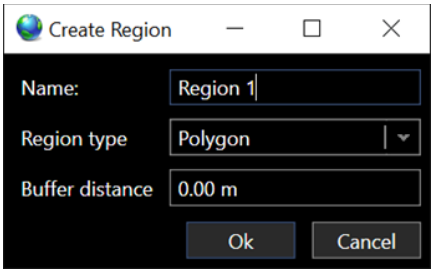

FIGURE 20-15 CREATE REGION DIALOG

IV. Click **OK**. The region will appear on the map view and will be added to the regions list in the Configure Watch Groups window

20.2.2.2 DYNAMIC BODY REGION

A region based on a dynamic body, such as a vehicle offset. The region will be a buffer circle around vehicle offset which will move with the dynamic body. This can only be added directly from the Configure Watch Groups window.

1. Select Dynamic Body region, see Figure 20-6
   - **Name:** Enter a suitable name for the region
   - **Buffer:** Enter a buffer distance to be applied around the Dynamic Body
   - **Source:** From the Source column populated with the vehicles and their offsets, select the data source to use for the Dynamic Body, see Figure 20-16

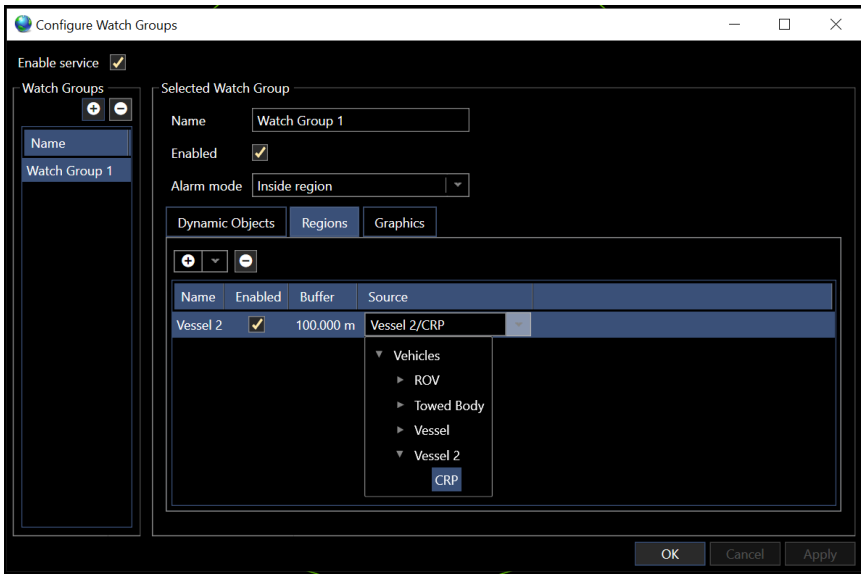

FIGURE 20-16 DYNAMIC BODY REGION - CONFIGURATION WINDOW

2. The image below shows a 100m region around a vessel. This shape will continuously update and move with the vessel, see Figure 20-17

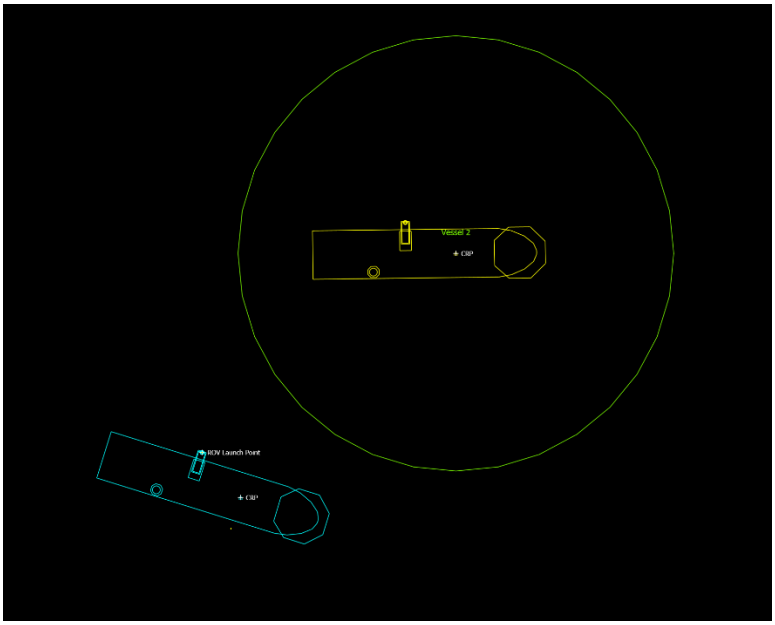

FIGURE 20-17 DYNAMIC BODY REGION - MAP VIEW

20.2.2.3 DYNAMIC LINE REGION

Dynamic line regions allow for regions created from either guidance calculations or select connections in NavView. These regions can be added from the Configure Watch Groups window or from a 2D Map.

- Create a Dynamic Line Region from the **Configure Watch Groups** window**.** Select Dynamic Line region type from the region's configuration dialog, see Figure 20-6
- **Name:** Enter a suitable name for the region
- **Buffer:** Enter a buffer distance to be applied around the Dynamic Line
- **Source:** Select the desired dynamic line from the drop down list of available dynamic lines such as Guidance Calculations, Straight Line Connections and 3D Polyline Connections, see Figure 20-18

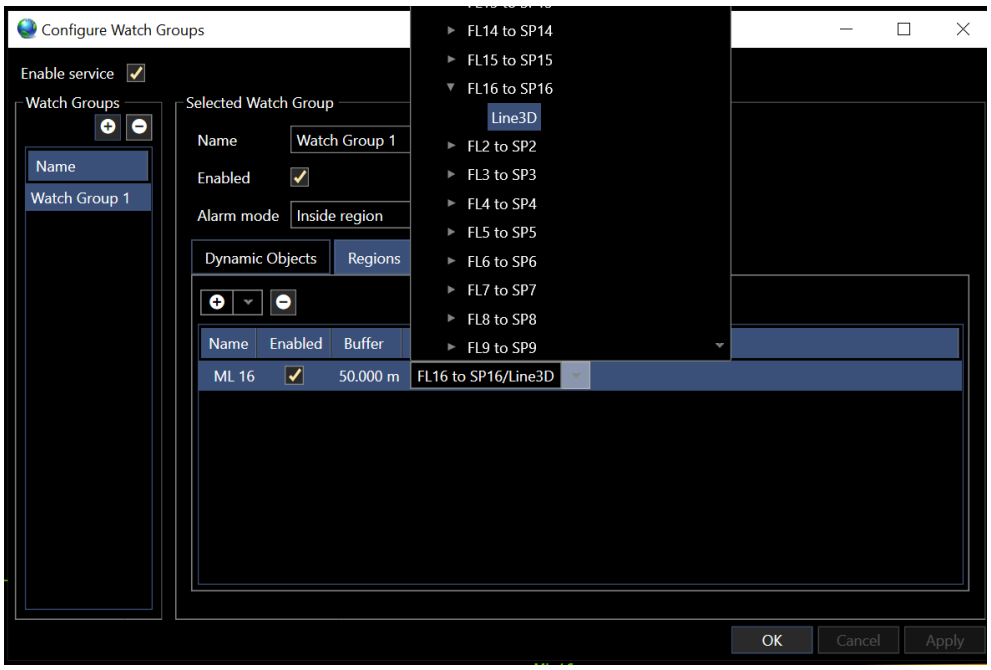

FIGURE 20-18 DYNAMIC LINE - CONFIGURATION WINDOW

3. Create a Dynamic Line Region from a **2D Map** view.

Note: The graphics must be turned on for a guidance calculation for it to be displayed in the 2D Map view and therefore available for selection.

a. Right click on the guidance calculation line and select the Exclusion/Watch Regions: [Name of Guidance calculation]->

I. Create New Watch Group with: [Name of Guidance Calculation] option to create a new Watch Group with this as a region

or

II. Add to Watch Group [Name of Guidance Calculation] > [Watch Group] to add this region to an existing Watch Group

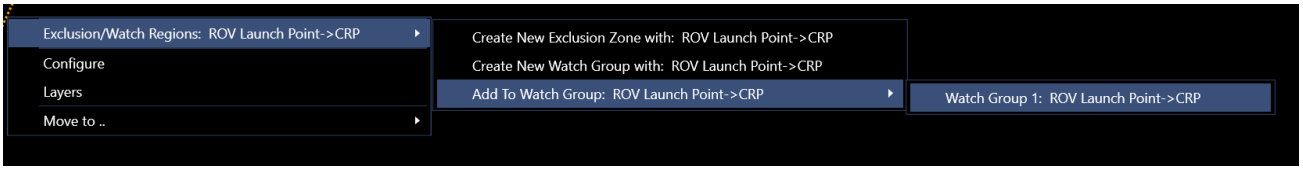

FIGURE 20-19 CREATE DYNAMIC LINE WATCH REGION FROM 2D MAP

b. The region will be added to the Configure Watch Regions window Regions list with the default name Line: [Name of Guidance Calculation] and a buffer distance of 50m which can be edited from this window

20.2.3 GRAPHICS

This provides a standard graphics configuration view, similar to other parts of NavView, to configure the look of a non-triggered area and the triggered area, see Figure 20-20

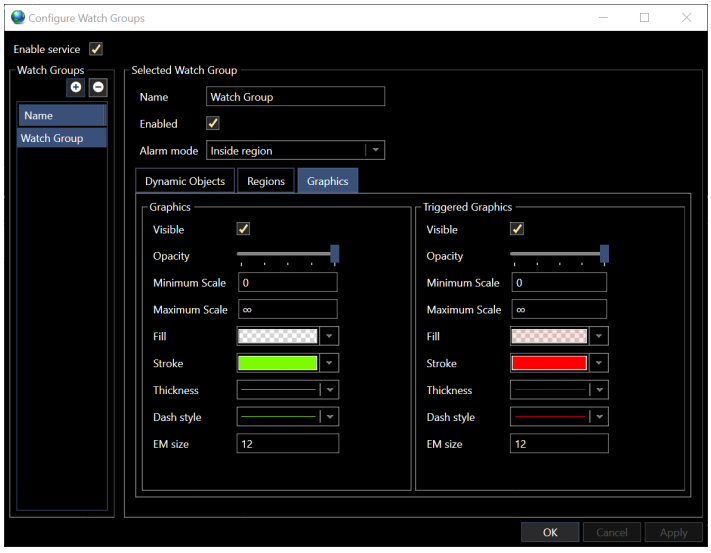

FIGURE 20-20 CONFIGURE WATCH REGIONS - GRAPHICS TAB

The only non-standard configurable item is **EM**, the size of exclusion zone label.

20.3 MONITORING WATCH REGION ALERTS

Alerts can be monitored visually on the map view and the Alert list window.

20.3.1 MAP VIEW

For any given Watch Group, when a Dynamic Object either enters or leaves a Watch Region, depending on the Alarm Mode setting, an alert is triggered. When this is triggered, the graphics for the region on the map view, see Figure 20-21, will change to match the settings in Triggered Graphics, see Figure 20-20.

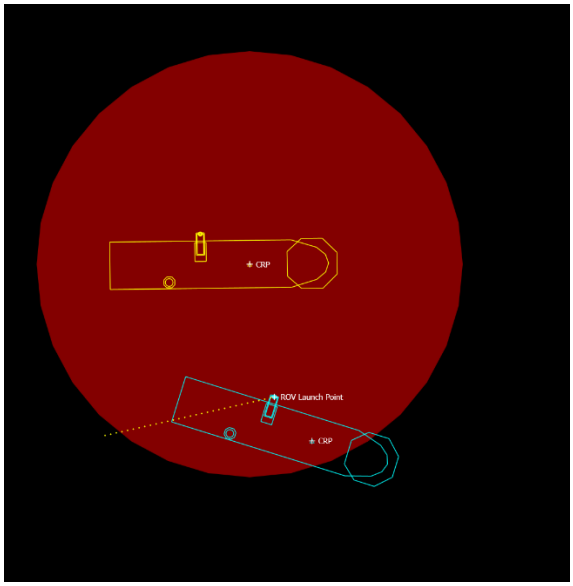

FIGURE 20-21 ALERT TRIGGERED – MAP VIEW

20.3.2 ALERT LIST WINDOW:

The alert list window, see Figure 20-23 is accessed from the View ribbon, Windows section, see Figure 20-22. If this window is not open when an Alert is triggered, it will automatically open.

FIGURE 20-22 ALERT LIST – VIEW RIBBON

FIGURE 20-23 ALERT LIST WINDOW

The Alerts table columns are as follows:

- **Type:** The type of alert icon (error, warning or information)
- **Time:** Time the event occurred
- **Event:** Message text of the event
- **Time Cleared:** Time Cleared, or '--' if it has not been cleared yet

- **Time Acknowledged:** Time Acknowledged, or '--' if it has not been acknowledged yet
- **State:** Indicates if the alert is cleared, acknowledged or still active
- **Module:** The alert list can handle alerts and information from other NavView modules, so the source of the alert is shown here
- **Top Buttons:** The buttons at the top of the alert window allow the user to filter what is displayed in the list, whether that be only errors, both errors and warnings, for information. It is also possible to filter out acknowledged items so only the most important information is shown

Note: Alerts/Alarms triggered are published to all stations on the network when triggered and not exclusive to a single station.

20.3.3 ALERT LIST CONFIGURATION

The  button is used to open the alert list configuration dialog. The alert list configuration view controls the display of popup messages, as well as sound, see Figure 20-24

FIGURE 20-24 ALERT LIST - CONFIGURE ALERT DISPLAY DIALOG

- **Play Sound:** The sound options include a variety of sounds to choose from for when an alert occurs. The alerts sounds in NavView use Windows system sounds, which allows it to leverage some added accessibility features in Windows 10.

For added notification in case the system sound is turned off or speakers are unavailable, Windows 10 has a feature in system settings called 'Show visual alerts for audio notifications' which can be found by searching via the Start Menu, see Figure 20-25and Figure 20-26.

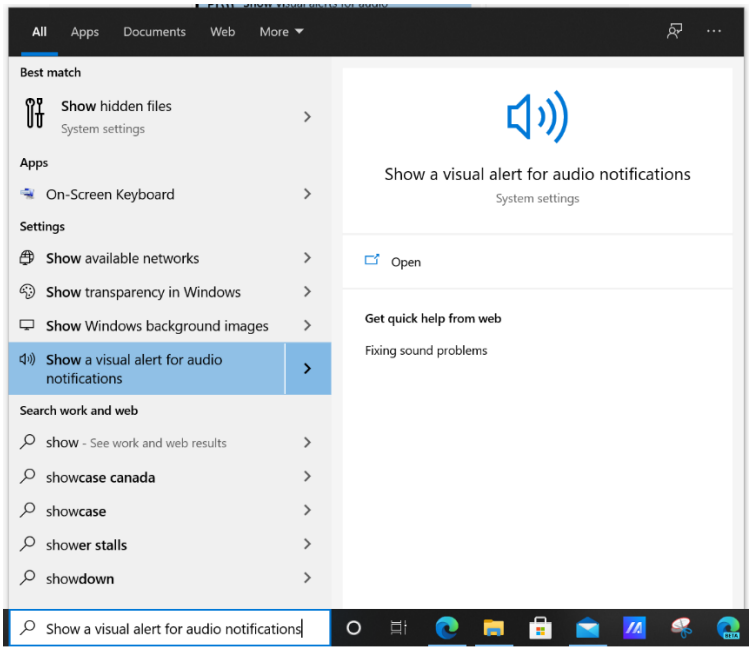

FIGURE 20-25 SHOW VISUAL ALERTS - WINDOWS 10

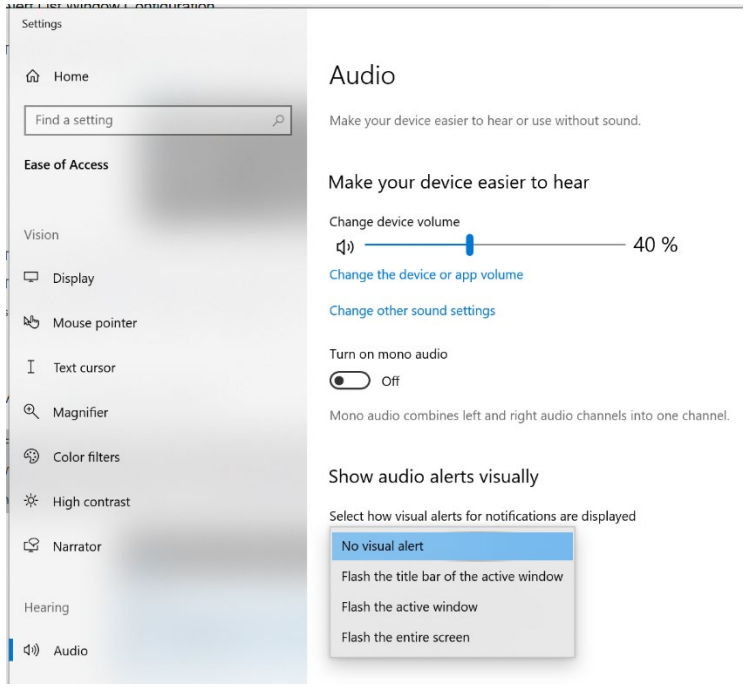

FIGURE 20-26 SHOW VISUAL ALERTS – CONFIGURATION - WINDOWS 10

- **Show message box:** If the On error, On warning and/or On message checkboxes in the settings dialog are checked, a popup message will appear on screen whenever an alert occurs. This will pop up in the middle of the screen in front of all other windows but is non-modal, meaning it still allows the user to interact with NavView before clicking the OK button, see Figure 20-27

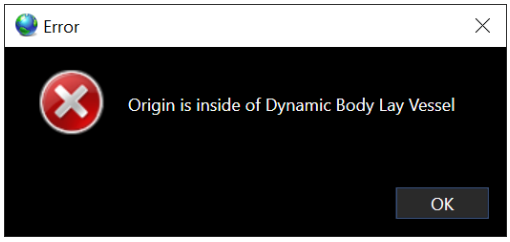

FIGURE 20-27 ALERT POPUP WINDOW

20.3.4 ACKNOWLEDGING ALERTS

When an alert is currently active, meaning it has not yet been cleared, it will continue to flash and create sound if those options are enabled. The user can acknowledge the alert, which will silence the flashing and sound, but the alert will remain in the 'triggered' graphics state on screen and remain in the alert list window until it is cleared.

Alerts can be acknowledged by clicking on the checkmark  button in the alert list table, or by right clicking on the alert, and selecting acknowledge from the context menu, see Figure 20-28

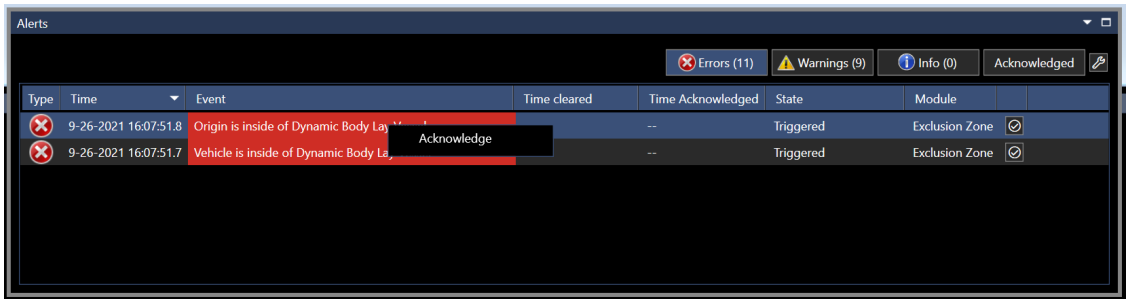

FIGURE 20-28 ALERT ACKNOWLEDGE - CONTEXT MENU