



GAPCOM User Manual

Global Attending and Passing Vessel Collision Monitoring

Security Classification: General

Document Type: Guidance

1 REVISIONS

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27-Dec-2021	1	Initial Issue

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2 INTRODUCTION – WHAT IS GAPCOM?

GAPCOM is a web-based application used to provide situational awareness and monitor for potential collisions by passing and attending vessels. GAPCOM accomplishes this by matching vessel AIS data to conditions set by an Alert Rules. When an Alert Rule condition is met, an Alert is created and displayed to GAPCOM users. Alert rules are defined by Zones that surround Points of Interest (POI) or other areas of interest. Additionally, current and historic static (ex. name, call sign flag) and dynamic (ex. location, speed, course) information for vessels are available as well as projections on where the vessel will be in the near future.

GAPCOM is composed of three interfaces: Map Interface, Administrative, and Report. This user manual will walk you through how to access and use of all three interfaces. Additionally, the appendices contain more technical details on certain parts of GAPCOM and will be referenced throughout the document.

Glossary of Terms section of this document to look up terms used within GAPCOM

2.1 SYSTEM REQUIREMENTS

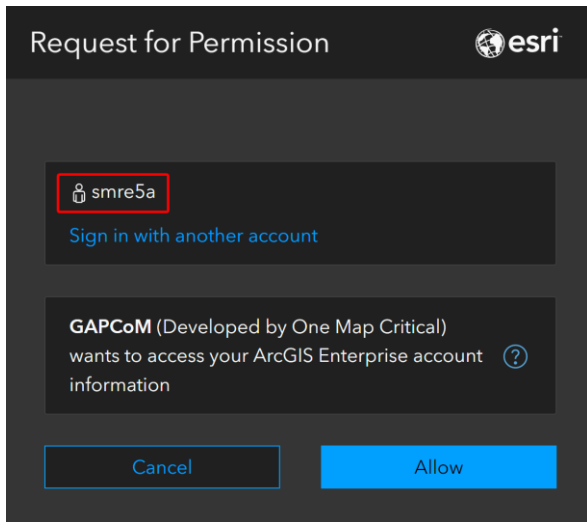
- **Internet Access:** GAPCOM is available over the internet. No special network configuration is required; so long as you can connect to the internet, you can access GAPCOM.
- **Computer:** Any reasonably modern laptop or desktop computer. GAPCOM was not designed to work on tablet or mobile devices.
- **Web Browser:** Either Microsoft Edge or Google Chrome.
- **Screen Resolution:** At least 1920x1080 screen resolution.

3 HOW TO ACCESS GAPCOM

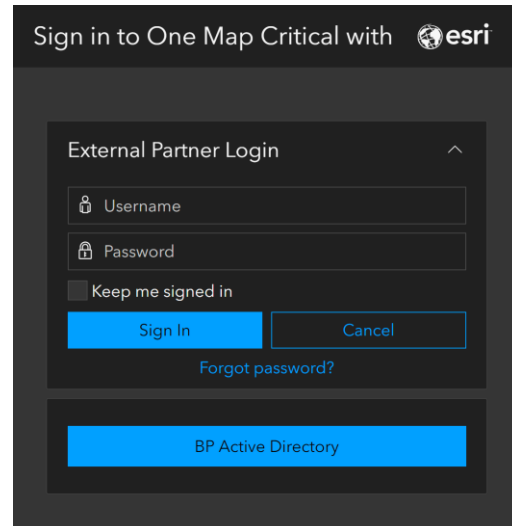
Ensure your system meets the details in the System Requirements section above.

1. Request access to GAPCOM from the Regional Marine Lead. You will be given access by either your NTID or an External Partner Login.
2. In a web browser, navigate to this URL:
<https://onemap-critical.bpglobal.com/apps/GAPCoM/index.html>
3. You will see one of two login prompts:

Login Screen A



Login Screen B



4. If you see Login Screen A and...
 - a. your username is correctly displayed (outlined in red above), click **Allow** to log in.
 - b. you see someone else's username, click **Sign in with another account** and you will be taken to Login Screen B.
5. If you see Login Screen B and...
 - a. if you are logging in with an account that is not your bp NTID, under the *External Partner Login* section, enter your Username and Password then click **Sign In**.
 - b. if you are logging in with your NTID, click **BP Active Directory** and sign in using the normal bp NTID signin process.
6. You will be taken to the GAPCOM region selection page where a dialog box (shown in Figure 1) will ask you to choose a region. Your account can be given access to several regions, so click the dropdown box to choose the region you wish to open in GAPCOM.
 - a. If you are on internet connection with limited bandwidth, first check **Low Bandwidth Mode** to open a low bandwidth version of GAPCOM.

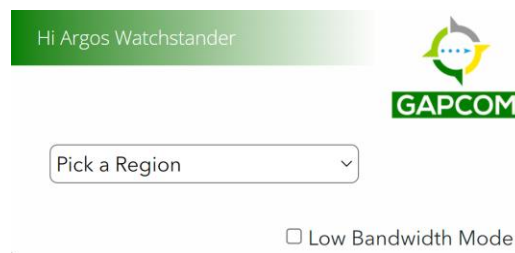


FIGURE 1 - GAPCOM REGION SELECTION DIALOG

7. You will be taken to the GAPCOM Map interface for the region you selected, as shown in Figure 2.

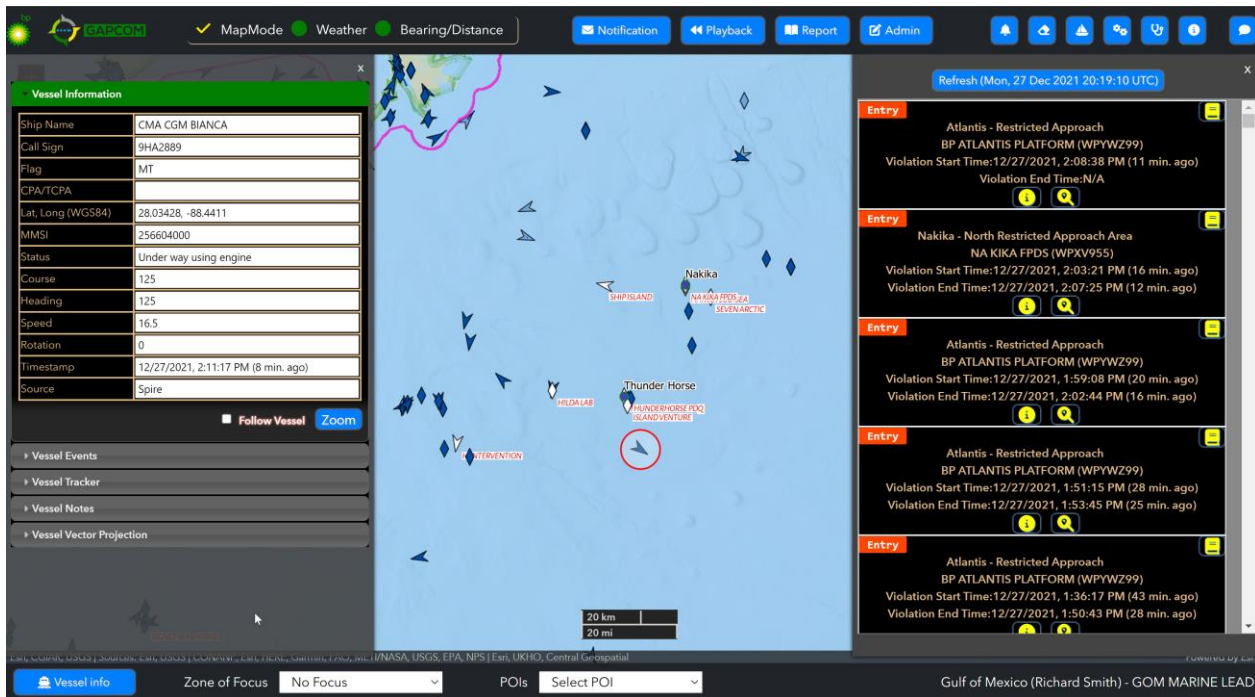


FIGURE 2 - GAPCOM MAP INTERFACE

Now that you are logged into GAPCOM, reference the remainder of this user manual to learn how to use the application.

4 GAPCOM INTERFACES

4.1 MAP INTERFACE

The GAPCOM Map interface is where most of your time will be spent monitoring passing and attending vessels. The map interface has several functions (identified in Figure 3) and each set of functions will be covered in this section:

- Navigation and Content
- Map Information and Tools
- Vessel Info Panel
- Zone of Focus
- Zoom To
- Map Scale
- Cursor Coordinates and Coordinate Conversion
- Search
- System and Map Tools
- Open Administrative Interface
- Vessel Playback
- Open Reporting Interface

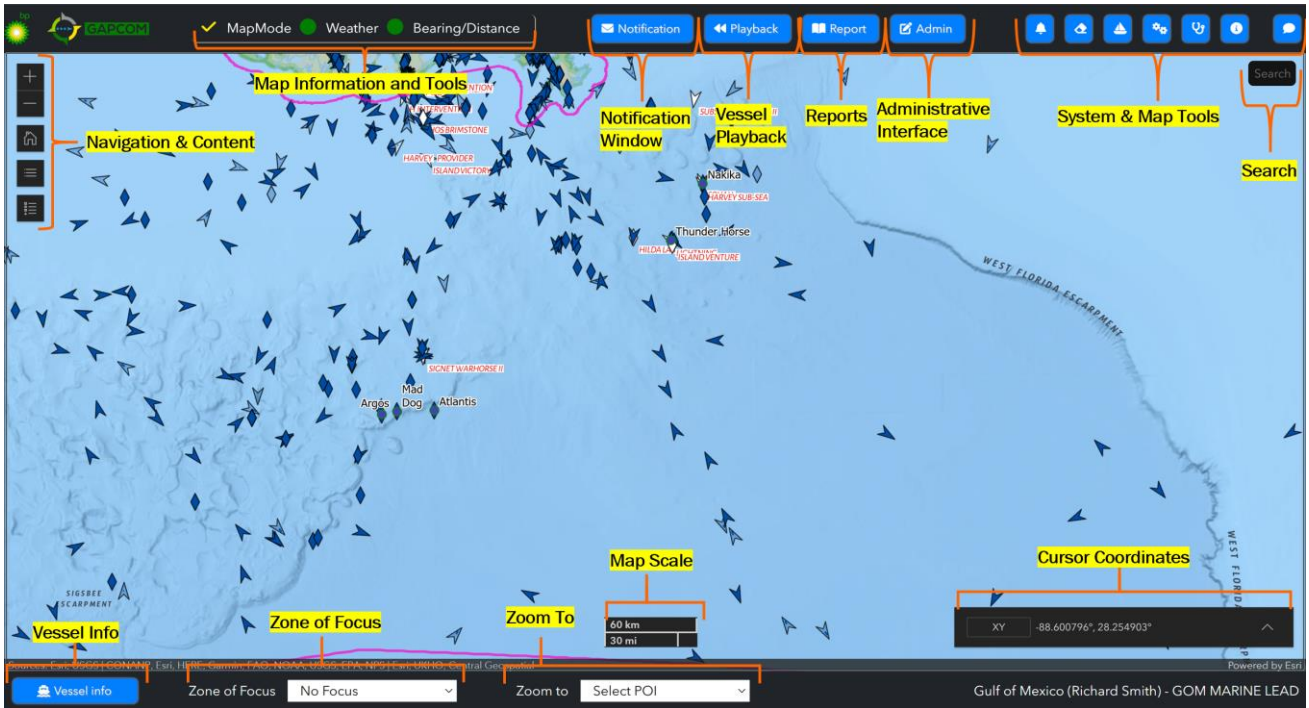


FIGURE 3 - GAPCOM MAP INTERFACE FUNCTIONS

4.1.1 NAVIGATION AND CONTENT

4.1.1.1 NAVIGATION

Using your mouse, you can click and drag the map to pan around. You can use your mouse wheel to zoom in and out. Alternatively, you can click the **Zoom In** button to zoom in, or the **Zoom Out** button to zoom out. To zoom back to the default map view, click the **Default map view** .

4.1.1.2 MAP CONTENT

The map contains several layer of information, such as points of interest, weather, and nautical charts. To view the list and toggle the visibility of these layers by clicking the **Expand Layer List** button and you will see the expanded content pane as shown in Figure 4.

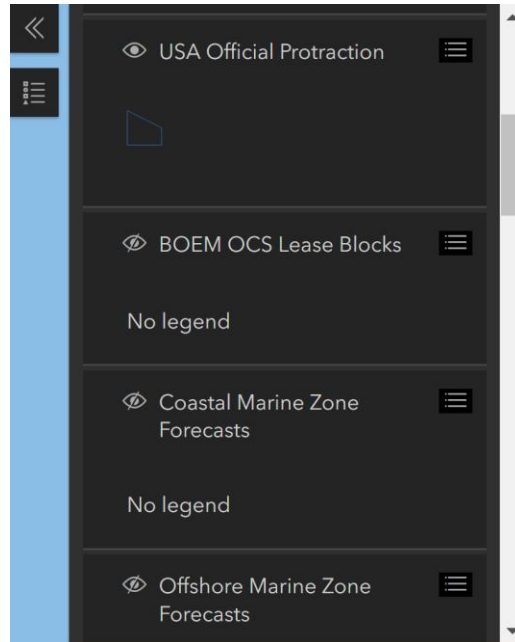




FIGURE 4 - EXPANDED CONTENT PANE

Layers that are visible on the map display an eye  while invisible layers shown a crossed-out eye . Note that some layers are only visible at certain scale ranges, so even if they are set to visible, they may not display. If a layer is not visible at the current scale range, the layer name will be greyed out. An example of this is shown in Figure 5 where *Global Vessels Outline* is set to visible (eye icon) but the layer is not visible at the current map zoom level, hence the layer name is greyed out. Alternatively, *Global Platform Realtime Radar Stream* is set to visible (eye icon) and is visible at this scale range, hence the layer name is white.

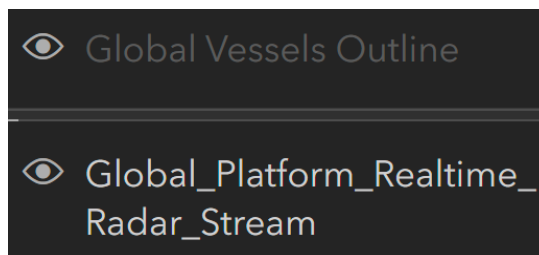



FIGURE 5 - EXAMPLE OF LAYER VISIBILITY LIMITED BY SCALE RANGE

4.1.1.3 MAP LEGEND

The map legend can be viewed by clicking the **Expand Legend**  button. Figure 6 shows the expanded map legend which shows entries for all layers currently set to visible.

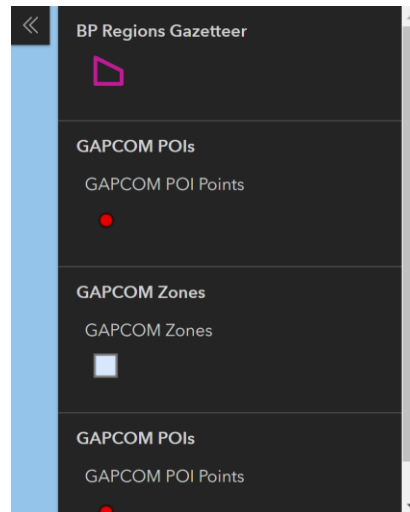


FIGURE 6 - MAP LEGEND

4.1.1.4 VESSELS

GAPCOM will always display vessels on the map and cannot be set to invisible. Vessels display differently based on several rules. Vessels that are moving will be arrows and stationary vessels will be diamonds. Vessels with positions reported within the last hour will be a solid color while vessels with positions reported more than one hour ago will be semi-transparent (lighter color). Moving vessels will have the arrowing pointing at the vessel's heading and a line plotting the course and distance the vessel will cover within the next 6 minutes.

Refer to Figure 7 - Vessel Symbol Examples and the explanation below to see how these rules translate to some examples.

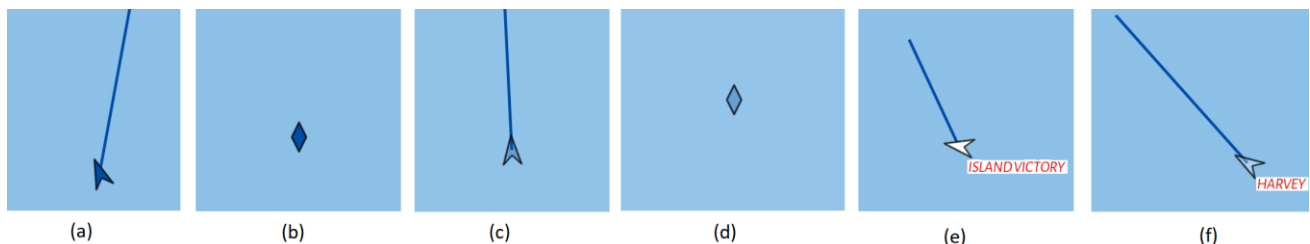


FIGURE 7 - VESSEL SYMBOL EXAMPLES

- Moving vessel with last reported position within the last hour.
- Stationary vessel with last reported position within the last hour.
- Moving vessel with last reported position more than one hour ago.
- Stationary vessel with last reported position more than one hour ago.
- Vessel on a fleet list (therefore showing fleet color of white and label) with last reported position within the last hour.
- Vessel on a fleet list (therefore showing fleet color of white and label) with last reported position more than one hour ago.

For a detailed explanation of the vessel symbols and logic, refer to Appendix A – Vessel Symbols.

4.1.1.5 POINTS OF INTEREST

Points of Interest (POI) created within GAPCOM will display as labelled point with a color set by a GAPCOM Operator Admin. POIs that have polygons will also have the polygon shown in addition to the point. Figure 8 shows the Immortelle POI with both a point and polygon representation.

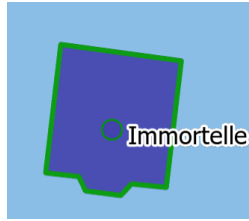


FIGURE 8 - IMMORTELE POINT OF INTEREST

POIs are used by several Alert Rule types to determine when vessel alerts will trigger and, therefore, are shown in the map for situational awareness.

4.1.1.6 ZONES


Zones created within GAPCOM will display as labelled polygons with a color set by a GAPCOM Operator Admin. The labels are dynamic and will only appear when zoomed in close and there is sufficient room to label. Figure 9 shows the Immortelle zones and how different labels appear at different map zoom levels.



FIGURE 9 - IMMORTELE ZONES

Zones are used by several Alert Rule types to determine when vessel alerts will trigger and, therefore, are shown in the map for situational awareness.

4.1.2 MAP INFORMATION AND TOOLS

The GAPCOM map interface has three *modes* of operation (shown in Figure 10 - Map Interface Modes) that cause clicks on the map to do different things. The current mode is designated by a yellow checkmark .

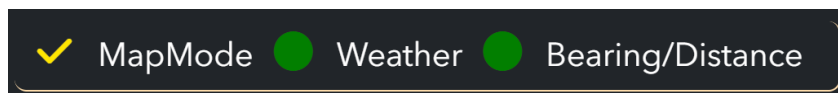


FIGURE 10 - MAP INTERFACE MODES

4.1.2.1 MAP MODE

Map mode is the default mode and is used to navigate around the map and click on vessels to view vessel information. Navigation is covered in the Navigation and Content section of this document.

If you hover your mouse over a vessel, you will see a popup display that shows basic vessel details. If you click on a vessel, it will be surrounded by a red circle, and the **Vessel Information** panel will open.

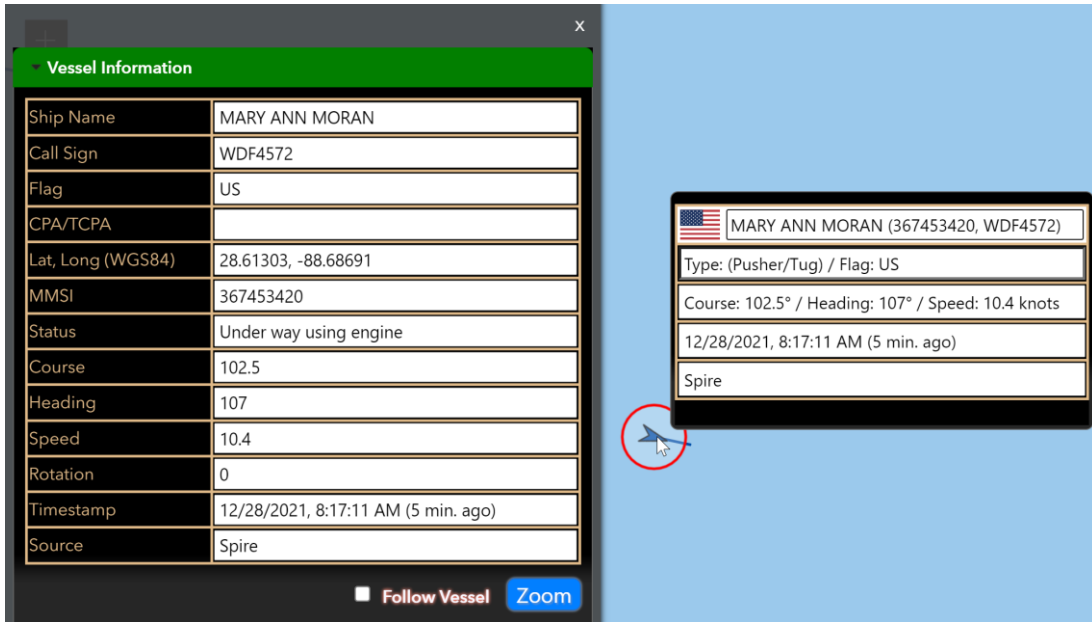


FIGURE 11 - EXAMPLE OF MOUSE HOVER AND MOUSE CLICK ON A VESSEL

4.1.2.2 WEATHER

With Weather mode selected, when you click on a location on the map, a weather dialog box will display, as shown in Figure 12. Click anywhere on the map to get the current and forecast weather.

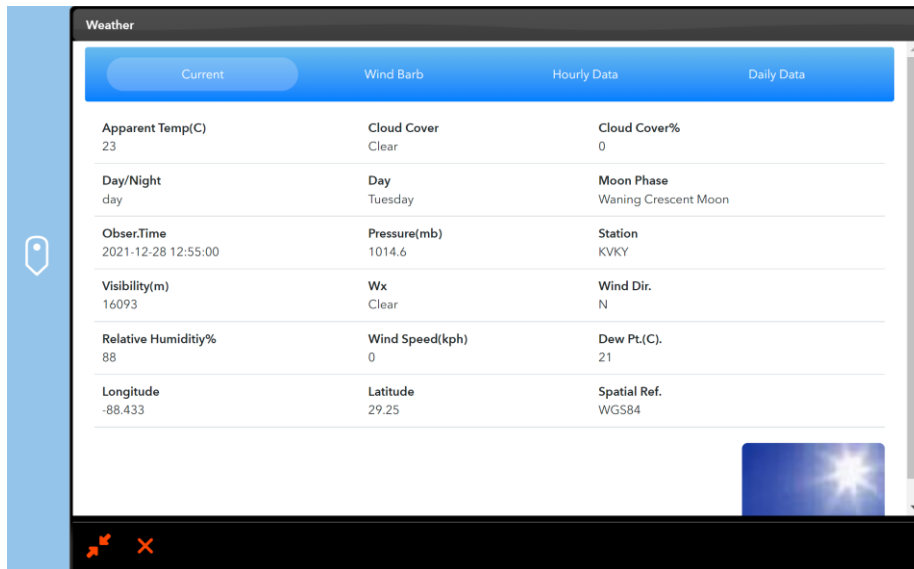


FIGURE 12 - WEATHER DIALOG BOX

The **Current** tab displays the current weather conditions at the clicked location. The **Wind Barb** tab displays current and ten day forecast for wind at the clicked location. The **Hourly Data** tab displays hourly forecast data for the next ten days at the clicked location. Finally, the **Daily Data** tab displays daily highs and forecast data for the next ten days at the clicked location.

You can close the Weather dialog by pressing the **Close** button. You can collapse and expand the dialog by pressing the **Expand/Collapse** button.

4.1.2.3 BEARING AND DISTANCE

With the Bearing and Distance mode selected, clicks on the map will build a series of bearing and distance measurements. As an example, by clicking three times (once on Squall, once on NaKika, and once on a location in the water), three markers are placed on the map and two labeled bearing and distance lines are drawn. To clear the drawn lines, click the **Clear Map Graphics** button.

Distances are given in meters when the distance is less than 500 meters and nautical miles when distances are over 500 meters. Bearings are given in degrees from grid north.

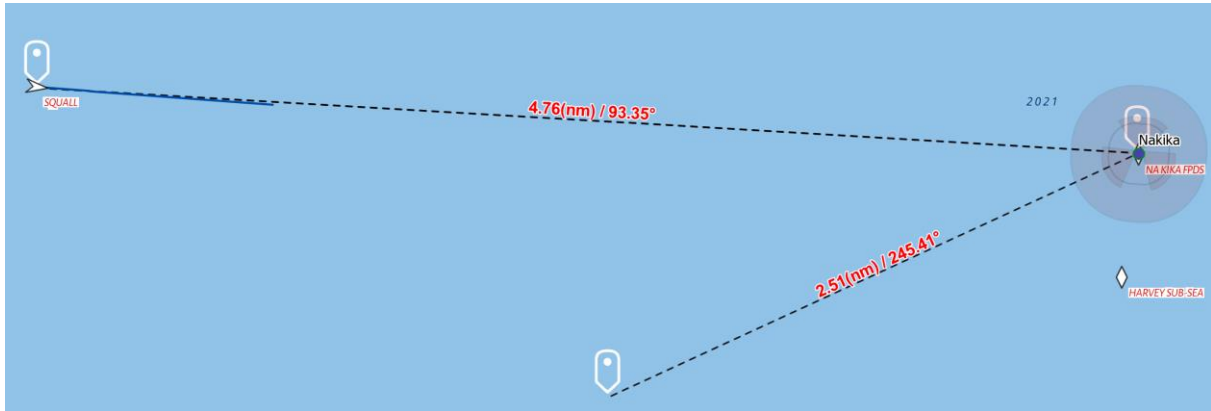


FIGURE 13 - EXAMPLE OF BEARINGS AND DISTANCES BETWEEN THREE POINTS

In addition to building the lines between clicks, if, after the first click, you hold down the Shift key on your keyboard, a line will follow your mouse cursor and dynamically calculate the bearing and distance.

4.1.3 VESSEL INFO PANEL

The Vessel Info panel, shown in Figure 14, allows you to view current and historic information regarding the currently selected vessel. A vessel can be selected by clicking on it in the map, searching for it, or by clicking on an alert for the vessel. You can toggle the visibility of the panel by clicking the **Vessel Info** button at the bottom-left of the screen.

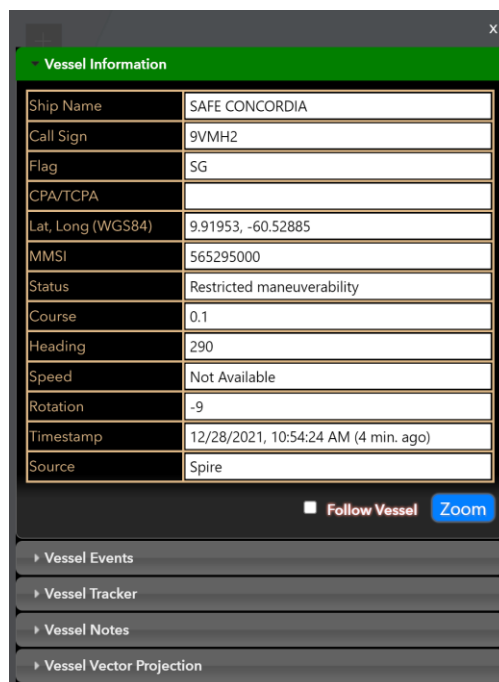




FIGURE 14 - VESSEL INFORMATION PANEL - VESSEL INFORMATION PANEL SELECTED

The Vessel Information Panel has five functions, each on its own tab: Vessel Information, Vessel Events, Vessel Tracker, Vessel Notes, and Vessel Vector Projection. The following sections will cover each of these functions in depth.

4.1.3.1 VESSEL INFORMATION

Displays static and dynamic information for the selected vessel based on AIS returns. As shown in Figure 14, information such as the ship name, callsign, position, speed, heading, course, time the position was reported, and source of AIS information is displayed.

To zoom to the current vessel position, click the **Zoom**  button.

To have the map automatically pan to follow the vessel when a new AIS position is received, click the **Follow Vessel**  checkbox. Uncheck to stop following.


4.1.3.2 VESSEL EVENTS

The Vessel Events tab, shown in Figure 15, displays all triggered alert rules for the vessel, starting with the most recent at the top of the list. Click on an event to be taken to the location where the event was triggered.



FIGURE 15 - VESSEL EVENTS TAB

4.1.3.3 VESSEL TRACKER

The vessel tracker tab, shown in Figure 16, allows you to view the vessel's historic location and information for up to 7 days in the past. To see the vessel tracks, select the *Track Length* and click the **Track**  button and the vessel tracks will appear as yellow dots with a dashed line connecting them. Optionally, if you want to show in red where the vessel exceeded a speed, check the *Highlight Speed* checkbox and enter a speed.

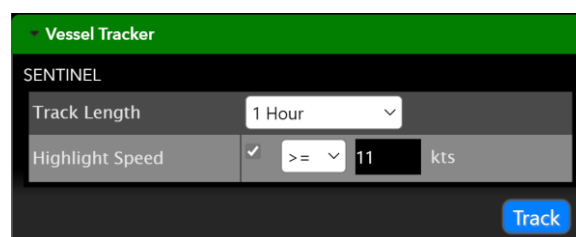


FIGURE 16 - VESSEL TRACKER TAB

Figure 17 shows an example vessel track with one location highlighted in red where a speed of 11 knots was exceeded. You can hover your mouse over a vessel track location to view a subset of the AIS data recorded at that time.

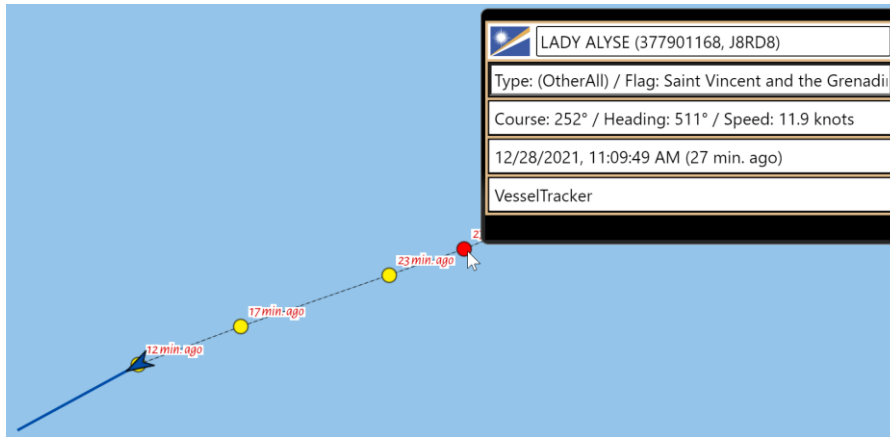



FIGURE 17 - EXAMPLE ONE HOUR VESSEL TRACK WITH HIGHLIGHTED SPEED AND AIS DATA RECORDED AT TIME IN PAST

4.1.3.4 VESSEL NOTES

The Vessel Notes tab allows you to save notes about a vessel. Any notes saved will be visible to anyone within the region (i.e. notes are shared to everyone). To create/edit a note, enter/edit the text, then press the **Save**  button.

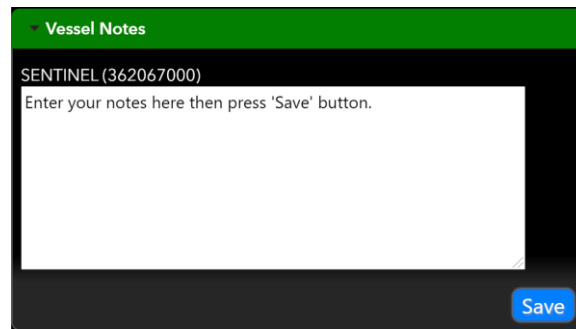




FIGURE 18 - VESSEL NOTES TAB

4.1.3.5 VESSEL VECTOR PROJECTION

The Vessel Vector Projection tab, shown in Figure 19, allows you to extend a vessel’s projected path out to between 1 and 120 minutes. To plot a projection, use the slider bar to choose the number of minutes, then click the **Plot**  button. The projections will appear as a dashed red line for all vessels within the current map view. To clear the projection, click the **Clear Map Graphics**  button.

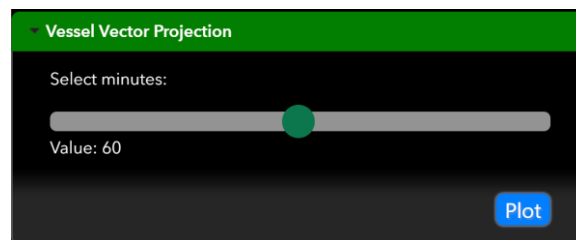


FIGURE 19 - VESSEL VECTOR PROJECTION TAB

Figure 20 shows an example of a ninety-minute vessel vector projection for the two vessels on the map screen.

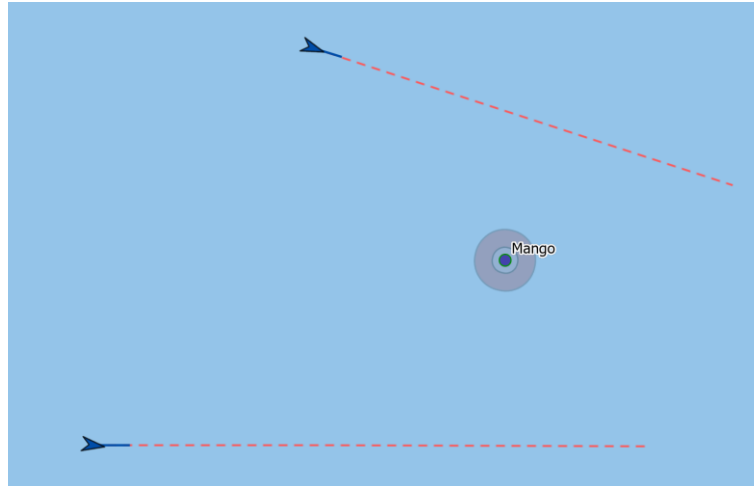


FIGURE 20 - NINETY-MINUTE VESSEL VECTOR PROJECTION

4.1.4 ZONE OF FOCUS

The Zone of Focus selector, shown in Figure 21, enables CPA/TCPA calculations between the selected vessels and the currently selected Point of Interest. The CPA/TCPA calculation is displayed on the *Vessel Information* tab in the *Vessel Info* panel.

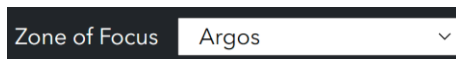


FIGURE 21 - ZONE OF FOCUS SELECTOR

To enable the Zone of Focus, select a Point of Interest from the Zone of Focus selector, then click on a vessel on the map. Look in the *Vessel Information* tab next to *CPA/TCPA* to see the calculated value (example shown in Figure 22).

If a CPA/TCPA cannot be calculated because the course of the vessel is not directed toward the selected Point of Interest, the CPA/TCPA calculation will be blank. If the selected vessel has a speed of 0 or no speed available, the CPA/TCPA value will state: *Speed is zero or missing or 102.3 (Invalid)*.

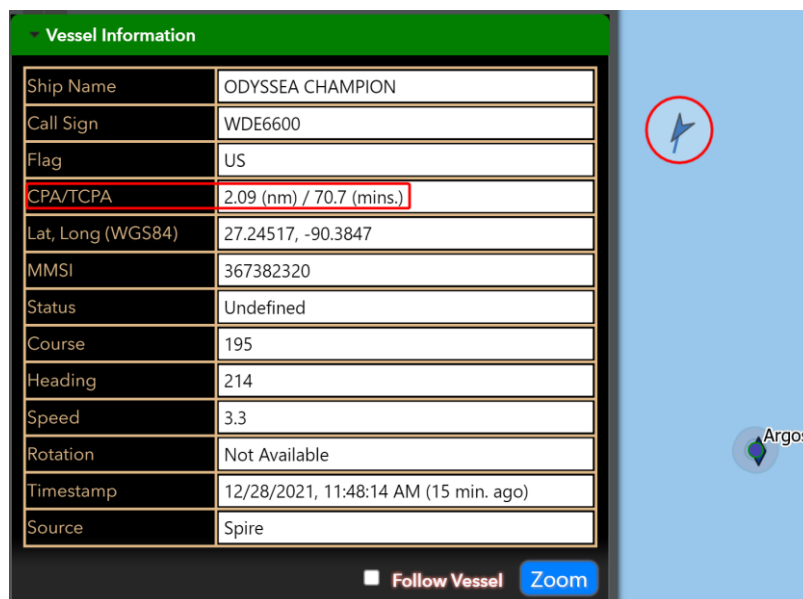


FIGURE 22 - ZONE OF FOCUS CPA/TCPA CALCULATION EXAMPLE

4.1.5 ZOOM TO

The Zoom To selector pans and zooms the map to the selected Point of Interest. Select a point of interest and the map will pan and zoom to the selection.

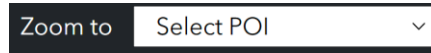


FIGURE 23 – ZOOM TO SELECTOR

4.1.6 MAP SCALE

The Map Scale represents the ratio between the distance on the map and the distance in the real world. The map scale changes as the map zooms in and out, as shown in Figure 24.

For precision distance measurements, consider using the Bearing and Distance mode.

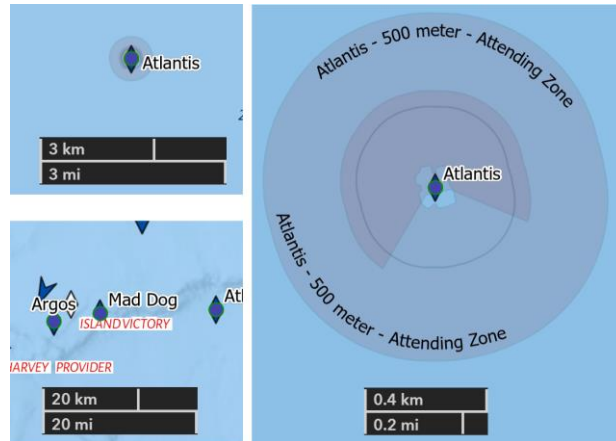


FIGURE 24 - MAP SCALE EXAMPLES

4.1.7 CURSOR COORDINATES AND COORDINATE CONVERSION

The Cursor Coordinates and Coordinate Conversion tool, shown in Figure 25, allows you to get the coordinates under your mouse cursor, convert those coordinates to a different representation, and enter a coordinate and zoom to that location.

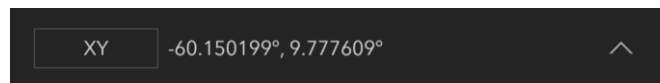


FIGURE 25 - CURSOR COORDINATE AND COORDINATE CONVERSION TOOL

To view the coordinate in a different representation, click the button to the left of the coordinates, shown in Figure 26, to see the other representations available.

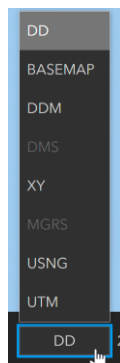


FIGURE 26 - COORDINATE CONVERSION SELECTION

To see multiple conversions at once (as shown in Figure 27), click the **Expand** button, then click the **Add Conversion** button. You can remove added conversions by mousing over a conversion and clicking the **Close** button.

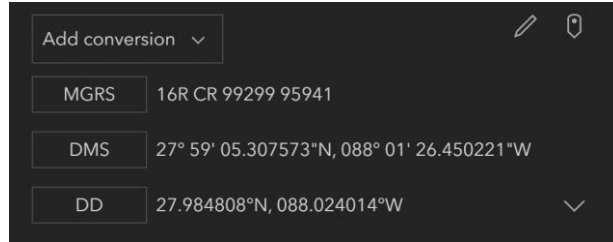


FIGURE 27 - EXPANDED COORDINATE CONVERSION TOOL

To input coordinates to see where they are on the map, click the **Input Coordinates** button to view the input coordinate dialog, shown in Figure 28. Next, choose the input format, then click **Convert**. Optionally, select *Go to location* to have the map pan to the entered coordinates.

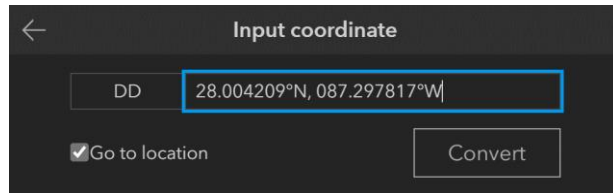


FIGURE 28 - INPUT COORDINATE DIALOG

To freeze the coordinates at a map location (as opposed to having it follow your mouse cursor), click the **Capture Mode** button and the coordinates will be set to where you clicked on the map. Click the **Capture Mode** button a second time to resume having the coordinates follow your cursor.

4.1.8 SEARCH

The Search bar, shown in Figure 29, allows you to find vessels by MMSI, IMO, ship name, and call sign.

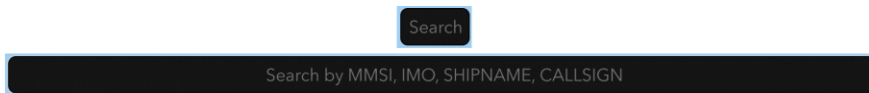


FIGURE 29 - SEARCH BAR - UNEXPANDED AND EXPANDED

To use the search bar, simply click inside the search bar to expand, and then type the values you would like to search with. Figure 30 shows a search for *Blue Thunder* that returns three vessels with that ship name. Click on the desired return to select and zoom the map to that vessel.

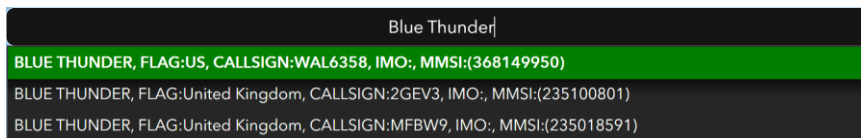


FIGURE 30 - EXAMPLE SEARCH FOR VESSELS NAMED BLUE THUNDER

4.1.9 SYSTEM AND MAP TOOLS

The System and Map Tools is a collection of other, less often used tools. Referencing Figure 31, the tools are, from left-to-right: Alerts, Clear Map Graphics, Fleet Manager, Settings, Health Check Dashboard, Contact, Send Feedback. The following sections will explain each tool in more detail.



FIGURE 31 - SYSTEM AND MAP TOOLS

4.1.9.1 ALERTS


Clicking the **Alerts**  button will open the Alerts Panel, shown in Figure 32 - Alerts Panel. This panel displays all alerts that have triggered alert rules that have been shared with your role.



FIGURE 32 - ALERTS PANEL

Each alert entry displays the following information (referring to the numbers in Figure 33 - Alert Details):

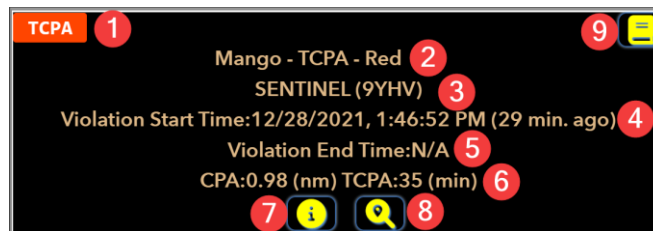


FIGURE 33 - ALERT DETAILS


Alert Rule Type: This is the orange badge in the upper-left corner (example : **TCPA**) that identifies the type of alert that was triggered. For a detailed explanation of the alert rules, refer to

1. Appendix B – Alert Rules.
2. **Alert Rule Name:** The name given to the alert rule when created by an Operator Admin.
3. **Ship Name and Callsign:** Ship name followed by callsign in parenthesis.
4. **Violation Start Time:** The time the alert was triggered.
5. **Violation End Time:** If the alert is no longer active (ex. vessel is no longer speeding), the time the alert stopped triggering will appear, otherwise this will be blank for currently active alerts.
6. **(optional) Rule Specific Information:** Depending on the alert rule, this will display more violation details, such as CPA/TCPA and speed.
7. **Open Vessel Info Pane:** Opens the *Vessel Info* pane for the vessel that triggered the alert.
8. **Zoom to Alert Location:** Zooms the map to the location where the alert was triggered.
9. **Activity Log:** Opens the Activity Log, shown in Figure 34 - Alert Activity Log, which shows the activity taken by users with the Watchstander designation.

Activity Log				
<input type="checkbox"/>	smre5a	Rick Smith	12/28/2021, 10:51:51 AM	Acknowledge
<input type="checkbox"/>	vag77z	Giri	12/27/2021, 2:32:08 PM	Acknowledge


FIGURE 34 - ALERT ACTIVITY LOG

4.1.9.2 CLEAR MAP GRAPHICS

The Clear Map Graphics  button clears the following items from the map:

- Bearing and Distance lines.
- Vessel Tracker positions and lines.
- Vessel Vector Projection lines.

4.1.9.3 FLEET MANAGER

The Fleet Manager  button opens the Fleet Manager window, shown in Figure 35, that displays a list of all vessels for all fleets shared with the role your account is assigned. The color of the text reflects the color of the vessel as rendered on the map. Click on an entry in the Fleet Manager to zoom to the vessel's current location.


Fleet Name	Ship Name	MMSI	IMO
TNT AMIC Whitelist	BYLGIA	244740210	9646314
TNT AMIC Whitelist	COLOSSUS	362065000	9190420
TNT AMIC Whitelist	DELTA COMMODORE	377901164	9410856
TNT AMIC Whitelist	DELTA SKIPPER	377901013	8967515
TNT AMIC Whitelist	DON SAVERIO	730151756	9693628
TNT AMIC Whitelist	HOMERUN P	377901130	9382358
TNT AMIC Whitelist	KNOCKOUT P	377901131	9382322
TNT AMIC Whitelist	NATIONALENERGYEXPLO	362174000	9689275
TNT AMIC Whitelist	NORTH SEA ATLANTIC	258955000	9665073
TNT AMIC Whitelist	OLYMPIC ORION	257786000	9617313
TNT AMIC Whitelist	SAFE CONCORDIA	565295000	8768127
TNT AMIC Whitelist	SENTRY	362069000	9576870
TNT AMIC Whitelist	VOS GORGEOUS	235103024	9680530

FIGURE 35 - FLEET MANAGER WINDOW AND SELECTED FLEET VESSEL COLORED TO MATCH

4.1.9.4 SETTINGS

Settings are coming in a future GAPCOM update.

4.1.9.5 HEALTH CHECK DASHBOARD

The Health Check Dashboard  opens the GAPCOM Health Check Dashboard, shown in Figure 36, in a new tab. This dashboard refreshes every minute and displays the current system status and tracks any outages that have occurred in the last 12 hours. The service definitions at the bottom of the dashboard explain what is monitored and how it relates to GAPCOM.

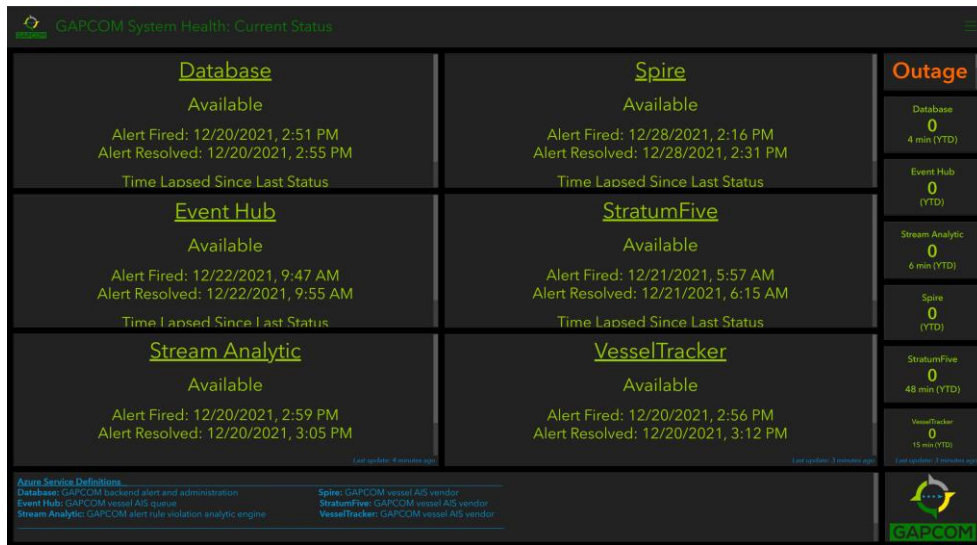


FIGURE 36 - GAPCOM HEALTH CHECK DASHBOARD

4.1.9.6 CONTACT

The Contact  button opens the Contact Us window, as shown in Figure 37. This window includes a link where you can email the GAPCOM Development Team for support.

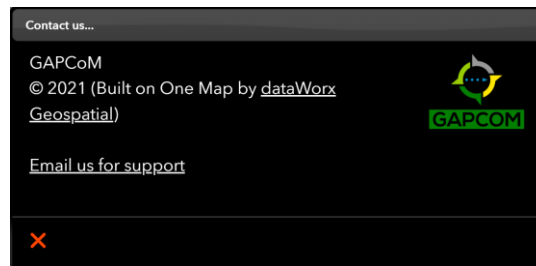




FIGURE 37 - CONTACT US WINDOW


4.1.9.7 SEND FEEDBACK

The Send Feedback  button opens a feedback form where you can submit improvement ideas as well as any bugs you have found. If you need immediate assistance, it is recommended to use the Contact button to email instead.

4.1.10 OPEN ADMINISTRATIVE INTERFACE

The Admin  button opens the Administrative Interface. If you do not have Operator Admin or Account Admin privileges, you will not see this button. Reference the Administrative Interface section of this guide for information.

4.1.11 VESSEL PLAYBACK

The Playback  button opens the Vessel Playback window, shown in Figure 38. Vessel Playback allows you to view historic vessel positions within the current map view. When you first open the Vessel Playback window, it will query the database to determine how much history is available within

the current map view and the populate the timeline. If you move the map, click the **Get Time Extents** button to get the time extents for the new map view.

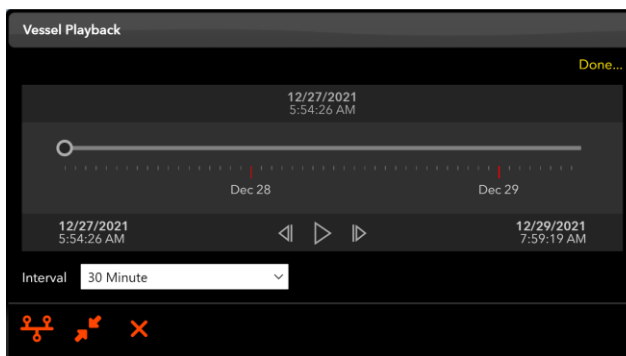


FIGURE 38 - VESSEL PLAYBACK WINDOW

With the time extents retrieved (designated by the yellow ‘Done...’), you can use the play, back, and forward buttons to traverse the history. You can also drag the handle on the timeline to scrub the playback. Each stop on the timeline shows all vessel positions retrieved for the *Interval*/selected. For example, in Figure 39, the interval is set to 30 minutes and the current playback time is 8:30AM. This means that all vessel positions between 8:30AM and 9:00AM will be displayed on the map.

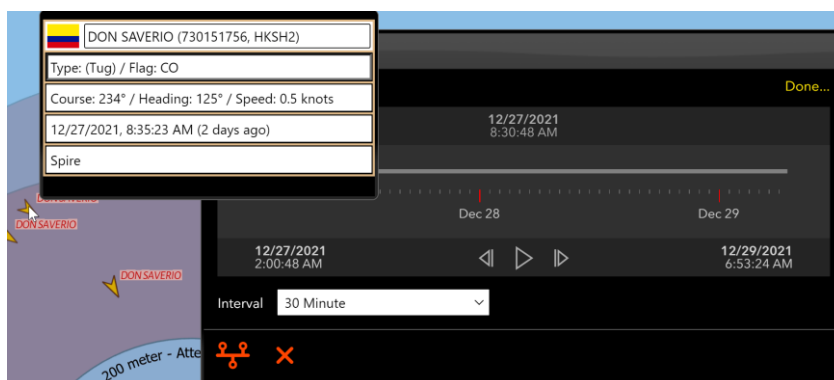


FIGURE 39 - VESSEL PLAYBACK SHOWING 30 MINUTE TIME SLICE

You can hover your mouse over a historic vessel location to get information about the vessel at that point in time.

4.1.12 OPEN REPORTING INTERFACE

The Report button opens the reporting interface, which is hosted in Power BI. You will only see the Report button if you have Reporting privileges assigned. Reference the Reporting Interface section of this guide for information.

4.2 ADMINISTRATIVE INTERFACE

The Administrative Interface is opened by clicking the Admin button on the Map Interface. This Interface is only available to accounts who have been assigned Operator Admin or Account Admin privileges.

Accounts that have Operator Admin privileges will be able to manage the following items:

- Points of Interest (POI)
- Zones
- Fleets
- Alert Rules

Accounts that have Account Admin privileges will be able to manage the following items:

- Roles
- Accounts

The sections below cover items Operator and Account Admins are able to manage.

4.2.1 POINTS OF INTEREST (POI)

The Point of Interests (POIs) tab, shown in Figure 40, is where you can create, update, and delete POIs. A POI represents a point of interest that should be shown on the map to all GAPCOM users. POIs are also used for the basis of creating Zones and Alert Rules.

A POI can be set to dynamic and associated with an AIS transmitter. In this case, the POI, and all associated Zones will move to the last received AIS position.

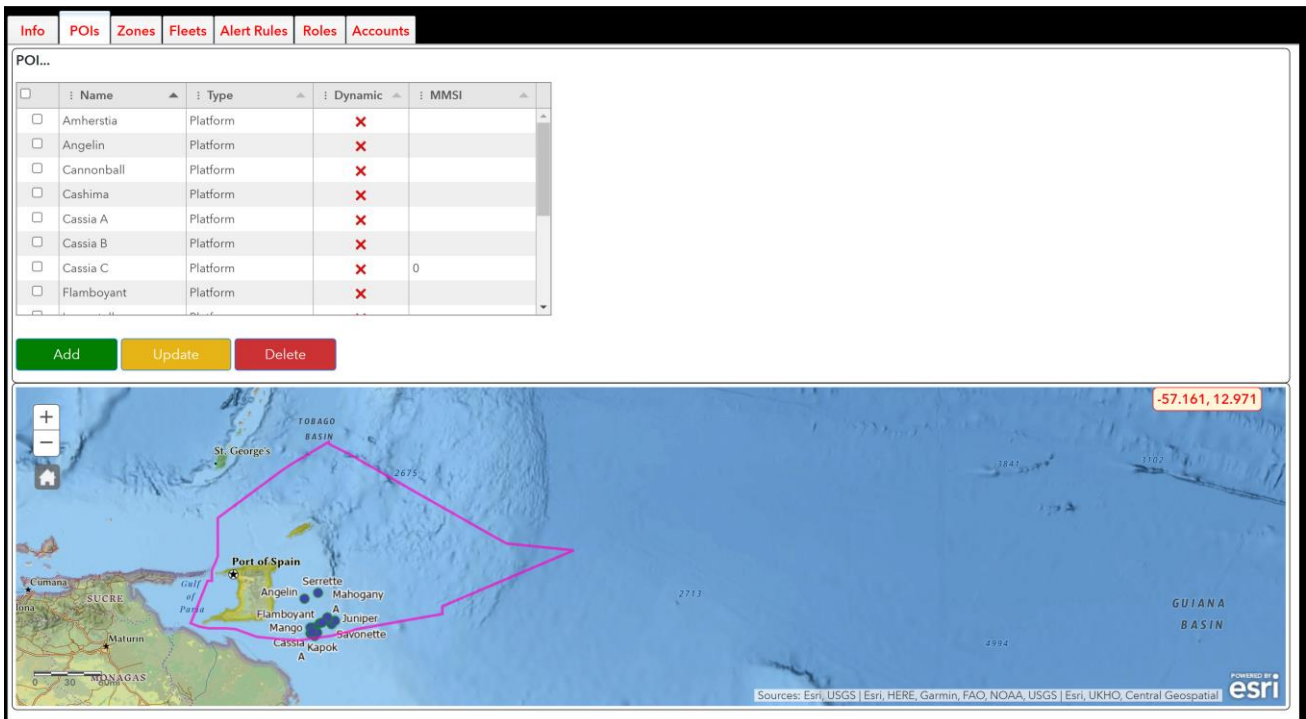


FIGURE 40 - POINTS OF INTERESTS (POIS) TAB OF THE ADMINISTRATIVE INTERFACE

4.2.1.1 ADD A NEW POI

To add a new POI, follow these steps, referencing Figure 41:

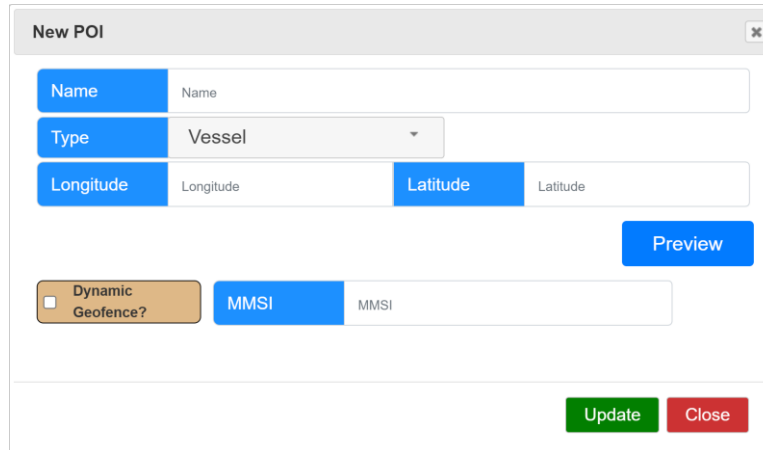


FIGURE 41 - NEW POI WINDOW

1. Click the **Add** button to open the *New POI* window.
2. In the **Name** field, enter the name you would like to assign the POI. This name must be unique within the region.
3. Choose the **Type** of POI from the dropdown list. Each type has a different color scheme on the map. If you need a new Type added, contact the GAPCOM Development Team.
4. Enter the **Latitude** and **Longitude** of the POI or click on the map below and it will populate these values from where you clicked. Values must be entered in decimal degree format.
 - a. Optionally, click the **Preview** button to have the map zoom to where the entered coordinates are located.
5. If the POI has AIS hardware and you wish to have the POI location and all associated Zones move to the most recently-received location:
 - a. Check the **Dynamic POI?** Checkbox.
 - b. Enter the MMSI for the POI to receive positions updates for.
6. Click the **Add** button.

4.2.1.2 ADD A POLYGON TO A POI

A POI can have both a point and polygon representation. The point is required while the polygon is optional. You can add a POI with a point yourself, however, if you need a polygon representation for a POI, contact the GAPCOM Development Team and they can assist with adding the polygon to the POI.

4.2.1.3 UPDATE A POI

To edit an existing POI, follow these steps referencing Figure 40 and Figure 42:

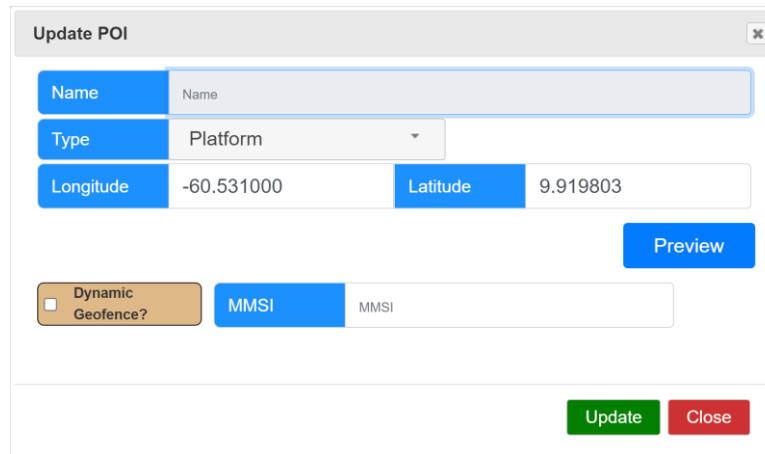


FIGURE 42 - UPDATE POI WINDOW

1. Select the POI you wish to edit from the POI list.
2. Click the **Update** button to open the *Update POI* window.
3. Change the values you wish to update.
 - a. Note: You can uncheck **Dynamic POI** but leave the MMSI value. The POI will stop moving, but the MMSI will still be saved in case you wish to re-enable dynamic POI.
4. With all values changed, click **Update** to save the changes.

4.2.1.4 DELETE A POI

Deleting a POI should be a rare occurrence due to how Zones, Alert Rules, Alerts, and Reports are dependant on a POI existing. A POI can be deleted under the following conditions:

1. All Select the POI you wish to edit from the POI list.
2. Click the **Delete** button to delete the POI.
 - a. If you receive an error message stating the operation cannot be completed, check for dependant Zones or Alert Rules. Contact the GAPCOM Development Team if you need assistance.
 - Zones associated with the POI have been deleted.
 - All Alert Rules associated with the POI have been deleted.

It is very likely that when trying to delete a POI, the operation will fail due to Zones and Alerts not being able to be deleted (as alerts and reports may be referencing them). The Delete function is only being included in the case where a newly created POI needs to be deleted (mistake), or a stand-alone/temporary POI with no associated Zones or Alert Rules needs to be deleted.

Follow these steps to delete a POI, referencing Figure 40:

3. Select the POI you wish to edit from the POI list.
4. Click the **Delete** button to delete the POI.
 - a. If you receive an error message stating the operation cannot be completed, check for dependant Zones or Alert Rules. Contact the GAPCOM Development Team if you need assistance.

4.2.2 ZONES

A Zone is a polygon (aka. Area) that is used by Alert Rules to determine when certain alerts trigger. A Zone can be created in two ways: Freehand, or Buffer a POI. When creating a Zone freehand, you can draw the polygon on the map to whichever shape you want. When creating a Zone using a POI Buffer, you choose the POI to buffer around, and the distance of the buffer.

Optionally, Zones can be related to a POI. If a Zone is related to a POI, then if the POI is set to Dynamic mode, then the Zone will move as the POI moves, so they always stay in the same location relative to each other.

The Zone tab, shown in Figure 43, displays all Zones and allows you to create, update, and delete Zones.

Zone Name	Related POI Name	Fill Color	Outline Color
<input type="checkbox"/> Amherstia - 10nm - Not Under Command	Amherstia		
<input type="checkbox"/> Amherstia - 200 meter - Attending Zone	Amherstia		
<input type="checkbox"/> Amherstia - 500 meter - Angle of Approach	Amherstia		
<input type="checkbox"/> Amherstia - 500 meter - Attending Zone	Amherstia		
<input type="checkbox"/> Amherstia - Exclusion Zone	Amherstia		
<input type="checkbox"/> Angelin - 10nm - Not Under Command	Angelin		
<input type="checkbox"/> Angelin - 200 meter - Attending Zone	Angelin		
<input type="checkbox"/> Angelin - 500 meter - Angle of Approach	Angelin		
<input type="checkbox"/> Angelin - 500 meter - Attending Zone	Angelin		

Configuration options on the right:

- Name: Zone Name
- Related POI: [Dropdown]
- Show on Map?
- Fill Color: [Color Picker]
- Outl. Color: [Color Picker]
- Outl. Width: 1
- Trans.: 55
- Clear

Map controls on the bottom right:

- Freehand | Buffer POI
- Polygon | Clear Polygon
- Add | Update | Delete

FIGURE 43 - ZONES TAB OF ADMINISTRATIVE INTERFACE

4.2.2.1 CREATE A ZONE

To add a new Zone, follow these steps, referencing Figure 43:

1. Click the **Clear** button to clear the current POI input boxes.
2. In the **Name** field, enter the name of the Zone. This must be unique in the region.
3. If you wish to relate this Zone to a Points of Interest (POI), select the POI from the **Related POI** dropdown.
4. Uncheck the **Show on Map?** checkbox if you do not want the zone to appear on the map. This may be useful for very large Zones that may dominate the map.
5. Set the **Fill Color** and **Outline Color** by clicking the colors and setting new values.
6. Set the **Outline Width** with a positive integer representing width in points.
7. Set the **Transparency** with a value between 0 and 100 with 0 being fully opaque and 100 being fully transparent.
8. Determine the way you want to create the Zone and follow the appropriate instructions below:
9. Freehand
 - a. Click the **Freehand** tab, then click the **Polygon** button.
 - b. Click on the map to start drawing the polygon. Everytime you click, you will add a vertex to the polygon. Double-click to complete the polygon. Click **Clear Polygon** if you would like to start over.
10. Buffer POI
 - a. Ensure that you have a **Related POI** selected; this will be the POI you are able to create a buffer around.
 - b. Click the **Buffer POI** tab.

- c. Select the **POI Geometry** you wish to buffer from. The dropdown list will show the geometry available for the related POI.
- d. Enter the **Buffer Min** and **Buffer Max** values in the units selected in **Buffer Units**.
 - i. If you want the buffer to be a donut, enter a **Buffer Min** value greater than 0. If you do not want a donut buffer (i.e. no hole in the middle), then enter a **Buffer Min** of 0.

11. Click **Add** to create the Zone.

4.2.2.2 UPDATE A ZONE

To edit an existing Zone, follow these steps referencing Figure 43 - Zones Tab of Administrative Interface:

1. Select the Zone you wish to update from the list of Zones.
2. Modify the values of the Zone.
3. Click the **Update** button to save the changes.

4.2.2.3 DELETE A ZONE

Deleting a Zone should be a rare occurrence due to how Alert Rules, Alerts, and Reports are dependant on a Zone existing. A Zone can be deleted under the following conditions:

- All Alert Rules associated with the Zone have been deleted.

It is very likely that when trying to delete a Zone, the operation will fail due to Alerts not being able to be deleted (as alerts and reports may be referencing them). The Delete function is only being included in the case where a newly created Zone needs to be deleted (mistake), or a stand-alone/temporary Zone with no associated Alert Rules needs to be deleted.

Follow these steps to delete a Zone, referencing Figure 43:

5. Select the Zone you wish to edit from the Zone list.
6. Click the **Delete** button to delete the Zone.
 - a. If you receive an error message stating the operation cannot be completed, check for dependant Alert Rules. Contact the GAPCOM Development Team if you need assistance.

4.2.3 FLEETS

The Fleets tab, shown in Figure 44 – Fleets Tab of Administrative Interface, is where you can create, update, delete and share Fleets. Fleets can be used to “whitelist” vessels from triggering alert rules and color-code vessels of a specific type or function.

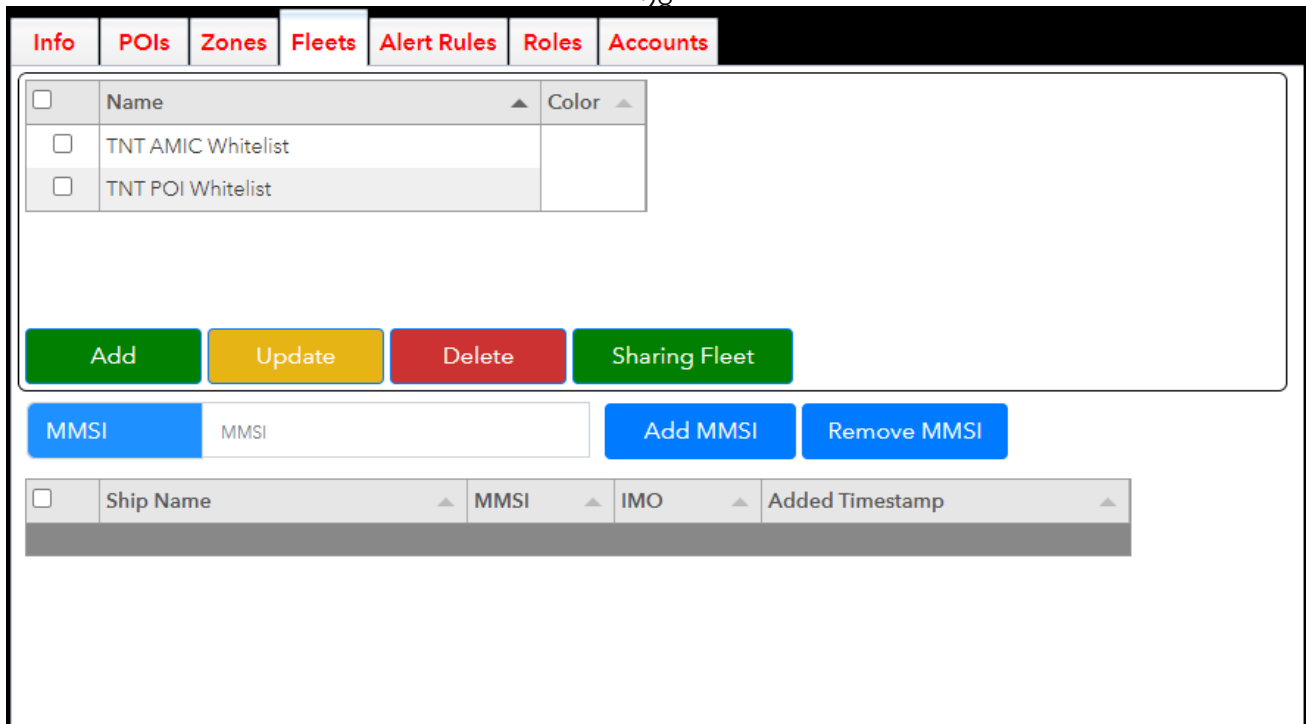


FIGURE 44 – FLEETS TAB OF ADMINISTRATIVE INTERFACE

4.2.3.1 ADD A NEW FLEET

To add a new Fleet, follow these steps, referencing Figure 45:

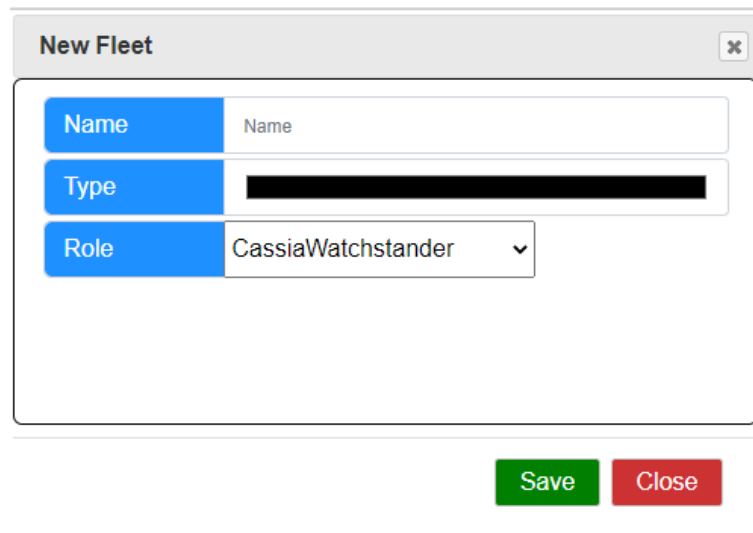


FIGURE 45 – NEW FLEET WINDOW

1. Click the **Add** button to open the *New Fleet* window.
2. In the **Name** field, enter the name you would like to assign the Fleet. This name must be unique within the region.
3. Choose the **Color** to assign the Fleet from the dropdown color palette.
4. Choose the **Role** to assign the Fleet from the dropdown list.
5. Click **Save** to create the new Fleet.

4.2.3.2 UPDATE A FLEET

To update an existing Fleet, follow these steps referencing Figure 44 and Figure 46:

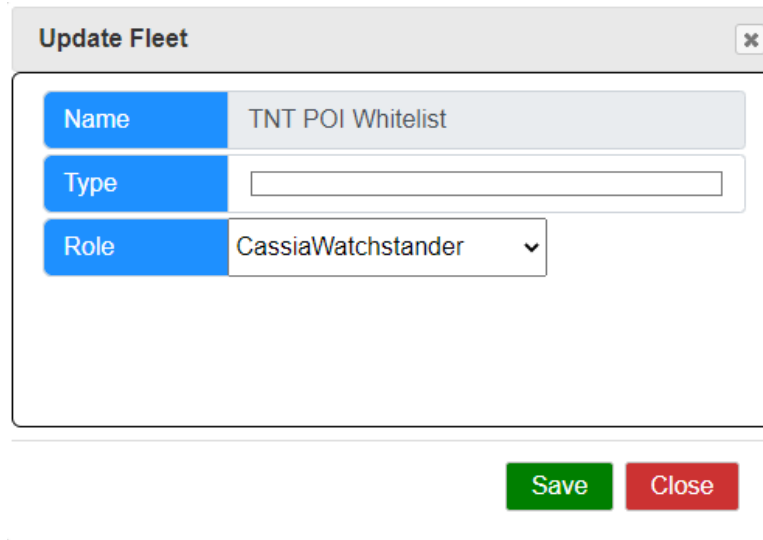


FIGURE 46 – UPDATE FLEET WINDOW

1. Select the Fleet you wish to edit from the Fleet list.
2. Click the **Update** button to open the *Update Fleet* window.
3. Change the values you wish to update.
4. With all values changed, click **Save** to save the changes.

4.2.3.3 DELETE A FLEET

To Delete an existing Fleet, follow these steps:

1. Select the Fleet you wish to delete from the Fleet list.
2. Click the **Delete** button to delete the Fleet.

4.2.3.4 SHARE A FLEET

1. Fleets are only shown to users when the Fleet has been shared with a Role of which they are a member. When a Fleet is first created, it is not shared with any roles and will not appear on the Watchstanders' screens. To share and unshare fleets to/from roles, refer to Figure 47 and follow these steps:

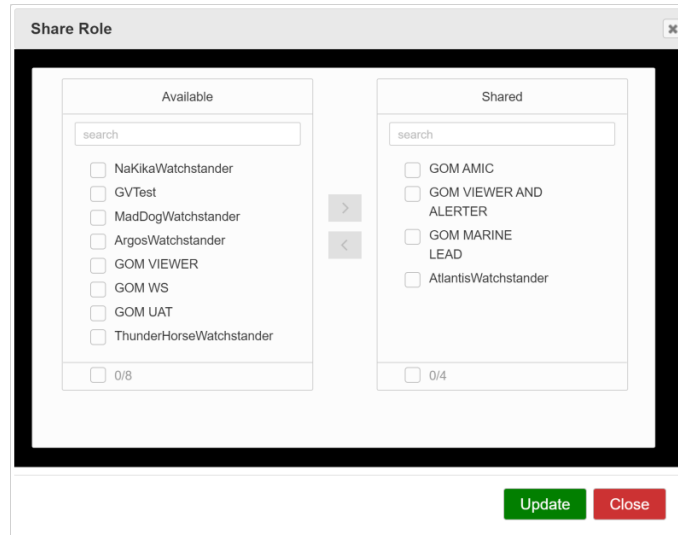


FIGURE 47- SHARING FLEET WINDOW

1. In the Fleet list, select the Fleet for which you want to share.
2. Click the **Sharing Fleet** button to open the *Sharing Fleet* window. The Roles the Fleet is already shared to appear on the right under the heading of *Shared*. The Roles that are available for sharing appear on the left under the heading of *Available*.
3. To share the Fleet to a Role, select the Role in the *Available* side, and click the **Right Arrow** button.
4. To unshare the Fleet from a Role, select the Role in the *Shared* side, and click the **Left Arrow** button.
5. Click **Update** to save.

4.2.3.5 ADD/REMOVE A VESSEL FROM A FLEET

Fleets will not contain vessels until until they have been added to a fleet. To add vessels to a fleet follow these steps referencing Figure 44 and Figure 48.



MMSI		MMSI			Add MMSI	Remove MMSI
<input type="checkbox"/>	Ship Name	MMSI	IMO	Added Timestamp		
<input type="checkbox"/>	ANGELIN	362221000	1	12/23/2021, 10:48:35 AM		
<input type="checkbox"/>		362725472		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	MAHOGANY A	993621842		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	MAHOGANY B	993621841		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>		990030020		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	SAVONETTE	993621822		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	CASHIMA	993621823		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	MANGO	993621828		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>		993621829		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>		993621830		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	AMHERSTIA	993621837		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	CASSIA A	993629071		12/23/2021, 10:48:35 AM		
<input type="checkbox"/>	CASSIA C	362276000		12/23/2021, 10:48:35 AM		

FIGURE 48 – ADD/REMOVE VESSELS WINDOW

1. In the Fleet list, select the Fleet for which you want to add/remove vessels.
 - a. If the select fleet has existing vessels, a list of the vessels in the fleet will be generated.

2. To remove an existing vessel(s) from the selected fleet, select the vessel(s) you wish to remove and click the **Remove MMSI** button.
3. To add a new vessel to the selected fleet, begin typing the vessel's MMSI number into the MMSI box and select the applicable vessel from the list of vessels that is generated as you continue to type in the MMSI then click the **Add MMSI** button to add the new vessel.

4.2.4 **ALERT RULES**

2. Alert Rules are set rules of behavior that a vessel can match to trigger an alert. Depending on which Alert Rule is created, different parameters will be required. Many Alert Rules require the selection of a Zone or POI. After an Alert Rule is created, it needs to be shared to Click the **Manage Whitelist** button to open the *Manage Whitelist* window. The Fleets that are already whitelisted for the Alert Rule appear on the right under the heading of *Whitelisted*. The Fleets that are available for whitelisting appear on the left under the heading of *Available*.
3. To set a Fleet to whitelisted, select the Fleet in the *Available* side, and click the **Right Arrow**  button.
4. To remove a Fleet from a whitelist, select the Fleet in the *Whitelisted* side, and click the **Left Arrow**  button.
5. Click **Update** to save.
6. Roles so the alerts and notifications can be shown to the appropriate users. Optionally, a Fleets can be whitelisted for an Alert Rule which means that no vessels in that fleet will trigger the Alert Rule.

There are currently six Alert Rule Types in GAPCOM:

- **Entry** – Alerts when a vessel enters a Zones.
- **Exit** – Alerts when a vessel leaves a Zones.
- **CPA/TCPA** – Alerts when a vessel's closest point of approach is between a set minimum and maximum distance *and* the time to the closest point of approach is less than a maximum time.
- **AoA (Angle of Approach)** – Alerts when a vessel is within a zone and the vessel's angle of approach intersects with the polygon of a POI.
- **Speed Violation** – Alerts when a vessel is within a zone for a minimum amount of time and their speed exceeds a speed limit.
- **NUC (Not Under Command)** – Alerts when a vessel is within a zone and its AIS status is broadcasting 'Not Under Command'.

For a detailed explanation of the logic behind Alert Rules, refer to

Appendix B – Alert Rules.

The Alert Rules tab, shown in Figure 49, lists all Alert Rules and allows you to create, update, delete, share, and whitelist Fleets.

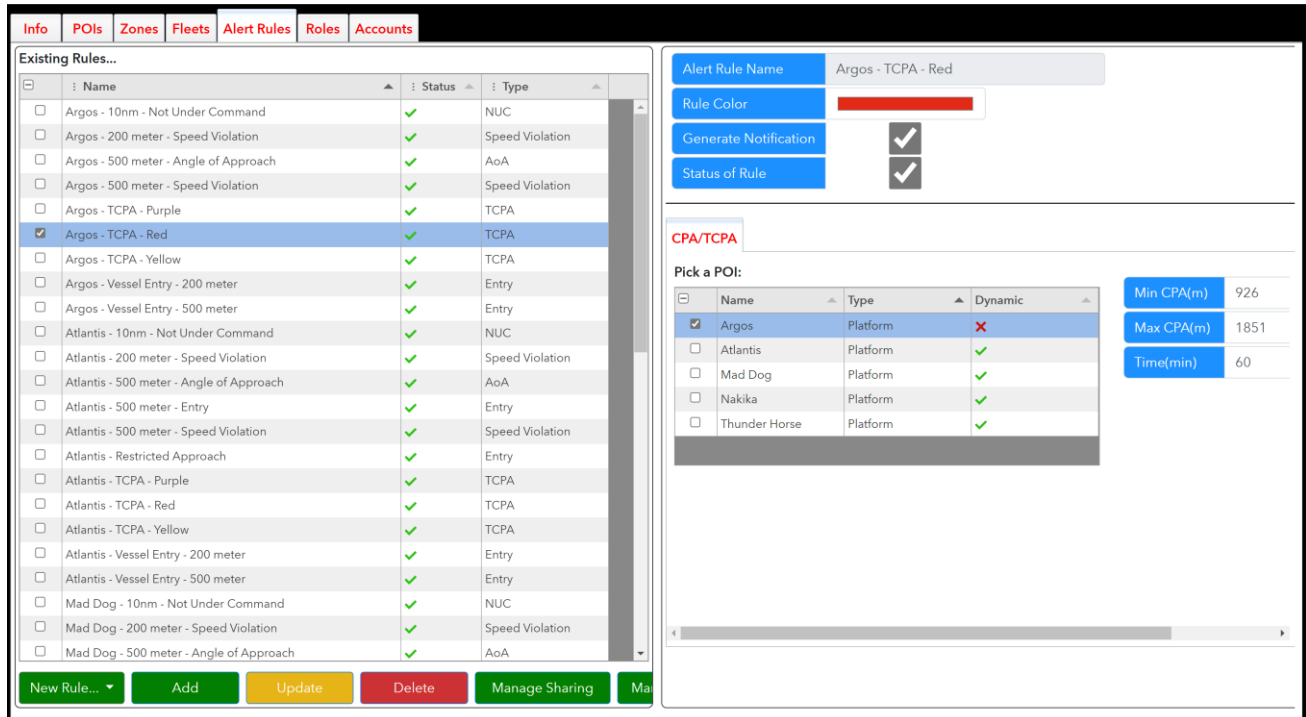


FIGURE 49 - ALERT RULES TAB OF ADMINISTRATIVE INTERFACE WITH CPA/TCPA ALERT RULE TYPE SELECTED

4.2.4.1 CREATE AN ALERT RULE

To create an alert rule, reference Figure 49 and follow these steps:

1. Click the **New Rule** button followed by the Alert Rule Type you wish to create.
2. This will change the right-half of the screen and show the parameters required to create the selected Alert Rule Type.
3. In the **Name** field, enter the name of the rule. This must be unique within the region.
4. Choose the **Rule Color** by clicking on the color and selecting the color you wish to use.
5. Check **Generate Notifications** if you want this alert rule to create popups to Watchstanders when triggered. If you uncheck this box, the alert will still trigger and be stored in the database for reporting purposes, but will not popup.
6. Check **Status of Rule** if you want the rule to be activated. Uncheck if you don't want to delete the rule, but want to turn it off and keep it from triggering.
7. Depending on which Alert Rule Type you chose, the parameters below will change to match what is required. Complete the parameters.
8. Click the **Add** button to save the new Alert Rule.

4.2.4.2 UPDATE AN ALERT RULE

To edit an existing Violation Alert Rule, follow these steps referencing Figure 49:

1. Select the Alert Rule you wish to update from the Alert Rule list, the parameters for the rule will populate on the right-half of the screen.
2. Update the parameters you wish to modify.
3. Click the **Update** button to save the changes.

4.2.4.3 DELETE AN ALERT RULE

Deleting an Alert Rule should be a rare occurrence due to how Alerts, and Reports are dependant on an Alert Rule existing. Instead of deleting the Alert Rule, it is preferable that you updatet the rule’s status to disabled (uncheck **Status of Rule**). However, if you still need to delete the Alert Rule, it can be deleted under the following conditions:

- All Alerts associated with the Alert Rule have been deleted. Only the GAPCOM Development Team can delete alerts.

It is very likely that when trying to delete an Alert Rule, the operation will fail due to Alerts not being able to be deleted (as alerts and reports may be referencing them). The Delete function is only being included in the case where a newly created Alert Rule needs to be deleted (mistake).

Follow these steps to delete an Alert Rule, referencing Figure 49:

1. Select the Alert Rule you wish to edit from the Alert Rule list.
2. Click the **Delete** button to delete the Alert Rule.

4.2.4.4 MANAGE SHARING FOR AN ALERT RULE

Alerts are only shown to users when the Alert Rule has been shared with Roles of which they are a member. When an Alert Rule is first created, it is not shared with any roles, so while the alert will be triggered and saved for reporting, it will not appear as a notification on the Watchstanders’ screens. To share and unshare alert rules to/from roles, refer to Figure 50 and follow these steps:

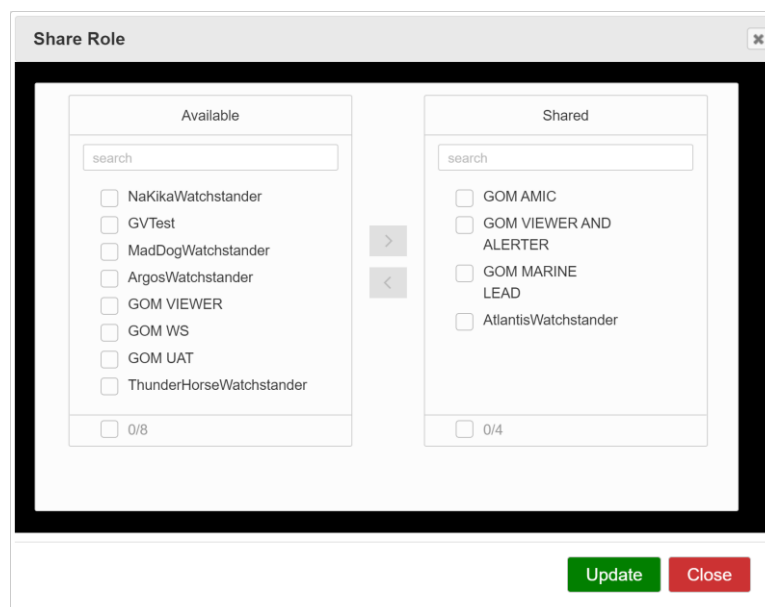




FIGURE 50 - MANAGE SHARING FOR ALERT RULES WINDOW

6. In the Alert Rules list, select the Alert Rule for which you want to manage sharing.
7. Click the **Manage Sharing** button to open the *Share Role* window. The Roles the Alert Rule are already shared to appear on the right under the heading of *Shared*. These Roles that are available for sharing appear on the left under the heading of *Available*.
8. To share the Alert Rule to a Role, select the Role in the *Available* side, and click the **Right Arrow**  button.
9. To unshare the Alert Rule from a Role, select the Role in the *Shared* side, and click the **Left Arrow**  button.
10. Click **Update** to save.

4.2.4.5 WHITELIST A FLEET FOR AN ALERT RULE

All vessels in a Fleets that are set as whitelisted for an Alert Rule will not trigger the Alert Rule. To manage which fleets are whitelisted for an Alert Rule, refer to Figure 49 and follow these steps:

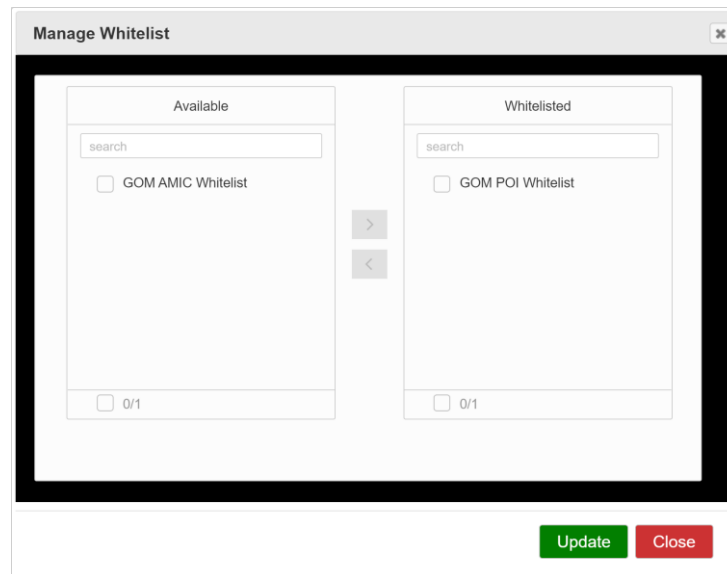




FIGURE 51 - MANAGE WHITELIST WINDOW

7. In the Alert Rules list, select the Alert Rule for which you want to manage sharing.
8. Click the **Manage Whitelist** button to open the *Manage Whitelist* window. The Fleets that are already whitelisted for the Alert Rule appear on the right under the heading of *Whitelisted*. The Fleets that are available for whitelisting appear on the left under the heading of *Available*.
9. To set a Fleet to whitelisted, select the Fleet in the *Available* side, and click the **Right Arrow**  button.
10. To remove a Fleet from a whitelist, select the Fleet in the *Whitelisted* side, and click the **Left Arrow**  button.
11. Click **Update** to save.

4.2.5 ROLES

A Role has two purposes: to assign privileges to accounts and for sharing Fleets and Alert Rules. There are seven privileges that are additive in nature (i.e. one role can have several privileges assigned). Roles are assigned to accounts in the Accounts tab of the Administrative Interface but are displayed when a role is selected for reference.

The GAPCOM privileges are explained below:

- **Viewer** – This is when no other privileges are assigned. The user is able to log into GAPCOM but cannot perform any actions allowed by the other privileges.
- **View Playback** – Allows the user to use the Vessel Playback tool.
- **Run Report** – Allows the user to use the Reporting Interface.
- **Receive Alert** – Allows the user to view alerts and use the Alerts tool, but does not receive popup notifications.
- **Watch Stander** – User receives popups for alerts, can view alerts, and can use the Alerts tool.
- **Operator Admin** – Allows the user to access the Administrative Interface and Points of Interest (POI), Zones, Fleets, and Alert Rules tabs.
- **Account Admin** - Allows the user to access the Administrative Interface and Roles and Accounts tabs.

The Roles tab, shown in Figure 52, displays all Roles and allows you to create, update, and delete Roles.

Name	Watch Stander	Account Admin	Operator Admin	Receive Alert	Run Report	View Playback
<input type="checkbox"/> TNT ALERTER	✗	✗	✗	✓	✓	✓
<input type="checkbox"/> TNT AMIC	✓	✓	✓	✓	✓	✓
<input checked="" type="checkbox"/> TNT MARINE LEAD	✓	✓	✓	✓	✓	✓
<input type="checkbox"/> TNT VIEWER	✗	✗	✗	✗	✗	✗
<input type="checkbox"/> TNT Viewer and Reporter	✗	✗	✗	✗	✓	✓
<input type="checkbox"/> TNT WS	✓	✗	✓	✓	✓	✓
<input type="checkbox"/> TT WatchStander	✓	✓	✓	✓	✓	✓

Username	Status	Full Name
<input type="checkbox"/> anrspn	✓	Ryan Anderson
<input type="checkbox"/> bjsqhu	✓	Steven Bjerring
<input type="checkbox"/> brblbl	✓	Bradley Brown
<input type="checkbox"/> cam785	✓	Mark Carrington
<input type="checkbox"/> kuser0	✓	Robert Kusek
<input type="checkbox"/> mereg1	✓	Gareth Meredith
<input type="checkbox"/> piero0	✓	Oluwa Pierre
<input type="checkbox"/> polkd1	✓	Daniel Polk
<input type="checkbox"/> smre5a	✓	Rick Smith
<input type="checkbox"/> talmw1	✓	Lorri Taylor
<input type="checkbox"/> vag77z	✓	Giri

FIGURE 52 - ROLES TAB OF ADMINISTRATIVE INTERFACE

4.2.5.1 CREATE A ROLE

To create a Role follow these steps referencing Figure 52 and Figure 53:

FIGURE 53 - NEW ROLE WINDOW

1. Click **Add** to open the *New Role* window.
2. In the **Name** field, enter the name of the Role. This must be unique within the region.
3. Check the boxes for the privileges that you wish to assign to the role.
4. Click **Save** to create the role.

4.2.5.2 UPDATE A ROLE

To edit an existing Role, follow these steps referencing Figure 52 and Figure 54:

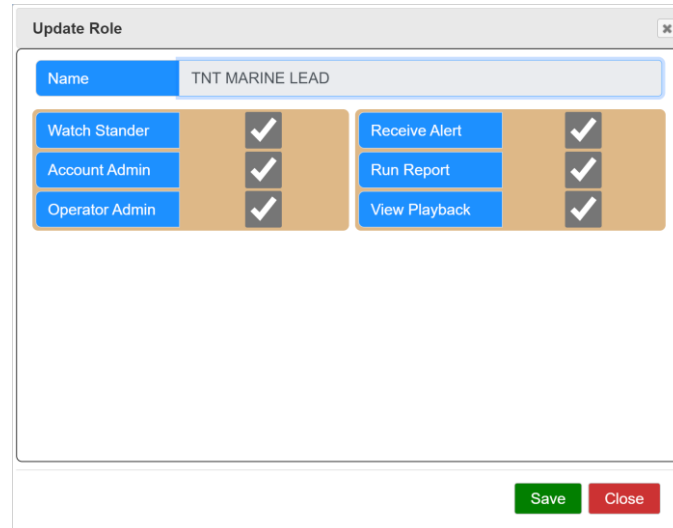


FIGURE 54 - UPDATE ROLE WINDOW

1. Select the Role you wish to update from the Role list.
2. Click the **Update** button to open the *Update Role* window.
3. Change the values you wish to update.
4. Click **Save** to update the Role.

4.2.5.3 DELETE A ROLE

A Role can be deleted under the following conditions:

- All Accounts assigned to the Role have been unassigned from the Role.

To delete a Role, follow these steps referencing **Error! Reference source not found.52**:

1. Select the Role you wish to delete from the Role list.
2. Click the **Delete** button.
 - a. If you receive an error stating the operation cannot be completed, ensure there are no accounts assigned to the Role.

4.2.6 ACCOUNTS

GAPCOM accounts rely on an underlying One Map account being created on the hosting One Map server: <https://onemap-critical.bpglobal.com/portal/home/>

There are two types of One Map Accounts: *built-in* and *bp Active Directory (NTID)*. Built-in accounts are only for shared watchstanding stations and contractors that do not have bp NTIDs. NTID accounts should not be used for watchstanding.

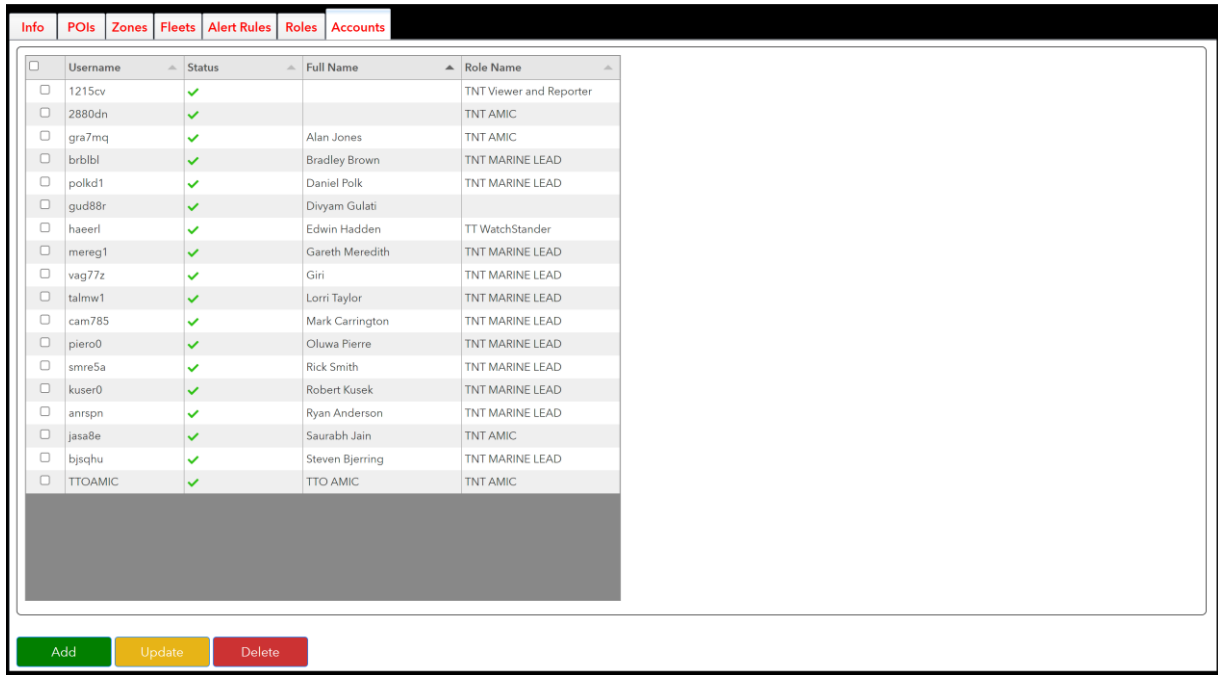
Here are the ways to create the two account types:

- **Built-in Accounts:** Only the GAPCOM Development Team can create built-in accounts, so contact them to have a new account made.
- **bp NTID:** Have the user visit <https://onemap-critical.bpglobal.com/portal/home/> once in a web browser and have them log in using their bp NTID following the instructions in the How to Access GAPCOM section of this guide. Upon their first login, their One Map account will be automatically created.

Once a One Map account has been created, the account can be added to GAPCOM. Once an account is added to GAPCOM, it can never be deleted, but it can have all of its privileges removed and login

revoked. The reason the account cannot be removed is for historic reporting purposes being tied to actions taken by accounts.

The Accounts tab, shown in Figure 55, lists all GAPCOM accounts and allows you to Add, Update, and Delete an account.



Username	Status	Full Name	Role Name
1215cv	✓		TNT Viewer and Reporter
2880dn	✓		TNT AMIC
gra7mq	✓	Alan Jones	TNT AMIC
brbibl	✓	Bradley Brown	TNT MARINE LEAD
polkd1	✓	Daniel Polk	TNT MARINE LEAD
gud88r	✓	Divyam Gulati	
haeerl	✓	Edwin Hadden	TT WatchStander
mereg1	✓	Gareth Meredith	TNT MARINE LEAD
vag77z	✓	Giri	TNT MARINE LEAD
talmw1	✓	Lorri Taylor	TNT MARINE LEAD
cam785	✓	Mark Carrington	TNT MARINE LEAD
piero0	✓	Oluwa Pierre	TNT MARINE LEAD
smre5a	✓	Rick Smith	TNT MARINE LEAD
kuser0	✓	Robert Kusek	TNT MARINE LEAD
anrspn	✓	Ryan Anderson	TNT MARINE LEAD
jasa8e	✓	Saurabh Jain	TNT AMIC
bjsqhu	✓	Steven Bjerring	TNT MARINE LEAD
TTOAMIC	✓	TTO AMIC	TNT AMIC

FIGURE 55 - ACCOUNTS TAB IN ADMINISTRATIVE INTERFACE

4.2.6.1 CREATE A GAPCOM ACCOUNT

To create a GAPCOM account reference Figure 56 and follow these steps:

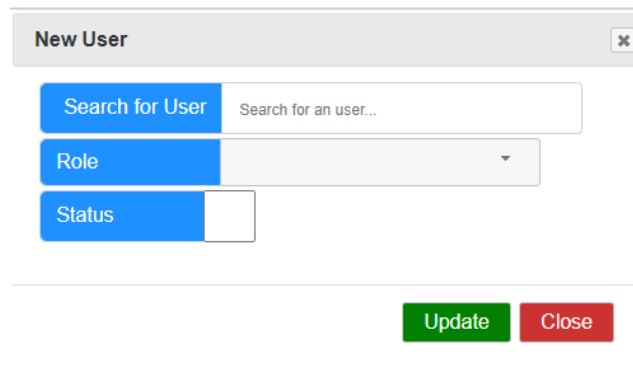


FIGURE 56 - NEW USER WINDOW

1. Click the **Add** button to open the *New User* window.
2. In the **Search for User** text field, enter a search term to find the user’s One Map account. You can search using first name, last name, and account name (NTID or built-in account name). As you type, search results will appear. Select the account you wish to add.
 - a. If you do not see the account, it is likely they do not yet have a One Map account. Follow the guidance at the beginning of this Accounts section to have a One Map account created.
3. Set the Roles you wish to assign the user.
4. Set the **Status** of the user. If unchecked, the account will be created, but will be disabled and unable to log into GAPCOM.

5. Click **Update** to create the GAPCOM account. The user will now be able to log into GAPCOM (unless account disabled).

4.2.6.2 UPDATE A GAPCOM ACCOUNT

To edit an existing Account, follow these steps referencing Figure 55 and Figure 57.

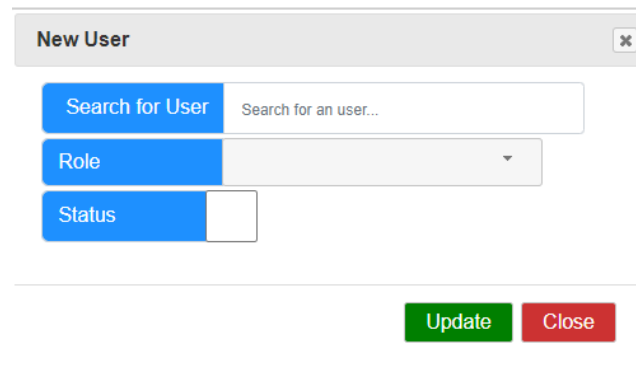


FIGURE 57 - UPDATE USER WINDOW

1. Select the Account you wish to edit from the Account List then click the **Update** button.
2. Change either the **Role** or **Status** of the account.
3. Click **Update** to save the changes.

4.2.6.3 DELETE A GAPCOM ACCOUNT

You cannot fully delete a GAPCOM account, however, you can remove all privileges for the account by removing the role. The delete account action simply removes the role from the account which will prevent them from logging into GAPCOM.

To delete a GAPCOM account reference Figure 55Error! Reference source not found. and follow t hese steps:

1. Select the account to delete from the Account list.
2. Click the **Delete** button.

4.3 REPORTING INTERFACE

GAPCOM’s reporting interface is powered by Power BI. A Power BI Pro license (E5) is required to access the interface from a non-bp computer. Only users that are a member of a role that has been granted access to the reporting interface will be able to view and utilize the reporting functionality.

4.3.1.1 REPORT PAGES

The reporting interface consists of two pages.

1. TCPA Alerts by Platform and Alert Threshold
2. Alerts By Type

The TCPA Alerts by Platform and Alert Threshold page, see Figure 58, displays closest point of approach (CPA) and time to closest point of approach (TCPA), collectively referred to as TCPA, alerts triggered for each platform. Alerts are classified by their threshold. The Alerts By Type page, see

Figure 59, contains all alerts for all of GOM and TTO. See Appendix B – Alert Rules for more information on alerts, alert thresholds and alert violations.

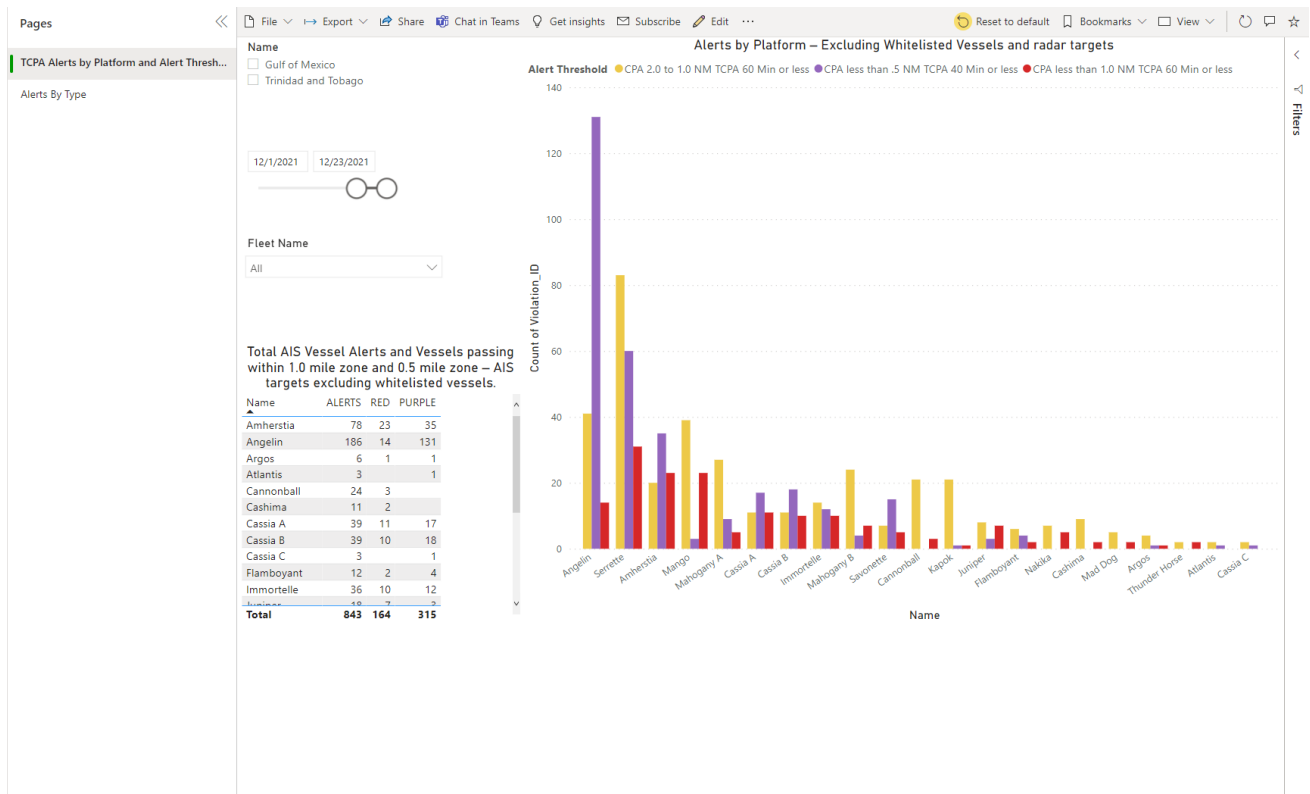


FIGURE 58– TCPA ALERTS BY PLATFORM AND ALERT THRESHOLD

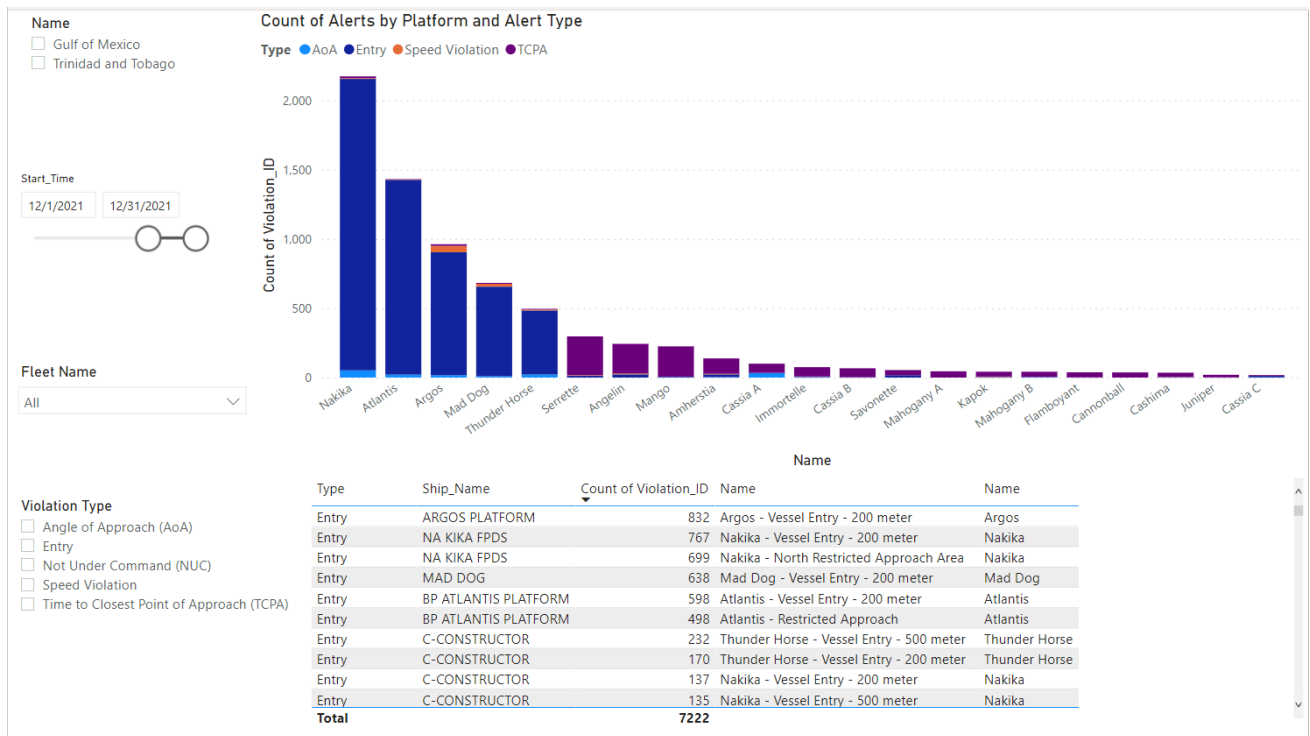


FIGURE 59 – ALETS BY TYPE

4.3.1.2 REPORT FILTERS

The reporting interface has several built-in filters to assist users with paring down report content. To apply filters to either reporting page reference Figure 58 and Figure 59 and follow these steps:

1. Select Gulf of Mexico or Trinidad and Tobago under Name to filter alerts by region.
2. Adjust the time slider under Start Time limit returned alerts to a date range.
3. Select a fleet from the Fleet Name dropdown menu to limit alerts to a specific fleet.
4. Select a platform from the TCPA Alert Table, see Figure 58, to limit TCPA alerts to a specific platform
5. Select an alert(s), see Figure Figure 59, to limit returned alerts to a specific alert type.

5 GLOSSARY OF TERMS

AIS – Automatic Identification System is a tracking system installed on marine vessels that transmit information such as identification, speed, heading, course, destination, etc. GAPCOM uses these AIS feeds to display vessels and monitor for vessels that trigger alert rules.

Alert – A recorded trigger of an alert rule against a vessel at a specific time and location.

Alert Rule – A set of condition that define when an alert is triggered based on the position and/or behavior of a vessel.

Operator Admin – A role privilege that allows a user to create, edit, and delete Points of Interest, Zones, Fleets, Whitelists, and Alert Rules.

Point of Interest (POI) – A vessel, platform, buoy, or other item of interest that is at a known location. If the POI is set to Dynamic, then the POI, and all associated Zones, will move to the most recently-received AIS position.

Watchstander – A designation given to a Role. Watchstanders are shown alerts and their actions on those alerts are recorded in the Alert Activity Log.

Zone – An area (i.e. polygon) that alert rules can use to determine if a vessel is inside or outside the zone.

6 **APPENDIX A – VESSEL SYMBOLS**

6.1 **VESSEL UNDERWAY**



A vessel shall be displayed as an arrow if all the following statements are true:

- Value in *SPEED* column is greater than 0
- Value in *HEADING* column is not equal to 511 OR *HEADING* is 511 and value in *COURSE* column is between 0 and 359, inclusive.
- Value in *STATUS* field does not include the values 'moored', 'at anchor', or 'aground'.

6.2 **VESSEL STATIONARY**



A vessel shall be displayed as a diamond if any of the following statements are true:

- Value in *SPEED* column is equal to 0.
- Value in *STATUS* column includes the value 'moored', 'at anchor', or 'aground'.
- Value in *HEADING* column equals 511 and value in *COURSE* field is greater than 359.

6.3 **COLOR**

Default vessel color: #004DA8 (blue).

If *Color* column contains a color hex value, use that instead. This color, if available, means that the vessels is on a Fleet for that user.

6.4 **ROTATION**

Vessels shall be rotated based on the value in the *HEADING* column if the heading is between 0 and 359, inclusive. If the *HEADING* is greater than 359 and the *COURSE* is greater than 0, then the vessel shall be rotated based on the value in the *COURSE* column. If neither of the two above cases are valid, then the vessel shall be displayed as a diamond.

6.5 **TRANSPARENCY**

If a vessel's value in the *TIMESTAMP* field is more than one hour old, the vessel shall have a transparency of 30%, all other vessels shall be at 0% transparency.

6.6 **COURSE LINE**

6.6.1 ***DIRECTION***

The course line shall be drawn using the value in the *COURSE* column if the course value is less than 360, otherwise the course line shall be drawn using the value in the *HEADING* column is between 0 and 359, inclusive. If neither value are valid, no course line shall be drawn.

6.6.2 ***LENGTH***

If the value of the *SPEED* column is greater than 0, the course line length shall represent the ground the vessel will cover within the next 6 minutes following the Direction determined above.

7 APPENDIX B – ALERT RULES

7.1 OVERVIEW

The Global Attending and Passing Collision Monitoring (GAPCOM) platform processes vessels' *automatic identification system* (AIS) and radar returns to identify passing and attending vessels and evaluate them against user defined alert rules. Alerts are generated when vessels violate a given alert rule. The alert rule violations are stored in the GAPCOM database. This database serves as the authoritative repository for AMIC reporting.

7.2 ALERT PROCESS

GAPCOM utilizes user defined rules (alert-rule) to govern alerts. Alerts are generated in the platform when AIS conditions meet the parameter(s) of an alert-rule. There are currently six GAPCOM alerts: *zone entry*, *zone exit*, *speed*, *angle of approach* (AoA), *closest point of approach* and *time to closest point of approach* (collectively as TCPA), and *not under command* (NUC).

Alerts are associated to violations in the GAPCOM backend database. Violations trigger *client-side web map pop-up alerts* (client-alerts). Some alerts instantly trigger a violation (e.g., 200m/500m entry alert) while others remain in the alert table until a violation occurs (e.g., 200m/500m speed violation) at which time a client-alert will trigger. The rule-set governing client-alerts are defined below.

7.3 CLIENT-ALERT DEFINITIONS:

1. **Entry** – an entry client-alert is triggered when a vessel *enters* into a user defined zone (e.g. Angelin - 500 meter - Attending Zone) associated to an entry alert-rule. The Entry alert-rule type immediately triggers a client-alert. Entry client-alerts for this alert-rule type are generated on the first instance only. No further client-alerts are generated for a vessel unless it leaves then re-enters the zone.
2. **Exit** – an exit alert is triggered when a vessel *exits* a user defined zone associated to an entry alert-rule. The client-alert for this alert-rule type is generated on the first instance only. No further client-alerts are generated for a vessel unless it re-enters the zone then exits again.
3. **Speed** – a speed violation client-alert is triggered when a vessel has entered a user defined zone associated to a speed violation alert-rule and remains in the zone for the user-defined *minimum time in zone*; has an AIS reported speed greater than the user defined *maximum speed*; and has an AIS reported ROT value of *null* or *0*. A speed violations client-alert is generated on the first instance of a violation only. A speed violation remains open in the GAPCOM database until the conditions of the speed violation no longer meet the above requirements. No further client-alerts are generated for a speeding vessel unless it first is no longer speeding then speeds once again.
4. **Angle of Approach (AoA)** – an AoA client-alert is triggered when a vessel has entered a user defined zone associated to a AoA alert-rule and while in the zone, has an AIS reported course that intersects the zone's associated *point-of-interest* (POI) polygon. An AoA client-alert is generated on the first instance of a violation only. An AoA violation remains open in the GAPCOM database until the conditions of the AoA violation no longer meet the above requirements. No further client-alerts are generated for a violating vessel unless she first corrects course as to not directly approach a POI then changes back to a violating course.
5. **Closest Point of Approach and Time to Closest Point of Approach (collectively as TCPA)** – a TCPA client-alert is triggered when a vessel is within 85 nautical miles of a user defined POI and

has a CPA less than or equal to a user defined maximum CPA and TCPA less than or equal to a user defined maximum TCPA. Three TCPA types; yellow, red, and purple are stored in the GAPCOM database for reporting purposes. Each TCPA type has an associated alert-rule. Currently the TCPA type definitions are as follows:

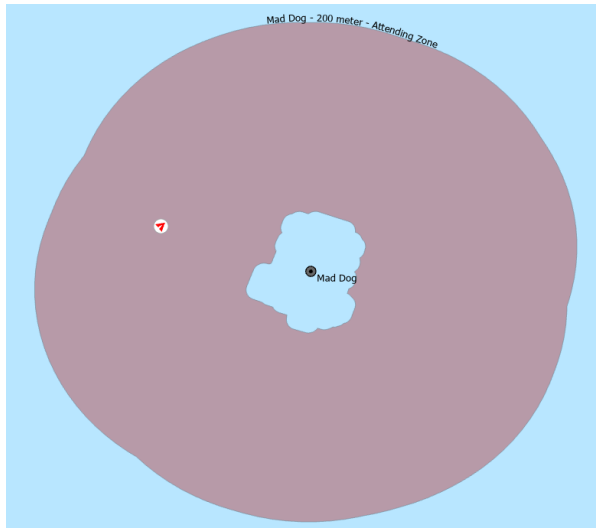
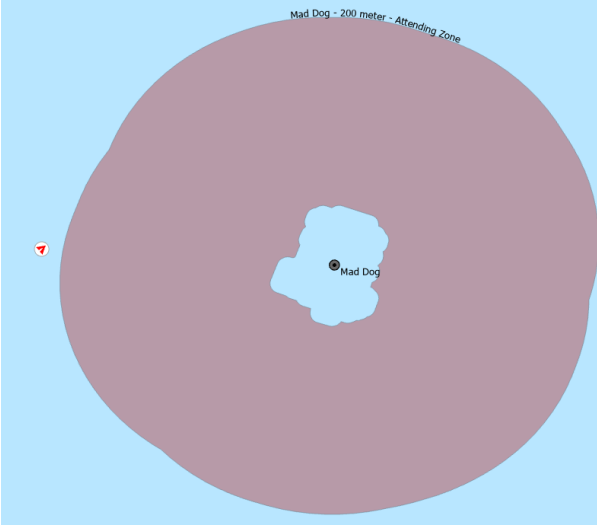
- a. **Yellow** – vessel has a CPA greater than 1 nautical mile and less than or equal to 2 nautical miles and a TCPA of 60 minutes or less
- b. **Red** – vessel has a CPA greater than 0.5 nautical mile and less than or equal to 1 nautical mile and a TCPA of 60 minutes or less
- c. **Purple** – vessel has a CPA less than or equal to 0.5 nautical mile and a TCPA of 40 minutes or less

A TCPA client-alert is generated on the first instance of a violation only. No further TCPA client-alerts are generated for a vessel unless it no longer meets the above TCPA requirements or changes TCPA type (e.g. vessel goes from red type to purple type TCPA).

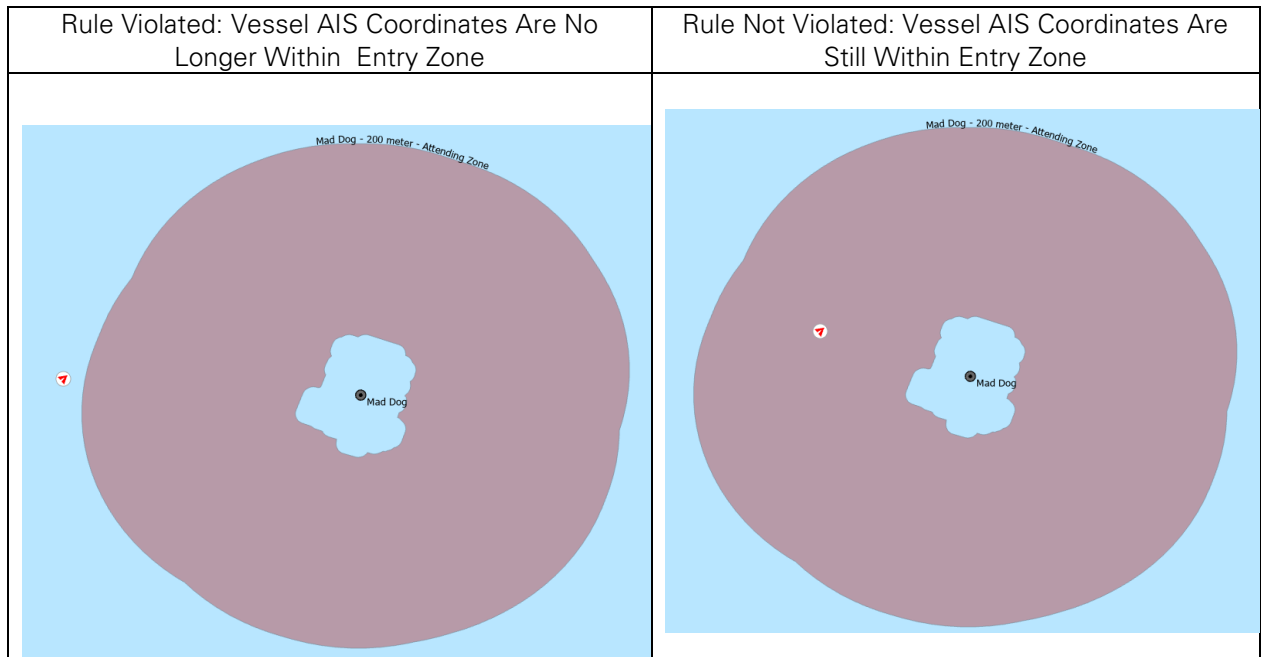
- 6. **Not Under Command (NUC)** – NUC client-alert is triggered when a vessel is within a user defined zone and has an AIS reported status of *not under command*. A NUC client-alert is generated on the first instance of a violation. No further client-alerts are generated for a vessel unless it remains in the user defined zone has an updated status then its status changes back to *not under command*.

7.4 ALERT RULE METHODOLOGY

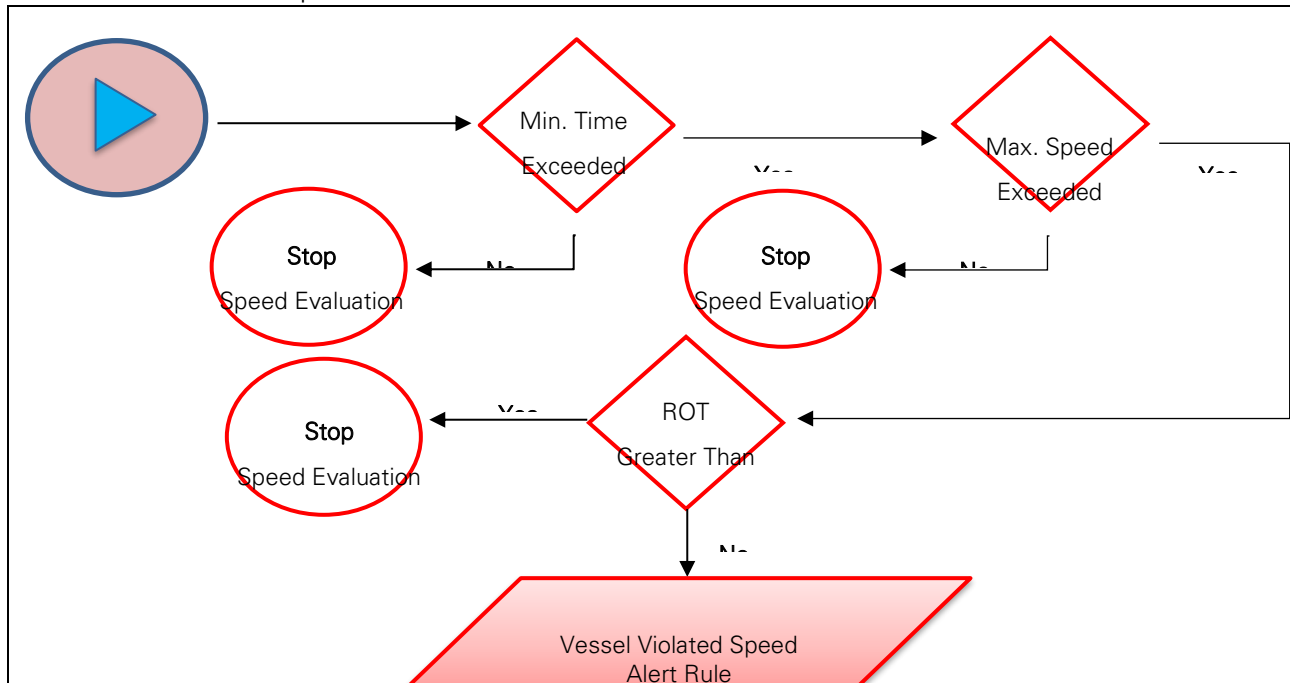
1. **Entry:** Rule evaluates AIS returns to determine if a vessel’s returned latitude and longitude coordinates are within a user defined zone (polygon) associated to an entry alert rule.

Rule Violated: Vessel AIS Coordinates Are Within Zone	Rule Not Violated: Vessel AIS Coordinates Are Not Within Zone
	

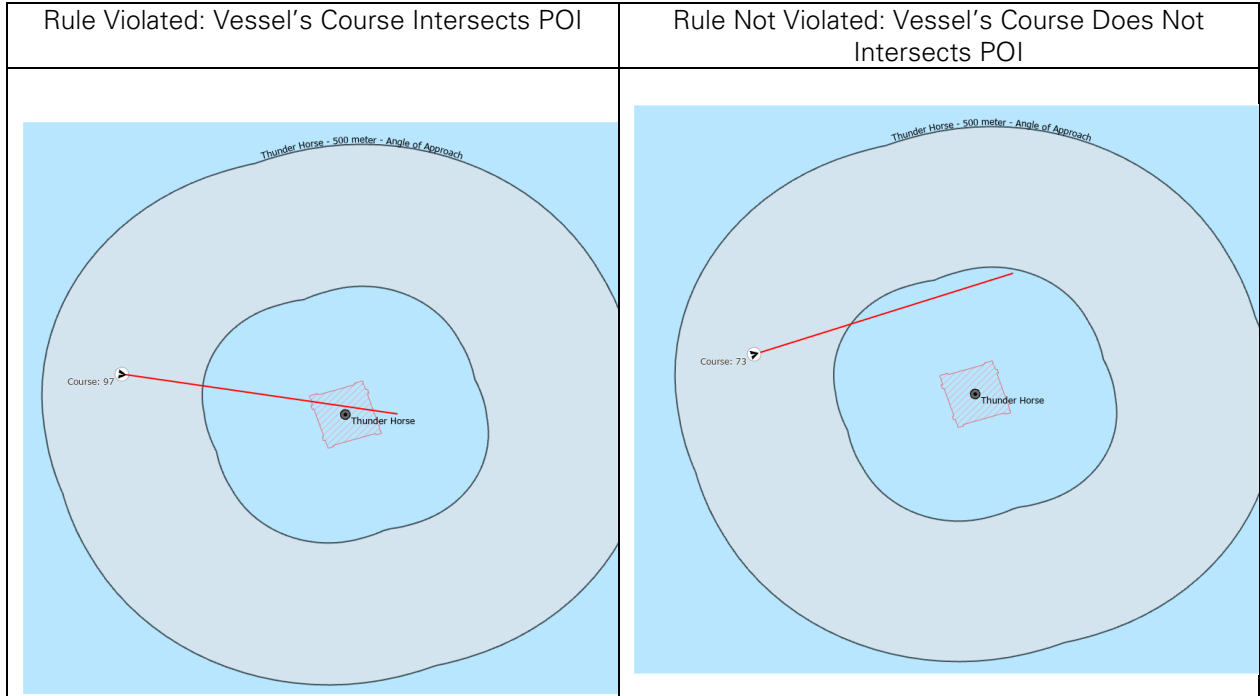
2. **Exit:** Rule evaluates AIS returns to determine if a vessel that was previously reported in a user defined zone associated to an entry alert rule has returned latitude and longitude coordinates that are no longer within a user defined zone (polygon) associated to an entry alert rule.



3. **Speed:** Rule evaluates AIS returns to determine if a vessel's returned latitude and longitude coordinates are within a user defined zone (polygon) associated to a speed alert rule. Vessel must remain within speed zone for no less than the user defined *minimum time in zone*. Once identified vessel has remained in speed zone for *minimum time in zone*, its AIS reported speed is then evaluated against its user defined *maximum speed* for the associated speed alert-rule. If identified vessel's reported speed exceeds the *maximum speed* and its AIS reported rotation (ROT) is 0 or *NULL* a speed violation is recorded.

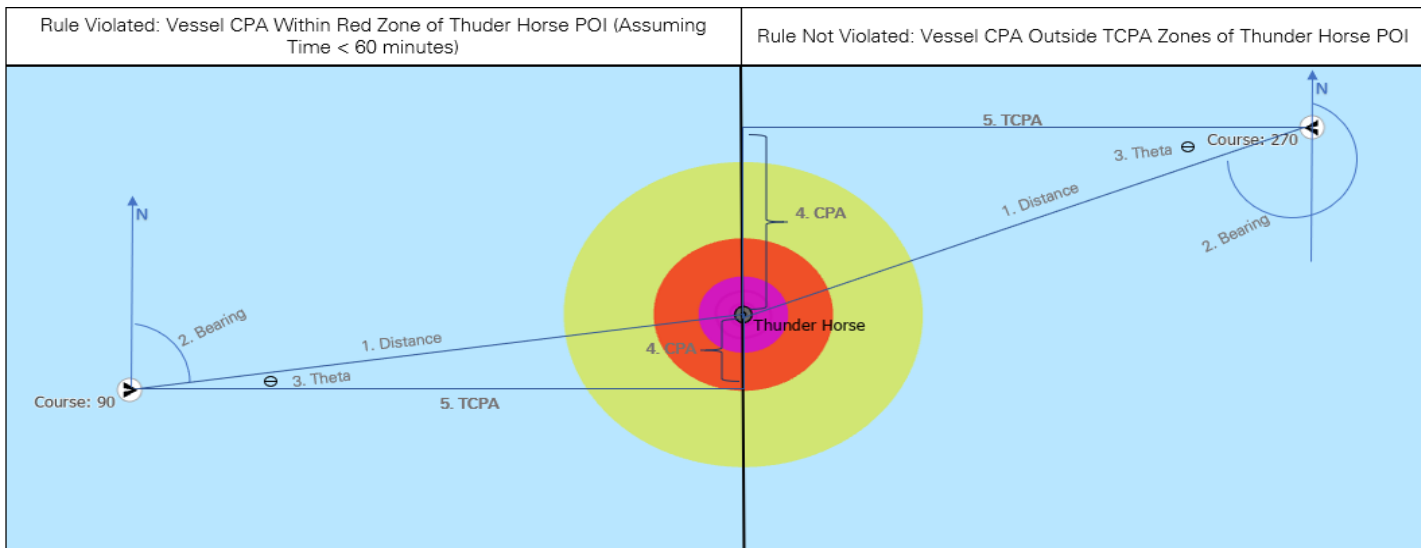


4. **AoA:** Rule evaluates AIS returns to determine if a vessel's returned latitude and longitude coordinates are within a user defined zone (polygon) associated to an AoA alert rule. An in-zone vessel's course is evaluated to determine if intersects the zone's POI (polygon). If a vessel's course intersects the POI then it is reported as violating the AoA alert rule.



5. **TCPA:** Rule evaluates a vessel's AIS returned latitude, longitude, course and speed values to calculate its TCPA. If the calculated TCPA is within the user defined minimum/maximum CPA and less than or equal to the user defined TCPA then it is reported as violating the TCPA alert rule.

TCPA Calculation Methodology



Step 1: Calculate distance from POI to vessel

Step 2: Calculate vessel's bearing, as degree from true north, to POI

Step 3: Calculate difference, as absolute value Θ , of vessels bearing and course (*if angle $\Theta > 90$ vessel is not evaluated for CPA/TCPA*)

Step 4: Solve for sine Θ to calculate CPA

$$\sin \Theta = \text{CPA} / \text{Distance}$$

$$\text{Distance} * \sin \Theta = \text{CPA}$$

Step 5: Solve for distance of vessel to CPA using Pythagorean theorem; then use result to calculate Time to CPA

$$\text{TCPA}^2 + \text{CPA}^2 = \text{Distance}^2$$

$$\sqrt{\text{TCPA}^2} = \sqrt{\text{Distance}^2 - \text{CPA}^2}$$

$$\text{Time} = \text{TCPA} / \text{Speed}$$

6. **Not Under Command (NUC):** Rule evaluates AIS returns to determine if a vessel's latitude and longitude are within a user defined zone (polygon) associated to a NUC alert rule. If an in-zone vessel's AIS returned status is *not under command* then a NUC violation is reported.

Rule Violated: Vessel's Status Not Under Command	Rule Not Violated: Vessel's Status Other Than Not Under Command
