European Maritime Safety Agency

SSN-VMS synergies pilot project

Tutorial on the web-based graphical interface for the FMC users (SSN GI)

Lisbon, 30/03/2012

Contents

1. Log-in

1.1. INTRODUCTION

This document outlines the most common functionalities that the users of Fisheries Monitoring Centre (FMC) participating in the "SafeSeaNet/VMS pilot project" have access through the web-based SafeSeaNet Graphical Interface (SSN GI).

1.2. AUTHENTICATION

EMSA has set up a process for providing to the users of the participating FMCs with the credentials (UserID and password) to log-in the SSN GI.

To access the SSN GI, the users should follow the steps below:

a) Click on the link:

https://vms-sso-test.emsa.europa.eu/ssn-login/login.jsp

b) Log-in by using own credentials:

Figure 1: SSN GI single sign-on page

c) From the main SSN page, the user should select the "**SSN GI"** tab:

Figure 2: the main SSN page

d) The SSN GI will open the application as shown in figure 3 below:

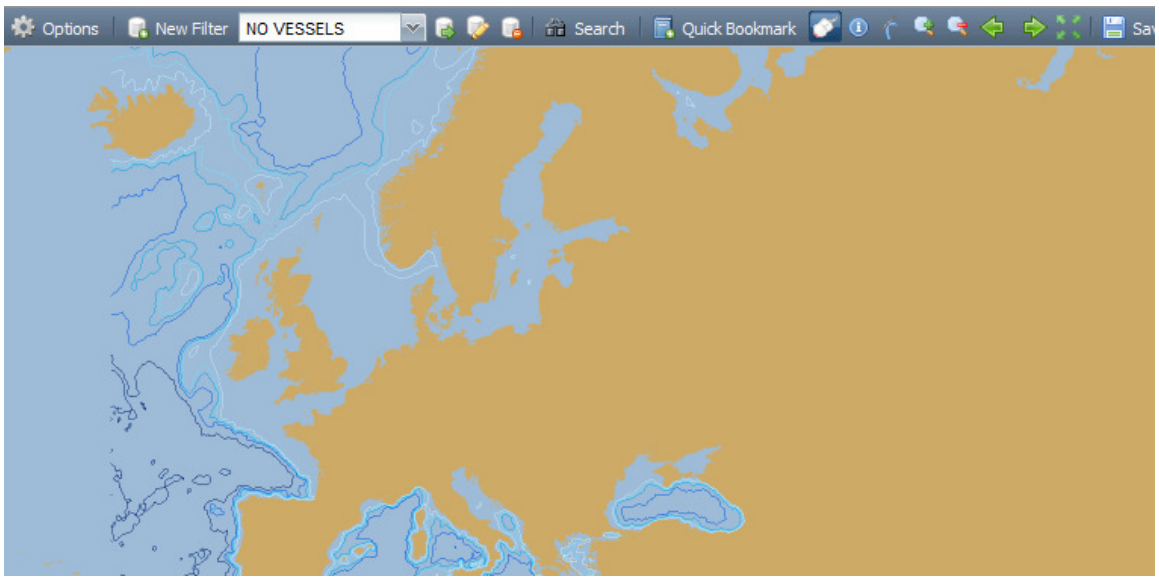


Figure 3: default screenshot of the SSN GI

e) To Log-out the user should click on the **"log-out"**  button (top-right of the screen)

2. Basic configuration

2.1. CONFIGURATION LAYERS MENU

This section describes how to customize the interface and the basic functionalities available. By clicking on the tab "**configuration**" the users access the geographical information system (GIS). The screenshot of this interface is provided below:

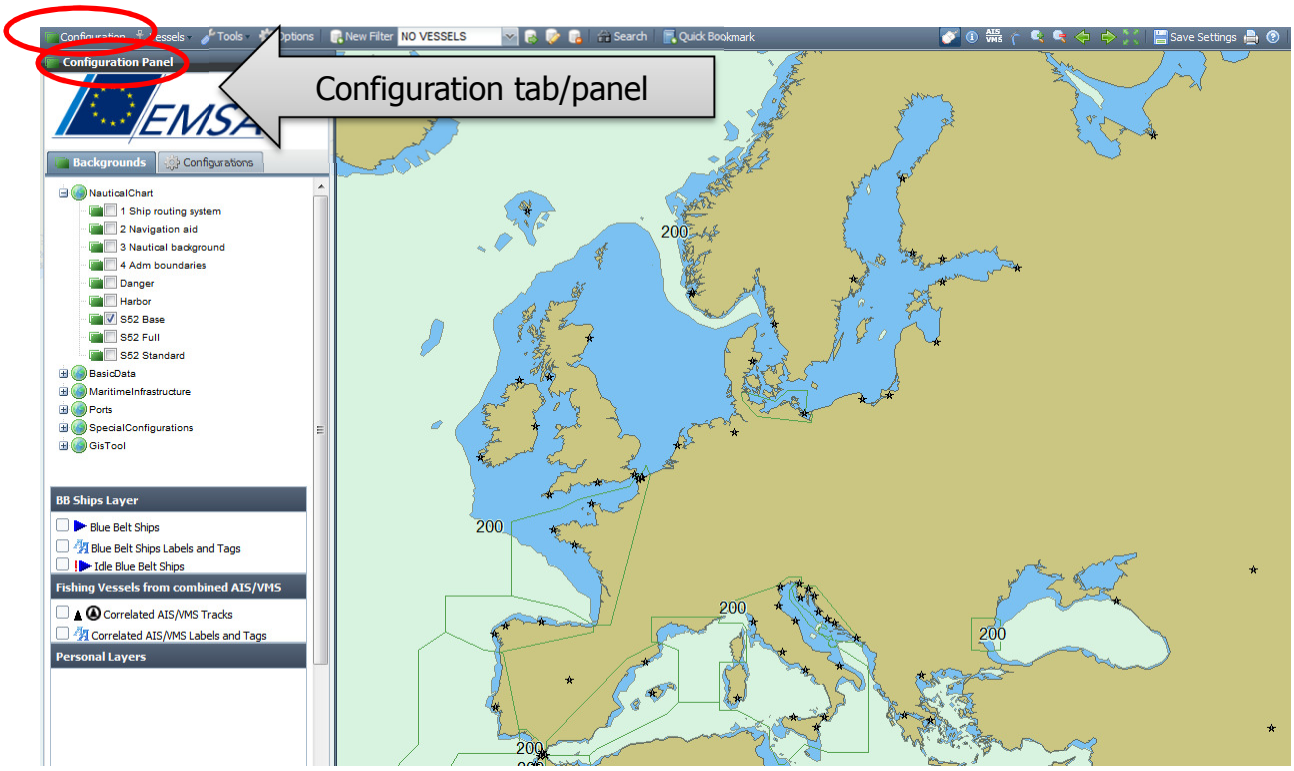


Figure 4: detailed view of the "Configuration panel"

The layers[1] in SSN GIS are activated/deactivated using the "**configuration panel**" (left top of the screen). The layers currently available through SSN GI are grouped into the following categories:

- Nautical Chart
- Basic Data
- Maritime Infrastructure
- Ports
- GIS Tool (currently not operational)

These categories are indicated as expandable menu items in the left bar of the application. The user can activate a specific layer by selecting the associated check-box. The list of the available layers in each category is presented below:

a) Nautical chart

The available layers are:

[1] The "BB ships layer" is not related to the "SSN-VMS pilot project" and cannot be used.

- Ship Routing Systems
- Navigation Aids
- Nautical Background
- Administrative Boundaries
- Danger
- Harbour
- S52 Base
- S52 Standard
- S52 Full

The information displayed on the charts is configurable. The symbols follows the International Hydrographical Organization (IHO) S52 standard while the level of details follows the Electronic Chart Display and Information System (ECDIS) standards for charts used on-board ships.

b) Basic Data

The layers are:

- Geographical Grid: draws parallels and meridian lines
- Countries: shows country names and boundaries
- Cities: indicates location and name of cities
- Sea: shows the names of the seas
- TSS: displays Traffic Separation Schemes on the map

c) Maritime Infrastructure

The layers are AIS Stations with information (position and name) on the AIS shore based stations.

d) Ports

The layers provide additional information on Ports:

- Media: provides access to Web cam, pictures, etc for a port
- Ports: shows port name and location

2.2. BASIC FUNCTIONALITIES

2.2.1. Vessel Tail (Vessel tool > Vessel tail > Apply)

The "**vessel tail"** option allows users to visualise up to five of the most recent positions of a single vessel. Depending on the number of past positions to be displayed (as set by the user), a "tail" is drawn on the screen upon selection of a vessel track.

This feature is configurable (the application allows to activate/deactivate the tail and to display 1 to 5 past positions). The figure 5 shows how the "vessel tail" option can be configured:

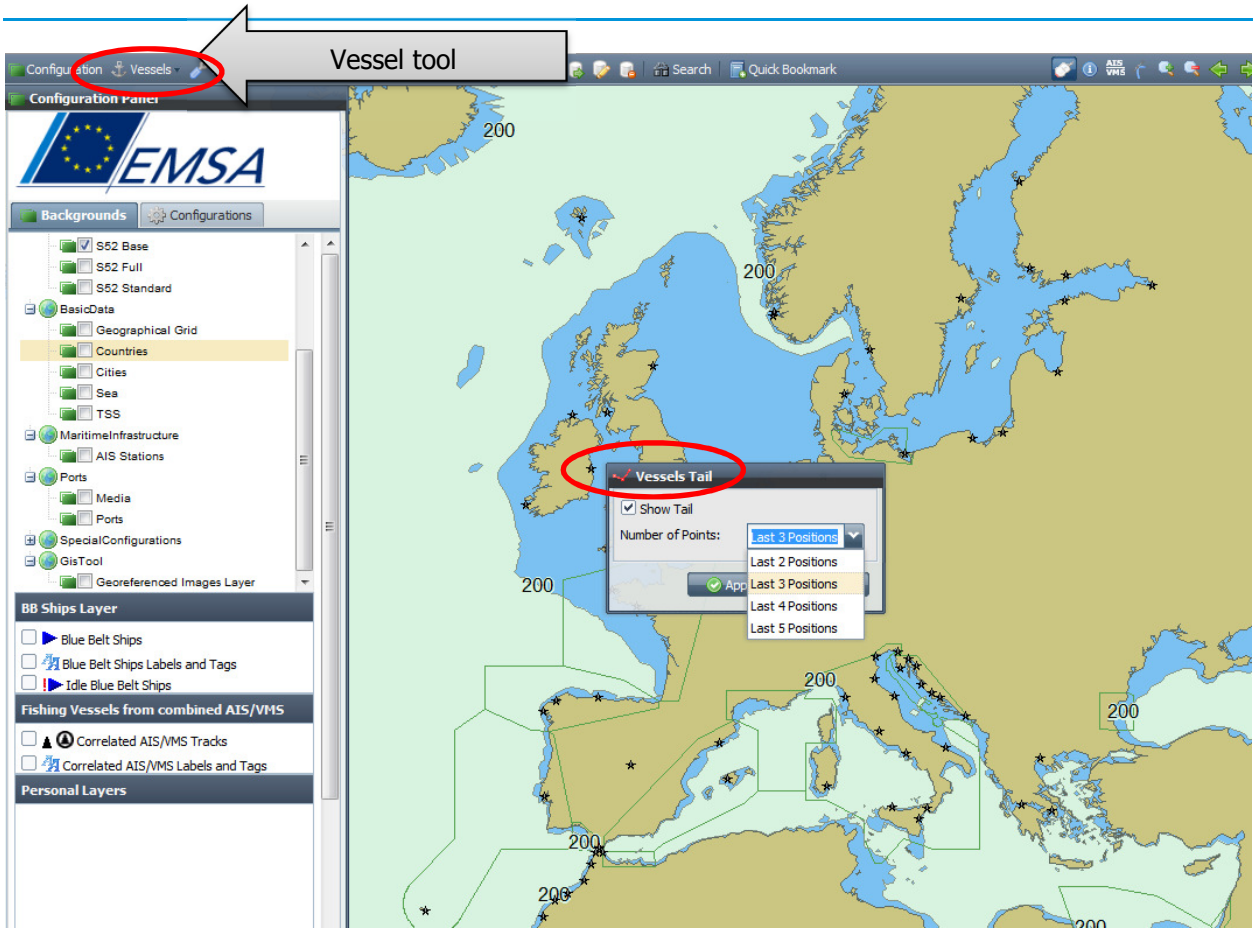
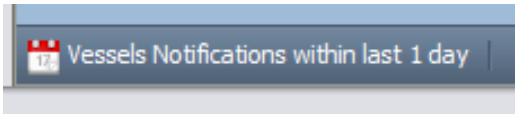


Figure 5: Set-up of the "vessel tail" options

2.2.2. SSN GI options (Options)

Using the **"options"** tool-kit the user can access the GIS options window in order to specify a set of configurable items among the following:

a) The **measurement units** (Km or NM) being used when the Measure distance functionality is activated.
b) The **zoom scale** to be applied when the user retrieves the information related to a specific vessel (see paragraph 3.3).
c) The **refresh interval,** defining the refresh interval of the tracks on the GIS screen.
d) The **validity time** determining the age of tracks displayed on the screen[2]. The validity time is displayed at bottom left of the screen.



[2] Depending on the associated timestamp, tracks with timestamp older than the identified as the validity time are not displayed.

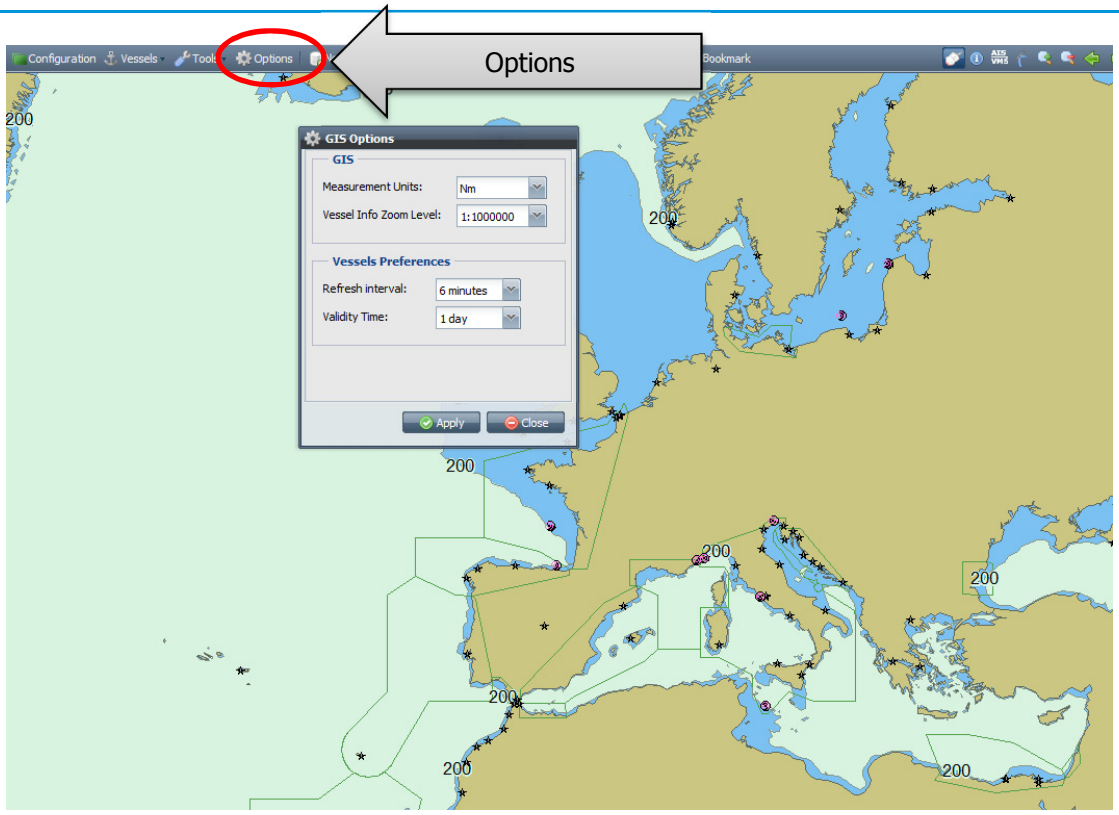


Figure 6: Set-up of the GIS options

2.2.3. Filter selection

Using the filter selection tool the user can easily configure the type of source to be displayed.

The filters which can be used within the pilot project are:

- **AIS FISHING VESSELS**: to display only the AIS track of the participating F/Vs. By default, this filter selects the relevant vessels by MMSI. Flag access rights are applied.
- **VMS FISHING VESSELS**: to display only the VMS track of participating F/Vs. Flag access rights are applied.
- **NO VESSEL**: to deselect all the tracks

> **NOTE**:
> The filter "ALL SHIPS" is not relevant to the scopes of the pilot project.

Once the filter has been selected in the drop-down list the button "**apply**"  has to be clicked.

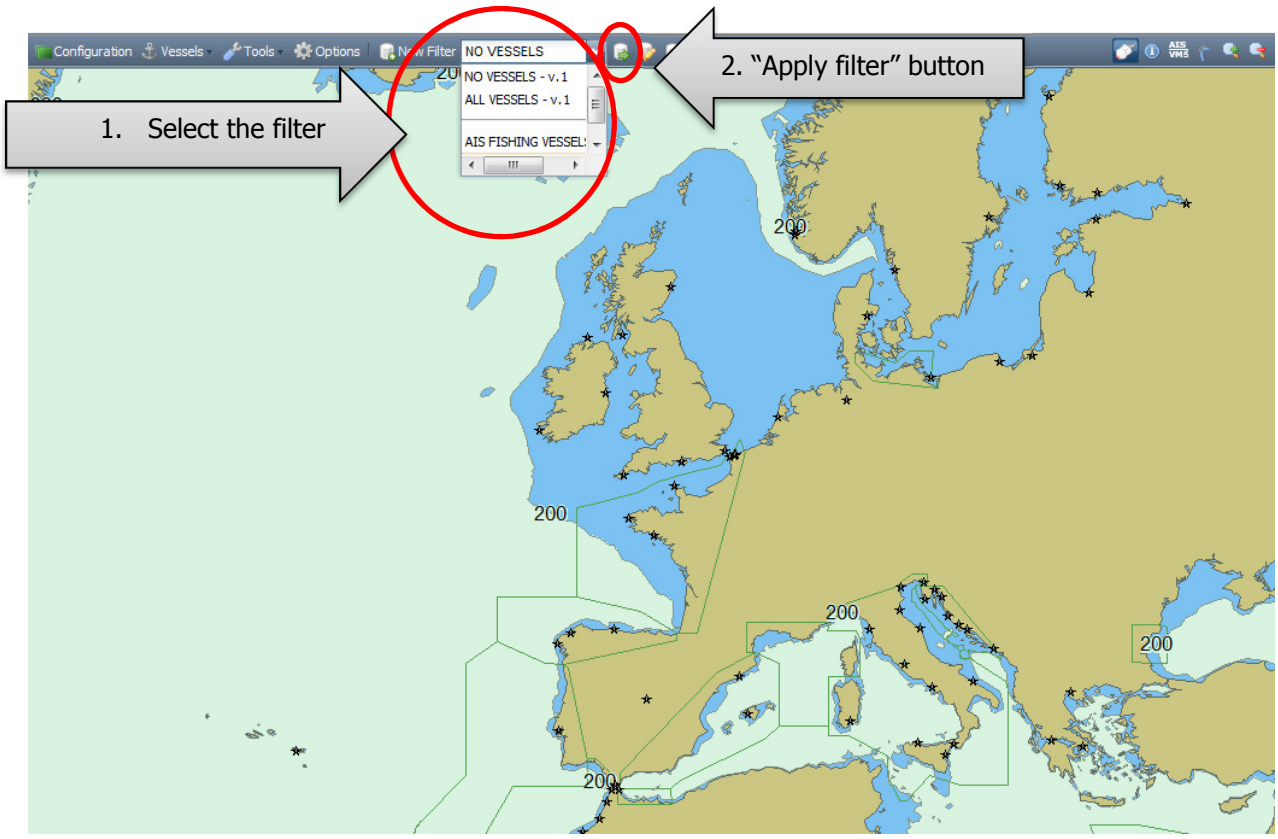


Figure 7: Filter selection and application

2.2.4. Pan function

The "**pan"** function allows a user to move the map around with the mouse, without changing scale.

To use the pan function, the user should click on the relevant button  on the top right toolbar and using the mouse drag the map to the target position.

2.2.5. Measure Distance

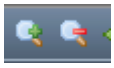
This function allows the user to measure distances between two selected points on the map.

The measuring tool is activated by clicking on the appropriate button  on the top right toolbar. Once the function is activated, the user can simply left-click the mouse on the map and draw a line (drag and drop) in order to calculate the distance between two points. The result is shown in a small "**measure distance**" window that appears on the GIS interface.

The user can choose the unit of measurement (e.g. nautical miles, kilometres, etc) using the **Options** tool-set (see paragraph 2.2.2).

2.2.6. Zoom in/Zoom out

The "**zoom in/zoom out"** allows the user to draw a rectangle on the screen in order to identify the geographical limits of a particular zone in the map. A zoom in or zoom out operation is performed on the selected area.

To enable the "**zoom in/zoom out functions"**, the user should first click on either the magnifier or minimiser buttons  on the on the top right toolbar.

2.2.7. Zoom extent function

The system stores the extents used during previous zooming in/out operations. Using the **"zoom extent function"** the user can navigate quickly back and forth in the extent history.
The left and right arrows  are used to do this.

The "**zoom to full extent function"** is represented by the four arrows button  . Upon clicking this button, the GIS interface performs a zoom out to display a world map.

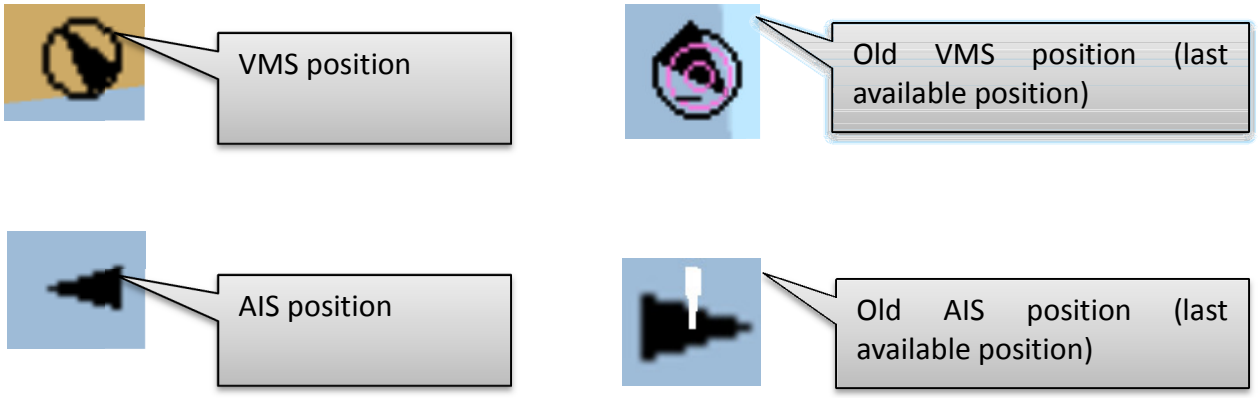
2.2.8. Scale resize

In order to change the scale of the map the mouse may be used to obtain the desired scale level. The scale set is shown on the scale indicator on the right bottom toolbar.

3. Operational use

3.1 Fishing Vessels related icons

The SSN GI displays 4 types of icons associated to the participating fishing vessels. These icons show the last position received by the system:



3.2 Identify function

To use the "**identify function**", the user must click on the blue button  on the top right toolbar and then click on the target of interest (TOI).
By clicking on a TOI, a pop-up window appears, showing the vessel name (or the MMSI, if the name is not available). At the same time, the track will be highlighted on the screen.
By double clicking on the TOI, as shown in the small window (action point 3), the right sidebar with the vessel information will be activated to make the information available (action point 4). In addition, the background chart will be centred on the vessel track.

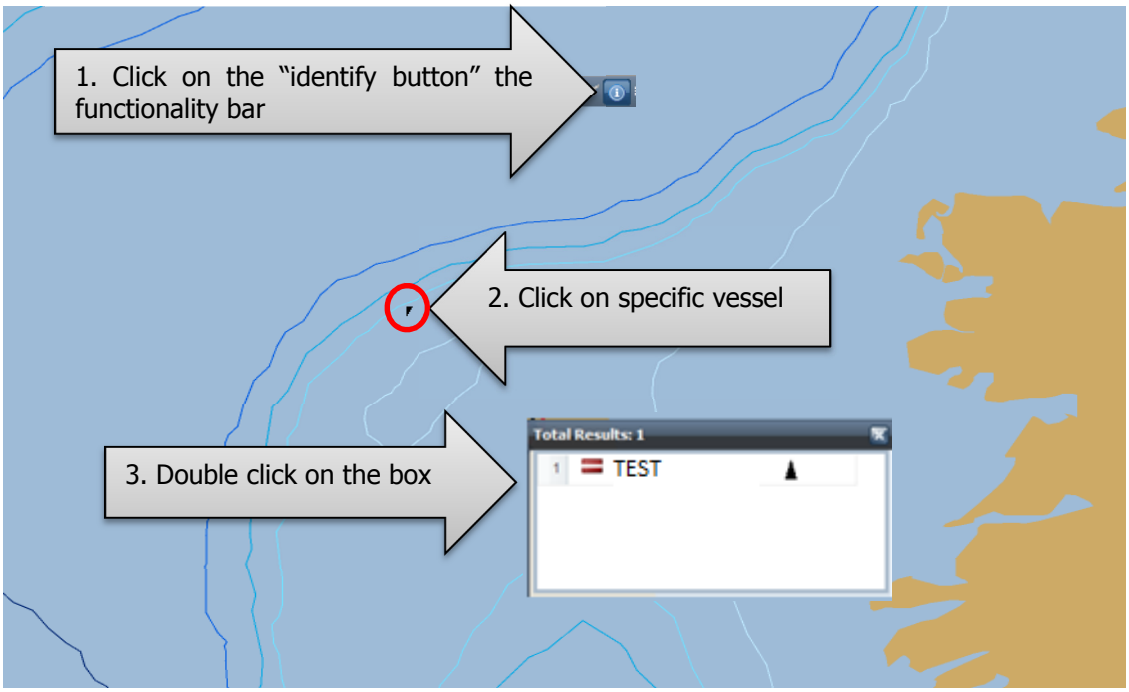


Figure 8: Identify a TOI

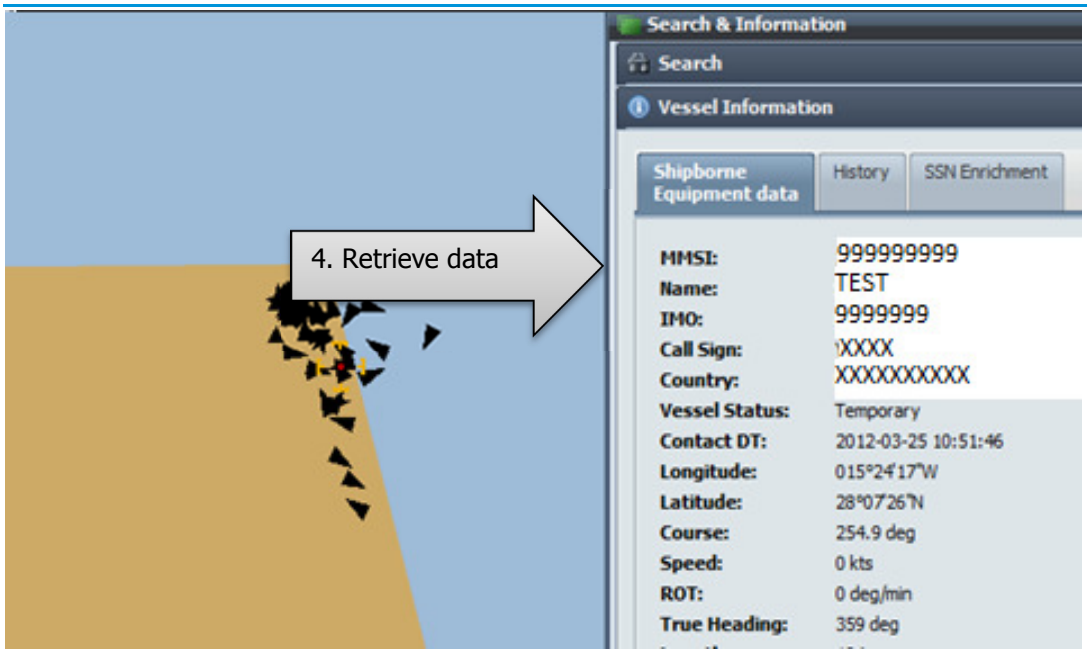


Figure 9: Retrieve static and dynamic information related to the TOI

The result of a search related to a single vessel allows the visualization of the following datasets:

a) **"Shipborne Equipment data"** tab: information received from the AIS transponder of the vessel, as they are actually transmitted.
b) **"History"** tab: the positions of the vessel over the previous days. The user can plot the route of the vessel in the SSN GI window.
c) **"Enrichment tab":** additional information on the selected vessel based on information recorded by the European Index server (EIS) of SafeSeaNet[3].

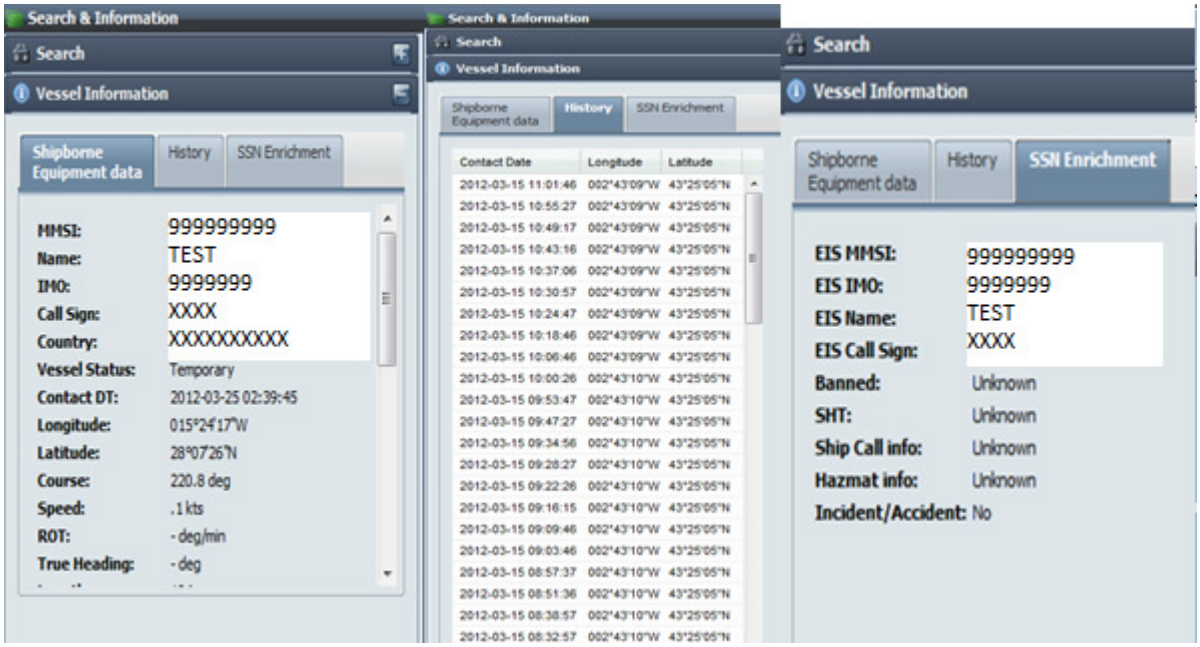
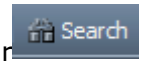


Figure 10: Information available under each tab

[3] Features as "Banned", "SHT", "Ship call info", "Hazmat info", "Incident/Accident" are irrelevant within the "SSN/VMS" pilot project

3.3 Search tools

These tools enable the user to search for specific target(s). The user should open the "Search sidebar" by clicking on the "Search" button in the toolbar 

.

Two options are available:

a) Search by vessel details:
In the "search sidebar"[4], the user has to enter the details of vessel such as: Name, MMSI, IMO number, Call sign. By clicking on the "search" button the result is displayed. To retrieve data it is necessary to double click on the results.

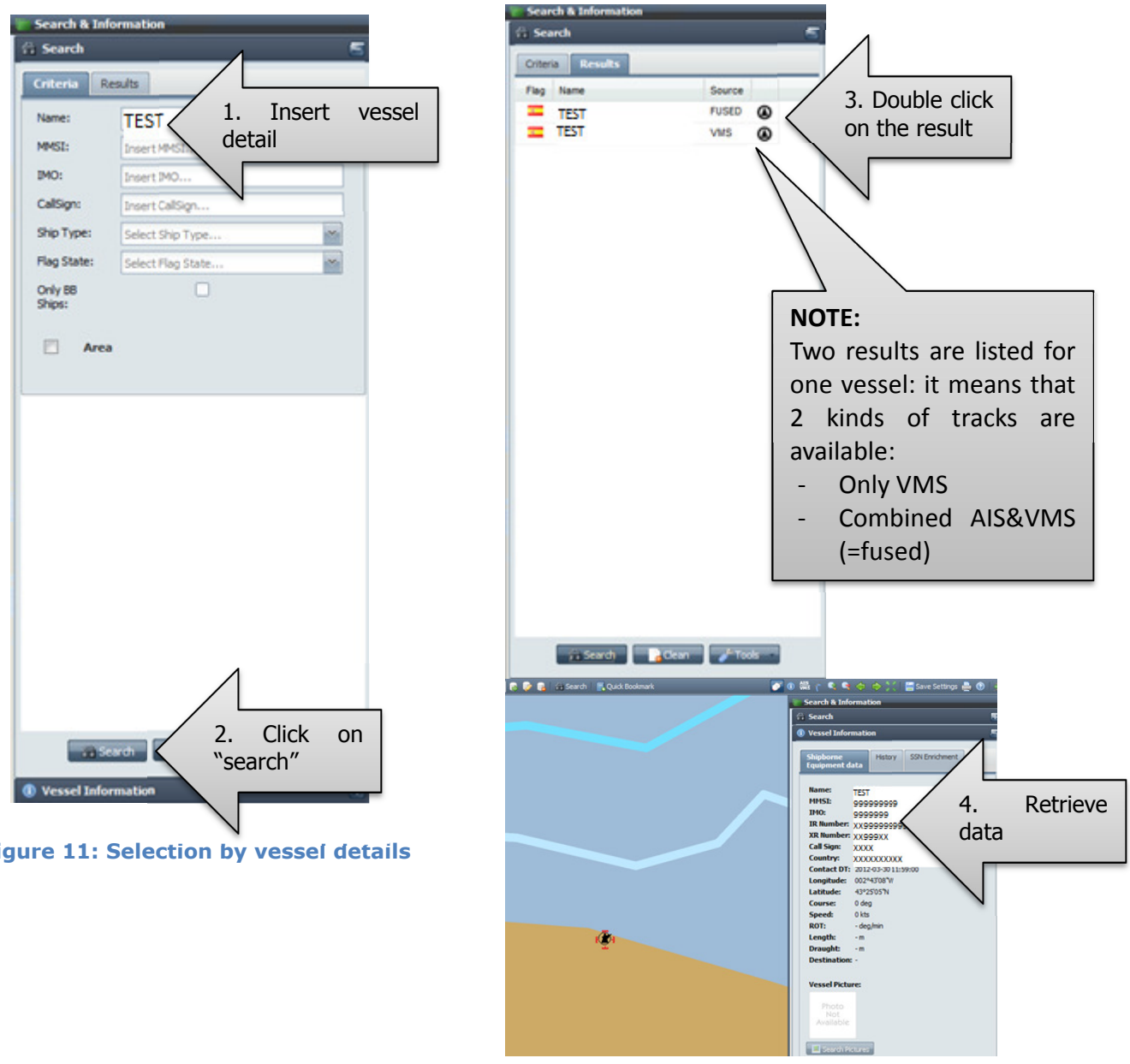


Figure 11: Selection by vessel details

[4] "Only BB Ships" is not a function related to the "SSN/VMS" project

b) Search per area:

The user has to select this option in the "search sidebar" and draw a square border of the area on the GIS window using the mouse. By clicking on the "search" button the list of participating vessel sailing in the area is displayed. To retrieve the information concerning a specific vessel included in the list, the user has to perform the action 3 and 4 of the "**search by vessel details"** (see previous figure 11).

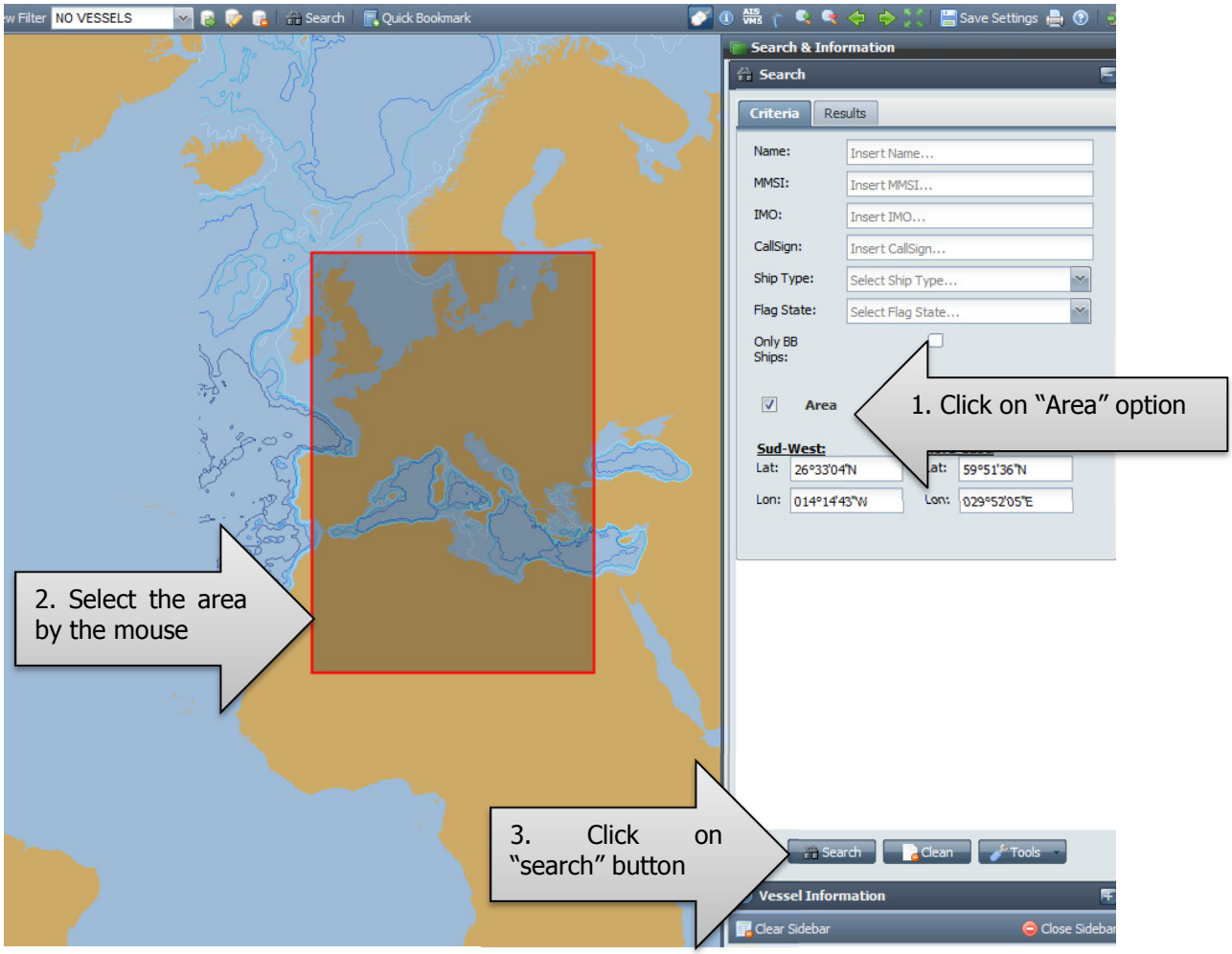


Figure 12: Search per area

To clean the search parameters the user has to click the button "Clean" 

bottom of the "Search sidebar".

3.4 Procedure to retrieve the combined AIS/VMS track

a) Select the filter "NO VESSEL"
b) Apply the selected filter
c) Open the "CONFIGURATION PANEL">"BACKGROUNDS"
d) Select the check-box "CORRELATED AIS/VMS TRACKS"

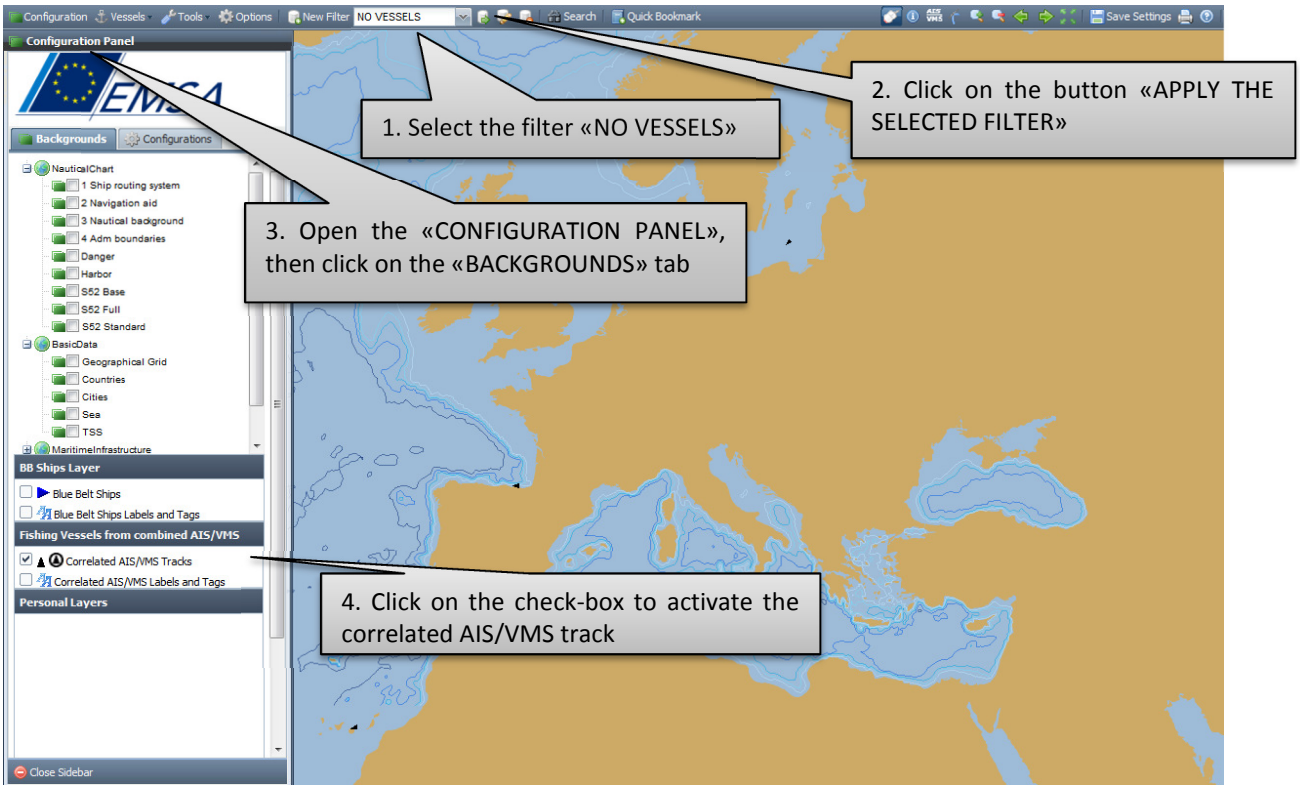
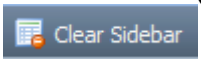


Figure 13: retrieving combined AIS/VMS tracks

3.5 Procedure to retrieve the AIS track (only AIS)

a) Deselect the check-box "CORRELATED AIS/VMS TRACKS" (if active)
b) Select the filter "AIS FISHING VESSELS"
c) Apply the selected filter

Before passing from a filter to another (e.g. from "ONLY AIS" to "ONLY VMS") click on the "**clear sidebar**" button 

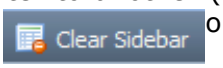
on the "**search and information**" sidebar.

NOTE:
To display again the "correlated AIS/VMS track" if the filter "AIS FISHING VESSEL" is active the user should follow this procedure:

1. Select the filter "NO VESSEL"
2. Click the button "APPLY THE SELECTED FILTER"
3. Open the "CONFIGURATION" panel, then click on the "BACKGROUND" tab
4. Click the check-box to activate the correlated AIS/VMS track (see paragraph 3.4)

3.6 Procedure to retrieve the VMS track (only VMS)

a) Deselect the check-box "CORRELATED AIS/VMS TRACKS" (if active)
b) Select the filter "VMS FISHING VESSELS"
c) Apply the selected filter

Before passing from a filter to another (e.g. from "ONLY VMS" to "ONLY AIS") click on the "**clear sidebar**" button 

on the "**search and information**" sidebar.

NOTE:
To display again the "correlated AIS/VMS track" if the filter "VMS FISHING VESSEL" is active the user should follow this procedure:

5. Select the filter "NO VESSEL"
6. Click the button "APPLY THE SELECTED FILTER"
7. Open the "CONFIGURATION" panel, then click on the "BACKGROUND" tab
8. Click the check-box to activate the correlated AIS/VMS track (see paragraph 3.4)

3.7 To display on the chart the path of a vessel (history)

Depending on the configuration/filter chosen (AIS+VMS combined, only VMS, only AIS), the user can select one vessel in order to analyse its "history". Once the vessel has been selected (see paragraph 3.3), the user has to open the tab "**history**" in the "**search and information**" sidebar. In order to load and display the previous position of the vessel, the user has to click in sequence the buttons "**load history**" and "**show on map**". Hence, it is possible to plot the available tracks on the chart, to export them (in MS Excel) or to print the data.

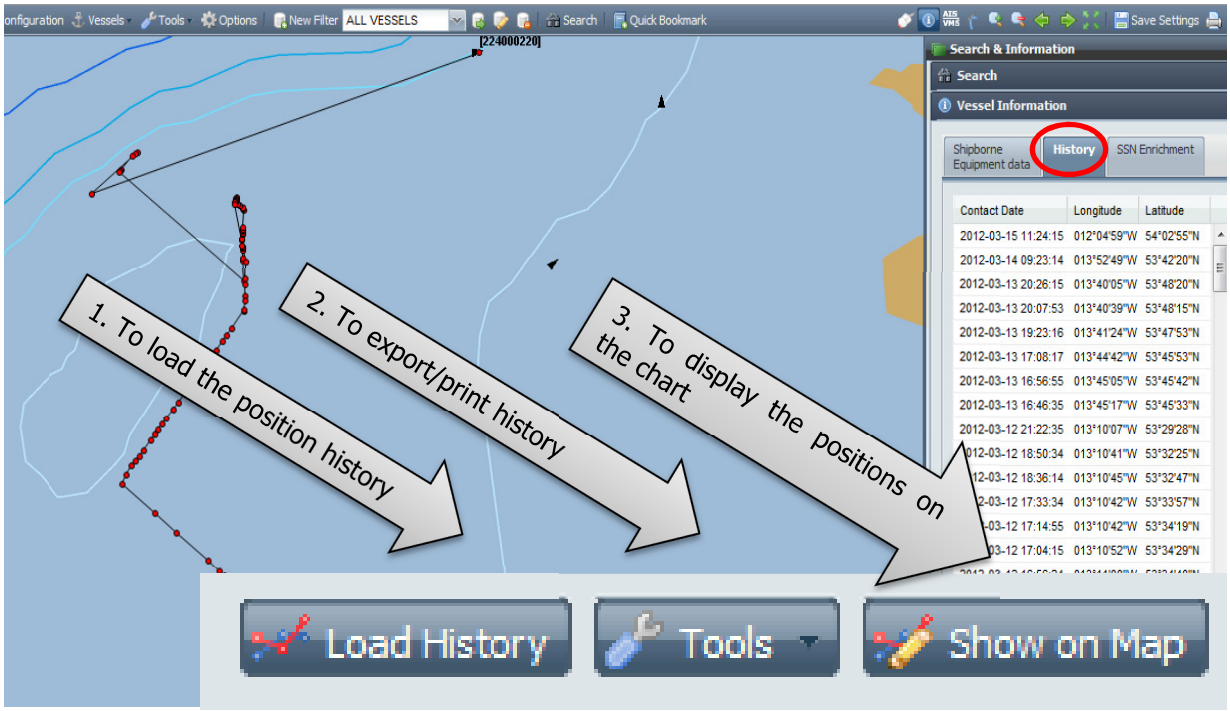
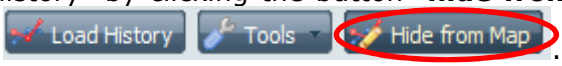


Figure 14: displaying history

In case of performing an additional search, the user has to reset the previous results. To do so, the user has to hide the previous "history" by clicking the button "**hide from map**" in the "**search and information**" sidebar 

.

3.8 Benefits of a combined AIS+VMS visualization

A test was performed in March 2012 to compare a combined AIS-VMS with only AIS track.

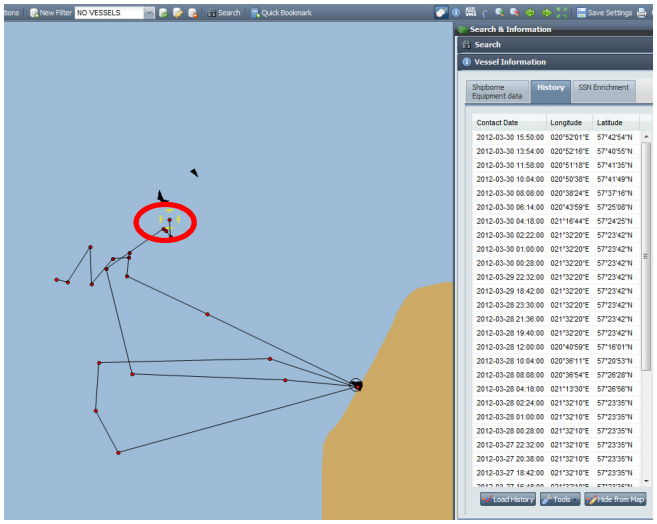


Figure 15: only VMS tracks

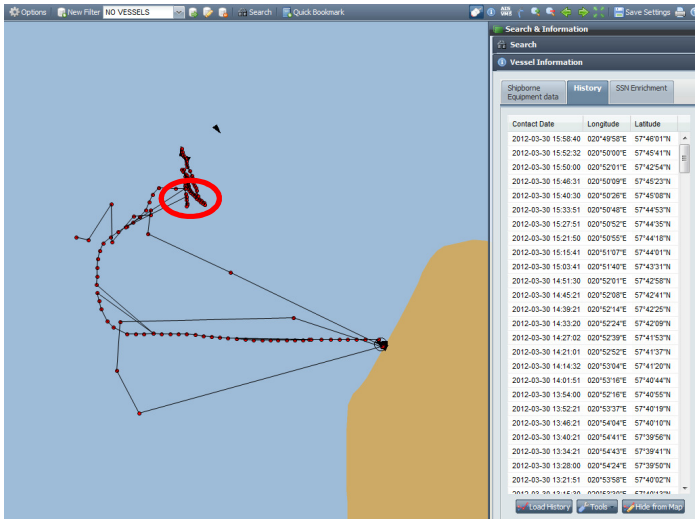


Figure 166: combined AIS/VMS tracks

In a 4-hour period only three VMS position were available while 32 AIS position have been parsed during the same period. The red ovals in the figures 15 and 16 include the position detected during the test.
Zooming in (figure 17), it is possible to compare the positions of the vessel around 12.00 UTC, 14.00 UTC and 16.00 UTC. On the left side, the picture shows only the VMS tracks. On the right side the combined information of the two sources allow to display the actual path of the vessel.

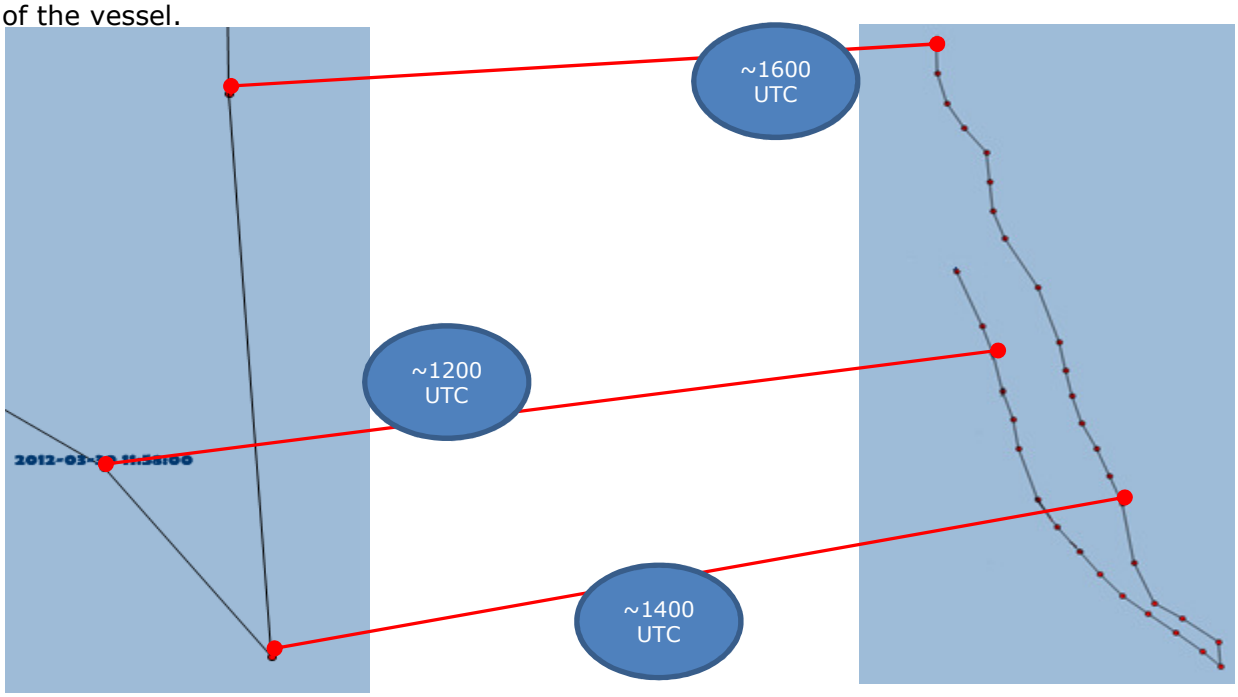


Figure 177: Vessel positions around 12.00, 14.00 and 16.00 UTC (30 March 2012)