



# SEG Training

## ABM's + LRIT Functionalities

Lisbon / 16 May 2017



## Automated Behaviour Monitoring (ABM's)



Algorithms are used to analyse real time vessel position reports, for a specific time period and area of interest (AOI), as defined by the users.

The system focuses on the detection of specific events, and therefore may be categorized as 'event' or 'rule' based.





ABM Type – description which events are automatically detected	ABM name
Presence of a particular vessel(s) in an area of interest	<i>InArea</i>
Passage of a vessel close to the shore	<i>DistanceToShore</i>
Vessels entering or leaving ports	<i>AtPortAtSea</i>
Anchored vessels	<i>Anchorage</i>
Frequency of vessels' position reports higher or lower than expected	<i>UnderOverReporting</i>
Vessels approaching one another closer than an indicated distance, with a speed below defined threshold	<i>AtSeaEncounter</i>
Change of heading higher than a threshold (e.g. more than 20 deg.)	<i>SuddenChangeOfHeading</i>
Sudden change of speed	<i>SuddenChangeOfSpeed</i>
Change of speed above or below a limit set	<i>SpeedAnomallyOverPeriod</i>



ABM Type – description which events are automatically detected	ABM name
Passage of a vessel close to an area of interest	<i>DistancetoArea</i>
Vessels entering a closed area at a specific time	<i>TimeAndPeriodOfDay</i>
Vessel leaves Area of interest X and enters Area of Interest Y	
Vessel reports position outside an Area X	
Vessel is switching off transponder	



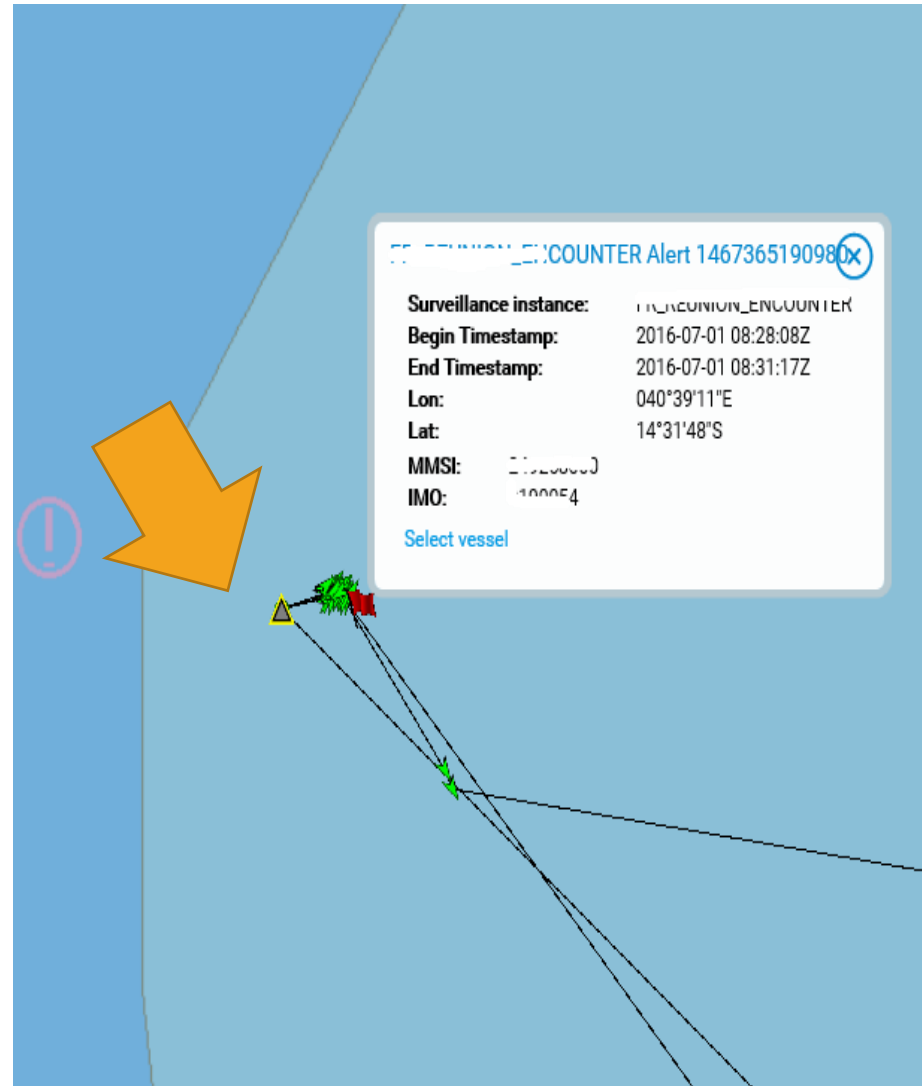
ABM Type – description which events are automatically detected	ABM name
Port of Departure is X	
Port of Arrival is X	
Vessel is probably drifting	
Vessel departs from or heads towards coastline	
Change of position	



## Security community

Example of 'at sea encounter'

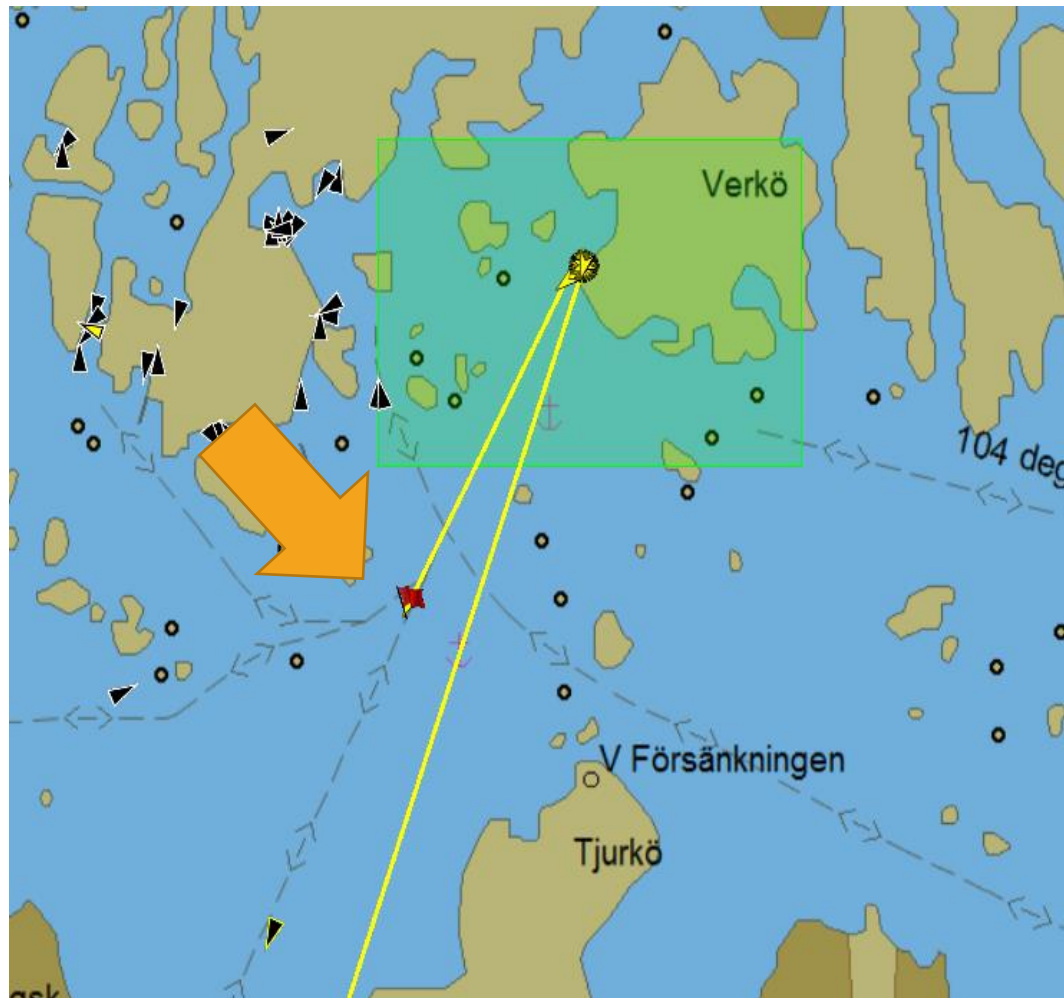
two vessels within a close distance





## Safety community

Example of a vessel leaving area of interest





## Safety community

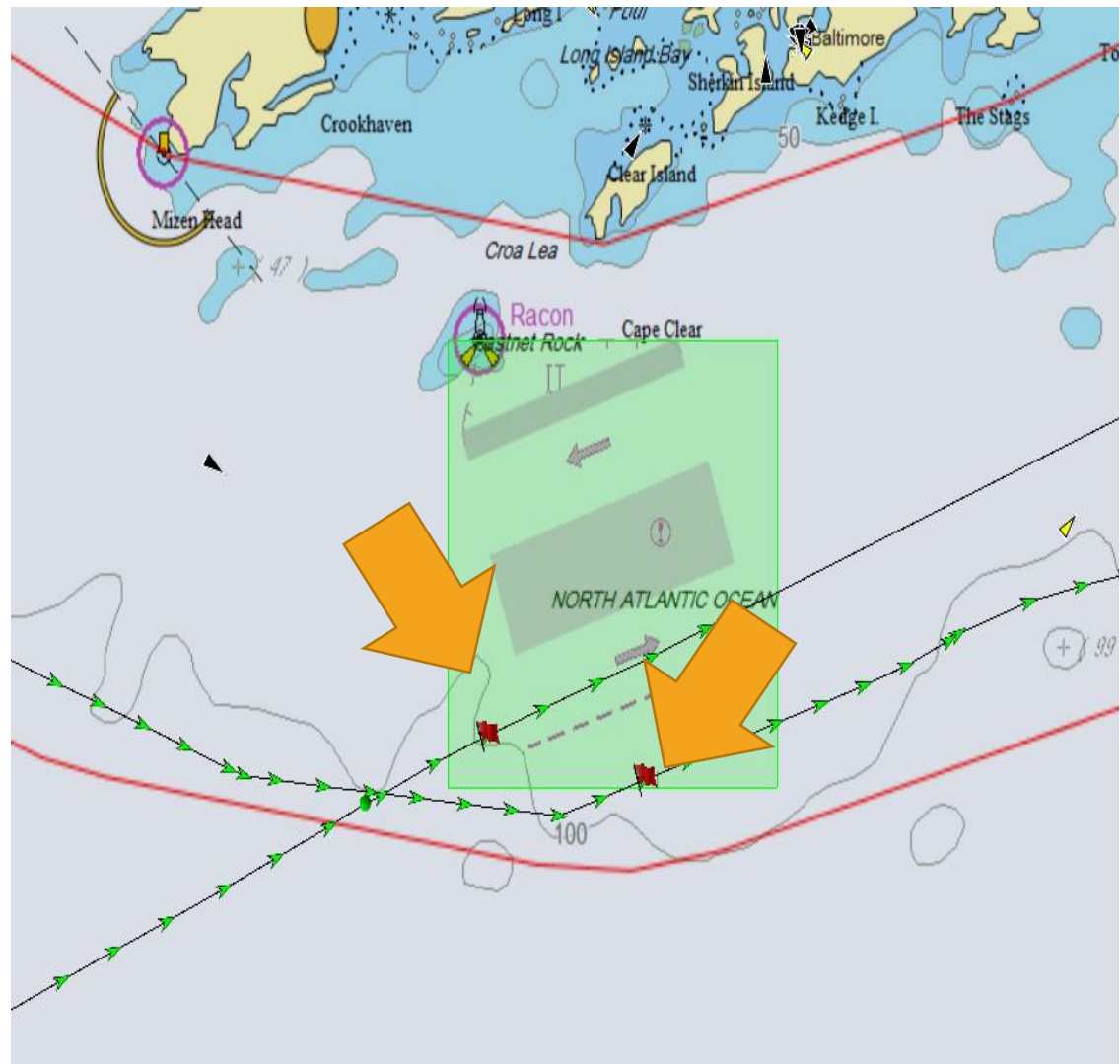
Distance to shore  
less than a defined  
threshold





## Traffic monitoring community

Vessels passing via TSS





## LRIT

- LRIT Request and Poll
- Enhanced SAR SURPIC



## Role Profile needed:

- LRIT NCA
- SAR
- Coastal, Port, Flag - FULL



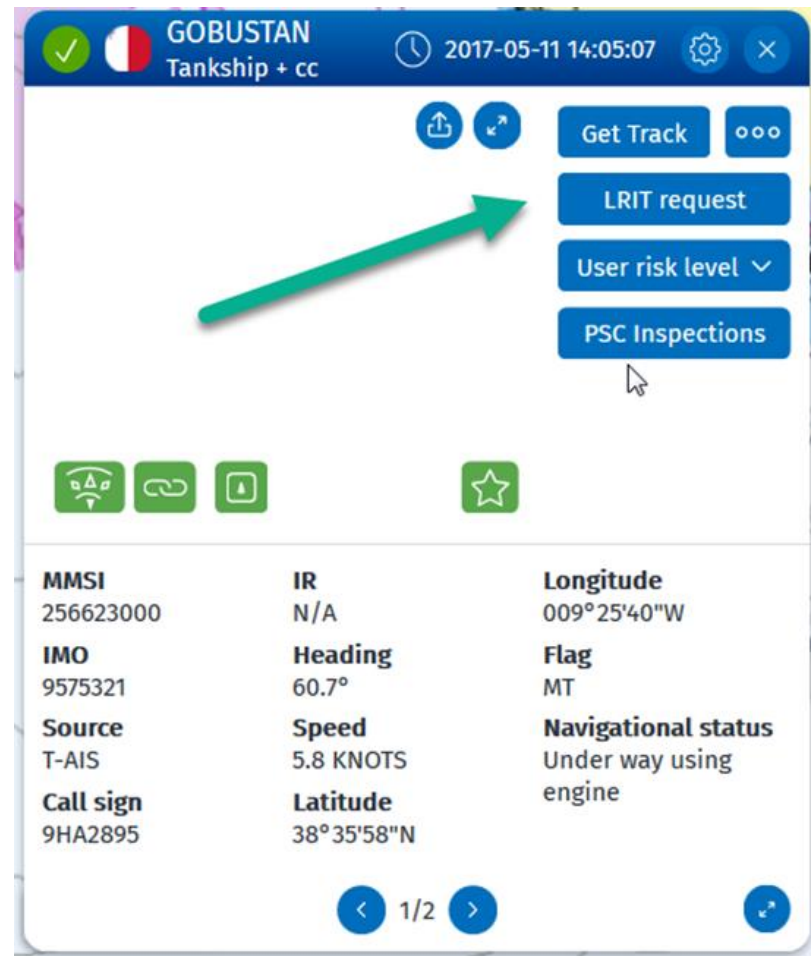
## LRIT Request from a ship on the map

- Hover over a ship to get basic info



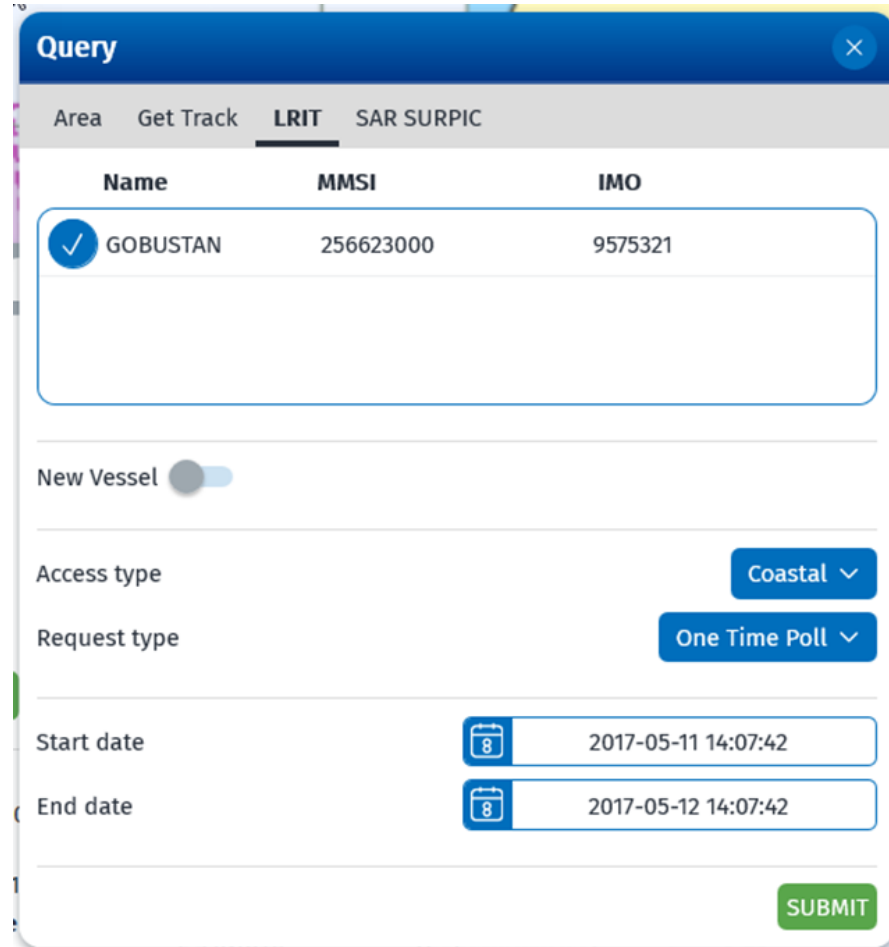


- Click on the ship to see the ship's detail and request button





- Click on the LRIT request button to open the Query window



The screenshot shows the 'Query' window in the EMSA system. The window has a blue header with the title 'Query' and a close button. Below the header is a tabbed interface with four tabs: 'Area', 'Get Track', 'LRIT', and 'SAR SURPIC'. The 'LRIT' tab is currently selected. The main content area displays a table with three columns: 'Name', 'MMSI', and 'IMO'. A single row is visible, showing 'GOBUSTAN' with MMSI '256623000' and IMO '9575321'. A blue checkmark icon is next to the vessel name. Below the table, there is a 'New Vessel' toggle switch, which is currently turned off. Further down, there are two dropdown menus: 'Access type' set to 'Coastal' and 'Request type' set to 'One Time Poll'. At the bottom, there are two date and time pickers: 'Start date' set to '2017-05-11 14:07:42' and 'End date' set to '2017-05-12 14:07:42'. A green 'SUBMIT' button is located at the bottom right of the form.

Name	MMSI	IMO
✓ GOBUSTAN	256623000	9575321

New Vessel ☐

Access type: Coastal

Request type: One Time Poll

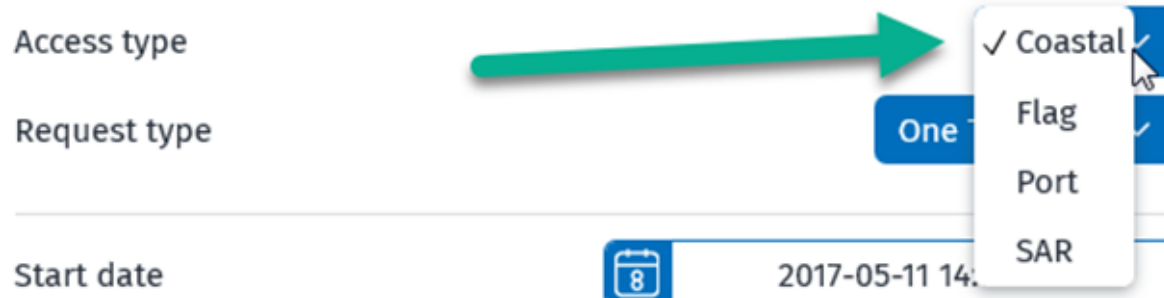
Start date: 2017-05-11 14:07:42

End date: 2017-05-12 14:07:42

SUBMIT



- Click on the Access type (if your LRIT role contains several possibilities, e.g. SAR+Coastal+Port Full) to select the desired role in the drop-down list



The screenshot displays a web form with three main sections: 'Access type', 'Request type', and 'Start date'. The 'Access type' section has a dropdown menu open, showing four options: 'Coastal' (selected with a checkmark), 'Flag', 'Port', and 'SAR'. A green arrow points to the 'Access type' label. The 'Request type' section shows a button labeled 'One'. The 'Start date' section shows a calendar icon with the number '8' and the date '2017-05-11 14:00'.

Access type	Request type	Start date
✓ Coastal	One	2017-05-11 14:00
Flag		
Port		
SAR		



- Click on the Request type to select the desired request in the drop-down list. Note that the requests displayed depend on the role



The screenshot displays a web interface for requesting data. A green arrow points to the 'Request type' dropdown menu, which is open, showing a list of options: 'One Time Poll' (selected with a checkmark and a hand icon), '15 Minutes', '30 Minutes', '1 Hour', '3 Hours', '6 Hours', '12 Hours', and '24 Hours'. The 'Access type' is set to 'Coastal'. The 'Start date' and 'End date' are both set to '2017-08-08'. Below the form, a table shows a vessel with a speed of '8.5 KNOTS', a status of 'Under way using engine', and a latitude of '38° 26' 24'' N'.

Access type	Request type	Start date	End date
Coastal	One Time Poll	2017-08-08	2017-08-08

Speed	Status	Latitude
8.5 KNOTS	Under way using engine	38° 26' 24'' N



- For requests linked with a rate change: enter a start date (by default: today's date and hour when the query window opened) and an end date



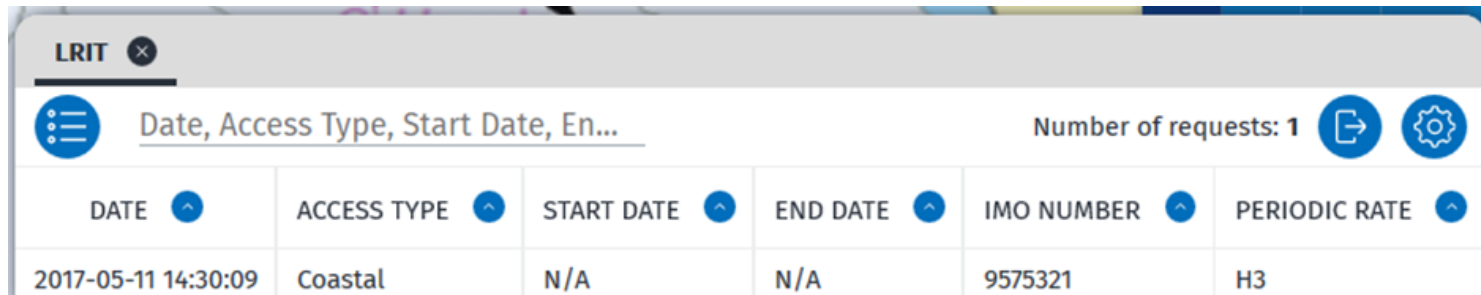
The screenshot shows a form with two rows. The first row is labeled 'Start date' and the second row is labeled 'End date'. To the right of each label is a green arrow pointing to a date input field. Each input field contains a calendar icon with the number '8' and a text box showing the date and time. The 'Start date' field shows '2017-05-11 14:07:42' and the 'End date' field shows '2017-05-12 14:07:42'. At the bottom right of the form is a green 'SUBMIT' button.

Start date	2017-05-11 14:07:42
End date	2017-05-12 14:07:42

SUBMIT



- Finally press the SUBMIT button. A tab containing the list of LRIT requests will appear



The screenshot shows a mobile application interface for LRIT (Long Range Identification Tracking) requests. At the top, there is a tab labeled 'LRIT' with a close button. Below the tab, there is a header bar with a menu icon, a search bar containing 'Date, Access Type, Start Date, En...', and a status indicator 'Number of requests: 1' with a share icon and a settings icon. The main content is a table with six columns: DATE, ACCESS TYPE, START DATE, END DATE, IMO NUMBER, and PERIODIC RATE. Each column has a sort icon (a blue circle with an upward arrow). The table contains one row of data.

DATE	ACCESS TYPE	START DATE	END DATE	IMO NUMBER	PERIODIC RATE
2017-05-11 14:30:09	Coastal	N/A	N/A	9575321	H3



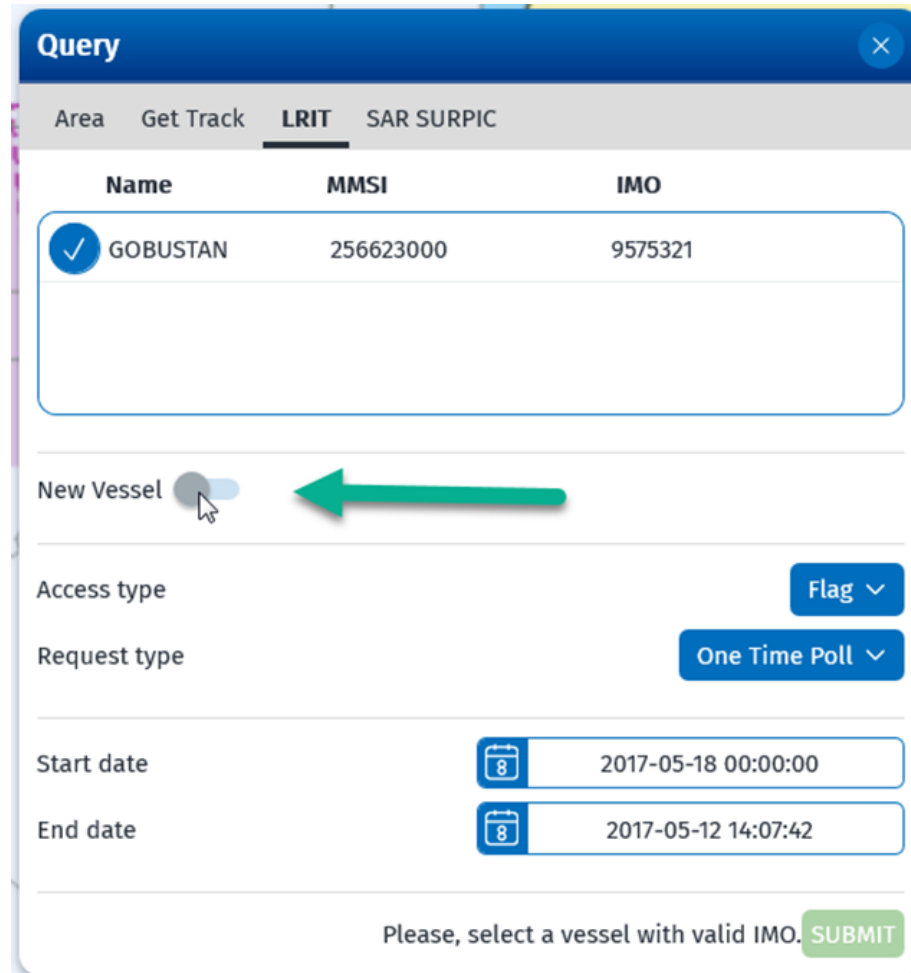
### LRIT request for a new ship

- Click on the query button





- The Query window opens. Activate the New vessel option



The screenshot shows the 'Query' window with the 'LRIT' tab selected. A table lists a vessel named 'GOBUSTAN' with MMSI '256623000' and IMO '9575321'. Below the table, the 'New Vessel' toggle switch is turned on, indicated by a green arrow. The 'Access type' is set to 'Flag' and the 'Request type' is set to 'One Time Poll'. The 'Start date' is '2017-05-18 00:00:00' and the 'End date' is '2017-05-12 14:07:42'. A green 'SUBMIT' button is at the bottom right.

Name	MMSI	IMO
✓ GOBUSTAN	256623000	9575321

New Vessel ☒

Access type: Flag

Request type: One Time Poll

Start date: 2017-05-18 00:00:00

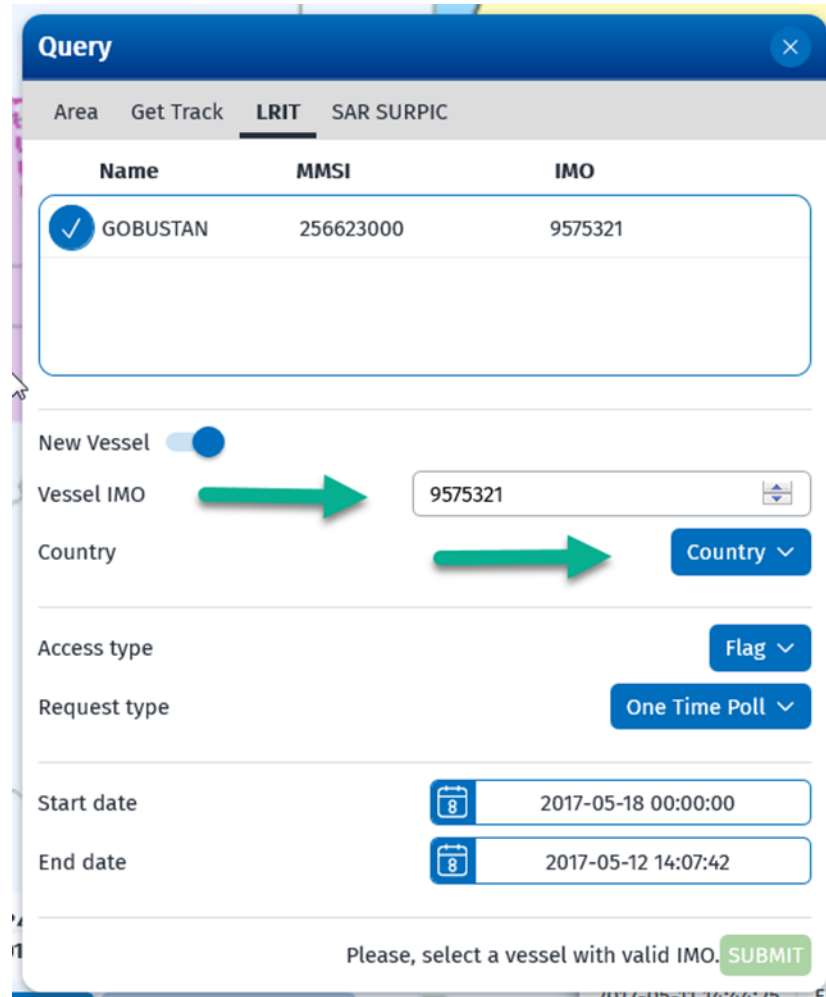
End date: 2017-05-12 14:07:42

Please, select a vessel with valid IMO. **SUBMIT**



## Option 2 (cont.)

- Enter a valid IMO number and select a country in the drop-down list
- Then proceed as before



**Query**

Area Get Track **LRIT** SAR SURPIC

Name	MMSI	IMO
✓ GOBUSTAN	256623000	9575321

New Vessel ☒

Vessel IMO

Country

Access type

Request type

Start date

End date

Please, select a vessel with valid IMO.



## Enhanced Search and Rescue Surface Picture

- The SAR SURPIC tool provides an enhanced SURPIC based on the existing LRIT SAR SURPIC function
- All latest ship positions of the last 24 hours will be displayed on the screen, irrespective of the data source (currently T-AIS, Sat-AIS, LRIT).
- List of identified ships with distance to target: shows the ships that are closest to the SURPIC center



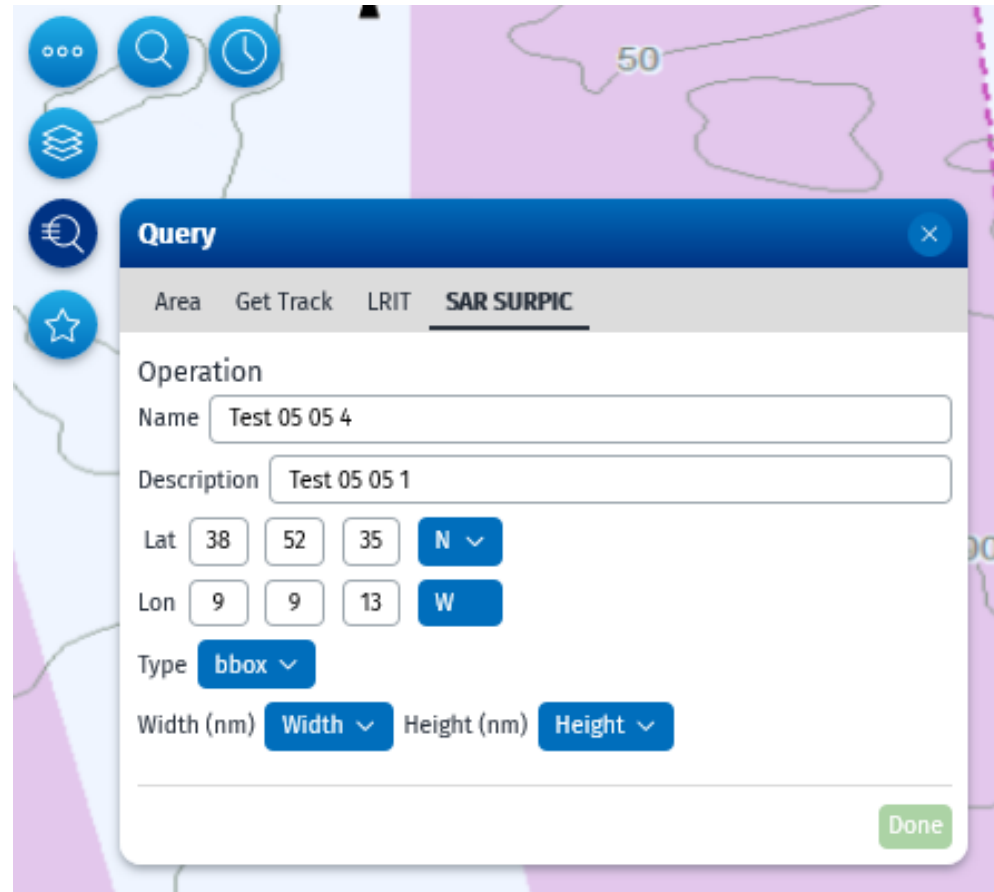
## Enhanced Search and Rescue Surface Picture

- Default square 10 NM x 10 NM is drawn on the map, up to 500 NM x 500 NM
- Circle can be selected, from 10 to 1000 NM
- for LRIT position reports a maximum of 4 positions available for the last 24 hours
- The SAR SURPIC tab provides access to
  - Active SAR SURPIC operations (list of vessels, log of the request, timeline)
  - Past SAR SURPIC operations



# How to make a SAR SURPIC – 1

- Click on the Query button, and select the tab: SAR SURPIC.
- Enter a name and a description
- Update the coordinates if needed



The screenshot shows a mobile application interface for creating a SAR SURPIC. A 'Query' dialog box is open over a map background. The dialog has a blue header with a close button. Below the header are four tabs: 'Area', 'Get Track', 'LRIT', and 'SAR SURPIC' (which is selected). The form contains the following fields:

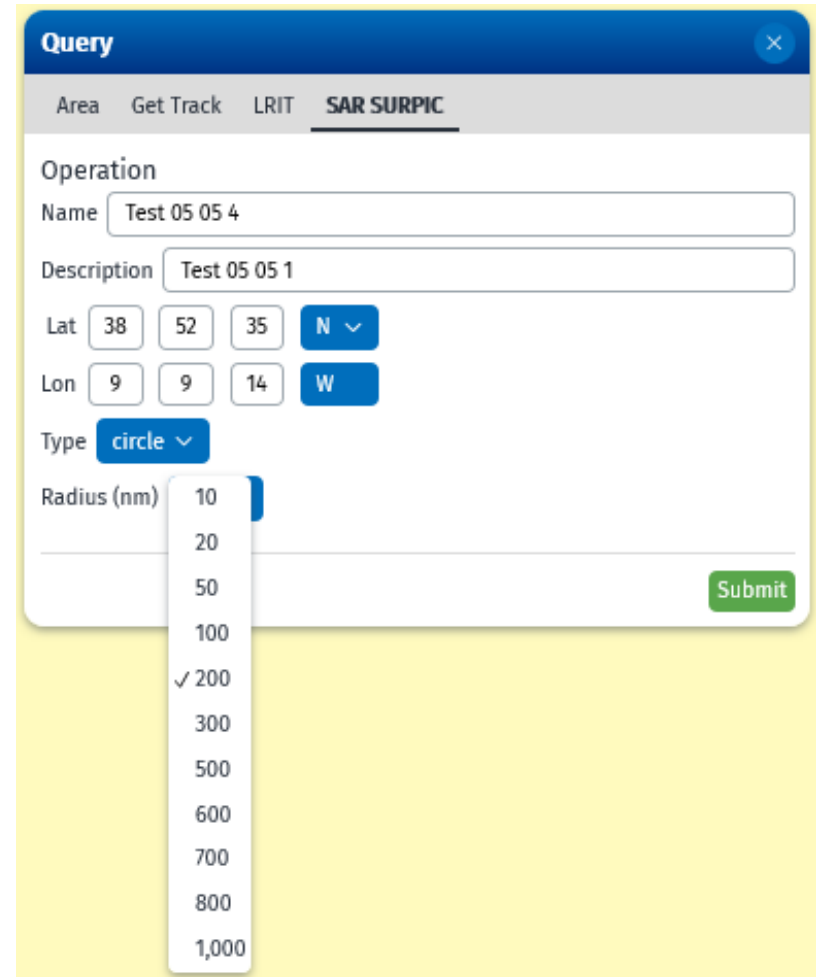
- Operation**
- Name**: Text input field containing 'Test 05 05 4'.
- Description**: Text input field containing 'Test 05 05 1'.
- Lat**: Three numeric input fields (38, 52, 35) followed by a dropdown menu set to 'N'.
- Lon**: Three numeric input fields (9, 9, 13) followed by a dropdown menu set to 'W'.
- Type**: A dropdown menu set to 'bbox'.
- Width (nm)**: A dropdown menu set to 'Width'.
- Height (nm)**: A dropdown menu set to 'Height'.

A green 'Done' button is located at the bottom right of the dialog.



# How to make a SAR SURPIC – 2

- Select circle or bbox, then the size
- Click on Submit button



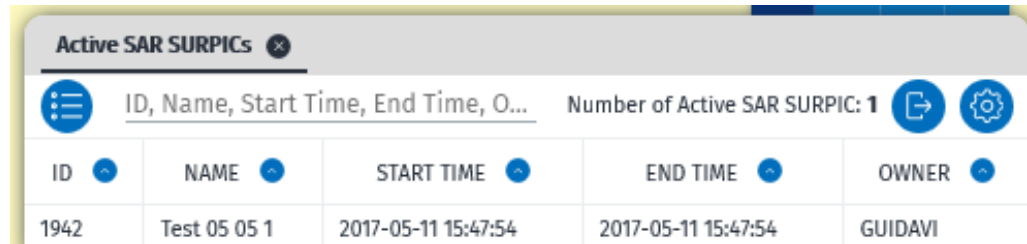
The screenshot shows a web interface titled "Query" with a close button (X) in the top right corner. Below the title bar are four tabs: "Area", "Get Track", "LRIT", and "SAR SURPIC", with "SAR SURPIC" being the active tab. The form contains the following fields and controls:

- Operation**
  - Name**: Text input field containing "Test 05 05 4".
  - Description**: Text input field containing "Test 05 05 1".
- Lat**: Three input fields containing "38", "52", and "35", followed by a dropdown menu showing "N".
- Lon**: Three input fields containing "9", "9", and "14", followed by a dropdown menu showing "W".
- Type**: A dropdown menu showing "circle".
- Radius (nm)**: A dropdown menu with values 10, 20, 50, 100, 200, 300, 500, 600, 700, 800, and 1,000. The value 200 is selected and marked with a checkmark.
- Submit**: A green button located at the bottom right of the form.



# How to make a SAR SURPIC – 3

- The SAR SURPIC appears in a new tab

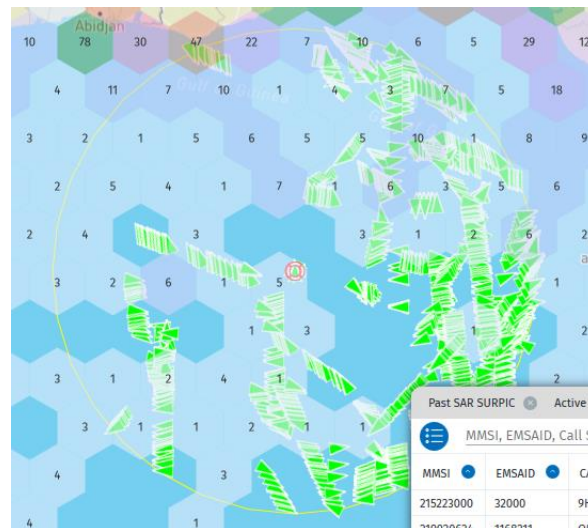


Active SAR SURPICs

ID, Name, Start Time, End Time, O... Number of Active SAR SURPIC: 1

ID	NAME	START TIME	END TIME	OWNER
1942	Test 05 05 1	2017-05-11 15:47:54	2017-05-11 15:47:54	GUIDAVI

- And the positions are visible on the map







**Thank you for your attention**

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