

# Maritime Monitoring Services Update on pilot projects

**LRIT NCA Meeting**  
17 October 2012

## Machteld Price

EMSA - European Maritime Safety Agency  
C.3.4 Maritime Monitoring Services

## 1 - MARSURV-3 for fishery control (BFT Campaign)

- The European Fisheries Control Agency (EFCA) coordinates the monitoring of Bluefin Tuna fisheries in the Mediterranean Sea and the Eastern Atlantic waters.
- The control, inspection and surveillance of fishery activities both at sea and ashore are done in cooperation with the Member States and the Commission.
- The MARSURV-3 pilot project began on 15 May and covered six pre-defined zones of interest in the Mediterranean Sea.
- The MARSURV-3 monitoring service combines specific fisheries information with maritime data available at EMSA for which access has been granted.
- The project was developed using the first version of EMSA Integrated Maritime data Platform (IMDatE) and the monitoring ended on 15 July.

## 1 - MARSURV-3 for fishery control (BFT Campaign)

- 18 MS granted access to LRIT positions over the 6 six sea areas of interest;
- 9 MS did not respond, 1 clarification by MS remained unanswered;
- No further distribution of the data was made and the applicable confidentiality requirements applied.

LRIT provision list (15 July 2012)	
MS	Number of positions
BEL - Belgium	4
HRV - Croatia	51
CYP - Cyprus	29
DNK - Denmark	24
EST - Estonia	4
GRC - Greece	81
ITA - Italy	311
LTU - Lithuania	4
LUX - Luxembourg	16
MLT - Malta	232
NLD - Netherlands	46
GBR – United Kingdom	40

## 1 - MARSURV-3 for fishery control (BFT Campaign)

Benefits of LRIT as data source to the project (although considered as non-critical data source) as provided by EFCA:

*The purpose of the project is to fuse and correlate all available maritime datasets in order to provide an integrated maritime picture identifying the vessels present in the Mediterranean Sea.*

*The available information will be cross-checked with satellite and visual sighting information allowing the detection of non identified targets.*

*As the fisheries for BFT also involves the use of transport vessels, processing vessels, reefers and auxiliary vessels the availability of LRIT data would facilitate the identification of such vessels*

# 1 - MARSURV-3 for fishery control (BFT Campaign)

- 78 LRIT positions corresponding to 19 different vessels were not reported by the other types of information (15 July);

	total	LYB	BAL	ADR	EastMED	SMAL	THYR
Number of LRIT positions :	843						
Number of position reported by all data sources	166 396						
Positions only reported by LRIT (unique mmsi):	78	4	4	22	2	13	33
Nb of vessel reported by LRIT only (unique mmsi)	19						

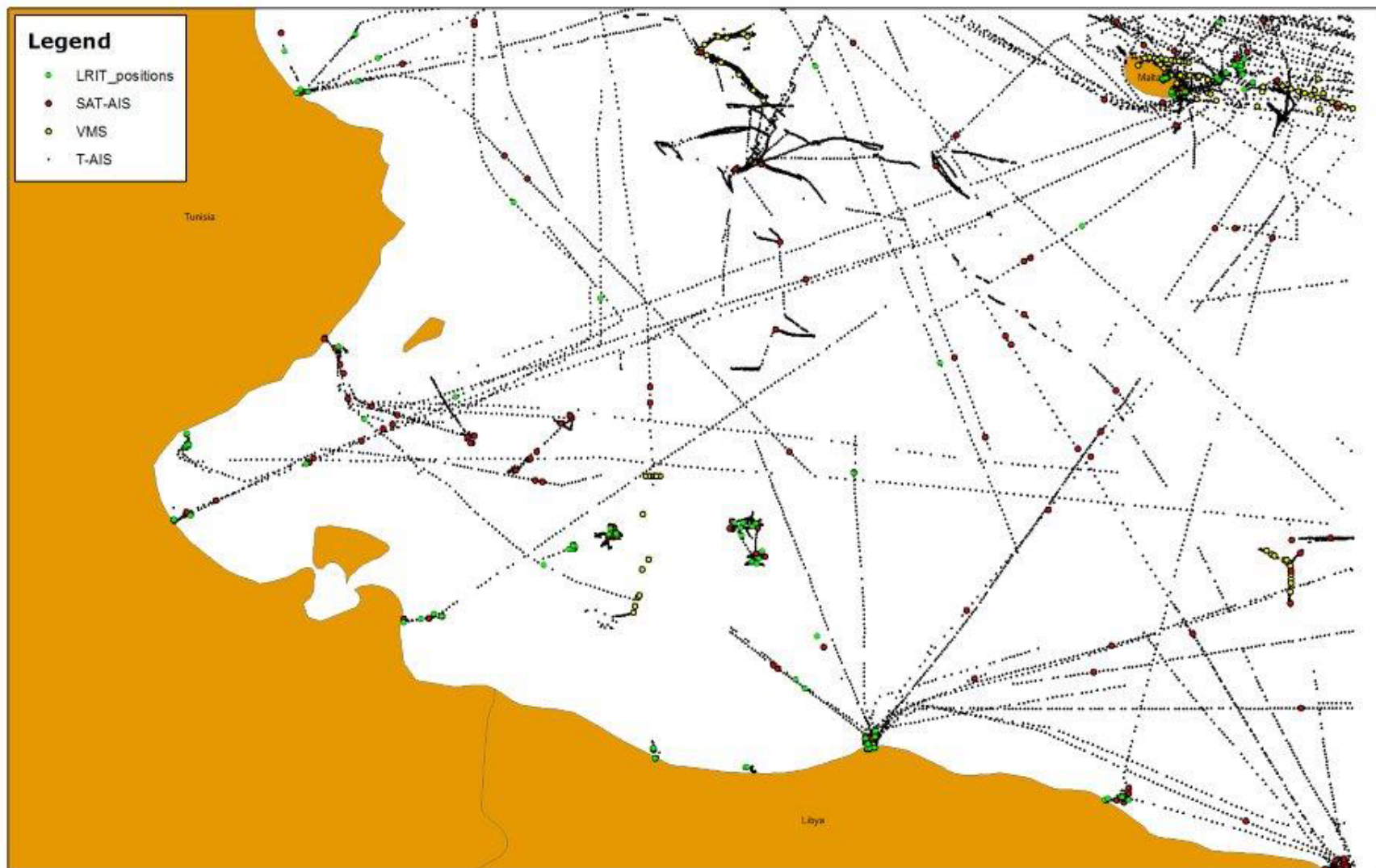
S-AIS: 423 positions reported

VMS: 1197

T-AIS: 164776

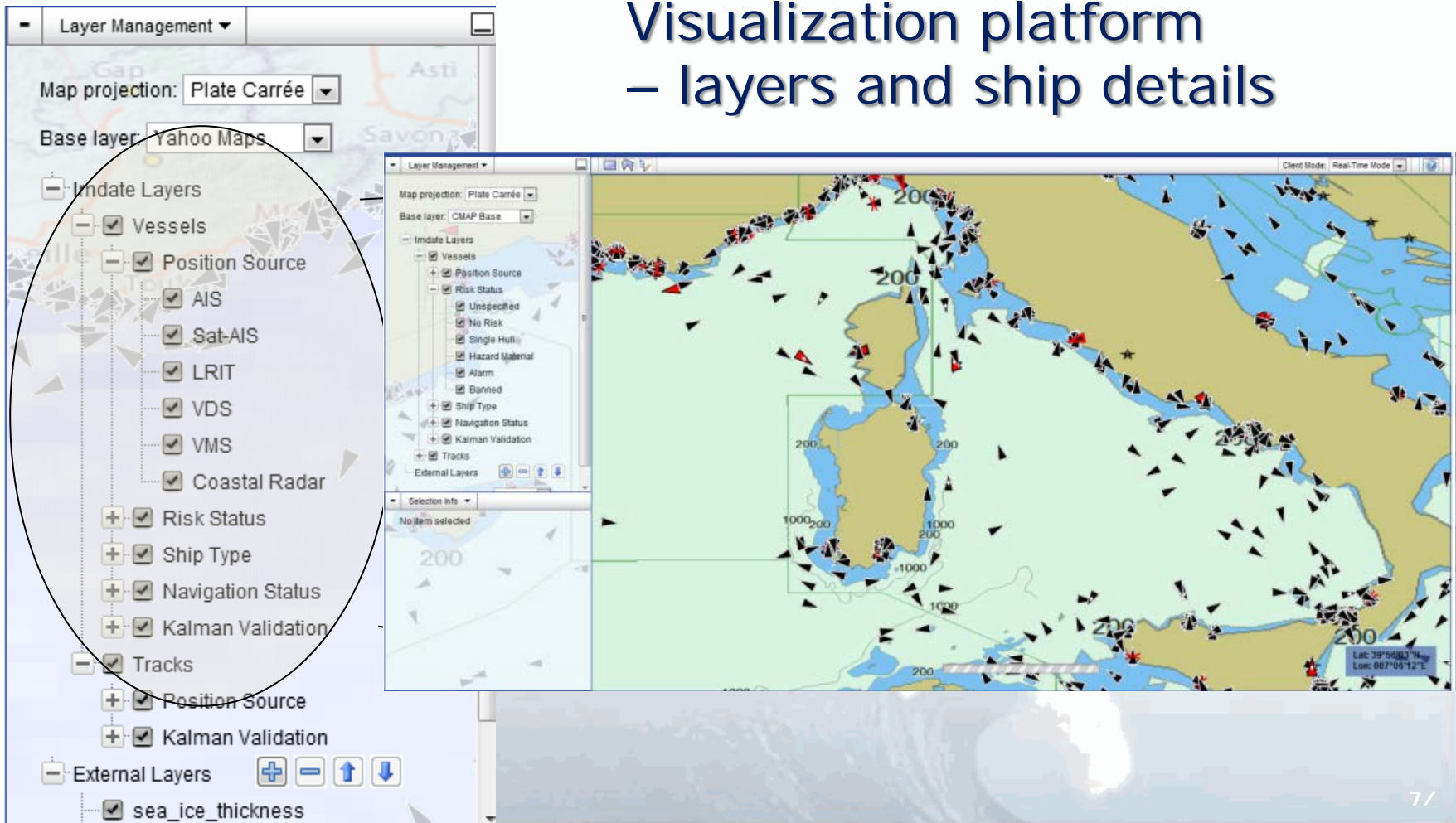


# 1 - MARSURV-3 for fishery control (BFT Campaign)



# 1 - MARSURV-3 for fishery control (BFT Campaign)

## Visualization platform – layers and ship details



The screenshot displays the MARSURV-3 visualization platform interface. The main window shows a map of the Mediterranean Sea with numerous ship icons. The interface includes a 'Layer Management' panel on the left and a 'Selection Info' panel at the bottom left.

**Layer Management Panel:**

- Map projection: Plate Carrée
- Base layer: Yahoo Maps
- Indicate Layers:
  - ☒ Vessels
  - ☒ Position Source
    - ☒ AIS
    - ☒ Sat-AIS
    - ☒ LRIT
    - ☒ VDS
    - ☒ VMS
  - ☒ Coastal Radar
  - ☒ Risk Status
  - ☒ Ship Type
  - ☒ Navigation Status
  - ☒ Kalman Validation
- ☒ Tracks
  - ☒ Position Source
  - ☒ Kalman Validation
- External Layers:
  - ☒ sea\_ice\_thickness

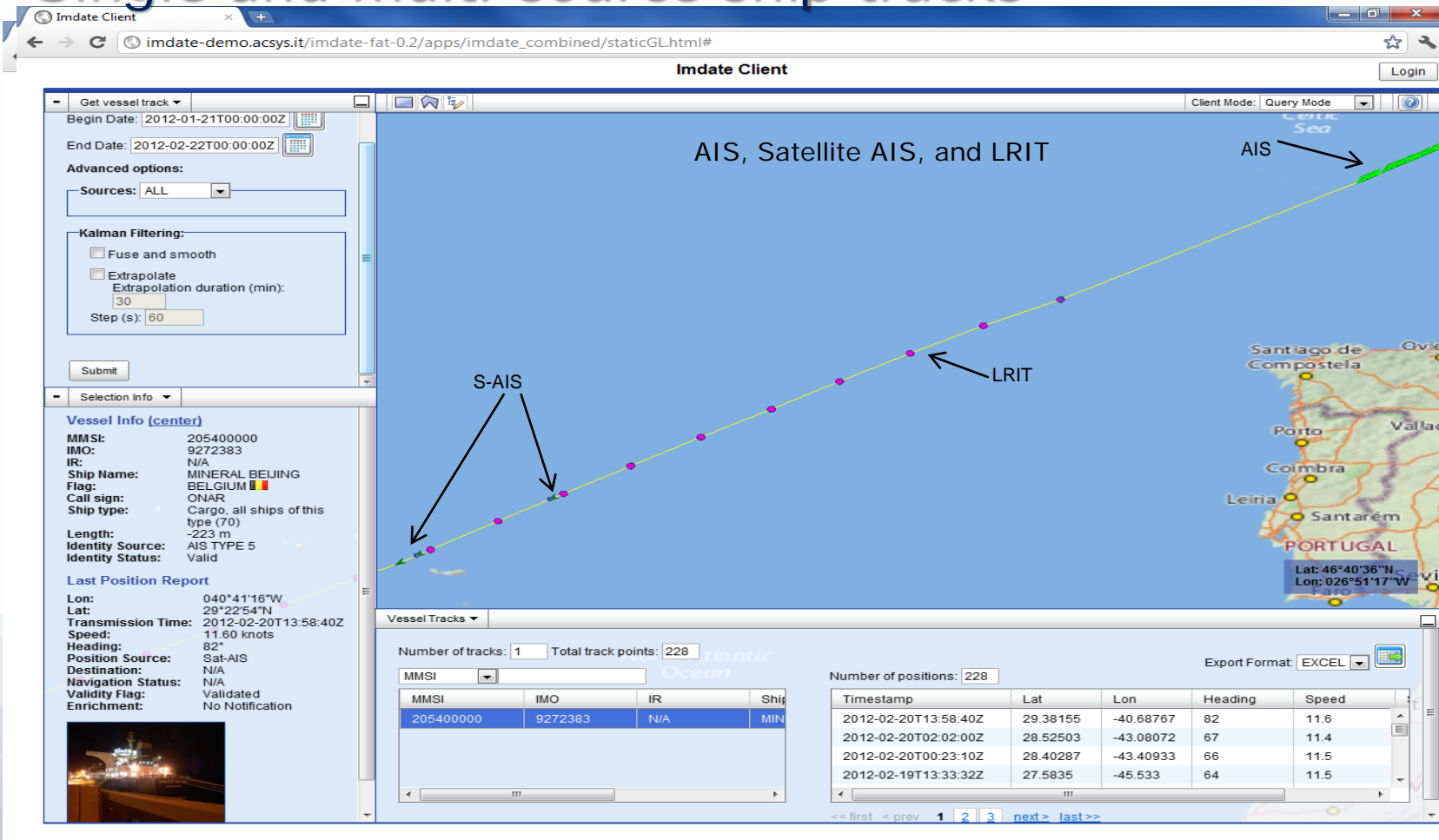
**Selection Info Panel:**

- No item selected

The main map area shows a detailed view of the Mediterranean Sea with ship icons and depth contours. The 'Client Mode' is set to 'Real-Time Mode'.

# 1 - MARSURV-3 for fishery control (BFT Campaign)

## Single and multi-source ship tracks





# 1 - MARSURV-3 for fishery control (BFT Campaign)

## Vessel reports with track interpolation

**Get vessel track**

Vessel: MMSI 352879000

Begin Date: 2012-02-12T00:00:00Z

End Date: 2012-02-15T11:00:00Z

Advanced options:

Sources: ALL

Kalman Filtering:

☒ Fuse and smooth

☐ Extrapolate

Extrapolation duration (min): 30

Step (s): 60

Submit

---

**Selection Info**

Flag: PANAMA

Call sign: 3EAG4

Ship type: Other Type, all ships of this type (90)

Length: 199 m

Identity Source: AIS TYPE 5

Identity Status: Valid

**Last Position Report**

Lon: 016°29'08"E

Lat: 35°10'08"N

Transmission Time: 2012-02-15T10:17:55Z

Speed: 15.90 knots

Heading: 106°


Position Source: Sat-AIS

Destination: N/A

Navigation Status: N/A

Validity Flag: Validated

Enrichment: No Notification



Marine Traffic Vessel Details

**Interpolation considers:**

- Previous position reports
- Heading and speed
- Correctness thresholds

S-AIS

AIS

Map showing vessel tracks in the Mediterranean Sea.

Lat: 34°47'31"N  
Lon: 002°42'58"E

**Vessel Tracks**

Number of tracks: 1 Total track points: 5068

MMSI	IMO	IR	Sh
352879000	9284776	N/A	GP

Number of positions: 5068

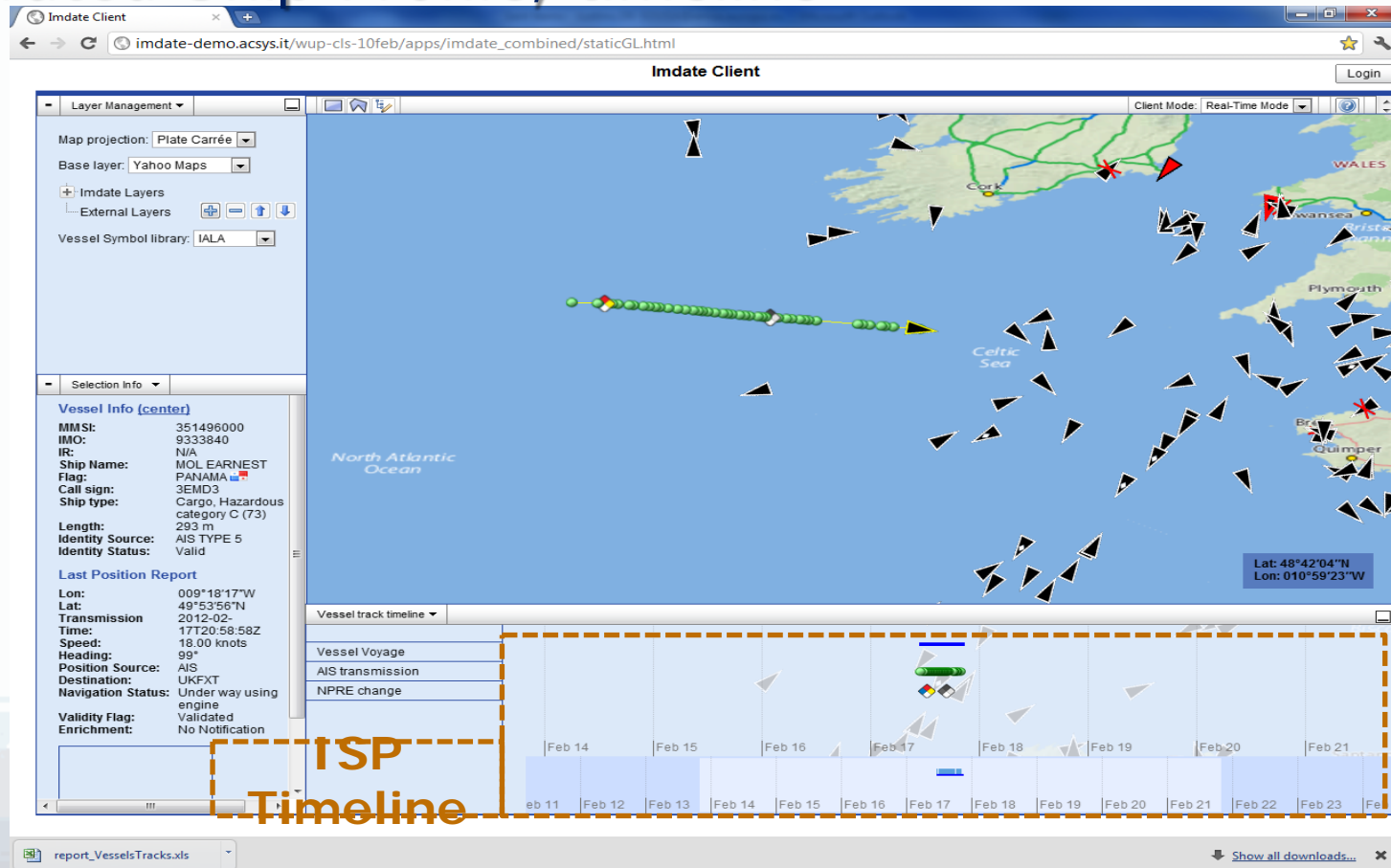
Timestamp	Lat	Lon	Heading	Speed
2012-02-13T04:05:03Z	36.52	-0.73	80.44	7.41
2012-02-13T04:04:03Z	36.52	-0.74	80.25	7.60
2012-02-13T04:03:03Z	36.52	-0.74	80.02	8.15
2012-02-13T04:02:03Z	36.52	-0.75	79.77	9.08

Export Format: EXCEL

<< first < prev 29 30 31 32 33 34 35 36 37 38 next > last >>

# 1 - MARSURV-3 for fishery control (BFT Campaign)

## Integrated Ship Profile, timeline



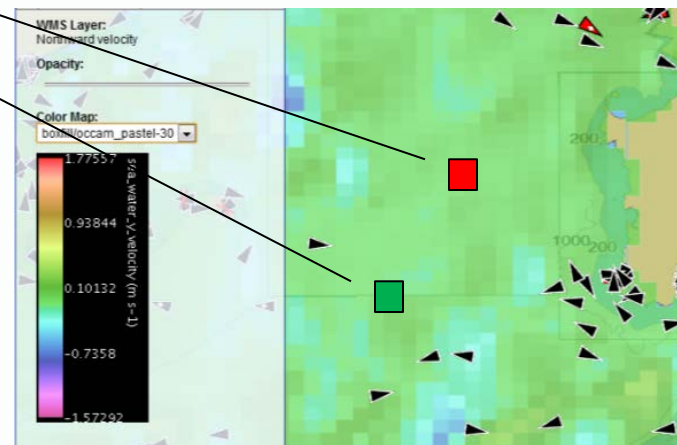
In addition to the map view, a 'Timeline' tool provides better awareness of time related events/information. Clicking on an element in the timeline sets the focus on the relevant part of the map.

# 1 - MARSURV-3 for fishery control (BFT Campaign)

## Visualization of external information

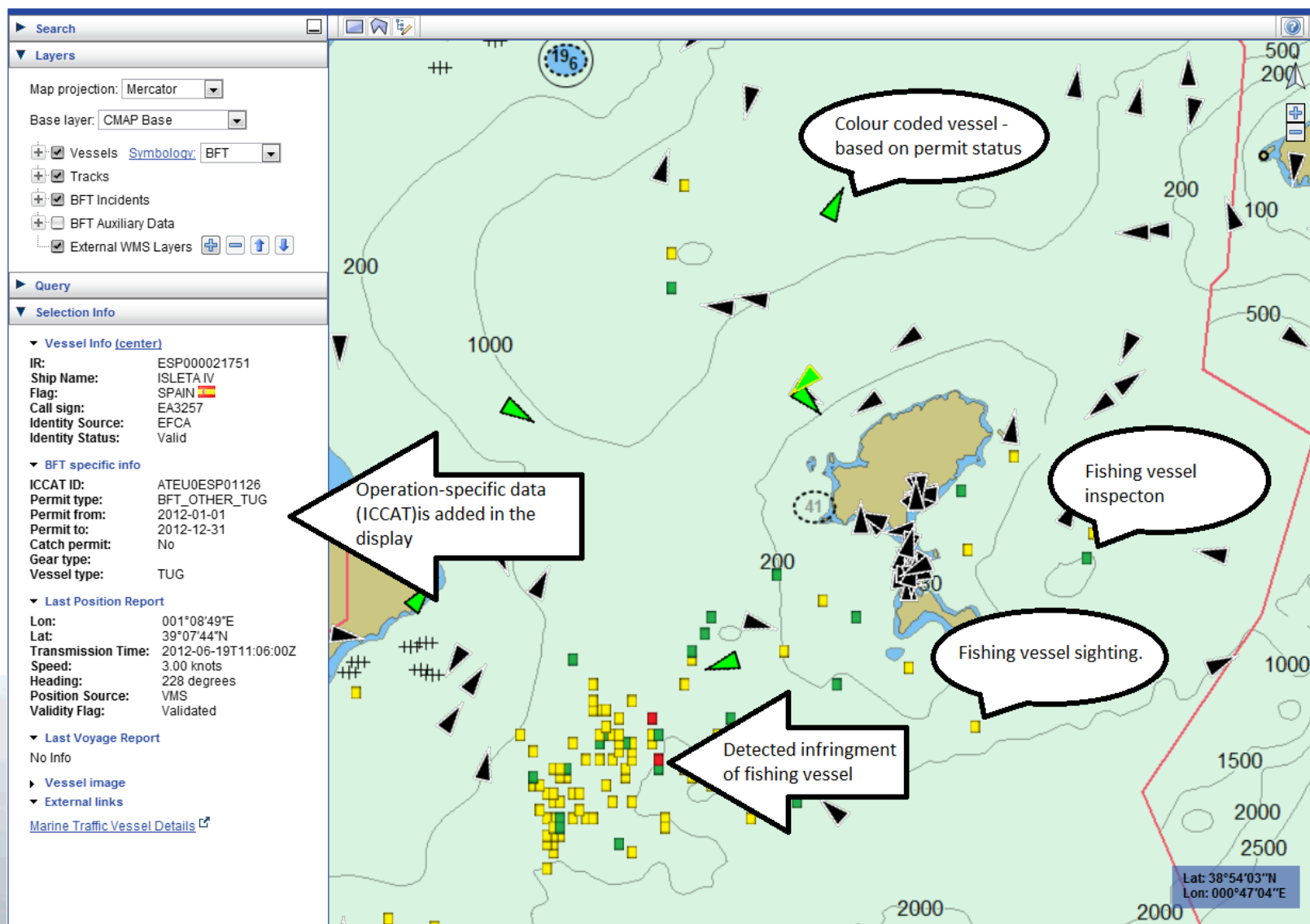


On-site inspections,  
intelligence data,  
sightings, etc.





# 1 - MARSURV-3 for fishery control (BFT Campaign)



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Search

Layers

Map projection: Mercator

Base layer: CMAP Base

☒ Vessels [Symbolology](#) BFT

☒ Tracks

☒ BFT Incidents

☐ BFT Auxiliary Data

☒ External WMS Layers

Query

Selection Info

Vessel Info (center)

IR: ESP000024638  
 Ship Name: FRANCISCO Y YOLANDA  
 Call sign: EB2652  
 Identity Source:  
 Identity Status: Temporary

Last Position Report

Lon: 001°02'28"E  
 Lat: 38°39'04"N  
 Transmission Time: 2012-06-19T09:54:00Z  
 Speed: 8.00 knots  
 Heading: 105 degrees  
 Position Source: VMS  
 Validity Flag: Validated

Last Voyage Report

No Info

Vessel image

External links

[Marine Traffic Vessel Details](#)

Vessel Tracks

Number of tracks: 1

MMSI

MMSI

N/A

Search

Layers

Map projection: Mercator

Base layer: CMAP Base

☒ Vessels [Symbolology](#) BFT

☒ Tracks

☒ BFT Incidents


☐ BFT Auxiliary Data

☒ External WMS Layers

Query

Selection Info

Vessel Info (center)

MMSI: 224006930  
 Ship Name: SERRA AITANA  
 Flag: SPAIN   
 Call sign: EA4720  
 Ship type: Not specified (0)  
 Length: 25 m  
 Identity Source: AIS TYPE 5  
 Identity Status: Valid

Last Position Report

Lon: 001°24'41"E  
 Lat: 39°12'46"N  
 Transmission Time: 2012-06-19T11:23:23Z  
 Speed: 3.00 knots  
 Heading: 233 degrees  
 Position Source: T-AIS  
 Navigational Status: Invalid (15)  
 Enrichment: No Notification  
 Validity Flag: Validated

Last Voyage Report

No Info

Vessel image

External links

[Marine Traffic Vessel Details](#)

Vessel Tracks

Number of tracks: 1 Total track points: 226

MMSI

MMSI	IMO	IR	Sh
224006930	N/A	N/A	SE

Number of positions: 226

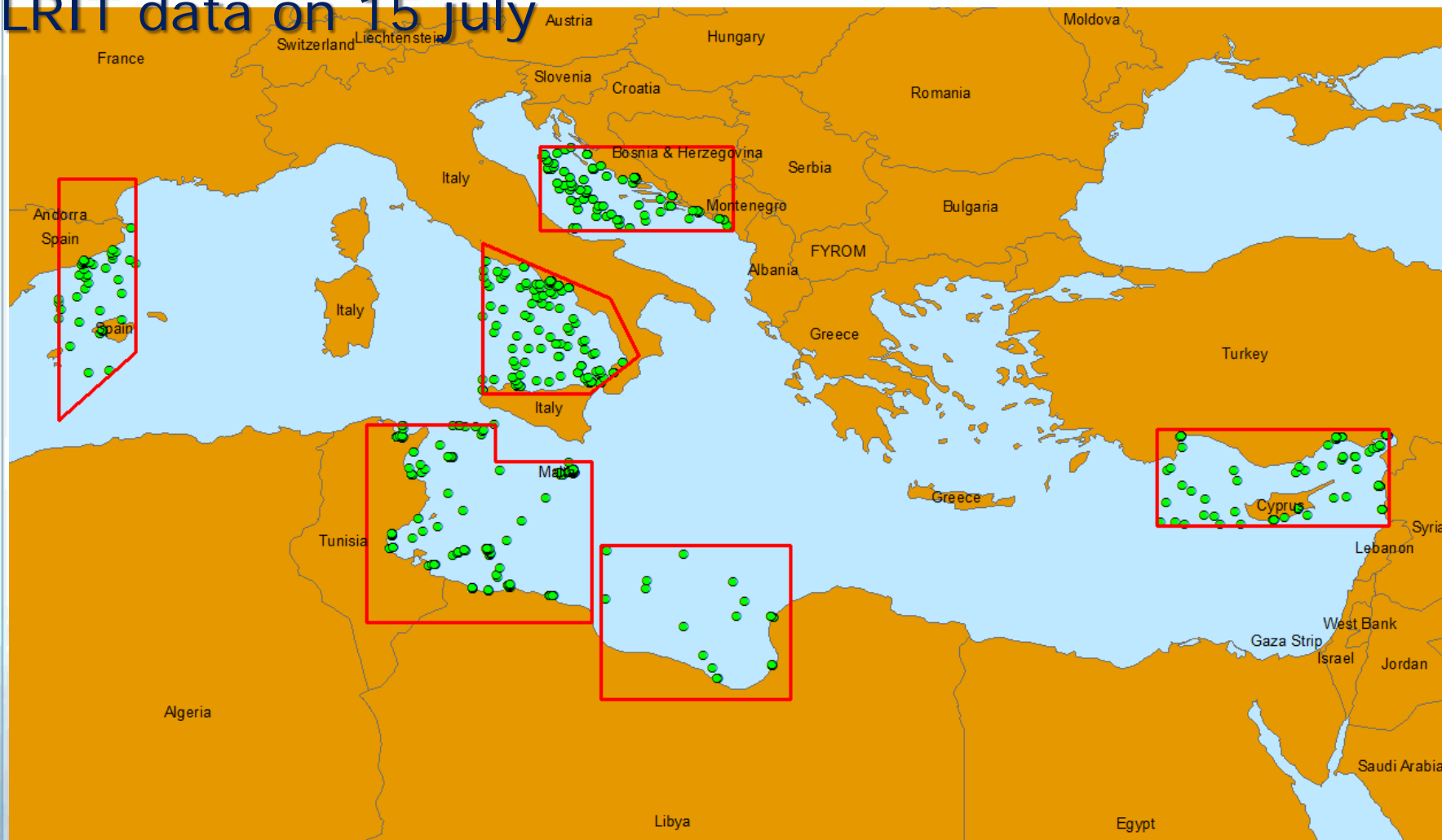
Export Format: EXCEL

Timestamp	Lat	Lon	Heading	Speed
2012-06-19T11:23:23Z	39.21279	1.41126	232.8	2.9
2012-06-19T11:17:23Z	39.21505	1.41661	257.6	3.1
2012-06-19T11:11:23Z	39.21724	1.42178	222.9	2.8
2012-06-19T11:05:23Z	39.21929	1.42641	242.1	2.3



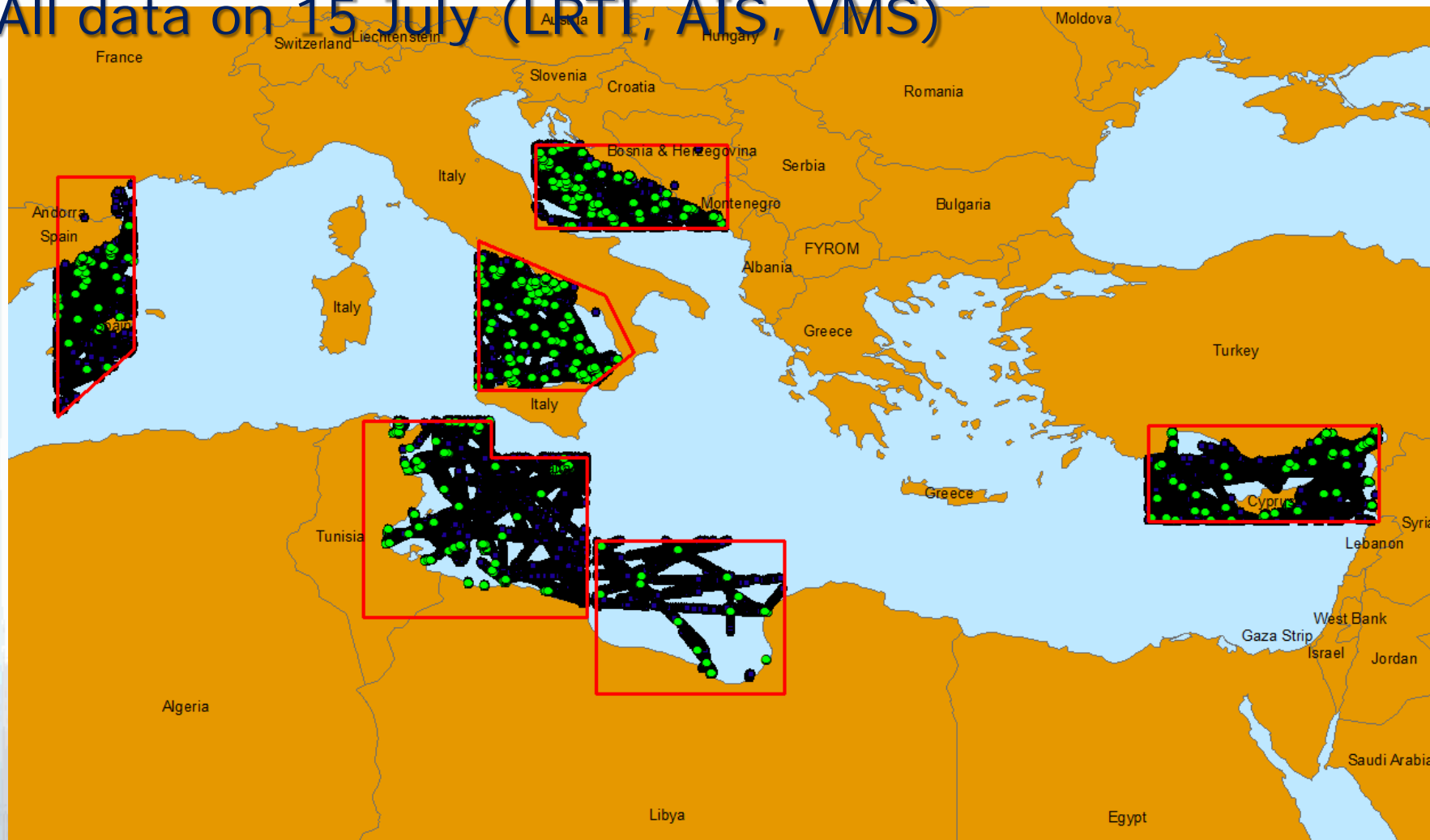
# 1 - MARSURV-3 for fishery control (BFT Campaign)

LRIT data on 15 july

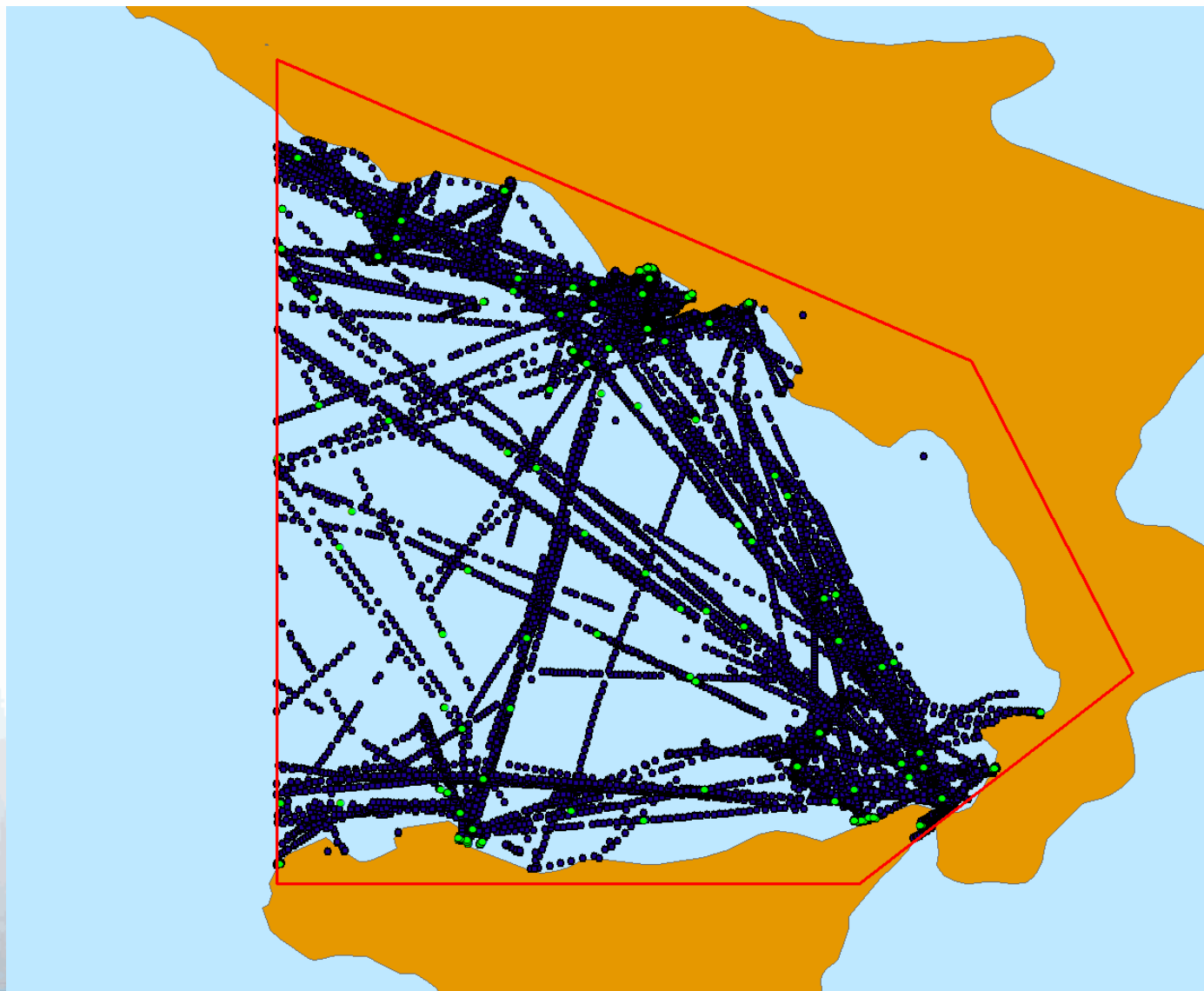


# 1 - MARSURV-3 for fishery control (BFT Campaign)

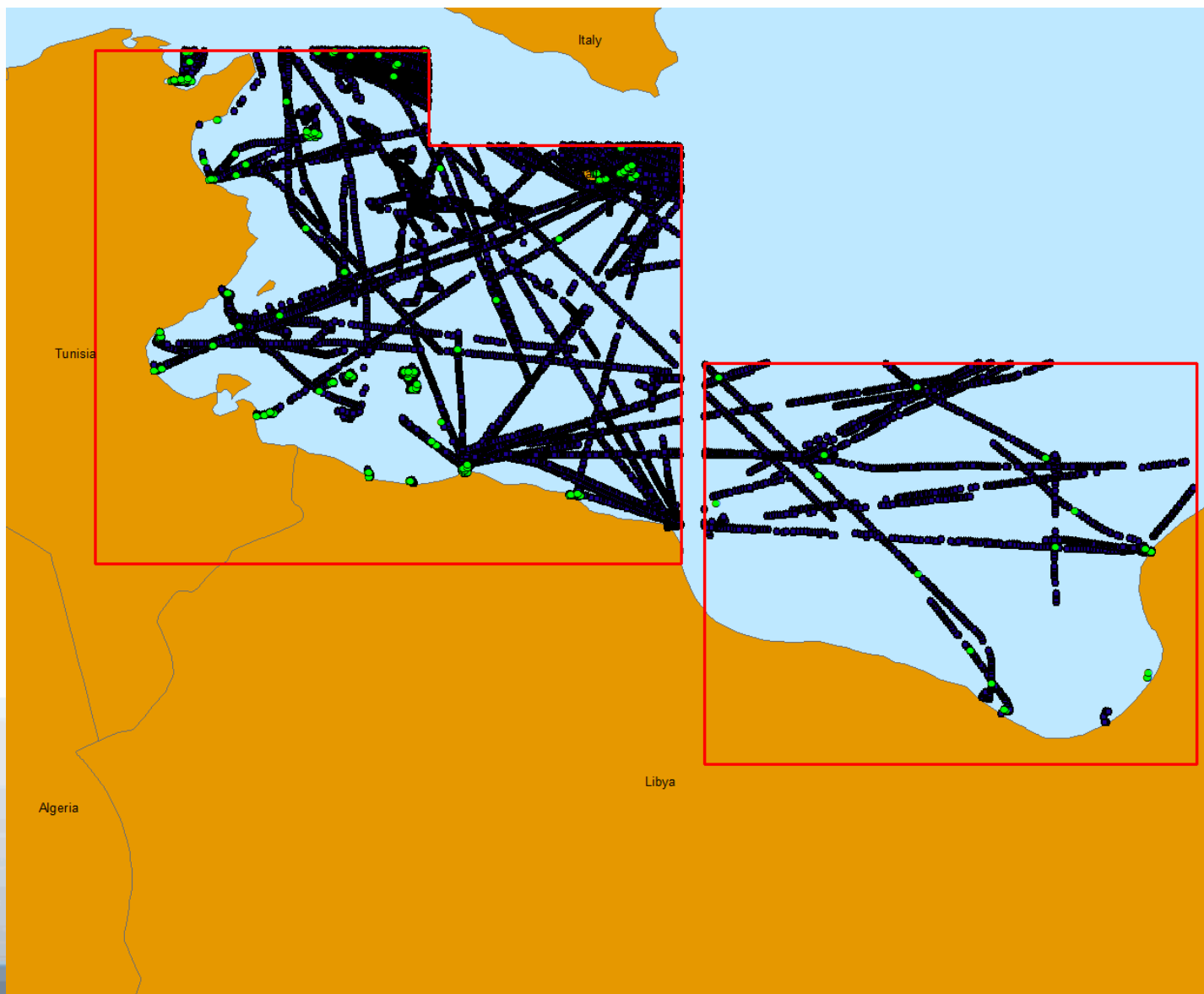
All data on 15 July (LRTI, AIS, VMS)



## 1 - MARSURV-3 for fishery control (BFT Campaign)



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## 1 - Way forward – MARSURV-3 for fishery control

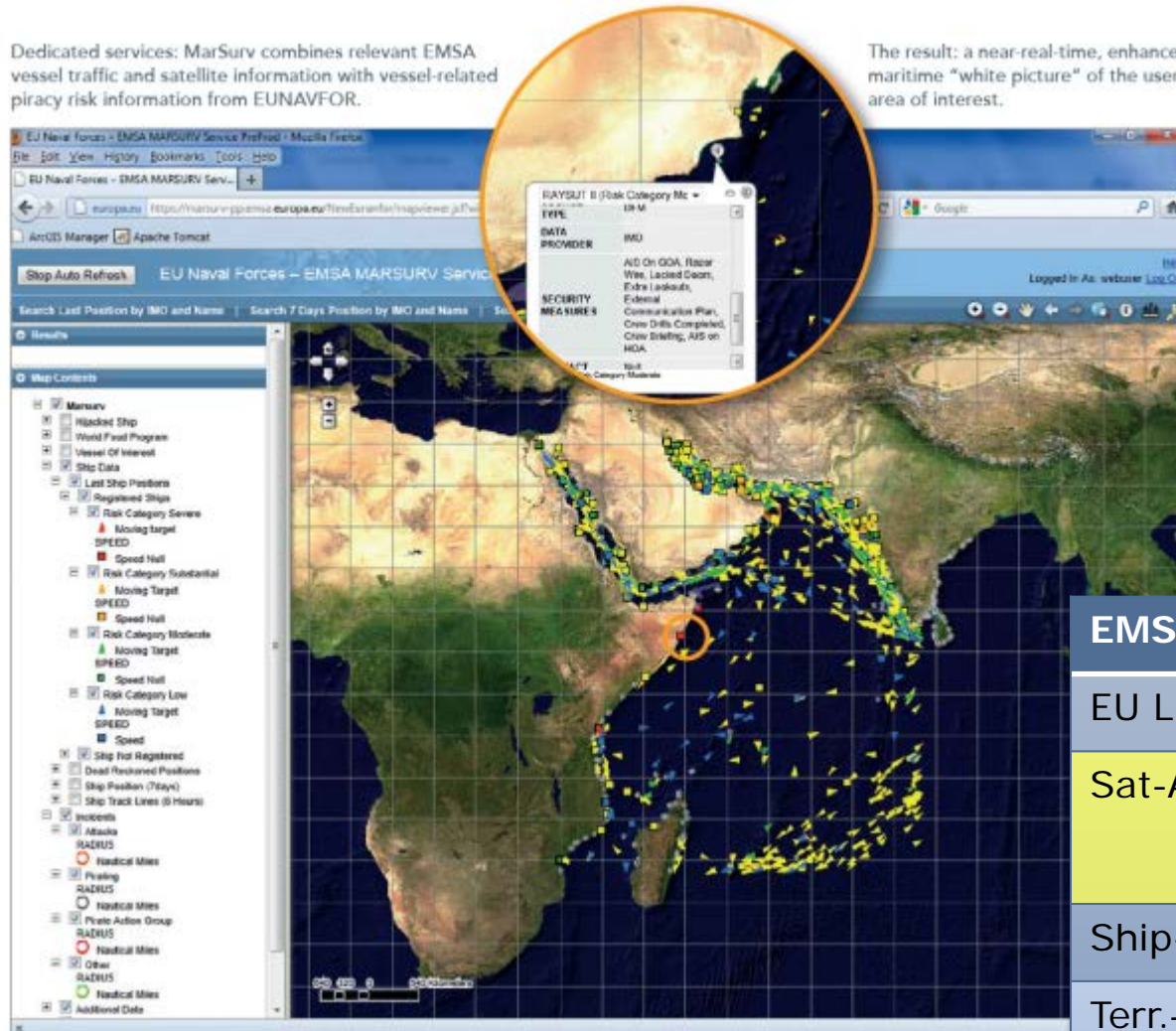
- MARSURV-3 has demonstrated:
  - good cooperation between EMSA and EFCA
  - the benefit of integrated data fusion and visualization tools
- Options for the future:
  1. EMSA to provide *ad-hoc* support for specific operations
  2. EMSA to develop a permanent “VMS + Maritime Data” service for daily monitoring duties and to support special operations
- Option 2 is a preferred choice:
  - long term commitment of IT resources with higher level of service
  - benefit from collected knowledge
  - continuous service improvement
  - quicker response in case of specific requests.



## 2 – Update on anti-piracy monitoring (pilot project *MARSURV-1* for *EUNAVFOR*)

Dedicated services: MarSurv combines relevant EMSA vessel traffic and satellite information with vessel-related piracy risk information from EUNAVFOR.

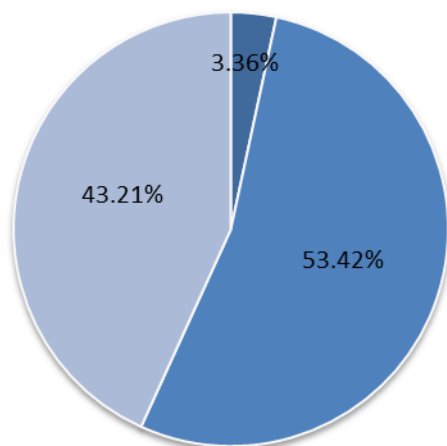
The result: a near-real-time, enhanced maritime "white picture" of the users area of interest.



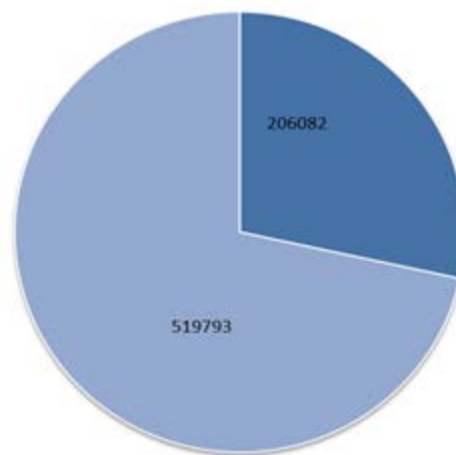
EMSA data	EUNAVFOR data
EU LRIT	Int. LRIT up to 85%
Sat-AIS	Piracy Risk register (incl. measures, communication info)
Ship-AIS	Piracy incidents
Terr.-AIS	

## 2 – MARSURV-1 for anti-piracy monitoring

- LRIT versus S-AIS Reporting vessels in the MARSURV-1 application during August 2012



- vessels reporting by LRIT only (330)
- vessels reporting by S-AIS only (4470)
- vessels reporting by LRIT and S-AIS (3892)



- Total LRIT positions in August
- Total Satellite AIS positions in August

## 2 – MARSURV-1 for anti-piracy monitoring

- S-AIS density versus LRIT density during one day

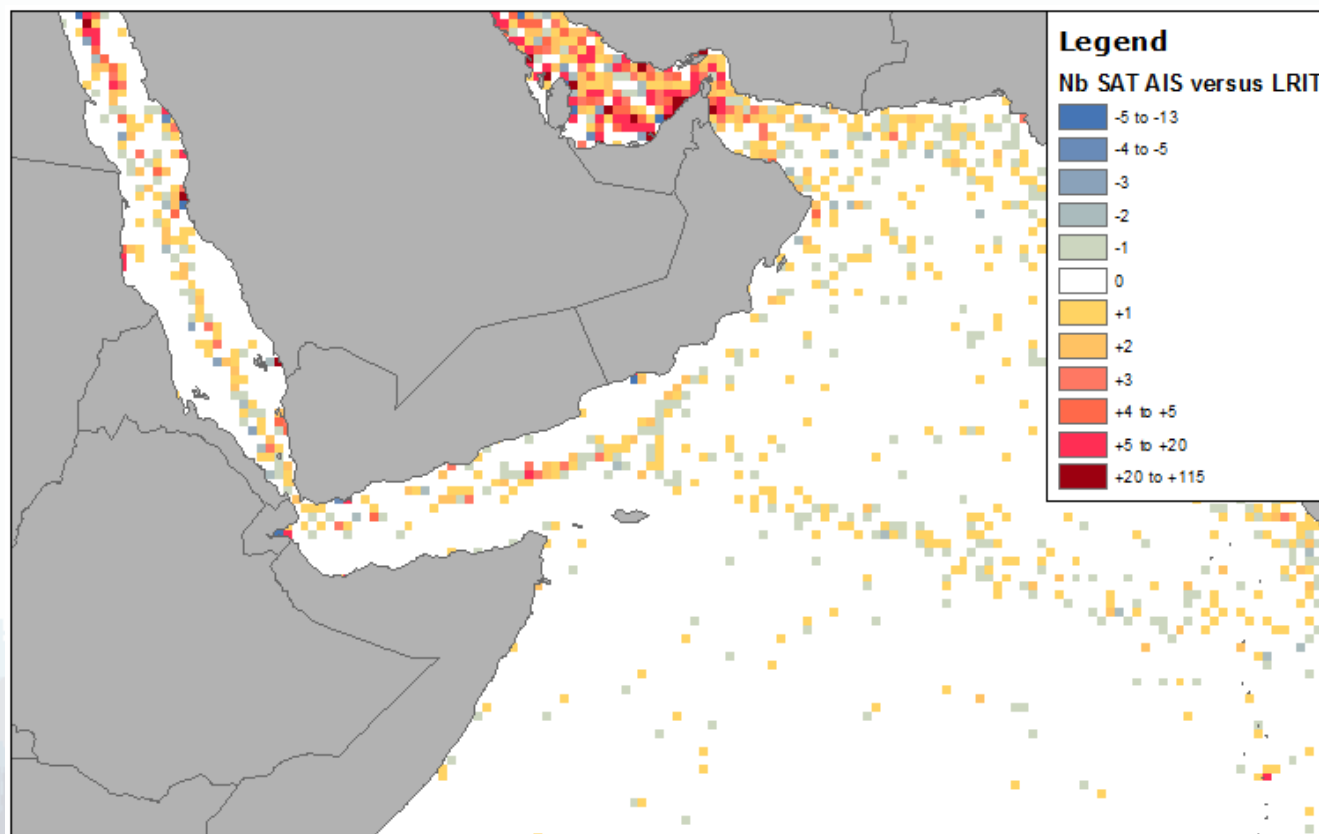


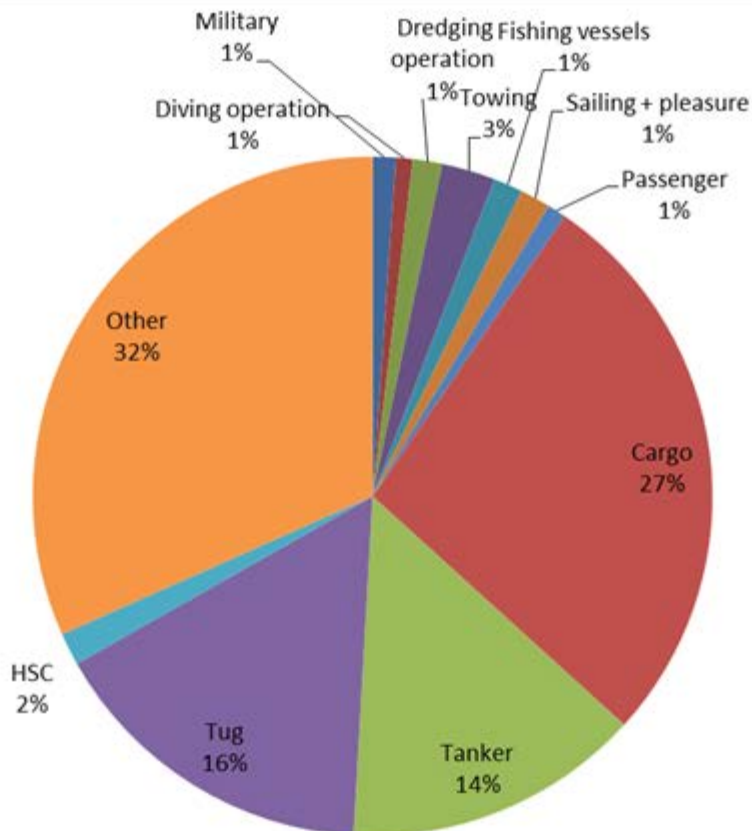
Figure: Geographical distribution of number of vessels collected by S-AIS versus LRIT.

This is the difference between the last positions of vessels during the day of 29<sup>th</sup> August 2012 collected by cells of 30km<sup>2</sup> for S-AIS and LRIT.

Warm colour indicates that there was more S-AIS vessel positions collected for a cell than LRIT. There are 2 times more cells where more vessels were reported by S-AIS than by LRIT.

## 2 – MARSURV-1 for anti-piracy monitoring

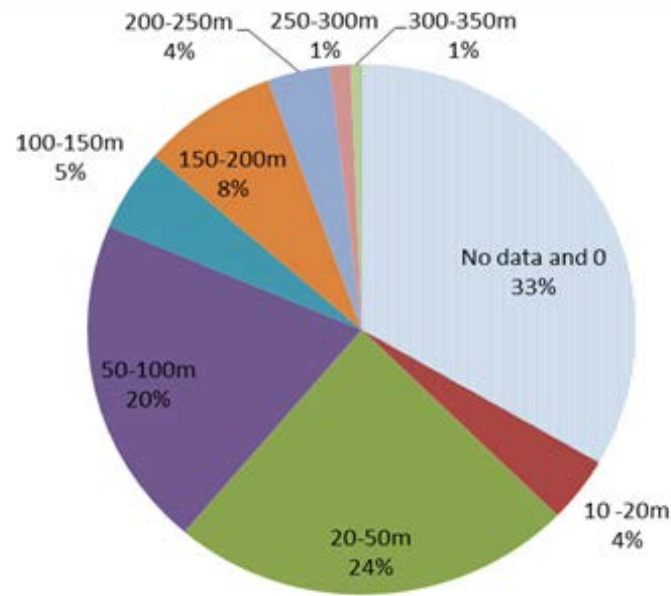
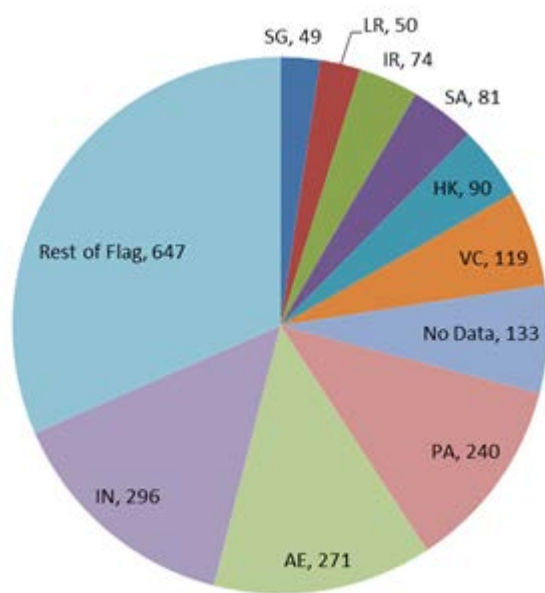
- MARSURV-1 S-AIS data from August 23 to August 30



S-AIS data procured by EUNAVFOR since August 2012

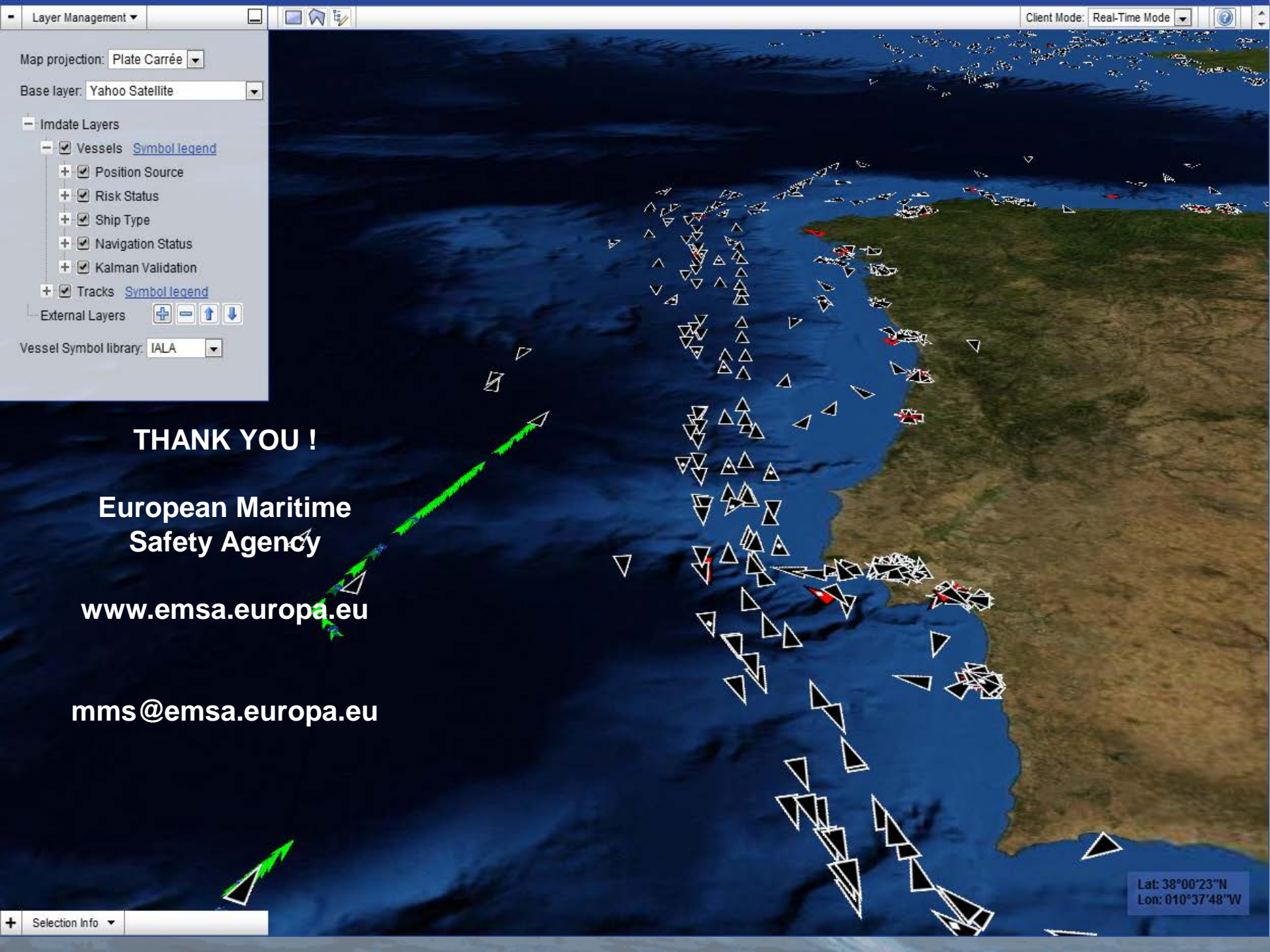
## 2 – MARSURV-1 for anti-piracy monitoring

- MARSURV-1 S-AIS data from August 23 to August 30
  - Concerning the information reported by SAT AIS in the target region the traffic seems mainly regional as the 2 of the 3 larger fleets are registered in the Arab Emirate and India.



Size category	Nb of vessel
No data and 0	661
10 -20m	79
20-50m	472
50-100m	400
100-150m	99
150-200m	160
200-250m	73
250-300m	24
300-350m	13





**THANK YOU !**

**European Maritime  
Safety Agency**

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