

# Fisheries Monitoring Centre (FMC) Blue Fin Tuna (BFT) Fishery

*3<sup>rd</sup> Automated Behaviour Monitoring (ABM)  
Workshop (Lisbon, 12<sup>th</sup> September 2017)*

By

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GPS SAT

# How a FMC/VMS works?



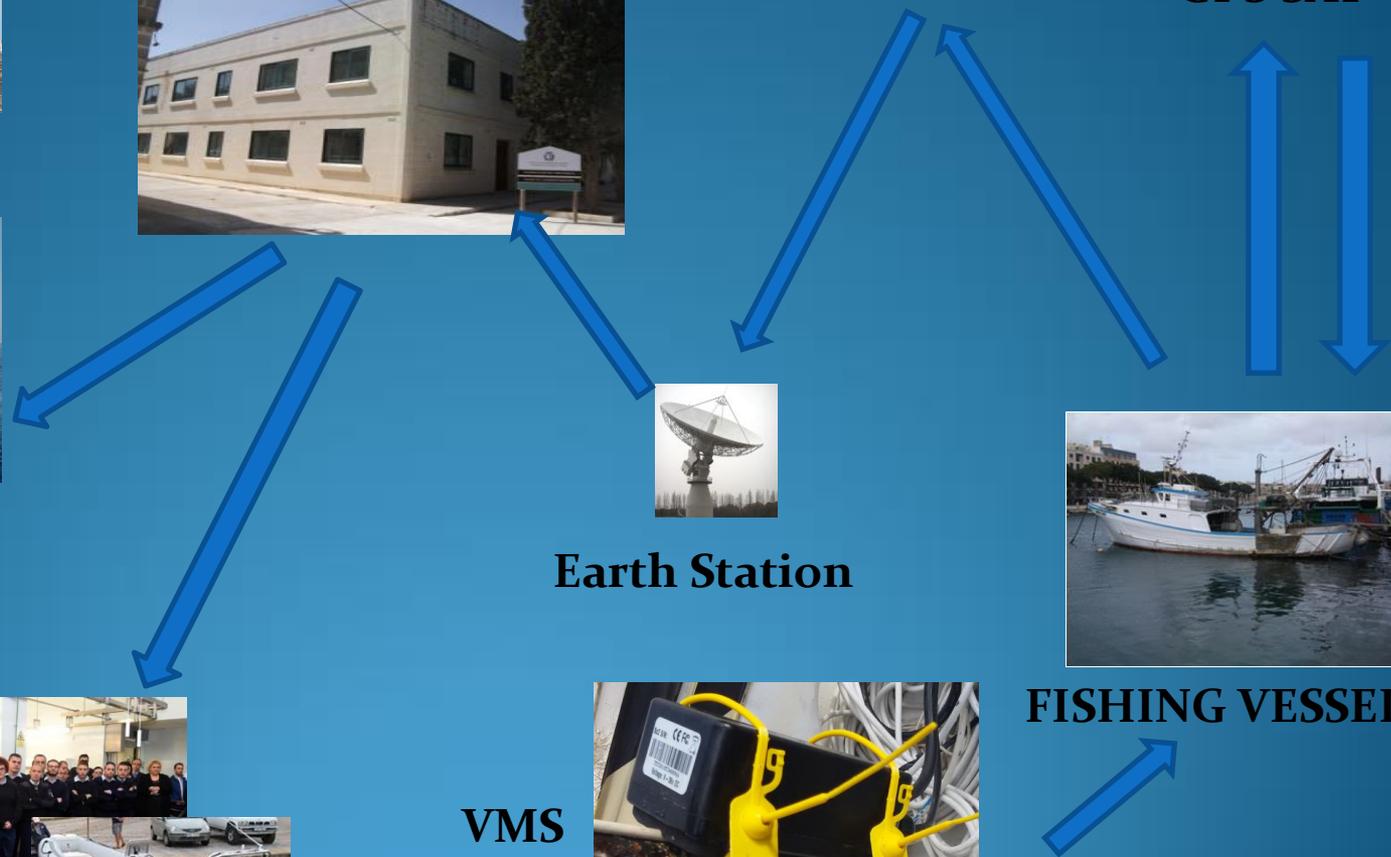
Earth Station



FISHING VESSEL



VMS



# Malta's Vessel Monitoring System (VMS)

Article 16 of Cap 425.07

Article 18 to 27 of (EU) No 404/2011 Commission Implementing Regulation

Article 9 (1) of Council Regulation (EC) No 1224/2009

Article 9 (2) of Council Regulation (EC) No 1224/2009

Article 9 (9) CR of (EC) No 1224/2009

## What is a VMS?

The most basic function of a VMS is to determine the vessel's location at a given time, and periodically transmit this information to a Fisheries Monitoring Centre (FMC).



**ID:** 425699377  
**Label:** Marie De Lourdes 1  
**Reg:** MFA7116  
**Speed:** 1.2125 mph, **Dir:** W  
**Last:** 01/04/2016 11:27:38  
**Pos:** 34.54921, 14.32107  
Ghan Tuffeħa, Malta

Article 19 of Commission implementing Regulation (EU) No 404/2011

Article 9 (3) of CR (EC) No 1224/2009

# Malta's Fisheries Management Zone cont..

**Trawlers permitted to operate within the FMZ are only authorised to operate in designated zones as per Annex V of Council Regulation (EC) No 1967/2006 and Article 23 of Commission Implementing Regulation (EU) 404/2011**



**Out of the 12 trawlers in the Maltese fishing fleet, 7 are permitted to operate inside the 25 FMZ.**

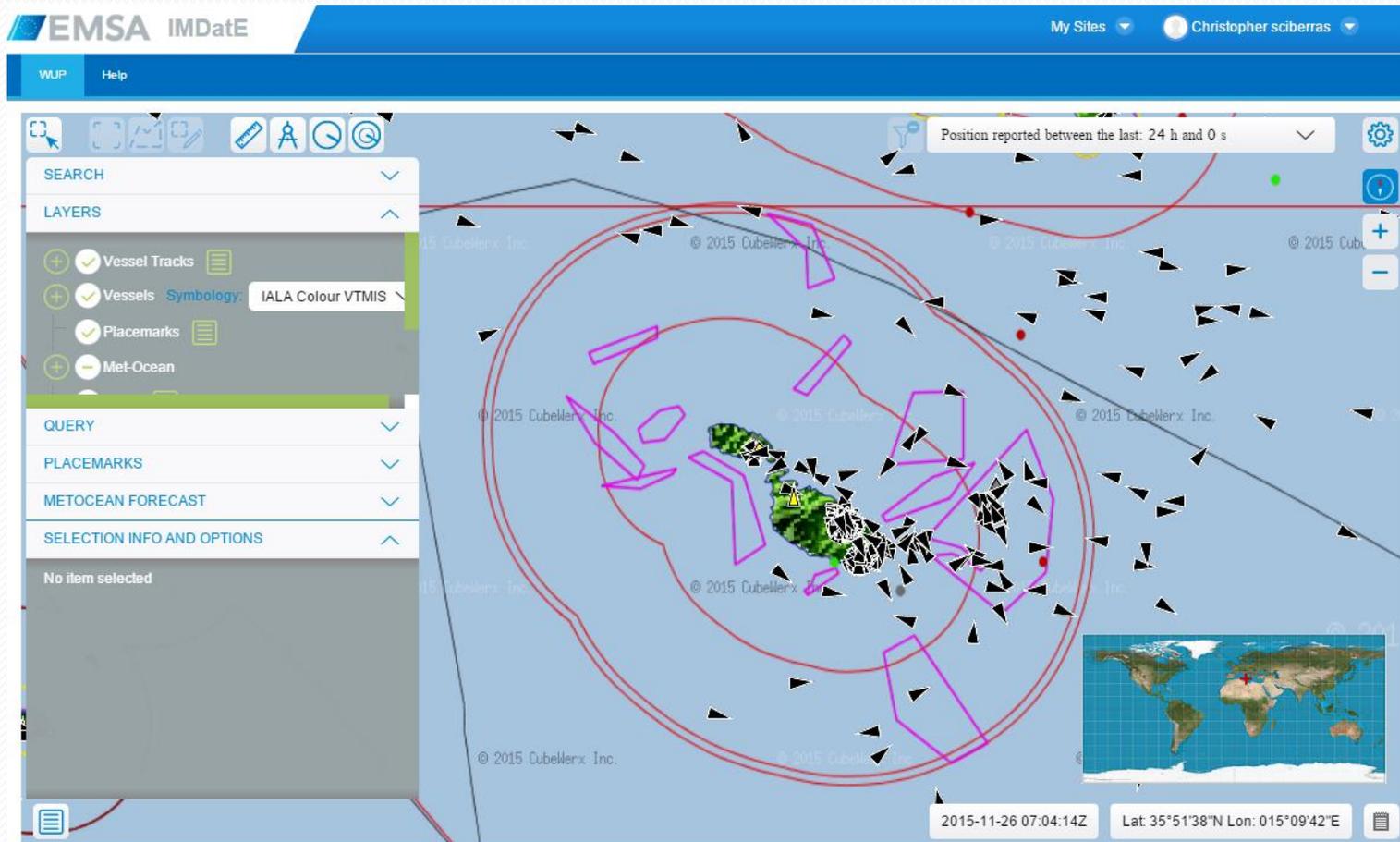
**4 trawlers – In all waters within the 25 FMZ.**

**3 trawlers – In waters deeper than 200 metres only.**

**5 trawlers - not permitted to operate in the 25 nm FMZ.**

# Malta's 25 nm Fisheries Management Zone

## Introduction of AIS monitoring



With the introduction of the IMDatE and Automated behaviour monitoring, it has proven very important to Fisheries due to the high level of F/V traffic around / entering Malta's 25 nm Fisheries Management Zone (FMZ).

# ABM SCENARIO 1

## VMS fail - ABM / In Area

1

### EMSA IMDatE - Alert Report

**ID:** 1479725348387  
**Surveillance code:** InArea  
**Surveillance instance:** Mare Blu BFT Farm\_clone  
**Start Time:** 2016-11-21T10:48:31-00:00  
**End Time:** 2016-11-21T10:48:31-00:00  
**Event locations:**

Longitude	Latitude
14.642	35.89

#### InArea event

**status:** OUT  
**position.timestamp:** 2016-11-21T10:48:31-00:00  
**position.latitude:** 35.89  
**position.longitude:** 14.642  
**Involved vessels:**

Imdate ID: 267472 MMSI: [REDACTED]

Positions:	Timestamp	Longitude	Latitude	Heading	Speed
	2016-11-21T10:48:31Z	14.642	35.89	NaN	NaN

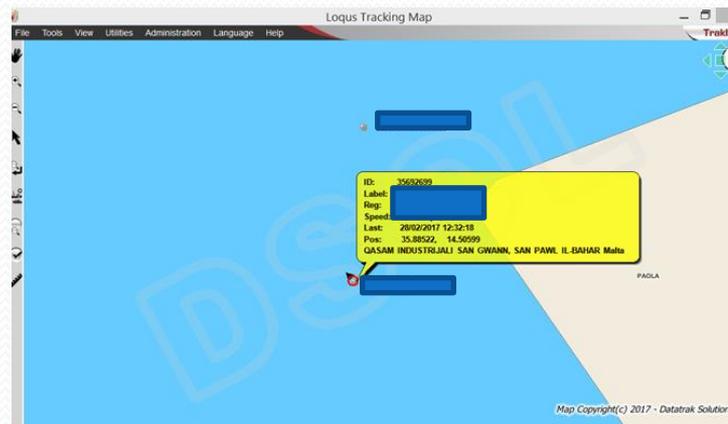
AIS alert sent to FMC

2



AIS is checked and vessel found at BFT farm

3



VMS screen shot showing vessel in port, port watch box was not triggered by the VMS as terminal was not operational.

# Selecting a ABM-Encounter at sea

EDIT SURVEILLANCE



Name

Towing Vessels

Description

encounter

Type: AtSeaEncounter

Maximum Distance between Ships (meters)

10

Maximum Speed (meters per second)

1

Minimum Duration (seconds)

60

AOIs:

Session AOIs

Polygon32

Vessels of interest:

Vessels of interest:

Mode: Filter

Exact match

Flags: IN

Libyan Arab Jamahiriya  Algeria

Malta  Tunisia  Italy

Ship types: IN

Fishing vessel

Start date:

2017-06-12 17:50:00 Z

Stop date:

Alert policy:

At start

Distribution list:

MT Fishery

MT\_FISHERIES  
MT\_SCIBERCH

SET

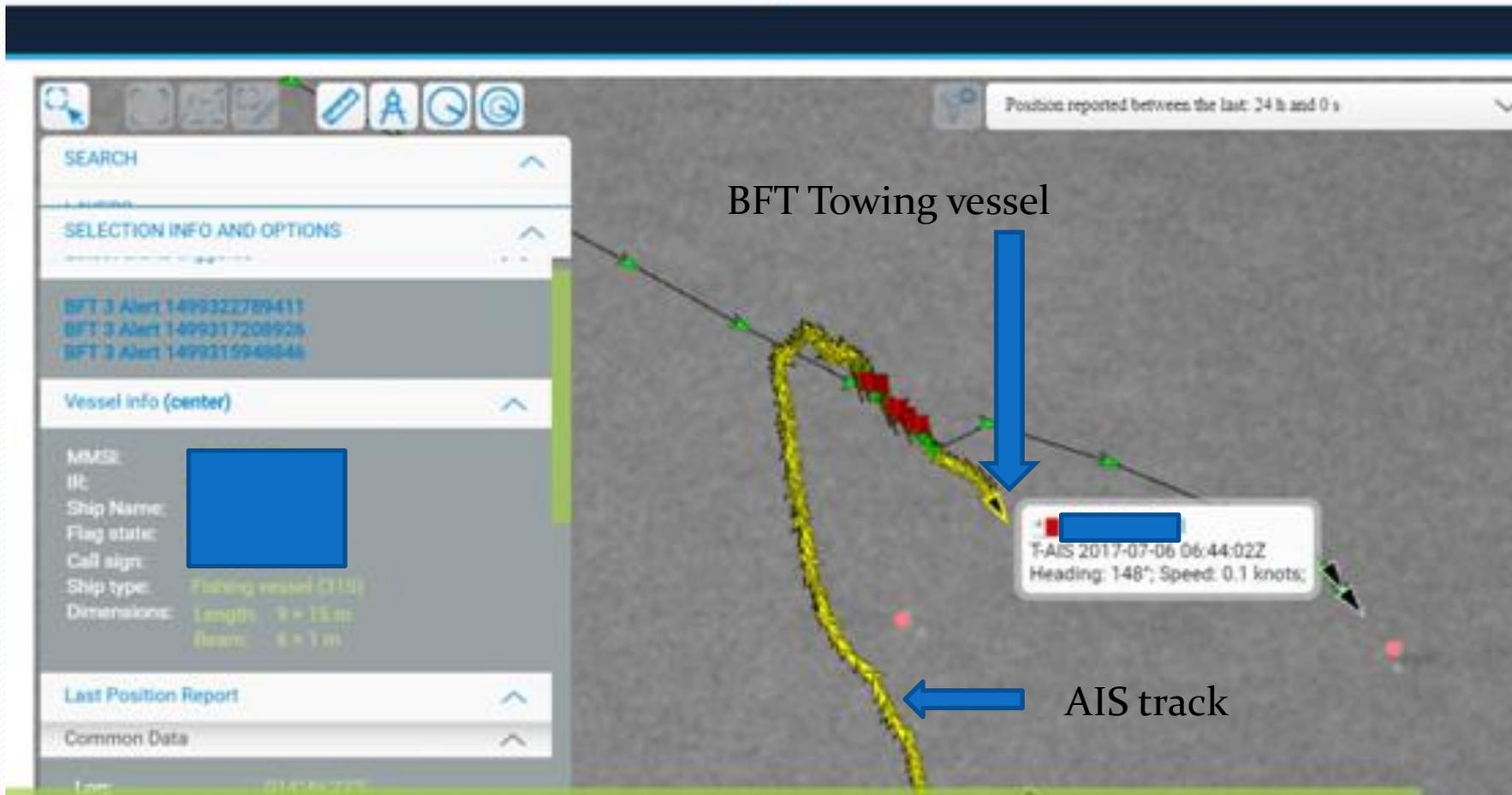
CANCEL



# ABM SCENARIO 2

## Encounter at sea

EMSA IMDatE



# ABM SCENARIO 2

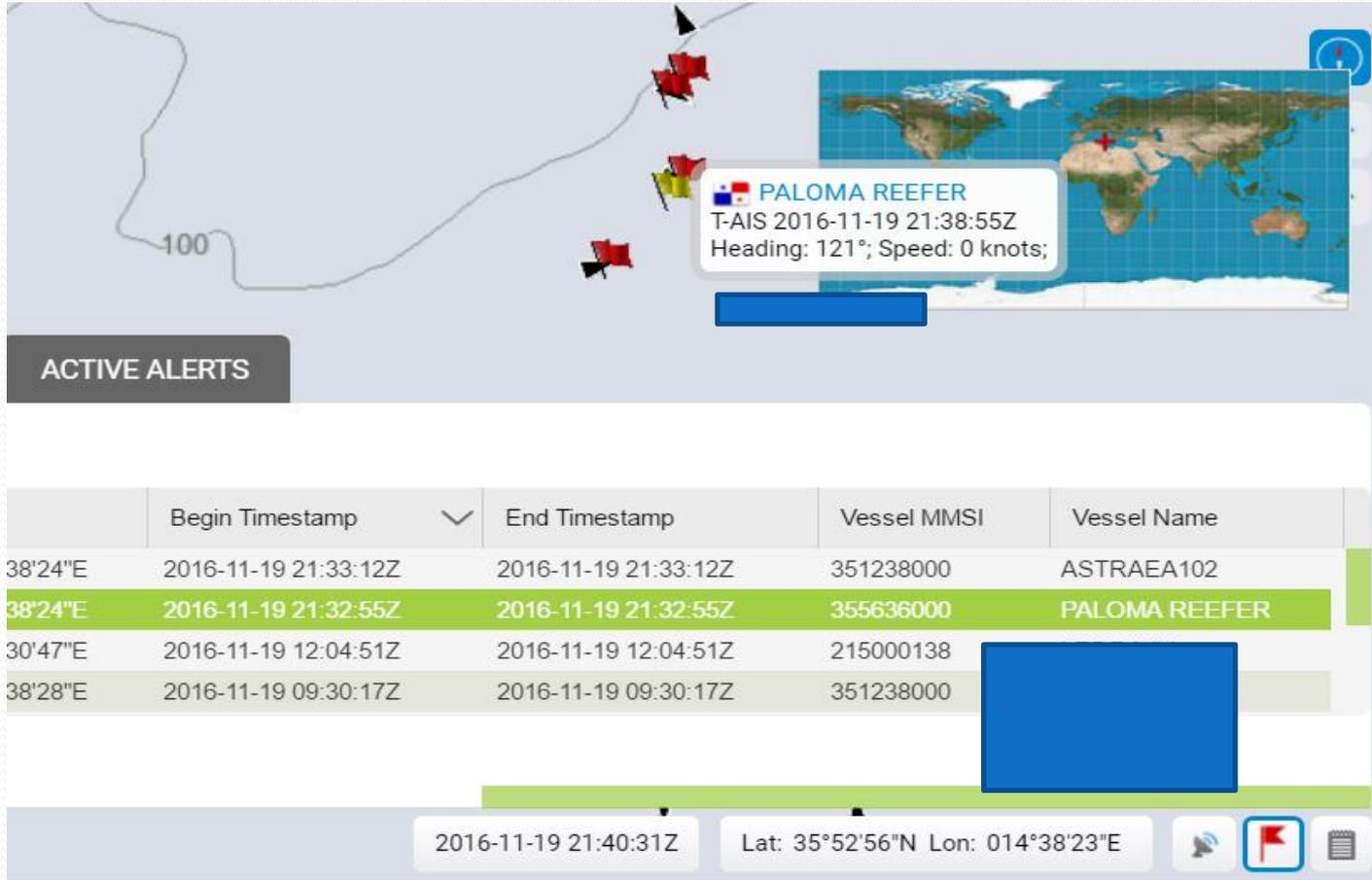
## Encounter at sea cont...



The support vessel was inspected by Fisheries Officers when it returned and the master was questioned why he was alongside XXXX which was a towing live tuna

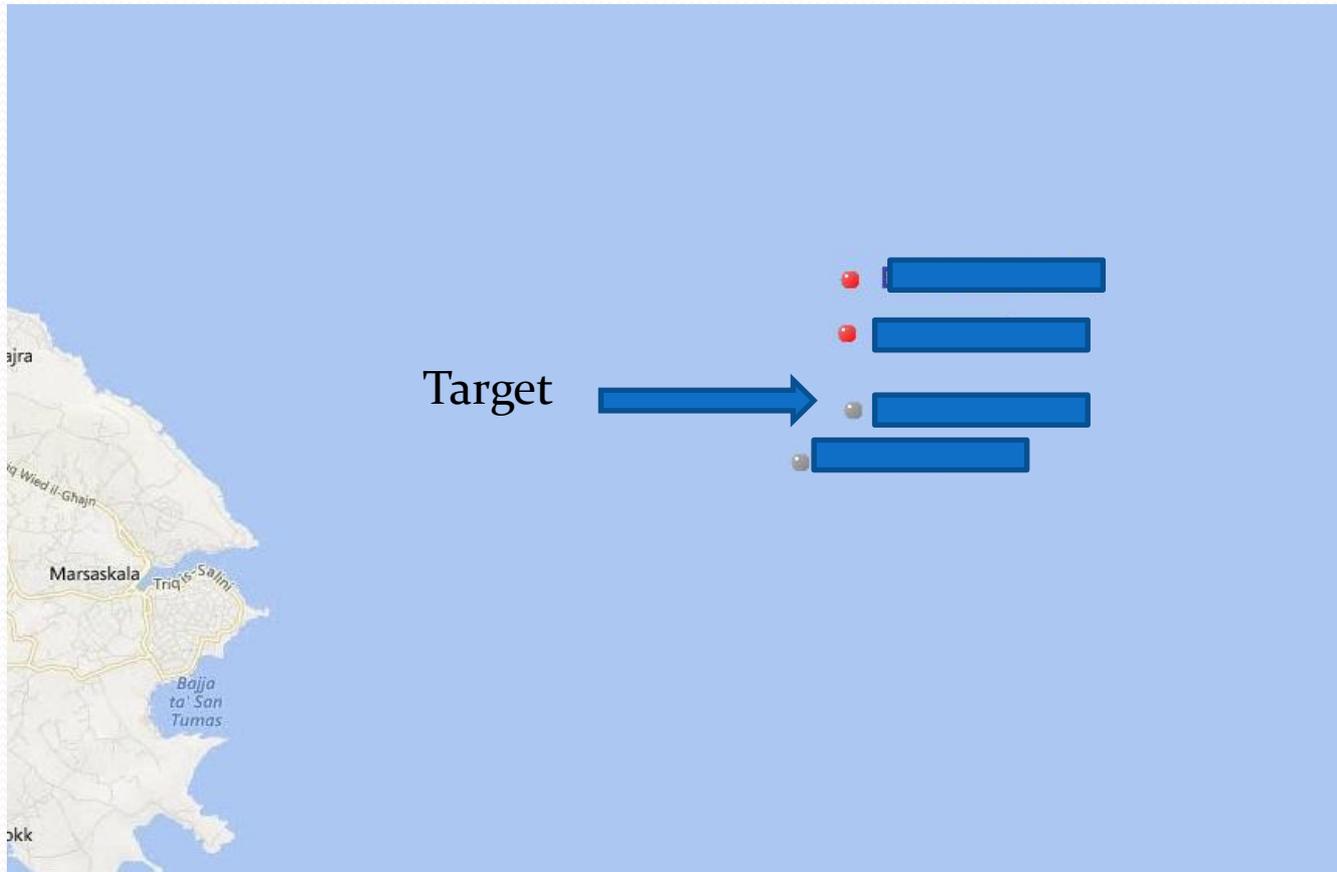
# ABM SCENARIO 3

## In Area cont...



# ABM SCENARIO 3

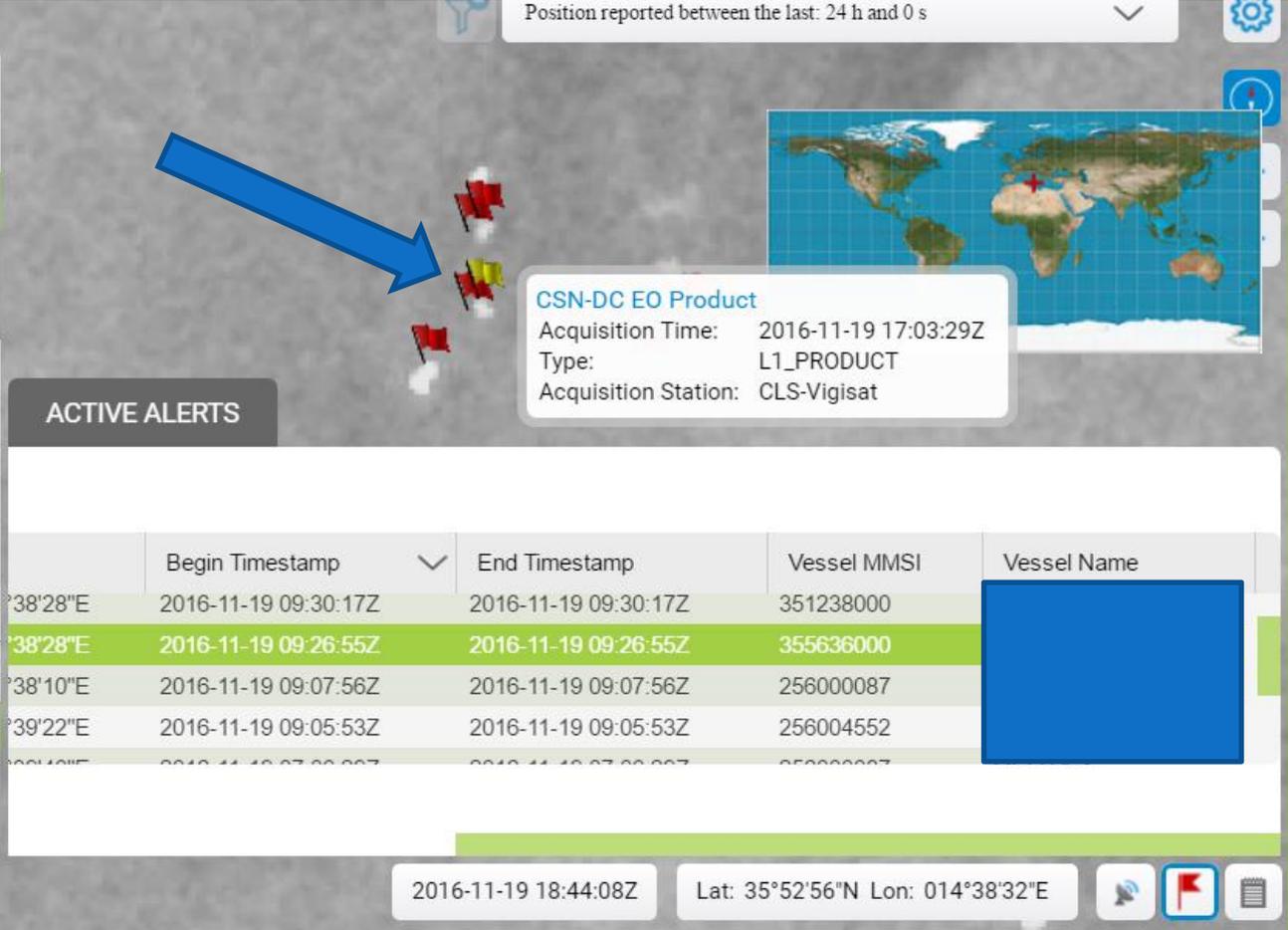
In Area cont...



VMS screen shot of 4 reefers (BFT) anchored nr farm

# ABM SCENARIO 3

## In Area cont...



Position reported between the last: 24 h and 0 s

**ACTIVE ALERTS**

**CSN-DC EO Product**  
Acquisition Time: 2016-11-19 17:03:29Z  
Type: L1\_PRODUCT  
Acquisition Station: CLS-Vigisat

	Begin Timestamp	End Timestamp	Vessel MMSI	Vessel Name
014°38'28"E	2016-11-19 09:30:17Z	2016-11-19 09:30:17Z	351238000	
014°38'28"E	2016-11-19 09:26:55Z	2016-11-19 09:26:55Z	355636000	
014°38'10"E	2016-11-19 09:07:56Z	2016-11-19 09:07:56Z	256000087	
014°39'22"E	2016-11-19 09:05:53Z	2016-11-19 09:05:53Z	256004552	
014°38'10"E	2016-11-19 09:07:56Z	2016-11-19 09:07:56Z	256000087	

2016-11-19 18:44:08Z    Lat: 35°52'56"N Lon: 014°38'32"E

Satellite image

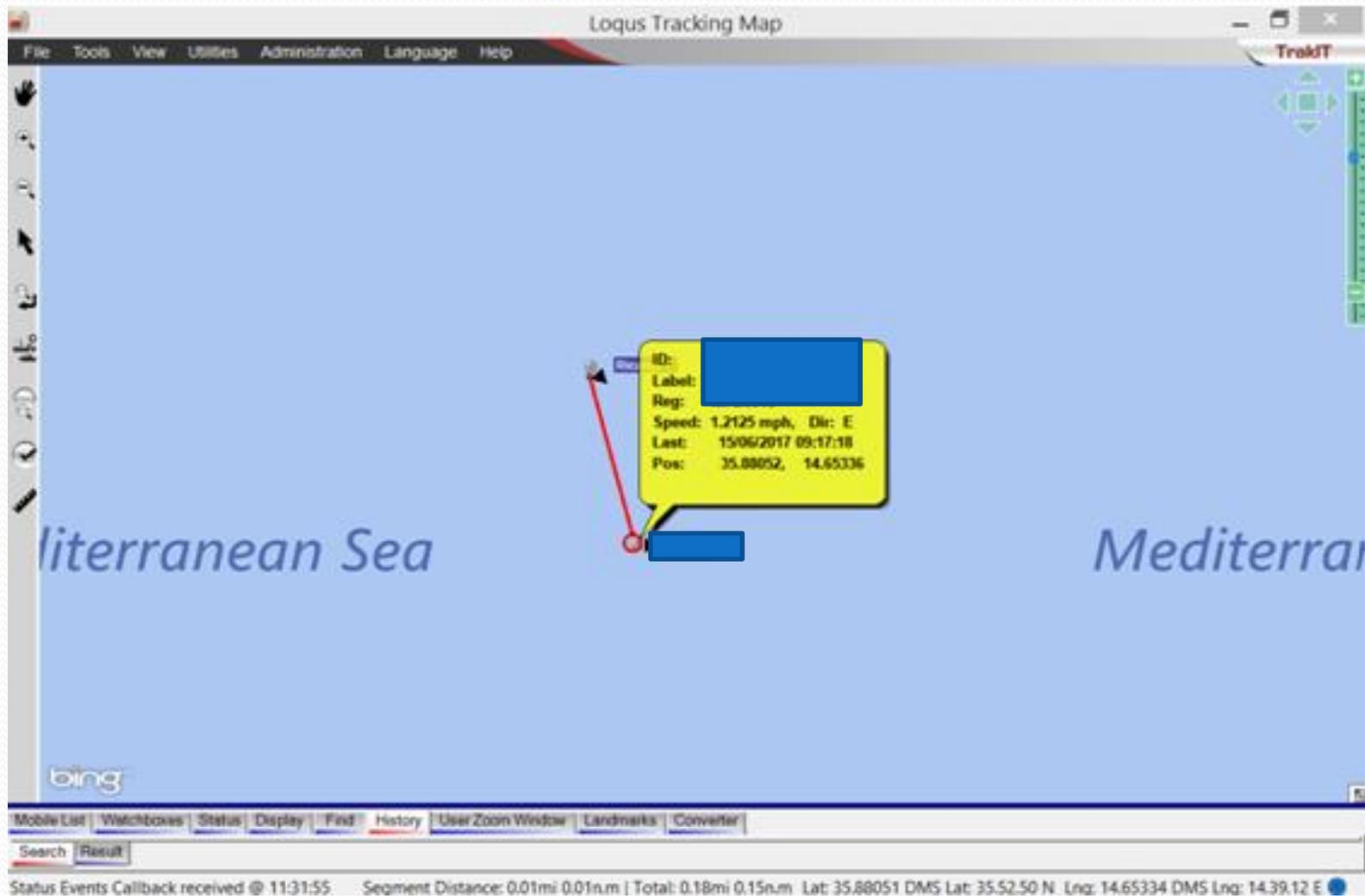
# ABM SCENARIO 3

In Area cont...



Physical sighting

# ABM SCENARIO 4 - Encounter at sea



VMS screen shot showing two BFT auxiliary vessels near one another

# ABM SCENARIO 4 - Encounter at sea

## EMSA IMIDatE - Alert Report

### Surveillance Instance

**Name:**BFT 3

**Description:**Towing vessel 2

**Area of Interest:**Polygon32

**Alert policy:**at\_each\_occurrence

**Alert type:**AtSeaEncounter

**Surveillance Instance Parameters:**

Param name	Param value
maxDistanceThresholdInMeters	20
maxSpeedThresholdInMetersPerSecond	15
minDurationInSeconds	1000

### Alert

**ID:**1497516679412

**Cap Creation Time:**2017-06-15T08:51:19Z

**Sent:**2017-06-15T08:51:19Z

**Start Time:**2017-06-15T08:30:50Z

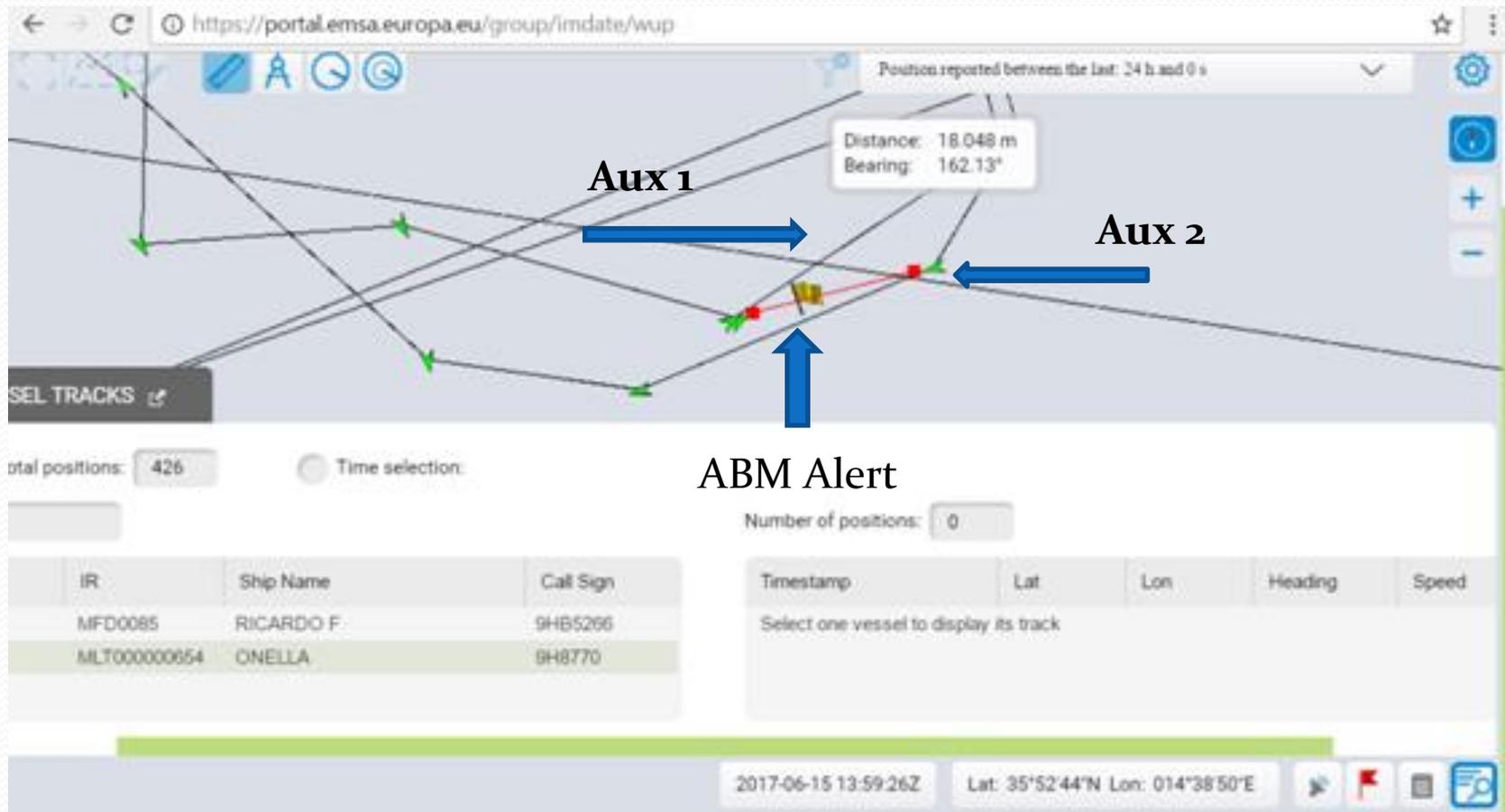
**End Time:**2017-06-15T08:39:48Z

**Position Source:**T-AIS

**Latitude:**35.88 (35 52'48.0"N)

**Longitude:**14.64 (14 38'56.4"E)

# ABM SCENARIO 4 - Encounter at sea cont..



Even though this alert is set as an encounter at sea, both vessels passed one another, thus maybe the alert could also be used or named as an early “warning for collisions” to complement other collision warning systems either at FMC, Coast Guard or vessels.

# Problems encountered with AIS

## ABM – In area

The screenshot displays a maritime tracking interface. On the left, a sidebar shows vessel details for 'KOI Yacht' (IMO: 8663066, MMSI: 518326000). The main area features a map of Malta with a vessel track. A large white alert box is overlaid on the map, titled '25 nm FMZ Alert 1504803012199'. The alert details include: Surveillance instance: 25 nm FMZ; Begin Timestamp: 2017-09-07 16:50:10Z; End Timestamp: 2017-09-07 16:50:10Z; Lon: 014°44'31"E; Lat: 35°58'37"N; MMSI: 518326000; IMO: 8663066. A smaller alert box at the bottom right shows the timestamp: 2017-09-07 16:50:10Z. The map shows the vessel's path with red flag icons, and a status bar at the bottom indicates the current position: 2017-09-08 16:04:30Z, Lat: 35°58'34"N, Lon: 014°44'37"E.

- Unlike the Vessel Monitoring System (VMS) where Fisheries imputes a fishing vessel particulars in the terminal, such as name and registration.
- For AIS it is different as the owner of the vessel is responsible, so mistakes can happen.
- Also AIS terminals can be manipulated far more easily than VMS.

Thank you,  
Questions?

