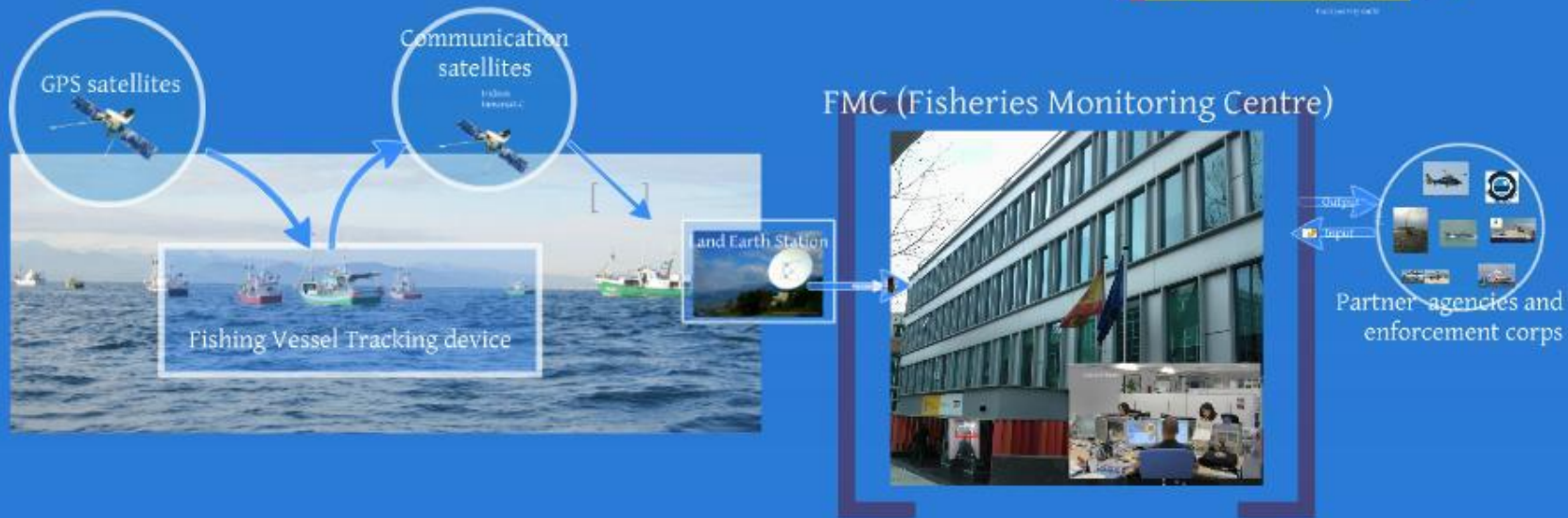


# Vessel Monitoring System in Spain



## What VMS allows:

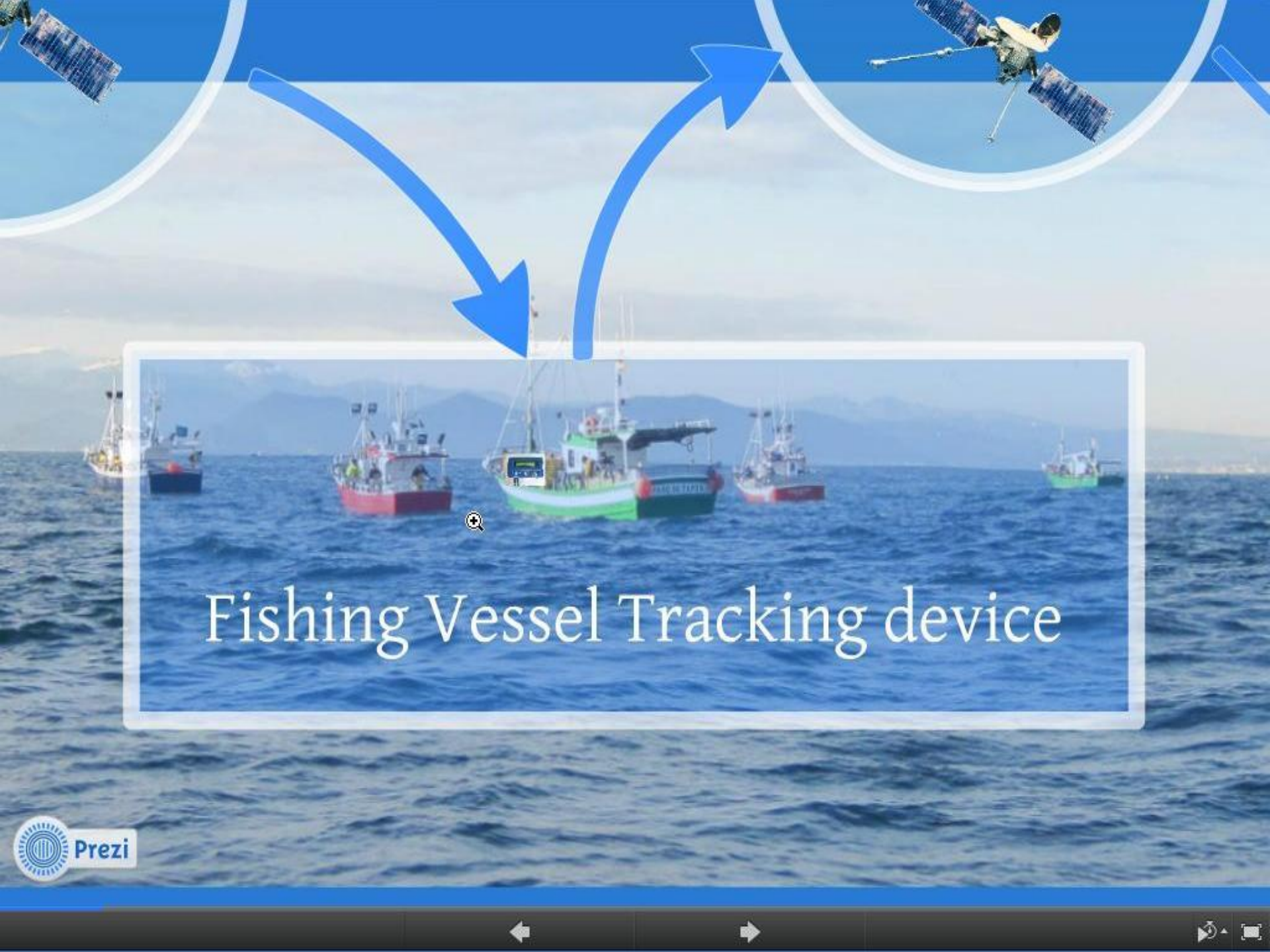
- To control close or restricted areas, fishing effort, etc.
- To dissuade fishermen from infringement.
- To locate at any time Spanish fishing vessels and Foreign vessels in Spanish waters.
- To help in the planning of fisheries inspection strategies offering local and global pictures.

So

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## Some data about our VMS:

- 10 millions of messages every year.
- First EU member state in number of FV monitored
- 2300 Spanish FV and 500 foreign FV
- 6 fisheries inspectors fully dedicated to the FMC.
- Ability for starting administrative disciplinary proceedings
- 15 VMS operators give 24-365 assistance to inspection teams.
- Support to other organisms such as Salvamento marítimo, Guardia Civil, Armada, IEO, etc.



# Fishing Vessel Tracking device



- VMS equipment is based in 2 different communication satellites:
  - Inmarsat- C
  - Iridium
- Some vessels carry two equipments
- Officially certified.
- Communication and repair costs are covered by vessel's owners.



# Vessel Monitoring System

Small text in the top left corner, likely containing project details or contact information.



## FMC (Fisheries Monitoring Center)



Communication flow through HTTPS protocol



Reception and Sending  
server

# Fleet under VMS coverage





# Spanish World Wide Fleet

TRAWLER



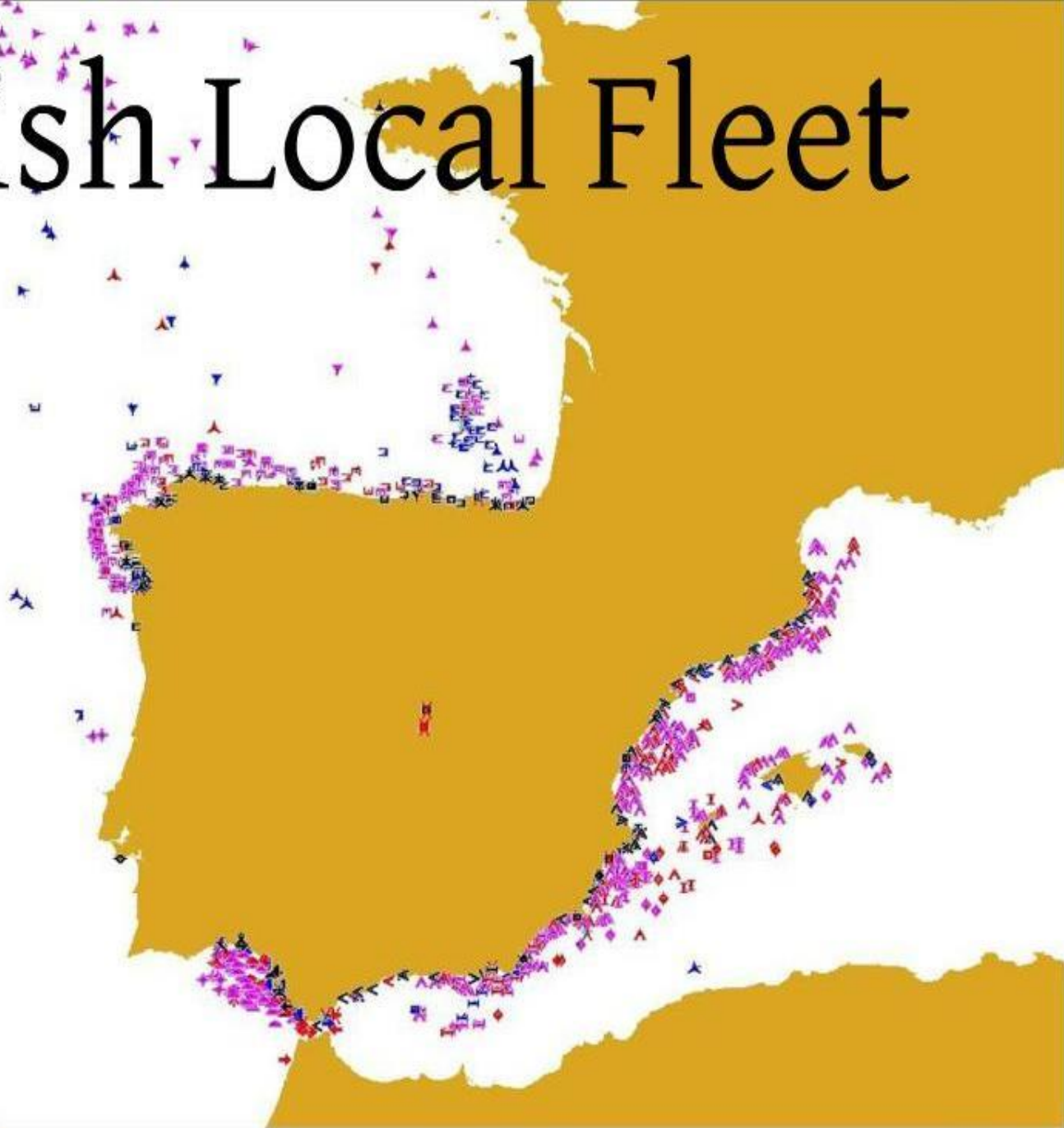
LONGLINER



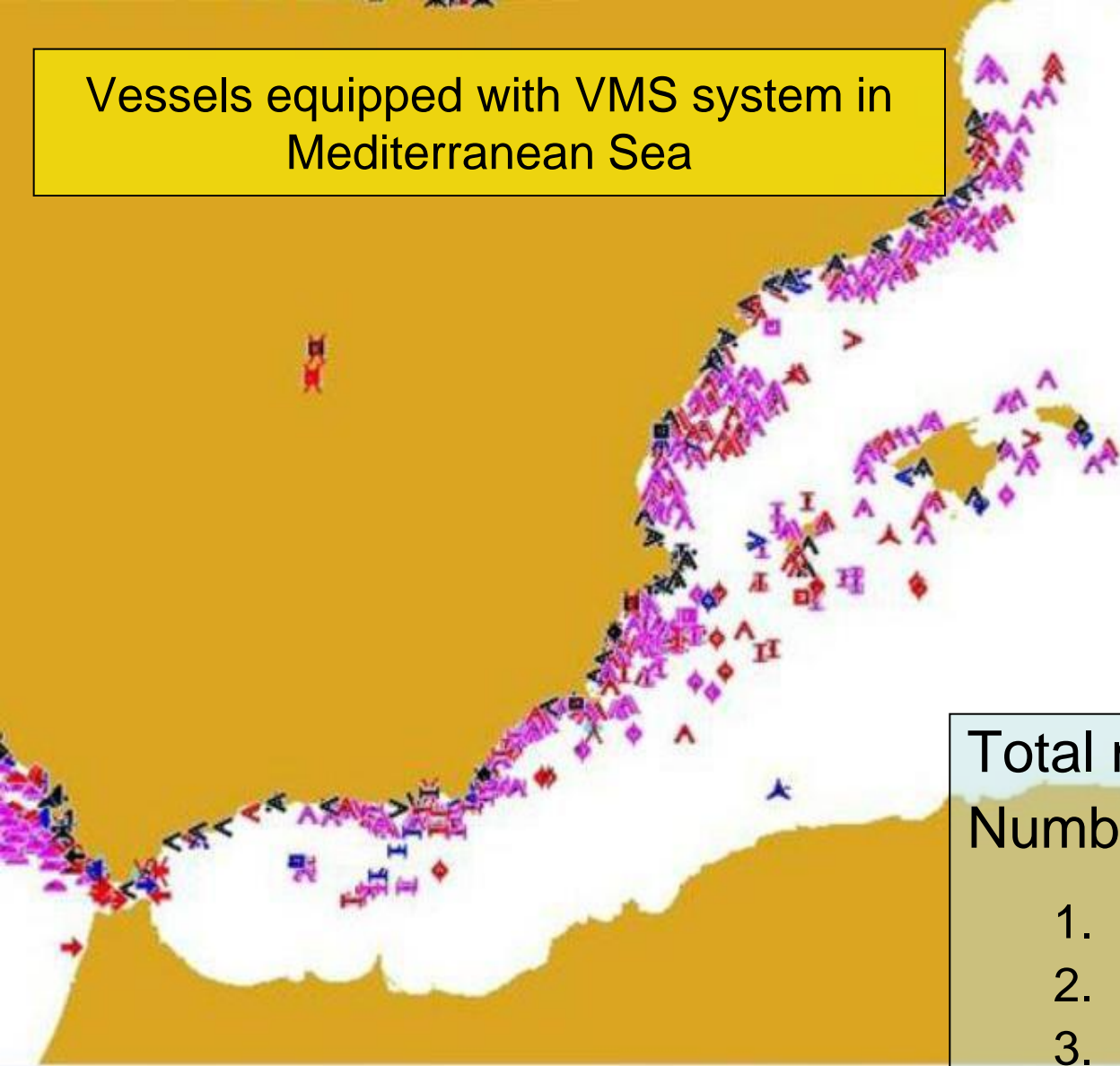
PURSE SEINER



# Spanish Local Fleet



## Vessels equipped with VMS system in Mediterranean Sea



Total number: 1020 vessels  
Number by length classes:

1. <12m = 45 vessels
2. 12-18m= 326 vessels
3. 18-24m= 463 vessels
4. >24m= 186 vessels.

# Identifying sort of Fishing Vessels through their track

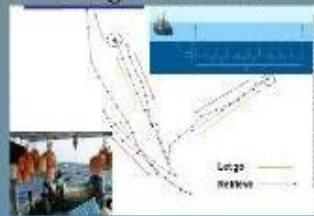
### Purse Seiner's Track



### Trawler's Track



### Longliner's Track



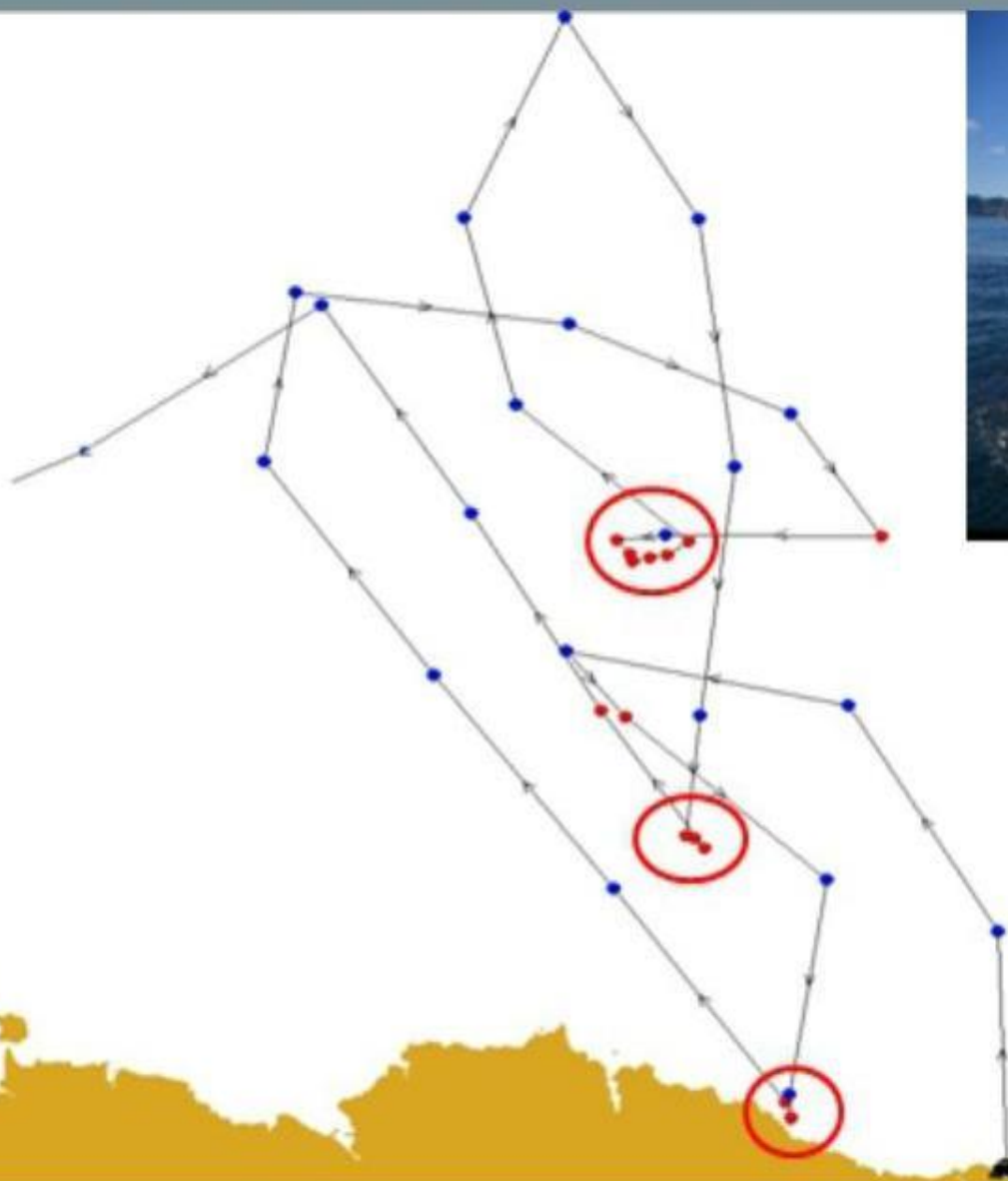
### Pair of trawlers' track



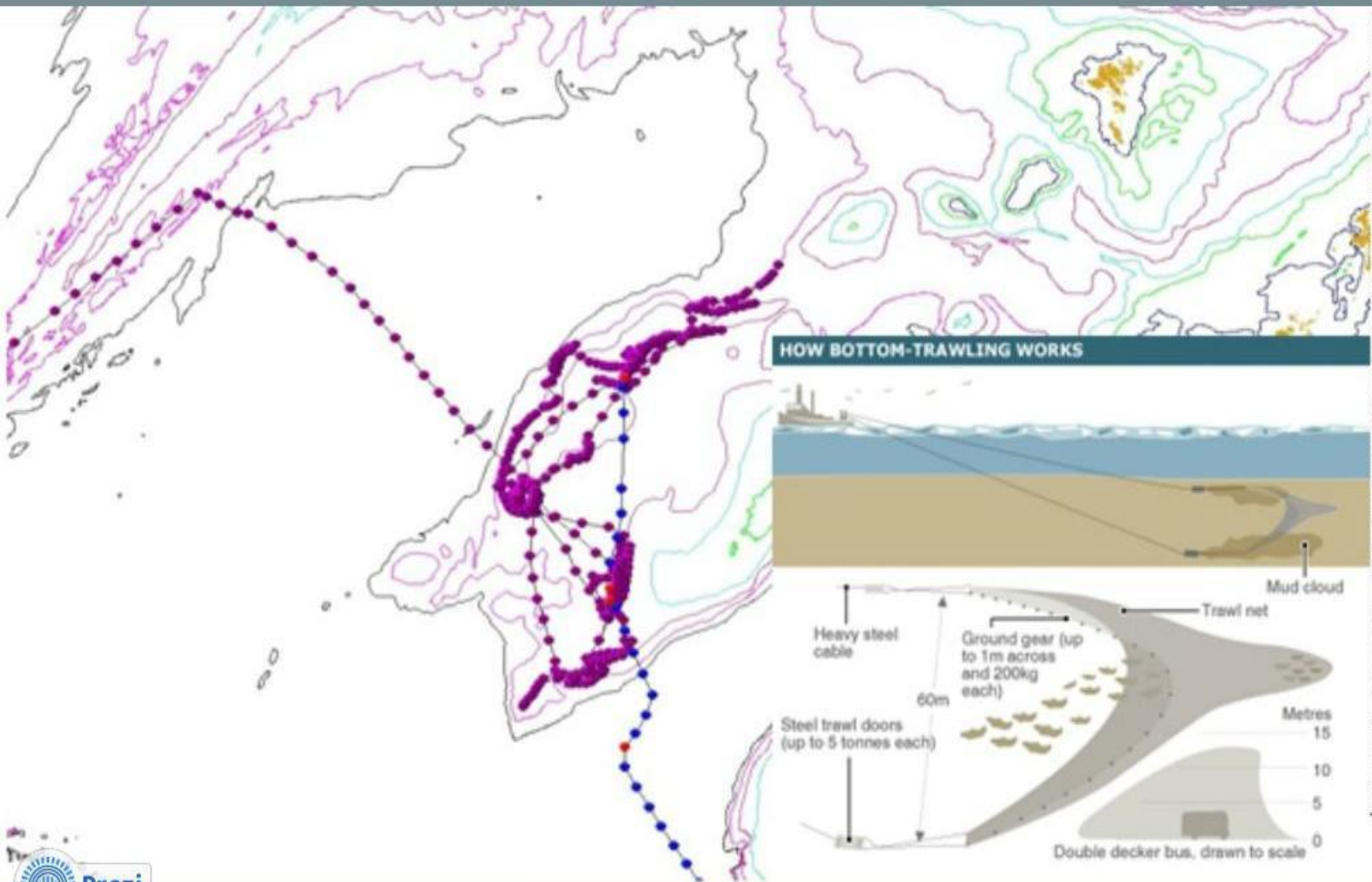
### Blue Fin Tuna Transferal track



# Purse Seiner's Track

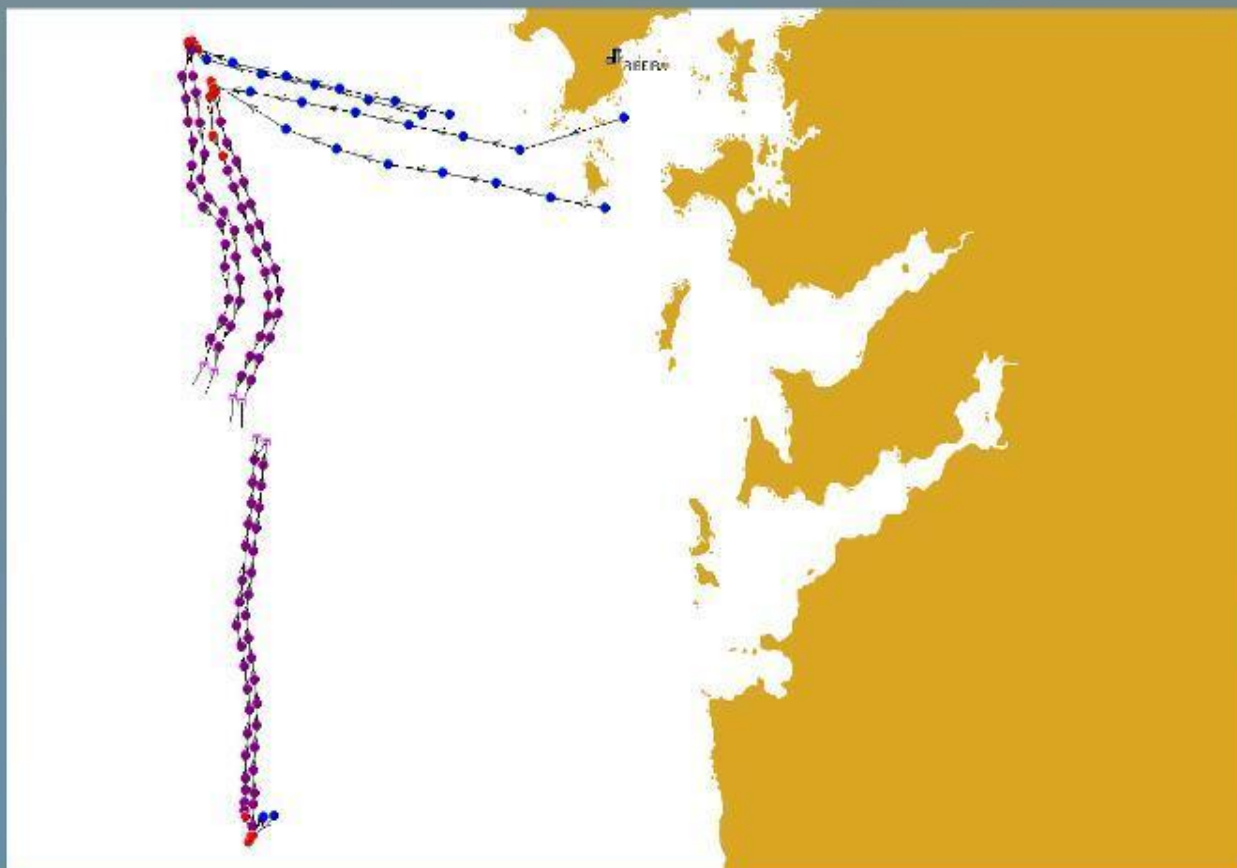


# Trawling's Track



HOW BOTTOM-TRAWLING WORKS

# Pair of trawlers' track



# Administrative disciplinary proceeding examples

Disciplinary proceeding with a sighting



Trawler's disciplinary proceeding



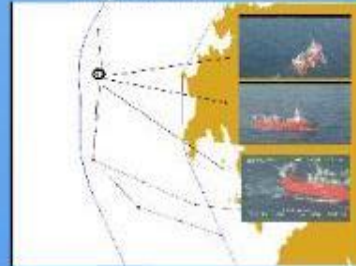
Purse Seiner in a closed area



VMS vs Electronic Reporting System



Foreign Vessel in Spanish Waters

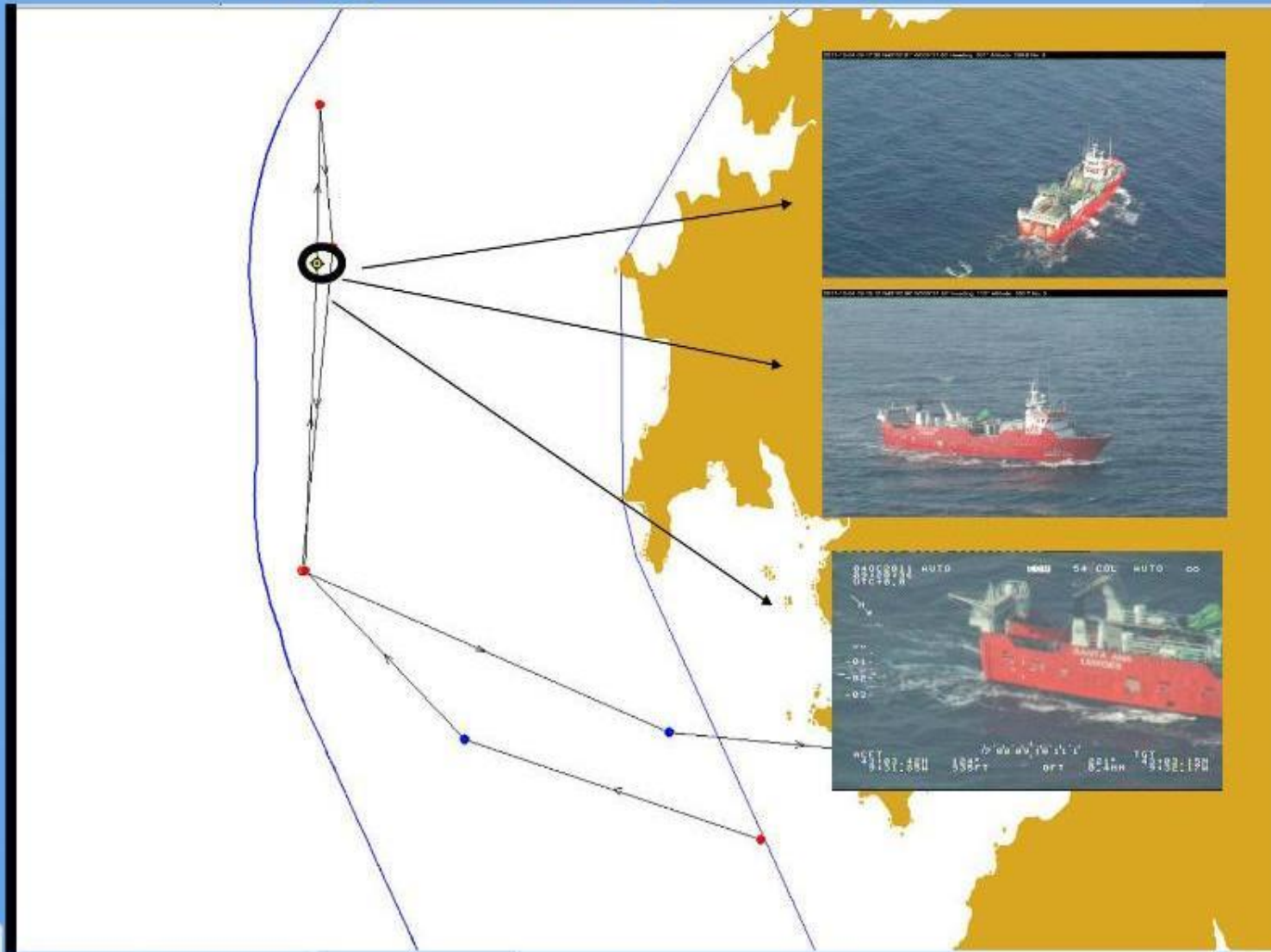




# Trawler's disciplinary proceeding



# Foreign Vessel in Spanish Waters



# Output

## Early exchange of information with:

- 20 European member states and the European Commission and interested agencies (OECA, EMA, ...)
- International liability regulations (PADI, MMS, ECR, ...)
- 16 port authorities

## New ways of getting a more integrated context

- **Real-time monitoring of the supply network** - We provide the real-time events that can be monitored in real-time. It is a 24/7 service that can be used from any location. It is a 24/7 service that can be used from any location. It is a 24/7 service that can be used from any location.
- **Real-time monitoring of the supply network** - We provide the real-time events that can be monitored in real-time. It is a 24/7 service that can be used from any location. It is a 24/7 service that can be used from any location.

Web  
Email  
Fax  
Phone

Daily exchange of information with:

- 20 European member states and third countries.
- National and international agencies (CFCA, EMSA,...)
- International fishing organizations (NAFO, NEAFC, ICCAT,...)
- On port inspectors.

New ways of getting a more integrated control:

- **Real time control of the spanish waters fleet:** We contact via cell phone vessels that are in forbidden areas and we advise them to abandon such waters.
- **International Alarms:** When a spanish vessel fishes into national waters from a third country (non EU countries) this vessels are automatically contacted via Satellite phone.
- **Daily Report of offenders to port inspectors:** Every day FMC's inspectors check out alleged offences and email them to port inspectors in order to pressure them and coordinate our inspection efforts.

Output

Web  
Email  
Fax  
Phone

Input



Partner agencies, and

# Output

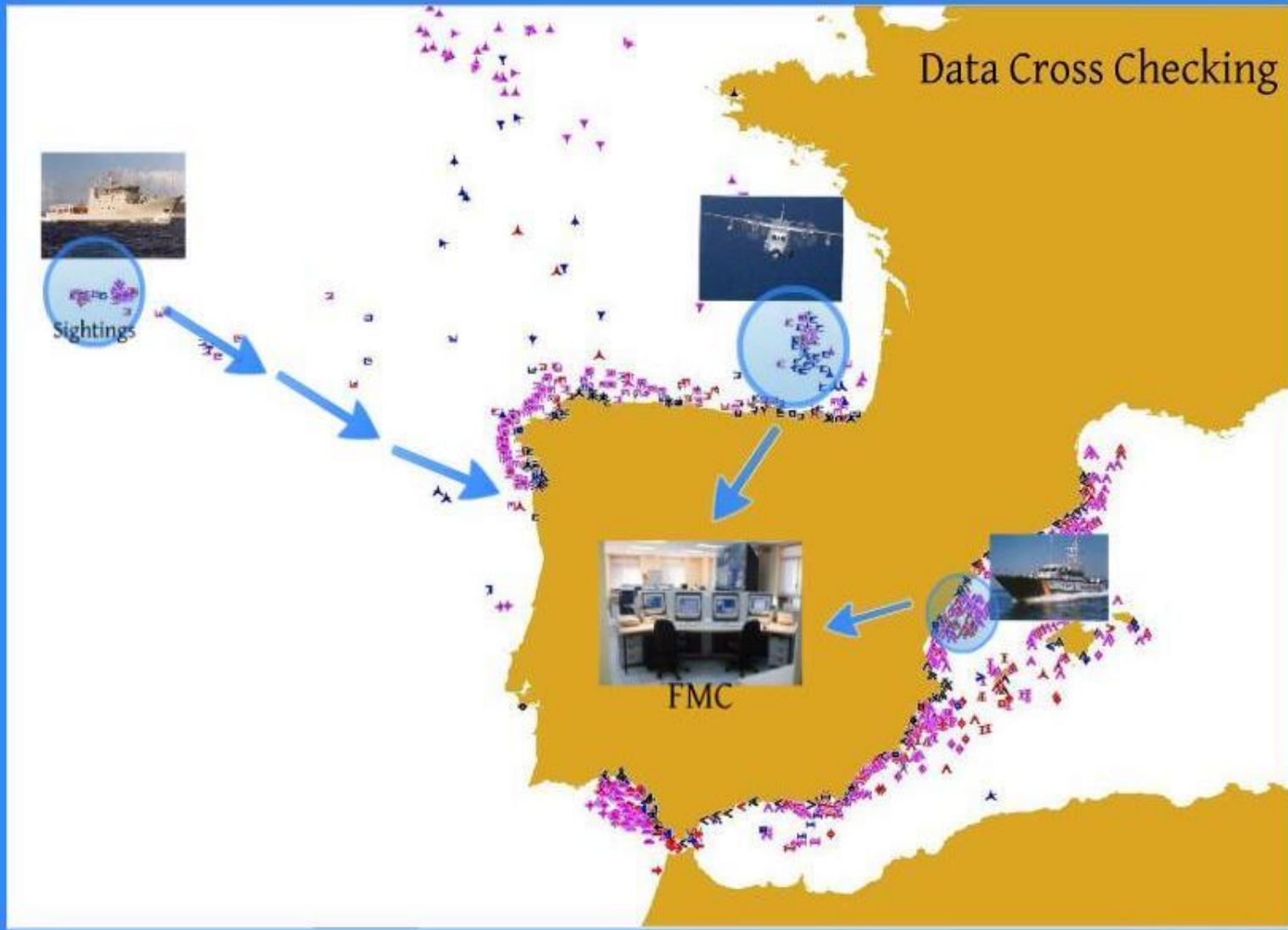
Web  
Email  
Fax  
Phone



# Input



# Data Cross Checking



Sightings



Sightings



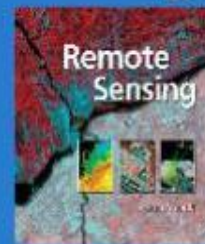
FMC



Sightings

# New Technologies

AIS (Automatic Identification System)

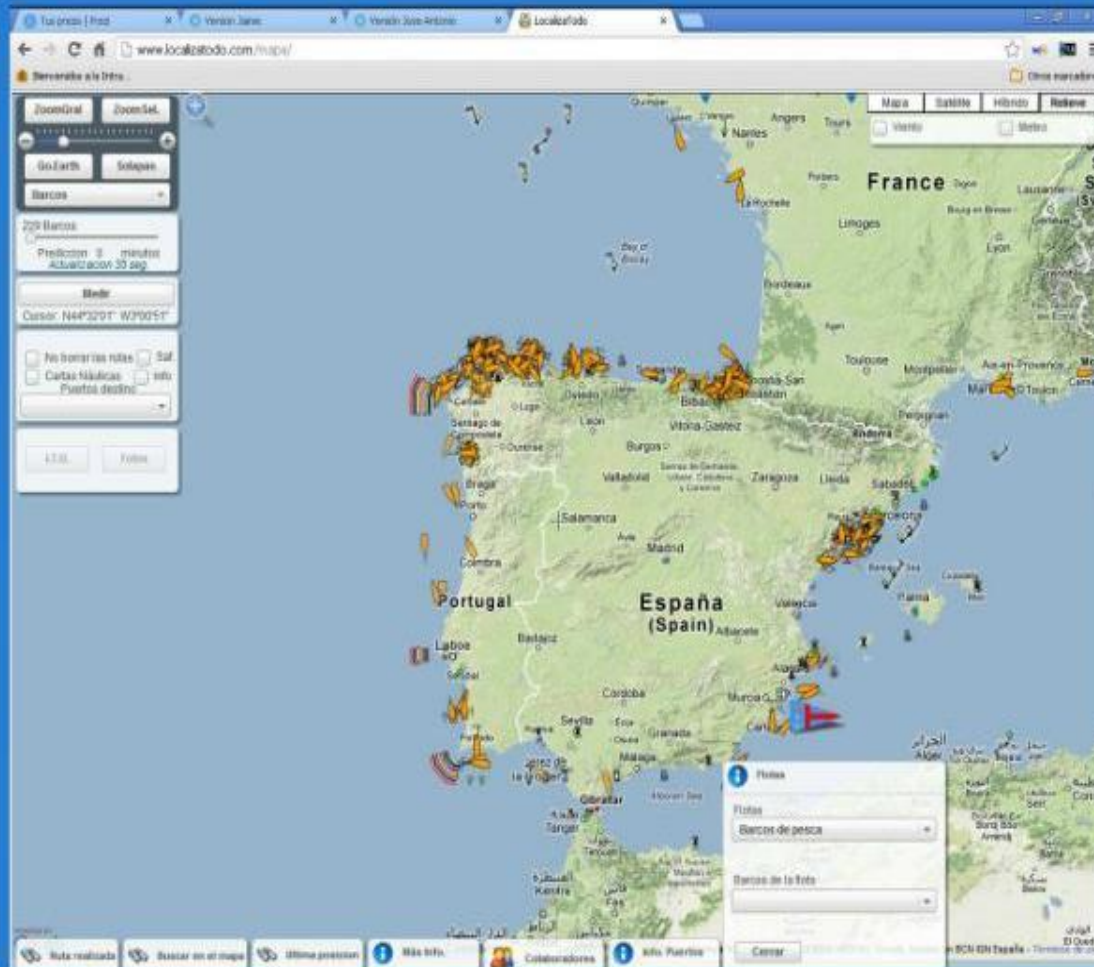


AIS vs VMS - In a pilot project



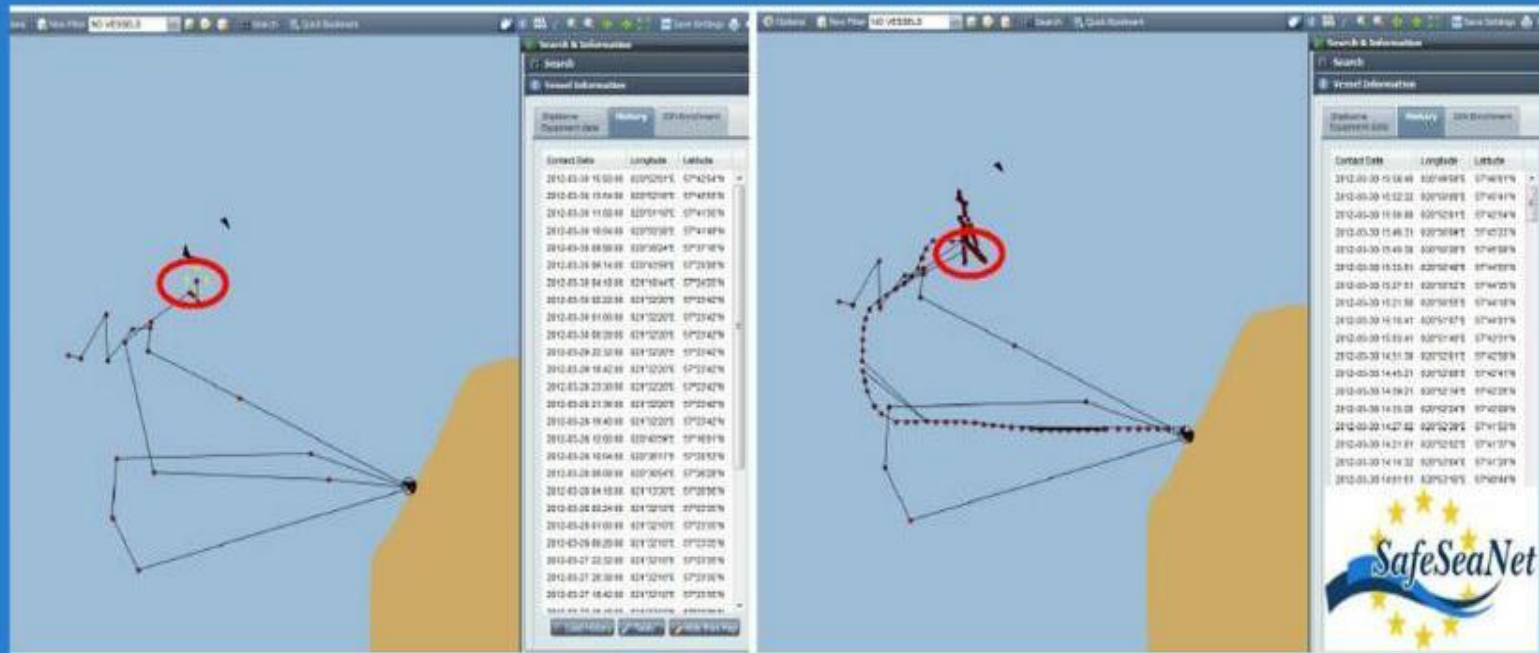


# AIS (Automatic Identification System)



# AIS vs VMS in a pilot project

## A



## New Technologies

RFID (Radio Frequency Identification)



RFID in VMS in order control



## Traditional inspection means



VMS future.

# em in Spain.



Thank you very much!

