

## **SSN Workshop 14**

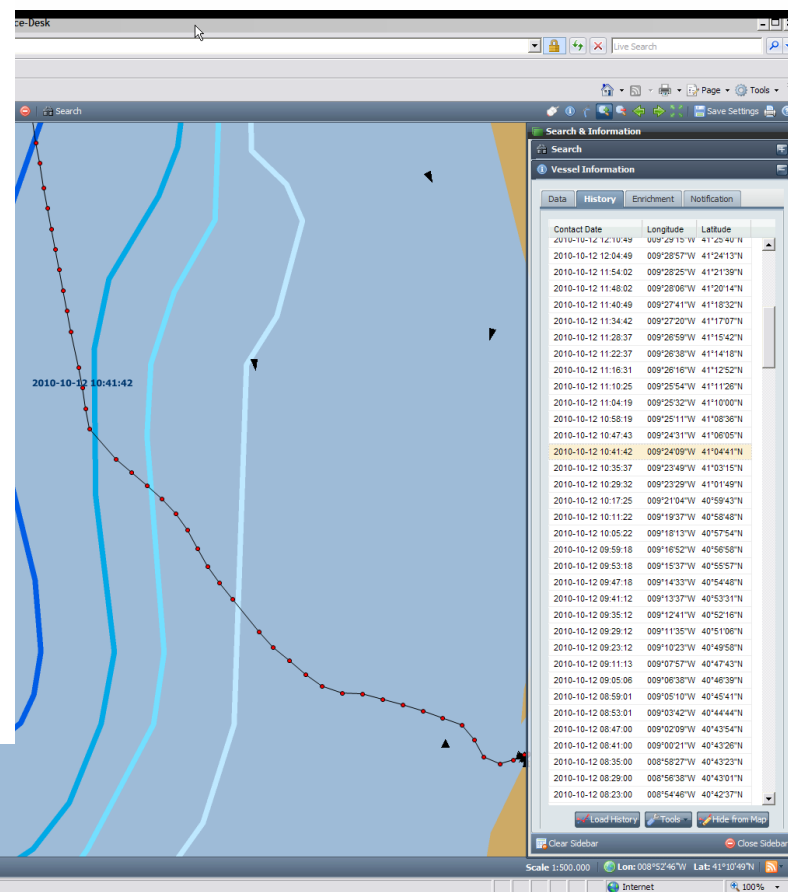
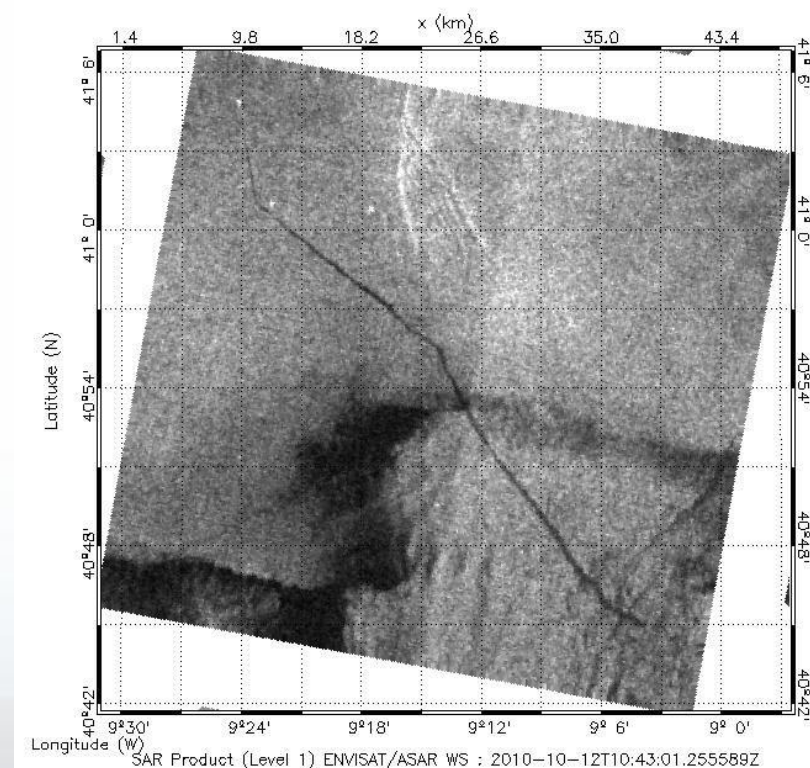
**Lisbon 20-21 October 2010**

# **Pollution detected by CleanSeaNet – Notification in SafeSeaNet**

1

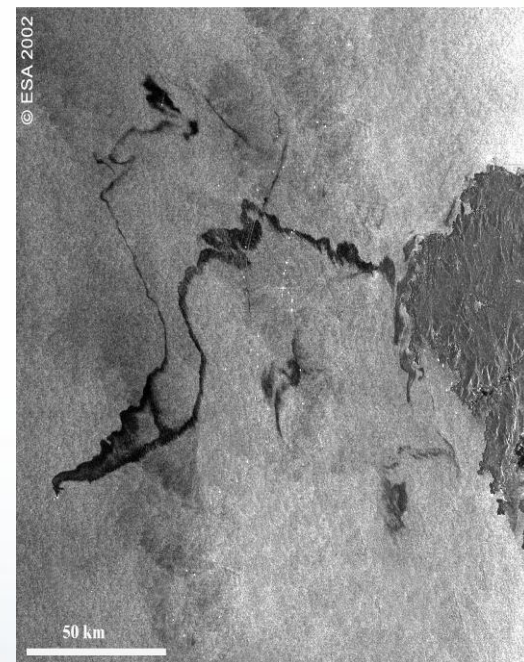
**SSN 14/3/2**

# CleanSeaNet - SafeSeaNet



## CleanSeaNet

- The European satellite oil pollution monitoring system
- Legal framework - Directive 2005/35/EC on ship sourced pollution and on the introduction of penalties for infringements
- Linked into national/regional response chain strengthening operational pollution surveillance and response for deliberate and accidental spills.
- Service operational since 16 April 2007

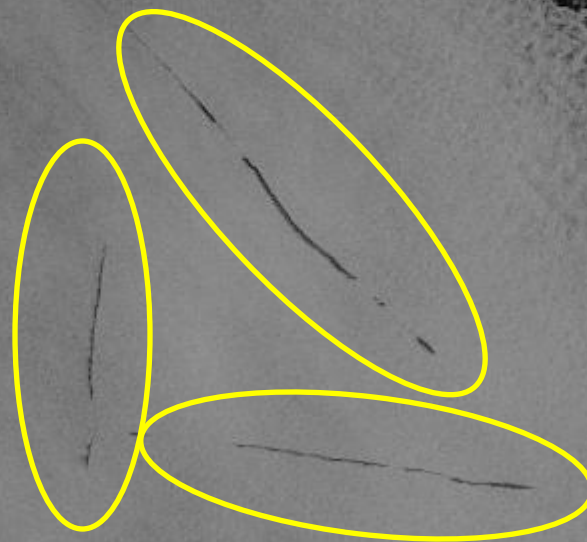


**24 EU Coastal States currently users of CSN**

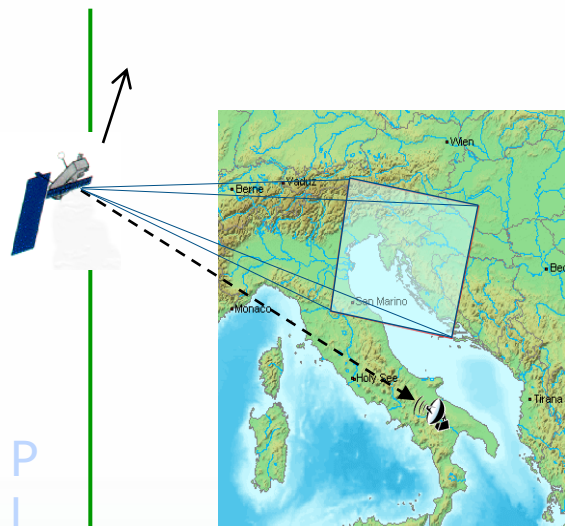


Cyprus  
18/06/2007

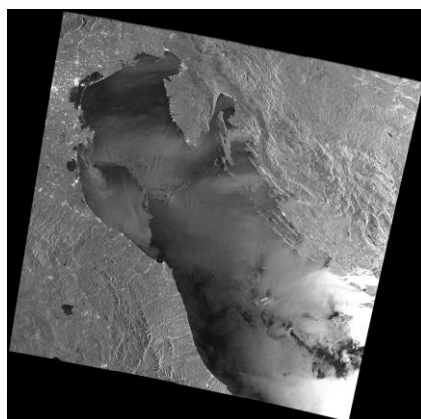
© CSA / MDA / EMSA



# Near Real Time Service – 30 Minutes



Acquisition and Processing



Oil Spill Analysis

Phone and email alert

Oil Service Report

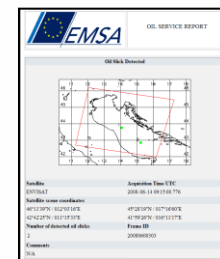
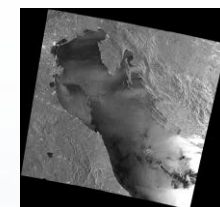


Image (LR, HR)



Ancillary data

Alert & Product Delivery

T0 = End of scene acquisition

T = T0 + 30 min

## Operational use of CleanSeaNet

- CleanSeaNet complements aerial/naval surveillance for illegal discharges:
  - On site verification and follow-up actions
- Identification of potential polluters by combining CleanSeaNet and Vessel traffic information available through SafeSeaNet
  - Port State Control inspections
- Monitoring of accidental pollution



## Oil Detection in SAR images – Look-alikes

SAR sensors detect all films on the sea surface that damp out small waves generated by the wind

CleanSeaNet detects:

### **NOT “OIL SPILLS” BUT “POSSIBLE OIL SPILLS”**

Discrimination between Oil Spills and Look-alikes require more information and most often in-situ verification.

#### Look-alikes:

- Other man-made substances: fish or vegetable oil, chemical, sewage, other...
- Natural phenomena: low wind area, algae, current front, upwelling area...



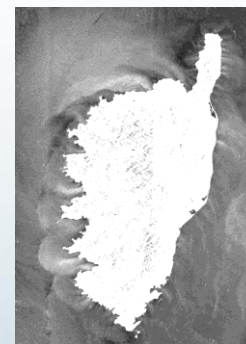
Current fronts



Low wind, rain cells  
and oil seepage



Algae



Land breeze

# SAR Satellites Efficient for Oil Spill Detection

## OIL SPILLS ARE LIKELY\* TO BE DETECTED

April 2007 – December 2009

7193 possible spills detected

1997 checked on-site

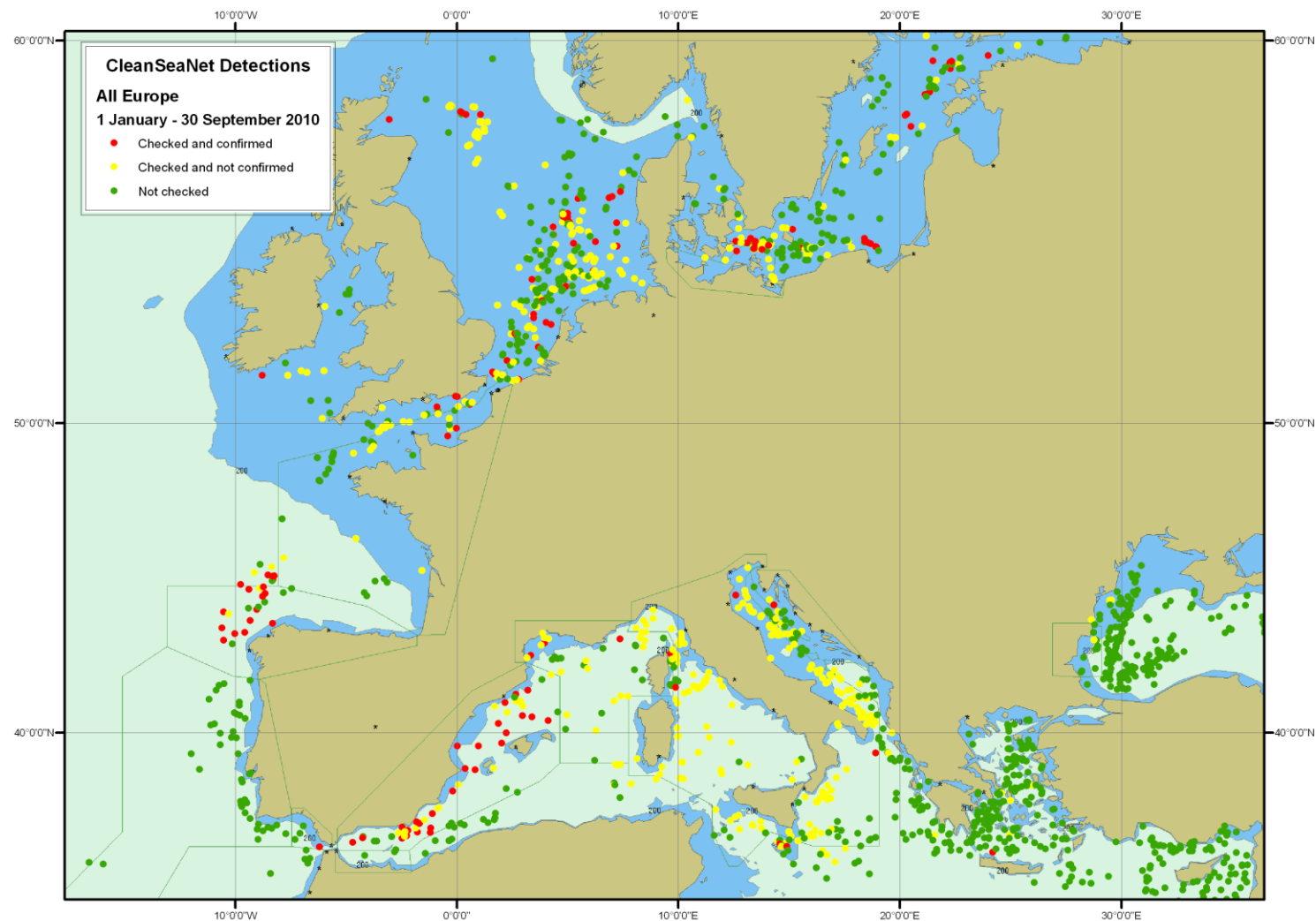
542 confirmed as mineral oil = 27% confirmed

Detailed Analysis - Year 2009

Verification mean	Delay verification/detection	Confirmation rate
All	No limit	25%
Aircraft	No Limit	38%
Aircraft	Max. 3 hours	51 %

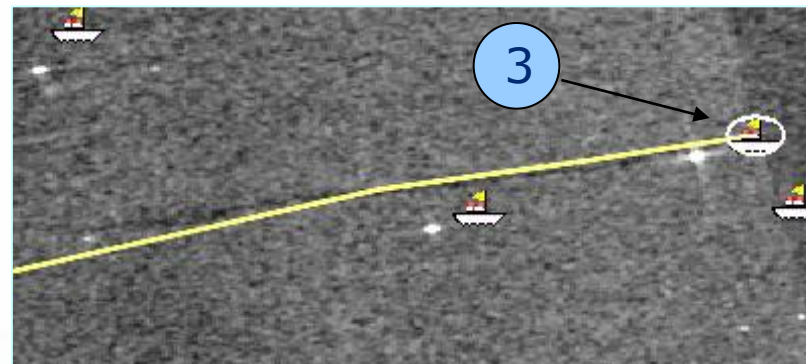
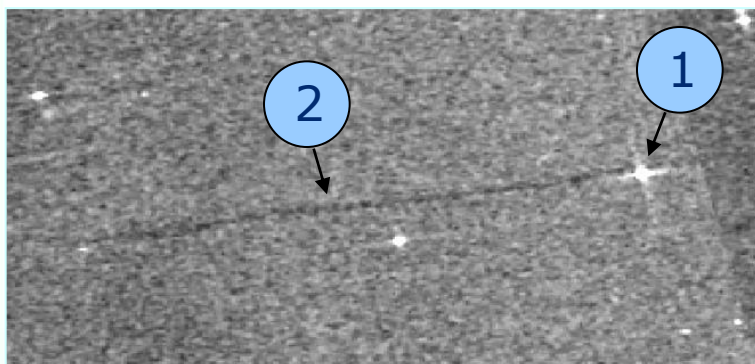
\* In suitable wind conditions





## Catching Polluters

**CleanSeaNet is able to  
DETECT AND IDENTIFY DISCHARGING VESSELS**



- 1 Ship detected on SAR image (Bright Spot)**
- 2 Long and linear possible spill trailing in the wake**
- 3 Vessel identified using SafeSeaNet information**

**A DISCHARGE? YES  
OIL SPILL? POSSIBLE**

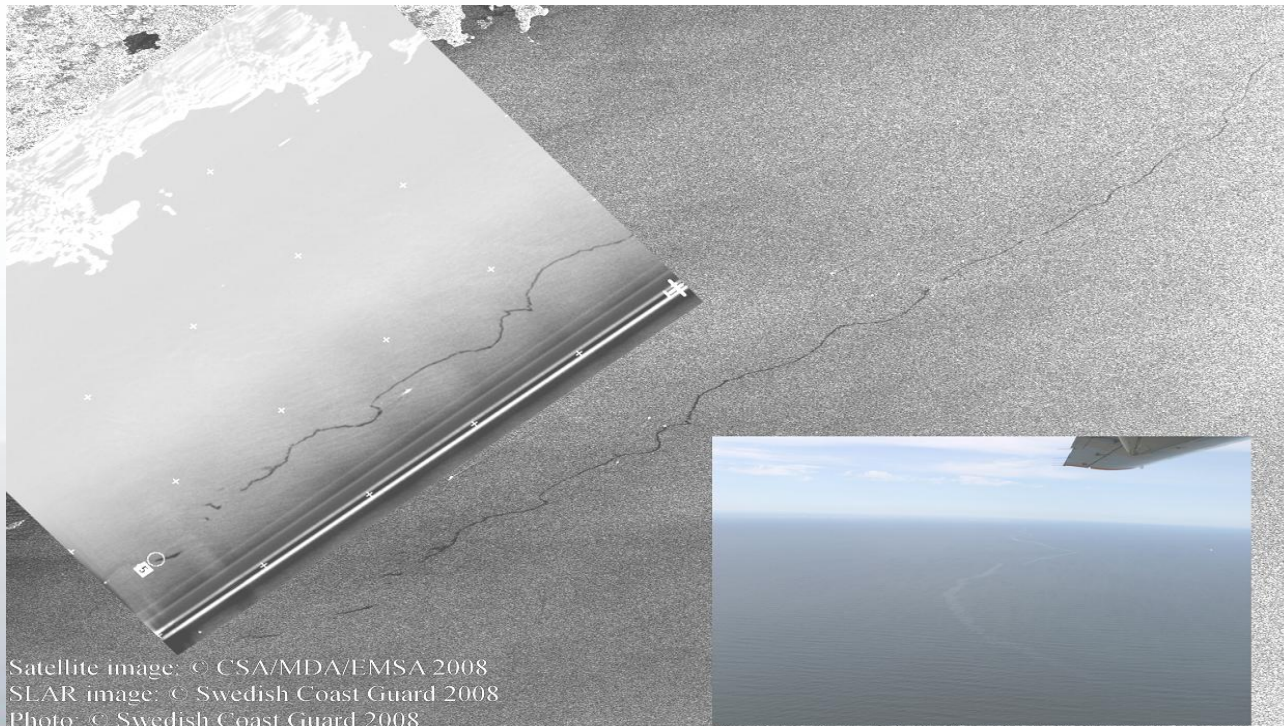
## Catching Polluters

**In case of a discharge detected by CleanSeaNet**

**PROVING A MARPOL VIOLATION**

**REQUIRES COMPLEMENTARY EVIDENCE**

**collected ON SITE and/or IN PORT**



# On site verification - Feedback in CleanSeaNet

## Obligation in the CoU to provide all observation results

### NOT ONLY OIL SPILLS

but also other substances and natural phenomena

INFORMATION PROVIDED SIMILAR TO INFORMATION IN POLREP

Feed-back report. NB! All textual input shall be in english

Report type

☒ Satellite detection checked

☐ Mineral oil confirmed

☐ Other substance confirmed

☐ Natural phenomena observed

☐ Unknown feature observed

☐ Nothing observed

☐ Satellite detection not checked

☐ Mineral oil observed

Performed observation

observation resp. organization

SASEMAR

observation resp. person

CAPTAIN OF AIRCRAFT SASEMAR 101

Observation method

Fixed wing aircraft

observation time (UTC)

2009 5 15 21 49 << today

Reporting person:

characteristics of mineral oil

Verified slick type

Mineral oil

verified latitude and longitude

40° 31' 12" N 1° 38' 18" E

verified length (km)

12.4

verified thickness (mm)

verified orientation

not set

BAOAC / Additional information

67S, 33M

Response actions

potential source

☐ source

potential source confidence

potential source latitude and longitude

0° 0' 0" N 0° 0' 0" E

Submit report

Attached files (0)

Mineral Oil/Other substance  
slick position and characteristics

Response actions

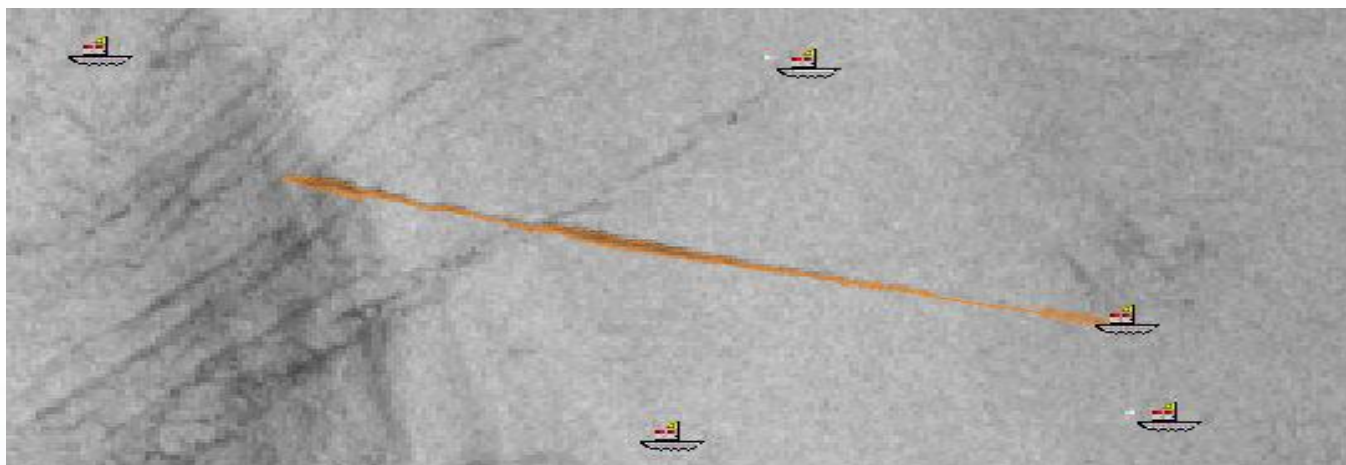
Information on potential source

Performed observation



## Catching Polluters

**CleanSeaNet detection may be considered sufficient to  
CONSTITUTE A SUSPICION OF AN ILLEGAL DISCHARGE**



18 August 2010 – Discharge detected 45 Nautical miles off Sicily  
Inspection in the next port of call (Not Paris MoU Member)

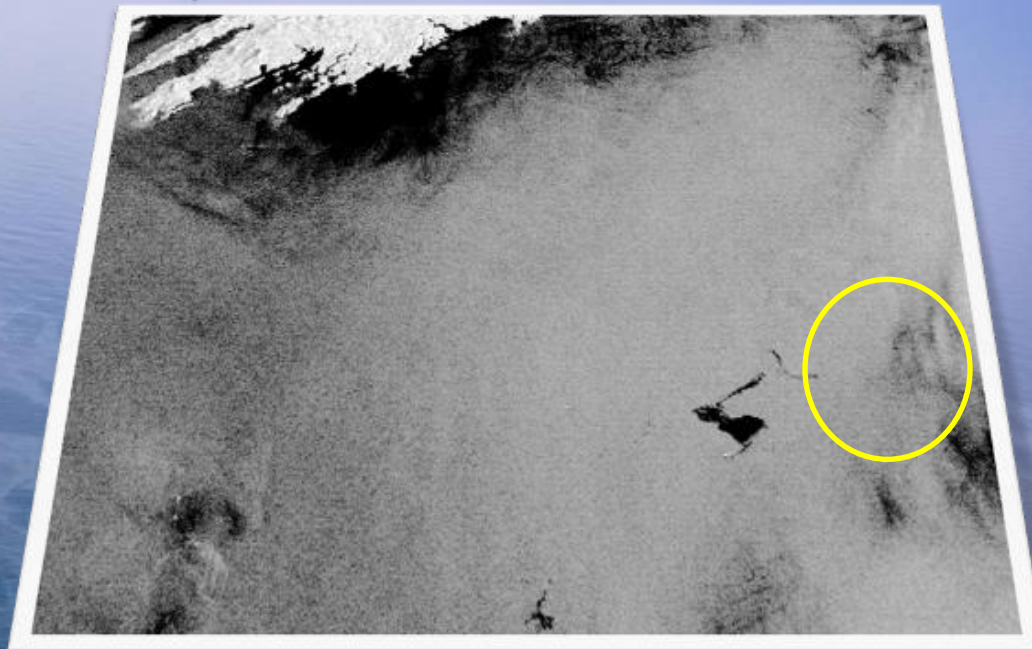
Evidence collected proves that the ship has been illegally discharging in the past

**CleanSeaNet more and more used to  
TRIGGER INSPECTIONS IN PORT**

A number of vessels detained or fined based on the evidence collected in port



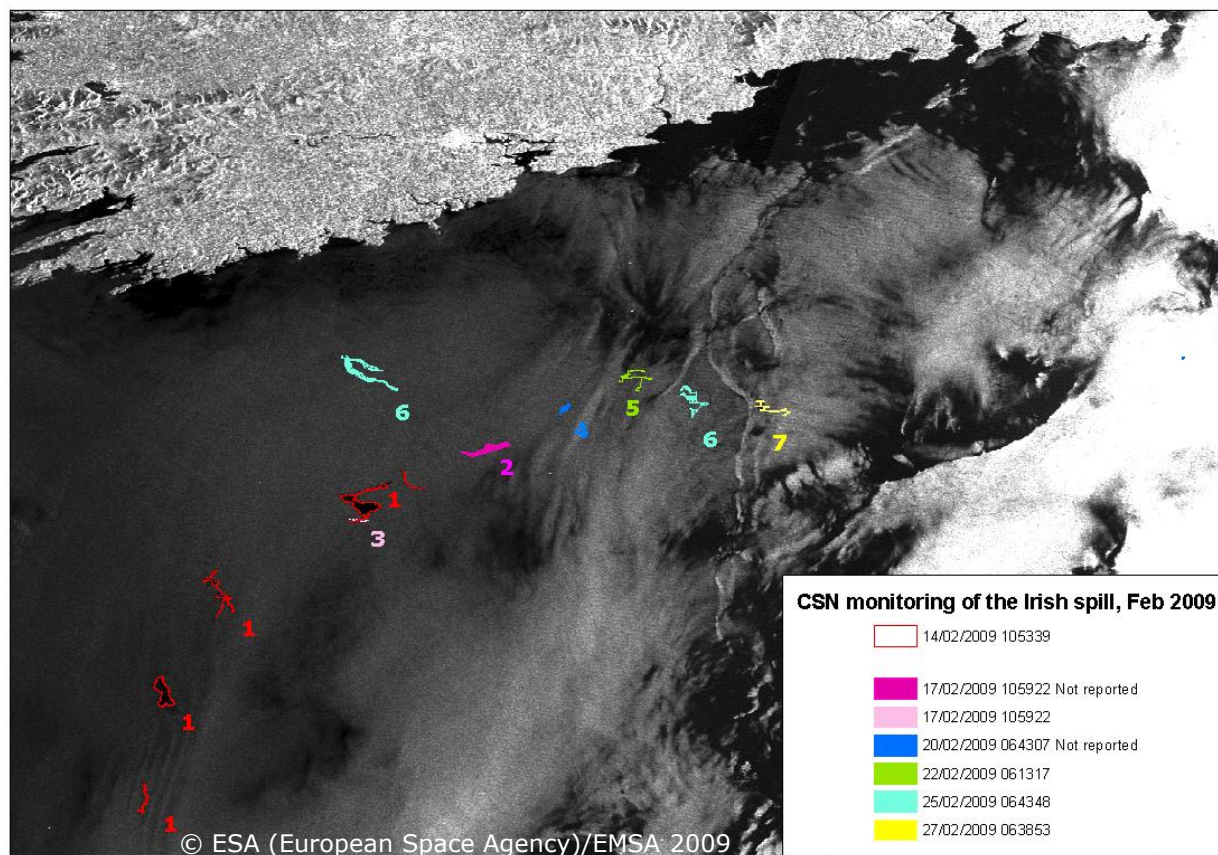
Admiral Kuznetsov  
off the Southern Irish coast  
17/02/2009



# Monitoring accidental spills extent and movement

## Example: spill in Irish waters in February 2009

- CSN alert on four possible oil slicks was sent to Irish Coast Guard and to MCA in UK on 14/02/2009
- Aerial surveillance confirmed the mineral oil spill that was at least 300m<sup>3</sup>
- The heavy fuel oil spill was due to failure in bunkering operation
- CSN monitored the area and oil was still detected on 27/02/2009





## Access to other sensors via GMES for emergency support

- **CosmoSkyMed**
- **TerraSarX**
- **Medium and High resolution Imagery**

**Example: support to French authorities in February 2010:**

TerraSarX 25/02/2010 17/15 UTC





## LEGAL ELEMENTS (2002/59/EC)

- Directive 2002/59/EC **art. 16.1** refers to “ships considered to be posing a potential hazard to shipping or a threat to maritime safety, the safety of individuals or to environment” and specifically paragraph 16.1.b) **refers to “ships in respect of which there is proof or presumptive evidence of deliberate discharges of oil or.../...”**
- **Art. 16.2** establishes that “**Coastal stations** holding relevant information on the ships referred to” in art. 16.1 “**shall communicate it to the coastal stations concerned** in the other Member States located along the planned route of the ship”.
- **Art. 16.3** provides that the **Member State receiving** the above **information** shall: “.../...within the limits of their available staff capacity, **carry out any appropriate inspection or verification** in their ports either on their own initiative or at the request of another Member State, without prejudice to any Port State control obligation. They shall **inform** all Member States concerned **of the results** of the action they take.”

## LEGAL ELEMENTS (2005/35/EC)

**Art 6 reads:** *"if irregularities or information give rise to a **suspicion** that a **ship**, which is voluntarily within a port or at an off-shore terminal of a Member State, has been engaged in or is engaging in a **discharge of polluting substances** into any of the areas referred to in Article 3(1), **that Member State** shall ensure that **an appropriate inspection** is undertaken in accordance with its national law".*

## LEGAL ELEMENTS (2005/35/EC)

- **Article 7: Enforcement measures by coastal States with respect to ships in transit**
  1. If the suspected discharge of polluting substances takes place in the areas referred to in Article 3(1)(b), (c), (d) or (e) and the ship which is **suspected of the discharge** does not call at a port of the Member State holding the information relating to the suspected discharge, the following shall apply:
    - (a) **If the next port of call of the ship is in another Member State**, the Member States concerned shall cooperate closely in the inspection referred to in Article 6 and in deciding on the appropriate measures in respect of any such discharge;

## 1<sup>st</sup> PROPOSAL

**WHEN TO REPORT A POLREP TO SSN, WHEN DETECTED THANKS TO THE COMBINED CSN/SSN DATA?** 3 possible cases:

1. An oil spill is confirmed (on-site verification) and a ship is identified without ambiguity.
2. The correlation between the oil slick and the ship track are evident and a further inspection in port brings enough evidences of an illegal discharge.
3. When a MS assess the information provided by the CleanSeaNet service is relevant enough for being considered as a “presumptive evidence” of pollution.



## 1st PROPOSAL (II)

- The report should be distributed to the MSs along the planned route, if known, or sent to the SSN core if unknown.
- The MS issuing the POLREP may explicitly request a verification/inspection.
- The destination port/MS should, according to art. 16.3, report back to the concerned MSs the results of the verification/inspection (Incident report type “Other”).

## 2<sup>nd</sup> PROPOSAL

**ISSUE:** CSN and SSN users may be obliged to double reporting.

EMSA can investigate, if agreed by the SSN group, the technical solutions for avoiding the duplication of reporting obligations to CSN and SSN as mentioned above.

*For that, It is worth noting that the services using CleanSeaNet are the bodies responsible for coordinating operations to tackle pollution at sea and therefore they are considered as a "coastal station" as defined in article 3 (n) of Directive 2002/59/EC.*

**Member States are invited** to assess and agree the above. Then EMSA will:

- 1- Reflect the examples under 3a) in the Incident Report Messages Guidelines;
- 2- Investigate, the technical feasibility of the proposal under 3b) and present it for approval at a next SSN WS and CSN meeting.

**Thank you for your attention**

