EUROPEAN MARITIME SAFETY AGENCY

QUALITY SHIPPING, SAFER SEAS, CLEANER OCEANS

Oil spill detection from space

and

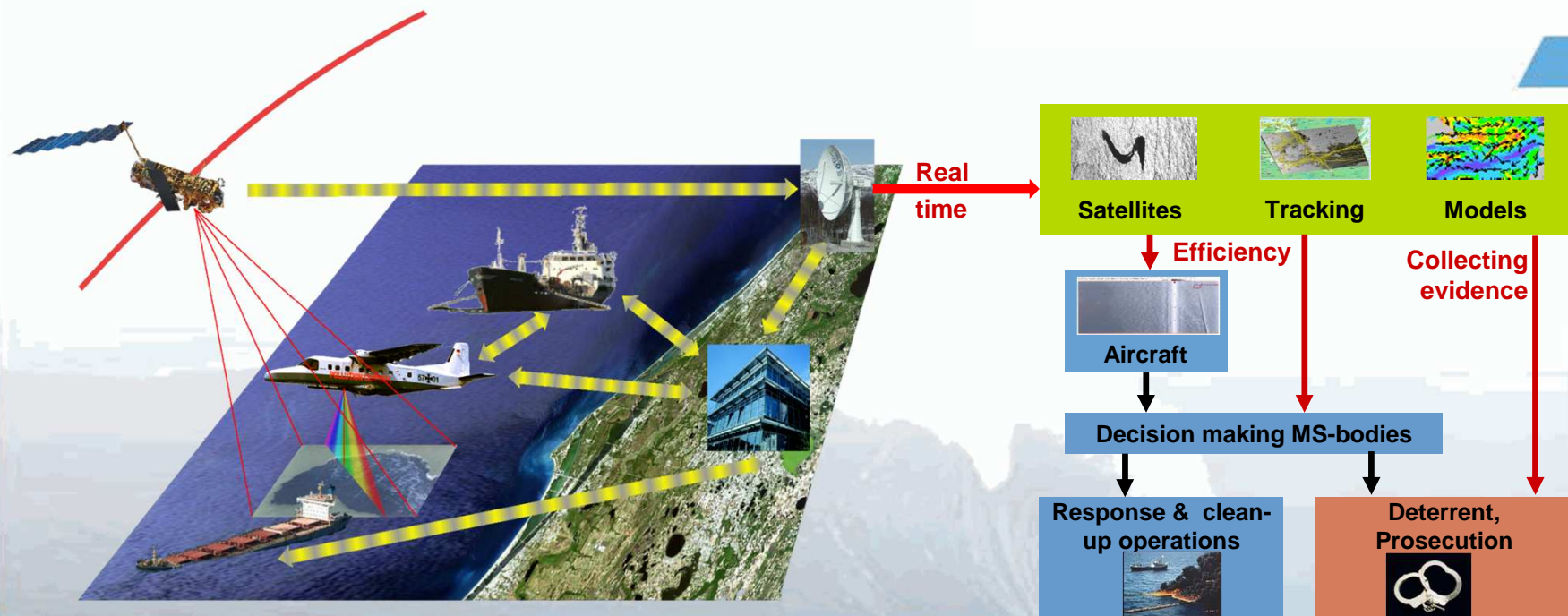# tracking of spills and potential polluters

Dr. Olaf Trieschmann,
Head of Section CleanSeaNet –
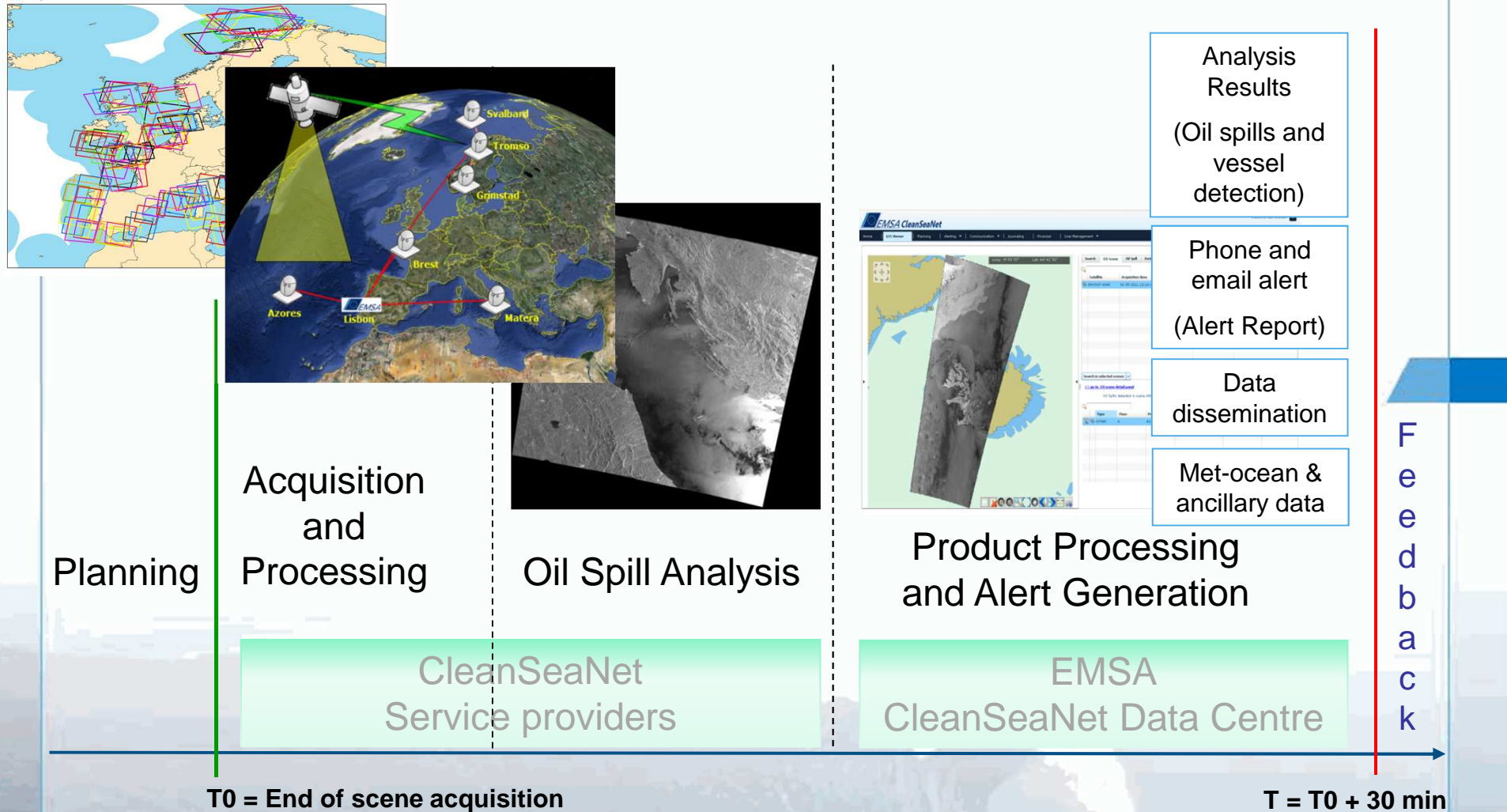Satellite Based Monitoring
Services

What are the objectives of CleanSeaNet?

To provide EU-wide information on deliberate and accidental pollution at sea in order to (EU Directive 2005/35/EC as amended by 2009/123/EC):

- assist Coastal States to locate and identify polluters in areas under their jurisdiction
- strengthen national response and enforcement mechanisms
- to maximise the use of allocated budget through economy of scale
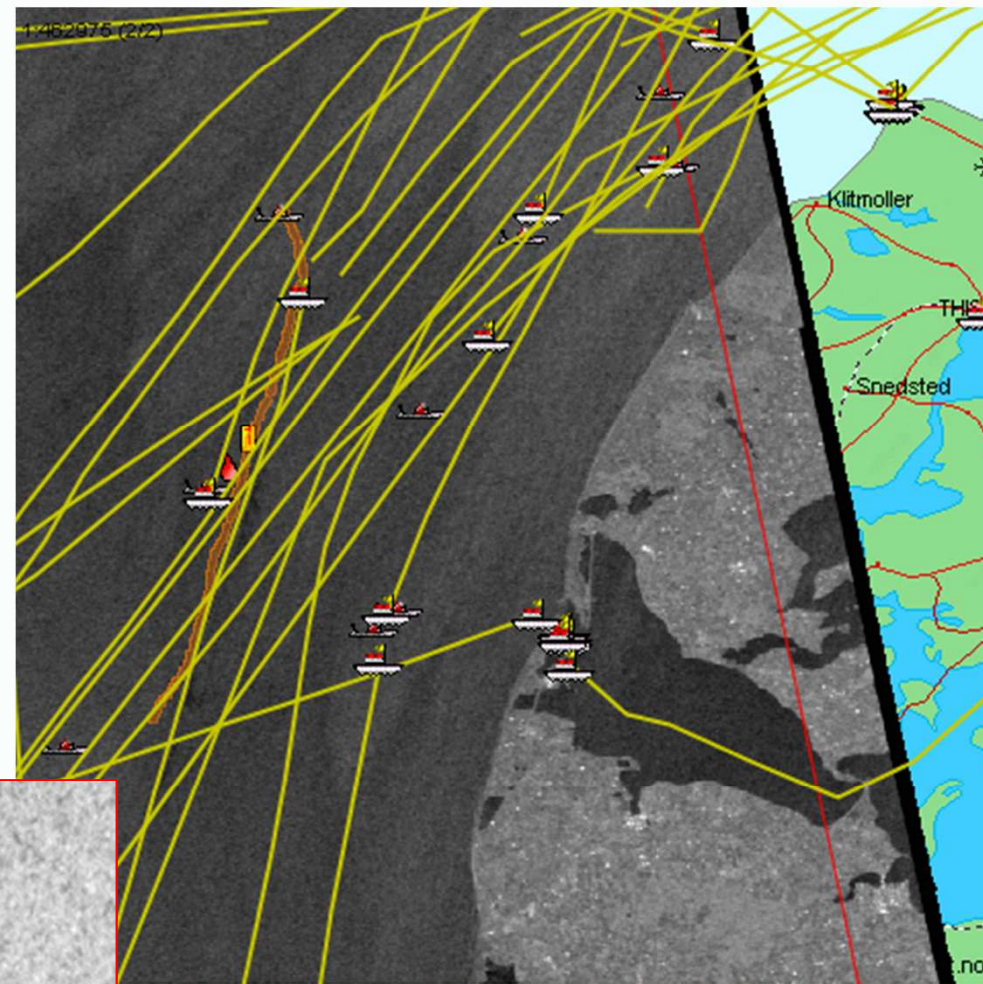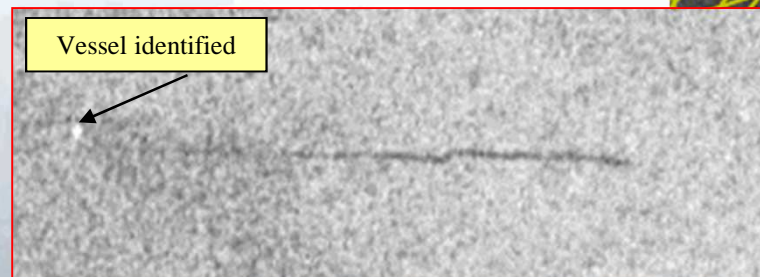
CleanSeaNet : Near Real Time service – 30 min*

Analysis Results
(Oil spills and vessel detection)

Phone and email alert
(Alert Report)

Data dissemination

Met-ocean & ancillary data

Planning

Acquisition and Processing

Oil Spill Analysis

Product Processing and Alert Generation

Feedback

CleanSeaNet Service providers

EMSA CleanSeaNet Data Centre

T0 = End of scene acquisition

T = T0 + 30 min

* Satellite images are acquired in segments up to 1400 km long. 30 min are for a 400 km long image

Polluter identification

Link between CSN and vessel tracking systems (SafeSeaNet)

1. SAR image,
   Oil spill,
   AIS-vessels positions
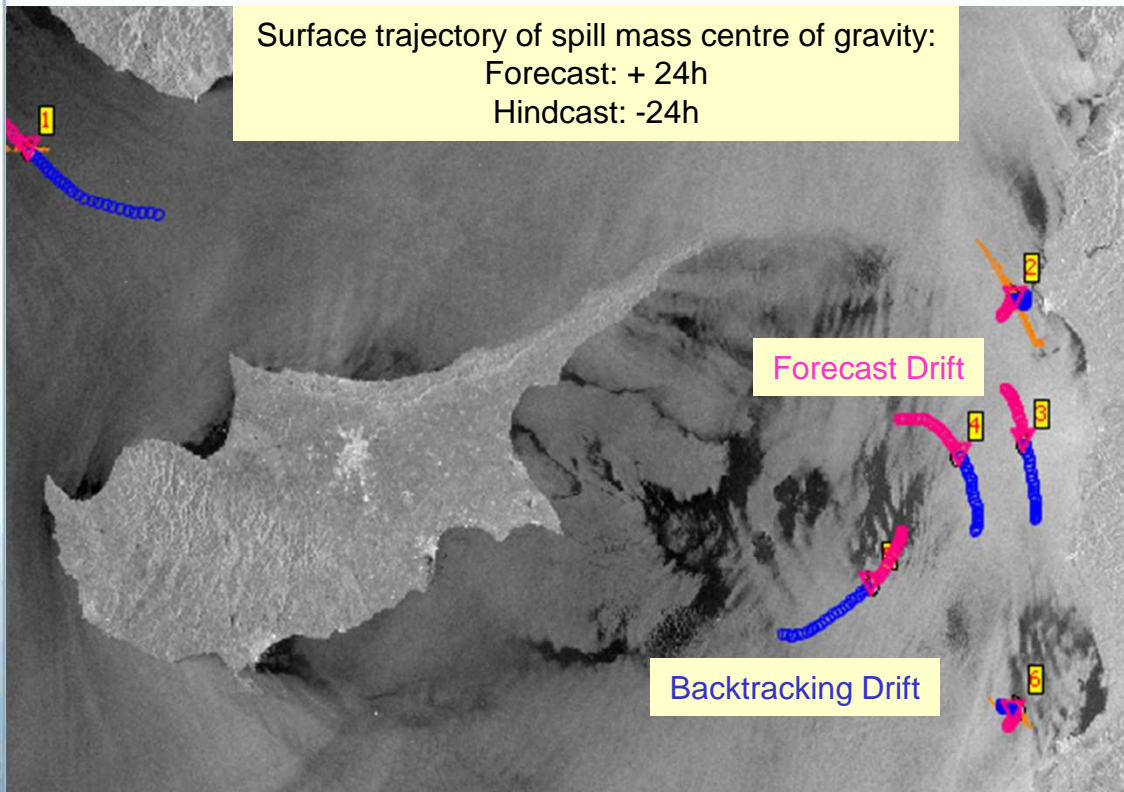
2. Vessel detection

3. AIS-tracks
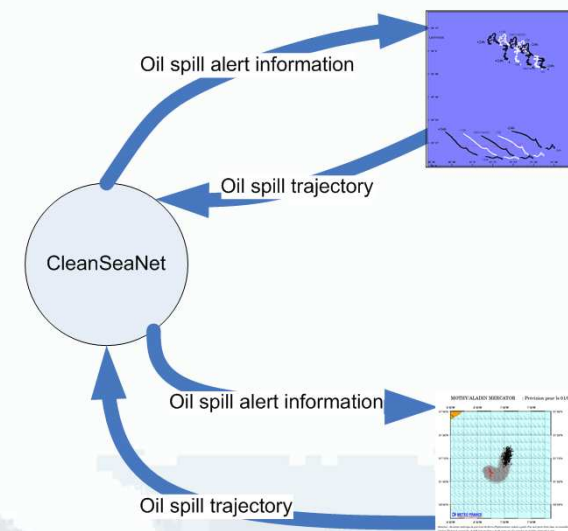
Red-handed polluter identification

Spill drift modelling

– Forecasting to support response operation
– Back tracking to identify polluters
– Triggered: after oil spill detection, on-demand or pre-defined execution

– Multi model support
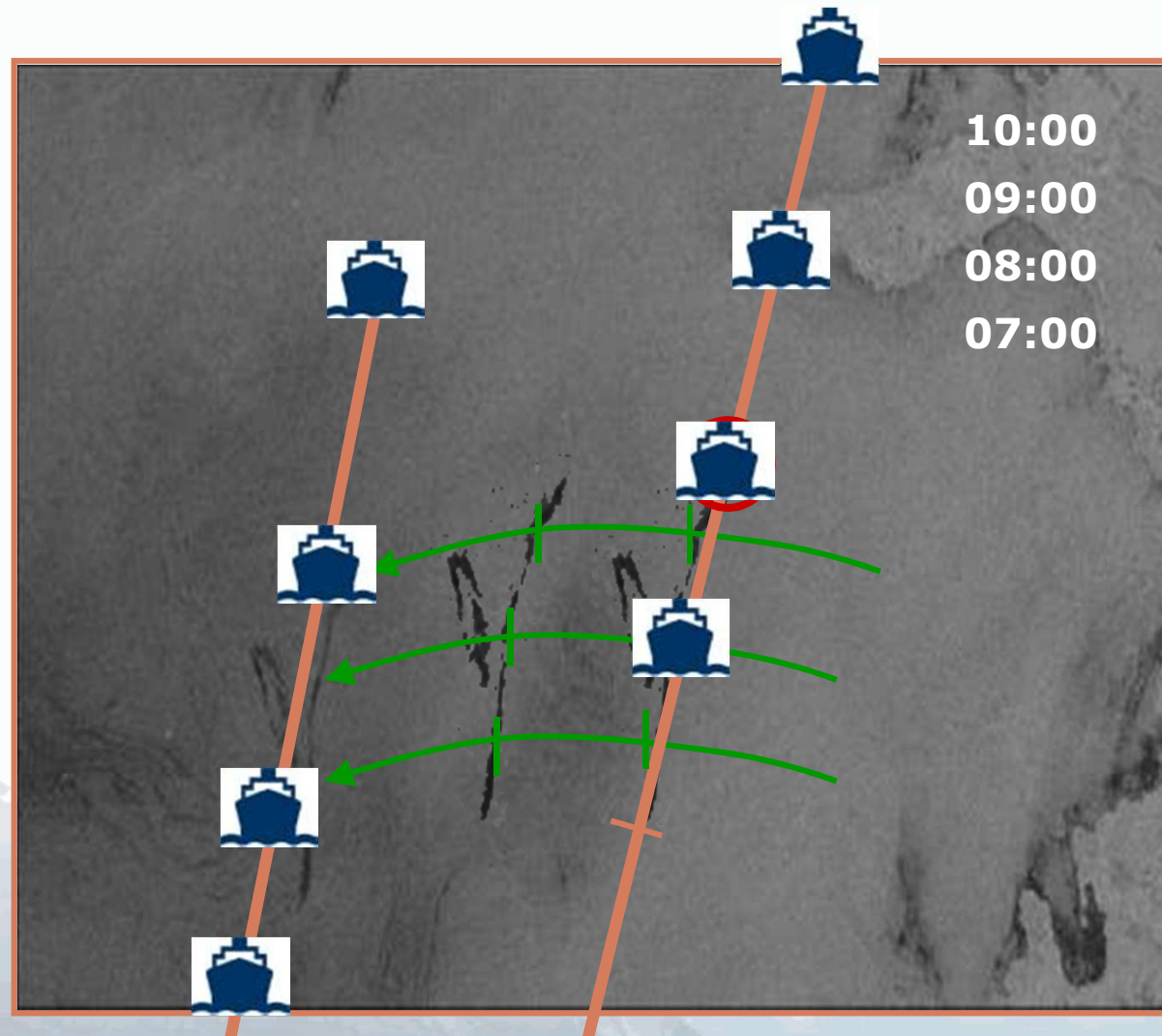– Two way data exchange between CSN DC and external models

Surface trajectory of spill mass centre of gravity:
Forecast: + 24h
Hindcast: -24h

Forecast Drift

Backtracking Drift

2010/03/12: Eastern Levantine Basin (MEDSLIK: Cyprus Oceanography Centre)

Oil spill alert information

Oil spill trajectory

CleanSeaNet

Oil spill alert information

Oil spill trajectory

Intersection of vessel tracks and spill movement
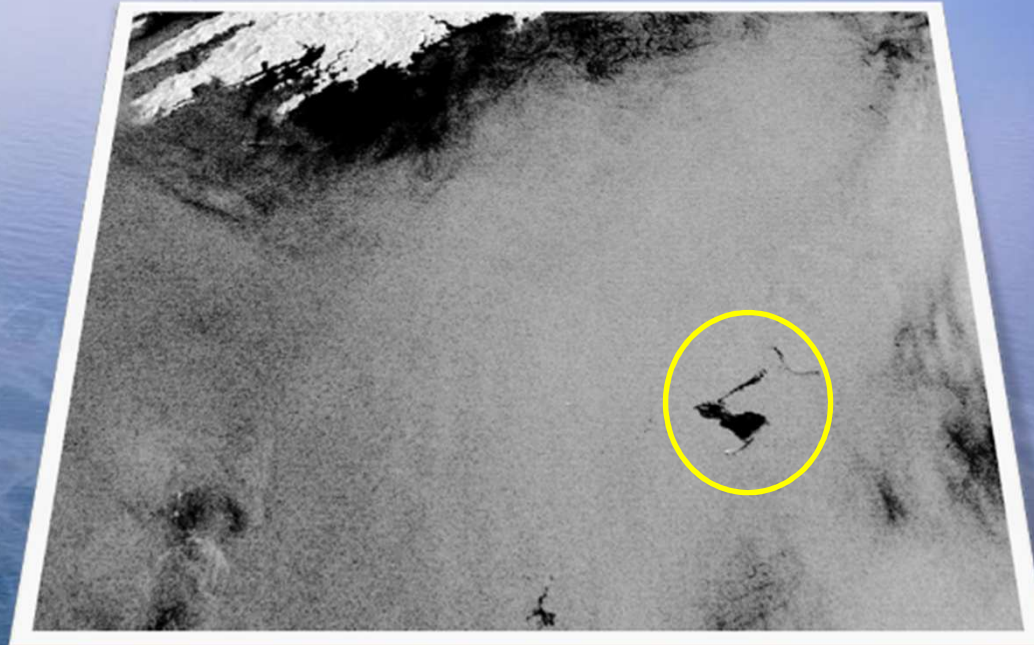
Combination of

- Satellite detection
- Spill backtracking
- Vessel tracking

➢ Identification of the likely polluter

➢ Reduction of uncertainties

10:00
09:00
08:00
07:00

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off the Southern Irish coast
17/02/2009

Thank you very much !!

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Satellite image: © ESA (European Space Agency) / EMSA 2009
Photo: © MCA/Irish Coast Guard