

European Commission Workshop

« SATELLITE IMAGERY AND ILLEGAL OIL SPILLS IN EUROPE AND IN THE MEDITERRANEAN »

Round table 1 :

« **DETECTION TECHNIQUES** »

Round table 2 :

« **MUTUAL INFORMATION AND PROSECUTION PROCEDURES** »



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1 - ROUND TABLE ON DETECTION TECHNIQUES

- **IDENTIFIED ISSUES**

- Lessons of the past experience
- Operational surveillance
- Information system

- **OBJECTIVES OF ROUND TABLE**

- Discuss issues and propose recommendations concerning each issue

- **MAIN LESSONS LEARNED FROM PAST EXPERIENCE (1)**

- Current situation in the Baltic and North seas: in both sea areas aerial surveillance by remote sensing aircraft has contributed to building up a long experience in the detection of illegal discharges. Several member states have co-operated over the past decade to gain experience in the use of satellite SAR imagery.
- Current situation in the Mediterranean sea: a number of dedicated project are going on but there is not yet practical application, and in addition the aircraft surveillance capacity is insufficient to allow for extended joint experiment and to derive operational experience.
- summary of the Baltic and North sea experience
 - ◆ Technical and operational capabilities vary a lot according to regions
 - ◆ Combined operation and reports to all participating/interested countries and parties
 - ◆ Development of operational experiences by an exchange of experts
- satellite SAR imagery is a tool that complements other remote sensing and visual resources (e.g. flexibility of airborne surveillance, versus long term statistical observation, importance of in-situ measurements) and models
- Improve or initiate exploitation of existing aerial/satellite surveillance data from recent and past projects and campaigns ; need to continue to carry out research activities in the field of satellite surveillance aimed at practical operational applications
- Use of information in (near) real time and in slow time (including access to historical data set) depending on operational needs
- Space data access cost implies definition of priorities. (envisage negotiation for the acquisition at the lowest possible costs when pollution and prevention activities are concerned)
- Interface with GIS systems (e.g. for digital charts and sensitivity mapping)
- Use these experiences to define operational requirements for future satellite surveillance

- **OPERATIONAL SURVEILLANCE (2)**

- Separate needs for routine operational surveillance and emergency monitoring.

- Enhance co-operation with Civil Protection across Med countries for emergency response at the intercoastal zone.
- Synergy with other operational systems (e.g.: VTS, AIS) for ship location and identification and with emerging technologies (e.g.: GALILEO for precise positioning, hyperspectral sensors)
- Review of end user requirements (e.g. petroleum products + hazardous and noxious substances, timeline, coverage, continuity of data access, quality of derived information, location, standards of reporting, met-oceano data...)
- Short and long term objectives : need for a strict and repeated surveillance of the sea area leading to a strong deterrence
- Reduction of surveillance costs to ensure long term sustainability. This is one of the most important challenges.
- As the development of satellite surveillance is very costly for small countries, specific transnational pilot projects within the MEDA and other or new co-operation programmes, even at regional and sub-regional level, should be developed to mitigate the relevant costs.

• **INFORMATION SYSTEM (3)**

- establishing local and overall statistics and deriving trends in the coming years at least for the threatened regions (experience in ongoing projects and in GMES initiative)
- Consider integration of aircraft, satellites and port state controls data (e.g. for optimisation of available flight time)
- Generation of risk mapping first, and eventually sensitivity mapping. (*e.g.: Proposal under discussion at REMPEC with participating countries*)
- the information system should be operated at regional (*e.g. REMPEC role in the Mediterranean sea*) and country level and should interface other operational relevant systems, met-oceano services...
- The information system should consider networking and compatibility of configurations for meeting regional and local operational needs

2- ROUND TABLE ON MUTUAL INFORMATION AND PROSECUTION PROCEDURES

- **IDENTIFIED ISSUES**

- Evidence
- Operational procedures re-routing and inspection
- Mutual information

- **OBJECTIVES OF ROUND TABLE**

- Discuss issues and propose recommendations concerning each issue

- **EVIDENCE (1)**

considerations (1)

- SAR (*Synthetic Aperture Radar*) satellite imagery enables the detection of surface anomalies such as oil slicks and the presence of vessels related or not to such slicks.
- Satellites provide localisation and slick size in addition to the data and the time of acquisition.
- Satellite imagery only delivers part of the evidence of an offence, as it does not identify the vessel or the type of pollutant. Consequently, satellite imagery is only a tool to be used in conjunction with visual reconnaissance or sampling.
- Observers need to be trained to produce clear reports and documents that would be easily understood by magistrates. These magistrates will also to be trained so that they can exploit evidence to the full.

Recommendations (1)

- As satellite imagery is highly technical and marine pollution issues so specific, it is recommended to appoint and train specialised investigators, prosecutors and magistrates.
- For the operational use of satellite imagery, it is recommended that each country avail itself of an aerial surveillance program that will complement and validate satellite detection so as to have all the necessary information to prosecute offenders.
- In order to provide the necessary operational capacity for airborne and shipborne surveillance of marine pollution, a plan to build the capacity of Mediterranean states should be considered.

- **OPERATIONAL PROCEDURES, RE-ROUTING AND INSPECTION (2)**

considerations (2)

- Taking action against offenders detected by satellite imagery involves also the same instruments as those used by other sensing methods.
- The Law of the Sea Convention and the relevant international and regional instruments enable states to intervene (inspect vessel, ...) at sea and in their harbours.
- Response must be proportional to the pollution threat.
- Satellite imagery can be used as a trigger for targeted aerial surveillance.
- When the polluting vessel is no longer connected with the oil slick, information from satellite imagery used in conjunction with information from airborne reconnaissance may allow in some cases to reconstruct the track of the suspected vessel and establish the link between the oil slick and that vessel.
- The option of re-routing a vessel should only be envisaged as a last resort if you have clear evidence and requisite response resources.

- The controls provided for by international agreements should be carried out (e.g. Port State Control).
- The designation of areas enjoying particular protection measures may improve the protection against pollution. However, the implementation of this kind of measures is complex.

Recommendations (2)

- It is recommended that a transnational approach to the acquisition of satellite imagery be undertaken in order to increase the amount of information for the prosecution of offenders.
- In the event of on board intervention it is recommended to implement direct link between operational control authorities and judicial authorities at national and transnational level.
- It is recommended to use all the provisions of the Law of the sea in order to have a legal basis for intervention to deal with marine pollution issues and in particular those outside territorial waters.

• MUTUAL INFORMATION (3)

considerations (3)

- Satellite data enables statistical mapping and the identification of areas at risk.
- Using the satellite imagery as a part of evidence for prosecution must essentially focus on these areas and may also provide an evaluation of the efficiency of the enforcement system.
- Each state will or has, in its code of criminal procedure, set fines and sanctions.
- Discrepancies in those deterrence tools may induce a shift of the problem to countries applying more lenient sanctions.
- Some states keep an updated record of the cases brought to court. Recent initiatives have been conducted to pool this information.
- There are two regimes of penalties:
 - ◆ administrative sanctions involving fines that are proportional to damage sustained will be immediately payable,
 - ◆ criminal procedure is often longer but involves steeper fines.
- The current trend is that not only the master but also the vessel operator(s) will be held liable.

Recommendations (3)

- It is recommended to extend liability to other parties involved in ship management rather than to limit such liability only to the master as is the case in a number of countries
- It is recommended to implement an exchange of information on legislation and sanctions in different countries.
- It is recommended to encourage the exchange and the compilation of information in database regarding prosecution as well as regarding procedures of investigations (e.g. North Sea Network, Helcom).
- The establishment of rapid notification procedures to flag states must be encouraged.