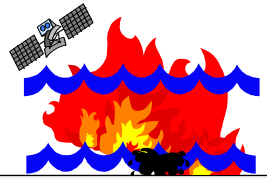
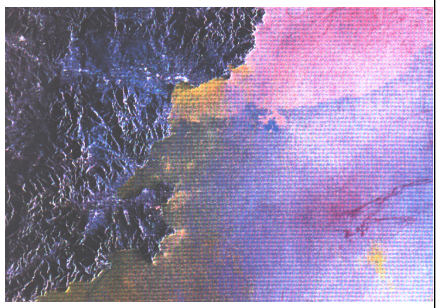
# ENVISYS: OIL SPILL ENVIRONMENTAL MONITORING, WARNING AND EMERGENCY MANAGEMENT SYSTEM



| Country | Contract value (€) | % carried out by Epsilon | No of staff provided | Client | Origin of funding | Date (start/end) | Consortium Members |
|---|---|---|---|---|---|---|---|
| Greece | 256.000.000 | 1%<br>2.560.000 | 10 | European Commission | EC<br>DGXIII | 1996<br>2000 | 14 Partners |

## Description of the project

ENVISYS is a software system for monitoring sea pollution from oil spills. It aims at the early detection of oil-spills and the provision of support for public authorities during clean-up operations. It integrates remote sensing techniques, communication tools, GIS, databases, telematics and multimedia tools. Its applicability has been tested and validated. The project included demonstrations of the system at three sites, dissemination of information to both, user groups and to the international community. ENVISYS is a complete management, monitoring and control system for public authorities that can be utilised in related natural disaster problems (e.g. floods). It was funded by the European Commission, Directorate General DXIII for Telematics Applications, Environment Programme.
ENVISYS can detect large-scale environmental emergency situations with satellite sensors, promptly reporting to stakeholders. The ENVISYS demonstrator is limited to marine oil spills; however, the system architecture can cover a large spectrum of environmentally emergency situations.
The system is built around a set of user requirements (user, quality, and infrastructure). The system possesses four core functionalities:



• Emergency detection: The system can monitor a large geographical area. Monitoring is automatic and reduces user workload. In an emergency situation detected; the user is automatically warned. The user has the option to screen data in emergency situations.
• Verification: The user is provided with tools analyzing image data received from satellites to confirm or invalidate emergency situations. This feature is provided since environmental emergencies require human expertise, intelligence and
judgement for effectiveness.
• Assessment: If an incident is verified, an assessment of the situation must be assumed. to uncover the threats posed (e.g. to what degree it will impact on public health, safety and property). The assessment includes an analysis of image data compared to geographical data describing the area in focus.
• Support: If the emergency is lasting with evolving characteristics, ENVISYS provides users with information on its escalation. This includes analysis to up to date satellite imagery and the application of simulation models forecasting the development of the situation.

## Services provided

Product.
ENVISYS provides a user-friendly environment applying state-of-the-art satellite remote sensing and information technologies. It is flexible and adaptable to highlighting different user environments. The system offers to users technologies on:
• Image analysis of remote sensing data
• Geographical information systems, GIS
• Database analysis
• Communications
• Decision support
• Multimedia presentation
• Oil spill and environmental mathematical modelling

Reference: Kallidromitou, D., M. Bonazountas, M., et.al. (1999).
ENVISYS: Environmental monitoring warning and emergency
management system. European Commission, EC-DG-XIII, Contract No EN-1009, Brussels. Final report, EPSILON International SA, Monemvasias 27, GR-15125 Marousi, Greece.
Tel: +30-210-6898615