



Decision Support for Oil-Spills (DSOS)

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Aim & Objectives

Develop a prototype **geospatial decision support platform** to provide more **effective information management** when **responding to oil-pollution incidents** in the marine environment

- Evaluation of platform** under real world conditions (carried out in conjunction with SEA-PT oil-spill exercise on West coast of Ireland)

- Assessment of new real-time sensor technologies including **Remote Sensing satellites (e.g. Sentinel), low-altitude Airborne & UAVs**

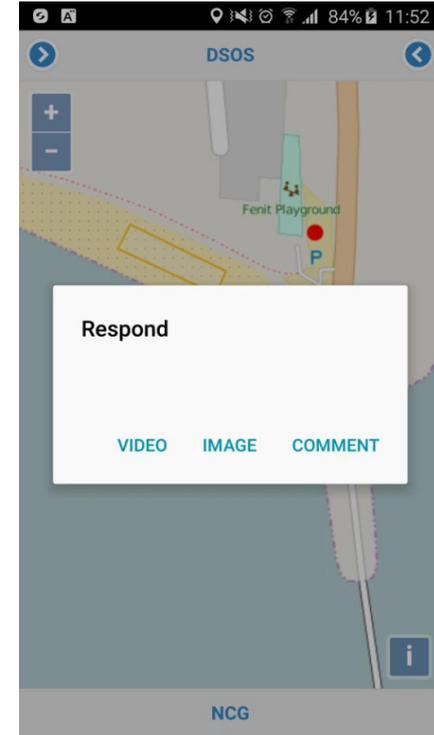
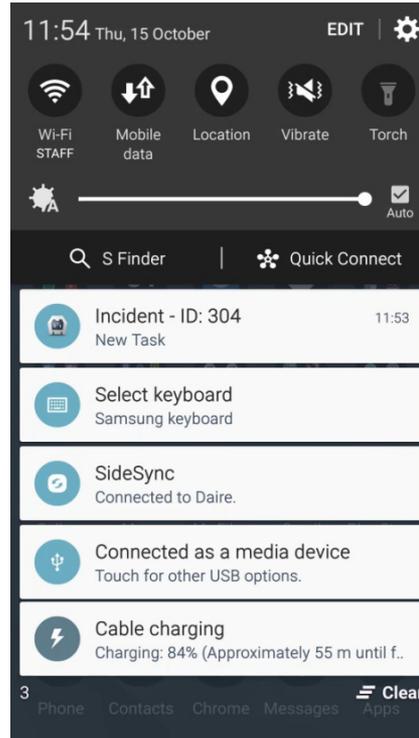
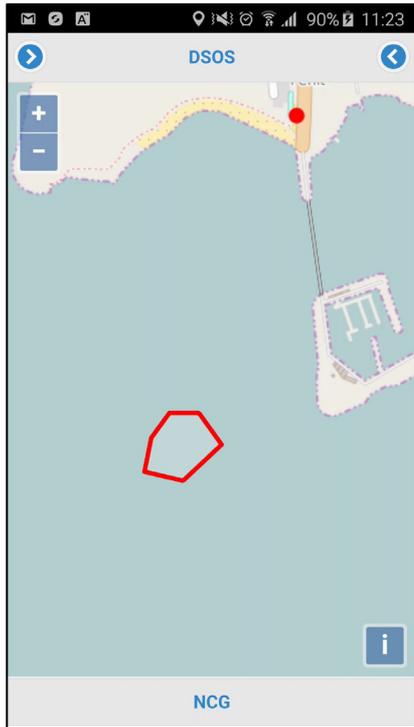
Cloud-based Marine Pollution Management Platform

The image displays two screenshots of the DSOS (Distributed System of Operations) platform interface. The left screenshot shows the 'Group Control' module, which includes a sidebar with navigation options like 'Home', 'Create New Incident', 'Select Historic Incident', 'Join Live Incident', 'Create User', and 'Admin Tools'. The main content area is titled 'Group Control' and features a 'Group Overview' section with 'Current Groups' and 'Groups Information' tabs. The 'Current Groups' list includes 'Dev Test', 'Dublin Port', 'Galway Bay', 'Key West Florida', 'Local Alm.', 'None', and 'PIPCO'. The 'Groups Information' section has an 'Info' field and an 'Edit Selected Group' button. The right screenshot shows the 'Set Incident Area' module, which includes a sidebar with navigation options like 'Home', 'Create New Incident', 'Select Historic Incident', 'Join Live Incident', 'Create User', and 'Admin Tools'. The main content area is titled 'Set Incident Area' and features a map with a red dashed outline indicating the incident area. The map also shows a photo of a person in a yellow vest standing on a beach. The 'Set Incident Area' section includes options for 'Response Area', 'Initial Slick Area', and 'Set Command Centre', each with 'Add' and 'Hide' buttons.

DSOS Platform Modules include;

- Response Team Formation & Mobilisation, Incident Reporting
- Document & Check-list Management
- Data Ingestion, Layer Management
- COP with various Mapping, Tasking, Logging & Analysis tools
- Comprehensive Pollution Incident Logging and Reporting tool

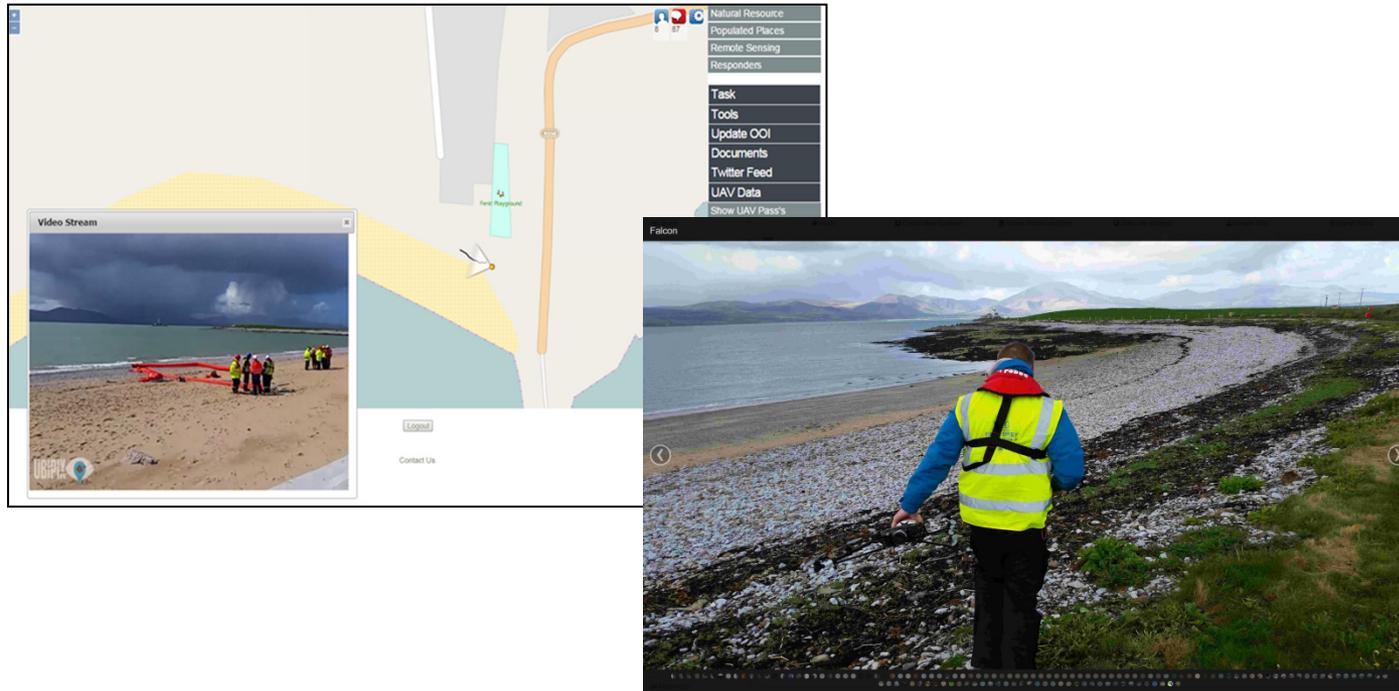
SmartPhone App (Real time views, Field-Observation & Tasking)



DSOS Smartphone App

- communicate with coordinator,
- accept tasks, report on task status,
- log and transmit field observations, in near real-time, GPS, images and video

Outputs: Research & Innovation



DSOS platform was evaluated out in the field (Fenit, Co Kerry) with Oil Pollution Industry groups (SEAPT.ie) in April 2015. Refinements were identified and subsequently implemented.

- Check-lists, Response plans, Logistics/Resources
- Real-time update of responder positions (Platform & Mobile Devices)
- De-clutter Common Operational Picture (COP), Improve layer mgt & post-event reporting
- Role of Airborne UAVs (Birds-eye view, Poor Weather- higher performance aircraft)

Airborne/UAV Video mapping

DSOS Signed in as Daire Walsh Wed, 14 Oct 2015 17:50:14 GMT

Layers Home Create New Incident Select Historic Incident Join Live Incident Create User Admin Tools

Video Stream

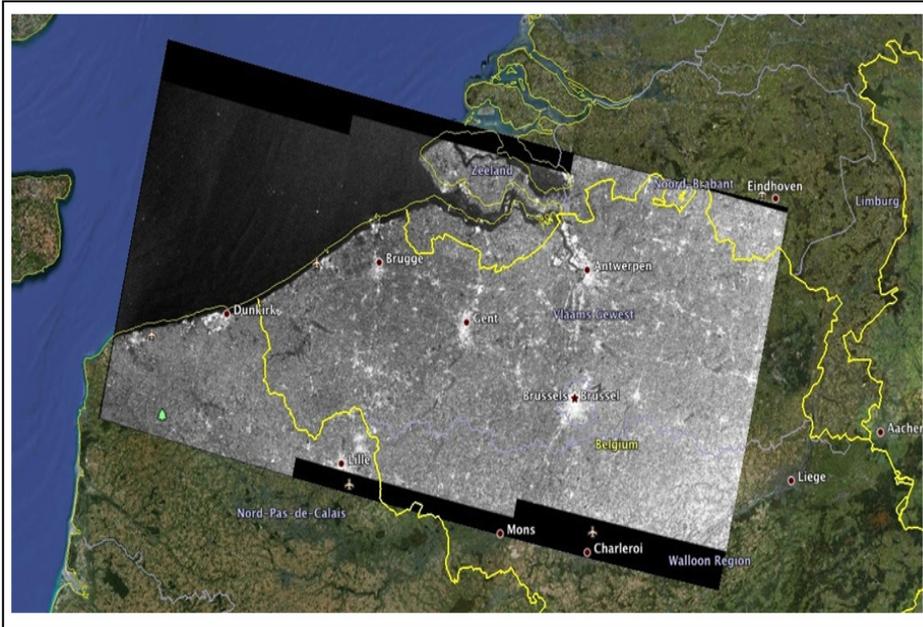
Object Of Interest
Populated Places
Remote Sensing
Responders
Resources
Reports
Global Alerts
Tools
Task

Play 2 Mute Full-Screen

Add Point 1 Add Point 2 Calculate Distance Length : 143.43 m's

- Integrating Airborne data in near real-time for oil-slick tracking, 6-DOF
- In-frame-positioning & area measurement
- Tagging

Satellite Remote Sensing



Sentinel-1 (strip map 80km, 5m) & Sentinel-2 (13bands, 10m,20m,60m, 265km)

Collaborative Ground Segment/Mirror Sites

EMSA CleanSeaNet & SafeSeaNet