OceansMap™

OceansMap is a web-based met-ocean data management and emergency response support system. It consists of a GIS-based graphical user interface, a spatial database and web services. The web interface allows users to manage, visualize, share, and analyze a variety of met-ocean data including operational model and in-situ observation data. It can be used to conduct oil and chemical spill simulations and visualize the results. It can also be integrated with search & rescue module to provide a rapid prediction of the movement of drifting objects and missing persons at sea. The system also includes interactive GIS features and tools to manage spill response planning activities and assets. The system can be used as a stand-alone website or integrated into existing applications.

It integrates the following modules:
- Oil spill trajectory and fate model
- Chemical spill 3D fate model
- Met-ocean data visualization and management
- Response planning

Metocean Data Management

OceansMap is designed for integration, visualization, sharing, analysis, and management of a variety of met-ocean data from models, radars, gliders, satellites, buoys, and other ocean observing techniques. It enables the management of data from disparate sources and in varying formats.

Integrated met-ocean module serves as a database to manage, visualize, share and analyze a large quantity of met-ocean data. The data is published as a map. Compatible data includes:
- Numerical model results or in-situ measurement data;
- 2D/3D;
- Vector or scalar;
- Point, rectangular, or curvilinear.

Users can interrogate, compare and analyze any data of interest at a point, line, polyline or polygon. Users are allowed to export extracted data or map plots to a local computer.
**OILMAP™ - Integrated Oil Spill Model**

The OILMAP integrated Oil Spill model has been used worldwide for decades to provide rapid predictions of the trajectories and fates of the spilled oil in rivers and marine environments for response support and risk assessment. OILMAP simulates the following processes:

- Dispersion
- Spreading
- Evaporation
- Entrainment
- Emulsification
- Shoreline Interaction
- Ice Interaction

OILMAP has the ability to incorporate oil boom interaction, overflight sightings, dispersant and mechanical cleanup application in the model.

**CHEMMAP™ – Integrated Chemical Spill Model**

The CHEMMAP integrated Chemical Spill model is used for predicting the movement of spilled chemicals on the water surface and its distribution in the environment (evaporated, in the water column, on the shoreline) for response support and risk assessment. CHEMMAP simulates the following processes:

- Transport
- Spreading
- Entrainment
- Dispersion
- Dissolution
- Volatilization
- Adsorption
- Buffering (pH)
- Settling
- Sediment mixing and partitioning
- Degradation

**SARMAP™ – Integrated Search and Rescue Model**

The SARMAP integrated Search and Rescue model has been used worldwide for decades to provide rapid predictions of the movement of drifting objects in marine or fresh waters environments for response support. SARMAP includes the ability to deploy search & rescue units (SRUs) with search patterns and calculate probability of containment (POC), probability of detection (POD), and probability of success (POS). The Search and Rescue Model includes the following:

- Search object database
- Search planning tool
- IAMSAR and MonteCarlo methods for computing drift
- Forward and Backtrack SAR
- Object trajectory and search planning reporting

**Applications**

- Met-ocean data analysis and management
- Decision support to oil/chemical spill emergency response
- Fast contingency planning
- Spill drill exercises and trainings
- Response resource management
- GIS data management

RPS has built a wide range of computer modeling applications to solve environmental problems and power generation industry challenges.

RPS’s suite of environmental modeling tools, are available for licensed use and customization and include: OILMAP™, SARMAP™, CHEMMAP™, SIMAP™ and AIRMAP™. More information about our products can be found at: rpsgroup.com | asascience.com