

# U.S. Coast Guard Search and Rescue Planning System: SAROPS



## CLIENT:

United States Coast Guard

## PROJECT #:

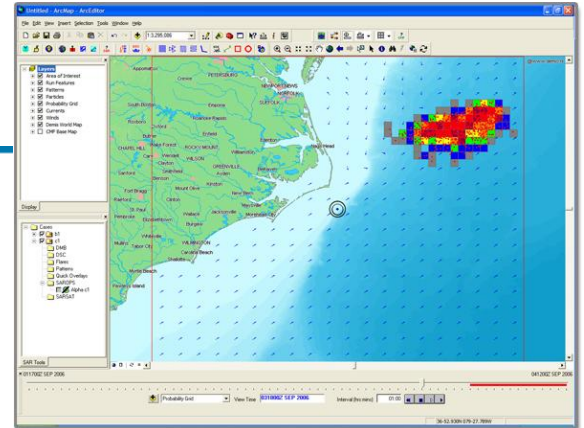
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## PROJECT ELEMENTS:

- Search & Rescue Planning
- Environmental Data Server (EDS)
- Web Services/GIS
- CJMTK/ArcGIS Framework

## PROBLEM. PURPOSE.

The United States Coast Guard considers search & rescue (SAR) as one of its primary missions. A critical component of the SAR process takes place well before a helicopter can get on-scene. This is the activity of Search Planning. Search planning is largely concerned with "where things are", "where things may have been" and "where things will be" so a search plan can be created effectively.



## SCIENCE. SERVICES. SOLUTIONS.

In collaboration with Northrup Grumman and Metron Inc., ASA has been working with the U.S. Coast Guard since 2003 to develop the Search and Rescue Optimal Planning System (SAROPS). SAROPS includes three main subsystems:

- C/JMTK/ArcGIS GIS-based user interface
- Environmental Data Server (EDS)
- Search Planning Simulator and Optimal Search Planning Tools

The system allows the search planner to define the scenario; to access environmental data (winds and currents) via web services from a central data server; and to develop near optimal search plans given the amount of searching effort available. The system was deployed throughout the U.S Coast Guard in 2007, and has successfully been used to find missing persons and save lives.

ASA's role in the project has been to develop GUI components of the SAROPS extension and ASA is the lead developer for the Environmental Data Server (EDS). The EDS is now installed at the United States Coast Guard Operations System Center (OSC) in Martinsburg, WV, and ASA also hosts a backup server in RI. The servers continually collect environmental observations and forecasts for the U.S and also global data products from NOAA, the U.S Navy, and a variety of regional data providers.

In the event of a SAR case, the EDS provides the appropriate wind and current forecast for the region of interest so the search planner can efficiently make a prediction of where missing objects will drift to and create a probability map that is used to set up search plans for search & rescue units (SRUs).

## PRODUCTS. RESULTS.

- Environmental Data Server Integration
- Data catalog of environmental data from public and private data providers
- Latest SAR technology
- Object drift characteristics database and integration into SAROPS system