

# A CASE STUDY: EVALUATING MARITIME AIR LITTORAL OPERATIONS THROUGH MODELING AND SIMULATION

Solution | **C4ISR**

## Challenge:

Live military trials are costly and labor-intensive.

## Solution:

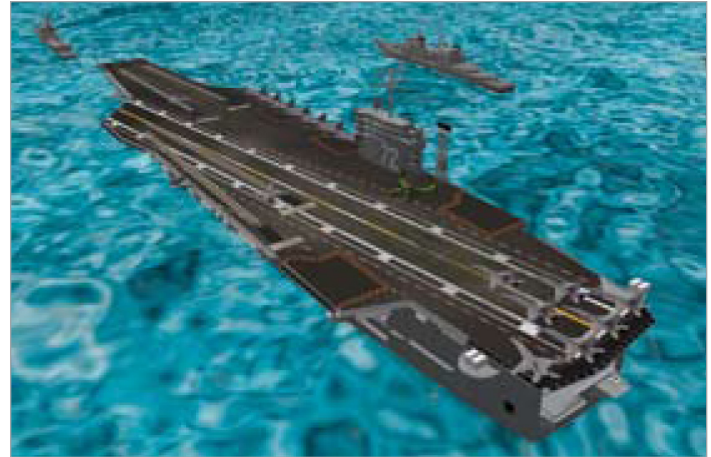
Use AGI software to evaluate battle strategies for the Maritime Air Littoral Operations Technology Demonstration Program.

## Results:

The Defence Research and Development Canada (DRDC)-Ottawa delivered a modeling and simulation capability based on AGI's STK software, which would have taken more than a year to develop themselves.

Live trials are the most effective means of evaluating military tactics, yet they tend to be costly and labor intensive. Instead, many organizations have turned to modeling and simulation (M&S) to evaluate battle strategies and their potential outcomes cheaply and efficiently. The Future Forces Synthetic environment (FFSe) section at the Defence Research and Development Canada (DRDC) Ottawa is using AGI software technology to achieve M&S goals for the Maritime Air Littoral Operations (MALO) Technology Demonstration Program (TDP). Designed to support the Canadian Forces Maritime Warfare Center (CFMWC), the MALO TDP is an experimental test bed for alternative maritime-air operational tactics in a littoral environment. DRDC Ottawa—one of the agency's six Canadian research centers—is delivering a two-stage modeling and simulation capability—the first a standalone analysis and simulation system founded on STK's physics based geometry and 3D visualization engine; the second a distributed simulation system.

The DRDC successfully employed AGI software technology for multiple projects prior to MALO, and found its strengths well suited to TDP requirements. "The simulation playback and 3D scenario visualization, combined with STK's data analysis capabilities, provide a very powerful concept," says Dr. Fawzi Hassaine, defense scientist for the DRDC Ottawa's FFSe section. The MALO TDP records tactical simulations, which are then directly inserted into STK to answer questions such as: What is the optimal



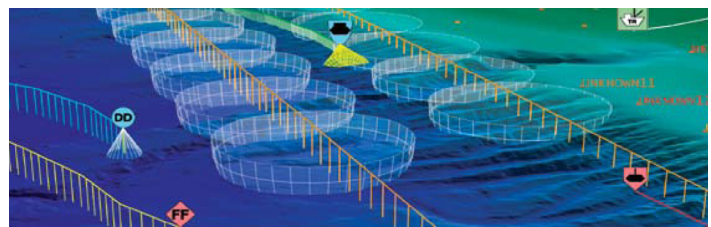
*The DRDC-Ottawa is employing STK for the Maritime Air Littoral Operations (MALO) Technology Demonstration Program, including acoustics modeling.*

sonobuoys pattern to employ in a given situation? What is the best flyroute (and altitude) for an aircraft in order to classify all the ships in an area of interest?

AGI business partner Applied Defense Solutions, Fulton, MD, helped develop the MALO TDP for DRDC Ottawa. The effort included creating a simple user interface that automated the generation of analysis metrics familiar to the end user; building a plugin that enabled STK to leverage the acoustics modeling capabilities of Sonalysts' software; and writing code that integrated simulation engine results with STK.

DRDC Ottawa is extremely pleased with the efficiency they got from using AGI's proven commercial technology. "It would have taken us more than a year to develop these capabilities internally," Hassaine says. The new simulation system was recently released to the CFMWC, which believes it will be of tremendous value to future maritime air operations.

**For more on MALO, write to [info@agi.com](mailto:info@agi.com) or [ryan@applieddefense.com](mailto:ryan@applieddefense.com). Information on the DRDC is available at [www.drdcdrdc.gc.ca](http://www.drdcdrdc.gc.ca).**



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