

A CASE STUDY:

# WINNING NEW BUSINESS WITH AGI SOFTWARE

**Challenge:**

Demonstrate new concept on limited time and budget.

**Solution:**

Use AGI software to accelerate development and stay focused on unique competencies.

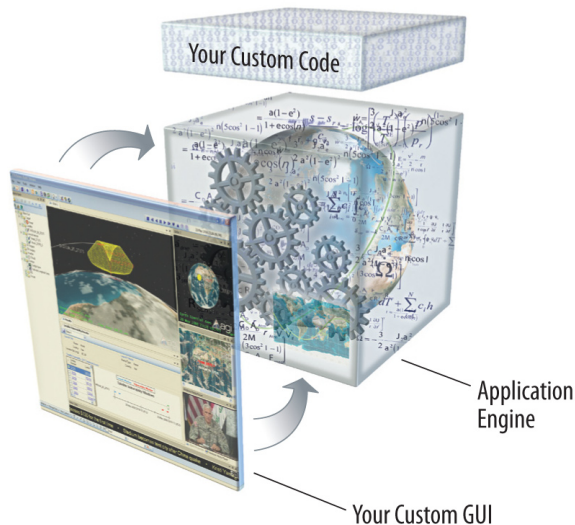
**Results:**

Won follow-on contract award to continue development.

In missile defense operations, optimal allocation of interceptors against multiple threats is critical. To address this, Signature Analytics LLC, Alexandria, VA, under contract to the Missile Defense Agency, conducted a six-month Phase 1 feasibility study to demonstrate the benefit of mathematical resource-allocation algorithms. The defense contractor wrote custom code to integrate STK, STK/Analyzer, STK/Scheduler and STK/Missile Modeling Tools into a weapon allocation solution. By leveraging AGI's broad analysis software base, Signature Analytics quickly demonstrated the value of the approach and was selected for a follow-on contract award.

***“Without AGI software, it would have been impossible to do what we did in such a short time.”***

“The ability to integrate custom code with STK tools was critical to accomplishing the study,” said Signature Analytics’ lead developer, Jerry Ruckstuhl. Signature Analytics’ “Defender” code computed battlespace access constraint and fed weapon-target access into STK, which ingested the data and quickly provided visualization and analysis of the missile battle scenario. Defender algorithms computed optimization details, shot opportunities, target priorities, resource costs,



By integrating AGI's software with its own custom framework, Signature Analytics produced a feasibility study on a short turnaround and won a follow-on contract.

engagement lethality and collateral damage risk that STK/Scheduler used to produce optimized engagement solutions. AGI's Interceptor Flight Tool (IFT)—a module included in STK/Missile Modeling Tools—received engagement feasibility requests from Defender and returned results that Defender could evaluate for optimal allocation.

AGI's off-the-shelf capability eliminated the time and cost of developing the majority of the software code, which allowed Signature Analytics to focus on its expertise and produce a solution in six months. “Without AGI software, it would have been impossible to do what we did in such a short time,” said Dr. Shaoann Shon, Signature Analytics principal investigator. “Because of it, we were able to examine many threat scenarios and conduct rapid prototyping of missile defense engagement scheduling in a short study.”

To learn more about custom solution development with AGI software, go to [www.agi.com/engine](http://www.agi.com/engine).

©2009 ANALYTICAL GRAPHICS, INC.

Analytical Graphics, Inc. (AGI) develops physics-based software that computes and depicts the relationships among moving objects over time. Space, defense and intelligence community professionals use AGI software to design, model and operate Earth- and space-based systems. Our software can be purchased as ready-to-use applications or development tools with flexible pricing and licensing options. For more information, visit [www.agi.com](http://www.agi.com).



**GENERAL INFO & SALES**  
Phone: 1.800.220.4785\*  
1.610.981.8000  
E-mail: [info@agi.com](mailto:info@agi.com)

**TECHNICAL SUPPORT**  
Phone: 1.888.785.9973\*  
1.610.981.8888  
E-mail: [support@agi.com](mailto:support@agi.com)  
\*Toll-free in U.S. & Canada

