

# A CASE STUDY: GENERAL DYNAMICS & DEFENCE R&D CANADA DEVELOP CUSTOM MISSION PLANNING APPLICATION IN 40% OF ALLOTTED TIME

## Solution | C4ISR

### Challenge:

Due to contract delays, Defence R&D Canada (DRDC) lost six months of a 10-month schedule to develop a Mission Planning Tool (MPT) for Canadian Forces Maritime Operations. With no relief in the delivery deadline, the project team had only four months to do the job.

### Solution:

Developers from General Dynamics Canada and DRDC used AGI's STK Engine and technical support to develop the MPT capability within the abbreviated time period.

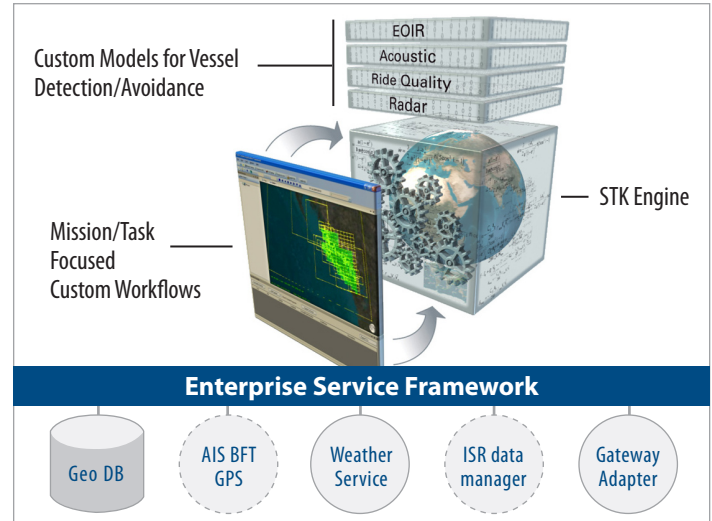
### Results:

The project team delivered the MPT on time and under budget, with far more capability than originally envisioned. The success led to expanding the scope of MPT and funding a next phase of MPT development with STK as the enabling software.

Objectives of the MPT are detailed planning and options analysis for naval intercept missions, guiding mission execution in theatre, post-deployment debriefings and related tactics and training. The MPT is based on a Common Operational Picture (COP) service-oriented architecture (SOA) with common data sharing for command and control (C2) and access to other network resources, such as environmental and geographic data. Requirements include integration with COP tools and data, and capabilities such as high-performance GIS and 4D visualization (3D + time) to execute custom models for scenarios that simulate and track multiple platforms.

DRDC and GD Canada used the STK Engine to develop custom workflows, a task-based user interface (UI) and MPT integration with the COP-SOA. The integration saves and exports STK data through the SOA, and imports external data for areas, targets and routes.

The task-based UI allows easy selection and import of geospatial information and accommodates line-of-site access with lighting and illumination. The solution includes a flexible



Using AGI's STK Engine, the MPT's Initial Operating Capability (IOC) was completed in 40% of allotted time and under budget, which led to expanding project scope and funding.

workflow interface and support tools for custom modeling of vessel detection and intercept or avoidance. A scenario typically involves mission setup, operating area setup, intercept route planning and mission execution.

A support package that bundles training and on-site engineering led to rapid project execution. Six developers from the project team trained at AGI's headquarters. With additional support from AGI developers on-site in Canada, the team had a working prototype in under 60 days. "That's exceeding expectations for this type of project," said Mike Gingell, Principal Engineer, General Dynamics Canada. "We delivered the MPT capability on time and under budget, with far more capability than originally envisioned. DRDC and their client were so impressed with results that the scope of MPT was expanded with additional funding."

**"Incorporating STK into the project mitigated a huge schedule risk. We achieved a very positive project outcome on time and under budget."**

— Mike Gingell, Principal Engineer  
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