

# Booz Allen®

# GENESIS™

## Global Environment NExt for System Integration and Simulation

GENESIS™—a Booz Allen digital integrator, brings together existing government off-the-shelf/commercial off-the-shelf modeling and simulation (M&S) tools into a singular, no-code environment for warfighter-focused M&S.

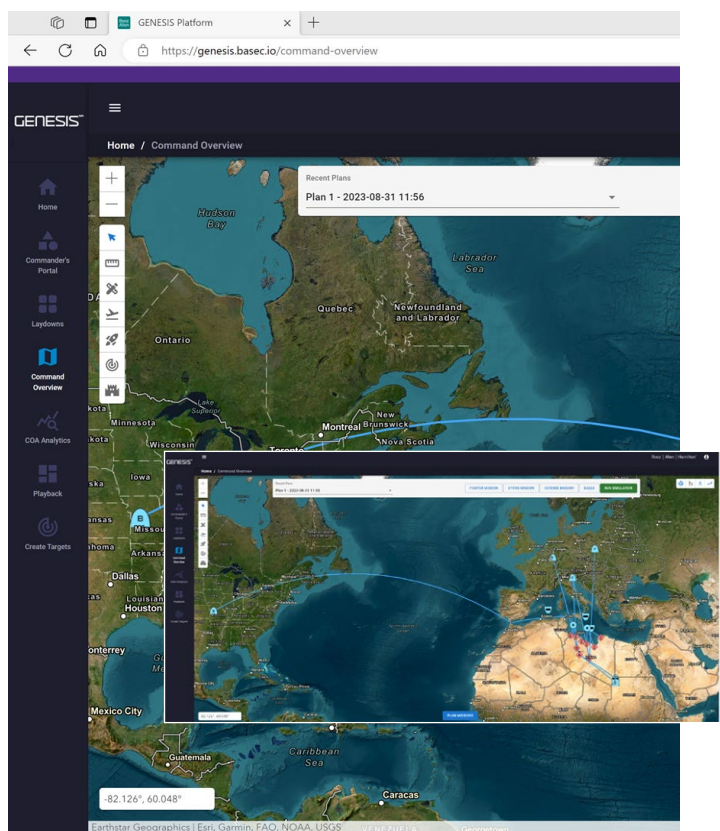
Warfighters struggle to leverage advanced M&S to thoroughly and collaboratively test their operation plans (OPLAN), evaluate trades, explore “what-ifs,” and generate courses of action (COA) at the speed desired by senior leaders. Booz Allen developed the Global Environment NExt for System Integration and Simulation (GENESIS™) to empower the warfighter with a tool built for them that meets them where they are—at the operational edge. GENESIS™ helps warfighters plan/execute to re-imagine M&S by making it accessible to all.

The Department of Defense’s legacy standard analytic toolkit is comprised of mostly closed, single-use case, technically inaccessible models that are too slow to support decision making in today’s dynamic environment. GENESIS™ seeks to overcome these analytic silos with a flexible infrastructure that integrates multi-disciplinary tools and disparate data sets through containerized microservices to fuse M&S with digital engineering, mission planning, wargaming/exercises, and test and evaluation use cases.

### INTEGRATED DIGITAL LABORATORY FOR THE NEXT- GENERATION BATTLESPACE

With a long history of supporting both warfighting and analytic campaigns, Booz Allen has a deep understanding of this unique problem space—the warfighter’s need for practical tools that produce actionable data at the speed of decision making. One of these tools—COMBAT—is digitally transforming the Air Force’s Title 10 wargaming process

and has been nominated by our clients for the Air Force’s 2022 Spencer Innovation Award. Building off the success of our COMBAT model, we have developed GENESIS™—a digital environment that connects warfighters and analysts together via accredited modeling, simulation, and analysis (MS&A) tools (e.g., AFSIM, Cameo, Model Center) and allows for cross-functional, integrated analysis at the speed of decision making.



DIGITAL OPLAN VIEW

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## GENESIS™ FEATURES AND BENEFITS

- Cloud-deployed containerization of AFSIM, Cameo, and other tools for an, integrated one-stop shop for analytic needs
- Customizable “what-if” modules let users manipulate variables/assumptions directly to study impacts of changing conditions in real time. For example, what if blue forces arrive late, or a red attack shuts down a blue base for 12, 24, or 36 hours?
- Integrated, point-and-click 3D map of the world using National Geospatial-Intelligence Agency (NGA) data
- Custom user interface for manipulating blue/red assets and building basing/bed-down that creates a canvas to create “moves” and build strategies
- Rapid multi-domain models that adjudicate near-instantaneous results and feed to higher order models like AFSIM

## GENESIS™ CAPABILITIES

### Rapid Simulation Engine

The GENESIS™ rapid simulation engine is a result of years of experimentation and investment, with a careful understanding of the needs of senior leaders for capable tools that can aid decision-making at the speed of relevance. With this motivation, Booz Allen engineers and scientists custom-designed and developed a modeling suite capable of representing complex physics with a series of parametric equations, saving computational power and enabling faster run-times and results. When combined with containerized AFSIM, the rapid simulation engine results in an environment that is both powerful and flexible enough to accommodate nearly any client mission and serve as the analytical framework to provide decision-quality data at speed.

### Logistics-Informed Mission Planning

The GENESIS™ backend integrates across the digital theater to track resources, supplies, generation times, people, and more—down to the tail and part number. This level of detail provides warfighters with the information they need to plan and test their mission while enabling higher-level visualizations and dashboards for commander decision support—all within the same environment. In addition, GENESIS™ can automatically ingest data of any format or file type, including the TPFDD, JIPTL, and ATO. Custom optimization algorithms match blue platforms and munitions against red targets and provide recommendations to planners for targeting.

### Custom Analytics and Integrated Decision Support

Warfighting organizations produce and possess large amounts of unstructured data and require a means to derive insights from this data in a collaborative space that integrates with current processes and tools. GENESIS™ is customized for each specific client mission—the result is a holistic digital integration tool designed for your organization. Its flexible framework also provides an ideal setting for building out more advanced solutions and customizable features, such as:

- Artificial intelligence (AI)-enabled mission planning, strategy, and COA recommendations
- Intelligent, doctrinally correct red using reinforcement machine learning (ML)
- Application programming interfaces (APIs) to external tools for full mission planning integration
- Commander dashboards using next-generation analytics for real-time decision analysis support

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### About Booz Allen

Trusted to transform missions with the power of tomorrow's technologies, Booz Allen Hamilton advances the nation's most critical civil, defense, and national security priorities. We lead, invest, and invent where it's needed most—at the forefront of complex missions, using innovation to define the future. We combine our in-depth expertise in AI and cybersecurity with leading-edge technology and engineering practices to deliver impactful solutions. Combining more than 100 years of strategic consulting expertise with the perspectives of diverse talent, we ensure results by integrating technology with an enduring focus on our clients. We're first to the future—moving missions forward to realize our purpose: Empower People to Change the World<sup>SM</sup>.