

# aiSEMBLE™

DEVELOP, DEPLOY, AND SCALE ENTERPRISE-WIDE  
ARTIFICIAL INTELLIGENCE FASTER



Booz Allen is the largest provider of public sector Artificial Intelligence (AI) services to the U.S. government today, with approximately 30 percent market share (per Bloomberg Government, November 2020), including as the prime system integrator for the two largest AI contracts in Department of Defense history. Through our support to critical missions across the federal government, we have observed many recurring risks and challenges with the development and delivery of AI solutions, including speed, scalability, and sustainment. To respond to these challenges, Booz Allen developed aiSEMBLE.

## A LEAN-MANUFACTURING APPROACH TO AI

aiSEMBLE is Booz Allen's lean manufacturing approach for holistically designing, developing, and fielding AI solutions. This is a one-of-a-kind approach enabled by a reference architecture, data delivery and machine learning patterns, and re-usable software components to accelerate and standardize the way Booz Allen builds AI solutions.

### LESSONS LEARNED

- The application of AI is everchanging, and there is a growing number of tools to select and evaluate.
- Unique needs to operationalize AI solutions will vary from individual pilots to real-world deployments.
- AI development requires a robust team with varied skillsets.
- An AI solution often has a mix of universal needs and distinct mission requirements.

## aiSEMBLE ADVANTAGES

- **Standardized AI Solution Designs for Reduced Risk:** Standardized components allow development teams to build mission-focused AI solutions with reduced risk, while driving consistency and reliability. By leveraging standard designs, teams also deploy solutions into real-world, enterprise-wide, production environments faster. Our robust team of data scientists and AI practitioners recognize the speed of change, and deploy new capabilities, update existing components, or remove outdated pieces as new research and tools become available.
- **Technical Baselines for Flexibility and Scalability:** By leveraging a common reference architecture and tailoring a flexible solution baseline for each project, Booz Allen lowers the barrier to entry by meeting teams where they are in their AI journey; therefore, helping teams understand AI Solution universal needs and distinct data, mission and user requirements.
- **Repeatable Processes for Increased Speed to Delivery:** Repeatable processes reduce the time spent on non-core activities (e.g., configuring environments, identifying and loading software and libraries) and enables teams to build and test the mission impactful aspects of tailored solutions earlier. On one project alone, we were able to shrink Sprint 0 activities from 6 weeks, to 30 mins.

## aiSEMBLE IN ACTION: SOLUTION BLUEPRINT, BASELINE AND DELIVERY

### Solution Blueprint

The Blueprint is a reference architecture that defines the components, capabilities, and repeatable patterns AI Engineers need to establish enterprise-grade AI solutions. The Blueprint provides a starting point to turn requirements into enterprise AI solutions.

### Solution Baseline

The Baseline turns the Blueprint into ready-to-use code through a model driven architecture production process. These artifacts are made available in the Baseline repository – a collection of code, templates, and reusable software that Booz Allen AI engineers use to rapidly develop tailored, high-quality solutions.

### Solution Delivery

Delivery is accelerated through dedicated support and software development best practices. Each project has an embedded engineer and Targeted Testing Environments, which ensure repeatable, scalable, and responsive delivery.

## CONNECT

If you are interested in learning more about aiSEMBLE, please email [aiSEMBLE@bah.com](mailto:aiSEMBLE@bah.com).