DESIGN NEXT-LEVEL TRAINING
VIRTUAL HUMAN INTEGRATION SUPPORTING INTELLIGENT TUTORING / ADAPTIVE TRAINING

THE PROBLEM

The U.S. Army is using synthetic training models to transform what would otherwise be a single, cost-prohibitive live training into infinitely replicable and scalable virtual scenarios. But the AI and machine learning algorithms that underpin current synthetic training software are still evolving.

To accelerate this evolution, AAL has launched **Virtual Human Integration Supporting Intelligent Tutoring / Adaptive Training (IT/AT)** to find technology that can create **intelligent, adaptive, and humanlike** synthetic training for Soldiers.

THE OPPORTUNITY

As many as two businesses will be selected to receive **up to $750,000** each for an 18-month period of performance. Businesses that develop synthetic training software are encouraged to apply.

This is a Direct to Phase II SPARTN SBIR opportunity, which means you can skip the proof-of-concept phase and go straight to the prototyping phase — where funding is much greater.

Examples of desired features:

- AI and machine learning algorithms for synthetic environments
- Adaptive training capabilities to adjust subsequent scenarios
- Automated speech analysis and natural language processing
- Analysis of the trainee's cognitive functions during simulation
- Automated feedback for trainees tailored to individual performance, and for leadership tailored to scenario efficacy
- Large-scale and replicated patterns of life in simulations
- Support for a high number of observer controller-trainers (OC-T), simulation pucksters, and human-controlled opposing forces (OPFOR)
- "Anywhere, anytime" simulations that allow participants across the globe to collaborate in realtime

The IT/AT application window opens June 16 and closes July 7 at 11:00am CT. Learn more at aal.army/SPARTN.

INTELLIGENT TUTORING

Software must include an AI-based guiding force within it that teaches the trainee. This "tutor" — be it a voice in a trainee's earpiece, an entity on their heads-up display, or even another virtual Soldier within the simulation — must be more than simply a robot that says the same thing every time. It has to be intelligent.

Tutor guidance must be customized to historical simulation data and the trainee's actions to provide personalized feedback that helps trainees learn in an intuitive manner.

ADAPTIVE TRAINING

Training scenarios should adjust naturally based on the trainee's performance, in order to generate a desired behavior. For example, a subsequent scenario might have an increased difficulty level to help the trainee in areas where they excelled, or decreased difficulty in areas where they previously struggled.

Reports should be provided at the end of each scenario, both to the trainee regarding individual performance and to leadership regarding overall scenario efficacy.

VIRTUAL HUMAN INTEGRATION

Intelligent entities — the other characters within the virtual scenario — should behave in a manner that is humanlike. Behavior should be based on the observable scenario, such as surrounding terrain, participating units, force composition, past events up to that point, and representations of the mission.

This humanlike behavior should be found in friendly as well as enemy soldiers depicted in the training, civilians in the virtual environment, and the intelligent tutor itself.

BACKGROUND ON THE NEW
SPARTN PROGRAM

Special Program Awards for Required Technology Needs (SPARTN) is a new program for the Army — and for the small businesses that want to work with us — led by the Army ASA(ALT) Small Business Innovation Research (SBIR) team and bolstered by AAL models and outreach.

SPARTN blends government and industry best practices to introduce a new whole-of-Army, collaborative approach to solution innovation. The result is a way to solve Army problems faster and to accelerate the process by which successful technology is purchased by the Army.

WHAT MAKES SPARTN DIFFERENT?

1. Problems released through SPARTN are tied to the Army's critical needs and other focused modernization efforts

2. Faster contracting speed, with businesses typically notified of award 4x faster than the conventional SBIR process

3. Potential for millions in total value follow-on contract to build a concept or prototype related to the specific problem

4. Acquisition teams included early with the goal of easing transition and building new tech into recurring Army budgets

5. Potential for future high-value contracts via SBIR, other government funds, and private investment you secure

All topics released through SPARTN feature challenging and important problem statements from problem owners across the Army. These represent some of our biggest challenges and the ones we want to work closely with industry to solve.

To learn more about SPARTN or how to apply for a SPARTN topic, visit aal.army/SPARTN.
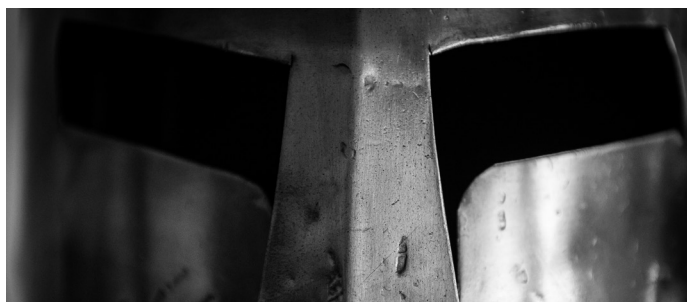
POINT CHALLENGE

"WE KNOW WHAT WE WANT."
We need a specific solution, tailored to meet a detailed problem statement.

TIMEFRAME	1–2 years
PARTICIPANTS	Potential for multiple businesses
FORMAT	Businesses are separately tasked to develop technology tailored to a distinct problem
EXAMPLE PROBLEM STATEMENT	"How can we create a specific radio to transmit and receive on the same frequency?"
FUNDING DETAILS	Funding and periods of performance are determined by topic requirements
SBIR PHASE DETAILS	Can invest across different tech development stages Depending on the topic, both Phase I and Direct to Phase II awards may be possible

ABOUT THE ARMY APPLICATIONS LABORATORY
We're not a laboratory in the traditional sense of the word. As the U.S. Army's innovation unit, we don't make things — we make things possible. The Army Applications Laboratory (AAL) is fundamentally reshaping how the Army works with industry to reunite American innovation and national security. Together, we question *why* and deliver *what if*. Learn how we do it at aal.army.