

1. **Research Title:** Persistent, Global, Proficiency-Based Team Training for Humans and Machines
2. **Individual Sponsor:**

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3. **Academic Area/Field and Education Level**

Computer Science; Cognitive Science; Cognitive Psychology; Data Sciences;
Industrial/Organizational Psychology; Mathematics; Statistics

4. **Objectives:** This research area is focused on the advancement of technologies to create a new training ecosystem to prepare Airmen for future operations. To meet future challenges, we pursue research in the following broad areas:

- (1) Advance performance measurement and assessment to enable proficiency-based training that ensures every Airmen is prepared for each and every operation.
- (2) Understand human cognition, learning, and performance to tailor training to individual needs, design training approaches that promote long-term learning, and support training through enhanced fidelity and personalized instruction
- (3) Leverage & extend advanced learning technologies to improve provide training when and where it is needed and maximize the efficiency and effectiveness of education and training interventions

5. **Description:** As technological parity becomes the new reality, the critical role of humans in military operations becomes increasingly apparent. Ironically, this reality is underscored by the rapid expansion of AI and autonomous capabilities. Training capabilities are needed to prepare Airmen for an increasingly technological, complex, and dynamic operational environment where readiness will be defined both by proficiency and agility. Knowledge, skills, and abilities will need to be employed to make decisions under intense time pressure and stress that will have wide-ranging impacts in integrated operational environments. We are exploring capabilities spanning the computational, cognitive, and learning sciences in conjunction with modeling and simulation to create new capabilities for training that keep pace with technological developments on other fronts, including artificial intelligence and autonomy.

6. **Research Classification/Restrictions:** There are wide ranging opportunities for participation in this research at the unclassified level, although aspects of the research are classified as SECRET or higher

7. **Eligible Research Institutions:** Any DAGSI institution is eligible