Air Education and Training Command

Commander's Challenge - Immersive Learning

Arizona State University (ASU) and Air Education Command (AETC) have demonstrated results and partnership in education innovation through multiple efforts since 2019. COMAETC, in a visit to ASU, was inspired by ASU's dynamic, immersive learning environment, Dreamscape Learn. ASU works with Dreamscape Learn as a sole source provider of these fully immersive cube and classroom immersive learning environments. COMAETC saw the potential for increasing learning and training efficacy through incorporation of these environments into AETC learning environments. As a result, COMAETC's "Commander's Challenge – Immersive Learning" was initiated. This challenge will utilize the partnership between Air Education and Training Command (AETC), Arizona State University (ASU), and Dreamscape Immersive to merge advanced pedagogy with the entertainment industry's best immersive storytelling. Dreamscape Learn may redefine how we teach and learn in the 21st century and help eliminate identified student learning gaps and accelerate learning.

Mission Analysis: AETC must train, educate and recruit for a dynamic landscape of threats and challenges, demanding a highly proficient and adaptable force ready for complex, multi-domain operations. Traditional training methods often struggle to fully replicate the intensity and

decision-making significance of real-world scenarios, potentially hindering Airmen's readiness for future conflicts.

Traditional training methods, while valuable, often fall short in replicating complexity. AETC has modernized many elements of the learning ecosystem and immersion is used within schoolhouses. Yet, there are still areas where learning has not been modernized and lack realistic, dynamic learning environments capable of accelerating learning, individualizing competency-based instruction, developing advanced decision making and ability to function implicitly in tumultuous operational environments.

Preparation for the complex, multifaceted operational environment requires innovative training solutions that:

- Accelerate learning: Reduce time and cost while maximizing retention and proficiency.
- Foster teamwork and communication: Promote learning, effective communication and coordination within teams operating in complex scenarios.
- Enhance decision-making: Prepare airmen to make rapid, informed decisions in high-stress, uncertain environments.
- Develop critical thinking: Cultivate adaptability, problem-solving, and critical thinking skills essential for success in dynamic situations.

The AETC Commander's Challenge solicits proposals from learning organizations that would have a requirement for students to use an integrated, developmental experiential learning platform to accelerate learning and that do not currently have a capability that provides that experience. The challenge seeks to have learning organizations imagine and identify a required application for an immersive, contextual learning environment such as Dreamscape Learn. The imagined environment would be a novel application of the technology that increases the organizations' ability to increase competency and proficiency of the Airmen utilizing the system and would replace and not be in addition to existing requirements for the learning environment.

A team of subject matter experts will evaluate applicants, using the evaluation criteria in **Attachment I**, and select units as finalists for participation in the virtual Pitch Day.

Use Case

An example use-case of Dreamscape Learn has students engage in a decision-making task in a wargaming scenario. Visiting both sides of the battlespace friendly and foe, teammates will collaborate and communicate to survey and assess the activities during the exercise. Teams will discover, investigate and solve operational challenges. The team will be measured on whether they detect and communicate and coordinate in response to developing solutions to several challenges within the exercise and any other observable behaviors that convey competency acquisition as they complete the scenario.

Data collected in the experience about the scenario are automatically exported to the learning management system, where they can be accessed for collaborative application with peers. Once in the scenario, students will observe, orient, analyze the components of the scenario, discover patterns and test hypotheses. Each scenario facilitates the development of practical skills, such as

building situational awareness, producing plans and strategies and calculating probabilities of success as a team.

About | Dreamscape Learn

Challenge

Develop and submit a proposal (refer to **Attachment II**) to take the technology and learning environment that is provided in this unique immersive solution and provide a use-case for how your organization/unit would use this technology to train or educate airmen. Ideally the proposal will address not only the use case but the plan for integration within a curriculum or set of curricula for your organization. The proposal must also address the key components of the IT system such as power, cloud storage of data, ATO process, technical support, maintenance and sustainment, and development and use of our airmen to develop and sustain these systems within the learning environments.

Eligibility requirements

Units must meet the minimum standards outlined in the technical specification document (refer to **Attachment III**) as far as power, IT infrastructure, connectivity, etc.

Units must commit to continuity of contracting or staffing required to maintain the system and the scenarios.

Units must share progress on implementation and integration with their operations and provide examples of improvements that have been made to the learning environment in conjunction with the incorporation of experiential development into their curricula.

Rules

Must be within the Department of the Air Force, Air Education and Training Command to participate.

Key Dates:

5-May	Challenge Use Cases Due
9-12June	ASU Visit
16-Jun	Pitch Day

ATTACHMENT I

Commander's Challenge: Evaluation Criteria

This document outlines the key criteria for evaluating the effectiveness and impact of the Commander's Challenge. These criteria will guide assessments of the proposed implementation for a given learning application.

I. Learning Outcomes: Did the unit address the change in learning outcomes generated by the application of the system.

- Competency Acquisition examples:

    o Metric: Pre- and post-training assessments measuring participants' understanding of principles, procedures, alignment with existing competency models and best practices.

    o Target: Demonstrate a statistically significant increase in competency scores from pre- to post-training.

- Skill Development examples:

    o Metric: In-simulation performance data tracking participants' ability to:

        ▪ Assess situations accurately and efficiently.

        ▪ Make timely and effective decisions under pressure.

        ▪ Allocate resources strategically.

        ▪ Communicate clearly and concisely.

        ▪ Coordinate effectively as a team.

    o Target: Show improvement in performance metrics across multiple simulations, demonstrating skill development over time.

II. User Experience: Did the unit propose to design and assess the experiences of the Airmen using the system

- Engagement:

    o Metric: User feedback surveys assessing levels of engagement, immersion, and overall satisfaction with the VR experience.

    o Target: Achieve high satisfaction ratings and positive feedback regarding the realism, interactivity, and emotional impact of the simulation.

- Usability:

    o Metric: Observations and user feedback on the intuitiveness of the VR interface, ease of navigation, and clarity of instructions.

- - Target: Ensure the VR experience is user-friendly and accessible to participants with varying levels of technical proficiency.

III. Program Impact: Did the unit propose to assess the transfer and value to learning that will be demonstrated using the system.

- Transfer of Learning:

  - Metric: Follow-up assessments and/or observations in real-world settings to gauge the extent to which participants apply skills learned in the simulation to actual disaster response situations.

  - Target: Demonstrate a positive correlation between participation in the scenario and improved performance in real-world scenarios.

- Organizational Value:

  - Metric: Feedback on perceived value, relevance, and impact on readiness and warfighter ethos.

  - Target: Receive positive feedback from Airmen regarding the program's effectiveness in enhancing their training and education capabilities.

IV. Data & Analytics:

- Data Integrity:

  - Metric: Regular audits to ensure the accuracy, reliability, and security of all data collected through the program.

  - Target: Maintain the highest standards of data integrity and protect participant privacy.

- Actionable Insights:

  - Metric: Ability to generate meaningful reports and visualizations from the collected data to inform program improvements and provide actionable insights to participants and organizations.

  - Target: Utilize data effectively to optimize the training experience and demonstrate the program's impact.

V. Sustainability & Scalability:

- Resource Efficiency:

  - Metric: Track program costs and resource utilization to ensure sustainability and cost-effectiveness.

  - Target: Optimize resource allocation and explore strategies for making the program more accessible to a wider audience.

- Scalability:

    - Metric: Assess the program's adaptability to different training contexts, disaster scenarios, and organizational needs.

    - Target: Design the program with scalability in mind, allowing for customization and deployment across various sectors and geographical locations.

By evaluating the Commander's Challenge proposals utilizing these criteria, we can ensure its effectiveness as a cutting-edge training tool, maximize its impact on learning and competency development, and continuously improve the learning experience for all participants.

ATTACHMENT II

Commander's Challenge: Immersive Learning

Proposal Challenge TITLE

Proposal

1. Introduction

Dreamscape Learn, the leading immersive XR learning platform, proposes the development of a groundbreaking "Commander's Challenge" experience. This immersive training program utilizes cutting-edge VR technology to place participants at the heart of realistic scenarios, fostering critical thinking, problem-solving, and teamwork skills essential for effective leadership in high-pressure situations.

2. Problem

Traditional xxx training often relies on theoretical exercises or limited simulations, failing to fully prepare individuals for the complexities and emotional weight of real-world events. This gap necessitates innovative training solutions that provide realistic, engaging, and measurable learning experiences.

3. Application

The Commander's Challenge addresses this need by immersing participants in a dynamic virtual environment where they:

- Assume leadership roles: Step into the shoes of commanders tasked with managing a response.

- Confront realistic scenarios: Experience the chaos and urgency of a simulated event.

- Make critical decisions: Analyze evolving situations, allocate resources, and direct teams under pressure to minimize casualties and damage.

- Collaborate effectively: Develop communication and teamwork skills through shared decision-making and coordinated action.

- Receive real-time feedback: Track individual and team performance through data-driven insights, identifying areas for improvement.

4. Benefits, Changes to Learning

The Commander's Challenge offers significant advantages over traditional training methods:

- Enhanced Engagement: Immersive VR technology creates an unparalleled level of engagement, fostering deeper understanding and knowledge retention.

- Realistic Simulation: Accurately simulates the sights, sounds, and emotional stress, providing invaluable experience without real-world risks.

- Measurable Results: Tracks user performance through data analytics, enabling personalized feedback and demonstrating training effectiveness.

- Scalable Solution: Can be customized and deployed across various organizations and training environments.

5. Audience

This program is ideally suited for:

- Military personnel: Preparing Airmen for leadership roles in disaster relief and humanitarian aid missions.

- Leadership: Developing crisis management and decision-making skills for leaders.

6. Scope & Deliverables

- Scenario Development: Creation of realistic scenarios based on client needs and specific training objectives.

- VR Environment Design: Development of a high-fidelity virtual environment that accurately portrays the chosen scenario.

- Gameplay Mechanics: Implementation of intuitive gameplay mechanics that facilitate decision-making, resource allocation, and team communication.

- Data Analytics Platform: Integration of a robust data analytics system to track user performance and provide actionable insights.

- Training & Support: Comprehensive training for instructors and ongoing technical support for seamless program implementation.

7. Partnership & Collaboration

8. Conclusion

The Commander's Challenge represents a paradigm shift in training. By harnessing the power of immersive VR technology, we can equip individuals and organizations with the skills and experience needed to navigate real-world scenarios effectively.

We invite you to partner with us in revolutionizing and modernizing learning.

9. Contact Information

[Your Name] [Your Title] [Your Email] [Your Phone Number]

ATTACHMENT III

Technical Specifications and Requirements for Dreamscape Learn

PDF	PDF	PDF
DSL Responsibilities List	Render Server rack dimensions 2023-06	DSL - School Network Diagram 2(