U.S. ARMY

DEVCOM SOLDIER CENTER

SFC SMITH SIMULATION & TRAINING TECHNOLOGY CENTER (STTC)

SFC Paul Ray Smith Center	JUNE 2026

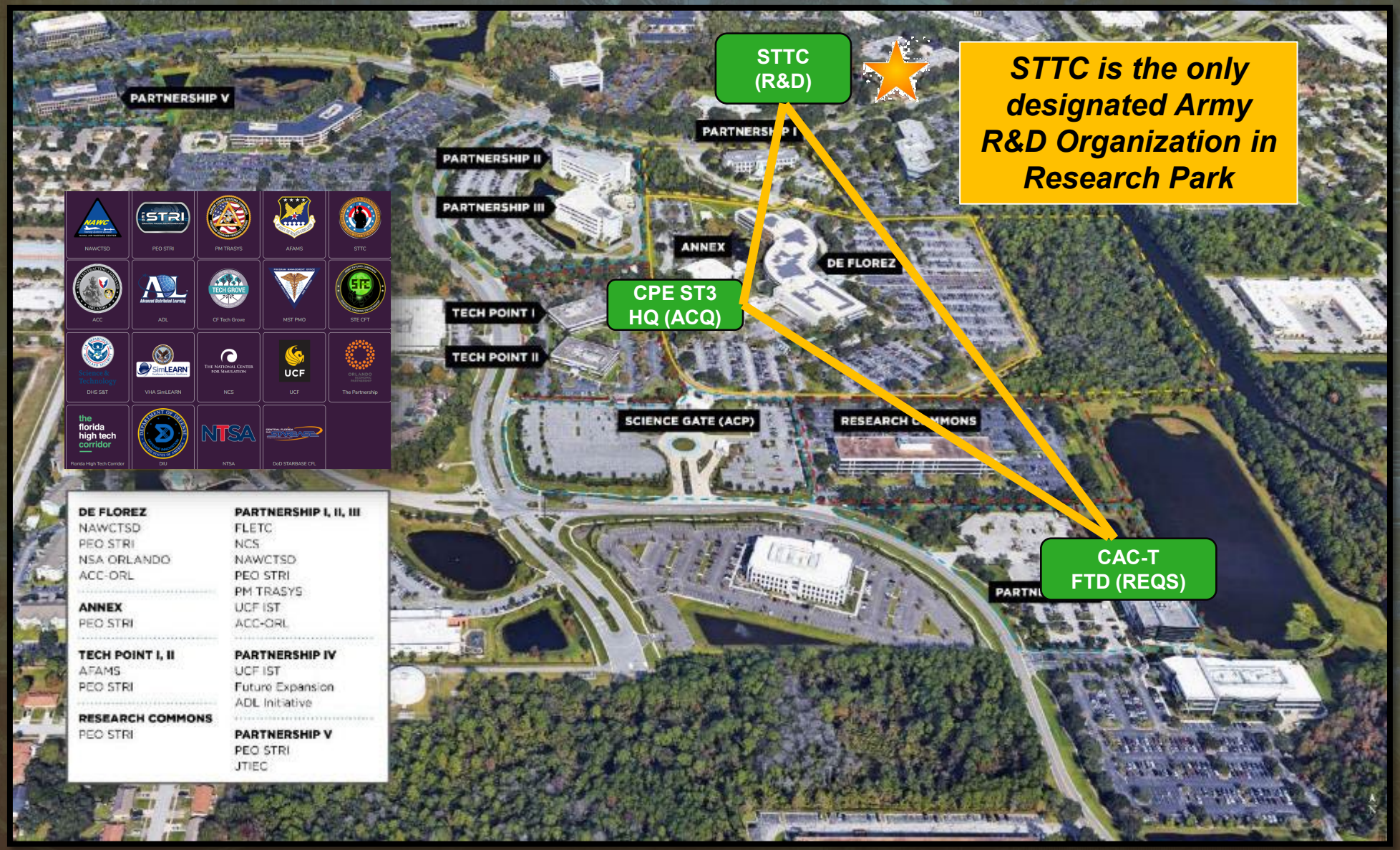
DEVCOM SC – Training and Simulation Portfolio Overview - TSIS

APPROVED FOR PUBLIC RELEASE

AGENDA

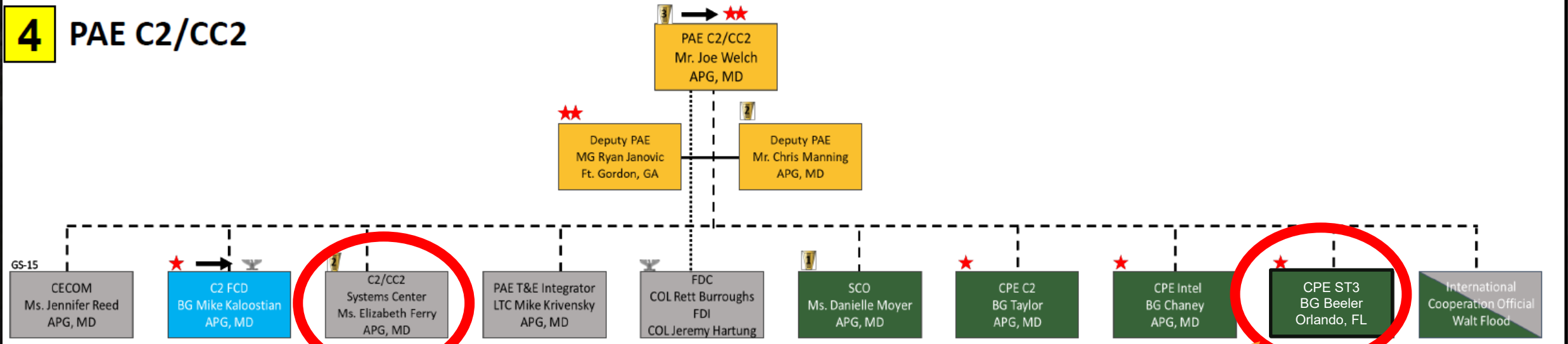
- Training and Simulation Division Overview
- Training Tech and Engineering Branch
- Advanced Modeling and Simulation Branch
- Medical Simulation Branch
- Adaptive and Intelligent Tutoring Branch

LOCATION


PARTNERSHIP V
PARTNERSHIP II
PARTNERSHIP III
ANNEX
DE FLOREZ
TECH POINT I
TECH POINT II
SCIENCE GATE (ACP)
RESEARCH COMMONS
STTC (R&D)
CPE ST3 HQ (ACQ)
CAC-T FTD (REQS)
STTC is the only designated Army R&D Organization in Research Park
NAWCTSD
PEO STRI
PM TRASYS
AFAMS
STTC
ACC
ADL
CF Tech Grove
MST PMO
STE CFT
DHS S&T
VHA SimLEARN
NCS
UCF
The Partnership
Florida High Tech Corridor
DIU
NTSA
DoD STARBASE CFL
DE FLOREZ
NAWCTSD
PEO STRI
NSA ORLANDO
ACC-ORL
ANNEX
PEO STRI
TECH POINT I, II
AFAMS
PEO STRI
RESEARCH COMMONS
PEO STRI
PARTNERSHIP I, II, III
FLETC
NCS
NAWCTSD
PEO STRI
PM TRASYS
UCF IST
ACC-ORL
PARTNERSHIP IV
UCF IST
Future Expansion
ADL Initiative
PARTNERSHIP V
PEO STRI
JTIEC

PROGRAM ACQUISITION EXECUTIVE (PAE) ALIGNMENT

4 PAE C2/CC2



- PAE C2/CC2 - Mr. Joe Welch
- PAE C2/CC2 Location - APG, MD
- Deputy PAE C2 - Mr. Chris Manning
- Deputy PAE C2 Location - APG, MD
- Deputy PAE CC2 - BG Ryan Janovic
- Deputy PAE CC2 Location - Ft. Gordon, GA

Training and Simulation Division (TSD), Orlando at Simulation and Training Technology Center (STTC) facility.

MISSION, VISION, ORGANIZATION, STAKEHOLDERS AND FUNDING

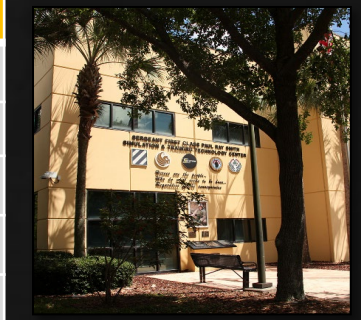
MISSION

Discover, Develop, and ***Transition*** Innovative Simulation and Training Technology to Maximize Soldier Effectiveness and Warfighter Readiness.

ORGANIZATION

- T2COM
- DEVCOM
- SOLDIER CENTER
- SOLDIER EFFECTIVENESS DIRECTORATE
  - TRAINING AND SIMULATION DIVISION
    - ADAPTIVE & INTELLIGENT TRAINING SYSTEMS
    - ADVANCED MODELING & SIMULATION
    - MEDICAL SIMULATION RESEARCH
    - TRAINING TECHNOLOGY & ENVIRONMENTS
    - TECHNICAL & ENGINEERNG SUPPORT

SFC PAUL RAY SMITH SIMULATION AND TRAINING TECHNOLOGY CENTER (STTC)



FUNDING & PERSONNEL

Funding
~ $30M Mission 6.2 & 6.3
~ $50M Customer Funds

Personnel
48 Civilians & 2 Mil

SUPPORT AREAS

TECHNICAL LEADERSHIP
- *Embedded & Matrixed Support*
- *Source Selection Support*
- *Unbiased Technology Evaluation*
- *STP/ETP & Data Collection Support*

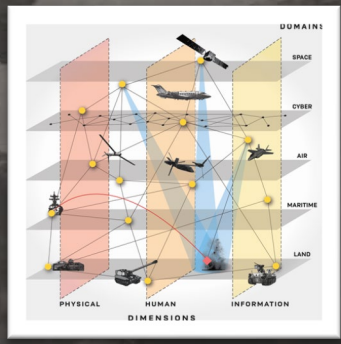
TECH DEVELOPMENT AND TRANSITION
- *In-house Prototype Development*
- *Research Contracts*
- *Formal Transition Agreements*
- *Technology Integration*
- *Joint and International Outreach*

KNOWLEDGE TRANSITION
- *Technical Papers*
- *Technical Studies*
- *Market Research*
- *Technical Panels & Talks*

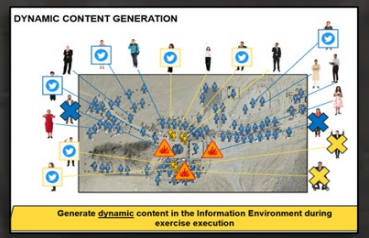
MAJOR STAKEHOLDERS

- Portfolio Acquisition Executive – C2/CC2 (100% aligned)
- CPE Simulation Training Test and Threat (ST3)
- Combined Arms Center – Training (CAC-T)
- Defense Advanced Research Project Agency (DARPA)
- U.S. Army Medical Research & Development Command (USAMRDC)
- Army Modeling & Sim. Office (AMSO) and 6 Army M&S Communities
- Army Cyber Command and National Guard
- National Geospatial and Army Geospatial Commands
- Embedded ACC APG support.

RESEARCH AREAS



Cyberspace and Info Warfare Simulations



Constructive Simulations

Medical Training Simulations

Live Training "e-Bullet"

Synthetic Terrain and Embedded Training

Augmented Reality and Training Effectiveness

UAS and C-UAS for Sim and Training

LIVE TRAINING TECHNOLOGIES

Problem Statement

- The Army requires an effective training capability to replace I-MILES. Prototype development priority is to provide near-real-time; employing physics-based munition trajectory simulations to replace the current probability-based I-MILES Probability of Hit (Ph)/Probability of Kill (Pk) tables; fully with network connectivity, or to the degree possible without network capability.

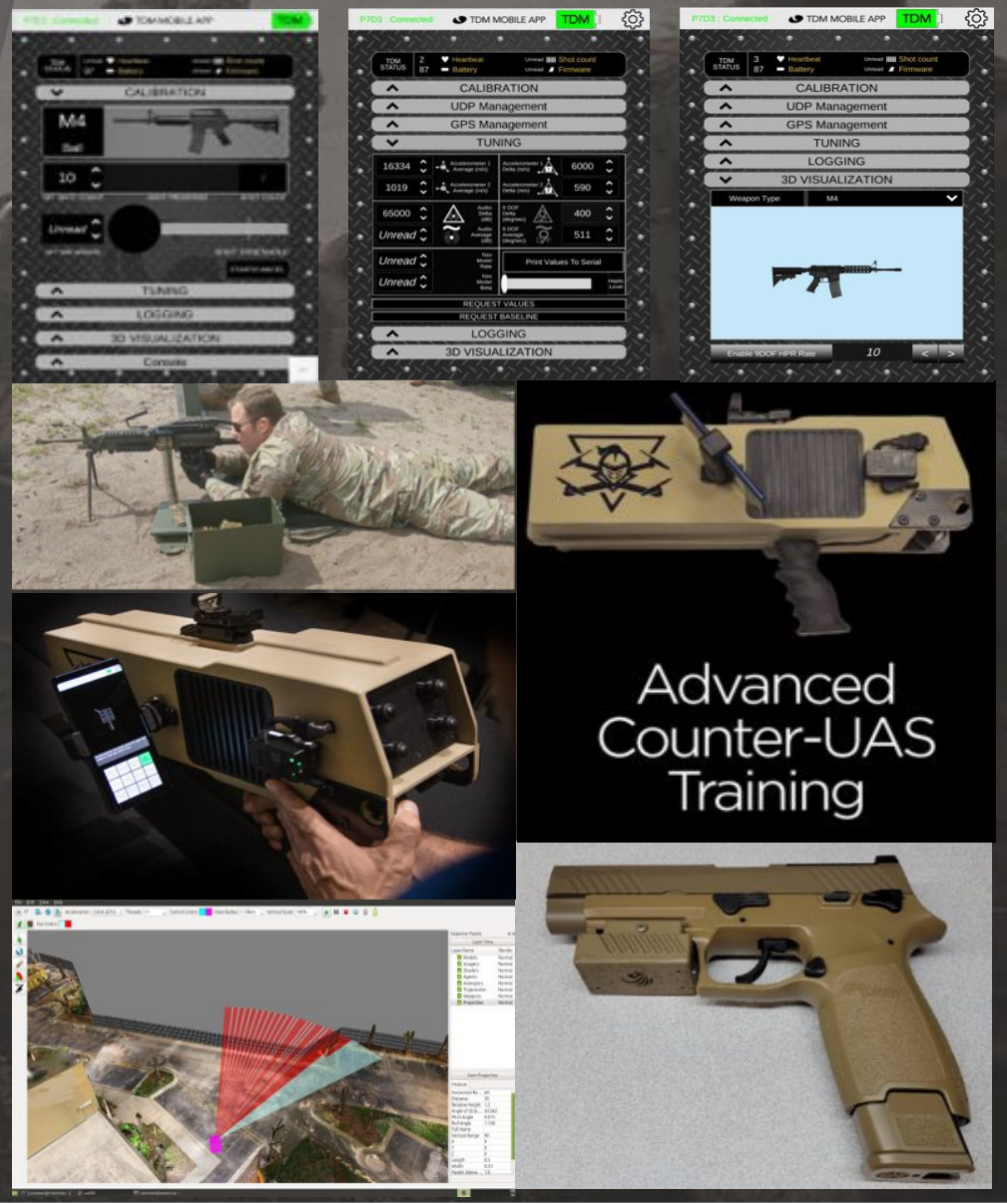
Research Goals

- Mature and integrate modular, research efforts that will inform requirements and accelerate I-MILES replacement (Direct Fire)
- The objective of the prototyping strategy will focus on proof of concepts for the direct fire, counter-defilade fire, and indirect fire engagement types.

Impact of R&D

- Replace I-MILES with a new Force on Force (FoF) Direct Fire Tactical Engagement Simulation Systems (TESS) and the supporting "Plus 5" enablers.
- Concentrate on efforts to inform, prototype, or integrate key instrumentation drivers. Primary investments are expected to focus on informing the key challenges associated with integrating calculations, terrain, and wireless networks.

Transition Partner(s): PAE C2/CC2: CPE ST3 – Live Training Systems



FULL SPECTRUM EMBEDDED TRAINING

Problem Statement

- Army lacks ability to provide effective training alternatives when physical vehicle is unavailable or unable to exercise all training objectives in a specific area of operation

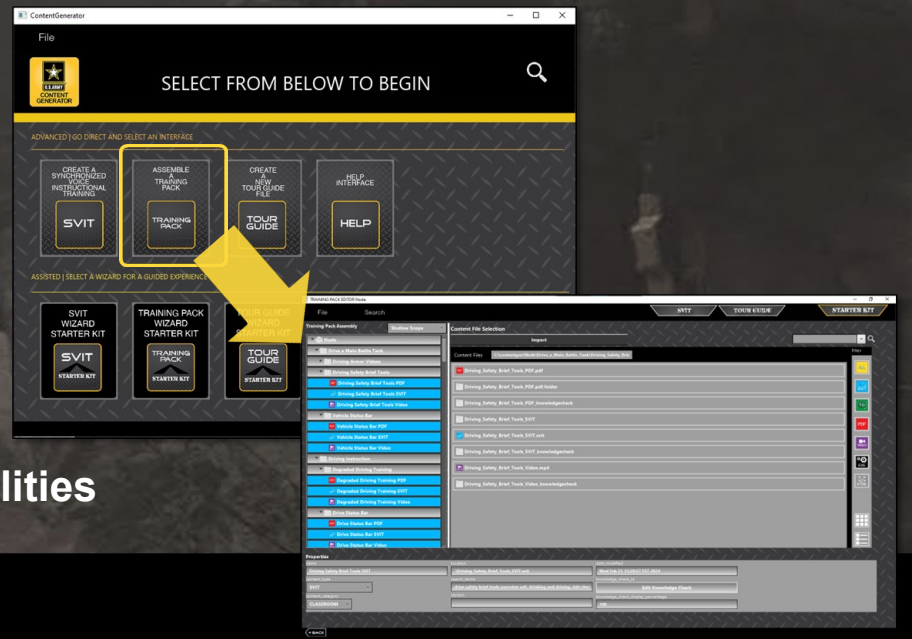
Research Goals

- Mature and integrate modular, multi-environment Full-Spectrum Embedded Training Architecture (FS-ET) and associated integrated tools/components to support Live Virtual and Constructive (LVC) content and rapid, SME-driven training content generation.

Impact of R&D

- Ensures adaptability of Embedded Training to changing operational needs, environmental conditions, and various content types.
- Rapid turnaround for content creation, editing, and deployment.

Adaptable Embedded Training



Rapid Content Creation Capabilities

Transition Partner(s): PAE C2/CC2: CPE ST3 – X

GEOSPATIAL

Problem Statement

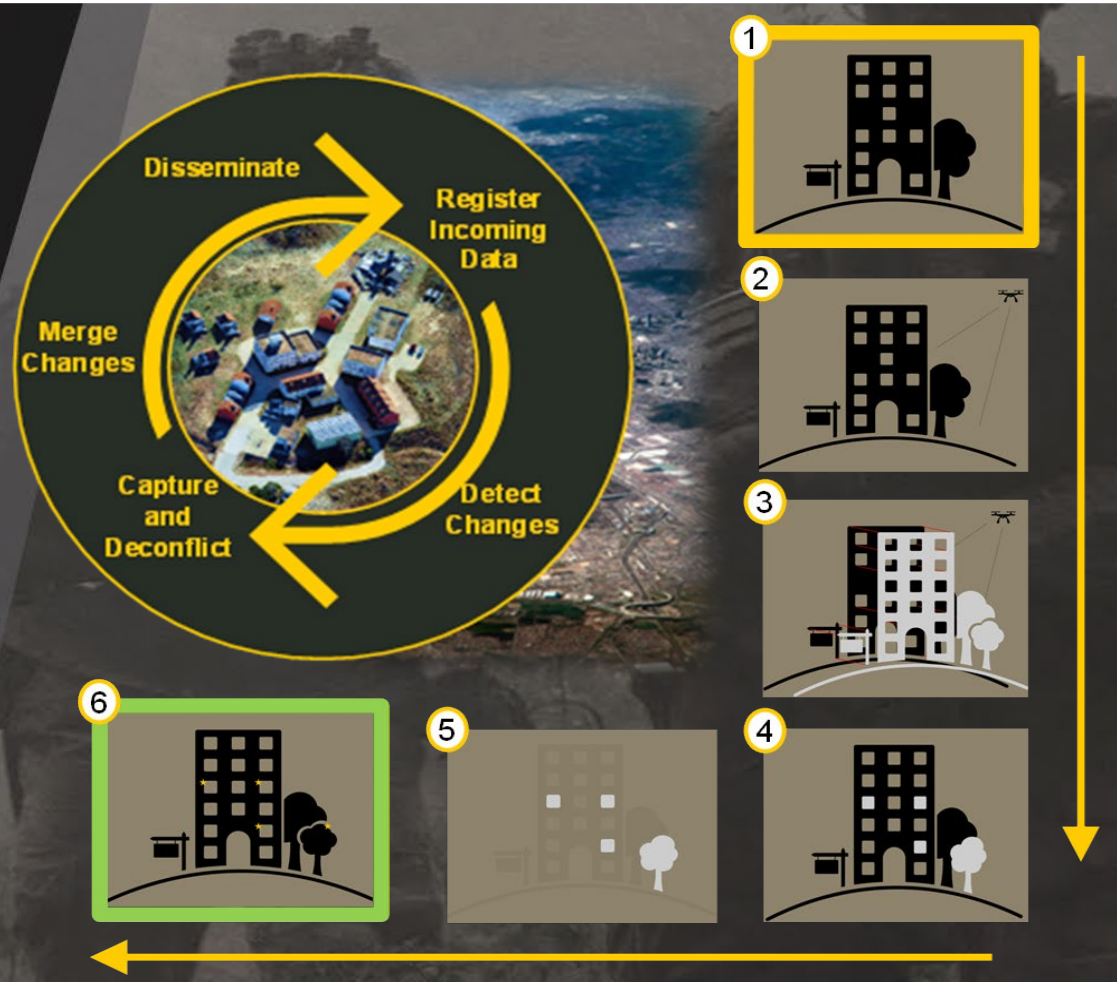
- Maintaining currency of synthetic geospatial models is both cumbersome and resource intensive. Synthetic models are static, whereas the real world changes constantly – both between training events (incremental updates) and during training events (dynamic updates).

Research Goals

- Implementation of a robust incremental/dynamic update solution that allows Army's investments in high-resolution synthetic geospatial models and content to maintain correlation with real-world changes and to support fair-fight and physics computations (e.g., munition effects) during exercise events.

Impact of R&D

- Rapid turnaround to update static content or models of the environment. Increased synchronization of live entities through increased currency and parity of environment.



Incremental Updates (full refresh): < 48hrs [T]; < 24hrs [O].
Incremental Updates (constrained refresh): < 4hrs [T]; < 1 hr [O]
Dynamic Updates (changes occur during event/exercise): < 3 mins [T]; 10 sec [O]

Transition Partner(s): PAE C2/CC2: CPE ST3 – One World Terrain (OWT) and Combat Training Centers (CTC-IS)

CYBERSPACE WARFARE FOR TRAINING

Problem Statement

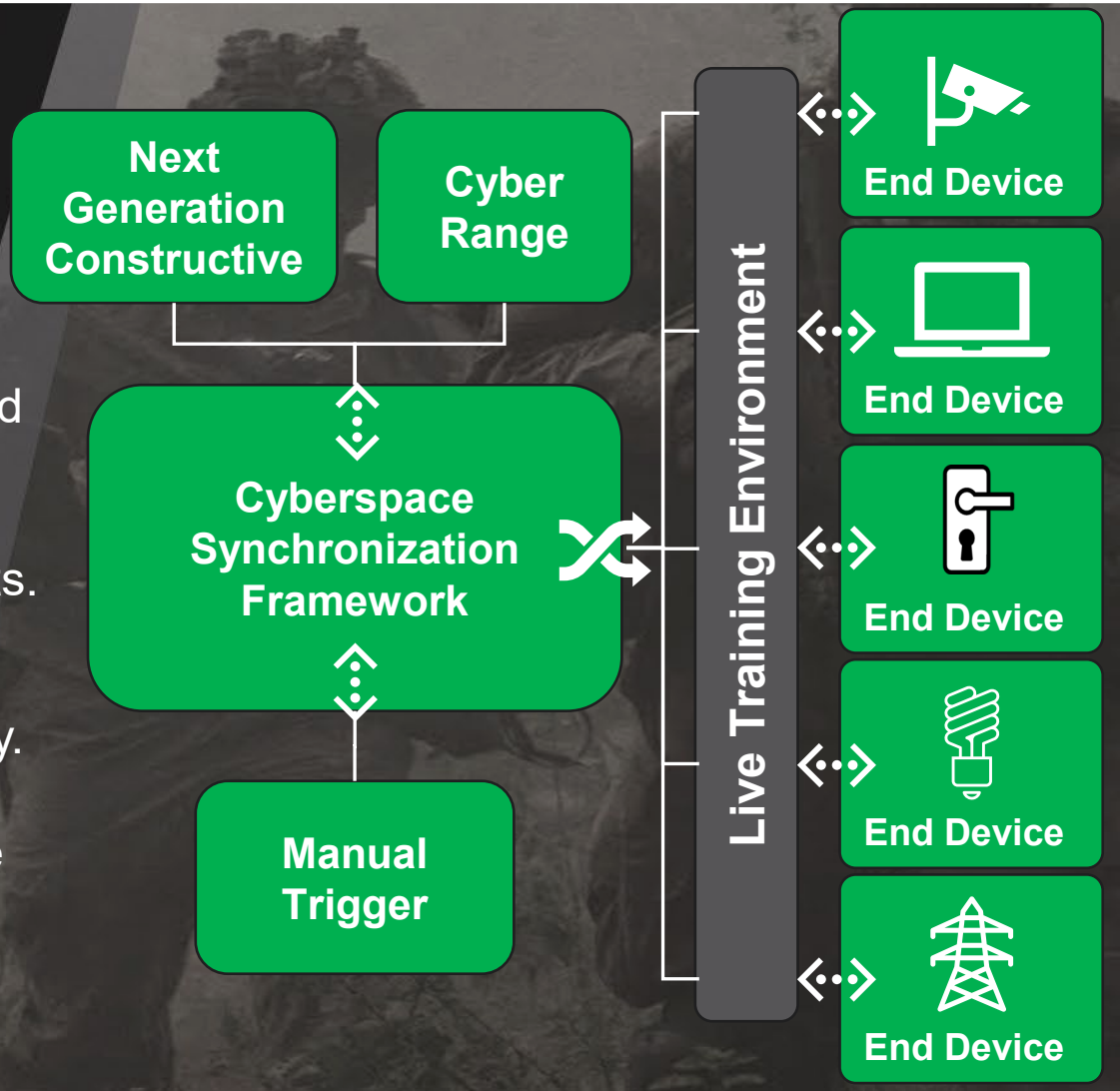
- Current Army LVC training relies on manual, low-fidelity "white-card" cyberspace effects, failing to replicate the true, interconnected friction of Multi-Domain Operations (MDO).

Research Goals

- Develop innovative techniques – novel APIs and standardized data exchange models – to connect isolated cyberspace models, ranges, and LVC simulations, driving automated, bi-directional synchronization of kinetic and non-kinetic effects.

Impact of R&D

- Replaces simulated friction with actual operational complexity. Realistic effects force warfighters to organically detect and "fight through" synchronized cyberspace events to guarantee multi-domain readiness.



Transition Partner(s): PAE C2/CC2: CPE ST3 – Next Gen Constructive (NGC) and Combat Training Instrumentation System (CTIS)

INFORMATION ENVIRONMENT FOR SIMULATION AND TRAINING

Problem Statement

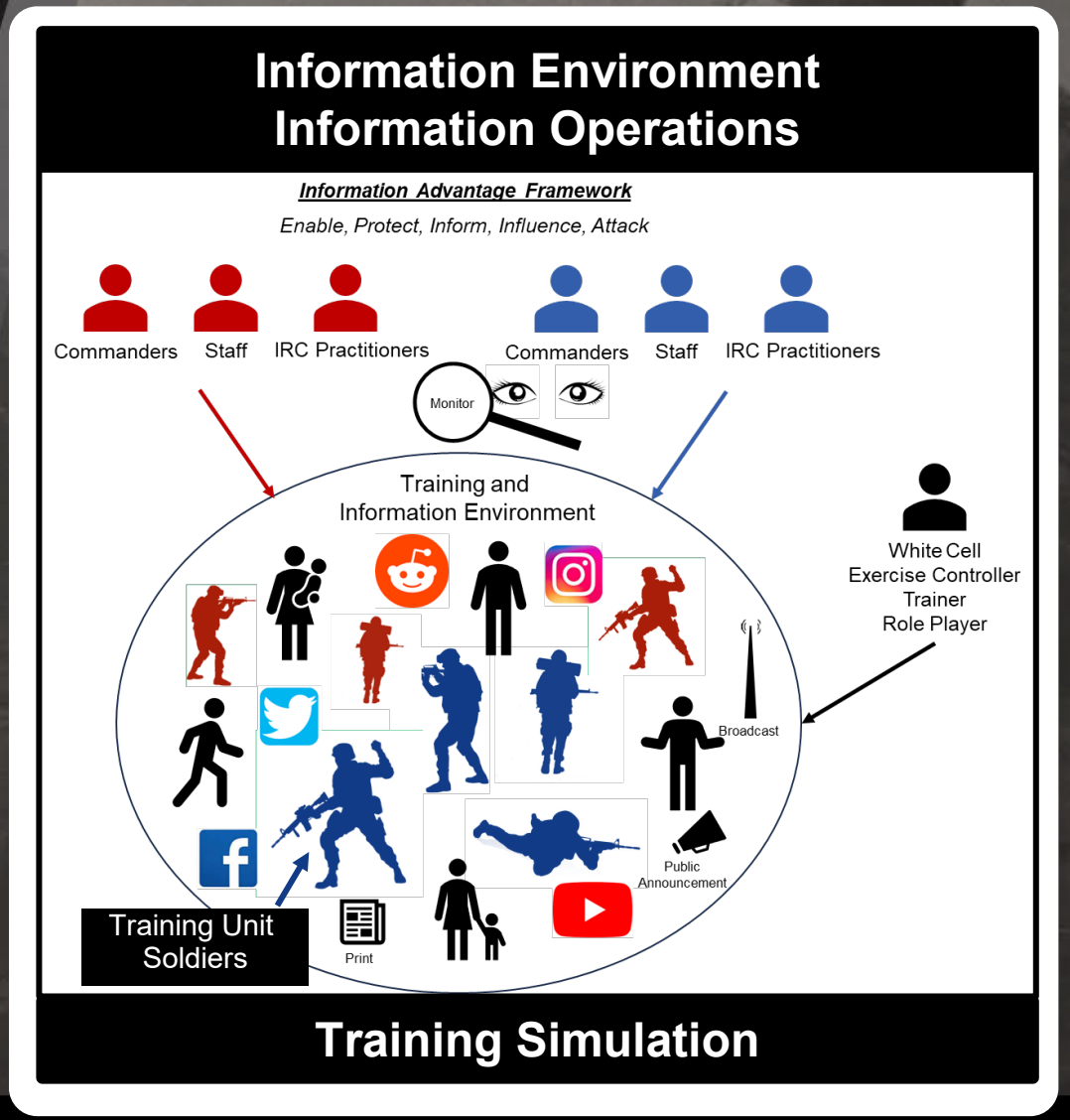
- Current Army LVC exercises rely on static, scripted human terrain, failing to replicate the complex, bi-directional friction of the Information Environment and cognitive warfare.

Research Goals

- Fuse kinetic simulations, cognitive models, and Generative AI to build a reactive synthetic ecosystem where physical and informational events dynamically drive population behaviors, "will-to-fight," and content generation in the synthetic internet.

Impact of R&D

- Replaces scripted scenarios with a realistic, dynamic human terrain. Forces warfighters to organically assess and navigate the cascading consequences of their actions on population sentiment and patterns of life, ensuring readiness for information-contested operations.



Transition Partner(s): PAE C2/CC2: CPE ST3 – Next Gen Constructive (NGC)

MACHINE AUTOMATION OF MODELS AND BEHAVIORS FOR SIMULATION

Problem Statement

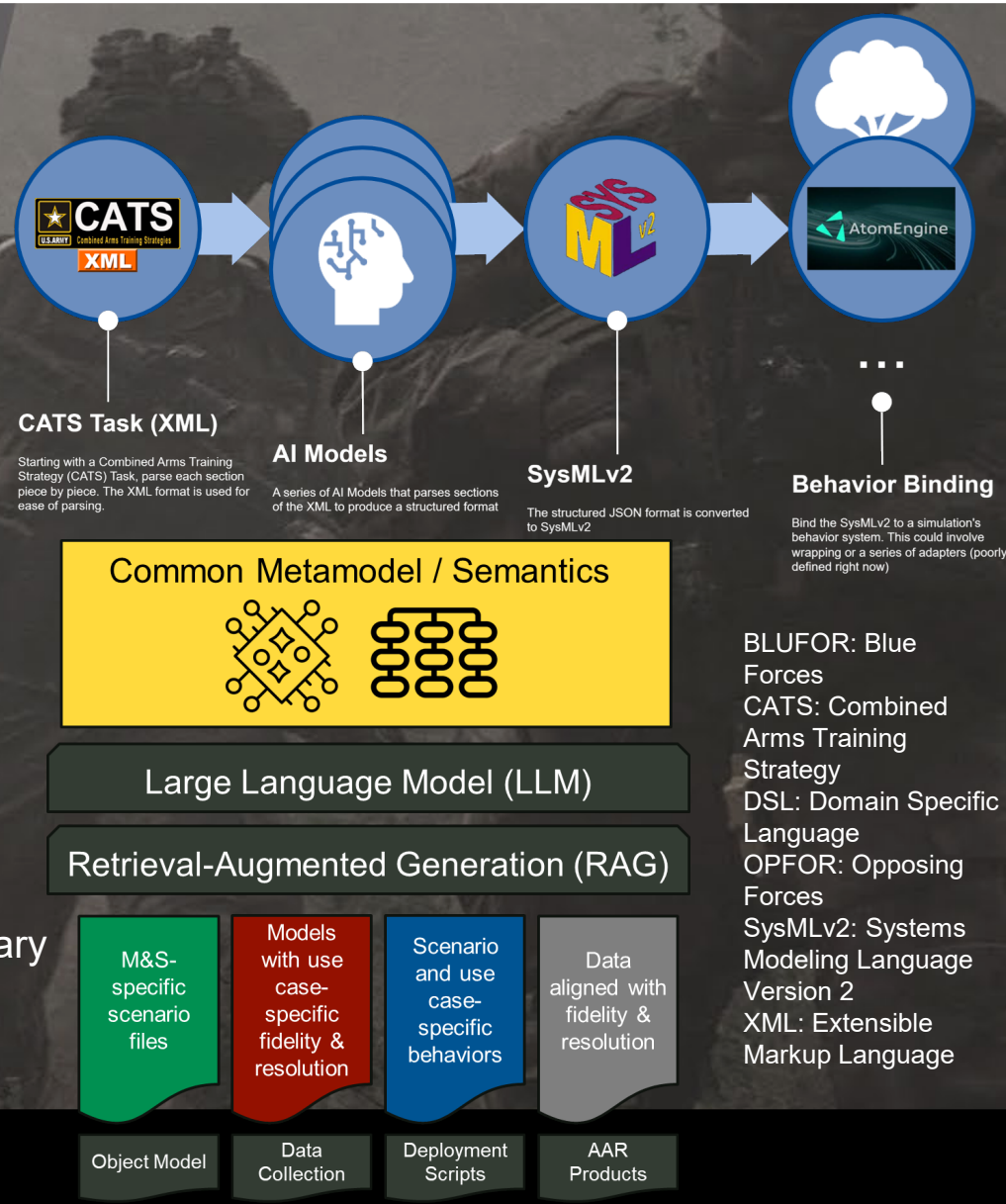
- The manual and redundant implementation of existing authoritative models and behaviors into emerging simulation environments continues to add cost to modernizing our simulation environment. The execution of large-scale simulation scenarios requires a large number of human operators ("pucksters") to manage simulated forces, making it difficult and resource-intensive to rapidly create, initialize, and command massive simulation environments.

Research Goals

- Automate the ingestion and processing of authoritative and emerging M&S sources to generate authoritative models suitable for NGC.
- Design and develop technologies that enable fully autonomous simulation forces to represent both OPFOR and BLUFOR in complex simulations.
- Utilize advanced AI methodologies to translate source data (e.g., XML) into structured formats (SysMLv2) creating a Digital Enginee8ring pipeline for behavior binding and course of action optimization.

Impact of R&D

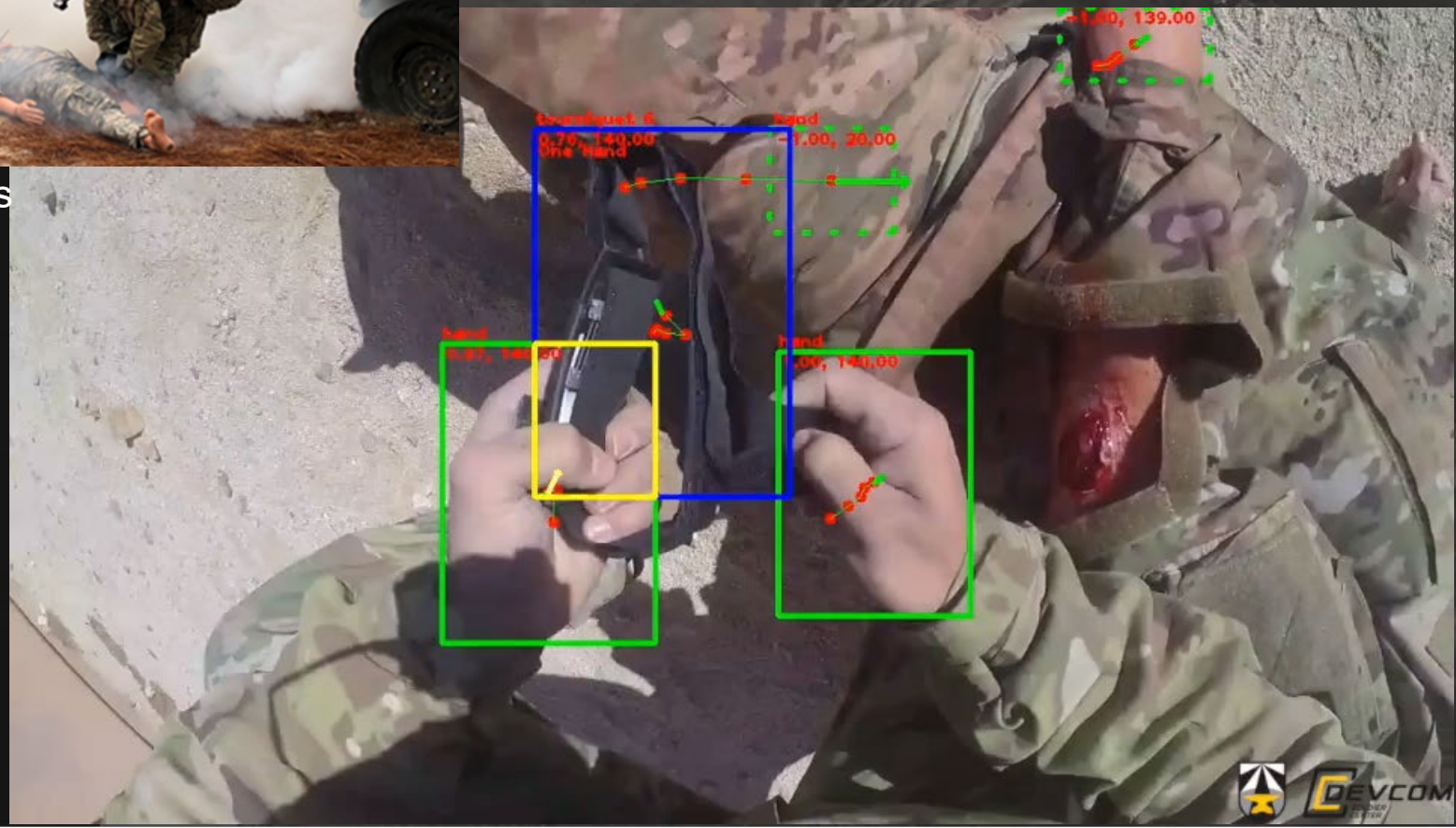
- Significantly reduces the number of human simulation operators required for exercises by utilizing military hierarchy AI to generate automated courses of action.
- Empowers soldiers to easily command automated units using their existing military DSL.
- Allows modifications to the Played Items Lists (PIL) without requiring software engineering expertise.



BLUFOR: Blue Forces
CATS: Combined Arms Training Strategy
DSL: Domain Specific Language
OPFOR: Opposing Forces
SysMLv2: Systems Modeling Language Version 2
XML: Extensible Markup Language

Transition Partner(s): PAE C2/CC2: CPE ST3 – Next Gen Constructive (NGC)

AUTOMATED ASSESSMENT



Problem Statement

- Prompty provide automated assessments of skills
- Requires tremendous amount of data

Current Research Goals

- Demonstrate in medical and warfighter training events
- Develop additional models that include voice analysis

Impact of R&D

Game changer, by providing real-time individual and team assessments of performane and levels of competence

SMART SURROGATES

Problem Statement

- Haptics-enhanced training system for standalone or live medical training
- Tourniquet first, extending to other Tactical Combat Casualty Care (TC3) interventions to include Needle Chest Decompression, nasal tube, and the Israeli bandage
- Paired with xAPI-driven software to integrate with STE LTS and future TES (open source)
- Mobile app (Apple or Android)
- Wifi and Bluetooth
- Viable haptics solution for the next 5-10 years

Current Research Goals

- Dynamic Wounds integration
- Packaging and reuse

Impact of R&D

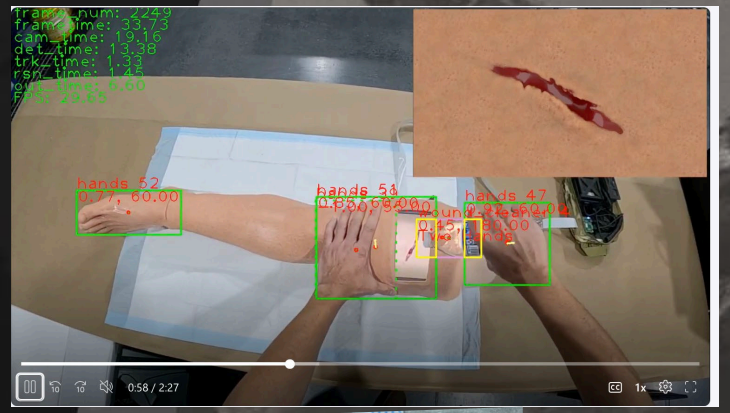
Capability to practice medical skills and pass data to STE and NXTGEN MSTC without reliance on human patient simulators and without causing harm to patient actors

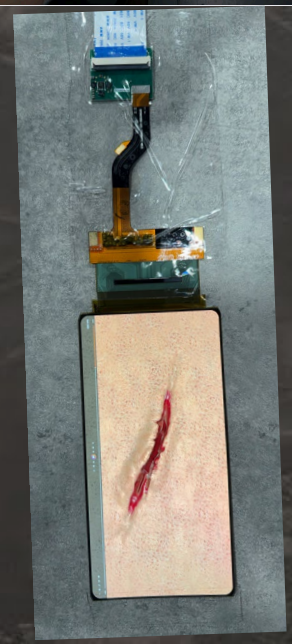
PROLONGED CASUALTY CARE

Problem Statement

Provide training environment with:

- Wounds that change over time
- Denied medical treatment resources
- Accelerated patient states





Current Research Goals

- Wound Progression Through Novel Displays
- Extreme Environments
- Incorporation of medical logistics in constructive simulations

Impact of R&D

- Responsive to current and expected future conflicts
- Supports comprehensive training of wounded from point of injury, with delayed evacuation

MULTIMODAL ASSESSMENT FOR AFTER ACTION REVIEW (AAR)

Problem Statement

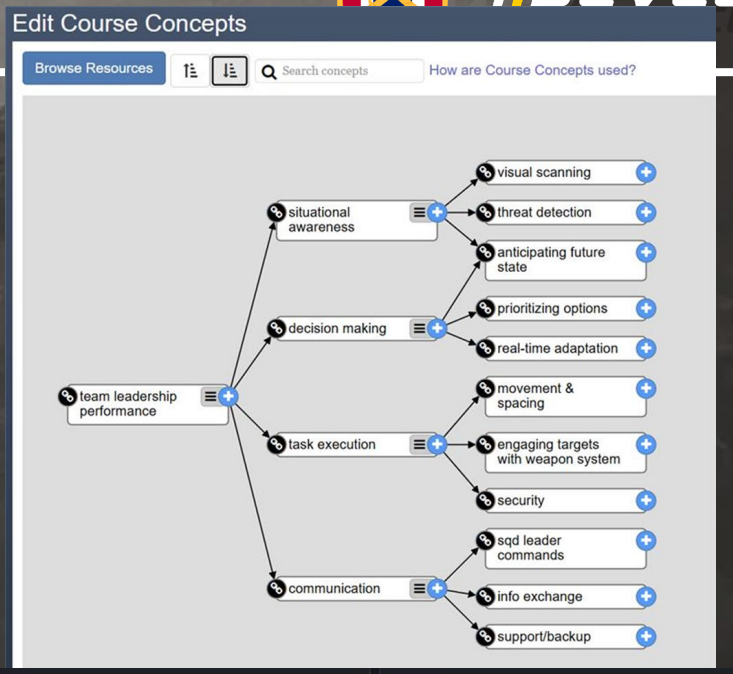
- Most AARs rely on instructor observations and limited performance data, resulting in inconsistent feedback and missed learning opportunities.
- Training events generate far more data than can be effectively analyzed and incorporated into current AAR processes.

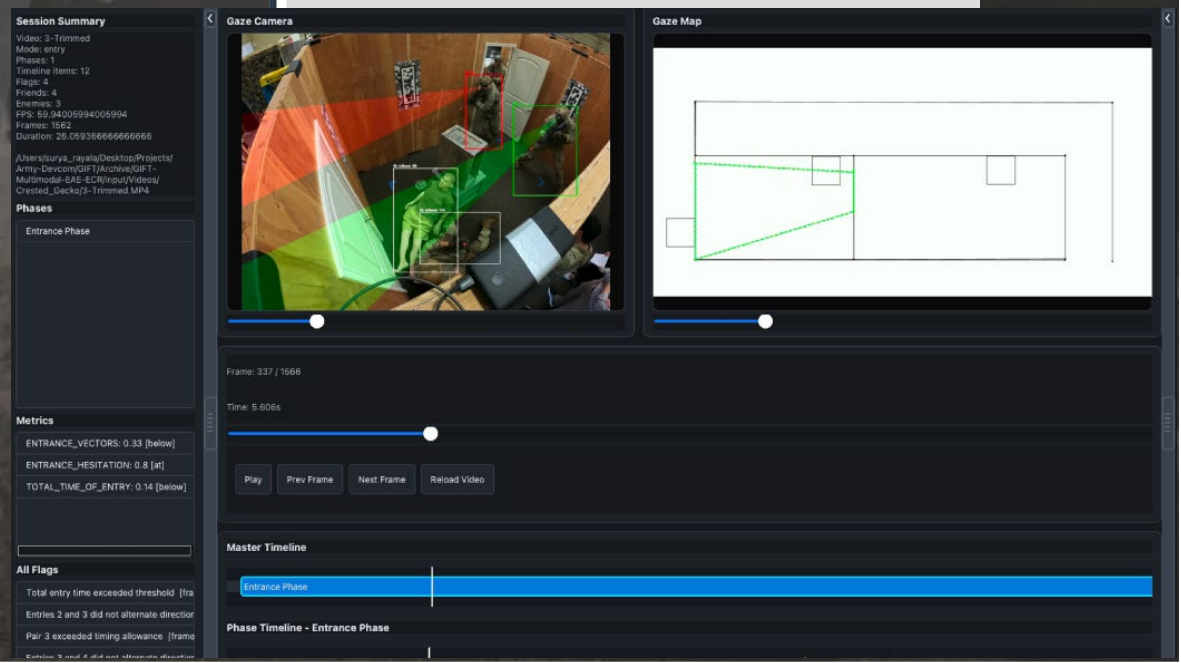
Research Goals

- Develop tools and methods that automatically synthesize multimodal training assessments into meaningful performance insights.
- Create adaptive AAR capabilities that personalizes feedback/ interaction based on learner, team, and mission objectives.

Impact of R&D

- Improve reflection, learning, and transfer by providing more timely, objective, and actionable feedback.
- Increase the consistency and scalability of high-quality AARs across training environments.





COMPETENCY ENGINEERING FOR PERSONALIZED SCENARIO GENERATION

Problem Statement

- Training systems collect substantial performance data but lack a common competency framework to guide learning progression and scenario adaptation.
- Personalized learning and scenario generation remain largely disconnected capabilities.

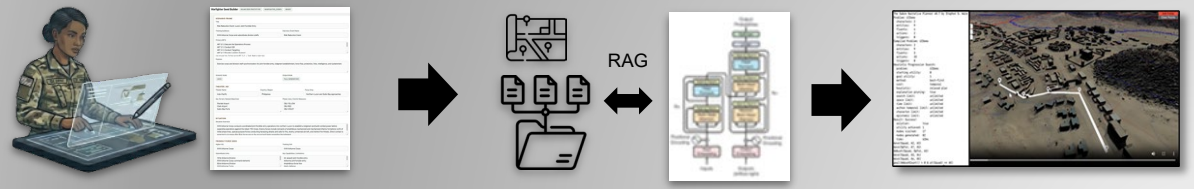
Research Goals

- Develop competency engineering frameworks that connect assessment, personalized learning pathways, and adaptive scenario generation.
- Leverage competency data to generate scenarios that target individual and team readiness requirements.

Impact of R&D

- Enable AI-driven training ecosystems that continuously tailor learning experiences, accelerate competency development, and improve Soldier readiness.
- Accelerate skill acquisition while reducing training time and instructor workload.

Phase 1: Scenario Generation



High-Level Intent & Scenario Description

LLM-based Generation with Authoritative Data

Partially Ordered Scenario Event Structure

Phase 2: AI-Assisted Scenario Refinement

Generated Scenario

Validation Agent and Training Alignment Checks

Refined Scenario

Scenario Generation Workflow


Thank you