THE FUTURE OF SYNTHETIC TRAINNG

TRAINING

OPERATIONS

STE

BRIDGING THE GAP BETWEEN TRAINING AND OPERATIONS

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- <u>Problem Statement</u>: In a resource constrained environment, how does the STE deliver a world class training capability replicating the complexities of the MDO environment NLT FY23, strengthen the Army's asymmetric advantages in training and leader development while aligning with the four tenets of synthetic training?

- <u>Mission</u>: STE CFT describes, documents and delivers the synthetic environment that enables our Army to train, fight, and win.

- <u>End State</u>: unified synthetic environment that replicates the complexities of modern warfare that enables world class training and leader development and adapts to the evolving needs of the warfighter.

Ease of Use; STE must begin delivering capability beginning in FY22 to set the conditions for the force to train for the complexities of MDO in order to be MDO capable by FY28. When delivered, STE must be available to the Soldier- removing barriers to training. STE should be available at the PoN as determined by the CDR and be ready to transcend from training to operational use cases

Efficient; STE must be both cost effective to deliver training capability to the force and be a cost savings over legacy systems.

Effective; STE must deliver the complexities of the MDO environment with the realities of combat either on or on high fidelity representations of the equipment on which Soldiers will fight with.
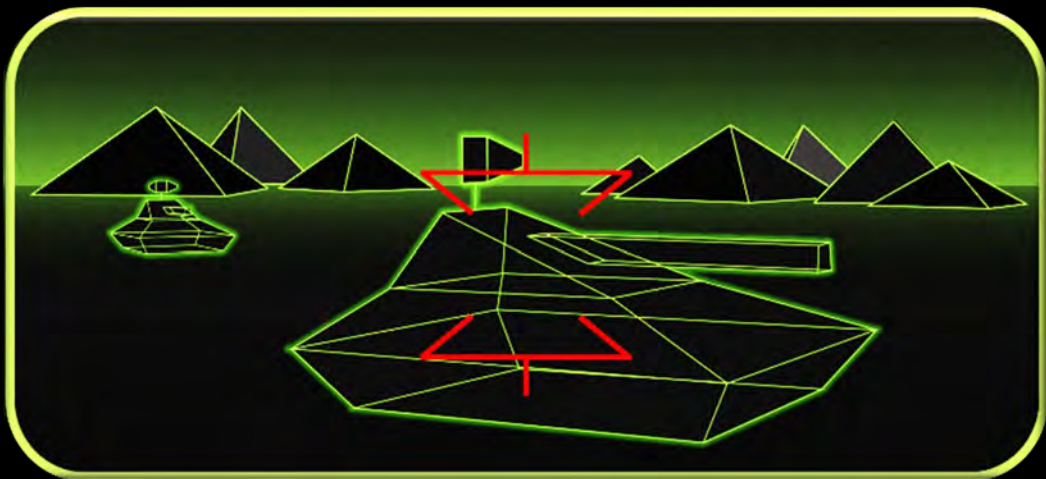
Encompassing; STE is the first holistic training capability that will scale from SQD to ASCC; the ultimate vision is STE IS will be the backbone on which all simulation training will converge onto and be executed through.

Training Modernization

- Integrated Live, Virtual, Constructive
- Distributed and accessible
- Model the complexities of modern warfare
- Open architecture and extensible

Training Challenges

- Model and terrain incompatibilities
- Growing sustainability costs
- Designed as point solutions
- Limited scale and flexibility

Future Solutions

STE Architecture

Training Management Tool

Reconfigurable Virtual Collective Trainer - Air

Reconfigurable Virtual Collective Trainer - Ground

Squad Immersive Virtual Trainer

One World Terrain

Training Simulation Software

Solider Virtual Trainer

Technology Integration Facility Mission

The STE TIF is the heart of development, testing and integration for STE technologies. The TIF enables us to **_examine_** capability needs; **_innovate_** hardware and software solutions with partners; **_assess_** new and emerging technologies using the STE network, architecture, and infrastructure; **_provide feedback_** to industry; and quickly **_integrate_** capabilities that meet STE requirements.

Requirements Refinement Product Line

PATRIoT

Preparation for Armed Training Readiness w/ Internet of Things

- Live-STE Integration Requirements Definition
- Possible Low-Cost MILES replacement
- Researching 27 Characteristics from STE LTS A-CDD
- Gov't owned Geo-location-based capability w/ MESH network
- Focus on 27 Desired Capabilities from LTS A-CDD as scorecard
- Team Project w/ STTC & USMA

SRCE Aug. Reality

*See, Rehearse & Collectively Experience*

- STE-LTS Integration for Skill Builder Trainers (Train Reps & Sets)
- Augmented Reality Add-on Module for Live Engagement Training
- Currently Indoor only, working to add latest commercial head-mounted displays to continually improve realism of outdoor battle drill training

HYBRID COMPUTING

NVIDIA GeForce Now Server

- Point of Need, Streaming Delivery
- Centralized GPU processing – designed to 'stream' interactive "gaming/sim" capability to User
- Dynamic GPU processing
- Saves future hardware lifecycle replacement costs
- Team Project w/ STTC
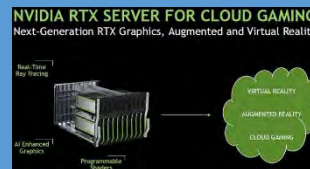
Precision Gunnery

Open-Wheeled Virtual Trainer

- The Army does not have an affordable systems trainer simulation for an open-wheeled platform Precision Gunnery Trainer
- Requirements Refinement & development for low-cost, open-wheel trainer
- TRADOC CG endorsed prototyping
- Mixed-Reality enhanced
- Working w/ Industry & Government to scout out best enabling, low-cost tech

M-SHORAD

Mobile Short Range Air Defense

- Virtual Sim Training
- Provides training designed to defend maneuvering forces against unmanned aircraft systems, rotary-wing and residual fixed-wing threats
- Working w/ Industry to scout out latest tech to fit training needs

## BATTLEFIELD VIZ

Mission Planning/Rehearsal

- Distributed collaboration for mission planning, rehearsal, command and control, after-action review, & training
- Provides 2D & 3D common operating picture & interaction tools via multiple modalities including physical sand tables, mobile devices, floor projection, & mixed & virtual reality HMDs

STE-IS

Future requirements & baseline integration

- Technical "sandbox" capability to provide a prototyping environment in which STE CFT can team w/ industry to pursue training simulation solutions based on reusing STE-IS components
- Risk-Reduction & knowledge building
- New products & prototypes to design w/ STE-IS Assets
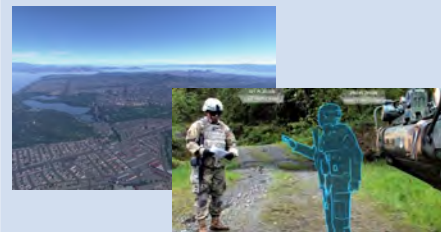
STRAPSS

SFAB Training & Readiness & Planning Simulation System

- STE LITE Simulation Capability. Inc OWT
- 5SFAB is target audience for first kit
- Packaging STE-IS-based training solutions for unique training needs & missions
- Low-cost, quick to deploy.

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The STE will enable training with unmatched immersiveness, repeatability, and complexity in order to develop decision