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Soldier Training Technologies

S&T Campaign: Human Sciences
Human Capability Enhancement

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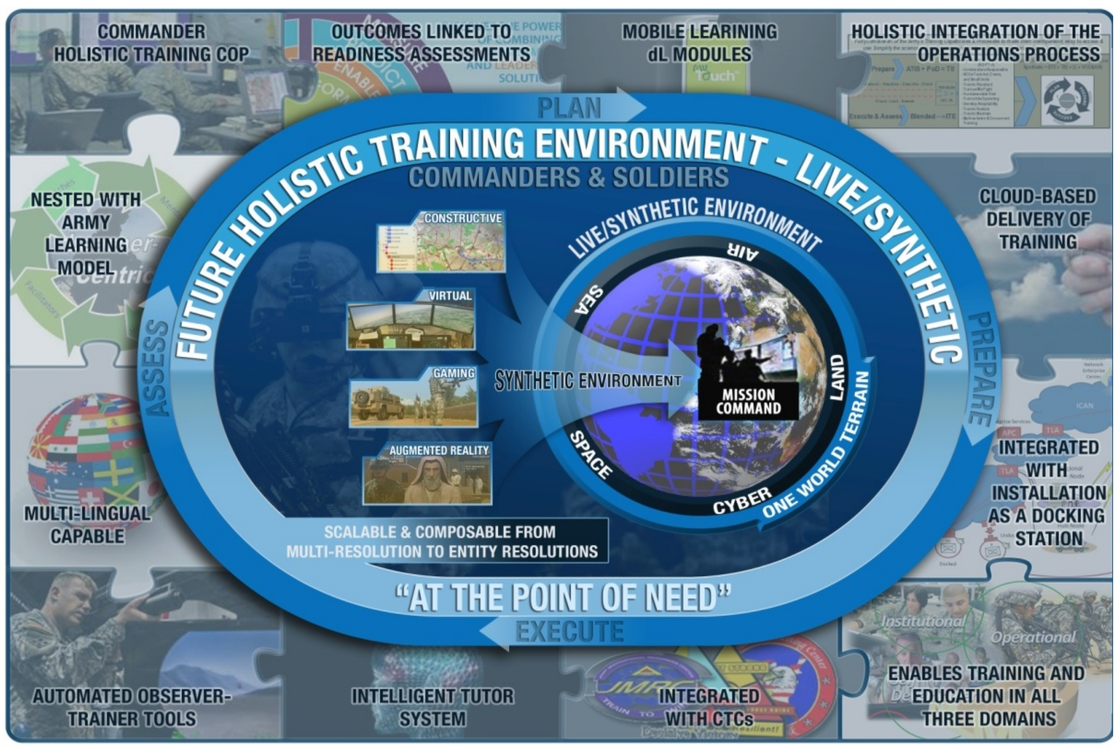
Research Objective

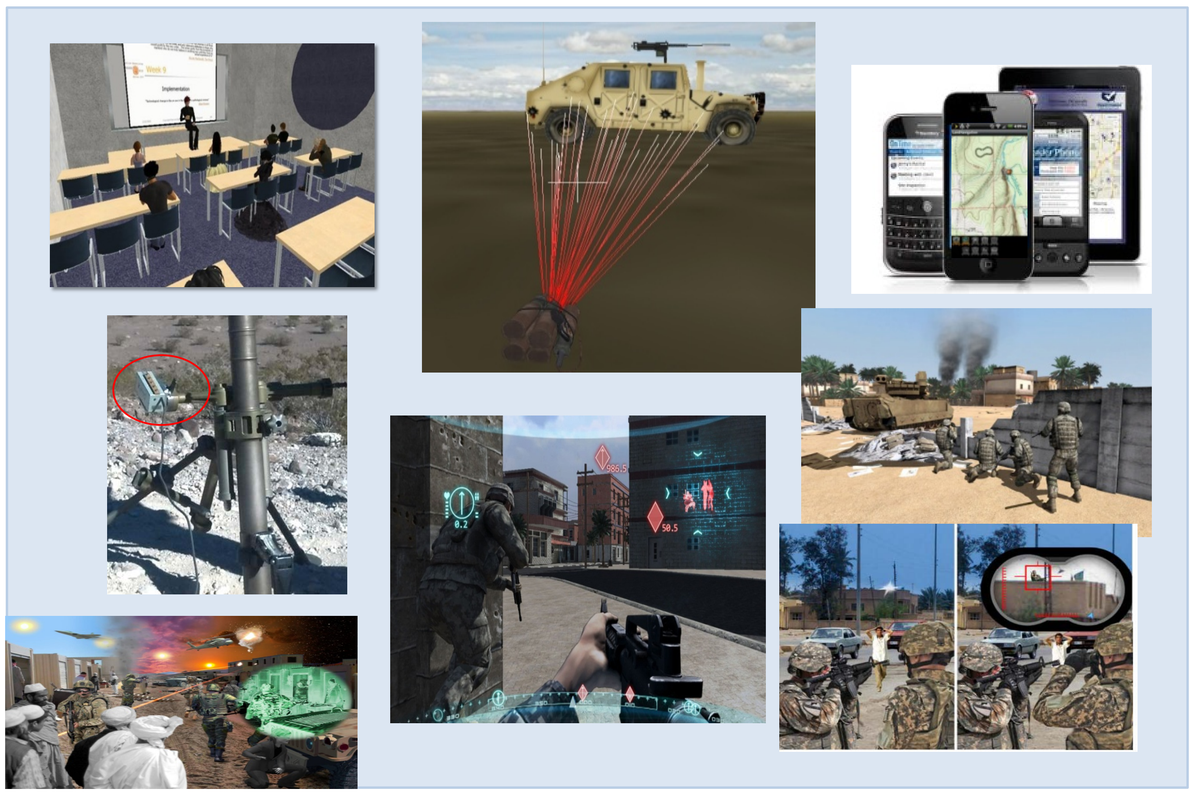
- Precisely replicate current and future Army battlefields
- Minimize difference between real battlefields and simulated battlefields that are used for training, mission rehearsal, and operations



Caption depicts Army's Future Holistic Training Environment – Live / Synthetic (FHTE-LS) concept that drives the ARL Simulation Research Vision for Fiscal Year 2025 and Beyond

Challenges – Today and Tomorrow

- Prototyping simulations that can be used by a single Soldier or hundreds of Soldiers anywhere, anytime by replicating any battlefield, any enemy, and all allies
- Prototyping simulations that can be used for training, mission rehearsals / planning, and combat operations
- Prototyping simulations that do not require role players and interact seamlessly without latency in the FHTE-LS



Caption depicts the diverse Soldier Training Technology Research Challenge Areas

ARL Facilities and Capabilities Available to Support Collaborative Research

- ARL Human Research and Engineering Directorate, SFC Paul Ray Smith Simulation and Training Technology Center, Orlando, Florida
- Dismounted Soldier Laboratory, Risk Reduction Test Bed for Live Simulations, Force 2025 Visulation Test Bed, Mixed Reality Laboratory, and Virtual World Technology Laboratory
- State-of-the-art technologies in the Live, Virtual, Constructive, and Game simulation domains
- Expertise in simulation engineering, human factors, and battlefield operating systems
- Successful prototyping / replication of real world weapons, terrain, man-made effects, virtual humans, distributed wide area networks, cloud computing, simulation architecture, interoperability, training, education, and after action review systems

Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- Expertise in training effectiveness tools and processes
- Expertise in integrated, technology-enabled, data-driven learning environments using PCs, mobile devices, social media, virtual worlds, and classroom teaching methods
- Expertise in live training technologies that include hybrid position and navigation sensors, next-generation lasers, see-through wall human tracking capabilities, enemy predictive technologies, and micro-cloud architectures
- Research expertise in artificial intelligence, virtual humans, natural language processing, gestures, responses, emotion, technology to rapidly create virtual humans that replicate real Soldiers, and photo-realistic graphic generation
- Expertise in augmented - mixed reality technologies
- Innovative, new research approaches and state-of-the-art laboratories to conduct on-site research and testing

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