

# Emerging Requirements for Virtual Simulations

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# Report Documentation Page

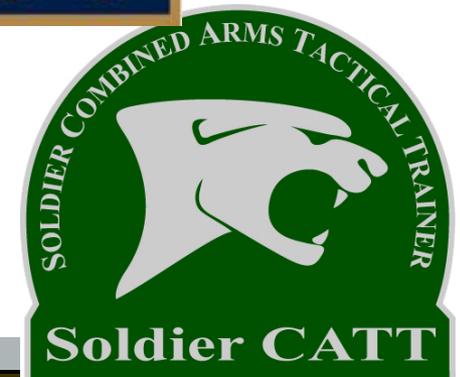
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# Virtual Simulations—Users' Perspective

- Assessing the Effectiveness of the Close Combat Tactical Trainer—2003
- Soldier Combined Arms Tactical Trainer Front End Analysis—2004
- Evaluating the Contributions of Virtual Simulations to Combat Effectiveness-OIF—2005
- Evaluating the Contributions of Virtual Simulations to Combat Effectiveness-ARNG—2005
- Current Operational Environment Impact upon the Soldier Combined Arms Tactical Trainer—2006
- Close Combat Tactical Training Staffing & Redistribution in Support of Modular Heavy Brigade Combat Teams—2006



# Training Management—US Army

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## Missions

Full Spectrum

Non-Linear

Dynamic

Short Notice

## Training Assessment

T—Trained

P—Partially Trained

U—Untrained

# Task-Condition-Standard

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## Control Movement of a Fire Team 071-326-5605

**Tasks are not  
changing**

- Conditions: As a fire team leader or assistant scout squad leader, while moving in a tactical environment, given specific instructions by the squad leader as to the movement technique to be used, the route to the overwatch position, and the actions to be taken there.
- Standards:
  1. React immediately to all of the squad leader's orders or instructions.
  2. Keep the interval between fire teams (if in a trail team) appropriate to the given movement technique and to the terrain.
  3. Move to the overwatch position and use the terrain to provide cover and concealment for the fire team.
  4. Recognize the fire team members' use of the following (and correct them when necessary):
    - a. Camouflage, cover and conceal.
    - b. Individual interval appropriate to terrain and visibility, while keeping all team members in sight.
    - c. Noise and light discipline.
    - d. Security measures (soldiers are alert and ready to act).
    - e. Response to leader's lead-by-example actions.

**Conditions  
change greatly**

# Virtual Simulations—Soldier Perspectives



- Leaders want to train in the live environment.
  - Lack of resources (space, time, enablers)
  - Increasing technical and tactical complexity
  - Wider training audience—less expertise
- Virtual simulations are a replacement for live training.
- Virtual simulations are seen as an enabler for other (live) training.
- Virtual simulations' perceived strengths are their flexibility and relative low overhead.
- Soldiers believe that simulation models are adequate for training.
- Virtual simulations' weakness is that they are not sufficiently rigorous to sanction task proficiency.



# User Level Requirements

- Ability to train to rapidly changing conditions
  - Transition from a generic training to theater specific training to mission training
    - Quick (on-the-fly) inclusion of geo-specific databases: Dynamic Terrain, Population, Threat Tactics, etc.
  - Theater oriented missions
    - Offense, Defense, Stability, Reconstruction
- Realistic (or more challenging) functioning of systems:
  - Realistic capability
  - Weapons, Communications, etc malfunction



**Most Critical: Modeling Threat Tactics**

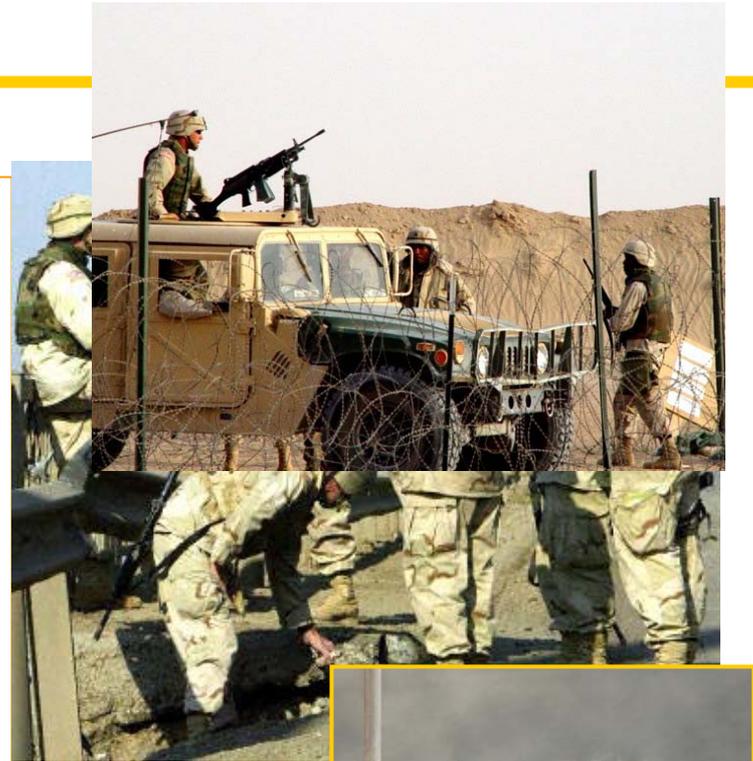
# User Level Requirements



- Support to After Action Reports
- Detailed export (take-home) packets to allow continued training, post-event.
- Semi-automated forces (SAF) to replace missing team members.
  - SAF must have sufficient artificial intelligence to function within the specific team—adapt team tactics, techniques, and procedures (minimize man-in-the-loop).
- Rapid, distributed device-training
  - Limited time with the simulations should be used for tactical-task training.

# Leader Level Requirements

- Refine training development tools that integrate virtual simulations into overall training program AND leave “ownership” of development with the leader.
- Symmetric and asymmetric linkage between virtual, constructive and live training.
- Create train-the-trainer support for training leaders.



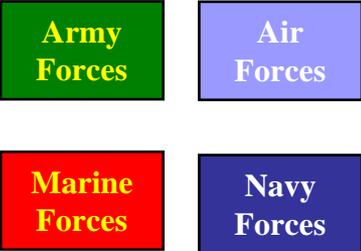
# Senior Leader Level Requirments

- Return on Investment
  - Money
  - Time
  - Focus

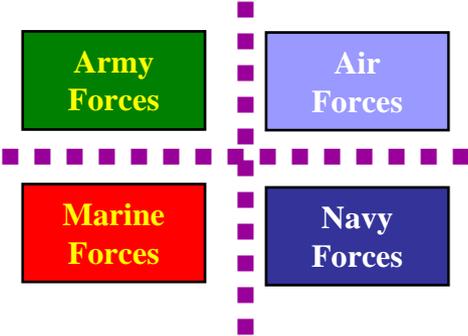


# Road Ahead

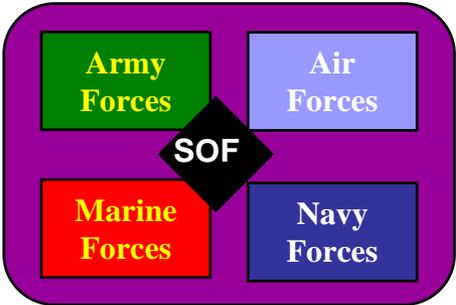
## Deconflict



## Coordinate



## Integrate



US Joint Forces Command Perspective

# Road Ahead



# Questions



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