Modeling and Simulation and the Warfighter - the CINC's View

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USACOM maximizes America’s present and future military capabilities through joint training, total force integration, and providing ready CONUS-based forces to support other CINCs, the Atlantic Theater, and domestic requirements.
Concept of Operations

M&S and the Warfighter- the CINC's View

- Coherent: “Sticking together. Marked by an orderly or logical relation of parts that affords comprehension or recognition.”

- Common Tactical & Operational Objectives
- Natural Rhythms & Cycles
- Synergistic Melding of Forces, Technology, Systems, & Doctrine
- Future Oriented
**USACOM M&S Issues**

**M&S and the Warfighter - the CINCs’ View**

- **Joint Training**
  - Models/tools (JSIMS, JTC, JTLS, JCATS, JIDPS, JEMP)
  - Distributed Joint Training
- **Joint Experimentation**
- **Joint Warfare Analysis**
- **Future M&S Challenges**
Joint Training Mission

Support joint and multinational training and exercises focused on commanders, staffs, and component forces, assist the CJCS, CINCs, and Service Chiefs in their preparation for joint and combined operations, and facilitate the conceptualization, development, and assessment of joint doctrine.
USACOM Joint Warfighting Center

M&S and the Warfighter - the CINCs’ View

Joint Force Trainer

A single program which provides rigorous, high fidelity training support

Providing maximum support to CINCs’ training programs
What We Provide

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• Joint Training System Support Teams (JTSST’s)
  ➢ JTS Overviews/Phase Expertise
  ➢ Assist with JMETL Development/Refinement
  ➢ Assist in JTP Development
• Joint Exercise Teams (JET’s)
  ➢ Full Package Support - “Cradle to Grave”
• Mobile Training Teams (MTT’s)
  ➢ Academic and/or Seminar Training
  ➢ Exercise-Related (Customer Needs Focused)
  ➢ Non Event-Related
How We Get the Job Done

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Worldwide Joint Training

MTT's / JTSST’s / JET’s

Deployable Models

Distributed Models

Virtual Training Support

School House
M&S Issue Areas - Joint Training

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- **JSIMS**
  - It's our future
  - Support to testing and IOC
  - Non-combat areas (e.g., logistics, intelligence, information operations)

- **JTC**
  - Required until JSIMS IOC is reached
  - C4I systems interface maintenance
  - Reliance on special models (e.g., MUSE, JSS) and significant scripting to fill shortfalls

- **JTLS and JCATS; JIDPS and JEMP**
  - Increasing user base
  - Entire joint training spectrum support
Distributed Joint Training

M&S and the Warfighter- the CINC’s’ View

• Allows more units to play from home station, thereby:
  ➢ Reducing OPTEMPO/PERSTEMPO
  ➢ Reducing TAD/travel costs
  ➢ Increasing the likelihood that players will use their go-to-war systems
  ➢ Making participation more likely due to ease of participation

• Fuertes Defensas Example
**Fuertes Defensas 98/99**

*M&S and the Warfighter- the CINCs’ View*

- **One exercise, four training requirements**
  - Supported CINC training by USACOM: SOUTHCOM
  - JTF training by USACOM: XVIII ABN Corps
  - JTF functional component training by USACOM / Battle Command Training Program (BCTP): XVIII ABN Corps (WARFIGHTER)
  - BCTP assessed Service component as Army Forces (ARFOR) HQ
- **Joint Training Confederation of models, distributed to CINC, JTF, and component headquarters**
- **COA analysis, Crisis Action and Execution Phases (II/III)**
- **It worked. We are planning/units are asking for more just like it!**

**Greater efficiency through multi-echelon training!**
• Demonstrating an exercise simulations network - part of Secretary Cohen’s vision for an enhanced education and training framework among nations.

• Using a NATO Combined Joint Task Force template to demonstrate technologies which can enhance PfP exercises, education, training, and operations.
Be the “Center of Excellence” for training, training support, and integration of US forces and allies in preparing to conduct the full spectrum of joint, multinational, and interagency operations in order to protect and defend national interests.
Joint Forces Command - Training Responsibilities

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JFCOM Joint Training

Preserve and advance Joint Operational Warfighting skills

“Respond and Prepare Now…”

Support CINCs’ requirements for Small Scale Contingency operations

“Shape and Respond…”

“…Today and Tomorrow”

“Today…”
• There is a significant role for M&S in the process of Joint Experimentation

• Many parallels in support to training and support to experimentation (exercise life cycle and M&S stimulation)

• J9901 in-progress
M&S Issue Areas - Joint Warfare Analysis

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- JWARS as central to future joint analytical efforts as JSIMS is to future joint training
  - Balanced representation of joint warfare
- Distributed, collaborative analytical efforts essential for CINC's in increasingly reduced resource environment
“Simulations must be interconnected globally--creating a near-real-time interactive simulation superhighway between our forces in every theater. Each CINC must be able to tap into this global network and connect forces worldwide that would be available for theater operations.”

Joint Vision 2010
M&S Future Challenges

Our biggest challenges we are working, and hope industry is too:

- Multi-level architecture resolution
- Multiple levels of security
- Increased permanent network infrastructure
- Rapid database build
- Integrated w/ C4I systems (today and tomorrow)
- Improved individual and group behavior representation
- Course of action analysis & mission rehearsal
Multi-Level Architecture Resolution:

- Integrate existing and future functional simulators into the operational and strategic models.
- Allows more realistic multi-echelon training.
- Example: integrate F-15, M-1A1, or Patriot missile simulators into the simulated battlefield.
Multiple Levels of Security:

• Integrate MLS capabilities into the models from several aspects:
  ➢ Database/model classification
  ➢ Output/dissemination classification

• External MLS devices are not always available, and do not address all of the current interface issues.
Increased Permanent Network Infrastructure:

- Current exercise distribution relies heavily on leased commercial lines.
- Significant drawbacks:
  - Cost
  - Lead time required for establishment
- Prohibits on-demand simulation testing or execution.
Rapid Database Build:

- Database build currently is manpower intensive and produces a non-standard product (databases cannot be easily shared across models).
- Prohibits on-demand modeling requirements from being met, particularly operational rehearsal and wargaming of real-world contingencies.
Integrated With C4I Systems: (Today and Tomorrow)

- C4I Systems are the players’ interface with the models.
- Currently many models do not interface directly with component C4I systems.
- For those that do, often this interface has to be modified on the fly in order to facilitate changes made to the C4I systems.
- Future model outputs must conform to DoD C4I standards.
Improved Individual and Group Behavior Representation:

• Current models inadequately represent the dynamics of human behavior.
• Lack of a “thinking” model inhibits realistic training and increases manpower requirement for role-players.
• Future models must be capable of replicating human behavior.
Course of Action Analysis and Mission Rehearsal:

• Critical field where M&S can “make money.”
• Currently too time consuming.
• REQUIRES rapid and flexible database build, robust and accurate modeling, and dedicated, high bandwidth networks.
Questions?

Please Hold for the Panel Discussion.

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