M&S Strategic Initiatives to Support Test & Evaluation

Mr. Richard Lockhart
Principal Deputy Director
Test Resource Management Center (TRMC)
OUSD(AT&L)

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Test Resource Management Center (TRMC) OUSD(AT&L)

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DoD Test & Evaluation

• **Determine what needs to be tested**
  – Developmental Testing
  – Operational Testing
  – Live-Fire Testing
  – Suitability Testing
  – Lethality Testing
  – Interoperability Testing

• **Determine what resources are available to support the tests**
  – Models and Simulations
  – Measurement Facilities
  – System Integration Laboratories
  – Hardware-in-the-loop Laboratories
  – Installed Test Facilities
  – Open-Air Ranges
Why M&S is Important to T&E

• M&S can optimize all phases of testing
  – Developmental Testing
  – Operational Testing
  – Interoperability Certification

• M&S can support test planning
  – Focus live testing on critical areas – investigate the “edges of the envelope”
  – Extrapolate system performance in conditions limited by safety, environmental, or treaty constraints
  – Improve locating instrumentation to maximize data collection during live tests

• M&S can augment live testing
  – Serve as a surrogate for other systems needed for interaction
  – Represent additional threats or other stimuli

M&S supports T&E
What the T&E Community Needs

- **Validated Models**
  - Validated system models need to be developed during Acquisition
  - Policy must be strengthen and better enforced
  - Beneficial to other communities beyond T&E
  - In addition, validated models of threat systems and of all aspects of the environment must also be available

- **Standards**
  - More than what the T&E community can fix alone
  - Policy must be strengthen and better enforced
  - Beneficial to other communities beyond T&E

**Maximize effectiveness of M&S for T&E**
What the T&E Community Needs (continued)

• Capability to Link Simulations at Different Locations
  – Required to support acquisition of Joint system of systems
  – Required to conducting distributed LVC testing
  – Corporate approach needed to mitigate duplicative solutions

To address this need, OSD established the Joint Mission Environment Test Capability (JMETC) program in FY07 under the TRMC.
What is JMETC?

- **A corporate approach for linking distributed facilities**
  - Enables customers to efficiently evaluate their warfighting capabilities in a joint context
  - Provides compatibility between test and training

- **A core, reusable, and easily reconfigurable infrastructure**
  - Consists of the following products:
    - Persistent connectivity
    - Middleware
    - Standard interface definitions and software algorithms
    - Distributed test support tools
    - Data management solutions
    - Reuse repository

- **Provides customer support team for JMETC products and distributed testing**
JMETC Status

• **Program Office:** Established (Oct 2006) and in operation

• **Connectivity:** JMETC VPN stood up based upon user needs
  – 8 current sites – expanding to 26 sites to address needs for upcoming test events
  – Site connections persistent to foster reuse in future test events

• **Test Events Supported**
  – JFCOM Joint Close-Air Support (JCAS) assessment (Aug 07)
  – JTEM (NLOS NEW) evaluation of new Joint test methodologies (Aug 07)
  – Warplan-Warfighter Forwarder (WWF) test of new C2 capability (Aug 07)
  – InterTEC Spiral 2, Build 1 (Sep 07)

• **Upcoming Tests**
  – Single Integrated Air Picture (SIAP) events
  – Joint Battlespace Dynamic Deconfliction (JBD2) – FCS CTO & JTEM events
  – InterTEC and CVN-21 events
  – Planning for future events for: SIAP, JSF, MMA, NECC, DD1000

• **Stakeholder Support Groups**
  – JMETC Advisory Group
  – JMETC Users Group
Benefits of M&S in T&E
Summary

• M&S is important to DoD Test and Evaluation

• Challenges exist to maximize the effectiveness of M&S for T&E
  – Continue working across the T&E community and with other communities to address these challenges

• JMETC is up and running