U.S. Army Modeling and Simulation Office Overview

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• Introduction
• Purpose
• Army Modeling & Simulation (M&S) Mission, Vision & Organization (3)
• Strategy and Resources Division (4)
• Simulation Proponent and School Division (4)
• Coordination Opportunities (2)
• Futures (2)
• Questions
Purpose

• To provide a greater understanding of modeling and simulation use in the U.S. Army and to describe the approach to supporting the communities of interests in terms of policy, workforce management and training
• CAA is a Field Operating Agency of the Deputy Chief of Staff, G-8.

• Vision: CAA is recognized authority on the independent analysis of land warfare interests in a joint and combined context.

• Mission: CAA conducts decision support analysis across the spectrum of conflict, in a Joint, Interagency, Intergovernmental, and Multinational (JIIM) context to inform critical senior level decisions for current and future national security issues.

Source: HQDA GOs, AR 10-88 (Field Operating Agencies), and AR 5-11 (Management of Army Models and Simulations)
• Mission: The Army Modeling Simulation Office serves as HQDA’s lead activity to:
  
  • **Develops** the strategy and policy for Army Modeling and Simulation Enterprise
  • **Executes** effective governance and resource management through leadership and synchronization
  • **Leads** coordination of the Army modeling and simulation enterprise and cross-community areas including Joint, Intergovernment, Interagency, and Multinational environments
  • **Trains, Educates and Manages** the Army Analysis, Modeling & Simulation M&S Workforce (Military and Civilian)
  
• Vision: An Army that effectively and efficiently employs modeling and simulation capabilities and tools, within and across all Army organizations, in support of both the Operating and Generating Forces.
The U.S. Army Modeling & Simulation Office

Director,
Center for Army Analysis and
Army Modeling and Simulation Office

Deputy Director
AMSO

Strategy and Resource
Management Division

Enterprise Integration
Value of M&S
Analysis
Governance &
Policy
M&S Standards
M&S Futures
Analysis
M&S Investments

HQs

Education & Training
Civilian Programs
Military Programs
SIG/Futures

Simulation Proponent
Division

SP & AMSS Key Tasks:
- Career management support
- M&S workforce life cycle management
- Education and training development
- Career management and assignments
- Acquisition and Sustainment
- Structure and concepts
- Workforce integration
- Assessments

SR Key Tasks:
- M&S policy development
- M&S Enterprise Governance Management
- M&S strategic planning
- M&S Enterprise Resource Management
- M&S Integration: capabilities, environment, enablers
- Joint and U.S. Service Component engagement
- NATO and multi-national engagement
- M&S future concepts

HQs Key Tasks:
- VMSO MDEP Manager
- OneSAF, SIMCI, JEPAC & CSI POM Support
- AMSO Programming, Budgeting & Execution
- Liaison between AMSO, CAA & G-8
- Contract Management (COR/ACOR)
- Desktop IT Support (BLDG 805)
- Security Management (BLDG 805)
- Maintenance and Logistics (BLDG 805)
Strategy and Resources
• Develop Regulations and Policy that support:
  • Reuse Data, Data Structures, Data Standards, and Digital Terrain
  • Common Tools and Systems
  • Architectures
  • System Integration
  • Coordination with Navy, Marine Corps, Air Force and other Government agencies

• Provide Visibility of On-going efforts across the Army
• Oversight of U.S. Army M&S investments
• Provides Guidance for relationship between the end-user and developer
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M&S Governance
Organizations, Relationships and Structure

**Army DCS G-8**
- Army M&S Proponent

**Army Deputy ADCS, G-8**
- Chair, M&S General Officer Steering Committee

**Director, AMSO**
- Senior advocate for M&S policy and standards
- Executive Agent for FA57 and CP36

**Deputy Director, AMSO**
- Advocate for M&S policy and standards
- Deputy Executive Agent for FA57 and CP36
- Chair M&S CoC
- Recommends strategic M&S vision and oversight to DCS, G-8
- Comprised of M&S Enabled Community Leads and M&S representatives from across the Army
- Focuses on M&S Foundational Issues

**US DoD Counterparts:**
- Modeling & Simulation Coordination Office
- Marine Corps Modeling and Simulation Management Office (MCMSMO)
- Navy Modeling and Simulation Office (NMSO)
- Air Force Agency for Modeling and Simulation (AFAMS)

**International Counterparts:**
- NATO Modeling and Simulation Group
- The Technical Cooperation Program (TTCP)

**Army M&S Communities**
(AR 5-11, Management of Modeling and Simulation)

- **Acquisition**
  - ASA (ALT)
  - DCS, G-8 (CAA)
- **Analysis**
  - TRADOC
- **Experimentation**
  - DCS, G-2
- **Intelligence**
  - ATEC
- **Test & Evaluation**
  - DAMO-TR
- **Training**
  - DCS, G3/5/7

Strategy and Resources 3 of 4
M&S Gap Study
AMSO delivers funded research to entire M&S Enterprise that:
• Examines the gap in depth
• Provides Actionable Considerations Requirements Development
• Provides Assessment of Current and Emerging Capability

Note: Process starts at center (M&S Gap Form) and spirals out prioritized and resourced gap projects.

AMSO’s enterprise approach is a cyclic annual process that capitalizes on current policy, governance, and the CPR results in order to focus resources for enterprise-level M&S Gap resolution.
Simulation Proponent & School Division
U.S. Army has created both a military and civilian workforce to support M&S needs:

**Military: Functional Area 57 – Simulation Operations**
- Operationally grounded and experienced Officer (Major and above)
- Typically Infantry, Armor, Artillery or Aviation
- Reclassified and Trained to provide commands with M&S expertise

**Civilian: Career Program 36 – Analysis, Modeling and Simulation**
- Government civilian who is trained and educated in M&S use
- Provides continuity for commanders to monitor long duration M&S programs
• AMSO is a Service-level School that provides the Army with M&S training and education
  • 8-week Simulation Operations Qualification Course
  • 2/3-week Simulation Professional Course
  • Online training courses

• Coordinate to send military and civilians to graduate school for M&S Certifications, Masters and PhD degrees
  • University of Central Florida, Naval Postgraduate School, Old Dominion University, Columbus State University

• Host M&S workshops to update the workforce on new developments, tools and methods of use

• Provide resources for our workforce to seek self-improvement
1. What decisions need to be made?
   - How are those decisions made?
   - What information is required?
   - What format is the information needed in?
   - What systems are needed to present the information?
   - What network a/o communication structure is required?

2. C4I System Selection
   - Model Selection
   - Architecture Selection
   - Data Format Selection (HLA, DIS, TENA)
   - Scenario Selection
   - Order of Battle Selection
   - Method (Real Time or FTRT)
   - MESL Development
   - M&S Support Team Development
   - Exercise Structure (TA, WC, EC, TC, etc.)
   - AAR and Data Capture, O/Cs, other

3. Testing (Load, Event, Thread, Disruption)
   - Execution (Networks to clear trash bags)
   - Real Time Injects as needed
   - Managing C4I Disruptions
   - Integration into Larger Event (WC, ExDir)
   - Media Considerations
   - Access Control
   - AAR and JELC pre-planning for next event

Leverage Technology to Improve Human Performance
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Army Simulation Proponent and School Facility/Capability

FIRST FLOOR

Fort Belvoir, VA
Coordination Opportunities
• Partnership with Academia: Science, Technology, Engineering, Mathematics Programs
• Cooperative Research And Development Agreements
• Participation in Allies M&S events (Training, Experimentation, etc...)
• Event Attendance (Papers, Presentations, Representation)
  • I/ITSEC - International and Inter-Service Training, Simulation, and Education Conference
    • Annual Event in Orlando, Florida (USA) in early December
  • ITEC - International Forum For The Military Simulation, Training And Education Community
    • Annual Event in Europe (UK or Germany, Alternates Annually)
  • MODSIM – Model and Simulation Conference
    • Annual Hampton Roads, VA sponsored by Congressional M&S Caucus
  • Capitol Hill M&S Expo and M&S Congressional Caucus
  • DAE (Korea) & I/AMSEC (Korea), NATO CAX Forum and NMSG Events
  • MORS and AORS
• Publish Papers, Articles and Presentations that tell the Army M&S Story
M&S Coordination Opportunities
Government, Industry, Academia

Coordination Opportunities 2 of 2
Futures
• **Strategy and Policy**
  • Develop and Implement M&S Governance Plan IAW AR 5-11
    • Annual Cross-Community Effort to Identify M&S Gaps, Reduce Redundancies, Promote Re-Use, and Cost Share Common Solutions
    • Empower M&S GOSC to Action Enterprise Resourcing Decisions
  • Develop a Enterprise approach to Simulation Ready Data from Authoritative Sources (2017-2019, Beyond)
  • Provide Strategic M&S Leadership within Services and Allies
  • Lead within SISO and other M&S Standards Organizations
  • Resource OneSAF to address other communities M&S Gaps (Cyber, CBRNE)
• Simulation Proponent and School
  • Planned Update of Current Online Courses
  • Expand Instructors to include Logistics, Acquisition and Analysis M&S Expertise
  • Analyze, Design, Develop, Implement, and Evaluate new M&S related courses for larger M&S Community of Interest:
    • Acquisition & Analysis (2017)
    • Test and Evaluation & Experimentation (2018)
    • Logistics (2019)
  • Develop and Execute Intermediate and Advanced Simulation Classes (2017-2018)
  • Initiate Workforce Survey for M&S (2019)
Conceptual Framework for an Army Synthetic Environment

- Uses emerging technology to fuse M&S and C4I into a cloud-enabled, multi-layered environment
- Shared Geospatial Runtime Environment between C4I and M&S systems
- Legacy stand-alone simulations replaced with API layers
- API layers can be configurable to meet emerging simulation needs (AR, VR, etc...)
- Composable Data and Algorithms within STE (Army Synthetic Environment) enables multi-layer use (Enterprise usage)
- Cloud delivered
- IP v6 Compatible

- Reduce Costs of Legacy Systems
- Maintains Pace with emerging Technology
- Enables the Army to Train as we Fight

2D View

Virtual & Gaming 3D View

Single Geospatial Runtime Environment - C4I Systems & Simulations
Questions