



U.S. Army Modeling and Simulation Office Overview



Monday, October 02, 2017

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Agenda



- 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

Center for Army Analysis



- 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: 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.



**6001 Goethals Road
Fort Belvoir, VA
Executive Officer: 703-806-5646**

Source: HQDA GOs, AR 10-88 (Field Operating Agencies), and AR 5-11 (Management of Army Models and Simulations)

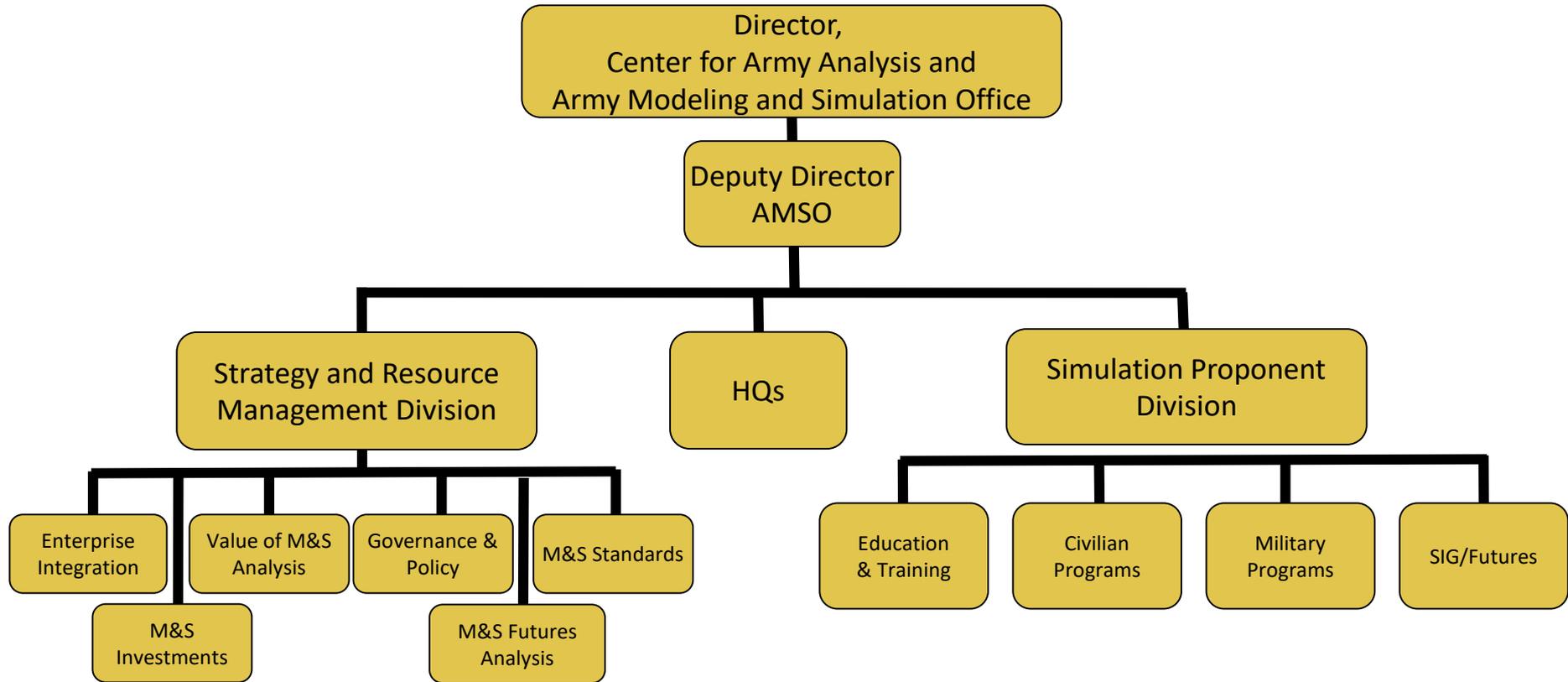
The U.S. Army Modeling and Simulation Office Mission and Vision



- 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



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)

SP & AMSS Key Tasks:

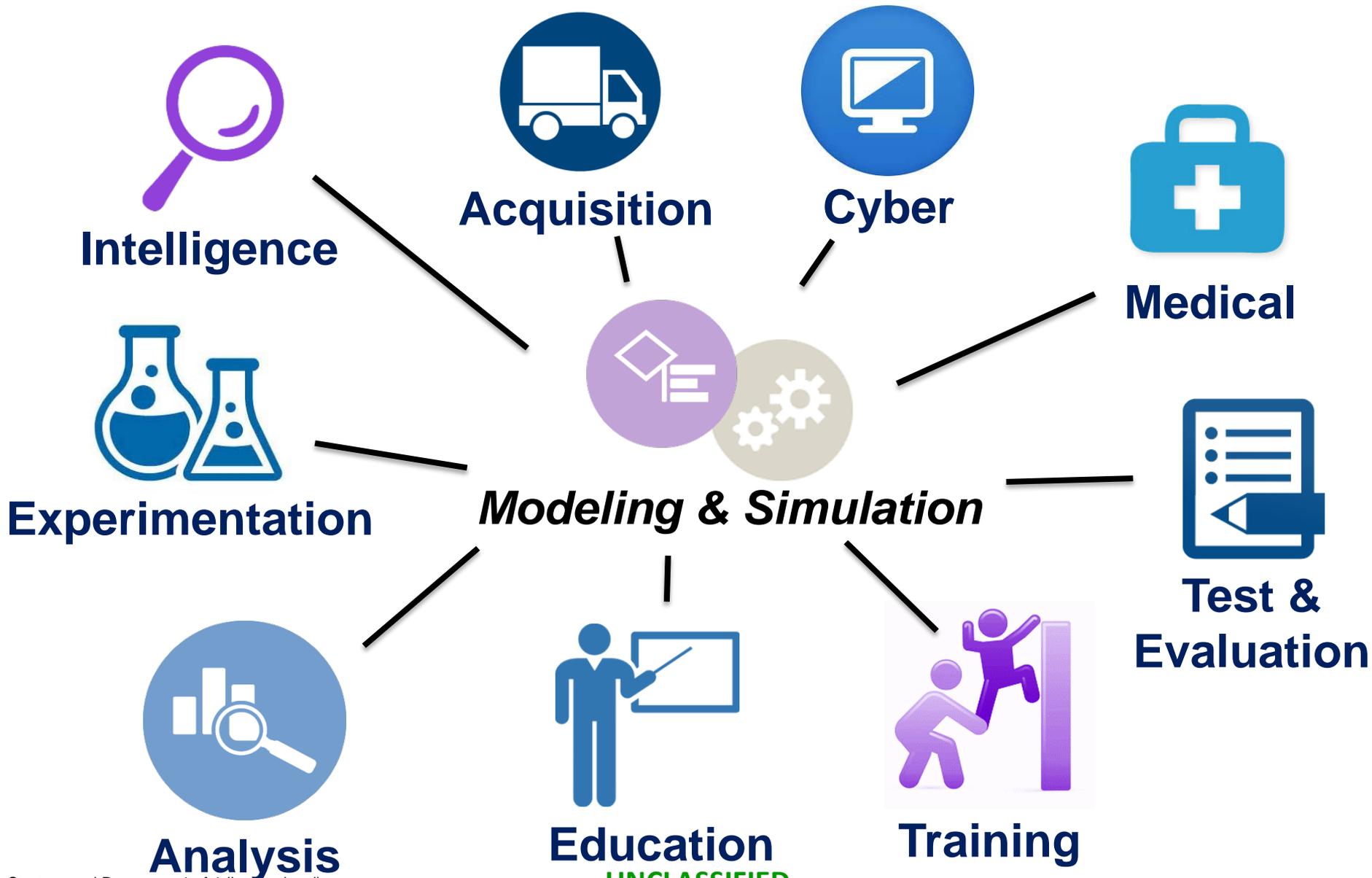
- Career management support
- M&S workforce life cycle management
- Education and training development
- Career management and assignments
- Acquisition and Sustainment
- Structure and concepts
- Workforce integration
- Assessments



Strategy and Resources



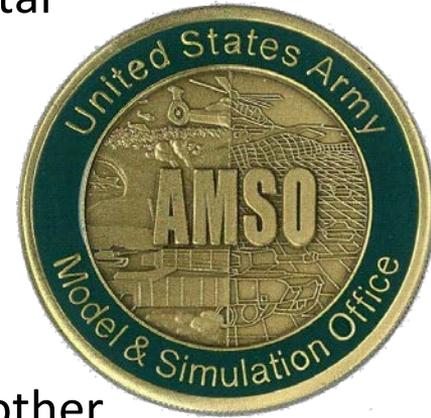
M&S Use in the Army



M&S Policy 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



M&S Governance

Organizations, Relationships and Structure



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)

Army M&S General Officer Steering Committee (GOSC)

- The Technical Cooperation Program (TTCP)
- DoD Science and Technology Board

Army M&S Council of Colonels (CoC)

Army M&S Working Group

M&S Functional Working Groups

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

International Counterparts:



NATO Modeling and Simulation Group



The Technical Cooperation Program

Army M&S Communities

(AR 5-11, Management of Modeling and Simulation)

Acquisition
ASA(ALT)

Analysis
DCS, G-8
(CAA)

Experimentation
TRADOC

Intelligence
DCS, G-2

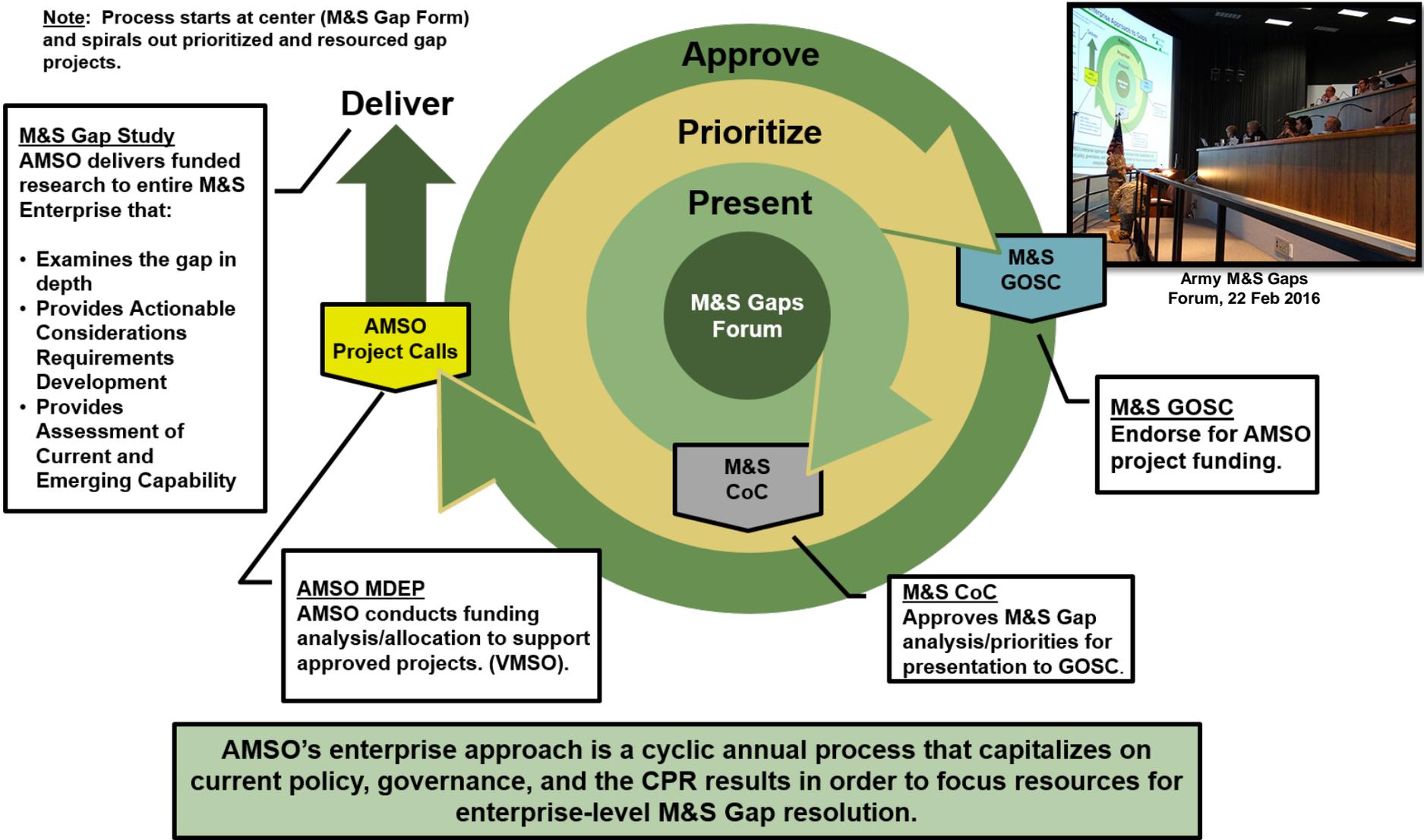
Test & Evaluation
ATEC

Training
DCS, G3/5/7
DAMO-TR

Enterprise Management



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





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



M&S Training and Education



- 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

Using M&S to Transform Requirements to Technical Solutions



- 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?

- 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
- 3**

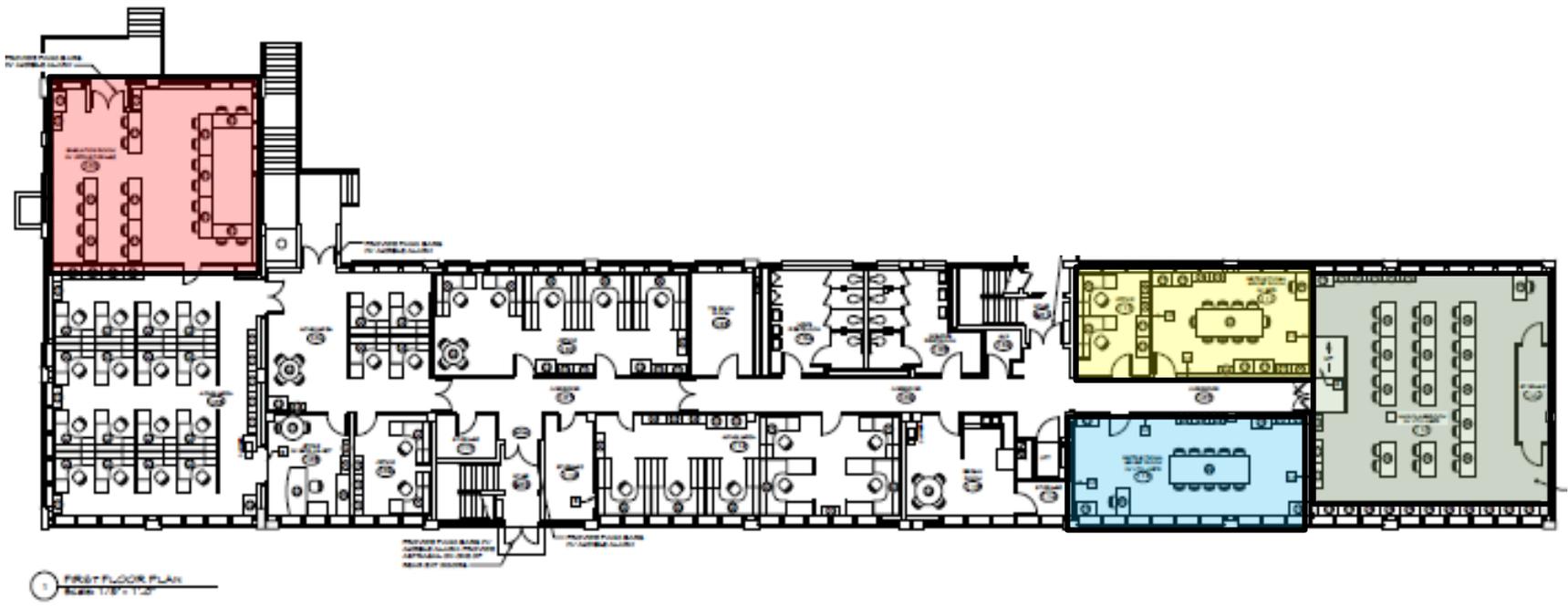
- C4I System Selection
 - Model Selection
 - Architecture Selection
 - Data Format Selection (HLA, DIS, TENA)
 - Scenario Selection
 - Order of Battle Selection
 - Method (Real Time or FTRT)
 - MESL Development
 - M&S Support Team Development
 - Exercise Structure (TA, WC, EC, TC, etc..)
 - AAR and Data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

Leverage Technology to Improve Human Performance



Army Simulation Proponent and School Facility/Capability

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Fort Belvoir, VA



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Coordination Opportunities

M&S Coordination Opportunities

Government, Industry, Academia



- 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

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Today's Focus:
The U.S. Army Modeling and Simulation Office

What is it?
The Army Modeling and Simulation Office (AMS/O) is the Army's enterprise-level organization for modeling and simulation (M&S) policy, coordination, and workforce management. A directorate under the Center for Army Analysis, AMS/O operates to enable the Army to effectively and efficiently employ M&S personnel, capabilities, and tools within and across all Army organizations, in support of both the Operating and Generating Forces.

What has the Army done?
M&S is used throughout the Army and other Joint Forces. Intelligence and Acquisition scenarios, cyber and medical applications, testing and evaluation, training and education, are all fields that have been influenced and improved by M&S. AMS/O partners with academia to promote Science, Technology, Engineering, and Mathematics (STEM) subjects. They also perform cooperative research and development agreements, participate in talent modeling, and simulation events, and leverage partnering opportunities with both government and industry.

What does the Army have planned for the future?
The Army Modeling and Simulation School (AMSS), part of AMS/O, provides targeted education, training, qualification, and certification to ensure the Army M&S workforce both Functional Area 27 (military) and Career Program 36 (civilian) is well trained in the use and application of the Army's analysis, modeling, and simulation capabilities.

A multitude of virtual training exists for soldiers that saves both time and resources. Finite funding has placed a greater emphasis on simulation, virtual environments, and shared platforms for intelligence, surveillance, and reconnaissance in helping prepare soldiers for the next war. Simulations enhance real-world training, covering areas outside the envelope and safety of real world systems. Simulations are routinely being used to train our future warfighters, and to leverage these tools properly the Army needs a trained and educated M&S workforce.

Why is this important to the Army?
Every Soldier who deploys goes through some type of M&S training to acquire critical warfighting skills. Simulations help the Soldiers hone their skills, gain familiarity with an environment, rehearse their missions, and finally return safely to their families when their missions are complete. Simulations play an essential role in attaining these goals and bringing our Soldiers home. AMS/O strives to get the most from the M&S enterprise to ensure the Army remains ready as the world's premier combat force.

Resources:

Chart the Future

WWW.ARMY.MIL
THE OFFICIAL HOMEPAGE OF THE UNITED STATES ARMY

Home News Features Media Info Leaders Army Life Join

News Front Page

SECTIONS
Army National Guard
Army Reserve
Community Relations
Current Operations
Energy
Environment
Health
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REGIONS
Africa
Asia & Pacific
Central/South America and Caribbean
Europe
Middle East
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RESOURCES
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Related Links
Army Modeling and Simulation Office
Army Modeling and Simulation Compliance Development Website

The Army Modeling and Simulation Office Sets the Standard

By Shannon L. Ross

FOR BELVOIR, Va. (Nov. 30, 2015) — Modeling and Simulation (M&S) is recognized as an essential enabler by Army leaders at all levels, to include the Vice Chief of Staff of the Army, who received an M&S capability portfolio review from leaders at the U.S. Army Modeling and Simulation Office (AMS/O), located on Fort Belvoir, Va. is the Army's Enterprise-level organization for modeling and simulation management. A directorate under the Center for Army Analysis, AMS/O operates to enable the Army to effectively and efficiently employ

Our Soldiers, who achieve amazing things, overcome incredible obstacles around the world and make great sacrifices every single day. They ask for very little in return, really only that they be well-led. It is particularly gratifying to support a mission that answers that call.

— Brig. Gen. Diana M. Milant, first female and the 700th commandant of cadets at the U.S. Military Academy at West Point, New York, is responsible for the development into Army officers of more than 4,400 cadets.

First female West Point commandant of cadets assumes new role

Related STAND-TO! information paper: U.S. Military Academy

Events:
January 2015
Dec. 18 - Jan. 25: Battle of the Bulge (sharpsouthridge)
Jan. 9: U.S. Army All American Bowl (LAWRANCE)
Jan. 18: Martin Luther King Jr. Day (M&S24)

(Note: Recommended hashtags for social media promotion provided in parentheses.)

11th ANNUAL CAPITOL HILL MODELING & SIMULATION EXPO
THURSDAY, JULY 7, 2016 • RAYBURN BUILDING - FOYER

BLACK SWAN: USING M&S TO PREPARE FOR THE UNEXPECTED

This summer, top-notch M&S demonstrations from around the country will be brought to the nation's capital at the 11th Annual 2016 Capitol Hill Modeling and Simulation Expo. Limited time, strained budgets, or under-trained staff threaten our nation's readiness to respond to a black swan event. Modeling and simulation (M&S) provides opportunities to prepare for and predict the unpredictable in these situations. Our nation's leaders are recognizing that M&S is the bridge that transforms future problems into current solutions.

As President of The National Training & Simulation Association in conjunction with the members of the Congressional Modeling and Simulation Caucus, I invite you to join us to take part in cutting-edge hands-on demonstrations such as:

- Experiencing combat in a real flight simulator
- Taking control of an entire city during a natural disaster
- Preparing for a terrorist attack with small arms and urban combat training
- Performing virtual surgery in an emergency using state of the art robotics
- And many more exciting uses of simulation technology

NTSA is proud to sponsor the 11th Annual 2016 Capitol Hill Modeling and Simulation Expo. The chairman of the Congressional Modeling and Simulation Caucus, Rep. J. Randy Forbes (VA-04), will make remarks during the exhibit along with other members of the Caucus.

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May 2-5, 2016
New Orleans
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Army Modeling and Simulation Enterprise

Published in the Journal of Cyber Security and Information Systems Modeling & Simulation Special Edition

Upcoming Events

- Managing Transformational Projects in a Military Setting
April 20 @ 1:00 pm - 1:00 pm EDT
Organizer: OLC
- 2016 New York State Cyber Security Conference
June 8 - June 9
Organizer: New York State Office of Information Technology Services
- 2016 Command, Control, Communications, Computers, Intelligence (C4I) and Cyber Conference
June 14-15 @ 8:00 am - June 16 @ 5:00 pm EDT
Organizer: ANASIS DIRECTORATE
ORGANIZATION: THE NATIONAL TRAINING AND SIMULATION ASSOCIATION (NTSA) Conference Chair: Captain
- VERO Hawaii - Asia Pacific Cyber Energy Summit
June 21 - June 23
Organizer: VERO Hawaii
Organizer: GeoBris

Recent Video Podcasts

Securing Your Company for Today's Cyber War: A Three-Pronged Approach to

Army Modeling and Simulation Forum
April 2, 2016

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The Army Modeling and Simulation Forum

An in-depth look at the Army modeling and simulation gaps

By Colonel Joseph M. Nolan

REGISTRATION
Military Training
2015 Simulation & Training Conference
Click Here to View

MODSIM 2015

I/ITSEC
INTERSERVICE/INDUSTRY TRAINING, SIMULATION AND EDUCATION CONFERENCE

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Futures

Where are we headed?



- 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)

Where are we headed?



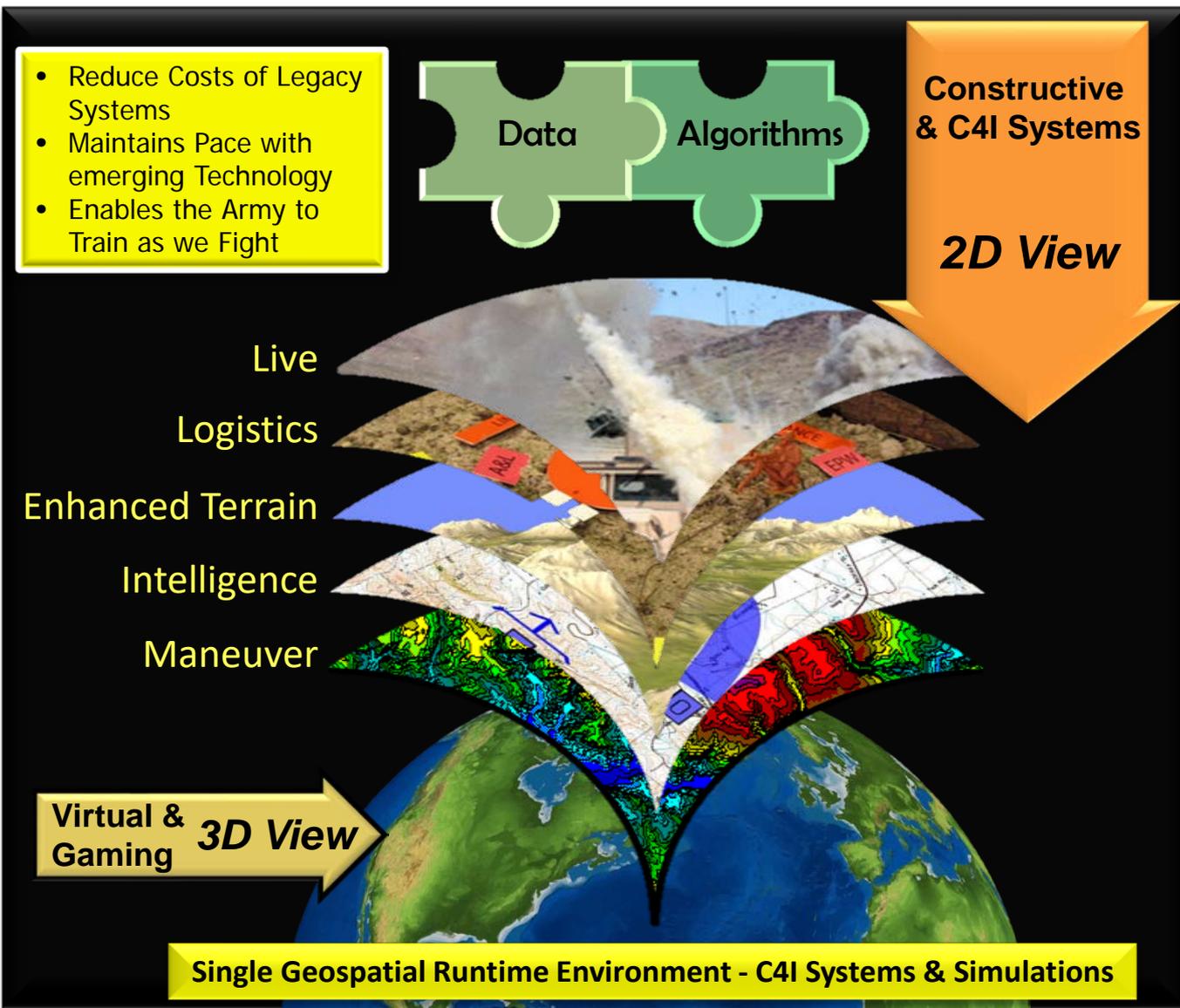
- Simulation Proponent and School
 - Planned Update of Current Online Courses
 - Expand Instructors to include Logistics, Acquisition and Analysis M&S Expertise
 - Analyze, Design, Develop, Implement, and Evaluate new M&S related courses for larger M&S Community of Interest:
 - Acquisition & Analysis (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





Questions