



# CHAIRMAN OF THE JOINT CHIEFS OF STAFF INSTRUCTION

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J-8

DISTRIBUTION: A, B, C, J, S

CJCSI 8510.01A

26 January 2004

## JOINT MODELING AND SIMULATION MANAGEMENT

References: See Enclosure C.

1. Purpose. This instruction:

a. Implements policy guidance established in reference a.

b. Establishes joint modeling and simulation (JM&S) policy, assigns responsibilities, and outlines a JM&S master planning process (reference b).

2. Cancellation. CJCSI 8510.01, 24 April 1996, "Joint Modeling and Simulation Management," is canceled.

3. Applicability

a. This instruction applies to the Joint Staff, joint activities reporting to the Chairman of the Joint Chiefs of Staff, and the combatant commands (hereafter collectively referred to in this instruction as "joint components"); and to their use, management, sponsorship, or resourcing (reference c) of JM&S activities; and to their use or sponsorship of other (i.e., non-joint) modeling and simulation (M&S).

b. This instruction is distributed to the Services and Defense agencies to foster cooperation and sharing of JM&S resources and capabilities. It is distributed to the multinational combined commands for information only; however, they are encouraged to use it as a guide in developing their own M&S management applications.

#### 4. Policy

a. In coordination with the joint components, the Joint Staff will develop JM&S policies and guidance and be a proponent for JM&S use in the joint community. It shall provide oversight, expertise, and requirements management for all JM&S other than joint training M&S.

b. The Joint Staff will use the JM&S master planning process described in Enclosure B to collect and manage JM&S requirements, develop solutions for these requirements, support the process of resourcing them, and prevent proliferation of duplicate, unneeded JM&S (reference b).

c. USJFCOM will identify, gather and integrate all joint training M&S requirements (reference d). USJFCOM will function as program manager (excluding acquisition) for all joint models used for training, to include responsibility for all aspects of life cycle support.

d. The Joint Staff will foster joint involvement in JM&S development, integration, use, and interfacing with operational command, control, communications, computers, and intelligence (C4I) systems, such as the Global Command and Control System (GCCS) and the Global Combat Support Systems (GCSS), per references e, f, and g. This will require that JM&S be compatible with the GCCS and GCSS common operating environment as appropriate.

e. The joint components will formulate and implement programs and activities to promote JM&S capabilities to satisfy their assigned missions and to consolidate similar functions to prevent unnecessary JM&S proliferation.

f. JM&S applications used to support joint training and major DOD decision-making organizations and processes (e.g., the Defense Planning and Resources Board, the Joint Requirements Oversight Council, and the DOD Planning, Programming, Budgeting, and Execution System) will be accredited for that use by the application user.

g. JM&S configurations will:

(1) Evolve from stovepipe legacy systems toward open, interoperable systems (hardware, software, and connectivity) per references h-j that will operate in synthetic environments which can be electronically linked or accessed to satisfy JM&S requirements.

(2) Comply with existing national, Federal, DOD and, where practicable, international standards to facilitate JM&S and C4I interoperability.

(3) Exploit connectivity and M&S interoperability to link existing M&S centers to support analysis, training, and acquisition requirements.

(4) Conform to the policies, practices, and standards for life-cycle management (LCM) and configuration management (CM) of automated information systems in references k-n.

h. A systematic plan of LCM is required for all JM&S per references a and l. Verification, validation, and accreditation (VV&A) will be accomplished as an integral part of the overall LCM and application of each JM&S. The Joint Staff instruction on VV&A (reference o) implements DOD VV&A policies, establishes responsibilities and procedures for Joint Staff VV&A of JM&S, and is provided to joint components for information.

(1) Proponents for models, simulations, and supporting databases will ensure LCM, verification and validation (V&V) and CM.

(2) M&S application sponsors will accredit models, simulations, and supporting data to ensure appropriateness for each intended use. Each sponsor's accreditation process will ensure that the V&V level is sufficient to support the accreditation decision based on guidance provided by recognized M&S authorities and will assess the availability of credible data that have been validated within the context of the intended use of the M&S.

(3) JM&S proponents and developers will ensure that forces and capabilities represented in JM&S have been verified and validated by the responsible Service, functional proponent, or DOD organization.

i. Data, information, and information technologies used in support of JM&S will comply with information management policies contained in references p and q.

5. Definitions. See Glossary.

6. Responsibilities. See Enclosure A.

7. Summary of Changes

a. Distribution of the new M&S data paradigm from DODI 5000.61, which integrates data V&V into M&S V&V and accreditation.

b. Identification of the USJFCOM responsibilities regarding training M&S.

c. Elimination of Joint Modeling and Simulation Executive Panel Charter.

d. Clarification that accreditation is the responsibility of the end user of the M&S results or products rather than the M&S operator.

e. Clarification that V&V, LCM, and CM are the responsibility of the JM&S proponent.

8. Releasability. This instruction is approved for public release; distribution is unlimited. DOD components (to include the combatant commands), other Federal agencies, and the public may obtain copies of this instruction through the Internet from the CJCS Directives Home Page--  
[http://www.dtic.mil/cjcs\\_directives](http://www.dtic.mil/cjcs_directives). Copies are also available through the Government Printing Office on the Joint Electronic Library CD-ROM.

9. Effective Date. This instruction is effective upon receipt.

For the Chairman of the Joint Chiefs of Staff:



MICHAEL D. MAPLES  
Major General, USA  
Vice Director, Joint Staff

Enclosures:

- A - RESPONSIBILITES
- B - JOINT MODELING AND SIMULATION MASTER PLANNING PROCESS
- C - REFERENCES
- GL - GLOSSARY

DISTRIBUTION

Distribution A, B, C, and J plus the following:

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Under Secretary of Defense for Acquisition and Technology .....	5
Director of Defense Research and Engineering.....	2
Director, Defense Modeling and Simulation Office.....	2
President, National Defense University.....	2
Commander, US Forces Korea .....	2

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ENCLOSURE A  
RESPONSIBILITIES

1. The heads of joint components will:

a. Establish and implement a management structure for M&S oversight, internal coordination, and communication of M&S issues. Each joint component's management structure will reflect its unique M&S requirements while complying with all DOD and Joint Staff M&S, information management, LCM, data administration, and C4I policies, directives, and initiatives (references a, i, k, l, and q).

b. Identify a JM&S focal point and advise the Joint Staff M&S focal point, J-8. These focal points will:

(1) Represent component requirements and activities in JM&S forums.

(2) Act as the central point of contact within their organization for coordination of JM&S matters.

(3) Provide information on their JM&S applications, standards, and databases to the Joint Staff M&S focal point, who will provide the information to the DOD M&S Resource Repository (MSRR). USJFCOM will provide its information directly to MSRR.

(4) Develop the JM&S requirements validation process for their organization.

(5) Identify short-term (present to 6 years) and long-term (beyond 6 years) programs to provide required capabilities, goals, and objectives for their organization's establishment and use of JM&S and associated JM&S resource requirements (reference a). These plans will include migration strategies as required by reference h and will be updated annually and forwarded to the Joint Staff M&S focal point for inclusion in the JM&S master planning process (reference b).

c. Ensure that each M&S application and database used by the joint component has a proponent designated to be responsible for its configuration and life-cycle management (reference a). Establish configuration and life-cycle management policies and procedures for JM&S applications and databases for which they are the proponent (references k and l).

d. Establish VV&A policies, procedures, and guidelines for JM&S applications when required by DOD policy.

(1) Routinely provide their VV&A information regarding models and simulations to the DOD MSRR and to other users as requested.

(2) Establish verification and validation procedures for JM&S applications and databases for which they are the proponent, i.e., responsible for life-cycle management of the JM&S or database (references o and r).

(3) Establish procedures to accredit the M&S and associated data for which the joint component is the application sponsor, i.e., uses the results or products from a specific application of the M&S (references o and r).

2. The Joint Staff, under the direction of the Vice Director of the Joint Staff acting as the Chief Information Officer (CIO), will:

a. Establish a management and administrative structure for oversight, coordination, and communication of joint component JM&S issues and activities. The Director, J-8, will provide the overall Joint Staff M&S focal point. The Director, J-7, will coordinate joint simulation policy for joint training and exercises (reference d). The Director, J-6, will oversee C4I JM&S and will act as the primary interface with the Defense Information Systems Agency (DISA), the C4 Intelligence, Surveillance, and Reconnaissance (C4ISR) Decision Support Center, and the Joint C4ISR Battle Center.

b. Represent the interests of, and integrate JM&S requirements of, the joint community at the DOD Executive Council for Models and Simulations (EXCIMS) and at working groups that support the activities of the EXCIMS.

c. Promote and manage JM&S technologies in support of operational needs and the acquisition process; develop common tools, methodologies, and databases; and comply with current national, Federal, DOD and, where practicable, international standards and protocols promoting the interoperability, data exchange, open system architecture, and software reusability of JM&S applications.

d. Develop a master planning process to satisfy JM&S needs of the joint components (Enclosure B). Establish a coherent JM&S strategy and create a supporting investment plan for the program objective memorandum. The Director, J-8, is responsible for the JM&S master planning process. The Joint Staff CIO will approve the JM&S Master Plan and Investment Plan (reference b).

e. Establish and maintain a user-responsive program to manage the planning, resourcing, programming, development, acquisition, operation, maintenance, accountability, and phase-out of Joint Staff JM&S capabilities.

ENCLOSURE B

JOINT MODELING AND SIMULATION MASTER PLANNING PROCESS

1. The joint components' JM&S master planning process will facilitate the development, coordination, maintenance, and issuance of an annual JM&S Master Plan and JM&S Investment Plan and will provide for the identification of JM&S requirements; programming and allocation of resources to provide JM&S capabilities; coordination, technical support, and internal management control and oversight of JM&S activities, investments, and LCM decisions; and high-level architecture (HLA) transition process (reference i).
2. The Joint Staff M&S focal point, in collaboration with J-7, the Joint Warfighting Center (JWFC), and J-6, will direct and coordinate the JM&S master planning process with the joint components in support of the DOD M&S master plan. The JM&S master planning process will facilitate the development of a consolidated and prioritized listing of joint validated requirements that might be fulfilled through M&S.
3. The Joint Staff directorate, combatant command staff, or joint activity having functional responsibility will identify requirements for JM&S. As a joint force command of USJFCOM, JWFC will provide expertise, advisory support, and strategic planning support within the joint training community on model and simulation issues through J-7 to the Joint Staff M&S focal point. DISA, the C4ISR Decision Support Center, and the Joint C4ISR Battle Center will collect, coordinate, and submit requirements, goals, objectives, and programs for C4I JM&S capabilities through J-6 to the Joint Staff M&S focal point.
4. The joint components will program sufficient funds in their program objective memorandums and provide resources to carry out their functional M&S responsibilities, including supporting the development and operation of required JM&S. Additionally, the joint components will provide input to J-8 initiated data calls (generally conducted annually) to maintain currency of the Joint M&S Inventory, which includes the status of HLA transition of joint-owned simulations.

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ENCLOSURE C

REFERENCES

- a. DOD Directive 5000.59, 4 January 1994, "DOD Modeling and Simulation (M&S) Management"
- b. DOD Directive 5000.59-P, October 1995, "DOD Modeling and Simulation Master Plan (MSMP)"
- c. JSM 7200.01 Series, "Joint Staff Resource Management"
- d. CJCSI 3500.01 Series, "Joint Training Policy for the Armed Forces of the United States"
- e. JSM 6212.01 Series, "Interoperability and Supportability of National Security Systems, and Information Technology Systems"
- f. DOD Directive 4630.5, 11 January 2002, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)"
- g. DOD Instruction 4630.8, 2 May 2002, "Procedures for Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)"
- h. Deputy Secretary of Defense memorandum, 13 October 1993, "Accelerated Implementation of Migration Systems, Data Standards, and Process Improvement"
- i. Under Secretary of Defense memorandum, 3 November 2000, "High Level Architecture (HLA) for Simulation Memorandum of Agreement (MOA)"
- j. Under Secretary of Defense memorandum, 30 November 1998, "DOD Joint Technical Architecture (JTA) Version 2.0"
- k. DOD Directive 5000.1, 12 May 2003, "The Defense Acquisition System"
- l. DOD Instruction 5000.2, 12 May 2003, "Operation of the Defense Acquisition System"
- m. JSM 8000.01 Series, "Joint Staff Chief Information Officer (CIO)"
- n. Military Standard 973, 17 April 1992, "Configuration Management"

- o. JSM 8104.01 Series, "Verification, Validation, and Accreditation of Joint Models and Simulations"
- p. DOD Directive 8000.1, 27 February 2002, "Management of DOD Information Resources and Technology"
- q. DOD Directive 8320.1, 26 September 1991, "DOD Data Administration"
- r. DOD Instruction 5000.61, 13 May 2003, "DOD Modeling and Simulation (M&S) Verification, Validation, and Accreditation (VV&A)"

## GLOSSARY

### Part I—ABBREVIATIONS AND ACRONYMS

AIS	automated information system
CIO	Chief Information Officer
C4I	command, control, communications, computer systems, and intelligence
C4ISR	C4 Intelligence, Surveillance, and Reconnaissance
DISA	Defense Information Systems Agency
EXCIMS	Executive Council for Modeling and Simulations
GCCS	Global Command and Control System
GCSS	Global Combat Support Systems
JM&S	joint modeling and simulation
JWFC	Joint Warfighting Center
LCM	life-cycle management
M&S	modeling and simulation
MSRR	M&S Resource Repository
VV&A	verification, validation, and accreditation

## Part II—TERMS AND DEFINITIONS

- accreditation** - The official certification that a model, simulation, or federation of models and simulations and its associated data are acceptable for use for a specific purpose.
- combatant command** - One of the unified or specified combatant commands established by the President. Combatant commands have either regional or functional responsibilities.
- configuration management** - The application of technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a model or simulation, control changes, and record and report change processing and implementation status.
- Executive Council for Modeling and Simulations (EXCIMS)** - An organization established by the Under Secretary of Defense (Acquisition and Technology) (USD(A&T)) and responsible for providing advice and assistance on Department Of Defense Modeling & Simulation issues. Membership is determined by the USD(A&T) and is at the Senior Executive Service, flag, and general officer level.
- information management** - The creation, use, sharing, and disposition of data or information as corporate resources critical to the effective and efficient operation of functional activities consistent with information management guidance issued by the Office of the Secretary of Defense. It includes the structuring of functional management improvement processes by the OSD Principal Staff Assistants to produce and control the use of data and information in functional activities, information resources management, and supporting information technology and information services.
- JM&S application sponsor** - The joint component that utilizes the results or products from a specific application of a model or simulation.
- JM&S proponent** - The joint component responsible for Life Cycle Management of a JM&S or database.
- joint community** - The joint components, Military Services, and Defense agencies.
- joint components** - The Joint Staff, joint activities reporting to the Chairman of the Joint Chiefs of Staff, and the combatant commands. For clarity, this also includes US Element, North American Aerospace Defense Command, and US Forces Korea.

**joint modeling and simulation (JM&S)** - Abstract representation of joint and Service forces, capabilities, equipment, materiel, and services used in the joint arena or by two, or more, Military Services (DODD 5000.59). For purposes of this instruction, JM&S means abstract representation of joint and Service forces, capabilities, equipment, materiel, and services managed, sponsored, or resourced by the joint components.

**Joint Modeling and Simulation Investment Plan** - A plan, published under the authority of the Chairman of the Joint Chiefs of Staff and with the coordination of the joint components, that establishes short-term (present to 6 years) and long term (beyond 6 years) programs and funding for joint modeling and simulation (JM&S) to achieve the specified goals and objectives outlined in the JM&S Master Plan.

**Joint Modeling and Simulation Master Plan** - A plan, published under the authority of the Chairman of the Joint Chiefs of Staff, and with the coordination of the joint components, that establishes short-term (present to 6 years) and long-term (beyond 6 years) goals and objectives for the application of joint modeling and simulation (JM&S) within the joint components. It shall also include an assessment of current JM&S capabilities, a status report on JM&S efforts under development, and a road map that delineates the management, investment, and technical strategies required to achieve joint components' M&S objectives.

**life-cycle management of automated information systems** - A management process, applied throughout the life of an automated information system (AIS), that bases all programmatic decisions on the anticipated mission-related and economic benefits derived over the life of the AIS.

**Military Services** - For the purpose of this instruction, the Military Services are the US Army, US Navy, US Air Force, and US Marine Corps.

**model** - A physical, mathematical, or otherwise logical representation of a system, entity, phenomenon, or process.

**modeling and simulation interoperability** - The ability of a model or simulation to provide services to and accept services from other models and simulations, and to use the services so exchanged to enable them to operate effectively together.

**open system** - A system in which the components and their composition are specified in a non-proprietary environment, enabling competing organizations to use these standard components to build competitive systems. There are three perspectives on open systems: portability -- the degree to which a system component can be used in various environments, interoperability -- the ability of individual components to

exchange information, and integration -- the consistency of the various human-machine interfaces between an individual and all hardware and software in the system.

simulation - A method for implementing a model over time. Also a technique for testing, analysis, or training in which real-world systems are used, or real-world and conceptual systems are reproduced by a model.

synthetic environments - Internetworked simulations that represent activities at a high level of realism from simulations of theaters of war to factories and manufacturing processes. These environments may be created within a single computer or a vast distributed network connected by local and wide-area networks and augmented by super-realistic special effects and accurate behavioral models. They allow visualization of and immersion into the environment being simulated.

validation - The process of determining the degree to which a model and its associated data are accurate representations of the real world from the perspective of the intended uses of the model or simulation.

verification - The process of determining that a model implementation and its associated data accurately represent the developer's conceptual description and specifications.