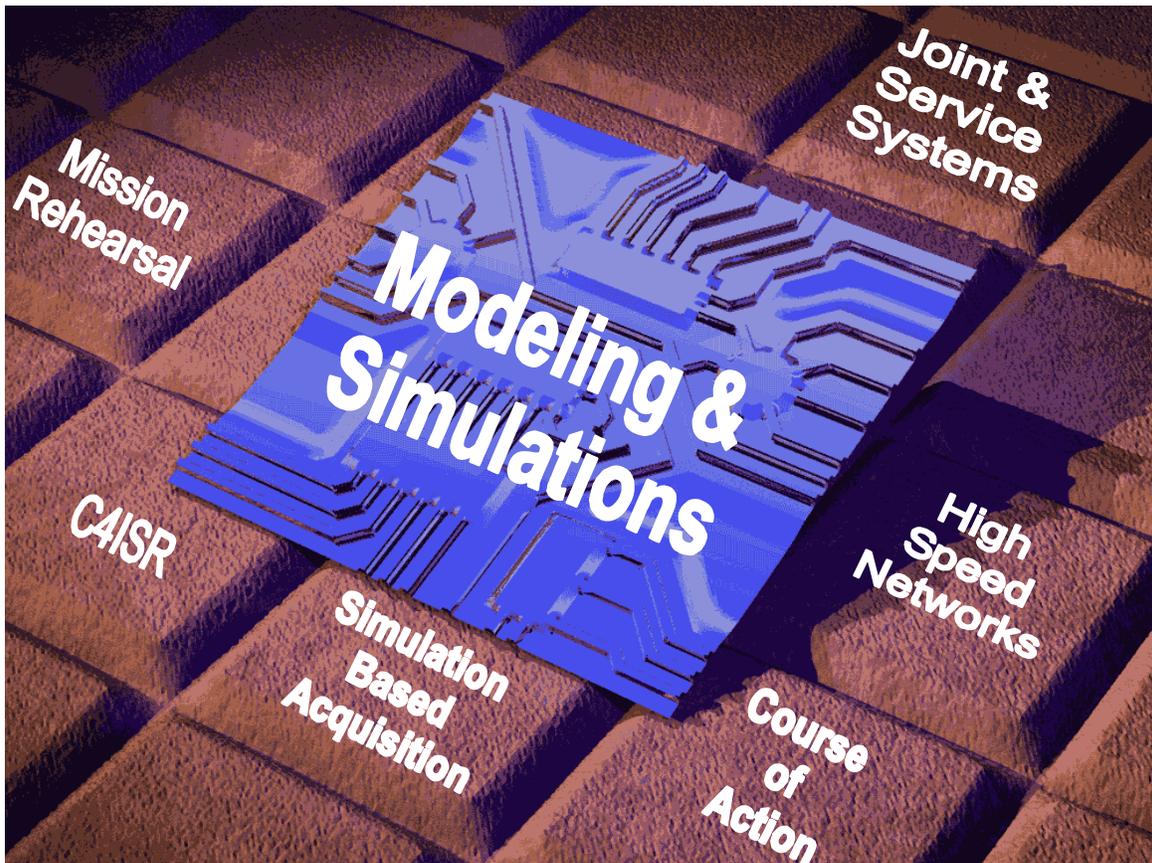




# US Special Operations Modeling and Simulation Master Plan



FEBRUARY 2000

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The US Special Operations Modeling and Simulation (M&S) Master Plan provides the basis for future decisions and direction of USSOCOM M&S. It is also consistent with the DOD M&S vision, JV 2010, SOF Vision 2020, *The Way Ahead*, and MPARE. It provides the basis for future decisions and direction of USSOCOM M&S.

SOF M&S will substantially improve capabilities and decision-making in the functional areas of analysis, training and acquisition. Advanced M&S capabilities will provide realistic representation of SOF missions enabling USSOCOM to be the most capable and relevant special operations forces in existence. All levels of SOF will be trained for certainty and educated for uncertainty to achieve

unequivocal success.

Assessment supported by M&S will provide analysts and decision-makers with more robust estimates of force structure requirements, sizing, costs, effectiveness and alternatives assuring the best allocation of defense resources. Operationally, M&S will be an integral part of a globally connected mission planning system assisting warfighters in COA analysis at the strategic, operational and tactical levels. Mission successes will be enhanced with M&S tools to help determine optimum force structure, weapon / sensor placement, tactics, etc.

As an important element of the MPARE integration process, M&S will initially simulate and later, integrate programmatically C4ISR, allowing SOF operators to conduct training at home bases or en-route (surface or airborne). Interactive individual, team, flight, detachment, group and force training will be supported to enable sharpening of individual skills, tactical proficiency, mission planning and rehearsal of collaborative SOF operations through the use of synthetic forces and threats without the need to transport trainees or exercise participants to the same operating areas.

M&S is a powerful tool supporting research (including studies and analyses) and technology development and assessment. The models and simulations used to develop new technology may also find productive use in other application areas, e.g., Simulation Based Acquisition (SBA). Using simulations to support systems acquisition will reduce the time, resources and risks of the acquisition process and increase the effectiveness of the systems being acquired.

The USSOCOM M&S focal point is the Joint Special Operations Simulation Office (JSOSO). The JSOSO is the central point of contact for coordination of SOF M&S matters and responsible for coordinating requirements within USSOCOM for the selection, integration and SOF specific development of models and simulations. This document is my vision for leveraging the power of simulation for SOF.

A handwritten signature in black ink that reads "Peter J. Schoomaker".

PETER J. SCHOOMAKER  
General, U.S. Army  
Commander in Chief

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## Foreword

The Department of Defense sponsored Modeling & Simulation Master Plan (MSMP) effort began with the publication of DOD 5000.59P, October 1995. Each service published a MSMP that same year. The Army and Navy MSMP were revised and updated in 1997. Although each plan differs in the approach taken to support the requirements of the DOD 5000.59P, the Services have endorsed the:

- Requirement to manage the Model & Simulation (M&S) programs proactively
- Integration of High Level Architecture into all simulation development programs (including some legacy systems)
- Centralization of decisions for M&S programs.

None of the Service M&S plans identifies USSOCOM, the Special Operations Command components or refers to SOF requirements. However, Joint requirements are cited as a goal.



The Commander in Chief, Special Operations Command (CINCSOC) provides the USSOCOM's M&S vision, organization, strategy and general guidance for the development and management of the M&S resources. The vision focuses the USSOCOM M&S strategy into the functional areas of Training, Analysis and Acquisition. It is not intended to describe, define or enumerate the current baseline of modeling and simulation capabilities but rather provide the End State M&S programs should strive to achieve. Funding specifics and implementation schedules are addressed in USSOCOM's-M&S investment strategy. Verification, Validation and Accreditation or Certification (V V&A / C) policy is provided by DOD directives and supplemented by the CINCSOC's designated M&S Manager. This plan implements policy established in DOD Directive 5000.59 and supports objectives and tasks identified in the DOD Modeling and Simulation Master Plan (DOD 5000.59P).

## Changes

To help refine publication, submit change recommendations to the USSOCOM, ATTN: SORR-SCS (JSOSO), MacDill Air Force Base, Florida 33621-5323.

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## Executive Summary

This document is an official US Special Operations Command (USSOCOM) publication. It is provided for informational purposes within the Department of Defense (DOD). It does not authorize procurement, nor does it legally or contractually bind the government for purchase of any goods or services. USSOCOM's vision is consistent with DOD, the Departments of the Army, Air Force, Navy, and the US Marine Corps Modeling and Simulation (M&S) visions. The Vision will be used as a guide for Special Operations Forces (SOF) commands and components to develop supporting M&S: visions, requirements, plans, and programmatic decisions.

The USSOCOM M&S Master Plan (MSMP) supports fulfillment of DOD Directive 5000.59 (DOD M&S Management) and Joint Staff Instruction. It promulgates requirements for the Service components to provide an M&S management system for oversight of their activities, for internal coordination and communication of M&S issues and management of investments. The MSMP provides a template for management, oversight, coordination, plus an overarching 'vision' to include goals & objectives for the SOF user community.

In today's era of constrained resources and rapid technological change, M&S promises a greater economy across the Defense community. Although SOF warfare centers have led in the development and application of specialized SOF M&S, the next step is to coordinate a Joint SOF M&S effort. Through a Joint effort, SOF will increase M&S funding efficiency.

The purpose of the USSOCOM MSMP is to set forth USSOCOM vision, organization, strategy, and guidance for the use and development of M&S resources. This plan promotes coordination and integration of M&S efforts within USSOCOM and SOF Components across the M&S Functional Areas.



USSOCOM's vision for the use of M&S is to support better decisions, enhance warfighting skills, and develop superior systems to maintain the world's most powerful SOF. Central to USSOCOM's vision is the evolutionary development of the Synthetic Battlespace that will provide users representations of operational and physical environments, standardized models and data, and scenarios via communications networks. The M&S effort is defined by the functional areas of analysis, training, and acquisition. These M&S functional areas drive efforts to yield the greatest payoff, support USSOCOM's mission and align USSOCOM and the SOF Component M&S goals with DOD M&S efforts.

**Analysis.** The capability for rapid turnaround analysis will provide decision-makers with more robust estimates of Force structure requirements, sizing, costs, effectiveness, and alternatives assuring the best allocation of defense resources.

**Training.** In consonance with CINCSOC's guidance toward 'full-force dominance' and to realize USSOCOM's M&S vision, common systems will be developed to support training, mission rehearsal, and planning - land, air and sea. There are currently two major thrusts of M&S development in support of USSOCOM training.

First, the SOF component to JSIMS will provide training at the Battle Group/Joint Task Force level. The second thrust is through the development and use of higher fidelity models, like the Navy’s Battle Force Tactical Training System (BFTT) and the Joint Tactical Combat Training System (JTCTS) for unit level training. Future USSOCOM training tools incorporating M&S will be compatible, where appropriate, with DOD’s High Level Architecture (HLA) to ensure interoperability with M&S in both service and joint arenas.

**Acquisition.** Distributed Simulation Based Designing (SBD)/ Simulation Based Acquisition (SBA) allows Program Managers (PM) to reduce cost, cycle time, and risk within the acquisition process, and to increase the quality of the systems being acquired. Goal 4 (Chapter 3) identifies PM’s role in the application of SBA. Employing SBA along with Integrated Product Process Development (IPPD) techniques will enable end-to-end (or life cycle) verification of requirements matched to: design, manufacturing, supportability, and cost/performance trades.

**Joint Synthetic Battlespace.** The Joint Synthetic Battlespace is USSOCOM's implementation of DOD’s plan to provide readily available, operationally valid environments for use by DOD components. The USSOCOM MSMP describes the Joint Synthetic Battlespace as the:

- Collection of SOF M&S and associated databases
- Networks, including the supporting connectivity, interfaces, associated hardware, and underlying software and protocols
- Real- world SOF operators, ranges, platforms, systems, and hardware
- Desired representation of the Warfighter roles on today’s battlefield. Figure E-1 depicts the Joint Synthetic Battlespace.

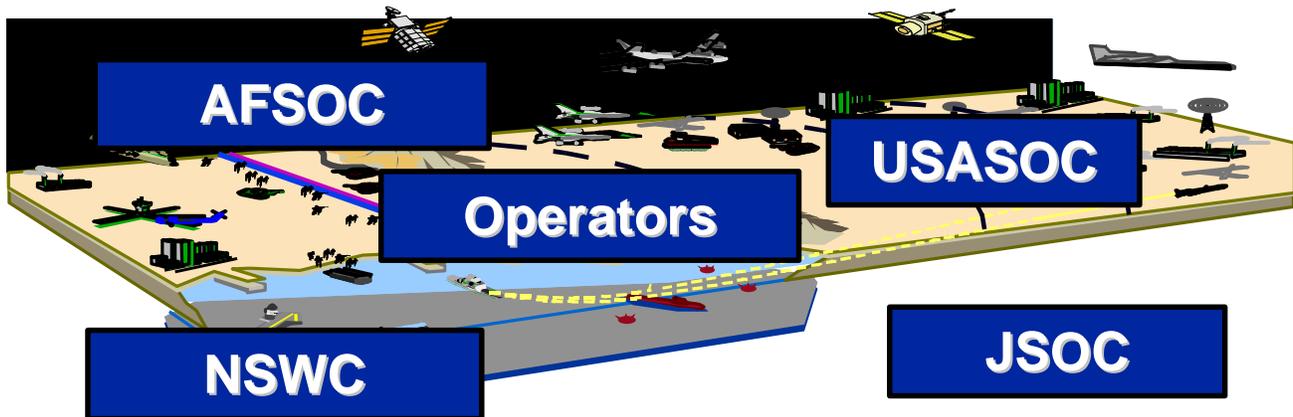


Figure E-1 Joint Synthetic Battlespace

This plan sets forth a “Vision of a future SOF” using M&S in a variety of ways to meet its many requirements. USSOCOM M&S end states have been defined and are specific goals to measure progress toward achieving USSOCOM's M&S vision and to estimate USSOCOM's return on investments. M&S will have achieved its full realization when Trainers, Analysts and Acquisition Managers routinely:

- Exercise any size Special Operations force as part of a combined or joint force via simulation
- Employ simulation as a part of mission planning in a distributed environment
- Conduct mission rehearsal for land, sea and / or air forces at all levels
- Contribute to the validation of joint SOF requirements, doctrine, logistics, and tactics using M&S as a primary tool
- Participate in the fundamental improvement of the acquisition process by simulating and testing before USSOCOM buys
- Utilize M&S with Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) systems
- Support major weapon systems in USSOCOM with a simulator that can be networked into a common synthetic environment by creating simulations that expose the trainee to an experience which closely replicates the sensations of actual warfighting.
- Use M&S as a primary decision support tool.

The USSOCOM M&S Master Plan represents a living document. As changes will undoubtedly occur, revisions are expected and will be incorporated annually.

**USSOCOM Strategic Planning Guidance (SPG) FY 2002-2007.** Alternatives to costly deployments of troops for training, time consuming analysis of concepts and equipment and subjective methods of force development will become an absolute requirement in the near future. USSOCOM must continue to take an active role in ensuring that SOF capabilities and requirements are adequately reflected in external models and simulations. Simultaneously, USSOCOM must take the lead in utilizing leading-edge developments for inclusion in or as solutions to SOF unique requirements. [Reference y]



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## Chapter 1 Introduction

### VISION

**USSOCOM Modeling and Simulation (M&S) will provide readily available, cost effective and operationally valid, flexible means to enhance special operations forces (SOF) operations in the areas of analysis, training, and acquisition. M&S will support interactive, distributed and collaborative tools at home station, en-route or deployed. M&S will be supported by a SOF-wide cooperative effort that promotes interoperability, reuse, & affordability.**

*Joint Special Operations Simulation Office, USSOCOM*

#### 1. 1 Purpose

The purpose of the US Special Operations Command (USSOCOM) Modeling and Simulation Master Plan (MSMP) is to set forth USSOCOM's M&S vision, strategy, organization and assign responsibilities. The plan provides guidance for development and use of Joint SOF M&S resources. The plan is anchored in the Department of Defense (DOD) M&S vision, Joint Vision (JV) 2010, SOF Vision 2020, and *The Way Ahead*. It also supports Commander in Chief Special Operations Command's (CINCSOC) Mission Planning, Analysis, Rehearsal, and Execution (MPARE) concept. Its purpose is to "provide the integration baseline that will migrate existing and emerging M&S with Command, Control, Communication, Computer and Intelligence (C4I) capabilities into a robust and seamless architecture.<sup>1</sup>"

As we plan, JV 2010 counsels:

*"We will have to make hard choices to achieve the tradeoffs that will bring the best balance, most capability, and greatest interoperability for the least cost."*

In SOF Vision 2020, CINCSOC guidance for the future of SOF included:

*"Future training programs must link to operational plans, integrate advanced technologies, capture the savings of simulations, and respond to evolving missions. Linking SOF training to operational plans, to the maximum extent possible, is consistent with our regional and cultural orientation, training, as we will fight, and reducing personnel tempo. SOF will exploit advanced individual computer-aided instruction, realistic interactive distributed simulations, and virtual reality environments to prepare units. The learning process must be accelerated to shorten the*

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<sup>1</sup> CINCSOC MEMO, *USSOCOM Flagship Program-Mission Planning, Analysis, Rehearsal, and Execution (MPARE)*, 28 Jun 99. [Reference w]

*reserve SOF train-up time and improve retention of key knowledge. Technology will allow SOF to provide effective training and education directly to our personnel at work or while deployed. Easily modified, stressful simulations will prepare our people for the full spectrum of SOF missions. Virtual reality will assist in the training process by offering an effective way to train in a high-fidelity, safe environment.”*

## 1.2 Discussion of the Vision

The M&S vision supports the DOD M&S vision, JV 2010, SOF Vision 2020, *The Way Ahead*, and MPARE. It provides the basis for future decisions and direction of USSOCOM Modeling and Simulation.

SOF M&S will substantially improve capabilities and decision-making in the functional areas of analysis, training and acquisition. Advanced M&S capabilities will provide realistic representation of activities in traditional warfare operations, crisis management and peace support, considering the necessary interactions with civilian organizations and authorities. SOF will be able to plan its operations and its investments more wisely given advanced M&S capabilities.

Assessment supported by M&S will provide analysts and decision-makers with more robust estimates of force structure requirements, sizing, costs, effectiveness and alternatives assuring the best allocation of defense resources. USSOCOM will actively participate in the DOD, Services and joint arenas to provide higher fidelity models of systems. These models will be linked with the Joint Synthetic Battlespace along with comparable representations of other Services systems and common environmental and threat databases [Reference b, c, d]. Full-force deployment options, operational plans and strategies, Future Concepts, and alternative future force structures via the Joint Mission Analysis (JMA) will be conducted [Reference p]. USSOCOM / SOF debates and decisions affecting acquisition, mission roles, and the Program Objective Memorandum (POM) will be strengthened by quantitative analysis assisted by simulation.

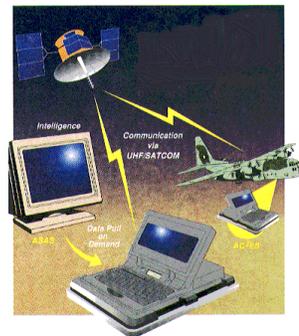
Operationally, M&S will be an integral part of a globally connected mission planning system assisting warfighters in Course of Action (COA) analysis at the strategic, operational and tactical levels. Mission successes will be enhanced with M&S tools to help determine optimum force structure, weapon / sensor placement, tactics, etc. [Reference w]



As an important element of the MPARE integration process, M&S will initially simulate and later, integrate programmatically Command, Control, Communication, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) allowing SOF operators to conduct training at home bases or en-route (surface or airborne). Interactive individual, team, flight, detachment, group and force training will be supported to enable sharpening of individual skills, tactical proficiency, mission planning and rehearsal of collaborative SOF operations through the use of synthetic forces and threats without the need to transport trainees or exercise participants to the same operating areas. Key

oceanographic, climatic, and terrain conditions, as well as unit specific systems / weapons will be dynamically simulated in order to credibly replicate mission conditions. Interoperation of existing and future SOF simulations and C4ISR systems in a joint environment will become normal operations.

The merging of M&S with C4ISR will allow SOF operators to conduct mission planning, preview and / or rehearsal in a collaborative-distributed environment in near-real-time with other conventional, SOF and joint forces. Training will be conducted on the same operational systems used by the SOF operator to the maximum extent possible. The simulated mission spaces will include reusable components interoperating through a common, open-standard technical architecture to allow maximum capability, flexibility and cost-effectiveness. Equipment, consoles, platforms, procedures, and alternative courses of action tools used in everyday operations will be integrated into the synthetic battlespace and merged with existing C4ISR systems and networks allowing systems and equipment to be appropriately stimulated by threats, signals and emissions.



M&S is a powerful tool supporting research (including studies and analyses) and technology development and assessment. The models and simulations used to develop new technology may also find productive use in other application areas, e.g., Simulation Based Acquisition (SBA). Using simulations to support systems acquisition will reduce the time, resources and risks of the acquisition process and increase the effectiveness of the systems being acquired.

The USSOCOM M&S focal point will be the Joint Special Operations Simulation Office (JSOSO)<sup>2</sup> [Reference w and x]. The JSOSO is the central point of contact for coordination of M&S matters and responsible for coordinating requirements for the selection, integration and SOF specific development of models and simulations. The JSOSO will support this process by way of users participating in meetings and other forums to validate requirements and assess M&S issues, activities and studies. The JSOSO goal is to define the M&S needs in sufficient detail to drive the Strategic Planning Process (SPP) and associated Major Force Program 11 (MFP-11) funding allocations in accelerated fashion. The JSOSO goal is not to replace or usurp the functional responsibilities of other staff elements / subordinate activities, but to serve as the M&S focal point for SOF issues and actions. The JSOSO will support the USSOCOM Centers of Excellence, Component Commands and individual theater SOCs with timely information on M&S resources by leveraging government and industry simulation resources. SOF users will have access to a broad



<sup>2</sup> The Joint Special Operations Simulation Office is found in the Simulation and Information Technology Branch (SCS) of the Center for Force Structure, Resources, Requirements and Strategic Assessment (SORR), USSOCOM.

range of M&S professional standards and procedures, software applications and databases that facilitate SOF operations on a global scale.

### 1.3 Strategy

The implementation of the M&S vision relies on the following guiding principles. These guiding DOD principles [Reference d] are fundamental, enduring tenets that shape M&S development strategies and implementation decisions to realize the vision. In coordination with other HQ SOCOM efforts, the JSOSO M&S efforts must:

- Leverage existing and future, joint and service sponsored M&S programs through close direct participation in systems definition to incorporate SOF requirements, functional features and realistic SOF representations whenever possible.
- Ensure all SOF sponsored M&S systems are standard, interoperable and reusable to the maximum extent. M&S systems will rely on open, common and enduring standards to allow the flexible composition of diverse simulated mission spaces satisfying the broad range of existing and emerging needs.
- Migrate SOF models, simulations and simulators to a collaborative-distributed environment accessible from anywhere in the world by merging M&S with C4ISR systems. This strategy is intended to fully support the Command's MPARE concept.
- Focusing on SOF user-tool needs in an effective manner, improving quality and reducing development time and cost. SOF operators must interact with simulations in the same manner as their real-world systems.
- Integrate M&S technologies through all aspects of the acquisition process.
- Apply systems development using M&S tools broadly, across all SOF mission areas to improve all SOF capabilities.
- Exploit emerging M&S technologies and best practices.
- Pursue USSOCOM unique M&S initiatives only as necessary to meet SOF specific requirements.
- Ensure that each SOF M&S system receives accreditation through a formal Verification, Validation and Accreditation (V V&A) program.
- Accommodate SOF unique security needs.
- Encourage cooperation throughout SOF without infringing on Component programs.
- Encourage cooperation among SOF, DOD agencies, academia and industry.



## 1.4 Scope

The scope of this plan covers legacy, bridging and future M&S systems. It addresses SOF needs in the functional areas of analysis, training, and acquisition. This plan establishes a prescription for the development of models and simulations to foster interoperability and reuse of construct actions necessary to ensure cost-effective development and employment of advanced M&S-related technologies. The plan is a “living” document revised to accommodate such changes as requirements, technologies, development strategies, employment concepts, co-operative opportunities, etc.

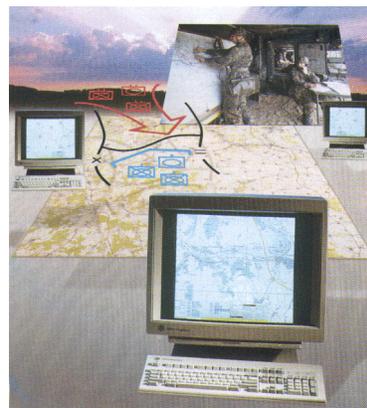
## 1.5 Terms

Throughout this document, the term “SOF” is used in reference to USSOCOM with its components and JSOC, SOF units, TSOCs and the individual SOF warrior. The term “USSOCOM” or “HQ USSOCOM” is used in reference to the USSOCOM staff. For the purpose of this document, the term “SOF Component” is used in reference to the Joint Special Operations Command (JSOC), the Navy Special Warfare Command (NSWC), the US Army Special Operations Command (USASOC), and the Air Force Special Operations Command (AFSOC). The term “Operator” is used in reference to individual SOF personnel.

As a matter of clarity, scope and context relative to the USSOCOM MSMP, a few terms should be defined, as follows. See Appendix D for further definitions. The reader is invited to review Appendix A for additional acronyms related to SOF and the Defense / Industry M&S community.

### Mission Planning Systems. (JSOSO, USSOCOM)

Typically, a computer-aided planner displaying 2-dimensional views; plan view displays (PVD) – e.g., the USAF Falcon View and the Portable Flight Planning System (PFPS) which is included in SOF Planning and Rehearsal System (SOFPARS). While today’s mission planning systems do not contain simulations, future systems will have (at minimum) mission previews [imbedded] and tools for COA analysis.



### Mission Preview Systems. (JSOSO, USSOCOM)

Typically, a computer-driven simulation that is displayed in 3-dimensional views e.g., TOPSCENE 400-workstation. Mission preview provides an added dimension by allowing operators to preview plans in a virtual environment.

Mission Rehearsal Systems. (JSOSO, USSOCOM) A computer driven, virtual simulation in as near to an operational environment as possible. The rehearsal is conducted in a "mock-up" with 3-dimensional views with computer generated forces,

and synthetic communications, as typified by an aviation simulator with the resolution / detail of a TOPSCENE 4000 Image Generator.

Analysis (Re: Multiple sources)

- Scientific - The structured decomposition of complexity to its smallest part and examined. Facts are established, allowing findings and conclusions that will lead to recommendation(s).
- Military - Usually considered a subset of assessment (i.e., judgement based on facts and / or conjecture). The analysis process is a disciplined approach to problem solving and may take on a label depending on its application e.g., AoA, COA, Quadrennial Defense Review (QDR), rehearsals (i.e., if in a learning mode), etc.

Training [Reference j]

- Scientific – Instruction of personnel or organizations to enhance their capacity to perform specific functions and tasks.
- Military – In this context, the computer-aided techniques that prepare Warfighters to perform their Joint Mission Essential Task (JMET). Most importantly, the scope of training may be at the individual, collective, combined or joint-level. Therefore, the M&S approach may differ by requirement, e.g.;
  - COA [planning]
  - Operational Rehearsal [preparation]
  - Joint / Service / Multinational Training [tactics, techniques and procedures]
  - After-Action Reviews (at the individual, crew or large unit level).

**1.6 M&S Functional Areas**

Training. M&S enhances the training of individuals and collective groupings (Crews, teams, flights, groups, staffs, and commanders in the conduct of their assigned tasks). Trainees should be exposed to equipment and processes they would normally encounter during real-world situations by creating a realistic environment. A realistic environment where trainees gain knowledge and proficiency concerning procedures, decision-making, information management, concepts, doctrine and the use of equipment and software. The Joint Simulation System (JSIMS) is the constructive training simulation of the future. JSIMS will be the premier SOF simulation that integrates live, constructive and virtual simulation. Mission rehearsal is a form of training for crew or team applications [Reference c, d].

Analysis. Analysis simulations fall into two categories: Operations Support and Assessment. SOF simulations should support routine decision-making in logistical and administrative areas, as well as tactical and strategic support of decision-making from the operational context e.g., COA. Simulations of an analytical nature that are not routinely tied into operational requirements will be used to evaluate force requirements

(i.e., JMA) and capabilities (i.e. Future Concepts and Joint Experimentation) as well as combat developments, e.g., SPP, AoA and QDR. The Joint Warfare System (JWARS) is the constructive analysis simulation of the future and will play the premier role in SOF assessments.

Acquisition. SBA promises to: reduce time, resources and risk associated with acquisition; increase quality, military utility and supportability; reduce operating costs; and provide models for reuse in training and analysis simulations. To execute SBA an Integrated Product and Process Development (IPPD) [Reference f] method will be used during the full acquisition cycle. The Joint Modeling And Simulation System (JMASS) is the constructive acquisition simulation of the future and will play a role in SOF acquisitions [Reference r].

### 1.7 Joint Synthetic Battlespace Description

Joint Synthetic Battlespace is critical to the achievement of USSOCOM M&S vision. Joint Synthetic Battlespace is not a computer program or mega-model, nor is it intended to reside in a single facility. Synthetic battlespace represents an advanced M&S capability capitalizing on current and emerging computer and communications technologies. The battlespace will provide users access to operational and physical environments, standardized models / data, and scenarios via communications networks. This environment will enable analysts, warfighters, and system developers to work within a common battlespace from their workstations, simulators, aircraft, ships or offices. DOD expects the IOC of the Joint Synthetic Battlespace in the near-term, Fiscal Year FY2005. SOF modeling must pay close attention to the characteristics of the synthetic battlespace including standards for models, data and network connectivity and interoperability, model configuration management, model and data repositories, and a robust V V&A process. The SOF Joint Synthetic Battlespace envisioned for the 21st century can be described as:



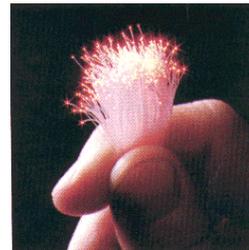
- Collections of models and simulations and associated databases
- Networks, including supporting connectivity, interfaces, associated hardware and underlying software and protocols
- Real-world operators, ranges, platforms, systems, and hardware

Three building blocks necessary for the evolutionary development of the synthetic battlespace are model standards, data standards, and communication standards. Joint Technical Architecture is the essential piece of DOD's overall strategy to achieve this standardization. Emerging SOF M&S products will be in compliance with DOD open standards-based approach which offers significant opportunities for reducing costs, development and fielding time through enhancing software portability, use of

commercial items, hardware independence and ease of systems upgrade. Existing systems will require migration planning.

## 1.8 Joint Technical Architecture (JTA)

Compliance with JTA has been mandated by Under Secretary of Defense (Acquisition and Technology, USD (A&T)) and Assistant Secretary of Defense (Command, Control and Intelligence, ASD (C3I)) [Reference g, h]. The purpose of the JTA is to establish a set of standards, based on DOD consensus, which support operations among all Joint Mission Areas. The objective is to enable Joint force interoperability and battlespace dominance as operational needs dictate, while leveraging technological advancements and DOD modernization demands for resource sharing and transparency in data format / data access. This approach is intended to promote horizontal and vertical interoperability, open standard-based systems and faster cycle times. Realization of this approach is envisioned to promote Special Operations-Peculiar Equipment (SPE) and functional modularity in addition to ease of interchangeability to leverage new and improved technologies as SOF mission and budgets dictate.



USSOCOM has published JTA policy and an implementation plan [Reference u, v] detailing the processes to ensure JTA compliance. The USSOCOM Chief Information Officer (CIO) approved the Joint Technical Architecture - Special Operations Command (JTA - USSOCOM) on 2 Jun 99. This document catalogs USSOCOM specific standards that are more specific than those implemented by JTA.

Of specific interest to the SOF M&S community is that JTA includes requirements for High-Level Architecture (HLA) and Defense Information Infrastructure, Common Operating Environment (DII COE). The JTA is continually under review and provides current standards required for interoperability.

## 1.9 Business Practices

USSOCOM will follow solid business practices in achieving its vision. The following frequently asked questions should be fully understood to embrace the vision.

### 1.9.1 Why use the Modeling and Simulation approach?

In recent years, M&S have received increased visibility within DOD, industry, and academia. This change, largely attributable to the emergence of Advanced Distributed Simulation (ADS) and Simulation Based Design (SBD), has been spurred by the advances in computers, communications, and software technologies. These new M&S tools and technologies, combined with new management and engineering processes, are altering ways we do business and offers opportunities to revolutionize the way Services and USSOCOM build, buy, train and fight. While these opportunities have been made possible by advances in technology, interest in M&S has been motivated by

several factors and influenced by various key organizations. These organizations include Congress, DOD, Joint Staff, and the Services. For example, Section 2367(A) of the National Defense Authorization Act (1996) states, "... Weapon simulation that is validated *by testing*, may be used to augment live-fire testing."

### **1.9.2 What is the expected return of investment?**

A principle factor generating interest in M&S is the sharp decline in fiscal resources necessitating greater efficiency and economy in all areas. In the areas of acquisition and training, where much of USSOCOM's budget is allocated, M&S is one area being closely followed for its potential to improve efficiency and economy over the long term. In order to justify the use of (and investments in) models and simulations, M&S tools must show a higher, credible return on expenditures over current methodologies. USSOCOM's approach will maximize Government-Off-The-Shelf (GOTS), Commercial-Off-The-Shelf (COTS) / Commercial and Non-Developmental Items (CANDI) and reuse of existing systems.

### **1.9.3 How will Acquisition Reform be impacted?**

Within the acquisition community, real incentives to reform and streamline the acquisition process exist. New platform and system costs have grown so expensive that USSOCOM must be sure of their operation, supportability and maintainability as well as have confidence in the designs before production. Early employment of M&S within the integrated product planning process will ensure that the correct platform will be built. Additionally, new platform and system development are so protracted, they are outpaced by technological advances before they can be fielded. M&S offers the potential to accelerate the acquisition process, reduce cycle time and acquisition costs, and enable true concurrent engineering and collaborative requirements definition.

### **1.9.4 Will the M&S technology realized make that much of a difference?**

USSOCOM needs to evolve away from single-purpose, legacy devices to multi-purpose, interoperable systems for training, analysis and acquisition. Training forces and maintaining readiness for an uncertain future is expensive. The costs associated with the transportation of forces, live ordnance expenditures and collateral environmental damage are frequently prohibitive to the conduct of training. Additionally, force reductions brought about by downsizing have impacted training. Large-scale exercises are not as robust as in the past due to the non-availability of support units and dedicated opposition forces. The need to exercise forces in joint and combined operations and for Operations-Other-Than-War (OOTW) has resulted in additional requirements, costs, and complexities for training. The demand for rapid decision support and associated analyses is building. Within the joint community, senior decision-makers are supporting the JSIMS and JWARS to satisfy CINCSOC and Theater Commander in Chief (CINC) training and assessment needs. For the training community, M&S offers the potential to improve the quality and range of training

available by linking live, constructive, and virtual forces together and simulating war and OOTW conditions.

### **1.9.5 Will the desired M&S objective impact the Joint arena?**

For the warfighter, changes in warfare are placing new demands on the ability to plan, train, and conduct operations for war and OOTW. With increased emphasis on joint operations, developing a common tactical picture, achieving battlespace dominance, and exploiting information warfare, warfighters are searching for new ways to meet present and future requirements. M&S are expected to fulfill many of these requirements. As a mental checklist the developer / manager should ask:

- Will the M&S end state be able to satisfy the demands (e.g., mission planning and rehearsal) in real-time or at accelerated play speeds?
- Will the M&S objective system support planning, training and operations in either a stand-alone or distributed mode, merging with future C4ISR networks and integrated with operational tactical systems and platform equipment?
- Will SOF M&S be interoperable and consistent with other conventional force M&S and authoritatively represent behavior of the modeled object or force?

Finally, Congressional, DOD, and joint community interest in M&S has increased as the requirements, expenditures, and return on investment associated with M&S are more closely evaluated. Of concern is that Service, Agency and DOD resource expenditure for M&S is significant, and may be duplicative. Within DOD, and led by the Defense Modeling and Simulation Office (DMSO), a number of initiatives are underway to define a framework for establishing consistency in the development of M&S.

### **1.10 Quality Assurance**

With the increasing role of M&S envisioned for the future, users and decision-makers want greater assurance that the model or simulation accurately represents the activity or process being modeled. Confidence in the results and decisions obtained from using the specific model or simulation must be solid. Additionally, M&S developers are concerned that M&S is used appropriately, (i.e., the model is used by people who understand its strengths and limitations, and the chosen model or simulation is suitable for the intended use). These concerns are well recognized within the community underscoring the need for a formal process for M&S V V&A [Reference e]. V V&A will improve the quality, use, and credibility of M&S. While the USSOCOM V V&A instruction will be published separately, it is clearly stated that USSOCOM will include these requirements in the program planning process. V V&A is an integral part of M&S development.

### 1.11 The USSOCOM M&S Master Plan:

- Applies to all aspects of SOF M&S employed in the respective Service and joint arena
- Applies to all SOF activities and organizations engaged in M&S development and employment
- Is in consonance with and implements instructions of DOD Directive (DODD) 5000.59 and Chairman, Joint Chiefs of Staff Instruction (CJCSI) 8510.01, provisions of DODD 5000.59P and the JTA
- Supports CINCUSOC MPARE concept
- Supports achievement of DOD MSMP activities to provide management policy and guidance, assess requirements, develop technology, build and field M&S capability and share benefits
- Is a statement of USSOCOM Modeling and Simulation future direction
- Describes USSOCOM's Management System (Chapter 2) for overseeing all SOF modeling and simulation activities
- Shall be used by SOF Components for planning guidance in the development of M&S investment and master plans



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## Chapter 2 Approach

### 2.1 Organization

Joint Chiefs of Staff Instructions (CJSCI) [Reference k] direct Unified and Joint Commands to “establish and implement a management structure for [Joint] M&S oversight and internal coordination and communication of related joint and common use M&S issues.” Per this guidance, CINCSOC establishes the USSOCOM JSOSO.

USSOCOM JSOSO role is to:

- Represent SOF M&S requirements and activities in Joint forums
- Provide centralized management of SOF-specific M&S
- Interface with other government agencies, DOD and Joint Staff
- Interface with Service M&S offices in concert with respective SOF Components
- Coordinate SOF M&S efforts across functional areas
- Serve as the M&S representative on Requirement / Program Integrated Product Teams (RIPT / PIPT)
- Coordinate, develop and implement USSOCOM V V&A policy and procedures for M&S
- Coordinate SOF M&S efforts with those of the MPARE Office

The JSOSO is organized within the Force Structure, Requirements, Resources and Strategic Analysis Center (SORR) under direction of the Wargaming, Simulation and Analysis Division (SORR-SC) as shown in Figure 2-1. [Reference q]

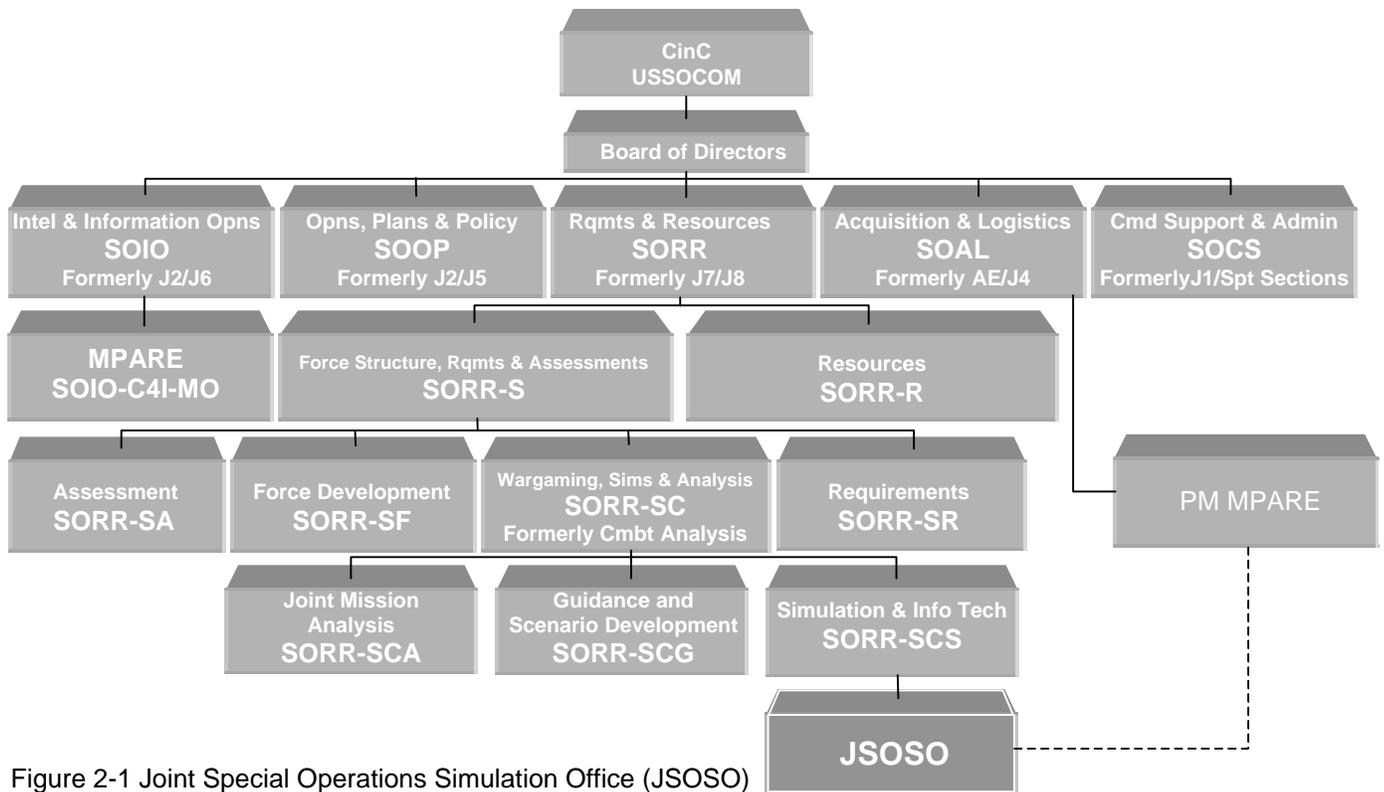


Figure 2-1 Joint Special Operations Simulation Office (JSOSO)

The JSOSO will be organized as depicted in Figure 2-2. The Assistant / Technical Advisor is an Operations Research Analyst who assists the JSOSO Officer in the administration and implementation of the MSMP. The advisor must be knowledgeable of SOF, SOF M&S, legacy and emerging technologies. The three Functional Area Coordinators take a direct interest and role with their receptive staff counterparts. Each Coordinator provides M&S expertise to executive and action offices requiring computer-aided technology for any issue / study; from theater to team; from concept to fielding. The Technical Interoperability Manager (TIM) is a M&S Specialist responsible for the implementation and tracking of cutting edge technologies and standards. The TIM is also responsible for USSOCOM's HLA, SEDRIS and V V&A program. This individual liaisons directly with MPARE office to aid in the integration of M&S and C4I. Liaison office(s) will be manned where the most leveraging can be achieved, subject to funding. A liaison office has been established in Orlando, Florida to leverage and coordinate SOF M&S efforts with AFAMS, STRICOM, NAWC-TSD, University of Central Florida, etc.

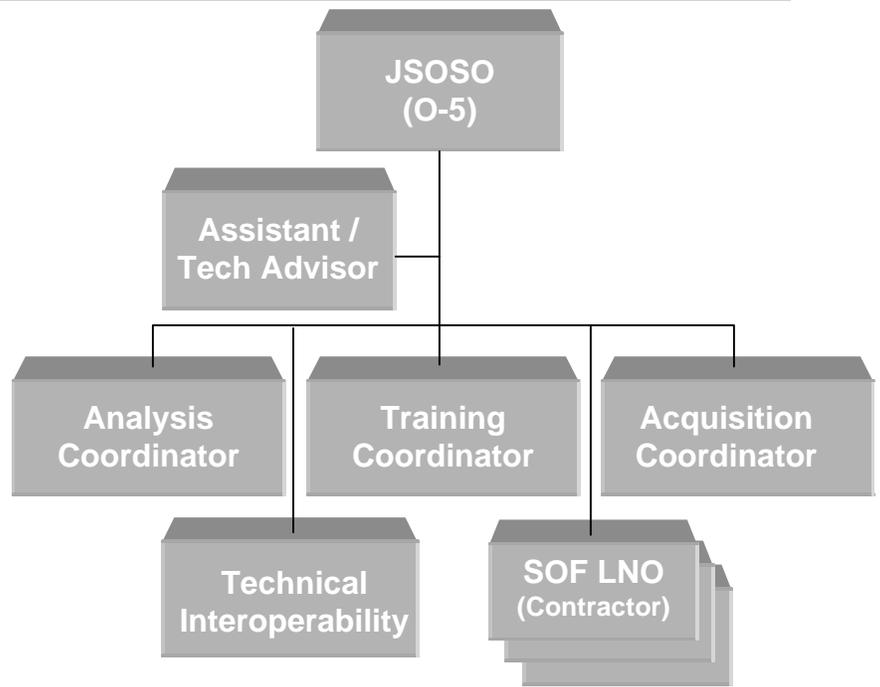


Figure 2-2 JSOSO Organization

The JSOSO will orchestrate M&S support via the matrixed organization shown in figure 2.3. SOAL, SOOP-OT and SORR-SC will oversee the three-M&S function areas with SOIO-IN providing intelligence expertise as required across the functional areas. Subject matter expertise will be leveraged from Joint, DOD and Service counterparts and / or SOF Components identified in Figures 2-4 and 2-5 below. The JSOSO will coordinate as necessary with the USSOCOM centers providing expertise and coordination. Asterisk items under SOAL are in-progress.

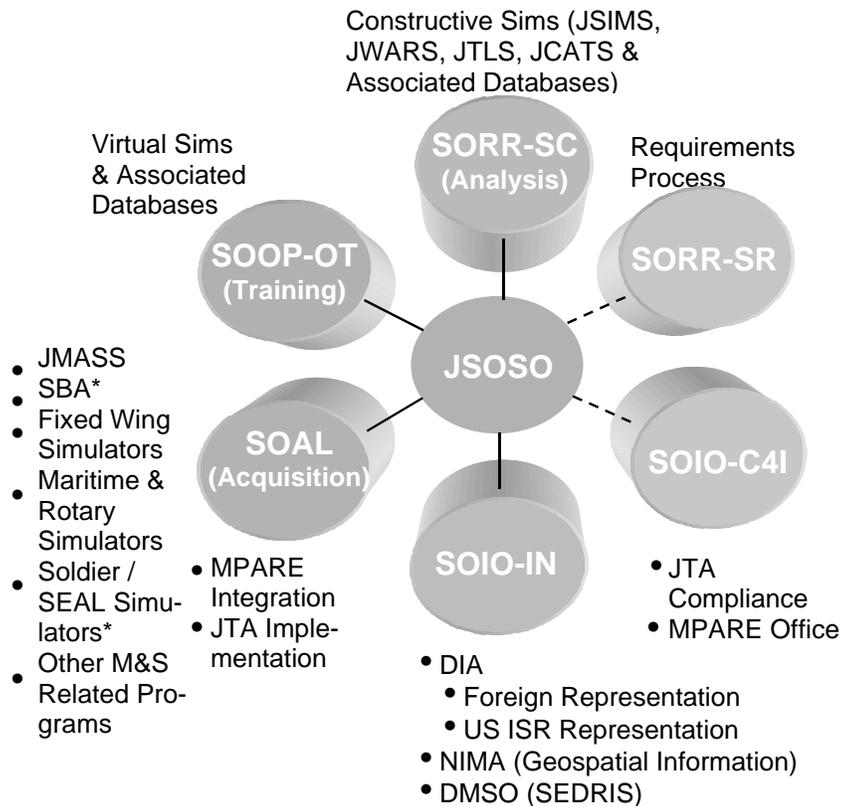


Figure 2-3 JSOSO HQ USSOCOM Matrix Organization

The JSOSO will accomplish necessary M&S coordination outside Headquarters, USSOCOM via the organization depicted on the right (Figure 2-4). The agencies shown can be thought of as the M&S community directly affecting SOF simulations and simulators and their associated databases. Direct coordination is strongly encouraged and equally encouraged is the sharing of new capabilities and technologies among the group. A desirable state would be for all agencies shown to actively participate and communicate under the auspices of the DMSO.

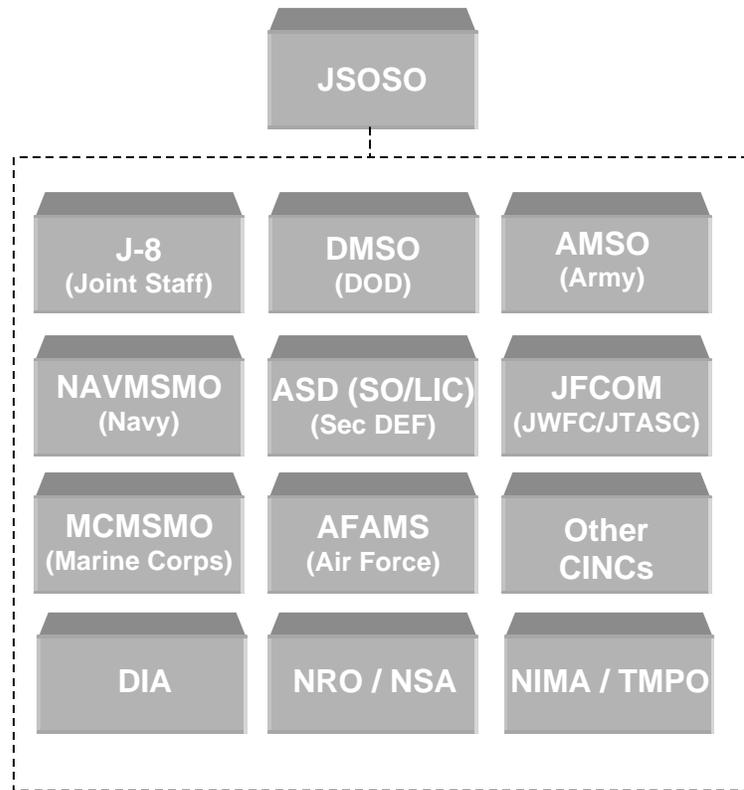


Figure 2-4 JSOSO Coordination outside USSOCOM

Figure 2-5 portrays the matrix organization within the SOF components for requirement definition and prioritization. Direct coordination is authorized between the JSOSO and the SOF Components. JSOSO will coordinate activities with Air Force elements through points-of-contact (POC) within AFSOC. JSOSO is authorized direct coordination with 160<sup>th</sup> Special Operations Aviation Regiment (SOAR) on aviation related issues. JSOSO envisions an entrepreneurial spirit throughout the components for the sake of advancing SOF M&S capability. SOF Component Commands will establish a single POC and a SOF Component M&S Management Office (CMSMO). Each CMSMO will collect M&S requirements, develop and maintain a MSMP and associated action plans that satisfy those validated requirements identified by their respective chain of command.

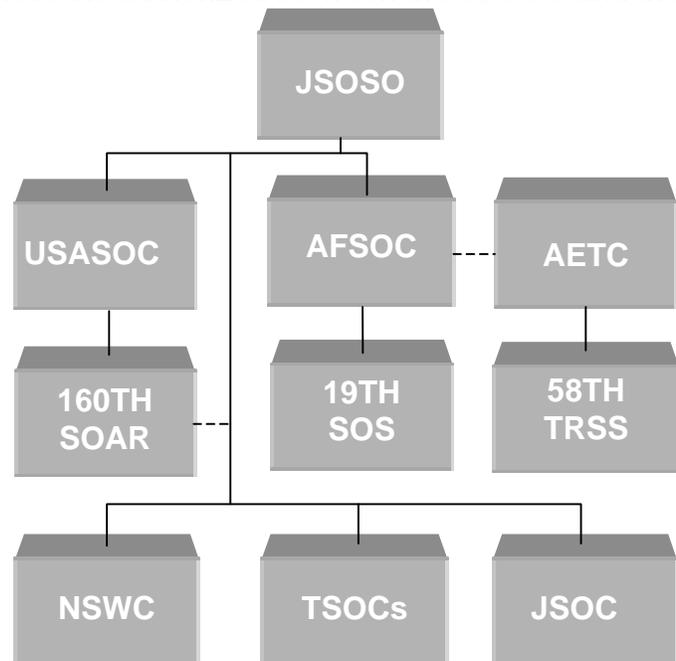


Figure 2-5 JSOSO Matrix SOF Component Organization

### 2.1.1 Key Players

Joint Special Operations Simulation Office (JSOSO). JSOSO is responsible for:

- SOF modeling and simulation systems requirements
- Policy, strategy, plans, and directives
- Building consensus for investment strategies
- Maintaining a comprehensive repository of M&S information

Office symbol for JSOSO is SORR-SCS.

M&S Integrated Product Team (MSIPT). The MSIPT is established per DOD [Reference a and b] guidance. The new DOD 5000 series directives recognize IPT / Working Groups as the core of IPPD implementation. IPT and associated working groups shall function in a spirit of teamwork with participants empowered and authorized to make commitments for the SOF community and working together to build successful M&S tools to the maximum extent possible.

The MSIPT will be chaired by the JSOSO, with representatives from each SOF Component, Theater Special Operations Commands (TSOC) and USSOCOM staff centers (Note: TSOCs will usually be represented by SOC Joint Forces - SOCJF). USASOC, AFSOC and NSWC members of the MSIPT will function as SOF M&S requirement POCs for their respective Service's chain of command. SOF specific M&S requirements will be submitted through the requirement process [Reference t]. MSIPT will generate documentation for approval and USSOCOM sponsorship and funding of SOF unique M&S needs not supported by the Services.

Mission Planning, Analysis, Rehearsal and Execution (MPARE) Office. This office has management and oversight for guiding integration and use of simulations and computer-based operational tools to achieve the knowledge-based, information centric goal of MPARE. MPARE, plus C2, serves as a basis to develop a common architecture and a fully integrated globally connected joint, system of systems. Its purpose is to define and coordinate requirements of SOF MPARE-like systems that will enable joint, interoperable and integrated applications for SOF operators in support of military operations, training, and daily staff activities.

### 2.1.2 Duties and Responsibilities

JSOSO will use existing USSOCOM processes and organizational structures described in this chapter for coordination, review and endorsement of M&S vision, strategies, funding, and policies. As the principal M&S POC for HQ USSOCOM, JSOSO will ensure centralized coordination of M&S for USSOCOM. Formal staffing of M&S issues and actions will be coordinated by JSOSO to ensure a unified USSOCOM position. Action officers will include JSOSO during the coordination process for M&S actions and issues falling under its cognizance. M&S issues involving Joint and DOD areas will be addressed by JSOSO or an approved representative. Table 2-1 summarizes how the USSOCOM M&S organization responds to the requirements delineated in Reference c.

Table 2-1. USSOCOM M&S Organizational Responsibilities

<b>DOD Directive 5000.59 Component Responsibility</b>	<b>M&amp;S Management Office (JSOSO) SORR-SCS</b>	<b>M&amp;S Integrated Product Team (IPT) (Chaired by JSOSO)</b>
Ensure that each M&S application standard and database used in the DOD Component has a proponent designated to be responsible for its configuration & life-cycle management.	Identify, recommend and designate sponsor and proponent for M&S applications.	Nominates SOF M&S applications to JSOSO.
Establish procedures to explore opportunities for joint or collaborative M&S development with other DOD Components before starting development of an M&S system.	Explore opportunities for Joint or collaborative M&S with the Joint Staff and DMSO prior to development of M&S systems.	Review, prioritize and recommend opportunities for joint or collaborative M&S development to JSOSO by identifying joint or collaborative M&S development opportunities.
Establish V V&A policy and guidelines for M&S applications; standards and databases managed by DOD Component.	Support development of V V&A policies, procedures, and guidelines. SORR approves V V&A policies, procedures, and guidelines.	Review guidelines for V V&A and develops V V&A policy.
Represent interests to the USD (A&T), EXCIMS, and the DMSO, as appropriate, on all pertinent matters about M&S.	Represent SOF interest at DMSO and Joint Staff. Coordinate, approve, and maintain records. Recommend representation at USD (A&T) and EXCIMS to the Joint Staff.	
Provide representatives to the EXCIMS, the M&S Working Groups, Sub Working groups and Task Forces, as requested by the USD (A&T).	JSOSO represents USSOCOM at DMSO MSWG, designates SOF representatives to DMSO Sub-working groups and Task Forces. Joint Staff represents CINCs at EXCIMS.	Represent USSOCOM on DMSO Sub-working Groups, and Task Forces.
Plan & provide resources, as needed, to carry out functional M&S responsibilities according to DOD Component priorities.	Participate in USSOCOM POM development process, annual M&S assessment to SORR. Recommend required resources for management of M&S to SORR and SOAL. Review M&S	Participate in SOF POM process, develops M&S baseline assessment.

<b>DOD Directive 5000.59 Component Responsibility</b>	<b>M&amp;S Management Office (JSOSO) SORR-SCS</b>	<b>M&amp;S Integrated Product Team (IPT) (Chaired by JSOSO)</b>
	POM input; recommendations and changes to SORR.	
Review, coordinate, and approve DOD M&S plans, programs, policies, procedures, and DOD pubs.	Coordinate SOF reviews, develop USSOCOM position, forwards through SORR to CINC.	Provide reviews to JSOSO.
Designate an office to serve as the single POC on all M&S matters and for coordination with the EX-CIMS and DMSO.	SOF POC for M&S.	
Implement an M&S management system to monitor Component M&S activities and for internal coordination and communication of DOD M&S issues.	Provide managerial coordination of SOF M&S program.	Participate in the development of M&S policies, procedures, and guidelines and provide input to M&S plans.
Provide information on M&S applications, standards and databases managed by the DOD Component to the MSIAC, DOD.	Review and forward information after consultation with application sponsors.	Members provide information as required.
Enforce M&S applications, standards and databases for efficiency and effectiveness; Document the contributions made by the use of particular M&S applications, standards, and databases during developmental & operational tests.	Provide oversight of SOF M&S applications, standards, and databases. Provides recommended changes to the proper authority.	Participate in the development of M&S policies, procedures, and guidelines. Provide input to M&S applications, standards, and databases.
Publish a DOD Component M&S Master and Investment Plan.	Support development of and manage MSMP and Investment Strategy. Review USSOCOM MSMP and Investment Strategy, forward to CINC for approval.	Provides input to the M&S Master Plan and Investment Strategy. Recommends plan approval to JSOSO.

Additional actions listed below will be coordinated through the JSOSO by the initiating CMSMO to ensure a coherent approach, support technology exploitation, leverage investments, reduce redundancy, and ensure appropriate USSOCOM representation.

These include:

- Designation and assignment of USSOCOM representatives to M&S groups external to USSOCOM M&S organizations (e.g., DOD, Joint, Industry, academia, M&S organizations, councils, working groups, etc.).
- Assignment of M&S managers for each SOF Component and principal USSOCOM staff functional area.
- Reviewing all new model or simulation developments.
- Coordination of M&S memorandums of agreement or understanding.
- Review and coordination of USSOCOM organizational M&S plans, policies, and strategies.
- Annual assessment of M&S Action Plans.
- Coordinate Advance Concepts Technology Demonstrations (ACTD) proposals with the respective activity, Service and DOD agency.

The following are on going tasks that require the attention of the MSIPT.

Table 2-2 Deliverables associated with the M&S Management Program for USSOCOM

<b>Activity required</b>	<b>Schedule</b>	<b>General Requirement</b>
M&S Master Plan	Review annually.	Joint coordination required.
V V&A Policy and Standards	Review annually.	To reflect DOD and service standards.
HLA Compliance Plan(s)	A plan for each current and future simulation program within the SOF. HLA compliance is required no later than 2001 to receive DOD funding approvals.	Component HLA compliance is governed by the parent service. JSOSO will coordinate HLA compliance for USSOCOM.
JTA Compliance	USSOCOM JTA Implementation Plan details the responsibilities for JTA compliance.	JTA includes M&S standards
SOF M&S Resource Repository (MSRR)	Maintained	Contains approved SOF requirements, standards, databases and software information across the community. A reference library cataloging each of the simulations, models, databases and links to available DOD-wide resources.
DOD M&S Program Support	Various meetings	Participate in DMSO sponsored group and sub-group meetings.
SOF M&S Program Support	Various meeting	Sponsor SOF unique requirements working groups and sub groups as needed.

Activity required	Schedule	General Requirement
Review Symposium	Annual	Educate, review, assess effectiveness of policy and processes and provide visibility of SOF needs to the M&S community
SOF M&S Program Requirements	Per each component SOC	Draft and approve SOF M&S requirements for inclusion into service M&S master planning for development.

### 2.1.3 M&S Management System

The SOF M&S Management System is a matrixed organization composed of key offices from HQ USSOCOM and component M&S management offices. Collectively, they are referred to as the MSIPT. Members of the MSIPT are responsible for inclusion of SOF unique M&S requirements into appropriate simulation specifications and developing supporting M&S planning for assigned areas. Figure 2-6 depicts the relationships followed by Table 2-3 that provides assignments by Offices of Primary Responsibility (OPR).

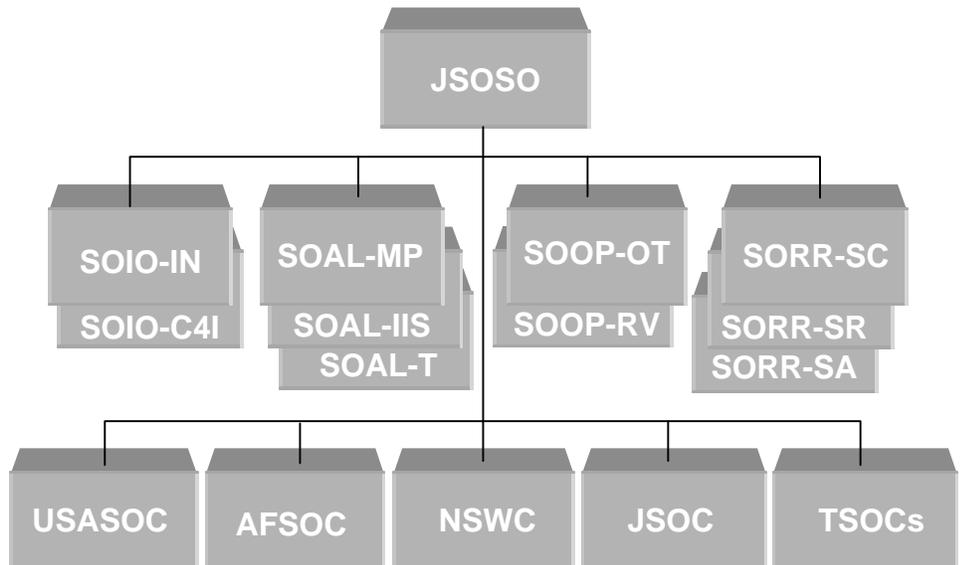


Figure 2-6 M&S&S Organization IPT Support

The following table (Table 2-3) shows the staff elements responsible for associated program or project planning and coordination. Each organization will sponsor a representative to the MSIPT as appropriate. Action Plans are found in Chapter 3.

Table 2-3 Responsibilities for Simulations, Simulators and R&D by OPR

<u>Operational Primary Responsibility (OPR)</u>	<u>Program / Project</u>																								
SORR-SC	Joint Conflict and Tactical Simulation (JCATS) Joint Theater-Level Simulation (JTLS) Joint Warfare System (JWARS) Joint Simulation System (JSIMS) Joint Integrated Database Preparation System (JIDPS) Joint Modeling and Simulation System (JMASS)																								
SORR-SA	Utilize the JSOSO as a M&S advisor during SPP.																								
INDIVIDUAL PEOs	Ensure programs associated with M&S are endorsed by the JSOSO as supportive of the M&S Vision.																								
SOAL-T	Include JSOSO in the Special Technology and Technical Development process. Invite JSOSO to SOST / SOTD Suitability Assessments.																								
SOOP-OT SOAL-PEO-FW	<table border="0"> <tr> <td data-bbox="690 980 808 1008">MH-47E</td> <td data-bbox="1118 980 1252 1008">EC-130E</td> </tr> <tr> <td data-bbox="690 1016 854 1043">MH-53J / M</td> <td data-bbox="1118 1016 1252 1043">AC-130H</td> </tr> <tr> <td data-bbox="690 1052 808 1079">MH-60K</td> <td data-bbox="1118 1052 1252 1079">MC-130E</td> </tr> <tr> <td data-bbox="690 1087 829 1115">MC-130H</td> <td data-bbox="1118 1087 1252 1115">AC-130U</td> </tr> <tr> <td data-bbox="690 1123 824 1150">MC-130P</td> <td data-bbox="1118 1123 1230 1150">TH-53A</td> </tr> <tr> <td data-bbox="690 1159 1078 1186">TOPSCENE 4800 and 400</td> <td data-bbox="1118 1159 1214 1186">CV-22</td> </tr> <tr> <td data-bbox="690 1194 837 1222">ESIG4000</td> <td data-bbox="1118 1194 1354 1222">Advanced SEAL</td> </tr> <tr> <td data-bbox="690 1230 805 1257">SE Plus</td> <td data-bbox="1154 1230 1386 1266">Delivery System</td> </tr> <tr> <td data-bbox="690 1266 907 1293">Compuscene V</td> <td data-bbox="1118 1266 1321 1293">Patrol Coastal</td> </tr> <tr> <td data-bbox="690 1302 1053 1329">Visual Threat Recognition</td> <td data-bbox="1118 1302 1349 1329">Aerial Gunner &amp;</td> </tr> <tr> <td data-bbox="748 1337 1010 1365">Avoidance Trainer</td> <td data-bbox="1154 1337 1414 1365">Scanner Simulator</td> </tr> <tr> <td data-bbox="748 1373 878 1409">(VTRAT)</td> <td data-bbox="1118 1373 1409 1409">Dismounted soldiers</td> </tr> </table>	MH-47E	EC-130E	MH-53J / M	AC-130H	MH-60K	MC-130E	MC-130H	AC-130U	MC-130P	TH-53A	TOPSCENE 4800 and 400	CV-22	ESIG4000	Advanced SEAL	SE Plus	Delivery System	Compuscene V	Patrol Coastal	Visual Threat Recognition	Aerial Gunner &	Avoidance Trainer	Scanner Simulator	(VTRAT)	Dismounted soldiers
MH-47E	EC-130E																								
MH-53J / M	AC-130H																								
MH-60K	MC-130E																								
MC-130H	AC-130U																								
MC-130P	TH-53A																								
TOPSCENE 4800 and 400	CV-22																								
ESIG4000	Advanced SEAL																								
SE Plus	Delivery System																								
Compuscene V	Patrol Coastal																								
Visual Threat Recognition	Aerial Gunner &																								
Avoidance Trainer	Scanner Simulator																								
(VTRAT)	Dismounted soldiers																								
SOOP-RV	Include JSOSO in validation of M&S requirements																								
SOAL-IIS	MPARE is lead for Related M&S acquisition																								
SOAL-MP	SBA Policy Ensure JSOSO is included on Procurement IPT Meetings relating to M&S issues																								
SOIO-C4I	M&S Requirements Development and Support Coordinate JTA Implementation Facilitate Integration of M&S and C4ISR																								

<u>Operational Primary Responsibility (OPR)</u>	<u>Program / Project</u>	
SORR-SR	Ensure JSOSO is included on Requirement-IPT meetings relating to M&S issues	
SOIO-IN	Coordinate the identification of intelligence Requirements for SOF M&S Liaison with other Intel agencies to satisfy Requirements	
SOIO-C4ISR	Support to Operations with MPARE as Executive Agent (SOIO-C4I-MO)	
SOF Components:		
USASOC	Warfighter Simulation (WARSIM) 2000 OneSAF Janus SPECTRUM Global Command and Control System-Army (GCCS-A) Automated Mission Planning System (AMPS) Brigade / Battalion Simulation (BBS) Corps Battle Simulation(CBS) Virtual Simulators for the Dismounted Soldier SOFPARS PARIS MetaVR ASTi Radio Simulation Simulyzer Data Logger & Builder	Simulators: MH-47E MH-60K Dismounted Soldier MH-47E / 60K DTT Synthetic Theater of War – Architecture (STOW-A) JWARS JMPS ESIG 4000 TOPSCENE 400, 4000 & 4800 Embedded Training Engagement Skills Trainer (EST) A / MH-6M LASAR CMS

<u>Operational Primary Responsibility (OPR)</u>	<u>Program / Project</u>	
AFSOC	MH-53J / M MC-130H / P TH-53A CV-22 JWARS JQUAD National Air & Space Model (NASM) Maintain close liaison with AETC to coordinate Simulator efforts Combat Control Team training simulators ESIG4000 TOPSCENE 4800 and 400 SE Plus VTRAT Aerial Gunner & Scanner Simulator Embedded Training	EC-130E AC-130H AC-130U MC-130E JMPS
NSWC	JSIMS Maritime JMASS JWARS State-of-art Image Generation Embedded training for selected weapon systems	ASDS simulator GCCS-M JMPS
JSOC	Coordinate with JSOSO as required	

**2.1.3.1 Charter**

The MSIPT charter is attached to this MSMP at Appendix B.

**2.1.3.2 Membership**

Team members will be drawn from, but not limited to, SOF components, SOCs and USSOCOM staff. Subject to the approval of the JSOSO, representatives from academia and industry may participate as non-voting members. It is recognized that geographical dispersal may prohibit physical attendance. Extended use of e-mail, discussion page on the USSOCOM classified M&S home page, video teleconferencing and networked databases will be employed. The JSOSO is responsible for insuring team-meeting objectives, agenda and minutes reach every member in a timely fashion. Team members are responsible to the lead for:

- Taking ownership of IPT charter, goals and objectives
- Supporting product cost, performance, schedule and quality objectives
- Providing and meeting commitments

- Maintaining communication with their respective managers and staff elements
- Funding of own TDY to attend MSIPT meetings

## 2.2 Processes

This section describes the initial interface with USSOCOM's Strategic Planning Process. Eventually, M&S will supplement many critical tasks of the Assessment Directors.

### 2.2.1 M&S Requirement Process

Component Commands submit their own M&S requirements for Service-common support as required by their respective Service. USSOCOM M&S-based requirements which supports HQ USSOCOM or crosses over two or more of its Components will be programmed / budgeted through the MFP-11 Program Objective Memorandum process [Reference r].

Programmed M&S Requirements. The Requirement Generation System is governed by USSOCOM Directive 71-4 [Reference t]. This POM line requirement(s) will be submitted via the Resource Sponsor (RS). RS's are Command functional experts responsible for providing program definition, justification, cost estimates, funding profiles and other documentation necessary to develop Strategic Planning Process products (See paragraph 2.2.2 below). Depending on the orientation and scope of the M&S item, the appropriate USSOCOM Resource Sponsors may be any of the components or USSOCOM Centers. **Programmed M&S requirements should be submitted to the appropriate Resource Sponsor by the first quarter of each Fiscal Year.**

SORR-SR has overall responsibility for USSOCOM requirement generation. SOOP-RV is responsible for validation of all USSOCOM requirements. SORR-SR and SOOP-RV will coordinate M&S requirements with the JSOSO to ensure the requirements are supportive of the USSOCOM M&S vision and goals.

POM Budget Requirements. Unforeseen M&S requirements are categorized, as Unfunded Requirements (UFR), reflecting unforeseen critical M&S needs. A UFR will be submitted as 'mission-essential' demands. UFRs are submitted via the appropriate RS to the USSOCOM Comptroller. Documentation will depend on the need, level of endorsement and cost. The FY dollars come from the current POM Budget Year and are competed for on a case-by-case basis.

### 2.2.2 Strategic Planning Process (SPP)

The USSOCOM SPP is governed by Directive 1-9 [Reference p] and is designed to meet the objectives of the DOD Planning, Programming and Budgeting System (PPBS). The objective of the SPP is to provide a prioritized list of capability-based programs, over a range of constraints that allows senior decision-makers to satisfy SOF specific mission needs. The SPP is a four-phase cyclical process which serves to frame the USSOCOM biennial MFP-11 POM (See Figure 2-7 below). The products of the SPP provide a

mechanism for supporting POM and budget submissions. To round out SOF capability requirements, USSOCOM’s component commands will submit their requirements for Service-common support as input into their respective Service POM.

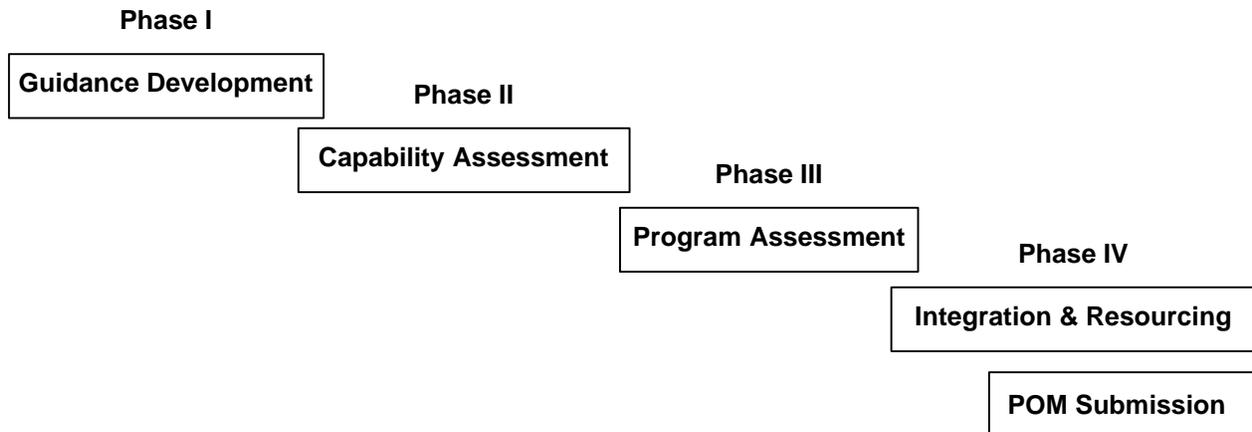


Figure 2-7 Strategic Planning Process Cycle

Assessment Directors (AD). The prime SPP mover is the AD (SORR-SA). Each AD is responsible for providing CINCSOC and the SPP Board of Directors independent, objective assessments of component capabilities (force structure, modernization, readiness and sustainment) within SOF mission areas. Each AD leads an assessment division comprised of a small staff of operational and functional experts (strike, engagement, mobility, C4ISR and Support). These comprehensive assessments provide the analytical link between the elements of long-range national security strategy, SOF mid-range programming decisions and the direction for short-range budget decisions. Each **AD must deliver the recommended Program Force and Resource Constrained-Capability Based Programs List (RC-CBPL) to the USSOCOM Command Staffs no later than March, on even years.**

### 2.2.3 Timeline

To illustrate what and when M&S supports in the SPP [and the ADs], Figure 2-8 shows key products necessary to successfully reach a USSOCOM POM submission. The following definitions are provided with the figure.

Required Capability List (RCL):	Unconstrained capability requirements
Prioritized- RCL (P-RCL):	AD prioritized RCL using higher guidance
Baseline Capability List (BCL):	Executable capability (First- year prior to POM)
Capability Based Programs List (CBPL):	Used to identify imbalances compared to DOTML <sup>1</sup>
Resource Constrained-CBPL (RC-CBPL):	Fundable capability representing the Program Force

<sup>1</sup> Doctrine, organization (force structure), training, materiel and leadership development

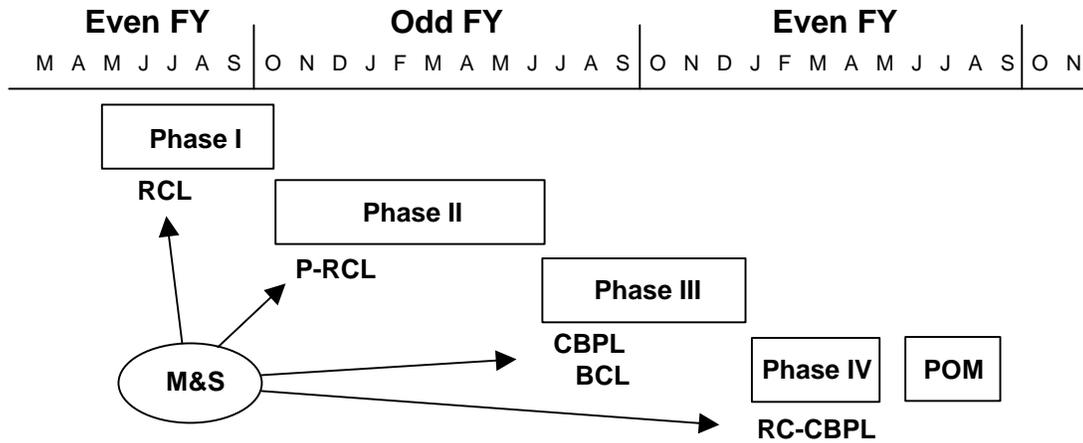


Figure 2-8 Strategic Planning Process Cycle Milestones

As computer-based analysis tools become available, M&S will have a major contribution to the development and defense of each product shown in Figure 2-8. The SPP calls for analysis, trade-off, and risk assessment with alternative solution sets. Only the repeatability and consistency of computer-aided methodologies provided by M&S can give the AD the defensible data necessary to achieve POM goals.

## Chapter 3 USSOCOM Goals and Action Plan

**3.1 Introduction.** This MSMP is the initial action plan to reach the goals and objectives supporting the vision outlined in Chapter 1. USSOCOM MSIPT is formed to identify and take action on recommendations that will take SOF to the desired end state. Figure 3-1 illustrates the approach and timeframe to evaluate and mature towards SOF Vision 2020. The MSMP will be reviewed annually and updated as required.

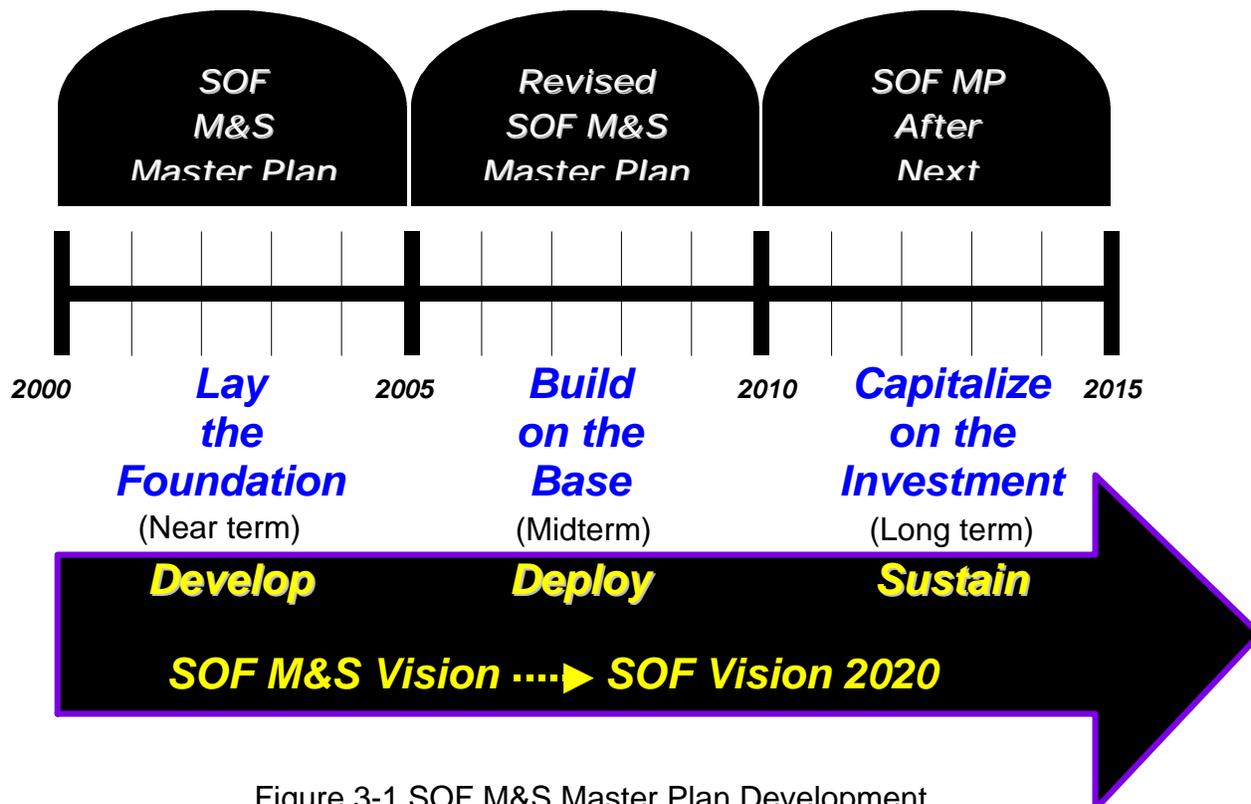


Figure 3-1 SOF M&S Master Plan Development

**3.2 USSOCOM Overarching M&S Priorities.** The priorities are:

- Coordinate M&S efforts and eliminate redundancy.
- Provide an M&S capability to support user needs.
- Posture SOF M&S for future technology insertions
- Ensure tools support accurate and timely analysis for decision-makers.

**3.3 Definitions.** As a matter of perspective, the following relationships are outlined. The vision will be obtained by achieving the four goals listed below. Each goal has been broken down into distinct objectives. Each objective is reached via tasks. Each OPR is responsible for the development of specific tasks, in addition to those listed below, to achieve the objective. Estimated Completion Dates (ECD) follows the OPR / Office of Collateral Responsibility (OCR) designations. For each OPR, the tasks have been compiled (in paragraph 3.6) to form an Action Plan. The vision will be realized by utilizing quality processes, increased expertise among people, and improved

infrastructure to support models, simulations and data. These initiatives contain specific, high-leverage programs, targeted for M&S focus and support.

**3.4 USSOCOM Goals.** Goals outlined below should be considered unconstrained guidelines to assist in resource decisions.



- Goal 1:** Bridge the current state of M&S from single-purpose, legacy simulations and simulators lacking SOF capability to future multi-purpose, interoperable simulations / simulators, fully integrating SOF while minimizing the use of MFP-11 funds.
- Goal 2:** Provide realistic training to every element of SOF from the task force staff to the individual SOF operator from anywhere in the world.
- Goal 3:** Develop rapid analysis to satisfy SOF unique needs.
- Goal 4:** Integrate M&S technologies through every aspect of the acquisition process.

The JSOSO has overall responsibility for coordinating actions that will achieve the USSOCOM M&S goals and monitor progress across all objectives. Goal 1 transcends all other goals, therefore USSOCOM staff elements are stakeholders in the completion and success of the first goal. The principal for Goal 2 (Training) is SOOP; Goal 3 (Analysis) is SORR; and Goal 4 (Acquisition) is SOAL. SOIO is in direct support of all goals.

**3.4.1 Goal 1:** Bridge the current state of M&S from single-purpose, legacy simulations and simulators lacking SOF capability to future multi-purpose, interoperable simulations / simulators, fully integrating SOF while minimizing the use of MFP-11 funds.



OPR: JSOSO - The JSOSO has overall responsibility to coordinate SOF efforts to support this goal.

**3.4.1.1 Objective 1:** Migrate SOF models, simulations and simulators to a collaborative-distributed environment accessible from anywhere in the world.

OPR: SOF Components

- Identify and recommend systems to be categorized as legacy or bridging to the MSIPT
- Submit requirement documentation which supports the bridging plan to SORR-R

OPR: MSIPT - Prioritize recommended system submissions received from the SOF Components

OCR: JSOSO – Provide / coordinate technical information support to the SOF Components

ECD: FY05

3.4.1.2 Objective 2: Leverage M&S efforts sponsored by the Services, DOD agencies and industry.

OPR: JSOSO

- Establish and maintain liaison with the Services, DOD agencies and industry to ensure M&S efforts include SOF requirements and properly replicate / represent SOF. Coordinate Service related efforts with Components.
- Represent SOF at DMSO and Joint sponsored M&S Conferences and events.
- Coordinate SOF representation as a voting member of Joint Service M&S governing bodies. (Examples include, but are not limited to, JSIMS, JWARS, JCATS, and JTLS Requirement / Configuration Control Boards).

OPR: USASOC, AFSOC and NSWC.

- Establish and maintain liaisons with parent Service to ensure Service M&S efforts include SOF requirements and properly replicate / represent SOF.
- Represent SOF at Service sponsored M&S Conferences.
- Represent SOF as a voting member of parent Service M&S governing bodies. (examples include, but are not limited to, WARSIM, NASM, JSIMS maritime, OneSAF, Distributed Mission Training (DMT) Requirement / Configuration Control Boards)
- Keep JSOSO informed of M&S related efforts. Request assistance as needed.

OCR: SORR-SC, SOOP-OT, SOIO-C4I, SOIO-IN, SOAL-MP, and all INDIVIDUAL PEOs.

- Provide expert representation as voting members of Joint Service M&S governing bodies as requested by JSOSO.
- Keep JSOSO informed of M&S related efforts.

ECD: Continuous process.

3.4.1.3 Objective 3: Develop USSOCOM unique initiatives only as necessary to meet SOF specific requirements.

OPR: SOF Components - Submit Mission Need Statements (MNS) for SOF unique M&S requirements.

OPR: JSOSO

- Screen M&S requirement / acquisition documents to eliminate duplication of effort.
- Ensure documents are in line with the USSOCOM M&S Vision.
- Coordinate MSIPT review of requirement documents.

OCR: MSIPT

- Endorse M&S requirement documents that are supportive of the USSOCOM vision.
- Recommend priorities for USSOCOM M&S efforts.

OCR: SORR-SR and SOAL-MP - Ensure M&S documents are forwarded to the JSOSO for review, coordination and endorsement.

ECD: Continuous process.

Objective 4: Obtain new M&S technologies through cooperative development.

OPR: SOF Components

- Share knowledge of emerging technology with SOF M&S Community
- Provide a brief at MSIPTs to update members on progress toward the M&S vision

OPR: All USSOCOM M&S activities will forward recommendations for new M&S technology requirements to SOAL-T per USSOCOM Directive 70-3.

ECD: Continuous process.

3.4.2 **Goal 2:** Provide realistic training to every element of SOF from the task force staff to the individual SOF operator from anywhere in the world.



OPR: SOOP-OT has overall responsibility to coordinate SOF efforts to support this goal.

3.4.2.1 Objective 1: Develop and coordinate in the development of M&S tools that have passed stringent V V&A in a collaborative, distributed environment accessible from anywhere in the world by merging M&S with C4ISR systems.

OPR: All INDIVIDUAL PEOs, SOOP-OT, SOOP-RE, SORR-SC and SOAL-MP.

- Ensure no loss of current M&S supported training.
- Develop mediated interface between models and data sources
- Continue migration / integration efforts to achieve seamless interaction of M&S tools within operational C4I architecture that supports training, C2, planning, rehearsal, and execution requirements

- Exploit display and computer technologies to transition from the data display C4I concepts of today to advanced concepts of tomorrow
- Establish formal user feedback / requirements process to use demonstrations to drive / refine M&S development
- In coordination with SORR-SCS, develop a master repository for data values generated by other models and simulations, such as calculated measures of performance, effectiveness and force effectiveness, and link this repository to other SOF agencies

ECD: FY05

3.4.2.2 Objective 2: Conduct mission preview and rehearsal at home station, en-route or deployed.

OPR: SOIO-C4I

- Implement USSOCOM Directive 71-1
- Sponsor recurring User Conferences to capture M&S short-comings and enhanced capability given new SOF systems
- Take action on requirements submitted

OPR: SOF Components, TSOCs - Submit mission preview and rehearsal requirements to SOIO-C4I

ECD: FY03

3.4.2.3 Objective 3: Replicate SOF capabilities in the synthetic battlespace to merge with existing C4ISR systems and networks allowing SOF simulations to be appropriately stimulated by threats, signals and emissions.

OPR: SOIO-C4I, all INDIVIDUAL PEOs

- Take action to coordinate the integration of SOF simulations and alternative courses of action tools into the synthetic battlespace.
- Implement USSOCOM Directive 71-3
- Take action to merge existing C4ISR systems and networks allowing simulations to be appropriately stimulated by threats, signals and emissions.

OPR: SOF Components – Coordinate with Services to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace.

OPR: JSOSO – Coordinate with DOD and Joint agencies to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace.

ECD: FY04

3.4.2.4 Objective 4: Ensure every major weapon system in USSOCOM is supported with a simulation / simulator that can be networked into a common / Joint synthetic battlespace.

OPR: SOF Components, TSOCs

- Identify requirements for networking simulations. Coordinate with other SOF components on networking issues.
- Submit networking and simulation requirements per USSOCOM Directive 71-4.

OCR: USASOC – Army Special Operations Mission Support Activity (ARSOMSA)

- Maintain current M&S capability while participating in the development of new constructive simulations and C4I systems. Targets include, but are not limited to, are WARSIM 2000, WARSIM Intel Model (WIM), OneSAF, and Army Battle Command System (ABCS).
- Actions related to the integration and fielding of:
  - GCCS-A
  - Special Operations Forces Planning And Rehearsal System – Ground (SOFPARS-G)

OCR: AFSOC

- Maintain current M&S capability while participating in the development of new simulations and C4I systems. Targets include, but are not limited to:
  - NASM
  - Air Warfare Simulation (AWSIM)
  - JQUAD
  - Joint Mission Planning System (JMPS)
  - CV-22 simulators
  - Combat Control Team training simulators
  - VTRAT
  - State-of-the-art Image Generation
  - Embedded training for select airframes.
- Coordinate with AETC on simulation issues.
- Coordinate with SOIO-IN-JM (SOFPREP) on employment of geospatial information and imagery (GII) and standards to be used.
- Actions related to the integration and fielding of:
  - Global Command and Control System (GCCS)
  - Mission preview and rehearsal devices.
  - Coordinate SOFPARS requirements with SOAL-PEO-FW

OCR: 160<sup>TH</sup> SOAR (A)

- Maintain current M&S capability while participating in the development of new simulations and C4I systems. Targets to insert SOF unique characteristics include, but are not limited to:
  - WARSIM / WIM
  - OneSAF

- JMPS
- STOW simulations
- Reconfigurable simulators and embedded training for select airframes as appropriate.
- Coordinate with SOIO-IN-JM (SOFPREP) on employment of geospatial information and imagery (GII) and standards to be used.
- Actions related to the integration and fielding of:
  - GCCS-A
  - Mission preview and rehearsal devices.
  - Coordinate SOFPARS requirements with SOAL-PEO-FW

OCR: NSWC

- Develop Naval Special Warfare (NSW) specific M&S capability while participating in the development of joint constructive / virtual simulations and C4I systems. Primary emphasis will be on mobility systems, and integration of real-time information systems with Special Warfare Automated Mission Planning System (SWAMPS).
- Participate in Navy M&S efforts, specific interest is targeted at, but not limited to:
  - JSIMS Maritime
  - GCCS-M
  - NSW Mission Support Center

ECD: FY05

3.4.3 **Goal 3:** Develop rapid analysis to satisfy SOF unique needs.

OPR: SORR-SC - The SORR-SC has overall responsibility to coordinate SOF efforts to support this goal.

OPR: SOIO-C4I - Overall responsibility to ensure integration of SOF M&S efforts to support this goal.



3.4.3.1 Objective 1: Fully automated M&S tools used to assess joint SOF requirements, force structure, doctrine, logistics, and tactics.

OPR: SORR-SC

- Actively participate in the development of JWARS as the analytical tool of the future.
- Actively participate in the development of JIDPS as the automated terrain generation tool of the future.
- Automate the transfer of information between the JMA database and simulations.
- Pursue advances in technology that increase automation of simulation execution.

- Resource the development of SOF specific capabilities, if required.

ECD: FY01

3.4.3.2 Objective 2: Utilize M&S for COA analysis at the strategic, operational and tactical levels.

OPR: SORR-SC

- Actively participate in the development of JWARS and JSIMS as the future tools for COA analysis at the strategic, operational and tactical levels.
- Support the ability to conduct strategic, operational and tactical COA analysis.

OPR: JSOSO, SOAL-IIS

- Coordinate efforts with SOIO-C4I to provide distributed capabilities.
- Coordinate with SOF mission planning systems to incorporate COA tools.

OPR: SOF Components

- Establish and maintain liaison with parent Service to ensure Service efforts on COA and mission planning tools include SOF requirements and properly replicate / represent SOF.
- Guide USSOCOM and Service efforts to include COA tools in Mission Planners.

ECD: FY03

3.4.4 **Goal 4:** Integrate SBA within the acquisition process.

OPR: SOAL-MP has overall responsibility to coordinate SOF M&S efforts to support this goal.

OPR: SOIO-C4I – Overall responsibility to ensure integration of SOF M&S efforts to support this goal.



3.4.4.1 Objective 1: Use SBA as a part of the decision-making process for the life cycle of SOF unique systems, from cradle to grave.

OPR: SOAL-MP, Program / Project Executive Officers (PEOs) and Program / Project Managers (PM)

- Promote the employment of SBA as a decision-making tool.
- Ensure application of M&S is considered during every phase of acquisition.

OCR: JSOSO - Assist SOAL-MP in eliminating duplication of effort through the reuse of existing M&S from outside USSOCOM.

OCR: SORR-SC - Provide M&S support as required.

ECD: Establish by FY01, continue process thereafter.

3.4.4.2 Objective 2: Maximize the reuse of M&S tools throughout the life-cycle process.

OPR: SOAL-MP, PEOs and PMs

- Design M&S for reusability to the fullest extent possible. Of particular interest is the injection of new models into associated constructive and virtual simulations used for analysis and training.
- Coordinate M&S efforts of separate programs to eliminate duplication and promote reuse.

OCR: JSOSO - Liaison with Services, DOD agencies and industry to make available SOF developed models.

ECD: Continuous process.

### 3.5 SOF Community Goals.

Table 3-1 shows current and forecasted capability by Functional Area. The goal is to change the lack of M&S application - labeled red (R) to full application - green (G).

Functional Area	Activity	Mode	Near Term (2000-2004)	Midterm (2005-2009)	Long Term (2010-2015)
Training	USASOC	Air	Yellow	Green	Green
		Ground	Orange	Green	Green
	AFSOC	Air	Yellow	Green	Green
		Ground	Orange	Yellow	Green
	NSWC	Maritime	Orange	Yellow	Green
		Ground	Red	Orange	Yellow
Analysis	-	USSOCOM	Orange	Green	Green
	-	USASOC	Orange	Green	Green
	-	AFSOC	Red	Yellow	Green
	-	NSWC	Red	Orange	Yellow
Acquisition	-	USSOCOM	Orange	Green	Green

Codes \_\_\_\_\_

R (Red) No application of M&S  
 O (Orange) M&S supports to some degree  
 Y (Yellow) Significant M&S support with limited connectivity  
 G (Green) Robust M&S support with significant connectivity

Table 3-1 Projected M&S Capability

**3.6 Action Plans by Office Code.** To assist offices with determining their responsibilities, the TASKS from paragraph 3.4 have been cross-walked by staff element, agency or command to this paragraph. Some OPR / OCR tasks have multiple offices / agencies and may be repeated. Coordination is an implied task. Clearly this list is not all-inclusive, however, it provides a starting point toward achieving the vision. As with any plan, the tasks will be periodically reviewed and updated as required.



**3.6.1 JSOSO.** JSOSO has overall responsibility for this plan and coordination of USSOCOM's M&S efforts.

- Provide / coordinate technical information support to the SOF Components. (GOAL 1 / OBJECTIVE 1)
- Establish and maintain liaison with services, DOD agencies and industry to ensure M&S efforts include SOF requirements and properly replicate / represent SOF. Coordinate Service related efforts with Components. (GOAL1 / OBJECTIVE 2)
- Represent SOF at DMSO and Joint sponsored M&S Conferences and events. (GOAL1 / OBJECTIVE 2)
- Coordinate SOF representation as a voting member of Joint Service M&S project governing bodies. (Examples include, but are not limited to, JSIMS, JWARS, JCATS, and JTLS Requirement/Configuration Control Boards). (GOAL1 / OBJECTIVE 2)
- Screen M&S requirement/acquisition documents to eliminate duplication of effort. (GOAL 1 / OBJECTIVE 3)
- Ensure documents are in line with the USSOCOM M&S Vision. (GOAL 1 / OBJECTIVE 3)
- Coordinate MSIPT review of requirement documents. (GOAL 1 / OBJECTIVE 3)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)
- Coordinate with DOD and Joint agencies to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace. (GOAL 2 / OBJECTIVE 3)
- Coordinate efforts with SOIO-C4I to provide distributed capabilities. (GOAL 3 / OBJECTIVE 2)
- Coordinate with SOF mission planning systems to incorporate COA tools. (GOAL 3 / OBJECTIVE 2)
- Assist SOAL-MP in eliminating duplication of effort through the reuse of existing M&S from outside USSOCOM. (GOAL 4 / OBJECTIVE 1)
- Liaison with Services, DOD agencies and industry to make available SOF developed models. (GOAL 4 / OBJECTIVE 2)

### 3.6.2 MSIPT

- Prioritize recommended system submissions received from the SOF Components. (GOAL 1 / OBJECTIVE 1)
- Endorse M&S requirement documents that are supportive of the USSOCOM vision. (GOAL 1 / OBJECTIVE 3)
- Recommend priorities for USSOCOM M&S efforts. (GOAL 1 / OBJECTIVE 3)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)

### 3.6.3 USASOC



- Identify and recommend systems to be categorized as legacy or bridging to the MSIPT. (GOAL 1 / OBJECTIVE 1)
- Submit requirement documentation that supports the bridging plan to SORR-R. (GOAL 1 / OBJECTIVE 1)
- Submit MNS for SOF unique M&S requirements. (GOAL 1 / OBJECTIVE 3)
- Share knowledge of emerging technology with SOF M&S Community. (GOAL 1 / OBJECTIVE 4)
- Provide a brief at MSIPTs to update members on progress toward the M&S vision. (GOAL 1 / OBJECTIVE 4)
- Submit requests for new technology requirements to SOAL-T per USSOCOM Directive 70-3. (GOAL 1 / OBJECTIVE 4)
- Submit mission preview and rehearsal requirements to the SOIO-C4I. (GOAL 2 / OBJECTIVE 2)
- Coordinate with Services to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace. (GOAL 2 / OBJECTIVE 3)
- Identify requirements for networking simulations. Coordinate with other SOF components on networking issues. (GOAL 2 / OBJECTIVE 4)
- Submit networking and simulation requirements per USSOCOM Directive 71-4. (GOAL 2 / OBJECTIVE 4)
- Establish and maintain liaison with parent Service to ensure Service efforts on COA and mission planning tools include SOF requirements and properly replicate/represent SOF. (GOAL 3 / OBJECTIVE 2)
- Guide USSOCOM and Service efforts to include COA tools in Mission Planners. (GOAL 3 / OBJECTIVE 2)
- Establish and maintain liaison with parent Service to ensure Service M&S efforts include SOF requirements and properly replicate/represent SOF. (GOAL 1 / OBJECTIVE 2)
- Represent SOF at Service sponsored M&S Conferences. (GOAL 1 / OBJECTIVE 2)
- Represent SOF as a voting member of parent Service M&S project governing bodies. (Examples include, but are not limited to, WARSIM, NASM, JSIMS maritime, OneSAF, DMT Requirement / Configuration Control Boards). (GOAL 1 / OBJECTIVE 2)

- Keep JSOSO informed of M&S related efforts. Request assistance as required. (GOAL 1 / OBJECTIVE 2)
- Maintain current M&S capability while participating in the development of new constructive simulations and C4I systems. Targets include, but are not limited to, are WARSIM 2000, WARSIM Intel Model (WIM), OneSAF, and ABCS. (GOAL 2 / OBJECTIVE 4)
- Actions related to the integration and fielding of GCCS-A and SOFPARS-G. (GOAL 2 / OBJECTIVE 4)

3.6.4 **AFSOC**. Special Operations Wings (SOW) / Squadrons (SOS) are responsible for implementing AFSOC policy concerning training devices, mission rehearsal systems and networking. The M&S infrastructure consists of an arrangement via a Memorandum of Agreement between AFSOC and AETC, to include the 19<sup>th</sup> SOS and 58<sup>th</sup> TRSS.



- Identify and recommend systems to be categorized as legacy or bridging to the MSIPT. (GOAL 1 / OBJECTIVE 1)
- Submit requirement documentation that supports the bridging plan to SORR-R. (GOAL 1 / OBJECTIVE 1)
- Submit MNS for SOF unique M&S requirements. (GOAL 1 / OBJECTIVE 3)
- Share knowledge of emerging technology with SOF M&S Community. (GOAL 1 / OBJECTIVE 4)
- Provide a brief at MSIPTs to update members on progress toward the M&S vision. (GOAL 1 / OBJECTIVE 4)
- Submit requests for new technology requirements to SOAL-T per USSOCOM Directive 70-3. (GOAL 1 / OBJECTIVE 4)
- Submit mission preview and rehearsal requirements to the SOIO-C4I. (GOAL 2 / OBJECTIVE 2)
- Coordinate with Services to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace. (GOAL 2 / OBJECTIVE 3)
- Identify requirements for networking simulations. Coordinate with other SOF components on networking issues. (GOAL 2 / OBJECTIVE 4)
- Submit networking and simulation requirements per USSOCOM Directive 71-4. (GOAL 2 / OBJECTIVE 4)
- Establish and maintain liaison with parent Service to ensure Service efforts on COA and mission planning tools include SOF requirements and properly replicate/represent SOF. (GOAL 3 / OBJECTIVE 2)
- Guide USSOCOM and Service efforts to include COA tools in Mission Planners. (GOAL 3 / OBJECTIVE 2)
- Establish and maintain liaison with parent Service to ensure Service M&S efforts include SOF requirements and properly replicate/represent SOF. (GOAL 1 / OBJECTIVE 2)
- Represent SOF at Service sponsored M&S Conferences. (GOAL 1 / OBJECTIVE 2)

- Represent SOF as a voting member of parent Service M&S project governing bodies. (Examples include, but are not limited to, WARSIM, NASM, JSIMS maritime, OneSAF, DMT Requirement / Configuration Control Boards). (GOAL 1 / OBJECTIVE 2)
- Keep JSOSO informed of M&S related efforts. Request assistance as required. (GOAL 1 / OBJECTIVE 2)
- Maintain current M&S capability while participating in the development of new simulations and C4I systems. (GOAL 2 / OBJECTIVE 4) Targets include, but are not limited to
  - NASM
  - AWSIM)
  - JQUAD
  - CV-22 simulators
  - Combat Control Team training simulators
  - VTRAT
  - State-of-the-art Image Generation
  - Embedded training for select airframes.
- Coordinate with AETC on simulation issues. (GOAL 2 / OBJECTIVE 4)
- Coordinate with SOIO-IN-JM (SOFPREP) on the identification and employment of data standards. (GOAL 2 / OBJECTIVE 4)
- Actions related to the integration and fielding of:
  - GCCS
  - Mission preview and rehearsal devices.
  - Coordinate SOFPARS requirements with SOAL-PEO-FW

### 3.6.5 NSWC

- Identify and recommend systems to be categorized as legacy or bridging to the MSIPT. (GOAL 1 / OBJECTIVE 1)
- Submit requirement documentation that supports the bridging plan to SORR-R. (GOAL 1 / OBJECTIVE 1)
- Keep JSOSO informed of M&S related efforts. Request assistance as required. (GOAL 1 / OBJECTIVE 2)
- Submit MNS for SOF unique M&S requirements. (GOAL 1 / OBJECTIVE 3)
- Share knowledge of emerging technology with SOF M&S Community. (GOAL 1 / OBJECTIVE 4)
- Provide a brief at MSIPTs to update members on progress toward the M&S vision. (GOAL 1 / OBJECTIVE 4)
- Submit requests for new technology requirements to SOAL-T per USSOCOM Directive 70-3. (GOAL 1 / OBJECTIVE 4)
- Submit mission preview and rehearsal requirements to the SOIO-C4I. (GOAL 2 / OBJECTIVE 2)
- Coordinate with Services to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace. (GOAL 2 / OBJECTIVE 3)



- Identify requirements for networking simulations. Coordinate with other SOF components on networking issues. (GOAL 2 / OBJECTIVE 4)
- Submit networking and simulation requirements per USSOCOM Directive 71-4. (GOAL 2 / OBJECTIVE 4)
- Establish and maintain liaison with parent Service to ensure Service efforts on COA and mission planning tools include SOF requirements and properly replicate/represent SOF. (GOAL 3 / OBJECTIVE 2)
- Guide USSOCOM and Service efforts to include COA tools in Mission Planners. (GOAL 3 / OBJECTIVE 2)
- Establish and maintain liaison with parent Service to ensure Service M&S efforts include SOF requirements and properly replicate/represent SOF. (GOAL 1 / OBJECTIVE 2)
- Represent SOF at Service sponsored M&S Conferences. (GOAL 1 / OBJECTIVE 2)
- Represent SOF as a voting member of parent Service M&S project governing bodies. (Examples include, but are not limited to, WARSIM, NASM, JSIMS maritime, OneSAF, DMT Requirement / Configuration Control Boards). (GOAL 1 / OBJECTIVE 2)
- Develop NSW specific M&S capability while participating in the development of joint constructive/virtual simulations and C4I systems. Primary emphasis will be on mobility systems, and integration of real time information systems with Special Warfare Automated Mission Planning System (SWAMPS). (GOAL 2 / OBJECTIVE 4)
- Participate in Navy M&S efforts, specific interest is targeted at, but are not limited to JSIMS Maritime, GCCS-M and NSW Mission Support Center. (GOAL 4 / OBJECTIVE 4)

### 3.6.6 JSOC.

- Identify and recommend systems to be categorized as legacy or bridging to the MSIPT. (GOAL 1 / OBJECTIVE 1)
- Submit requirement documentation that supports the bridging plan to SORR-R. (GOAL 1 / OBJECTIVE 1)
- Keep JSOSO informed of M&S related efforts. Request assistance as required. (GOAL 1 / OBJECTIVE 2)
- Submit MNS for SOF unique M&S requirements. (GOAL 1 / OBJECTIVE 3)
- Share knowledge of emerging technology with SOF M&S Community. (GOAL 1 / OBJECTIVE 4)
- Provide a brief at MSIPTs to update members on progress toward the M&S vision. (GOAL 1 / OBJECTIVE 4)
- Submit requests for new technology requirements to SOAL-T per USSOCOM Directive 70-3. (GOAL 1 / OBJECTIVE 4)
- Submit mission preview and rehearsal requirements to the SOIO-C4I. (GOAL 2 / OBJECTIVE 2)



- Coordinate with Services to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace. (GOAL 2 / OBJECTIVE 3)
- Identify requirements for networking simulations. Coordinate with other SOF components on networking issues. (GOAL 2 / OBJECTIVE 4)
- Submit networking and simulation requirements per USSOCOM Directive 71-4. (GOAL 2 / OBJECTIVE 4)
- Establish and maintain liaison with parent Service to ensure Service efforts on COA and mission planning tools include SOF requirements and properly replicate/represent SOF. (GOAL 3 / OBJECTIVE 2)
- Guide USSOCOM and Service efforts to include COA tools in Mission Planners. (GOAL 3 / OBJECTIVE 2)

### 3.6.7 TSOCs

- Keep JSOSO informed of M&S related efforts. Request assistance as required. (GOAL 1 / OBJECTIVE 2)
- Submit mission preview and rehearsal requirements to the SOIO-C4I. (GOAL 2 / OBJECTIVE 2)
- Identify requirements for networking simulations. Coordinate with other SOF components on networking issues. (GOAL 2 / OBJECTIVE 4)
- Submit networking and simulation requirements per USSOCOM Directive 71-4. (GOAL 2 / OBJECTIVE 4)

### 3.6.8 160<sup>th</sup> SO Aviation Regiment (SOAR)



- Identify and recommend systems to be categorized as legacy or bridging to the MSIPT. (GOAL 1 / OBJECTIVE 1)
- Submit requirement documentation that supports the bridging plan to SORR-R. (GOAL 1 / OBJECTIVE 1)
- Submit MNS for SOF unique M&S requirements. (GOAL 1 / OBJECTIVE 3)
- Share knowledge of emerging technology with SOF M&S Community. (GOAL 1 / OBJECTIVE 4)
- Provide a brief at MSIPTs to update members on progress toward the M&S vision. (GOAL 1 / OBJECTIVE 4)
- Submit requests for new technology requirements to SOAL-T per USSOCOM Directive 70-3. (GOAL 1 / OBJECTIVE 4)
- Submit mission preview and rehearsal requirements to the SOIO-C4I. (GOAL 2 / OBJECTIVE 2)
- Coordinate with Services to assure development of SOF synthetic environments that realistically represent the conditions of the battlespace. (GOAL 2 / OBJECTIVE 3)
- Identify requirements for networking simulations. Coordinate with other SOF components on networking issues. (GOAL 2 / OBJECTIVE 4)
- Submit networking and simulation requirements per USSOCOM Directive 71-4. (GOAL 2 / OBJECTIVE 4)

- Establish and maintain liaison with parent Service to ensure Service efforts on COA and mission planning tools include SOF requirements and properly replicate/represent SOF. (GOAL 3 / OBJECTIVE 2)
- Guide USSOCOM and Service efforts to include COA tools in Mission Planners. (GOAL 3 / OBJECTIVE 2)
- Establish and maintain liaison with parent Service to ensure Service M&S efforts include SOF requirements and properly replicate/represent SOF. (GOAL 1 / OBJECTIVE 2)
- Represent SOF at Service sponsored M&S Conferences. (GOAL 1 / OBJECTIVE 2)
- Represent SOF as a voting member of parent Service M&S project governing bodies. (Examples include, but are not limited to, WARSIM, NASM, JSIMS maritime, OneSAF, DMT Requirement / Configuration Control Boards). (GOAL 1 / OBJECTIVE 2)
- Keep JSOSO informed of M&S related efforts. Request assistance as required. (GOAL 1 / OBJECTIVE 2)
- Maintain current M&S capability while participating in the development of new simulations and C4I systems. Targets to insert SOF unique characteristics include, but are not limited to WARSIM, WIM, OneSAF, STOW simulations, reconfigurable simulators and embedded training for select airframes as appropriate. (GOAL 2 / OBJECTIVE 4)
- Coordinate with SOIO-IN-JM (SOFPREP) on the identification and employment of data standards. (GOAL 2 / OBJECTIVE 4)
- Actions related to the integration and fielding of:
  - Global Command and Control System-Army (GCCS-A)
  - Mission preview and rehearsal devices.
  - Coordinate SOFPARS requirements with SOAL-PEO-FW

3.6.9 **SORR-SR.** Among SORR-SR responsibilities is the coordination of pre-milestone one-requirement documents.

- Ensure M&S documents are forwarded to the JSOSO for review, coordination and endorsement. (GOAL 1 / OBJECTIVE 3)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)

3.6.10 **SORR-SC.** SORR-SC is responsible for Wargaming, Simulation and Analysis in support of the SPP. The Simulation and Information Branch (SORR-SCS) is responsible for coordinating the use of M&S for assessments.

- Provide expert representation as voting member of Joint Service M&S project governing bodies as requested by JSOSO. (GOAL 1 / OBJECTIVE 2)
- Keep JSOSO informed of M&S related efforts. (GOAL 1 / OBJECTIVE 2)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)
- Ensure no loss of current M&S-supported training. (GOAL 2 / OBJECTIVE 1)

- Develop mediated interface between models and data sources. (GOAL 2 / OBJECTIVE 1)
- Continue migration/integration efforts to achieve seamless interaction of M&S tools within operational C4I architecture that supports training, C2, planning, rehearsal, and execution requirements. (GOAL 2 / OBJECTIVE 1)
- Exploit display and computer technologies to transition from the data display C4I concepts of today to advanced concepts of tomorrow. (GOAL 2 / OBJECTIVE 1)
- Establish formal user feedback / requirements process to use demonstrations to drive/refine M&S development. (GOAL 2 / OBJECTIVE 1)
- Develop a master repository for data values generated by other models and simulations, such as calculated measures of performance, effectiveness and force effectiveness, and link this repository to other SOF agencies. (GOAL 2 / OBJECTIVE 1)
- Actively participate in the development of JWARS as the analytical tool of the future. (GOAL 3 / OBJECTIVE 1)
- Actively participate in the development of JIDPS as the automated terrain generation tool of the future. (GOAL 3 / OBJECTIVE 1)
- Automate the transfer of information between the JMA database and simulations. (GOAL 3 / OBJECTIVE 1)
- Pursue advances in technology that increase automation of simulation execution. (GOAL 3 / OBJECTIVE 1)
- Resource the development of SOF specific capabilities if required. (GOAL 3 / OBJECTIVE 1)
- Actively participate in development of JWARS and JSIMS, which are future tools for SOF-COA analysis at the strategic, operational and tactical levels. (GOAL 3 / OBJECTIVE 2)
- Support the ability to conduct strategic, operational and tactical COA analysis. (GOAL 3 / OBJECTIVE 2)
- Provide M&S support as required. (GOAL 4 / OBJECTIVE 1)



3.6.11 **SOIO-C4I.** Among SOIO-C4I's responsibilities is the implementation of JTA and achieving MPARE goals. MPARE is the process that provides oversight, guidance and integration of all special operations information management, tools, applications and systems, used in the exercise of command and staff responsibilities for both operational and non-operational use.

- Overall responsibility to ensure integration of SOF M&S in MPARE.
- Provide expert representation as voting member of Joint Service M&S project governing bodies as requested by JSOSO. (GOAL 1 / OBJECTIVE 2)
- Keep JSOSO informed of M&S related efforts. (GOAL 1 / OBJECTIVE 2)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)
- Implement USSOCOM Directive 71-1. (GOAL 2 / OBJECTIVE 2)

- Sponsor recurring User Conferences to capture M&S shortcomings and enhanced capability given new SOF systems. (GOAL 2 / OBJECTIVE 2)
- Take action on requirements submitted. (GOAL 2 / OBJECTIVE 2)
- Take action to coordinate the integration of SOF simulations and alternative courses of action tools into the synthetic battlespace. (GOAL 2 / OBJECTIVE 3)
- Implement USSOCOM Directive 73-1. (GOAL 2 / OBJECTIVE 3)
- Take action to merge existing C4ISR systems and networks allowing simulations to be appropriately stimulated by threats, signals and emissions. (GOAL 2 / OBJECTIVE 3)

3.6.12 **SOIO-IN.** Among SOIO-IN responsibilities is to facilitate the seamless intelligence support of simulations.

- Provide expert representation as voting member of Joint Service M&S project governing bodies as requested by JSOSO. (GOAL 1 / OBJECTIVE 2)
- Keep JSOSO informed of M&S related efforts. (GOAL 1 / OBJECTIVE 2)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)

3.6.13 **SOAL-MP, SOAL-ISS and Individual PEOs.** SOAL-MP is responsible for acquisition policies. SOAL-IIS is responsible for MPARE integration efforts. Individual PEOs are responsible for virtual training devices.

- Provide expert representation as voting member of Joint Service M&S project governing bodies as requested by JSOSO. (GOAL 1 / OBJECTIVE 2)
- Keep JSOSO informed of M&S related efforts. (GOAL 1 / OBJECTIVE 2)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)
- Ensure M&S documents are forwarded to the JSOSO for review, coordination and endorsement. (GOAL 1 / OBJECTIVE 3)
- Ensure no loss of current M&S supported training. (GOAL 2 / OBJECTIVE 1)
- Develop mediated interface between models and data sources. (GOAL 2 / OBJECTIVE 1)
- Continue migration / integration efforts to achieve seamless interaction of M&S tools within operational C4I architecture that supports training, C2, planning, rehearsal, and execution requirements. (GOAL 2 / OBJECTIVE 1)
- Exploit display and computer technologies to transition from the data display C4I concepts of today to advanced concepts of tomorrow. (GOAL 2 / OBJECTIVE 1)
- Establish formal user feedback / requirements process to use demonstrations to drive / refine M&S development. (GOAL 2 / OBJECTIVE 1)
- Take action to coordinate the integration of SOF simulations and alternative courses of action tools into the synthetic battlespace. (GOAL 2 / OBJECTIVE 3)
- Implement USSOCOM Directive 71-3. (GOAL 2 / OBJECTIVE 3)
- Take action to merge existing C4ISR systems and networks allowing simulations to be appropriately stimulated by threats, signals and emissions. (GOAL 2 / OBJECTIVE 3)

- Coordinate efforts with SOIO-C4I to provide distributed capabilities. (GOAL 3 / OBJECTIVE 2)
- Coordinate with SOF mission planning systems to incorporate COA tools. (GOAL 3 / OBJECTIVE 2)
- Promote the employment of SBA as a decision-making tool. (GOAL 4 / OBJECTIVE 1)
- Ensure application of M&S is considered during every phase of acquisition. (GOAL 4 / OBJECTIVE 1)
- Ensure M&S developed is designed for reuse throughout the entire life cycle. Of particular interest is the injection of developed models into associated constructive and virtual simulations used for analysis and training. (GOAL 4 / OBJECTIVE 2)
- Coordinate M&S efforts of separate programs to eliminate duplication and promote reuse. (GOAL 4 / OBJECTIVE 2)

3.6.14 **SOOP-OT.** SOOP-OT is responsible for operational training including the use of virtual and constructive simulations.

- Provide expert representation as voting member of Joint Service M&S project governing bodies as requested by JSOSO. (GOAL 1 / OBJECTIVE 2)
- Keep JSOSO informed of M&S related efforts. (GOAL 1 / OBJECTIVE 2)
- Pass recommendations for new M&S training technologies to SOAL-T. (GOAL 1 / OBJECTIVE 4)
- Ensure no loss of current M&S-supported training. (GOAL 2 / OBJECTIVE 1)
- Develop mediated interface between models and data sources. (GOAL 2 / OBJECTIVE 1)
- Continue migration/integration efforts to achieve seamless interaction of M&S tools within operational C4I architecture that supports training, C2, planning, rehearsal, and execution requirements. (GOAL 2 / OBJECTIVE 1)
- Exploit display and computer technologies to transition from the data display C4I concepts of today to advanced concepts of tomorrow. (GOAL 2 / OBJECTIVE 1)
- Establish formal user feedback / requirements process to use demonstrations to drive/refine M&S development. (GOAL 2 / OBJECTIVE 1)
- In coordination with SORR-SCS, develop a master repository for data values generated by other models and simulations, such as calculated measures of performance, effectiveness and force effectiveness, and link this repository to other SOF agencies. (GOAL 2 / OBJECTIVE 1)

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## Appendix A

### SOF, Defense and Industry M&S Acronyms

*NOTE: See Appendix D for MSMP acronyms, abbreviations and definitions.*

This appendix is divided into 2 sections.

- The **first** section (A-1) holds acronyms that are common within the SOF M&S community.
- The **last** section (A-2) displays acronyms common to the Defense and Industry M&S community. This appendix is not meant to be a comprehensive DOD list. Such lists are readily available on the Internet and documents.

All terms are drawn from authoritative sources.

**A-1 SOF M&S Community.** The following terms are offered not already specified above but are used by and related to SOF.

AADC	Area Air Defense Commander
ABCCC	Airborne Battlefield Command and Control Center
ABMOC	Air Battle Management Operations Center (Army Air Defense)
ADRG	Arc Digitized Raster Graphics (NIMA data format)
AFMSS	Air Force Mission Support System (Air mission planner for AF, Army & SOF)
AFSAF	Air Force Semi-Automated Forces (JTC)
AFSERS	Air Force Synthetic Environment for Reconnaissance and Surveillance model
AFSOB	Air Force Special Operations Base
AFSOF	Air Force Special Operations Forces
AG	Air-Ground
AGSS	Aerial Gunner and Scanner Simulator
ALLTV	All Light Level Television
AMP	Analysis of Mobility Platform (JTC)
AOB	Air Order of Battle
AOC	Air Operations Center
AOI	Area Of Interest
AOR	Area Of Responsibility
AR	Armed Reconnaissance
ARG	Amphibious Ready Groups (Navy ships)
ASDS	Advanced SEAL Delivery System
ASL	Above Sea Level
ASOC	Air Support Operations Center
AT	Antiterrorism
ATARS	Aircrew Training and Rehearsal Support
ATO	Air Tasking Order
ATS	Aircrew Training System
AWACS	Airborne Warning and Control System

A / W / E	Aircraft, Weapons, and Electronic (AFMSS module)
AWIS	Aircraft Wireless Intercom System
BALCS	Body Armor/Load Carriage System
BCTP	Battle Command Training Program (Army)
BDA	Bomb/Battle Damage Assessment
Blackhawk	MH-60K/UH-60A/L
BLS	Beach Landing Site
BM	Battle Management
BMC	Battle Management Center
BMP	OPFOR Combat Vehicle (Russian)
BOS	Battlefield Operating System
BP	Battle Position
BSC	Beach Survey Chart
BUD/S	Basic Underwater Demolition/SEAL (Navy training course)
BVR	Beyond Visual Range
C2TIC	Command & Control Training and Innovation Center
C4IAS	C4I Automation System
CA	Civil Affairs
CADRG	Compressed Arc Digitized Raster Graphics (NIMA data format)
CAOC	Combined Air Operations Center
CAP	Crisis Action Planning
CAPS	Coordinated Adaptive Planning System (theater-level planning tool; NBC)
CAS	Close Air Support
CAT	Crisis Action Team
CBT	Computer-based Training; Combating Terrorism
CCATF	Combined Civil Affairs Task Force
CCT	Combat Control Team (AF)
CD	Counter-drug (activities)
CEC	Cooperative Engagement Capability (Navy Fleet)
CENTCOM	Central Command
Chinook	CH-47D/MH-47E
CI	Counter Intelligence Civilian Internee
CID	Combat Identification
CJTF	Combined Joint Task Force
CLOAR	Common Low Observable Auto Router (Air Force auto routing and threat analysis to low observable airframes)
CMOC	Civil-Military Operations Center
CMS	Combat Mission Simulator (Army)
CN	Counter Narcotics (disrupt, destroy, and interdict illegal drug activities)
COCOM	Combatant Command
COI	Critical Operational Issue
Combat Shadow	MC-130P
Combat Talon I	MC-130E

Combat Talon II	MC-130H
Commando Solo	EC-130E
COMPASS	Common Operational Modeling, Planning, and Simulation Strategy (Software Interface for joint collaborative mission planning and training)/(C4I)
CONOP	Concept of Operation
CP	Counter-proliferation (of WMD); Command Post; Check Point
CPX	Command Post Exercise
CRC	Control and Reporting Center
CRE	Control and Reporting Element; Close Range Engagements
CRRC	Combat Rubber Raiding Craft (Navy SW)
CSAR	Combat Search and Rescue
CT	Counter Terrorism; Combating Terrorism
CTAPS	Contingency Theater Automated Planning System (Theater battle management)/(Command & control)
CTOC	Corps Tactical Operating Center
CUBE	Command Unified Battlefield Environment
DA	Direct Action (missions limited in duration and scope)
DAG	Division Artillery Group - OPFOR
DDS	Dry Deck Shelter (Navy submarine SOF module)
DBGF	Database Generation Facility
DBGS	Database Generation System
DIU	Dedicated Interface Unit
DJSOTF	Joint Special Operations Task Force
DJSOTFI	Distributive Joint Special Operations Task Force Initiative (Makes SWAMPS, MCS, and SOFPARS more interoperable) NAWCTSD
DODIIS	Department Of Defense Intelligence Information System
DRLMS	Digital Radar Land Mass System
DTG	Date-Time Group
EAC	Echelon Above Corps
EAGLE	An Army corps/division level combat model
E&E	Escape and Evasion
ECM	Electronic Countermeasures
EEI	Essential Elements of Information
EFX	Expeditionary Forces Experiment (AF)
ELINT	Electronic Intelligence
ENWGS	Enhanced Naval Warfare Gaming System
EO	Electro-Optical
EOB	Electronic Order of Battle
E-Tool	Entrenching Tool
EW	Electronic Warfare
FAAD	Forward Area Air Defense
FAC	Forward Air Controller
FACP	Forward Air Control Post
FBCB2	Force XXI Battle Command Brigade and Below system (Army)
FDC	Fire Direction Center

FDP	Formalized Data Product
FID	Foreign Internal Defense (Train, assist, advise, and support host military forces)
FIWC	Fleet Information Warfare Center
FLIR	Forward Looking Infrared
FO	Forward Observer
FOB	Forward Operating Base
FOV	Field of View
FPM	Flight Performance Module (Air Force AFMSS)
FTS	Flight Test Squadron [AFSOC]
GBS	Global Broadcast System
GCS	Ground Control Station
GOB	Ground Order of Battle
GPS	Global Positioning System
GW	Guerrilla Warfare (Overt military part of an insurgency)
HA	Humanitarian Assistance
HALO	High Altitude Low Opening (SOF parachuting technique)
HCI	Human-Computer Interface
HCST	AC-130H Crew Station Trainer (AFSOC)
HD	Humanitarian Demining
HF	High Frequency (radio)[3-30MHz]
HLD	High Level Design
HN	Host Nation
HOA	Head of Agency
HRLMD	Hydrographic Reconnaissance Littoral Mapping Device
HUD	Heads Up Display (Aircraft systems)
HUMINT	Human Intelligence
HWL	High Water Line
IAD	Integrated Air Defense
ICD	Interface Control Document
IDAS	Interactive Defense Avionics System
IFF	Identification Friend or Foe
IFOR	Implementation Force
IIS	Intelligence and Information Systems
IMINT	Imagery Intelligence
IO	Information Operations (previously, information warfare)
IR	Infrared
ITEM	Integrated Theater Engagement Model
ITEMS	Interactive Tactical Environment Management System (CAE Electronics)
IW	Information Warfare (now, information operations)
Janus	An Army series of land combat models, with limited air & naval (A mission analysis system)
JBASS	JSIMS Breakout Analysis Worksheet
JBS	Joint Base Station
JC2WC	Joint Command & Control Warfare Center (owns JQUAD)
JCAPS	Joint C4ISR Automated Planning System
JCAS	Joint Command and Control Attack Simulation (part of JQUAD; JTC)

JCM	Joint Conflict Model
JCMOTF	Joint Civil Military Operations Task Force
JDISS	Joint Deployable Intelligence Support System
JECEWSI	Joint Electronic Combat Electronic Warfare Simulation (part of JQUAD; JTC)
JESS	Joint Exercise Support System
JFACC	Joint Force Air Component Commander
JFC	Joint Forces Commander
JFLCC	Joint Force Land Component Commander
JFMCC	Joint Force Maritime Component Commander
JFSOCC	Joint Forces Special Operations Component Commander
JISE	Joint Intelligence Support Element
JMCIS	Joint Maritime Command Information System
JMEM	Joint Munitions Effectiveness Manual
JMP	Joint Mission Planner
JMPS/S	Joint Mission Planning Segment / System (Combines AFMSS & TAMPS systems to GCCS in 2001)
JMSSR	Joint Models and Simulation System Repository
JNETS	Joint Network Simulation (Part of JQUAD; JTC)
JNMS	Joint Network Management System
JOA	Joint Operations Area
JOC	Joint Operations Center
JOISIM	Joint Operational Intelligence Simulation (Part of JQUAD;JTC)
JOPEs	Joint Operation Planning and Execution System
JPO	Joint Program Office
JPOTF	Joint Psychological Operations Task Force
JPT	JFACC Planning Tool
JRCC	Joint Rescue Coordination Center
JROC	Joint Requirements Oversight Committee
JRTC	Joint Readiness Training Center – Light Infantry (Ft. Polk, LA)
JSOACC	Joint Special Operations Air Component Commander
JSOFOR	Joint Special Operations Forces
JSOTF	Joint Special Operations Task Force
JSOMP	Joint Special Operations Mission Planner (SOF)
JSOMTC	Joint Special Operations Medical Training Center
JSOR	Joint Service Operational Requirement
JSOTF	Joint Special Operations Task Force
JSTARS	Joint Surveillance Target Attack Radar System
JTC	Joint Training Confederation
JTF	Joint Task Force
JTIDS	Joint Tactical Information Distribution System
JTL	Joint Targets List
JTS	Joint Tactical Simulation (mission analysis system)
JTT-A	Joint Tactical Terminal-Airborne
JTWS	Joint Threat Warning System
JTX	Joint Training Exercise
JULLS	Joint Universal Lessons Learned System

JWFC	Joint Warfighting Center
JWICS	Joint Worldwide Intelligence Communications System
KPP	Key Performance Parameter (Operational Requirement Document)
LASAR	Light Attack Reconfigurable Simulator (A/MH-6)
LBE	Load Bearing Equipment
LCE	Liaison Coordination Elements
LDS	Leaflet Delivery System
LEP	Lightweight Environmental Protection
LIC	Low Intensity Conflict
Little Bird	A/MH-6
LLSO	Low Level Source Operations (intelligence activities)
LOC	Line of Communication
LPI/D	Low Probability of Intercept/Detection
LRP	Limited Response Package
LTD	Laser Target Designator
LWVRS	Light Weight Visual Reconnaissance System
LZ	Landing Zone
MAAP	Master Air Attack Plan
MAGTF	Marine Air Ground Task Force
M&R	Maritime & Rotary Wing
MATT	Multi-Mission Advanced Tactical Terminal
MBMMR	Multi-Band Multi-Mission Radio
MBITR	Multi-band Inter/Intra Team Radio
MC&C	Mapping, Charting and Geodesy
MCG&I	Mapping, Charting, Geodesy and Imagery
MCM	Mine Countermeasures
MCS	Maneuver Control System (Army mission planning/execution system)
MDST	Missile Defense Space Tool (JTC)
METOC	Meteorological and Oceanographic (environmental conditions/effects)
METT-TC	Mission, Enemy, Terrain, Troops - Time available and Civilians on the Battlefield (Army)
MFP 11	Major Force Program 11 (Special Operations funds)
MICH	Modular/Integrated Communications Helmet
MICON	Mission Consent (by Commander)
MILES	Multiple Integrated Laser Engagement System
MISREP	Mission Reports
MK V SOC	MK V Special Operations Craft (Navy SW)
MMTT	Multi-Mission Tactical Trainer (Navy)
MOM	Management Object Model
MOOTW	Military Operations Other Than War
MOPP	Military Over-garment Protective Posture
MOUT	Military Operations Urban Terrain
MPC	Mission Planning Center; (PSYOP) Media Production Center
MPM	Mission Planning Module
MPS	Mission Planning System (part of new AFMSS/SOFPARS system)
MRD	Mission Rehearsal Device

MSRT	Mobile Subscriber Radio Telephone
MSS	Mission Support System (Air Force); Mission Support Site
MTBF	Mean Time Between Failure
MTT	Mobile Training Team
MTW	Major Theater War
MTWS	MAGTF Tactical Warfare Simulation (Marine Corps; JTC)
MUSE	Multiple UAV Simulation Environment
NAVSOC	Naval Special Operations Command
NAVSOFF	Naval Special Warfare Forces
NBC	Nuclear, Biological, and Chemical (threat)
NCA	National Command Authority
NEO	Noncombatant Evacuation Operation
NMCS	National Military Command System
NRT	Near-Real Time
NSC	National Simulation Center (Army)
NSWC	Naval Special Warfare Command
NSWG	Naval Special Warfare Group
NSWTG	Naval Special Warfare Task Group
NSWTU	Naval Special Warfare Tactical Unit
NSWU	Naval Special Warfare Unit
NTC	National Training Center, Army – Armored & Mechanized (Ft. Irwin, CA)
NVD	Night Vision Device
NV/EO	Night Vision \ Electro Optic
NVG	Night Vision Goggles
OBJ	Objective
ODA	Operational Detachment Alpha (Army SF Team)
OPCON	Operational Control
OPLAN	Operations Plan
OP/LP	Observation/Listening Post
OPORD	Operations Order
OPSEC	Operations Security
OPTEMPO	Operational Tempo (SOF utilization measure)
ORP	Objective Rally Point
OSPREY	CV-22
OTH	Over-The-Horizon
PARIS	Planning And Rehearsal Information Support system (160 <sup>th</sup> SOAR)
PARKHILL	Encrypted HF communications system
PARS	Planning and Rehearsal System
Pave Hawk	MH-60G
Pave Low III	MH-53J
PC	Patrol Coastal (Navy ship)
PDS	Product Distribution System (PSYOP)
PKO	Peace Keeping Operation
PMPS	Portable Mission Planning System (part of new AFMSS/SOFPARS system)
POAS	PSYOP Automated System (Formerly POADS-PSYOP Automated Data System)
POBS	PSYOP Broadcast System

PSM	Portable Space Model (JTC)
PRIVATEER	SOF SIGINT maritime craft
PSYOP	Psychological Operations
QRE	Quick Reaction Element
QRP	Quick Response Package
RAAP	Rapid Application of Air Power
R&S	Reconnaissance and Surveillance
RESA	Research, Evaluation, and System Analysis (Simulation: Navy, JTC)
RFI	Request For Information
RHIB	Rigid Hull Inflatable Boat (Navy Special Warfare)
RIB	Rigid Inflatable Boat (Navy Special Warfare)
ROE	Rules of Engagement
RP	Release Point; Rally Point
RTO	Responsible Test Organization
SA	Security Assistance
SAHRV	Semi-Autonomous Hydrographic Reconnaissance Vehicle (Navy)
SAR	Search And Rescue
SATCOM	Satellite Communications
SAW	Squad Automatic Rifle
SBU	Special Boat Unit (Navy SOF)
SCAMPI	A digital communications network
SDBF	Simulator Database Facility (AF), Kirtland, AFB, NM)
SDV	SEAL Delivery Vehicle (Navy SW)
SE	Support Element
SERE	Survival, Escape, Resistance, & Evasion
SF	Special Forces (Army)
SFG	Special Forces Group (Army)
SFOB	Special Forces Operating Base
SFOR	Stabilization Force
SIGINT	Signal Intelligence
SILENT	SOF SIGINT aircraft
SHIELD	
SIOP	Single Integrated Operational Plan
SITREP	Situation Report
SLAM	Selectable Lightweight Attack Munitions
SMRS	Special Mission Radio System
SOA	Special Operations Aviation
SOASMRF	Special Operations Aviation Simulation and Mission Rehearsal Facility (Army – 160 SOAR (A))
SOCA	Special Operations Communications Assemblage
SOCCE	Special Operations Command and Control Element
SOCCENT	Special Operations Command Central (CENTCOM SO)
SOCEUR	Special Operations Command Europe
SOCIFOR	Special Operations Command Implementation Force
SOCJFCOM	Special Operations Command Joint Forces Command
SOCKOR	Special Operations Command Korea

SOCOORD	Special Operations Coordination Element
SOC PAC	Special Operations Command, Pacific
SOC-R	Special Operations Craft-Riverine
SOCRATES	Special Operations Command Research, Analysis, & Threat Evaluation System
SOC SOUTH	Special Operations Command South
SODARS	Special Operations Debriefing and Analysis Reports
SOF IV	Special Operations Forces Intelligence Vehicle
SOFAMS	SOF Analysis and Modeling System (JMA model)
SOFATS	Special Operation Forces Aircrew Training System
SOF CDF	SOF Core DIS (Distributive Interactive Simulation) Facility (19 <sup>th</sup> SOS)
SOFNET- JCM	SOF Inter-Simulation Network-Joint Conflict Model
SOFPREP	Special Operations Forces Planning, Rehearsal and Execution Preparation (USSOCOM facility supporting the 19 <sup>th</sup> SOS data production)
SOFSA	SOF Support Activity
SOFTACS	Special Operations Forces Tactical Assured Connectivity System
SOFTS	SOF Training System
SOIS	Special Operations Intelligence System
SOLE	Special Operations Liaison Element
SOM	Simulation Object Model
SOMPF	Special Operations Mission Planning Folder
SOMS-B	Special Operations Media System-B
SOP	Standard Operating Procedure
SOPMOD	Special Operations Peculiar Modification (E.g., M4 Carbine)
SORTS	Status of Resources and Training System
SOTAC	Special Operations Tactical Air Controller
SOTVS	Special Operations Tactical Video System
SOW	Special Operations Wing
SPEAR	Special Operations Forces Personal Equipment Advanced Requirements
SPECOPS	Special Operations
Spectre	AC-130H/U
SR	Special Reconnaissance (“eyes on” a strategic or operational high-value target)
SRO	Sensitive Reconnaissance Operations
SSMS	SOF SIGINT Manpack System
STAM	Strategy-to-Task Assessment Model (under development by Sverdrup Tech)
STD	Swimmer Transport Device
STG	Special Tactics Group [AFSOC]
STS	Special Tactics Squadron [AFSOC]
	Special Operations Forces Training System
TACCSF	Tactical Air Command and Control Simulation Facility
TAC-D	Tactical Deception
TACON	Tactical Control
TACP	Tactical Air Control Party
TACS	Tactical Air Control System
TACSIM	Tactical Simulation (JTC)
TADIL	Tactical Digital Information Link

TAMPS	Tactical Automated Mission Planning System (Navy) / execution system [Part of JMPS in 2001]
TAOC	Tactical Air Operations Center
TB	Test Bed
TBA	Theater Battle Arena
TBM	Theater Battle Management
TBMCS	Theater Battle Management Core Systems (USAF)
TEL	Transporter, Erector, Launcher (missile battery)
TEMO	Training, Exercises, and Military Operations (Army)
TF	Task Force
TF/TA	Terrain Following/Terrain Avoidance
TIBS	Tactical Information Broadcast System
TMPC	Theater Media Production Center (PSYOP)
TOC	Tactical Operations Center
TOPSCENE	Tactical Operational Preview Scene (a mission rehearsal visualization system)
TPFDL	Time-Phased Force and Deployment List
TRP	Target Reference Point
TRS	Tactical Radio System
TSR	Time Sensitive Requirement
TSTARS	Transportable Strike Assault Rehearsal System (Navy)
UAV	Unmanned Aerial Vehicle
UGS	Unattended Ground Sensor
UHF	Ultra High Frequency
UJTL	Universal Joint Task List
USACOM	US Atlantic Command
USCINCSOC	US Commander-in-Chief Special Operations Command
USMTF	US Message Text Format
UTC	Unit Type Code
UTM	Universal Transverse Mercator
UUUV	Unmanned Underwater Vehicle
UW	Unconventional Warfare (military or paramilitary part of an insurgency)
VINSON	An encrypted UHF communications system
VHF	Very High Frequency (30-300 MHz)
VSW	Very Shallow Water
VTC	Video Teleconferencing
VTOL	Vertical Take Off and Landing (aircraft)
WAN	Wide Area Network
WCCS	Wing Command and Control System (AF), TBMCS
WDM	Weapon Delivery Module (Air Force AFMSS)
WGS	World Geodetic System
WMD	Weapons of Mass Destruction
WST	Weapon System Trainer
W WMCCS	World Wide Military Command and Control System (Replaced by GCCS)

**A-2 Acronyms collected from multiple M&S sources.** The following acronyms are terms not called out in the lists above, not SOF unique and are common to M&S Defense/Industry community.

21CLW	21 <sup>ST</sup> Century Land Warrior
3D CAD	3 Dimensional Computer aided design
A2	Algorithmic architecture
A2C2S	Army Airborne Command and Control System
AAR	After-action Review
ABS	Advanced Battle Simulation
ACC	Air Combat Command
ACSL	Advanced Continuous Simulation Language
ACT	Advanced Concepts and Technology
ADAPTOR	ALSP Data & Protocol Transfer Over RTI
ADRG	Arc Digitized Raster Graphics (NIMA Data Format)
ADRPM-7	Acoustic Detection Range and Propagation Model
ADST	ADS Technology
AFATDS	Advanced Field Artillery Tactical Data System [ATCCS/ABCS]
AFATS	Automated Feedback and Analysis Training System
AFIT	Air Force Institute of Technology
AI	Artificial Intelligence
AIRNET	Aviation Network Research Facility
AIT	Automatic Identification Technology
ALSP	Aggregate Level Simulation Protocol
AMG	Architecture Management Group
AMHJS	Airborne Radar Jammer Threat Simulator
AMTP	Army Training Evaluation Program (ARTEP) Mission Training Plan
AROSUM	Artillery Resupply Operations simulation Using Model
ARPA	Advanced Research Projects Agency [Old-See DARPA]
ASAS	All Source Analysis System [ATCCS/ABCS]
ASAT	Automated Systems Approach to Training
ASL	Atmospheric Sciences Lab
ASTMP	Army Science and Technology Master Plan
ATAFS	Automated Training Analysis and Feedback System
ATCCS	Army Tactical Command and Control System [ABCS]
ATD	Advanced Technology Demonstration
ATHS	Automatic Target Handover System
ATM	Asynchronous Transfer Mode
AVCATT	Aviation Combined Arms Tactical Trainer (See CATT)
AWD	Advanced Warfighting Demonstration
AWE	Advanced Warfighting Experiment [e.g., FOCUSED DISPATCH]
BAA	Broad Agency Announcement
B-ISDN	Broad Band Integrated Systems Digital Network
BBS	Bulletin Board System
	Battalion/Brigade Battle Simulation
BCIS	Battlefield Combat Identification System

BEWSS	Battlefield Environmental Weapon System Simulation [CGF]
BOS	Battlefield Operating System (Army)
BLRSI	Battle Lab Reconfigurable Simulator Initiative
BNN	Bounded Neutral Network [SAF]
BPA	Blanket Purchase Agreement
BSM	Battlefield Spectrum Management
CADEX	Combination and Dissemination of Experiments Data
CADIS	Communications Architecture and Security for DIS
CADRG	Compressed ARC Digitized Raster Graphics (NIMA Data Format)
CAIV	Cost as an Independent Variable
CATT	Combined Arms Tactical Trainer (Army virtual simulator family)
CAU	Cell Adapter Unit (Translate older SIMNET PDU TO DIS PDU)
CBD	Commerce Business Daily
CBT	Computer Based Training
CCIR	Commander's Critical Information Requirements
CCTT	Close Combat Tactical Trainer (See CATT)
CDRL	Contract Data Requirements List
CD-ROM	Compact Disk-Read Only Memory
CE	Collaborative Environment [SBA]
CGF	Computer Generated Forces
CHATS	Counter Intelligence/HUMINT Automated Tool Set
CHS	Common Hardware/Software (C4I)
CIB	Controlled Image Base (NIMA Data Format)
CIG	Computer Image Generator
CIS	Combat Information Set (See CATT)
CIU	Cell Interface Unit (Filters PDU/Gateway between 2 Networks e.g., SIMNET/DIS)
CLIN	Contract Line Item
CLS	Contractor Logistics Support
COE	Common Operating Environment [ABCS]
COEA	Cost & Operational Effectiveness Analysis
COP	Common Operating Picture
COPE	Combat Operational Performance Evaluation
COR	Contracting Officer's Representative
COTR	Contracting Officer's Technical Representative
COVERS	Combat Vehicle Reliability Simulation
CRLCMP	Computer Resource Life Cycle Management Plan
CSAR	Combat Search and Rescue
CS / CSS	Combat Support/Combat Service Support
CSSCS	Combat Service Support Control System [ATCCS/ABCS]
CSSTSS	Combat Service Support Training Simulation System
CTF	Common Technical Framework [HLA/M&S Master Plan]
CVM	Computer Vision Model
DADS	Digital Automated Data System
	Dynamic Analysis Design System
DARPA	Defense Advanced Research Projects Agency

DBDB5	Digital Bathymetric Database (NIMA Data Format)
DBMS	Database Management System
DCP	Distributed Collaborative Planning
DFAD	Digital Features Analysis Data
DIF	Data Interchange Format
DIS	Distributive Interactive Simulation
DISA	Defense Information Systems Agency [JIEO]
DMA	Defense Mapping Agency
DMSTTIAC	Defense Modeling, Simulation, & Tactical Technical Information Center
DNC	Digital Nautical Chart (NIMA Data Format)
DOCNET	Doctrine Networked Education and Training
DOTMLS	Doctrine, Organization, Training, Materiel, Leadership, & Soldier [Army]
DOTML-P	Doctrine, Organizations, Training & education, Materiel, Leadership & People (JV 2010 Operational Concept)
DPD	Distributed Product Description [Simulation Based Architecture]
DSI	Defense Simulation Internet
DTED	Digital Terrain Elevation Data (NIMA Data Format)
DTSS	Digital Topographic Support System
DTVS	Dynamic Terrain Visual System
EPLGR	Enhanced PLGR (C4I)
ESIG-2000	Evans and Sutherland Image Generator - 2000
EXFOR	Experimental Force
FAAV	Future Attack Air Vehicle
FAT	First Article Test
FDB	Functional Description of the Battlespace
FDDI	Fiber Distributed Data Interface
FEA	Front End Analysis
FIRESTORM	Federation of INTEL, RECON, Surveillance & Targeting, Operations & Research Model [Army]
FTX	Field Training Exercise
FOM	Federation of Models [HLA]
FOT&E	Follow-on Test & Evaluation
FUE	First Unit Equipped First Unit Exercise
FXXI	Force Twenty-one
GAMES	Guided Artillery Munitions Effectiveness Simulation
GIFT	Geometric Information for Targets
GFI	Government Furnished Information
GOPS	Giga Operations per Second
GOSC	General Officer Steering Committee
GOWG	General Officer Working Group
GUI	Graphic User Interface
HITL	Human-in-the-Loop (also man-in-the-loop)
HMD	Helmet Mounted Display
HTI	Horizontal Technology Integration
HTTP	Hyper Text Transfer Protocol

I/ITSEC	Inter-service/Industry Training Systems & Education Conference
ICT	Integrated Concept Team
IDD	Interface Design Document
IDEF	Integrated Computer-Aided Definition Language
IDEF0/ IDEX	Integrated Definition for Information Modeling
IEEE	Institute of Electrical & Electronic Engineers
IEWCS	Intelligence Electronic Warfare Common Sensor
IEWTPT	Intelligence and Electronic Warfare Tactical Proficiency Trainer
IG	Image Generation (visual database systems)
IITRI	Illinois Institute of Technology Research Institute (Army SMART support)
IOC	Initial Operational Capability
IOTE	Initial Operation Test and Evaluation
IPDT	Integrated Product Development Team
IPPT	Integrated Product and Process Team
I-PORT	Individual soldier's Portal into the Synthetic Environment
IPT	Integrated Product Team Integrated Process Team
ISO	International Standards Organization [SISO]
IST	Institute for Simulation and Training [Orlando, FL]
ISYCON	Integrated Systems Control (C4I)
ITEC	International Training and Education Conference [SISO]
ITEMS	Interactive Tactical Environment Management System [CGF]
ITTS	Instrumentation, Targets & Threat Simulators
JADS	Joint Advanced Distributed Simulation
JASP	Joint Analytical Support Program [OLD MAPPS]
JAST	Joint Advanced Strike Technology Program
JCET	Joint Combined Exercise and Training
JCM	Joint Conflict Model [CGF]
JTCTS	Joint Tactical Combat Training System
JDEIS	Joint Doctrine Electronic Information System
JDOL	Joint Doctrine Operations Laboratory
JPEG	Joint Photographic Experts Group (NIMA Data Format)
JEWC	Joint Electronic Warfare Center
JIEO	Joint Interoperability & Engineering Organization [DISA]
JTA-A	Joint Technical Architecture-Army
KBSA	Knowledge-Based Software Assistant
LAN	Local Area Network
LCC	Life Cycle Cost
LCCS	Life Cycle Contractor Support
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LLDR	Lightweight Laser Designator Range-finder
LOTS	Logistics Over The Shore
LRIP	Low Rate Initial Production

LRP	Long Range Patrol Long Range Protocol
LRU	Line Replaceable Unit
LWTB	Land Warrior Testbed [Army, Ft Benning]
MAADP	Mission Area Analysis Deficiency Program
MAN	Metropolitan Area Network
MANPRINT	Manpower & Personnel Integration
MAP	Mission Area Plan [USAF]
MBS	Motion Based Simulation
MCS/P	Maneuver Control System/PHOENIX
MDEP	Management Decision Package
MFD	Multi-function display
MIDAS	Man-Machine Integration Design and Analysis System
MIPS	Million Instructions Per Second
MIS	Management Information System
ModSAF	Modular Semi-Automated Forces [CGF]
MOPS	MEGA Operations per Second
MORS	Military Operations Research Symposium (SOCIETY)
MOSAIC	Models and Simulations: Army Integrated Catalog
MOUT	Military Operations in Urban Terrain
MSOSA	M&S Operational Support Activity [Replaced by MSIAC]
MSRR	Modeling & Simulation Resource Repository
NAWC	Naval Air Warfare Weapons Center
NDI	Non-Developmental Item
NES	Network Encryption System
NGI	Next Generation Internet (See TCP/IP; will utilize v6 as per Internet Society)
NITF	National Imagery Transmission Format (NIMA Data Format)
NLOS	Non-Line-of-Site
NRaD	RDT&E Division of NAVCOM, Control & Ocean Survey Center
NSC	National Simulation Center [Army, Ft Leavenworth]
NTSA	National Technical Services Association [SISO]
O&M	Operations & Maintenance
OA/SA	Operational Architecture/Systems Architecture
OCR	Operational Capability Requirements; Office of Collateral Responsibility
OMT	Object Model Template [HLA]
ONR	Office of Naval Research
OPSIN	OPSTATE Interpreter
ORD	Operational Requirements Document
OR/SA	Operations research/Systems analysis
OSF	Operational Support Facility
OTA	Office of Technology Assessment (US Congress)
OT&E	Operational Test & Evaluation
OTW	Out-The-Window
P3I	Preplanned Product Improvement
PACED	Portable Aviation Collective Exercise Demonstrator

PAD	Program Approval document
PBD	Program Budget Decision
PDSS	Post Deployment Software Support
PDU	Protocol Data Unit
PED	Processing Exploitation Dissemination [C4I]
PIDS	Prime Item Development Specification
PLGR	Precision Lightweight Global Positioning System Receiver (C4I)
PLCCE	Process Life Cycle Cost Estimate
POE	Program Office Estimate
POP	Persistent Objective Protocol (XCIU Filter) [STOW-A] Period of Performance
PPF	Platform Proto-Federation [HLA]
QRMP	Quick Response Multicolor Printer
RAM	Reliability, Availability & Maintainability Random Access Memory
RDEC	Research, Development and Engineering Centers
RDT&E	Research, Development, Test & Evaluation
RFI	Radio Frequency Interferometer
RFP	Request for Proposal
RFPI	Rapid Force Projection Initiative [FXXI]
RIMS	Research and Development Information Management System
RISTA	Reconnaissance, Intelligence, Surveillance & Target Acquisition
RSTA	Reconnaissance, Surveillance and Target Acquisition
RTI	Runtime Infrastructure [HLA]
SAF	Semi-Automated Forces
SAMP	Single Acquisition Management Plan
SBIR	Small Business Innovation Research
SEE	Software Engineering Environment
SEID	Systems Engineering, Integration & Demonstration
SETA	Systems Engineering & Technical Assistance
SGI	Silicon Graphics Impact
SICD	System Interface Control Document
SINGARS	Single Channel Ground and Airborne Radio System
SINGARS/ ICOM	SINGARS Integrated COMSEC
SIP	Software Initiatives Program
SISO	Simulation Interoperability Standards Office
SLEP	Service Life Extension Program
SMART	Simulation & Modeling for Acquisition, Requirements and Training [Army]
SNAP	Simulation Nomination and Approval Process [Army]
SNE	Synthetic Natural Environment
SOM	Simulation Object Model [HLA]
SOMIC	Special Operations Mission Integration Capability [inactive]
SOS	Special Operation Squadron
SOW	Statement of Work Special Operations Wing

SPAWAR	Space and Naval Warfare Systems Command
STANAGS	Standardization Agreement
STARS	Strategic Target Systems; Software Technology for Adaptable Reliable Systems
STO	Special Technical Operations
STOW-A	STOW – Architecture (Army)
STTR	Small Business Technology Transfer
TADSS	Training Aids, Devices, Simulators & Simulations
TADSSI	TADSS and Instrumentation
TCP/IP	Transmission Control Protocol/Internet Protocol (Internet protocol suite)
TEA	Training Effective Analysis
	Technical Exchange Agreement
TEMP	Test and Evaluation Master Plan
TENCAP	Tactical Exploitation of National Capabilities
THP	Take Home Package
TIFF	Tag Image File Format (NIMA Data Format)
TOR	Technical Oversight Representative
TPEG	Training Performance Evaluation Guide
TRADOC	Training and Doctrine Command (Army)
TSIU	Tactical System Interface Unit
TTP	Tactics, Techniques & Procedures
UDO	Unilateral Delivery Order
UTM	Universal Transverse Mercator
VAMP	Vulnerability Analysis Methodology Program
VAPS	Visual Applications Builder
VMAP	Vector SMART Map (NIMA Data Format)
VPF	Vector Product Format (NIMA Standard Format)
W V S	World Vector Shoreline (NIMA Data Format)

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**Appendix B**

**CHARTER FOR THE MODELING AND SIMULATION INTEGRATED PRODUCT TEAM  
(MSIPT)**

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# CHARTER FOR THE MODELING AND SIMULATION INTEGRATED PRODUCT TEAM (MSIPT)

February 2000

1. **CHARTER PURPOSE:** This charter establishes the MSIPT for the purpose of assisting and supporting the Joint Special Operations Simulations Office (JSOSO) with the:

- Identification of special operations forces (SOF) M&S requirements and associated resourcing
- Identification and integration of SOF M&S requirements and functionality into existing / on-going M&S efforts where possible or planning and staffing for new development
- Prioritization of related MFP-11 M&S investments
- Identification of new technologies and useful M&S tools of industry and Defense agencies
- Documentation and distribution of approved M&S tools and functional designs
- Cognizant responsibility for the tasks and deliverables outlined in Chapter Two of the USSOCOM Modeling and Simulation Master Plan

## 2. **ORGANIZATION:**

a. Figure 1 (next page) shows the MSIPT organization. Representatives from the following cross-functional areas constitute the membership.

- MSIPT Chairperson. The SORR-SCS Project Director for Modeling and Simulation will lead the MSIPT and serve as the lead for the JSOSO.
- Representatives from the SOF Components and Theater SOCs.
- The following HQ USSOCOM staff, as required:

SORR-SA	SOAL-T	
SORR-SR	SOIO-C4I	SOAL-IIS
SORR-RP	SOIO-IN	SOOP-RV
SOAL-MP	SOOP-OT	

b. The following organizations may support the SOF M&S effort in a technical advisory capacity.

ASD / SO-LIC	Service Components	PEO Office
DMSO	MSIAC	
AFAMS LNO	AETC-XP	
Mitre (FFRDC)	Line Units	

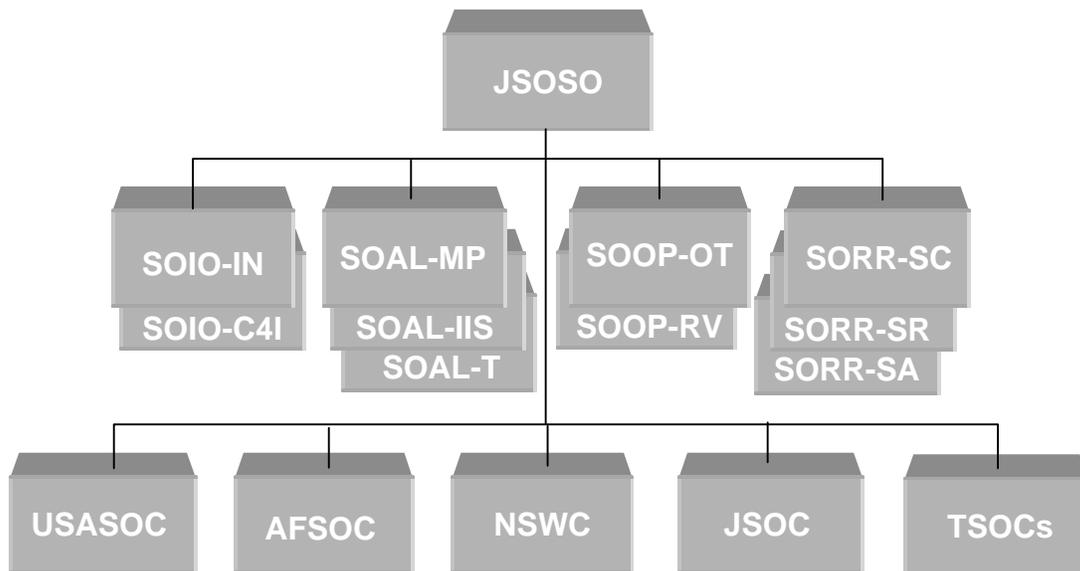


Figure-1 M&S Organization IPT Support

### 3. **AUTHORITY:**

- a. The MSIPT is chartered by the authority of the USSOCOM M&S Master Plan.
- b. Guidance.
  - (1) Priority. Prioritize executable requirements and Strategic Planning Process (SPP) documentation input through reconciliation of issues and comprehensive staffing.
  - (2) Delegated Authority. All MSIPT members must have the authority to represent their organization and make decisions (see attachment).
  - (3) Preparation. Members will ensure that they are familiar with agenda items and are prepared to address the issues.
  - (4) MSIPT Execution. Each MSIPT meeting will have an agenda. Agenda items, to the extent possible, will be pre-coordinated with all MSIPT members. MSIPT minutes will be published and distributed to all members as soon as practical after the meeting. Maximum visibility should be given to M&S issues, whenever possible.
4. **RESPONSIBILITY:** MSIPT members are functional area problem solvers and are essential to the success of MSIPT products and the SOF community. To that end, timely and accurate assistance will help ensure any recommended M&S product will compete favorably in the SPP. Members also have the responsibility to keep their leadership informed of outcomes of MSIPT meetings.
5. **FUNCTIONS:** The MSIPT will support the M&S development process through active requirements, assessment, activities and studies, sponsored Special Operations Command (SOC) and Component user conferences and forums. The team's goal is to

define the M&S needs in sufficient detail to drive the SPP and associated MFP-11 funding allocations in accelerated fashion.

6. **DIRECTION AND CONTROL:** Direct communication between MSIPT members is encouraged. The Chief, Wargaming, Simulation and Analysis Division (SORR-SC) will review issues arising from the MSIPT that cannot be solved at that level.
7. **SCHEDULING OF MSIPT MEETINGS:** The JSOSO (SORR-SCS) will manage the scheduling of and chair all MSIPT meetings. MSIPT meetings will be scheduled quarterly and as required to support highly visible activities.

ATTACHMENT TO THE CHARTER, M&S INTEGRATED PRODUCT TEAM

**SIGNATURE PAGE**

I empower my MSIPT member to represent my organization.

<b>ORGANIZATION</b>		<b>MSIPT MEMBER</b> (MSIPT Member's name / (Empowering official's signature)	<b>DATE</b>
USASOC			
AFSOC			
NAVSPECWARCOM			
JSOC			
SOIO	SOIO-IN		
	SOIO-C4I		
SOOP	SOOP-OT		
	SOOP-RV		
SOAL	SOAL-MP		
	SOAL-IIS		
SORR	SORR-SR		
	SORR-SA		

## Appendix C

### List of References

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## Appendix D

### MSMP Acronyms, Abbreviations and Definitions

ABCS	Automated Battlefield Control System [TPIO-ABCS] (Army)
ACR	Advanced Concepts & Requirements
ACTD	Advanced Concept Technology Demonstration
Admin.	Administration
AD	Assessment Director
ADS	Advanced Distributed Simulation
AE	Acquisition Executive
AETC	US Air Force Education and Training Command
AFAMS	Air Force Agency for Modeling and Simulation
AFSOC	Air Force Special Operations Command
AI	Artificial Intelligence
AMSO	US Army Modeling and Simulation Office
AoA	Analysis of Alternative
AMPS	Automated Mission Planning System (ARSOF)
ARSOMSA	Army Special Operations Mission Support Activity
ARSOF	Army Special Operations Forces
ASD (C3I)	Assistant Secretary of (C3I)
ASD (SO/LIC)	Assistant Secretary of Defense (Special Operations/Low Intensity Conflict)
ASDV	Advanced SEAL Delivery Vehicle
AWSIM	Air Warfare Simulation (Air Force: JTC)
BBS	Brigade / Battalion Simulation (Army)
BFTT	Battle Force Tactical Training System
C2	Command and Control
C3I	Command, Control, Computers and Intelligence
C4I	Command, Control, Communications, Computers and Intelligence
C4ISR	Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance
CANDI	Commercial and Non-Developmental Item [Replaces COTS]
CBS	Corps Battle Simulation [Army, JRTC]
CFDB	Conventional Forces Data Base
CINC	Commander in Chief
CINCSOC	CINC Special Operations Command
CIO	Chief Information Officer
CJCSI	Chairman, Joint Chief of Staff Instruction
CJCSM	Chairman, Joint Chiefs of Staff Manual
CMS	Combat Mission Simulator
CMMS	Conceptual Model of Mission Space
CMSMO	Component M&S Management Office
Cmbt.	Combat
Cmd.	Command
COA	Course of Action

Constr.	Constructive [simulation]
COTS	Commercial off the Shelf (Also Commercial and Non-Developmental Items – CANDI; DOD Acquisition University)
DII/COE	Defense Information Infrastructure-Common Operating Environment
DIA	Defense Intelligence Agency
DMSO	Defense Modeling and Simulation Office
DMT	Distributed Mission Training (Air Force)
DOD	Department of Defense
DODD	DOD Directive
DODI	DOD Instruction
DTT	Desk Top Trainer
ECD	Expected Completion Date
EXCIMS	Executive Council of Modeling & Simulation [DOD Executive Committee, Acquisition Council]
FCWG	Future Concepts Working Group
FY	Fiscal Year
GCCS-A	Global Command and Control System (C4I) – Army
GCCS-M	Global Command and Control System (C4I) - Maritime
GOTS	Government-off-the-Shelf
HLA	High Level Architecture
IOC	Initial Operational Capability
Info.	Information
Intel.	Intelligence
IPPD	Integrated Product and Process Development
IPT	Integrated Planning Team
US ISR	United States Intelligence, Surveillance, Reconnaissance
JCATS	Joint Conflict and Tactical Simulation (mission analysis system) [JWFC]
JFCOM	Joint Forces Command
JIDPS	Joint Integrated Database Preparation System
JMA	Joint Mission Analysis
JMASS	Joint Modeling and Simulation System
JMET	Joint Mission Essential Task
JMETL	Joint Mission Essential Task List
JMPS	Joint Mission Planning System
JQUAD	Five force intelligence related simulations
JSIMS	Joint Simulation System
JSOC	Joint Special Operations Command
JSOSO	Joint Special Operations Simulation Office
JSTEB	Joint Synthetic Test and Evaluation Battlespace
JSIMS	Joint Simulation System
JTA	Joint Technical Architecture
JTASC	Joint Training, Analysis and Simulation Center
JTLS	Joint Theater Level Simulation
JV	Joint Venture
JWARS	Joint Warfare System
JWFC	Joint Warfighting Center

LASAR	Light / Assault Attack Reconfigurable
M&S	Modeling and Simulation
MCMSMO	US Marine Corps Modeling and Simulation Management Office
MFP-11	Major Force Program for Special Operations
MIDB	Modernized Integrated Data Base (DIA)
MPARE	Mission Planning, Analysis, Rehearsal and Execution (See JSOFC2 –XXI)
MNS	Mission Need Statement
MSIAC	Modeling and Simulation Analysis Center [MSOSA + DMSTTIAC]
MSIPT	M&S Integrated Product Team
MSMP	Modeling and Simulation Master Plan
MSRR	M&S Resource Repository
MSWG	Modeling and Simulations Working Group
NASM	National Air and Space Model
NAVMSMO	US Navy Modeling and Simulation Management Office
NAWC-TSD	Naval Air Warfare Center – Training System Division
NIMA	National Imagery and Mapping Agency
NRO	National Reconnaissance Office
NSA	National Security Agency
NSW	Naval Special Warfare
NSWC	US Naval Special Warfare Command
OCR	Office of Collateral Responsibility
OneSAF	Next generation of CGF [Replaces ModSAF]
OOTW	Operations Other Than War
Opns.	Operations
OPR	Office of Primary Responsibility
PARIS	Planning And Rehearsal Information Support
PEO	Program / Project Executive Office
PES	Programs and Education Specialist
PFPS	Portable Flight Planning System
PM	Program or Project Manager
POC	Point-of-Contact
POM	Program Objective Memorandum
PPBS	Planning, Programming and Budget System
PVD	Plan View Display
QDR	Quadrennial Defense Review
R&D	Research and Development
Rqmts.	Requirements
SBA	Simulation Based Acquisition
SBD	Simulation Based Design
SEAL	Sea-Air-Land (forces, Navy)
SEDRIS	Synthetic Environment Data Representation & Interchange Specification
SIMCEN	Simulation Center
Sims.	Simulations; simulators
SOAL	USSOCOM Center for Acquisition and Logistics
SOAL-FW	SOAL – PEO, Fixed Wing

SOAL-IIS	SOAL – PEO, Intelligence and Information Systems
SOAL-MP	SOAL Acquisition Policy and Test Division
SOAL-PEO-C4I	SOAL Program Executive Office for C4I
SOAL-T	SOAL-Office of Advanced Concepts and Engineering
SOAR (A)	Special Operations Aviation Regiment (Airborne)
SOCACOM	Special Operations Center Atlantic Command (See SOCJF)
SOCJF	SOC Joint Forces (Effective 1 Oct 99 – see SOCACOM)
SOCS	USSOCOM Center for Chief of Staff and Command Support
SOF	Special Operations Forces
SOFPARS-G	Special Operations Forces Planning and Rehearsal System-Ground
SOIO	USSOCOM Center for Intelligence and Information Operations
SOIO-C4I	SOIO – PEO, C4I
SOIO-C4I-MO	MPARE Management Office
SOIO-IN	Directorate for Intelligence, Intelligence and Information Operations Center
SOOP	USSOCOM Center for Operations, Plans and Policy
SOOP-RE	SOOP Operational Test and Evaluation Division
SOOP-RV	SOOP Validation and Interoperability Division
SOOP-OT	SOOP Training Division
Spt.	Support
SORR	USSOCOM Center for Force Structure, Requirements, Resources, and Strategic Assessments
SORR-R	SORR Director, Resources
SORR-RC	SORR-R Comptroller Division
SORR-RP	SORR-R Programs Division
SORR-S	SORR Director, Force Structure, Resources & Strategic Assessments
SORR-SA	SORR-S Assessments Division
SORR-SC	SORR-S Wargaming, Simulation and Analysis Division
SORR-SCA	SORR-SC Analysis Branch
SORR-SCG	SORR-SC Guidance Branch
SORR-SCS	SORR-SC Simulation and Information Technology Branch
SORR-SF	SORR-S Force Development Division
SORR-SR	SORR-S Requirements Division
SOS	Special Operations Squadron [AFSOC]
SPE	Special Operations-Peculiar Equipment
SPG	Strategic Planning Guidance
SPP	Strategic Planning Process
Spt.	Support
STOW	Synthetic Theater of War
STRICOM	Simulation, Training and Instrumentation Command [Army]
SWAMPS	Special Warfare Automated Mission Planning System
T&E	Test and Evaluation
Tech.	Technical
TEMO	Training, Exercises and Military operations
TENA	Test and Evaluation Network Architecture
TIM	Technical Interoperability Manager

TMPO	Terrain Modeling Project Office
TOA	Total Obligation Authority
TRSS	Training Support Squadron [58 <sup>th</sup> TRSS]
TSOC	Theater Special Operations Center
UFR	Unfunded Requirement
US	United States
USASOC	US Army Special Operations Command
USD (A&T)	Under Secretary for Defense (Acquisition & Technology)
USSOCOM	United States Special Operations Command
VTRAT	Visual Threat Recognition and Avoidance Trainer (AFSOC)
VTTR	Virtual Test and Training Range
V V&A	Verification, Validation and Accreditation
V V&C	Verification, Validation and Certification
WARSIM / 2000	Warfighter Simulation / 2000 [Army]
WIM	WARSIM Intelligence Module

### Terms of Reference

#### Analysis.

- The application of scientific methods, especially mathematics and statistics, to study military operations to provide commanders and staff agencies with a scientific basis for making decisions to improve military operations. (Multiple sources).
- The capability for rapid turnaround objective (where possible) and subjective assessments (seasoned military judgement) that will provide decision-makers with more robust estimates of Force structure requirements, sizing, costs, effectiveness, and alternatives assuring the best allocation of defense resources. (JSOSO, USSOCOM, extrapolated from multiple sources).

Bridging (systems). A product improved or interim enhancement of a current system which moves toward a future capability in a cost effective manner while providing a more potent operating force in the near term; a system capability designated to carry SOCOM until replaced by future systems. (Reference y)

Current (system). An inventory system/platform whose capability still surpasses conventional systems and in part defines the unique nature of SOF; a system whose capability meets today's requirements. (Reference y)

Defense Information System Network-Leading Edge Services (DISN-LES). T1 line. DISN-LES is an advanced technology ATM network supporting the STOW community. ATM services typically support the movement of large files that require high-bandwidth and speed. This includes full-motion and real-time video, imagery files and distributed

simulation training exercises. Supported the Joint Warfighter Interoperability Demo and on going Advanced Concept Tech Demos (ACTD). (Simulation Interoperability Standards Office, DOD)

Defense Research & Engineering Network (DREN). T3 line (45 Mbps). Designed to serve high-performance research oriented computing in a long-haul communications network incorporating capability from both DOD and commercial telecommunications infrastructure. Originally established as Interim DREN or IDREN. Services support high-fidelity M&S for scientists/engineers at defense labs, test centers, universities, and industry over 6-US sites. (Simulation Interoperability Standards Office, DOD)

Defense Simulation Internet (DSI). T1 line (1.54Mbps). An operational network for the simulation community funded via a Defense Information Systems Agency fee. DSI has an Asynchronous Transfer Mode (ATM) backbone that provides reliability to the network. Multicasting and service quality has been enhanced using the Resource Reservation Protocol and ATM Permanent Virtual Circuits (PVC). DSI permits both classified and unclassified simulations. When the service transitioned to fee-for-service, the subscribers dropped from 125 to 29. Principle subscribers use DSI for training and exercises. (Simulation Interoperability Standards Office, DOD)

Foreign Representation. Within the context of intelligence modeling and simulation roles responsibilities, encompasses all aspects of foreign entities and interactions, to include forces, systems, organizations, infrastructure, connectivity, processes, doctrine, tactics and behavior. The term "foreign" applies to allies, coalition partners, neutrals and opposing forces. (DIMSMP (Draft))

Future (system). A developmental or potential system/platform which provides significant improvement(s) in capability or performance over those currently in the inventory; A Cornerstone Program of a Capstone Concept required to keep SOF relevant in the 21<sup>st</sup> Century. (Reference y)

Integrated Product and Process Development. A management technique that simultaneously integrates all essential acquisition activities throughout the use of multidisciplinary teams to optimize the design, manufacturing, business and supportability processes. (DOD Guide to IPPD, Version 1.0, 5 February 1996).

Legacy (system). An inventory system / platform whose capabilities are matched or overcome by conventionally fielded systems and produces no significant advantage; a system with a designated retirement date and subsequent replacement. (Reference y)

Mission Planning Systems. A computer-aided planner that displays 2-dimensional views; plan view displays (PVD), for example, the USAF Falcon View and the Pilot Mission Planning System (PMPS) which is included in SOFPARS. (JSOSO, USSOCOM, 1999).

Mission Preview Systems. Computer-driven workstation simulations that are displayed in 3-dimensional views; as typified by a TOPSCENE 400-workstation. Mission preview provides an added dimension by allowing the operator to preview his / her plan in a virtual environment. (JSOSO, USSOCOM, 1999).

Mission Rehearsal Systems. Computer driven virtual simulations is as near to real life environment as possible. The rehearsal is conducted in a "mock-up" with 3-dimensional views, computer generated forces, and synthetic communications; as typified by an aviation simulator with the resolution/detail of a TOPSCENE 4000 image generator. (JSOSO, USSOCOM, 1999).

Model. A physical, mathematical or otherwise logical representation of a system, entity, phenomenon or process. (DOD 5000.59-M, 1997).

Modeling. The application of a standard, rigorous, structured methodology to create and validate a physical, mathematical or otherwise logical representation of a system, entity, phenomenon or process. (DOD 8320.1-M, 1994).

#### Modeling and Simulation.

- The use of models, including emulators, prototypes, simulators and stimulators, either statically or over time, to develop data as a basis for making managerial or technical decisions. The terms "modeling" and "simulation" are often used interchangeably. (M&S Educational Training Tool (MSETT); Navy Air Weapons Center Training systems Division Glossary, 1994).
- The applications used to assess SOF requirements, force structure, doctrine, logistics and tactics; provide realistic training; and support acquisition activities. (MPARE Office, February, 2000)

Near-real-time. Pertaining to the timeliness of data or information, which has been delayed by the time, required for electronic communication and automatic data processing. This implies that there are no significant delays. See also real-time. (Joint White Paper, *Concept for Future Joint Operations – Expanding Joint Vision 2010*, May 1997)

Real-time. Pertaining to the timeliness of data or information, which has been delayed only by the time, required for electronic communication. This implies that there are no noticeable delays. See also near-real-time. (Joint White Paper, *Concept for Future Joint Operations – Expanding Joint Vision 2010*, May 1997)

Seamless. Perfectly consistent. Transparent. (DODD 5000.59M, December 1997)

Simulation. A method for implementing a model over time. (DODD 5000.59, 1997).

Simulation Based Acquisition (SBA). An acquisition process supported by the robust, collaborative use of simulation technology that is integrated across acquisition phases

and programs. The objectives of SBA are to reduce cost, cycle time, and risk within the acquisition process, and to increase the quality of the systems being acquired. Employing SBA along with Integrated Product Process Development (IPPD) techniques will enable end-to-end (or life cycle) verification of requirements matched to: design, manufacturing, supportability, and cost/performance trades. (Director for Defense Test, System Engineering and Evaluation, USD (A&T), March 1998).

Simulator. A device, computer program or system that performs simulation; For training, a device which duplicates the essential features of a task situation and provides for direct human operation (i.e., man-in-the-loop). (*A Glossary of Modeling and Simulation Terms for Distributed Interactive Simulation (DIS)* August 1995, DODD 5000.59P)

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. (CJCSI 8510.01, September, 1999)

Task. A specific step(s) accomplished in a process to accomplish an objective. The task may be combat (i.e., mission rehearsal) or training oriented. The process may be in the [instrumented] live, constructive or virtual domain. (JSOSO, USSOCOM, 1999).

Training. In consonance with CINC's guidance toward 'full-force dominance' and to realize USSOCOM's M&S vision, common training systems will be developed to support SOF unique training, mission rehearsal, and planning - land, air and sea. There are currently two major thrusts of M&S development in support of SOF training. First, the SOF component to JSIMS will provide training at the Battle Group/Joint Task Force level. Second, through the development and use of higher fidelity models, like the Navy's Battle Force Tactical Training System (BFTT) and the Joint Conflict and Tactical Simulation (JCATS) for unit-level training. Future SOF training tools incorporating M&S will be compatible, where appropriate, with DOD's High Level Architecture (HLA) to ensure interoperability with M&S in both service and joint arenas. (JSOSO, USSOCOM 1999). Intrinsic to the thrusts briefly outlined above is the network infrastructure necessary to conduct distributive, collective mission training at multiple locations.

US ISR. US intelligence representation is defined as the representation of all aspects of **US intelligence, surveillance and reconnaissance** entities and interactions, to include national, joint and service systems, organizations, infrastructure, connectivity, processes, doctrine, tactics and behavior. (DIMSMP (Draft))