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SECRETARY OF THE AIR FORCE**

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**AIR FORCE AGENCY FOR MODELING  
AND SIMULATION (AFAMS)**

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This directive states the mission, defines the command structure, and establishes the responsibilities of the Air Force Agency for Modeling and Simulation (AFAMS) as an Air Force (AF) Field Operating Agency (FOA). Throughout this publication, the term "LVC" (live, virtual, constructive) foundations refers to LVC simulations and supporting infrastructure, models, databases, tools and services which support operational training. LVC Operational Training (LVC-OT) is inextricably linked to and enabled by LVC foundations and provides an environment that allows individuals and units to improve operational readiness. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate functional chain of command. Submit requests for waivers through the chain of command to the Publication OPR. Ensure that records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of IAW the AF Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS).

**SUMMARY OF CHANGES**

This revision is extensive and requires a complete review. AFAMS is a Field Operating Agency (FOA) of the Headquarters United States Air Force (HQ USAF) under the Deputy Chief of Staff Operations, Plans & Requirements (AF/A3/5), under the direction of the Director of Operations (AF/A3O).

**1. Mission. AFAMS is the lead agent for centralized management of Air Force cross-functional and shared LVC foundational capabilities and resources supporting AF Service**

**Core Functions (SCF).** The AFAMS mission is to provide seamless integration of cross functional LVC environments for operational training that allow warfighters to maximize performance and decision making. Guided by the AF mission to fly, fight and win...in air, space, and cyberspace, AFAMS collaborates with and provides support to Combatant Command (CCMD) Air Components, Major Commands (MAJCOMs), AF Reserve Command (AFRC), Air National Guard (ANG), Headquarters Air Force (HAF), Direct Reporting Units (DRUs) and Field Operating Agencies (FOAs). AFAMS serves as the HAF lead for AF LVC foundations and integration with the Department of Defense (DoD), Service Components, other government agencies, international partners, academia and industry. This mission focus is key to providing necessary development and implementation of standards for common access and interoperability within the LVC domain for efficient and secure global operations.

**2. Command.** The AFAMS Commander will:

- 2.1. Execute this mission directive.
- 2.2. Exercise command over assigned personnel, facilities, property and funds.
- 2.3. Operate according to policy, guidance and oversight from the Director of Operations, Deputy Chief of Staff Operations, Plans and Requirements, HQ USAF, the Pentagon, Washington, D.C. (AF/A3O).

**3. Responsibilities.** AFAMS is responsible for implementation of AF/A3O policy and guidance and for orchestrating AF LVC foundations and integration support. AFAMS will implement policy, guidance and oversight as stated in AFPD 16-10 (Modeling and Simulation), and other HAF approved directives, mandates, and authoritative sources for integration of AF LVC foundations capabilities.

3.1. LVC Foundations Management - AFAMS will execute AF-level centralized management, coordination and integration of the technical and non-technical aspects of cross-functional and shared AF LVC foundations (infrastructure, knowledge management and workforce development) to improve interoperability and prevent unnecessary duplication/redundancies.

3.1.1. LVC Infrastructure - Provide technical oversight of the cross-cutting LVC infrastructure between major training enclaves to improve interoperability across HAF, MAJCOMs and with other services and coalition partners to effectively and efficiently integrate AF LVC training systems and networks to support OT requirements by executing the following responsibilities:

3.1.1.1. Define, evaluate, report and advocate AF LVC technical capabilities / specifications (e.g., distributed training system architectures; common/shared components, data, tools and services; standards; protocols; information assurance; security and connectivity) to effectively integrate AF LVC training systems and networks.

3.1.1.2. Evaluate and advocate solutions in support of the LVC enterprise networks (e.g. monitor and report on demand for and supply of hardware/software/data, bandwidth, and associated support services) to promote AF LVC distributed training capability.

- 3.1.1.3. Identify and advocate LVC infrastructure standards to support distributed training capability for cross-MAJCOM and Joint training events/exercises; and to promote reusability and interoperability of AF LVC assets.
- 3.1.1.3.1. Lead the implementation of common LVC standards, interfaces and metadata to improve reuse, accessibility, and trustworthiness of LVC tools, data, and services.
  - 3.1.1.3.2. Advocate acquisition community's efforts to ensure authoritative data complies with DoD and other Service definitions for interoperability of common applications in LVC environments.
  - 3.1.1.3.3. Lead HAF efforts to coordinate/manage AF requirements integration/adherence with standards (e.g., **SISO-STD-003-2006** and **SISO-STD-004-2004**) to achieve a common Joint/coalition LVC environment with the other DoD Components.
  - 3.1.1.4. Promote the use of authoritative LVC models and data by developing, maintaining, and managing AF LVC knowledge management sites and tools to include an LVC community portal, a LVC resource registry, and a LVC requirements database.
  - 3.1.1.5. Develop recommendations, coordinate, and maintain LVC infrastructure metrics to measure and track progress of LVC investments (e.g., map LVC operational capability to operator training requirements).
- 3.1.2. LVC Knowledge Management - Capture, distribute, and effectively use AF LVC knowledge to achieve effective development and integration of AF LVC architectures and distributed training capability by executing the following responsibilities:
- 3.1.2.1. Identify and coordinate science and technology improvement, innovation and transition in support of LVC systems' capabilities.
  - 3.1.2.2. Identify LVC best practices across MAJCOMs to improve visibility of LVC software practices and standards that enable convergence with DoD and coalition partners operational architectures.
  - 3.1.2.3. Establish and maintain guides, examples, and on-line tools for effective and efficient LVC development, interoperability, and reuse of distributed training capability.
  - 3.1.2.4. Serve as an AF advocate for LVC-OT capability through active collaboration with the acquisition and analysis communities, and facilitate coordination across MAJCOMs and with DoD, other US Government, industry, academia, and international partners.
  - 3.1.2.5. Use applicable standards (e.g., **SISO-STD-003-2006**, Standard for Base Object Model (BOM) Template Specification) to ensure Air Force LVC metadata is visible, accessible, and discoverable in the DoD metadata search capability.
  - 3.1.2.6. Coordinate through AF/A3O to the AF representative of the DoD M&S Steering Committee to synchronize AF LVC capability with DoD and industry standards.

- 3.1.2.7. In concert with HAF LVC-OT/M&S policy organizations, keep AF/A3O informed on the state of AF LVC efforts (e.g. LVC programs/initiatives, Joint and coalition M&S capabilities/requirements, and LVC program funding).
- 3.1.2.8. Collaborate with appropriate OSD, Air Force and other Service organizations (e.g., DoD Modeling and Simulation Executive Agents, the AF/A3/5 Weather Directorate, etc...) on issues relating to M&S representations of the air, space, cyberspace and geospatial environments to properly represent LVC environmental data.
- 3.1.3. Workforce Development - Assist with the development of an AF M&S professional workforce supporting LVC foundations by executing the following responsibilities:
- 3.1.3.1. Through AF/A3O, develop AF specific LVC training and coordinate with other DoD Components to ensure commonality.
  - 3.1.3.2. Assist MAJCOMs and functional experts in identifying and consolidating M&S training requirements to develop training standards and certification criteria for a professional M&S workforce required to support LVC foundations.
  - 3.1.3.3. Develop, coordinate, offer and conduct LVC foundational courses to AF M&S community and other DoD and Service Component training organizations.
- 3.2. Combatant Command (CCMD) Air Component and MAJCOM Support - AFAMS will serve as the AF LVC-OT focal-point for facilitating the use of cross-functional and shared LVC foundational capabilities/resources in support of AF distributed training and LVC enabled events by executing the following responsibilities:
- 3.2.1. Facilitate implementation of HAF approved LVC foundations roadmaps, plans and strategy.
  - 3.2.2. Establish/maintain liaison with select AF/DoD organizations with AF LVC equities.
  - 3.2.3. Facilitate cross-MAJCOM coordination of AF LVC programs and initiatives.
  - 3.2.4. In coordination with AF/A3O and appropriate MAJCOMs/DRUs, advocate appropriate representation of AF air, space and cyberspace capabilities in AF and other DoD LVC-OT events.
  - 3.2.5. Identify, capture and advocate advanced AF LVC requirements, concepts and capabilities in concert with AF MAJCOMs.
  - 3.2.6. Track operational user requirements for major cross-MAJCOM LVC programs and initiatives.
  - 3.2.7. Facilitate AF LVC initiatives within AF and Joint requirement processes, programs and systems; and conduct LVC foundational assessments for the HAF.
  - 3.2.8. Support MAJCOMs and HAF to ensure LVC foundational issues (initiatives, enhancements, shortfalls, and disconnects) are accurately presented to the AF Corporate Structure.

3.2.9. Assist MAJCOMs and Components to identify LVC capabilities for effective application in support of mission rehearsal, readiness and potential combat operations.

3.3. LVC Standards Enforcement / Compliance - AFAMS will facilitate HAF oversight of cross-functional and shared LVC architecture and interoperability standards compliance by executing the following responsibilities:

3.3.1. Serve as the HAF A3/5 office of primary responsibility in coordination with SAF/CIO A6 for LVC systems certification to facilitate required certification of LVC training systems.

3.3.1.1. Monitor and report LVC related Information Assurance (IA) compliance issues to HAF, MAJCOMS and other appropriate authorities.

3.3.1.2. Coordinate Verification, Validation, and Accreditation (VV&A) policy and procedures to ensure effective application to LVC integrated architecture.

3.3.1.3. Advise AF/A3O to ensure LVC training system/asset compliance with the DoD Discovery Metadata Specification IAW DoDI 8320.02 titled, "Sharing Data, Information, and Information Technology (IT) Services in the Department of Defense."

3.3.1.4. Support HAF in the review and coordination of LVC system waiver requests with appropriate AF authorities.

3.3.1.5. Support HAF in addressing mission driven data content and interface requirements of the Net Ready Key Performance Parameter (NR-KPP).

3.3.2. Support HAF in overseeing AF and MAJCOM compliance with LVC infrastructure standards and report to AF/A3O and MAJCOM commanders.

BURTON M. FIELD, Lt Gen, USAF  
DCS, Operations, Plans and Requirements

## Attachment 1

### GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

#### *References*

**DoD Directive 4630.05**, *Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)*, 5 May 2004

**DoD Directive 5000.59**, *DOD Modeling and Simulation (M&S) Management*, 8 August 2007,

**DoD Directive 8320.02**, *Data Sharing in a Net-Centric Department of Defense*, 2 December 2004,

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**CJCSI 3170.01H**, *Joint Capabilities Integration and Development System*, 10 January 2012

**CJCSI 6212.01 series**, *Net Ready Key Performance Parameter*, 21 March 2012

**Air Force Policy Directive 16-10**, *Modeling and Simulation*, 10 March 2006

**Air Force Instruction 16-1001**, *Verification, Validation and Accreditation (VV&A)*, 1 June 96

**Air Force Instruction 63-101/20-101**, *Integrated Life Cycle Management*, 7 March 2013

**IEEE Std 1278.1-2012**, IEEE Standard for DIS - Application Protocols

**IEEE Std 1516-2000**, M&S High Level Architecture (HLA) - Framework and Rules

**IEEE Std 1516.1-2000**, Standard for M&S HLA - Federate Interface Specification

**IEEE Std 1516.2-2000**, Standard for M&S HLA - Object Model Template (OMT) Specification

**SISO-STD-003-2006**, Standard for Base Object Model (BOM) Template Specification

**SISO-STD-004-2004**, Standard for Dynamic Link Compatible HLA API Standard for the HLA Interface Specification

**SISO-STD-006-2010**, Standard for Commercial Off-the-Shelf (COTS) Simulation Package Interoperability (CSPI) Reference Models

**SISO-STD-007-2008**, Standard for Military Scenario Definition Language (MSDL)

#### *Abbreviations and Acronyms*

**API**—Application Programmer Interfaces

**DIS**—Distributed Interactive Simulation

**HLA**—High Level Architecture

**IEEE**—Institute of Electrical and Electronics Engineers

**LVC**—Live, Virtual and Constructive

**M&S**—Modeling and Simulation

**SISO**—Simulation Interoperability Standards Organization

*Terms*

**Lead Agent**—The organization that controls or directs the course of a task, event, or process.

**"LVC" Foundations**— Refers to LVC simulations and supporting infrastructure, models, databases, tools and services which support operational training. LVC environments range from stand-alone weapon system simulator training to full spectrum distributed mission operations designed to rehearse complex mission objectives and accurately represent operating environments, threats, and available C2ISR support functions.